

Final Environmental Impact Statement for the 2020 Land Management Plan

Custer Gallatin National Forest

Volume 3: Appendix A (maps) through Appendix E



Cover photos were taken on the Custer Gallatin National Forest by Mariah Leuschen-Lonergan (except where noted). Starting with top left photo, going clockwise – Coneflower, Echinacea, native wildflowers, Sioux Ranger District; American Flag and U.S. Forest Service Flag displayed in winter on the Hebgen Ranger District; Log Deck from East Short Pines Project, Sioux Ranger District, photo by Kurt Hansen; Bison grazing in the Greater Yellowstone Ecosystem with Arrowleaf Balsamroot in background; Elk Grazing on the Gardiner Ranger District with sagebrush in background, foreground; Center - Close up of Indian Paintbrush, Bozeman Ranger District; Calf nursing from mother (mow), grazing permittees are a large part of the Ashland and Sioux Ranger Districts; Close-up of native alpine wildflowers in early spring on the Beartooth Ranger District, Beartooth Pass; View looking into the Rock Creek drainage and Absaroka-Beartooth Wilderness atop Beartooth Pass, Beartooth Ranger District; Aspen trees blowing in light breeze on the Yellowstone Ranger District, Suce Creek Trail.

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Appendix A: Maps

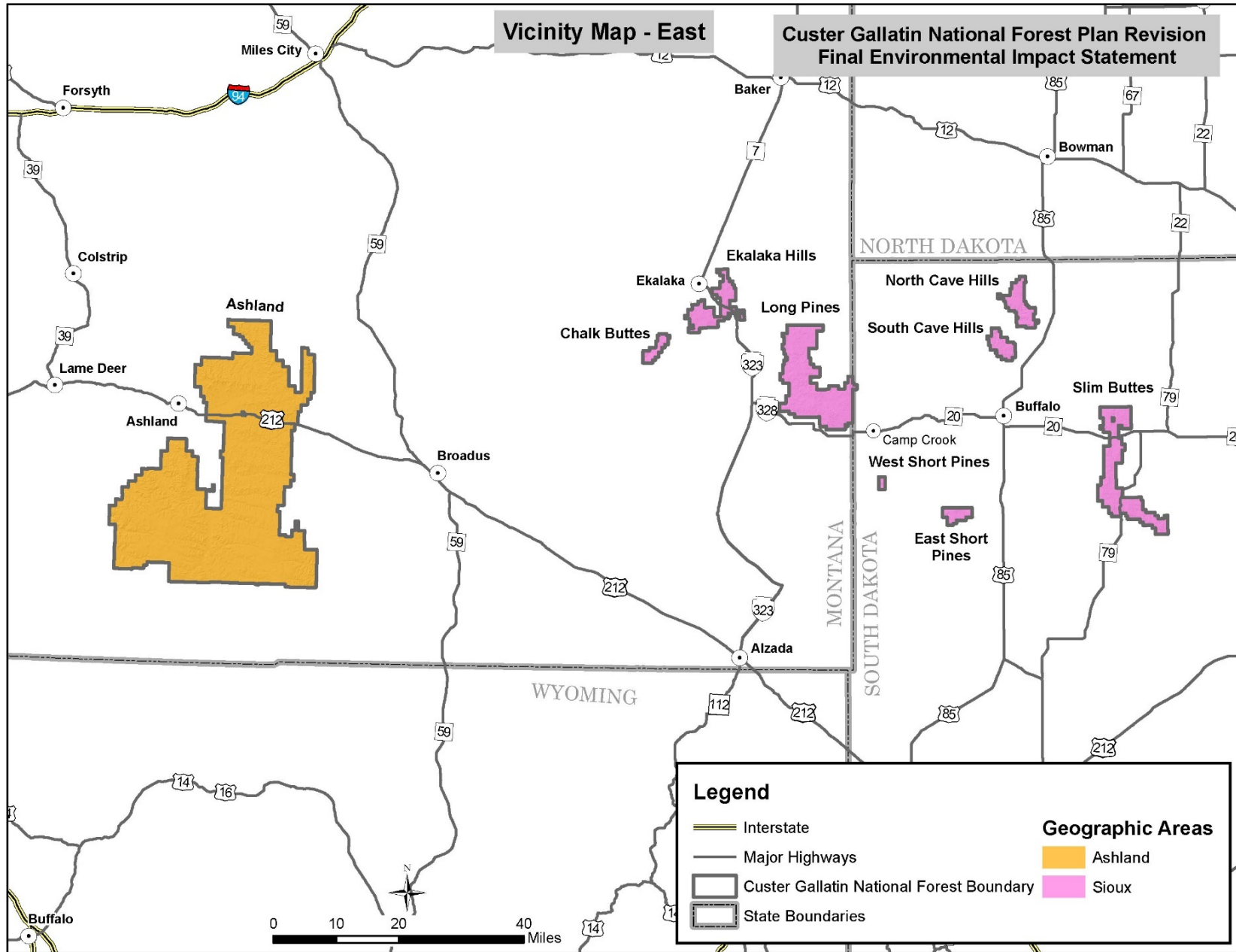
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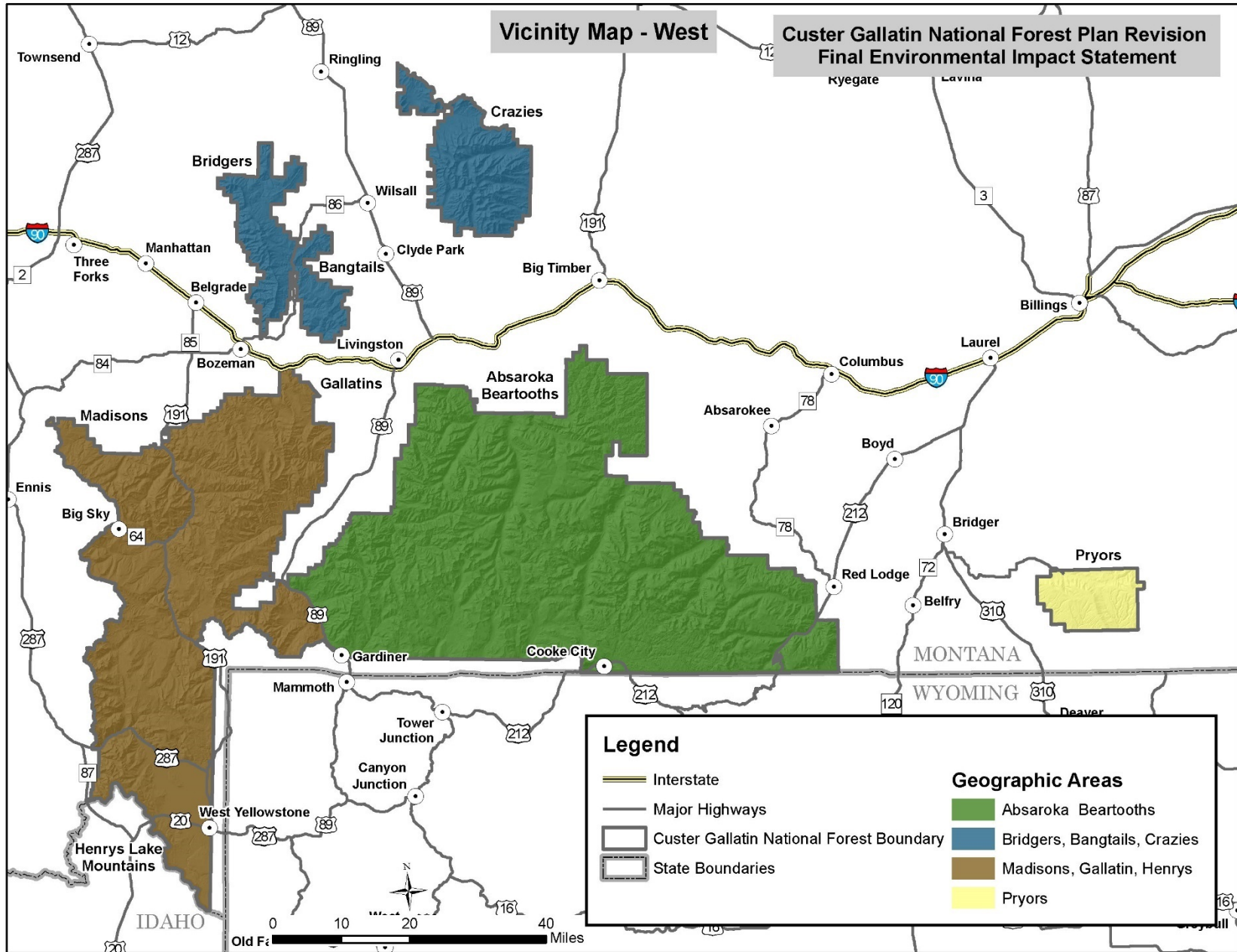
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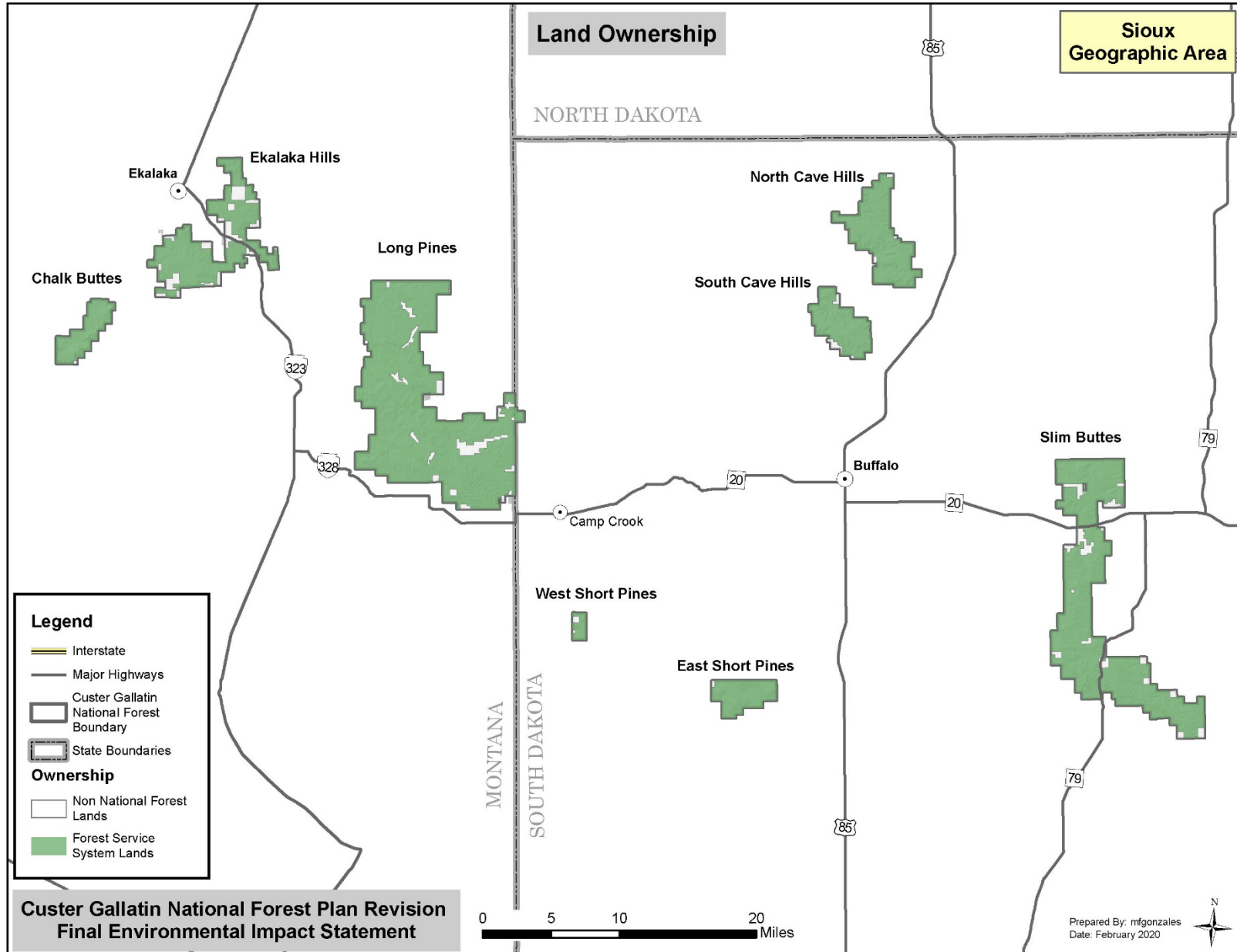
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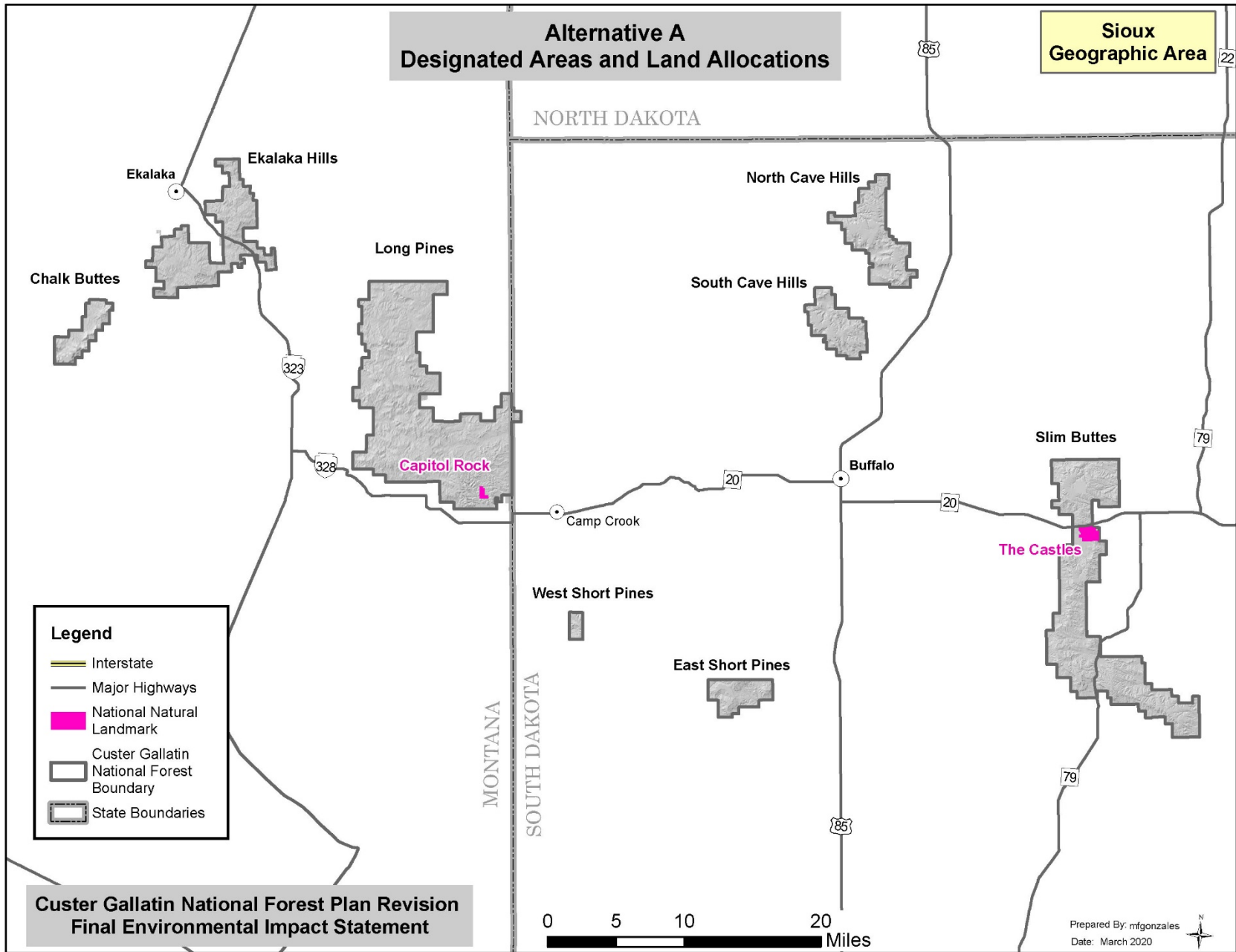


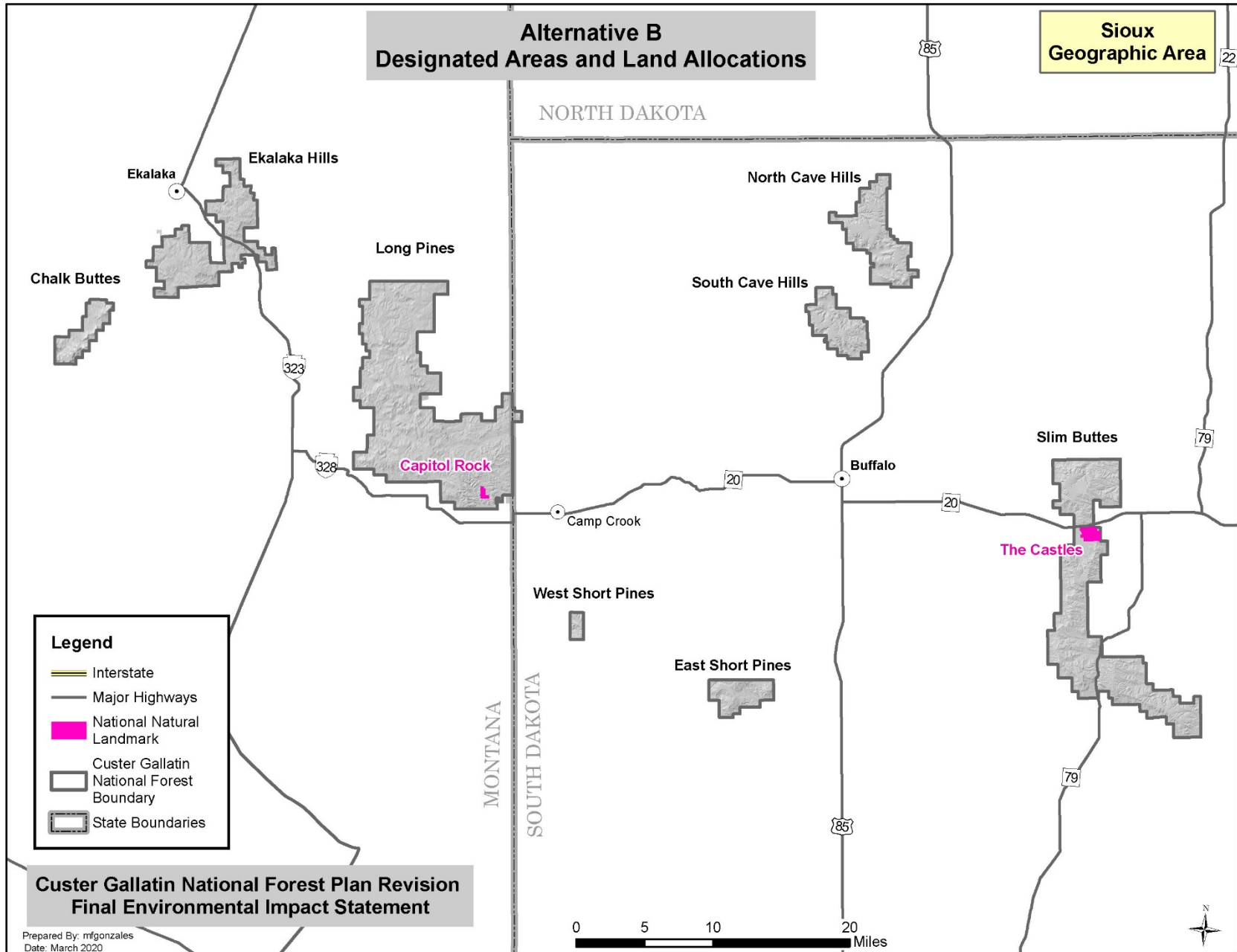
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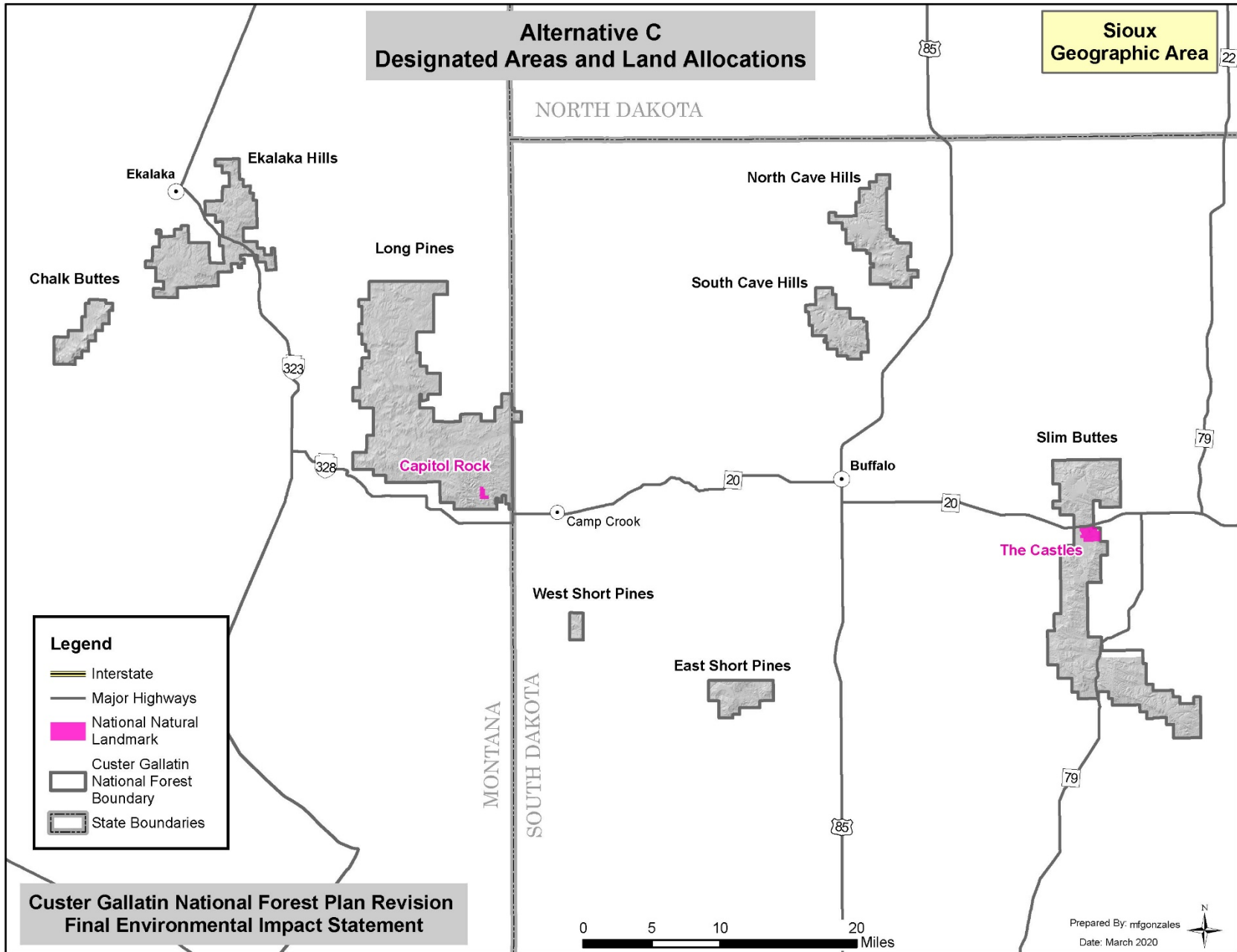
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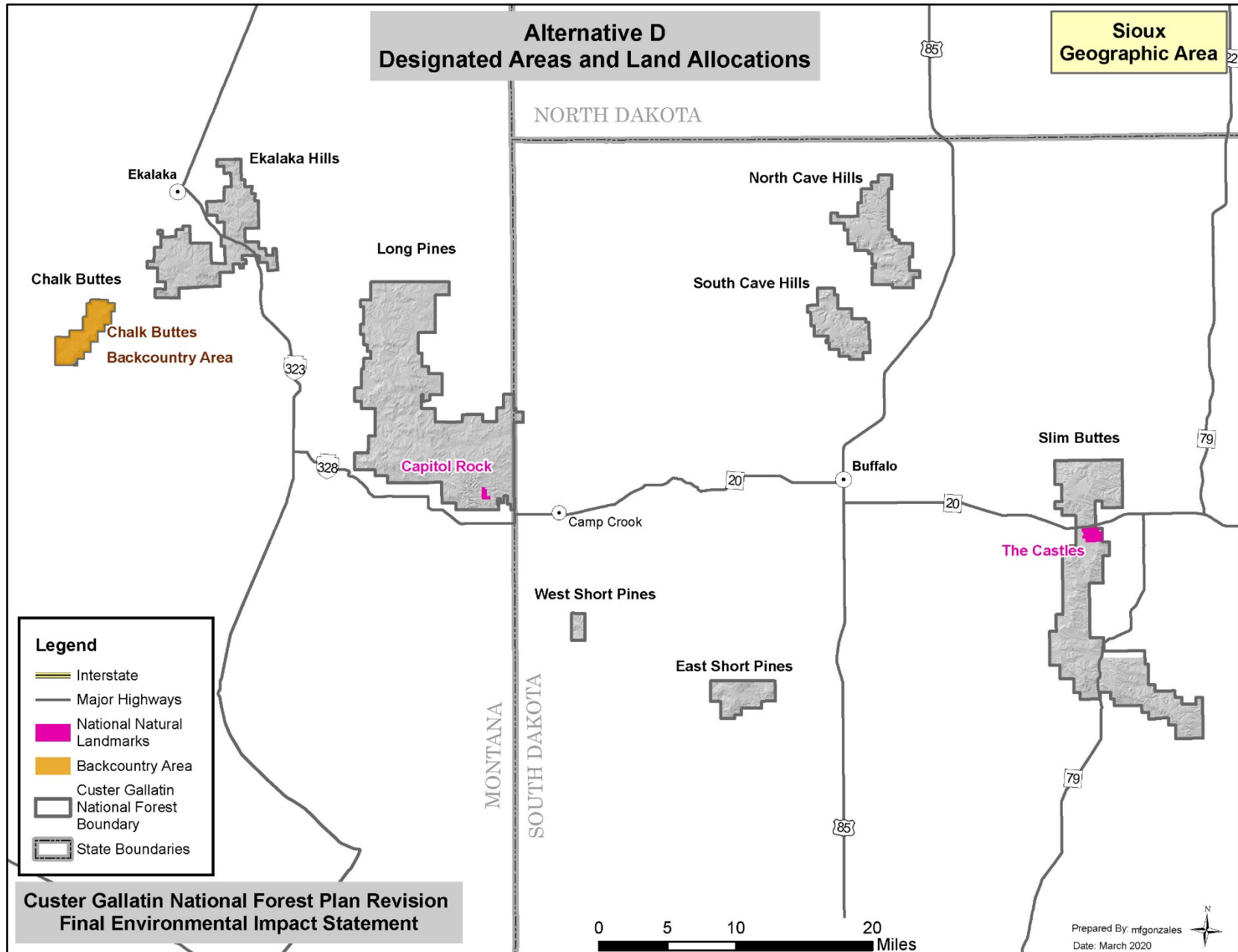


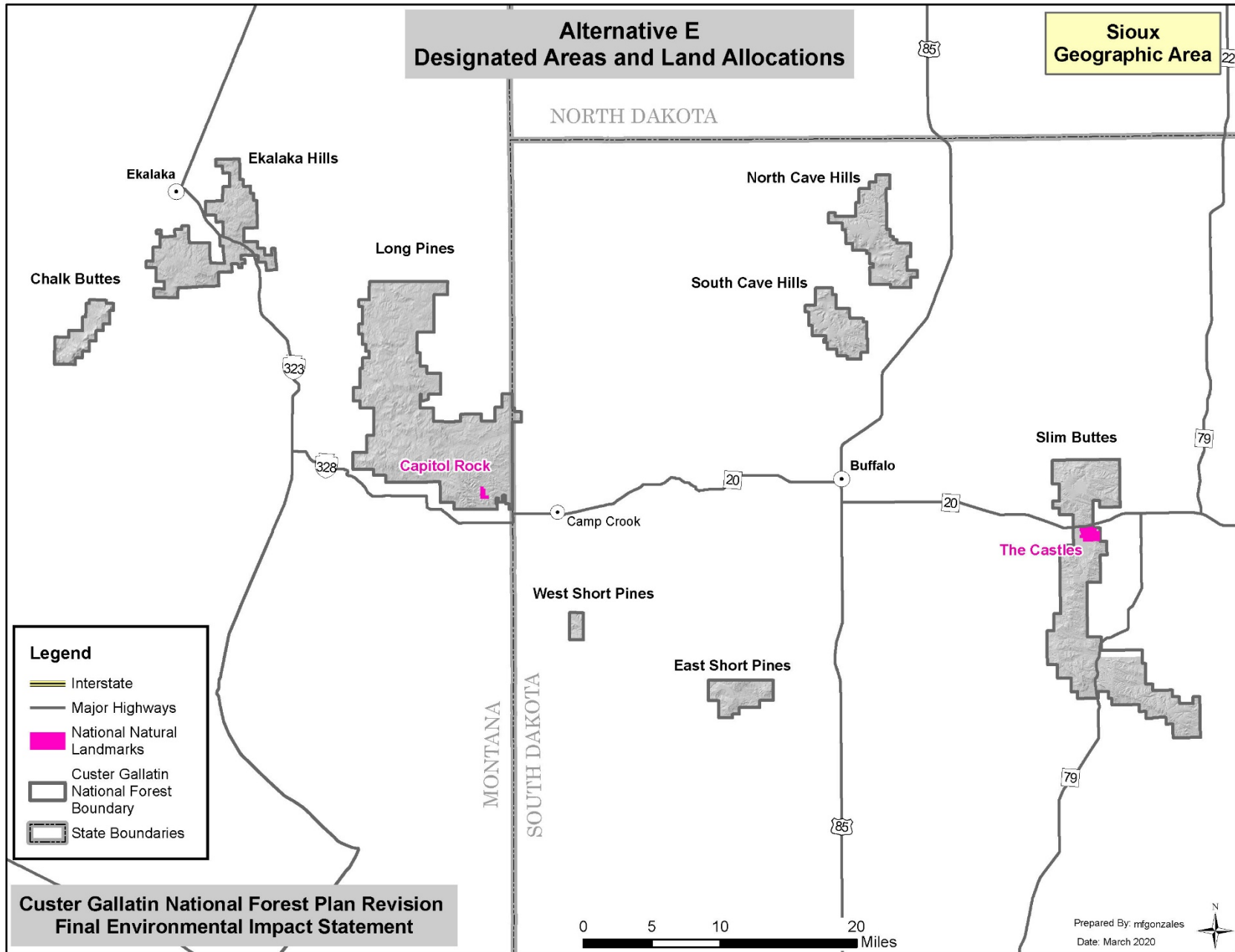
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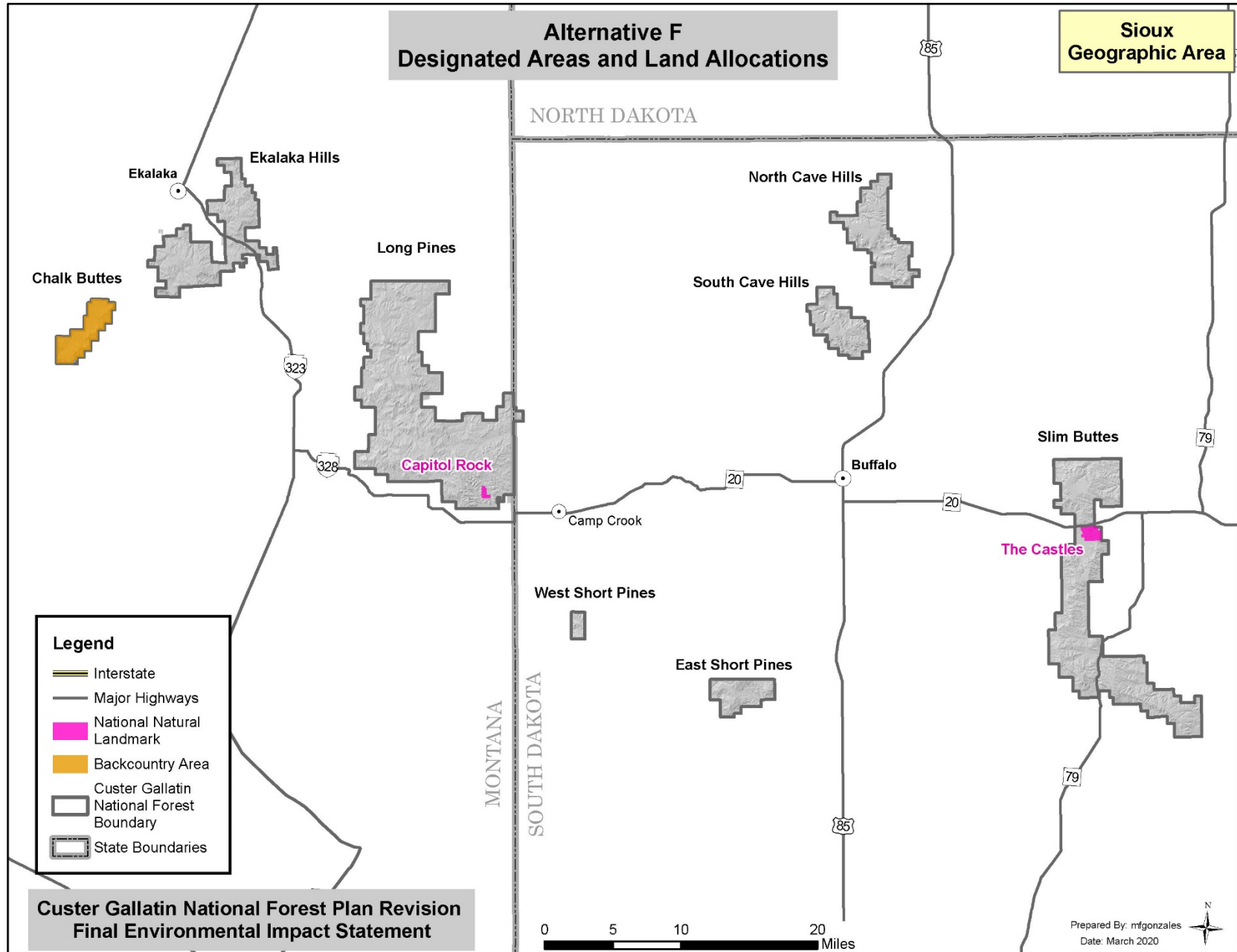




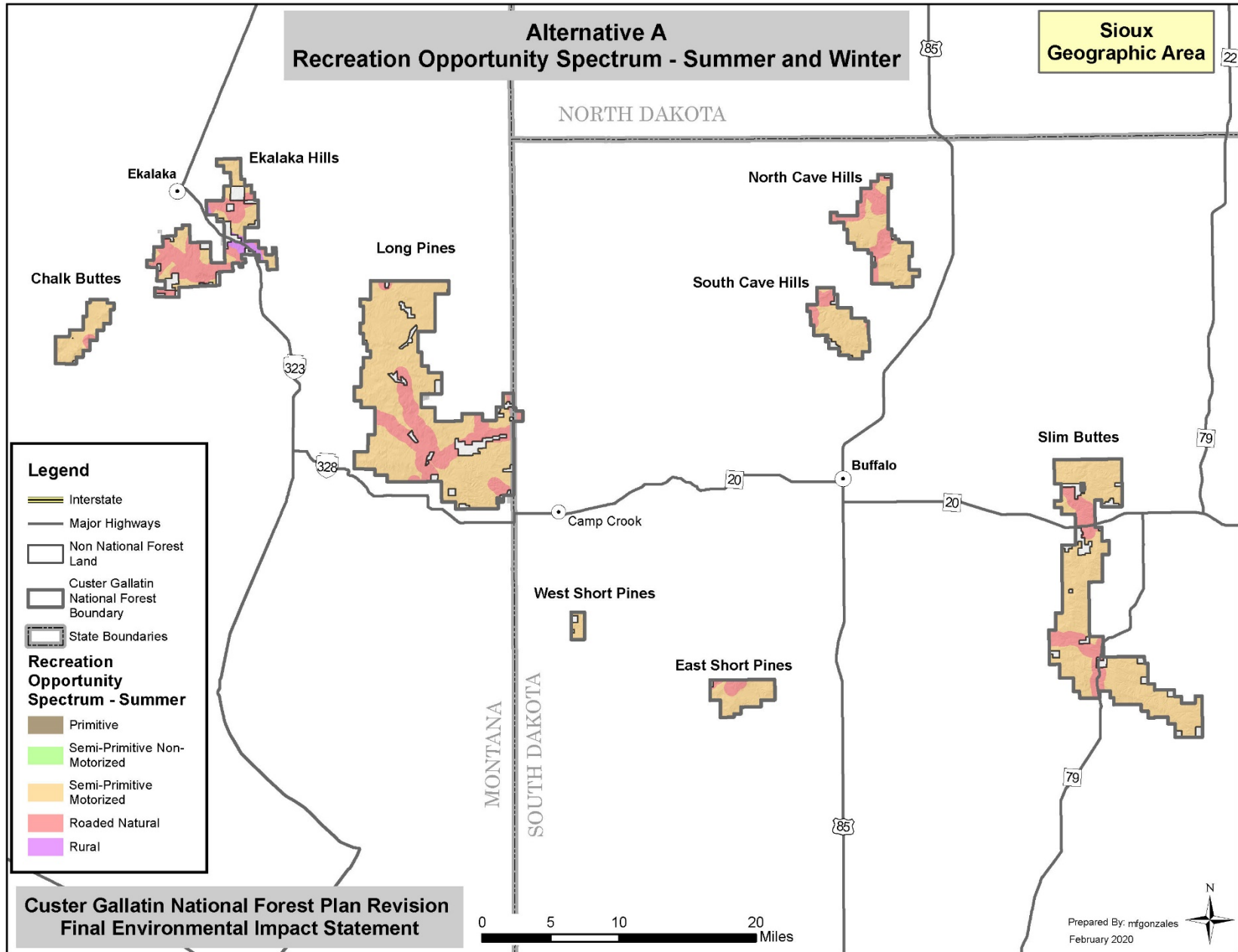


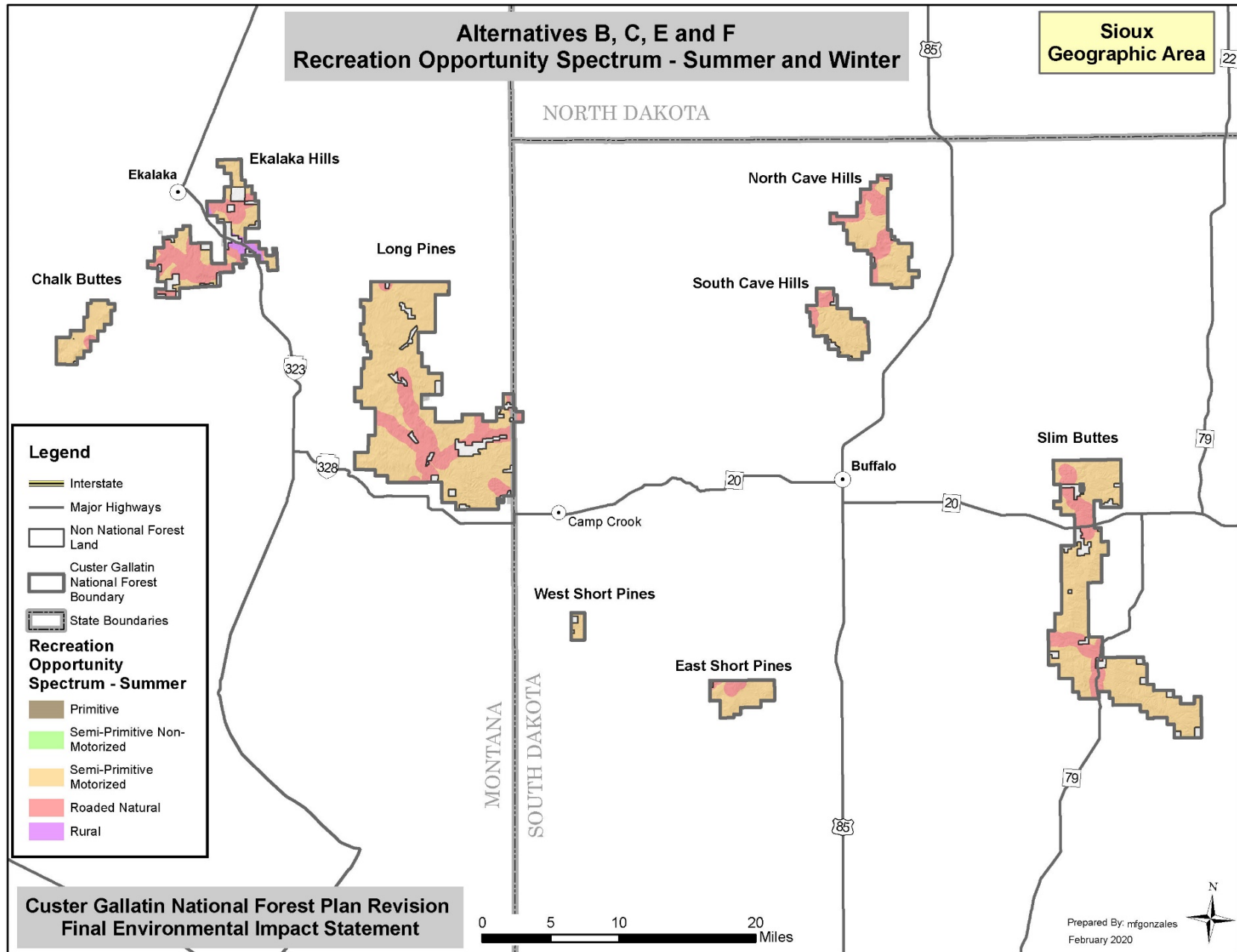


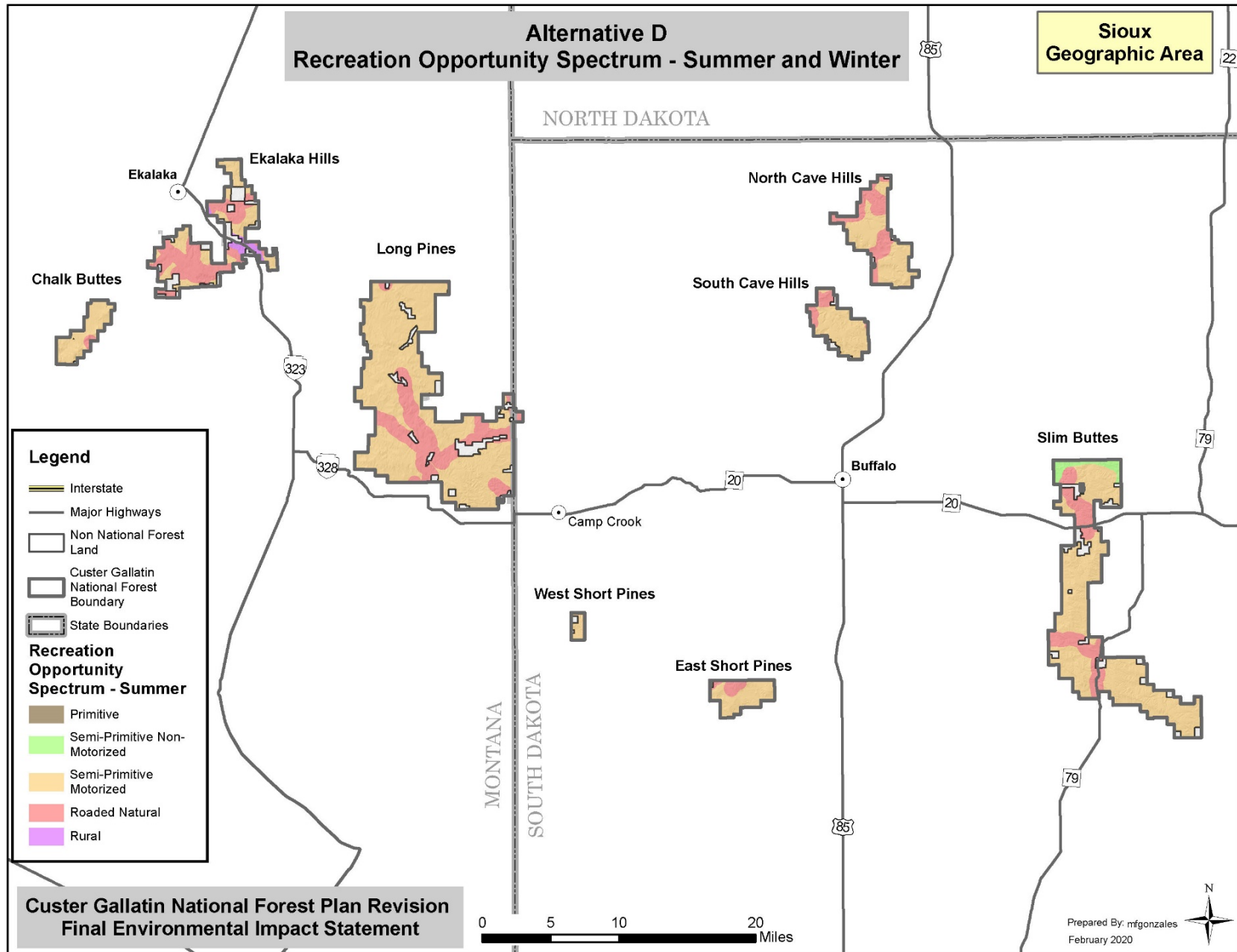




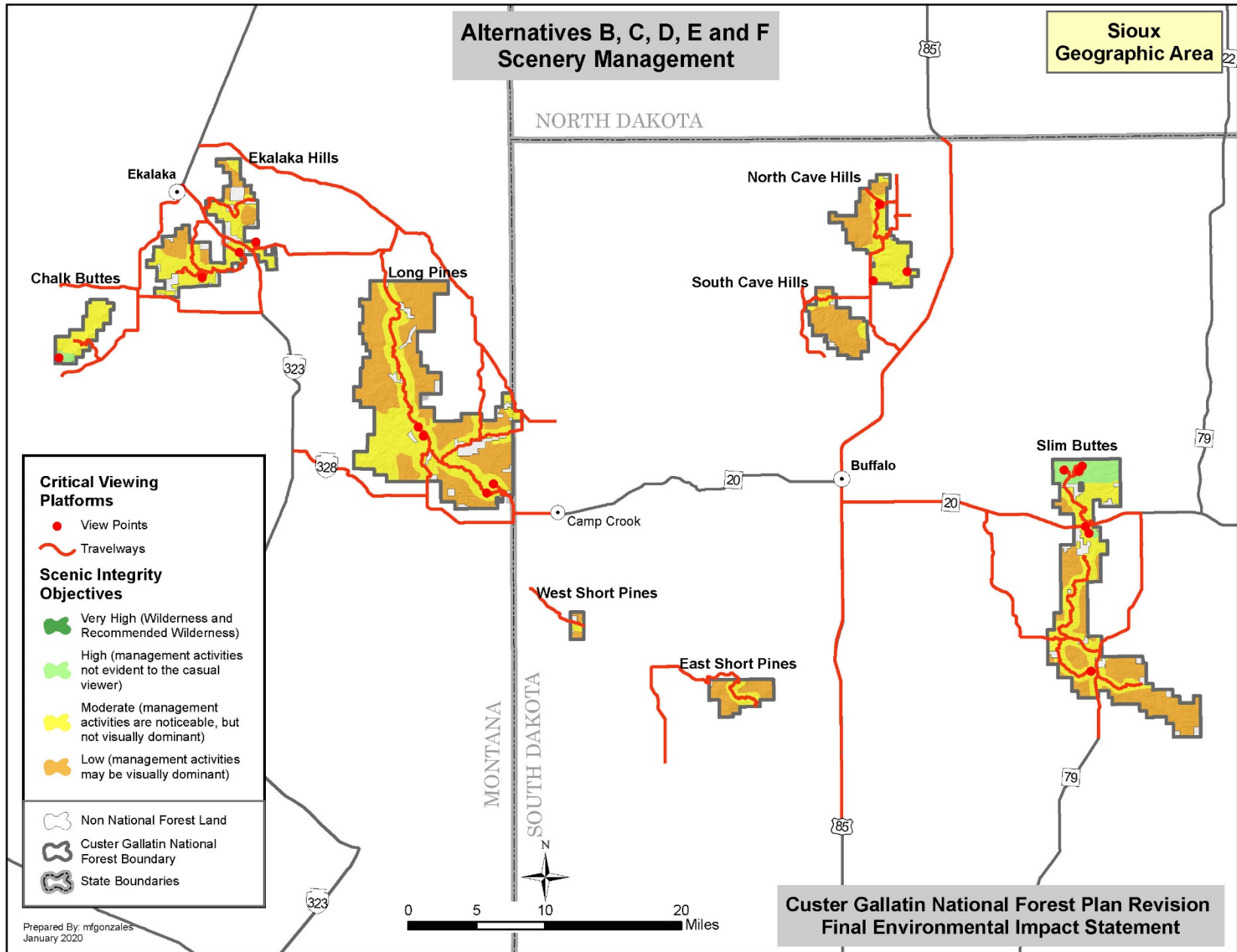
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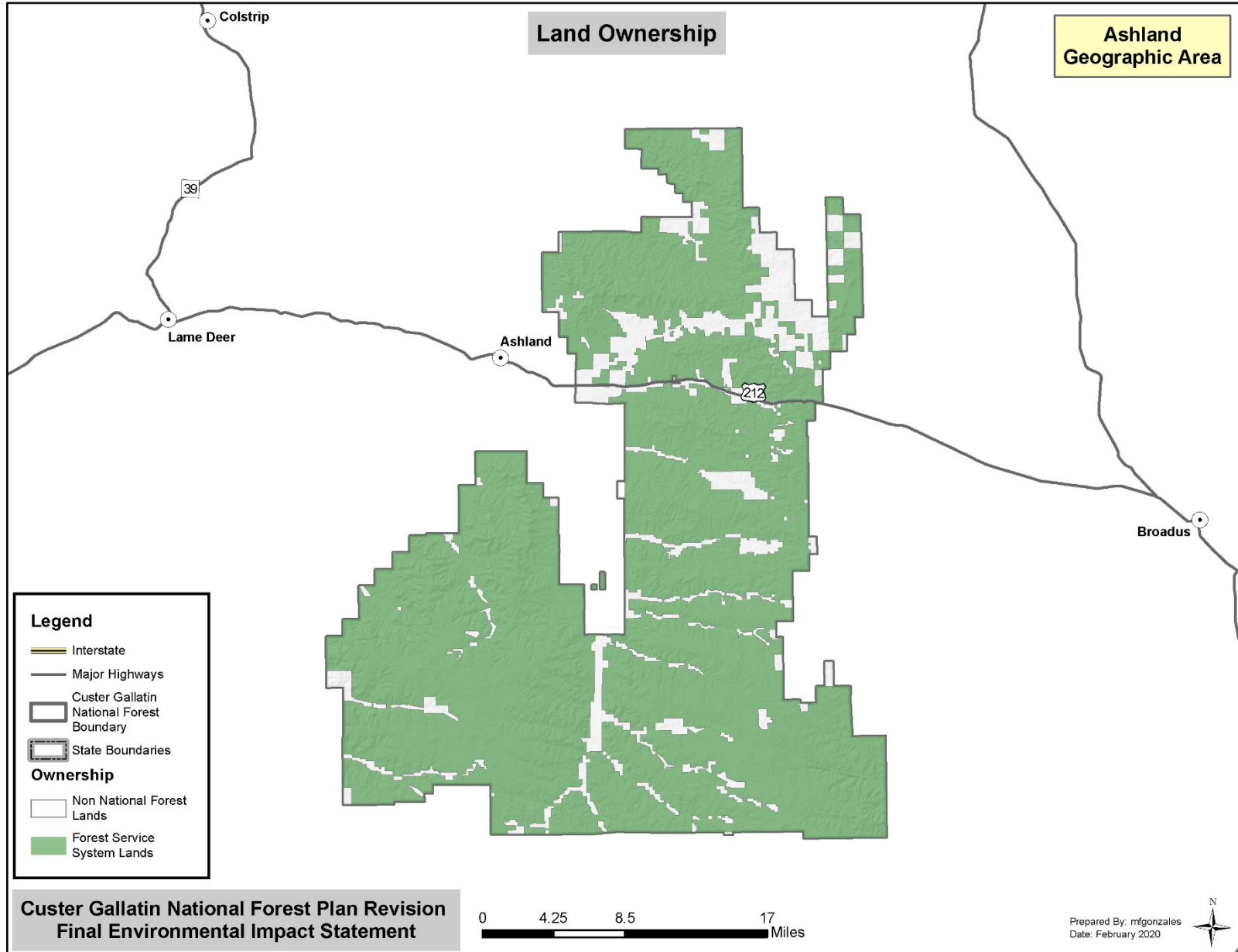


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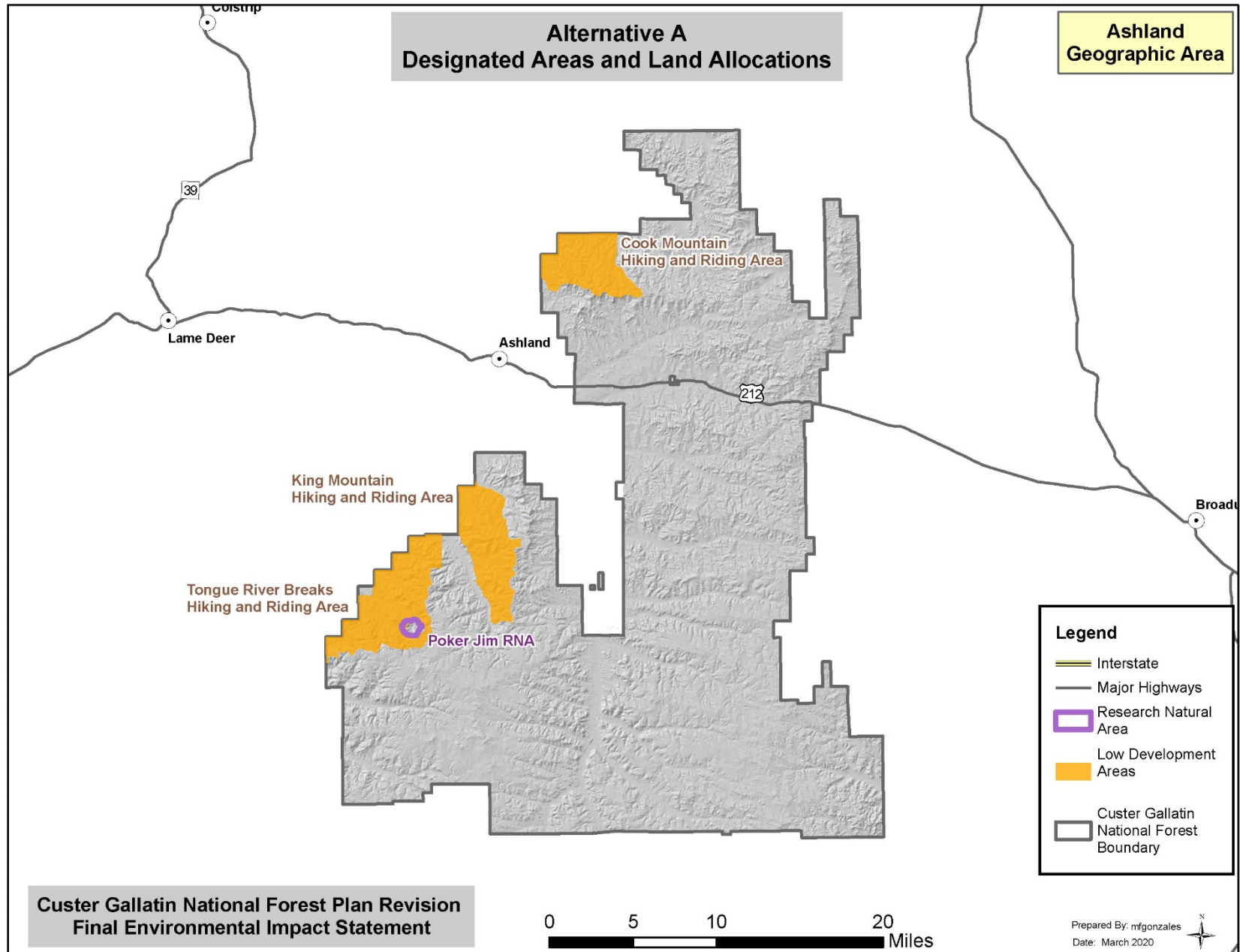


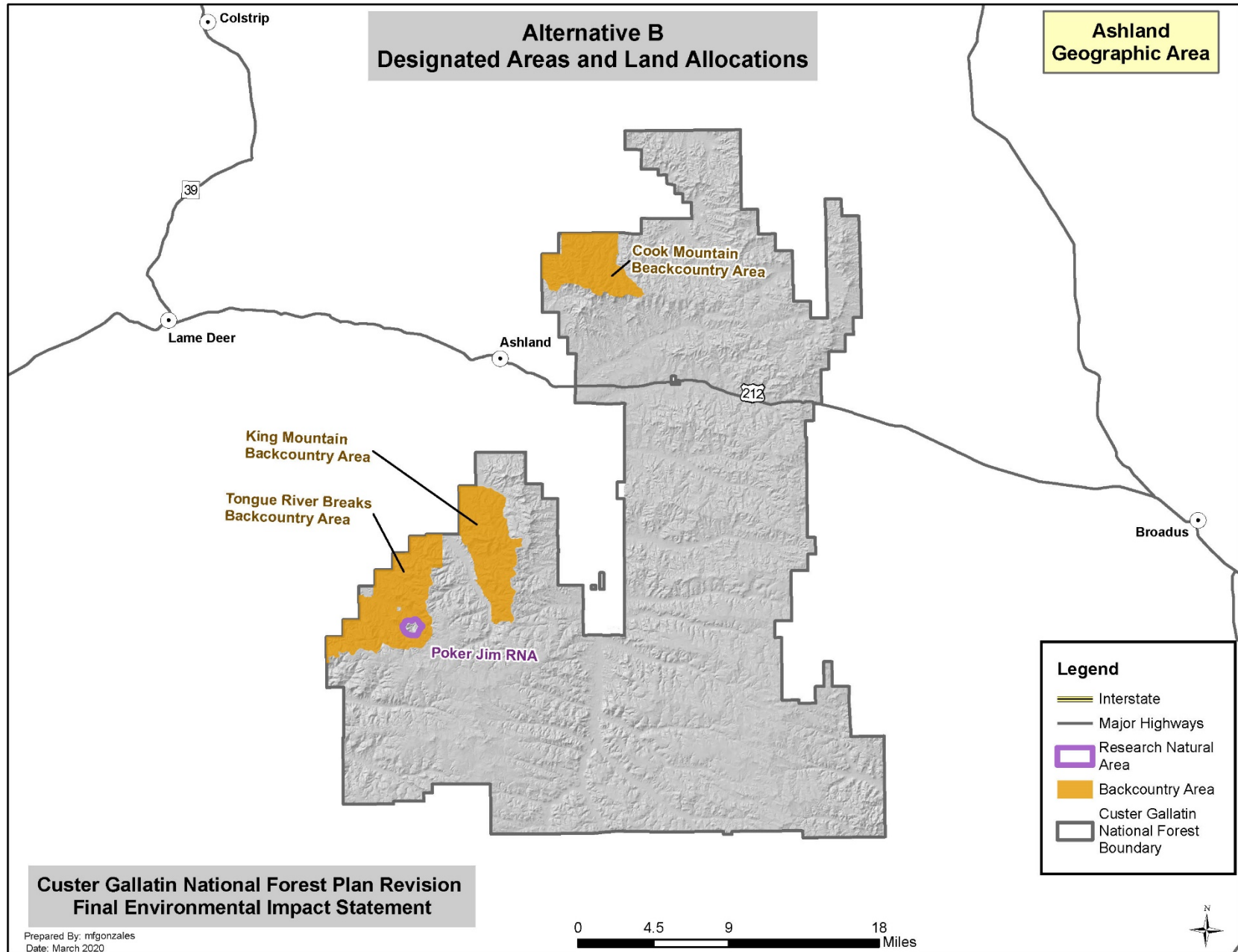
Geographic Area Maps – Ashland Geographic Area

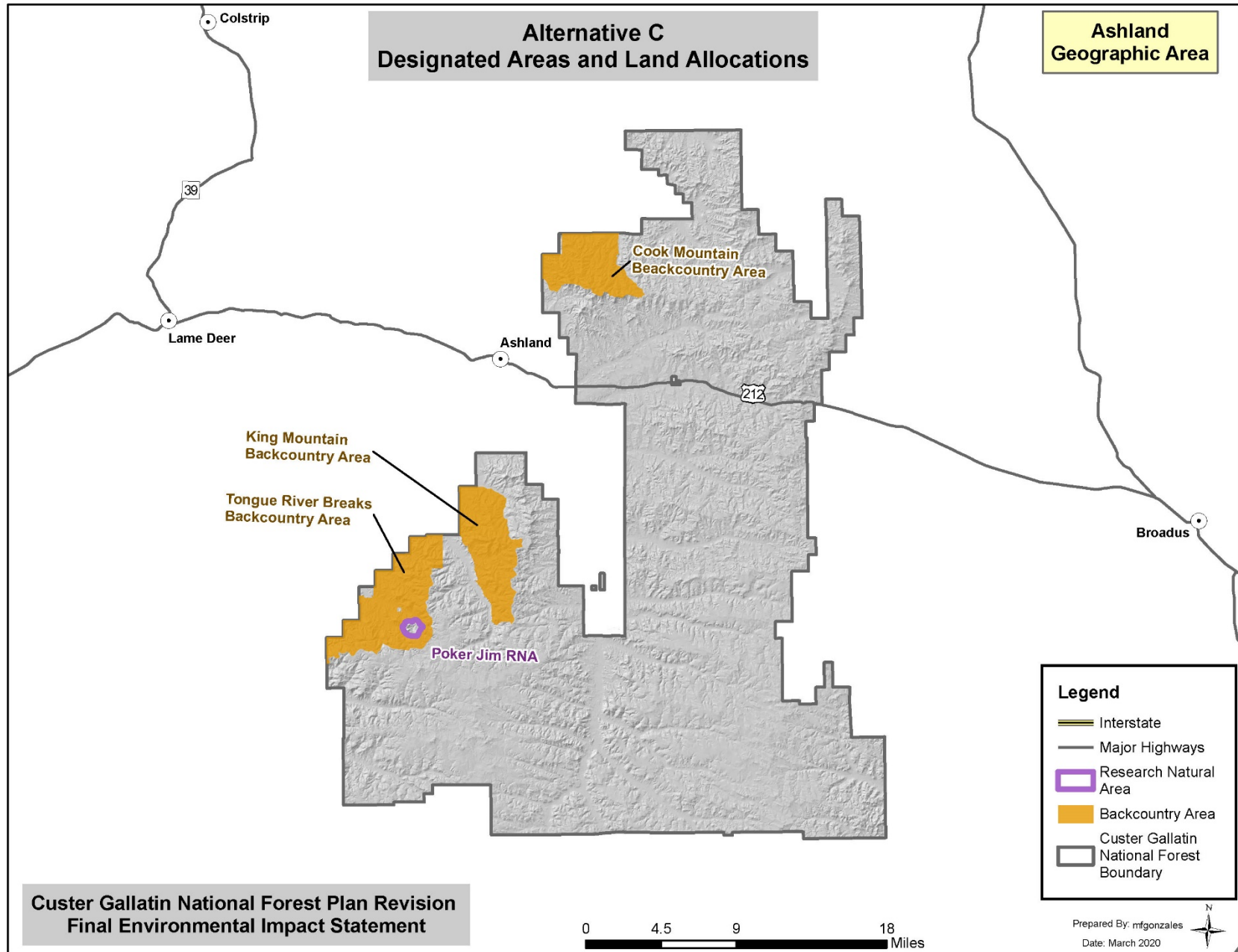
Land Ownership

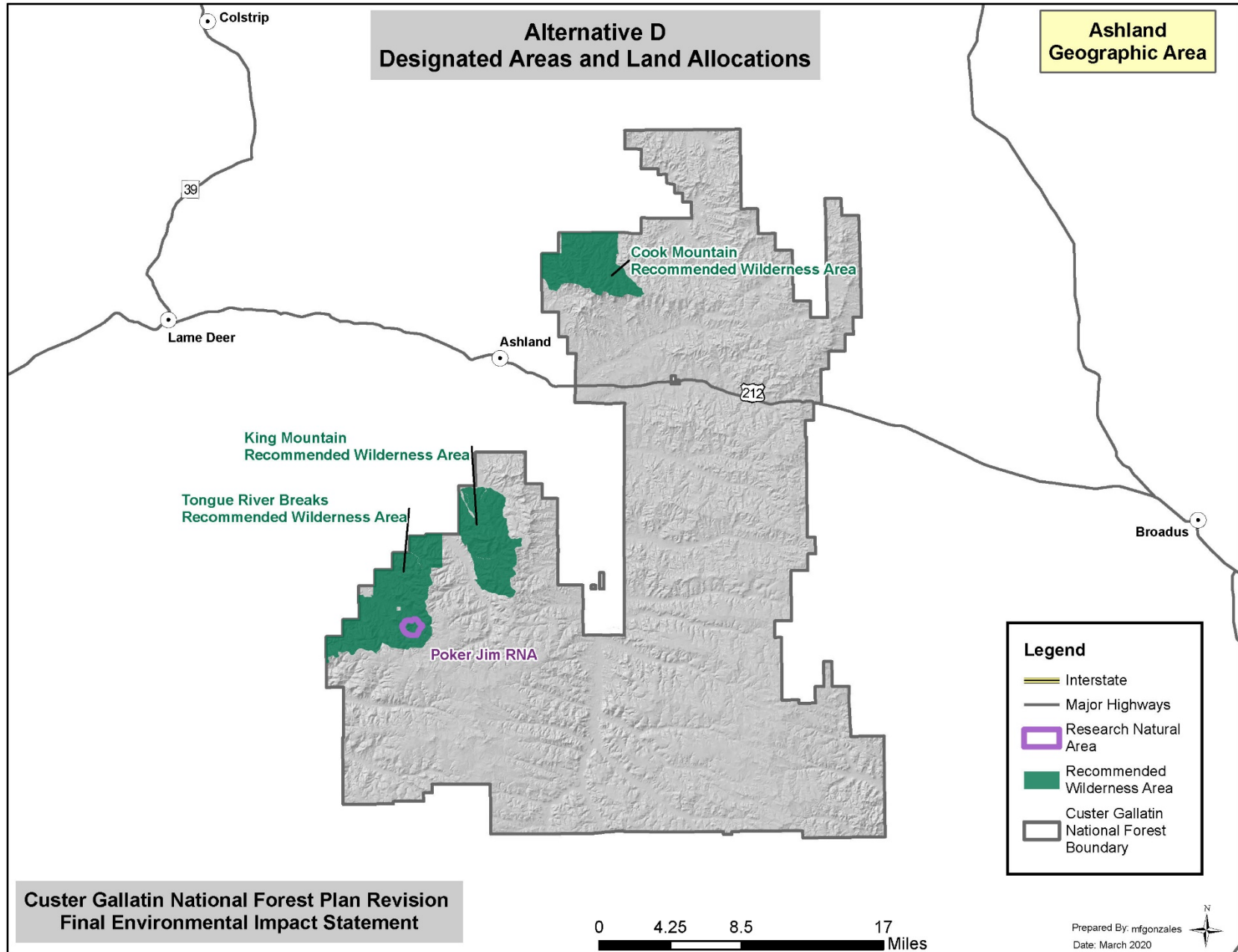


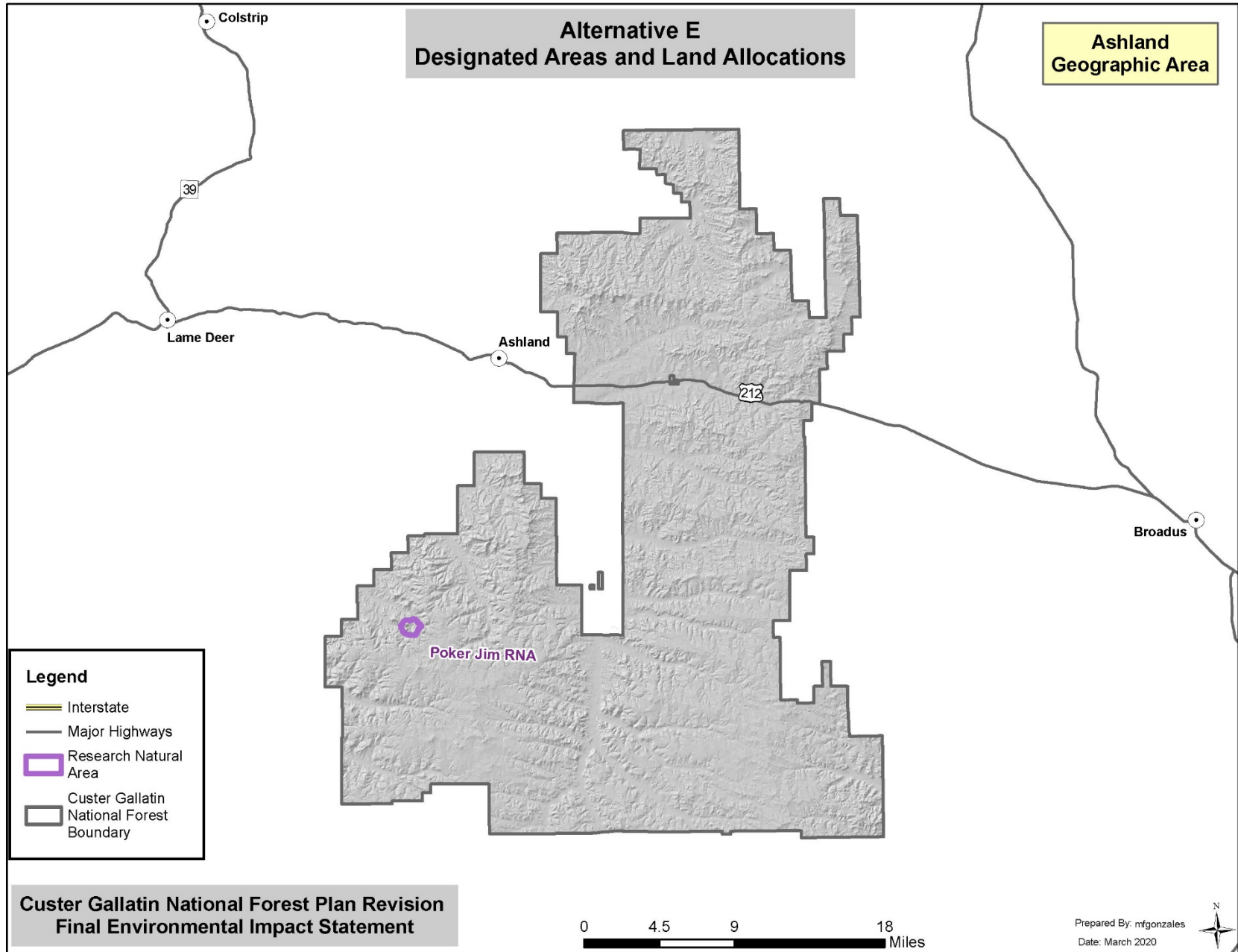
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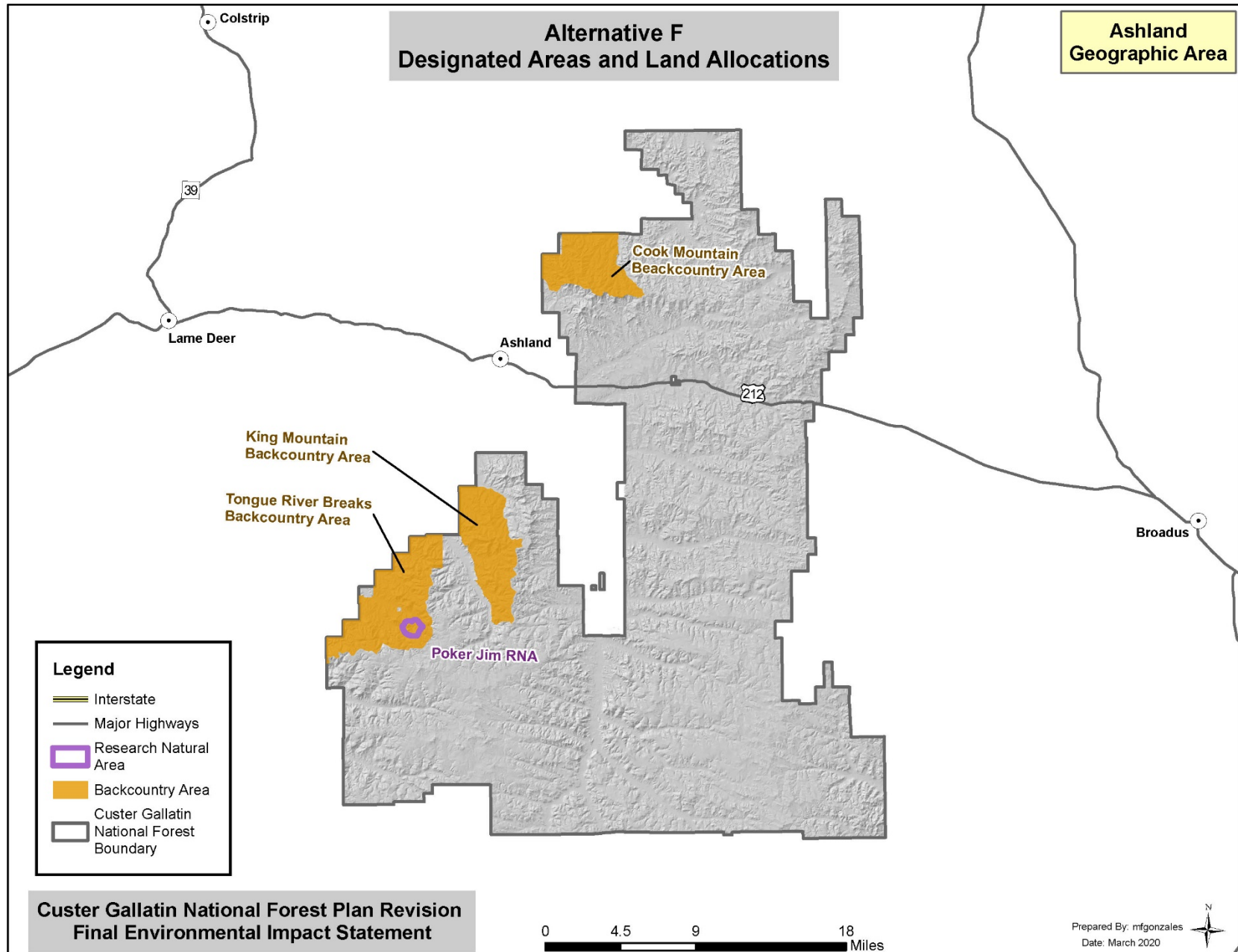




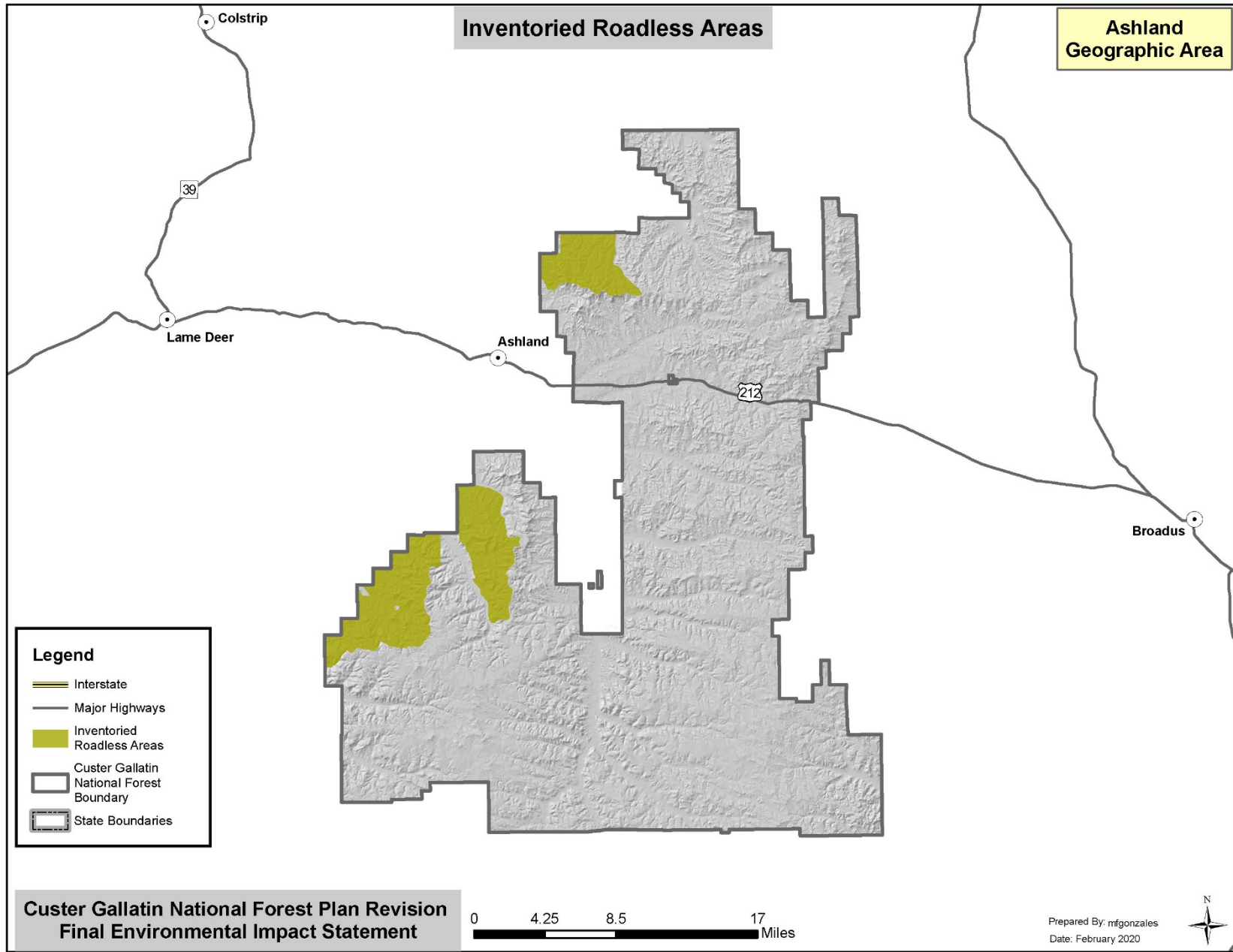




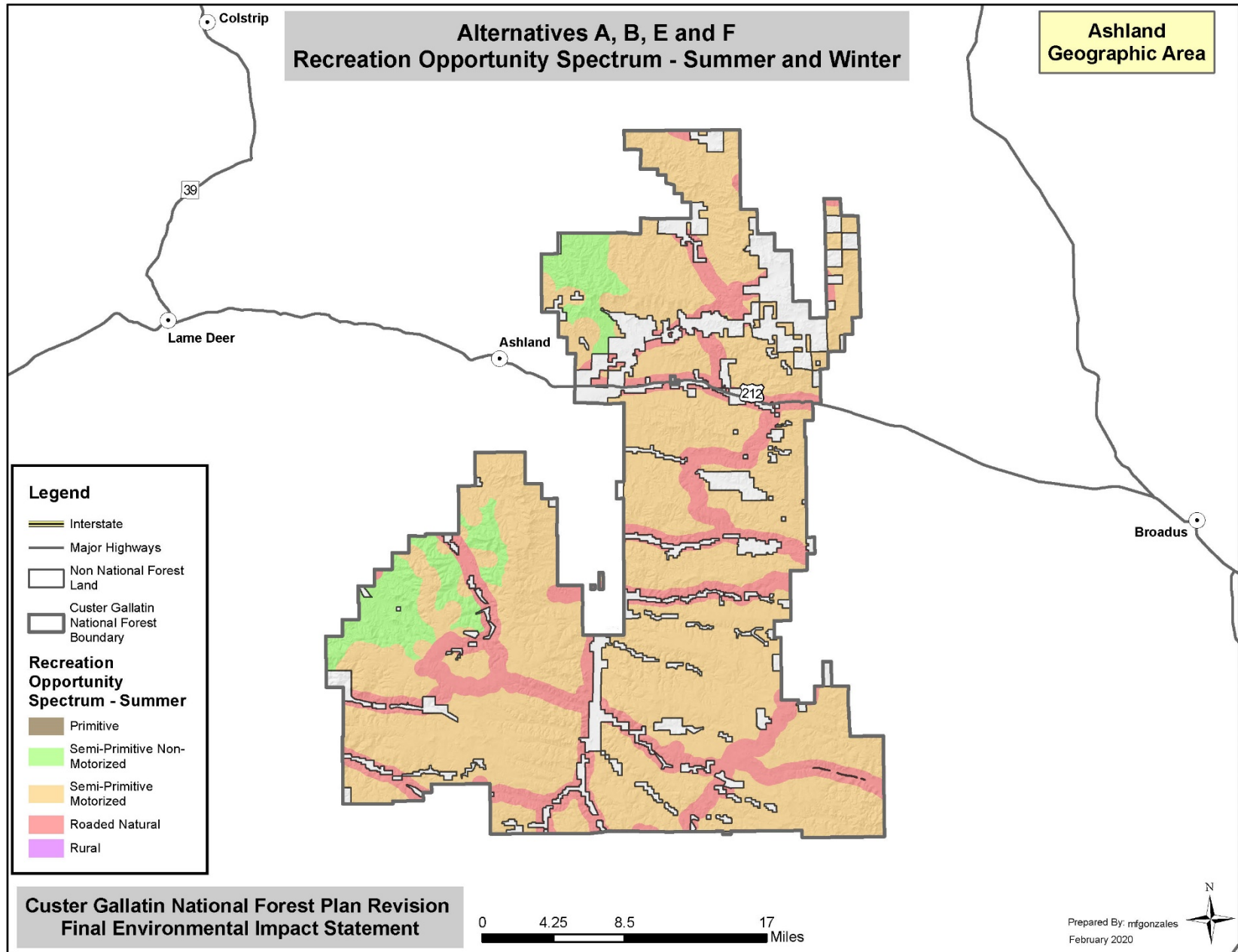


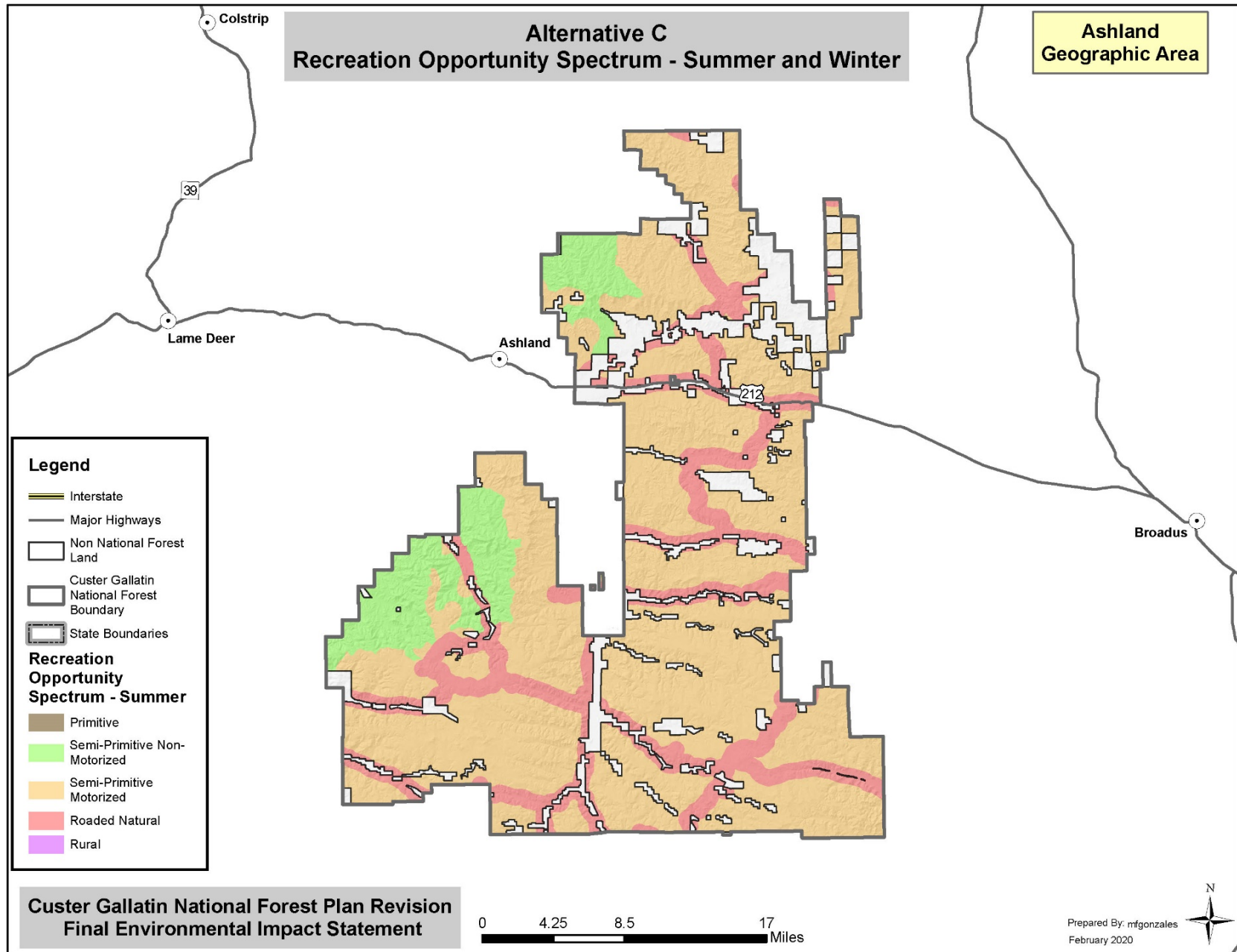


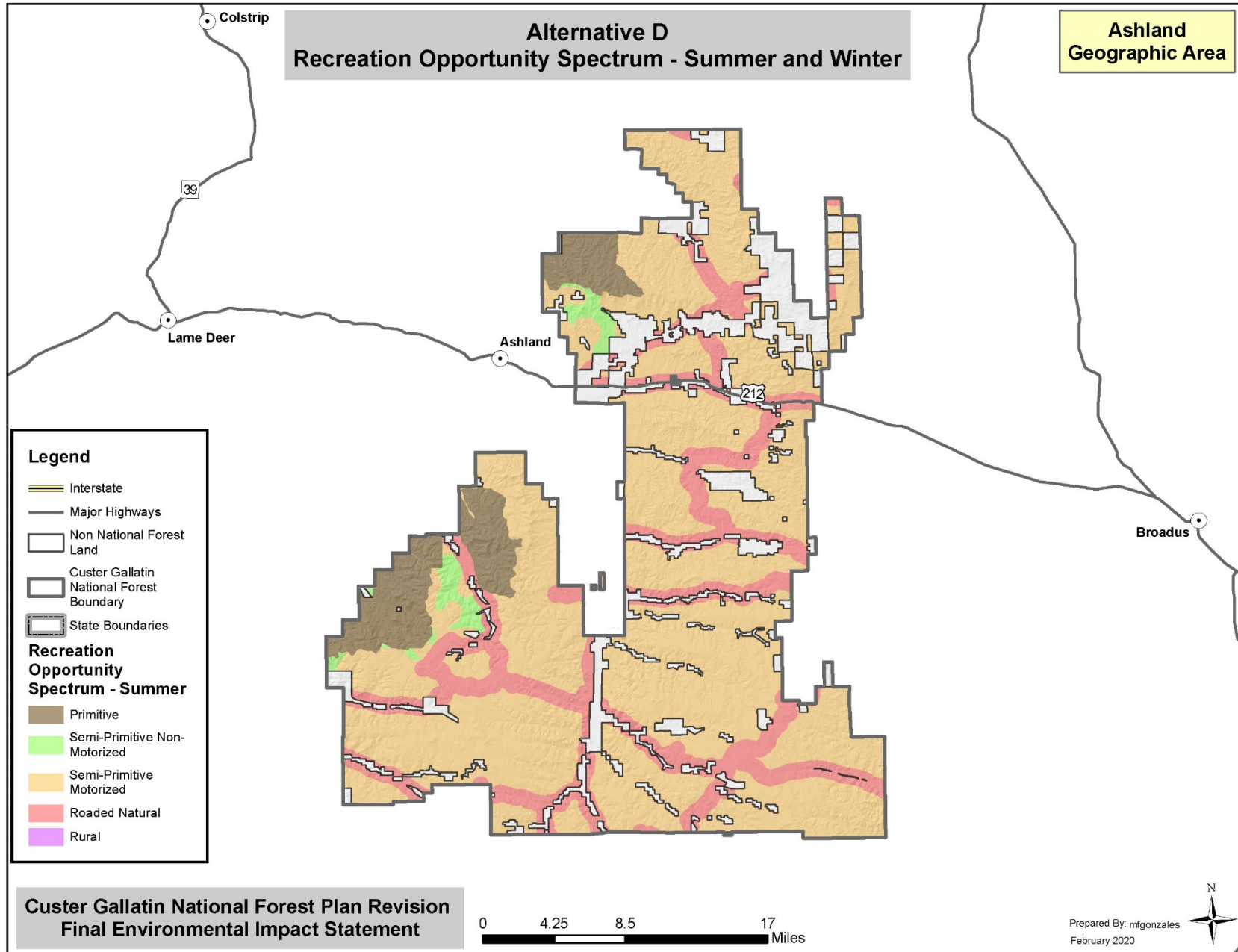
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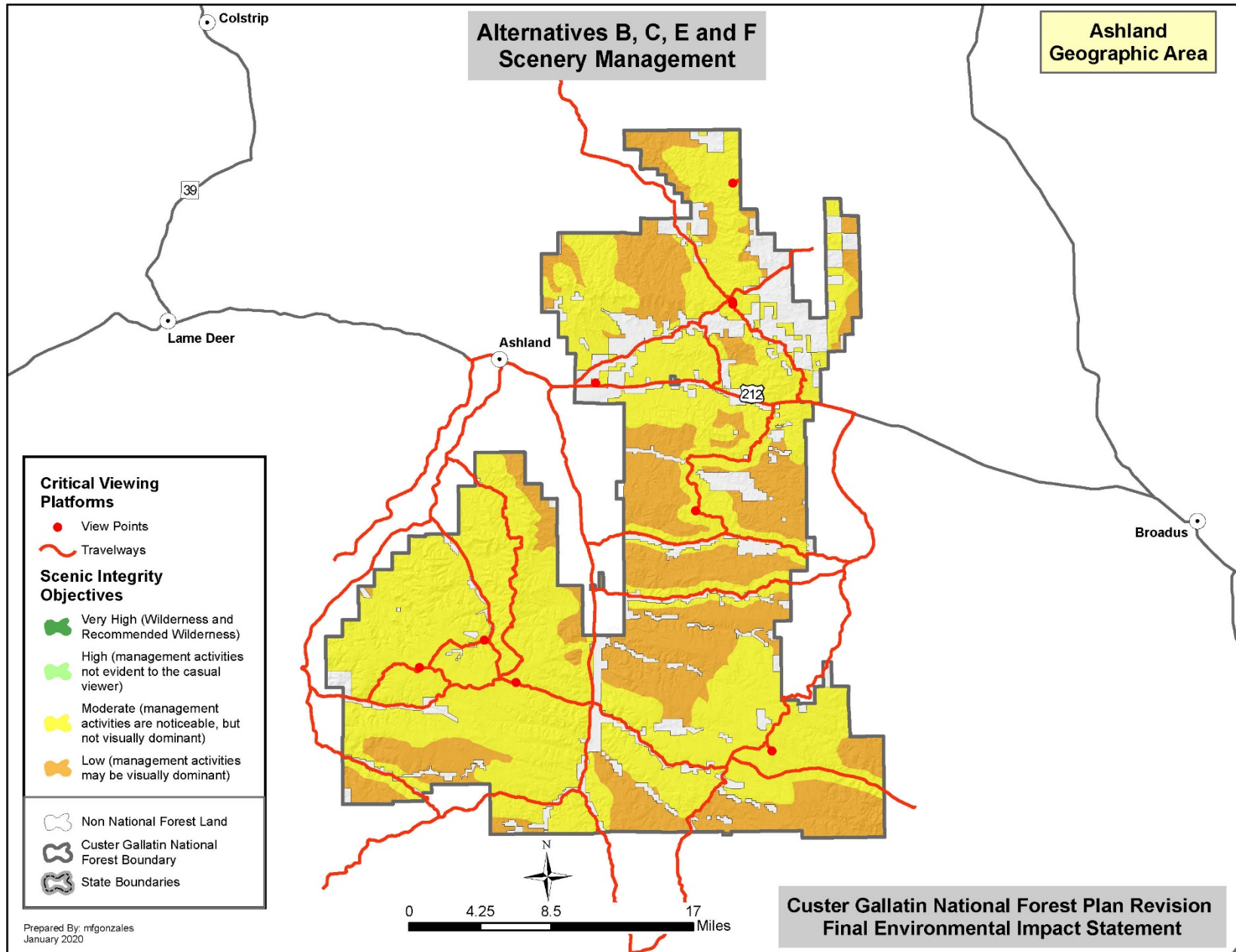
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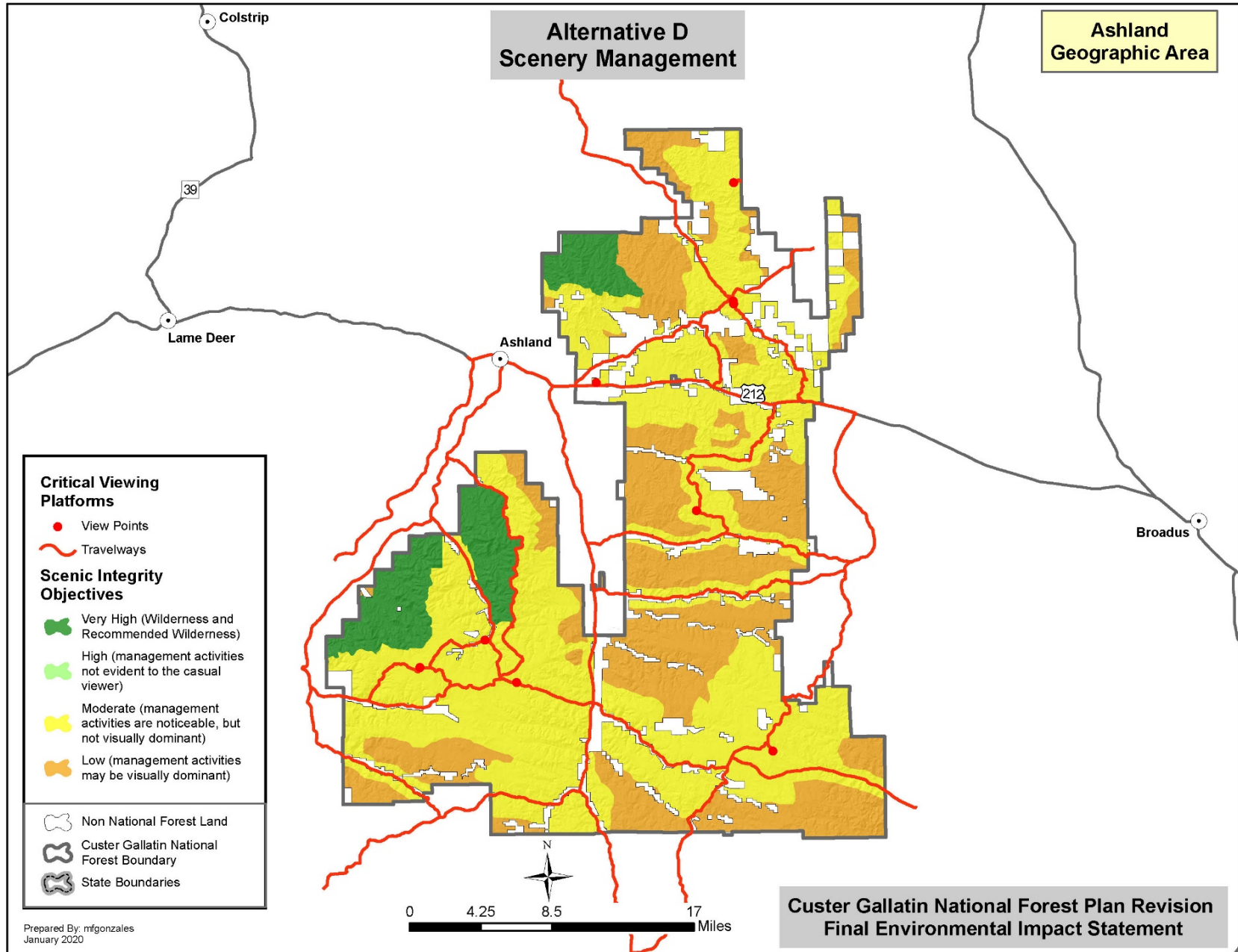






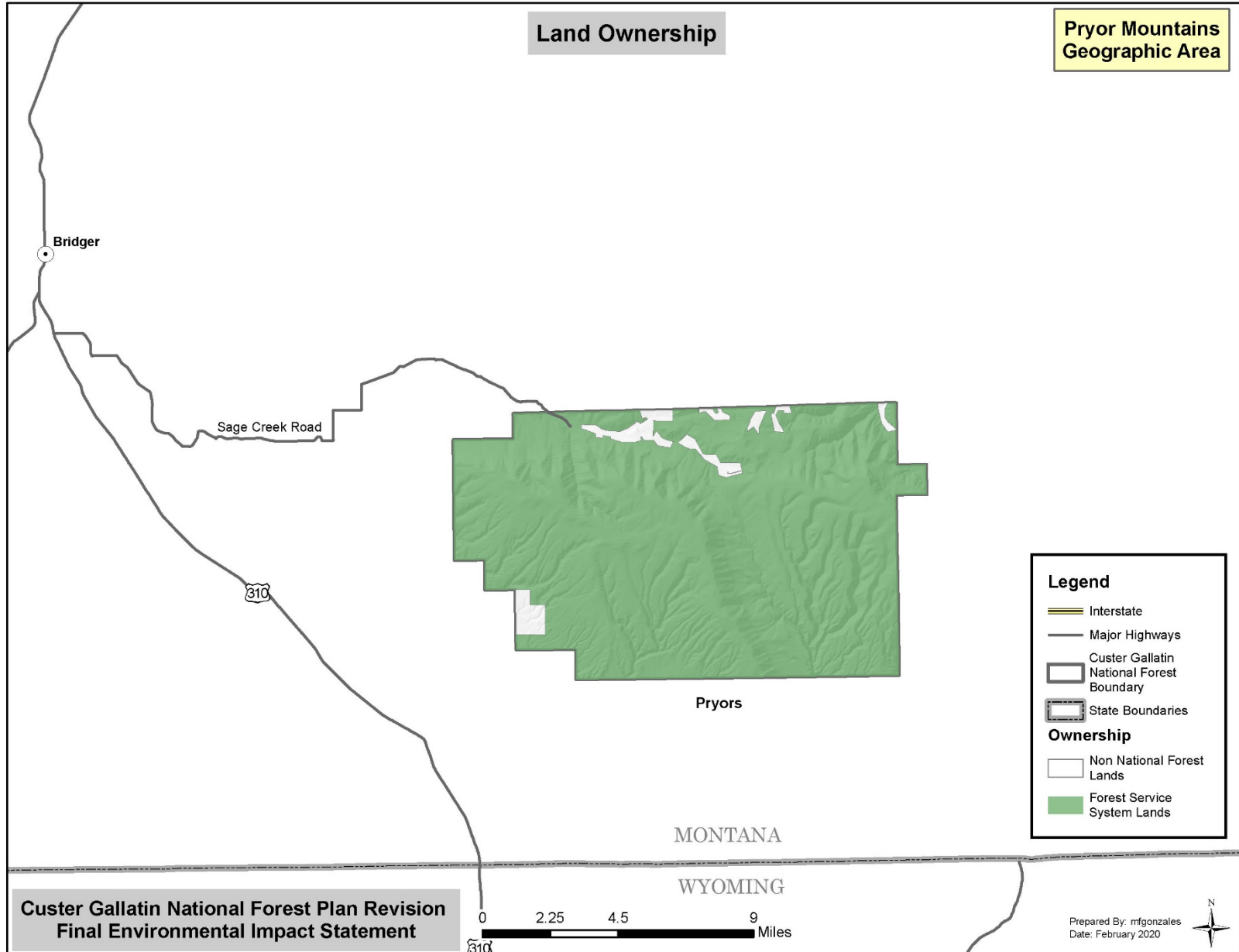
Scenery Management



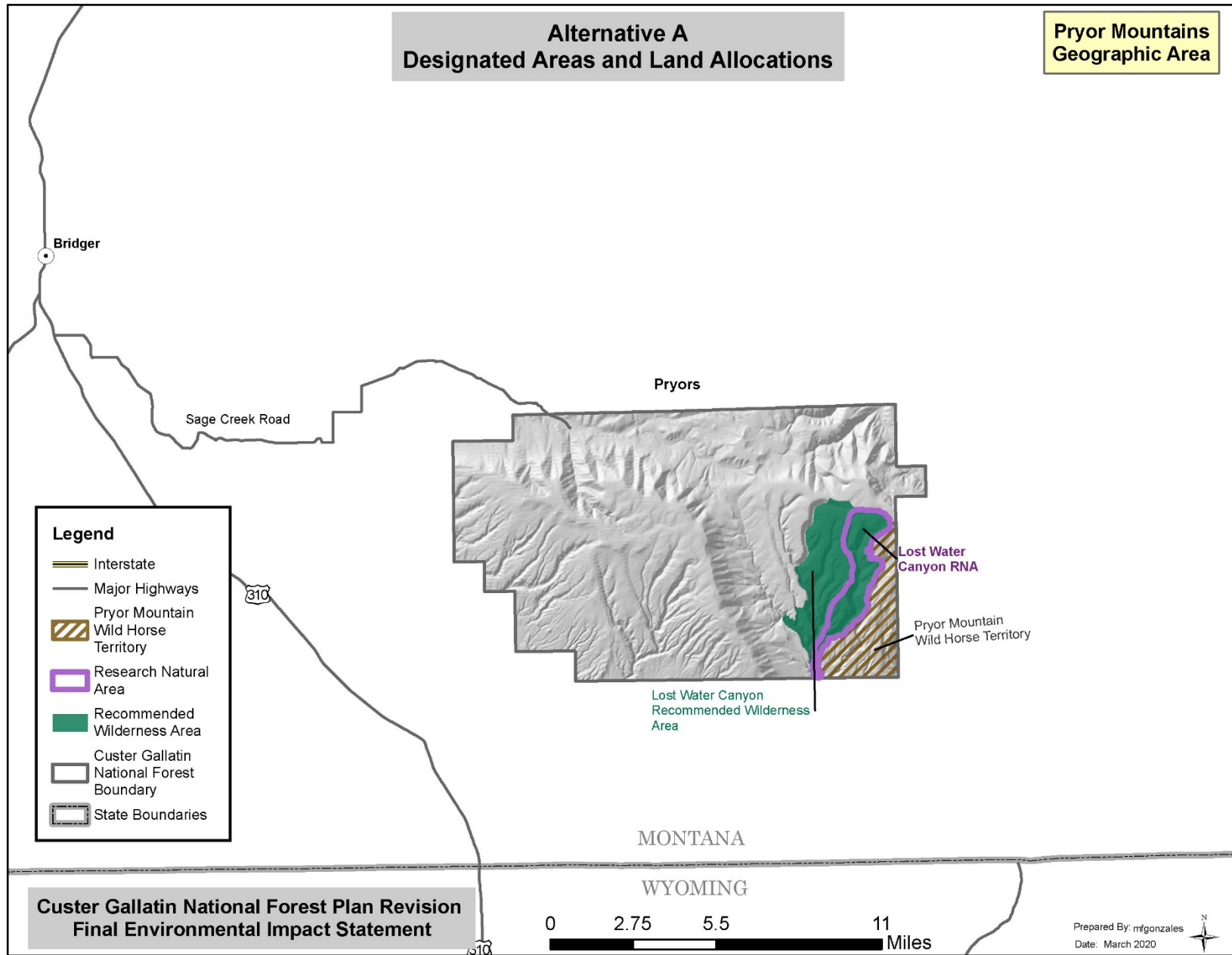


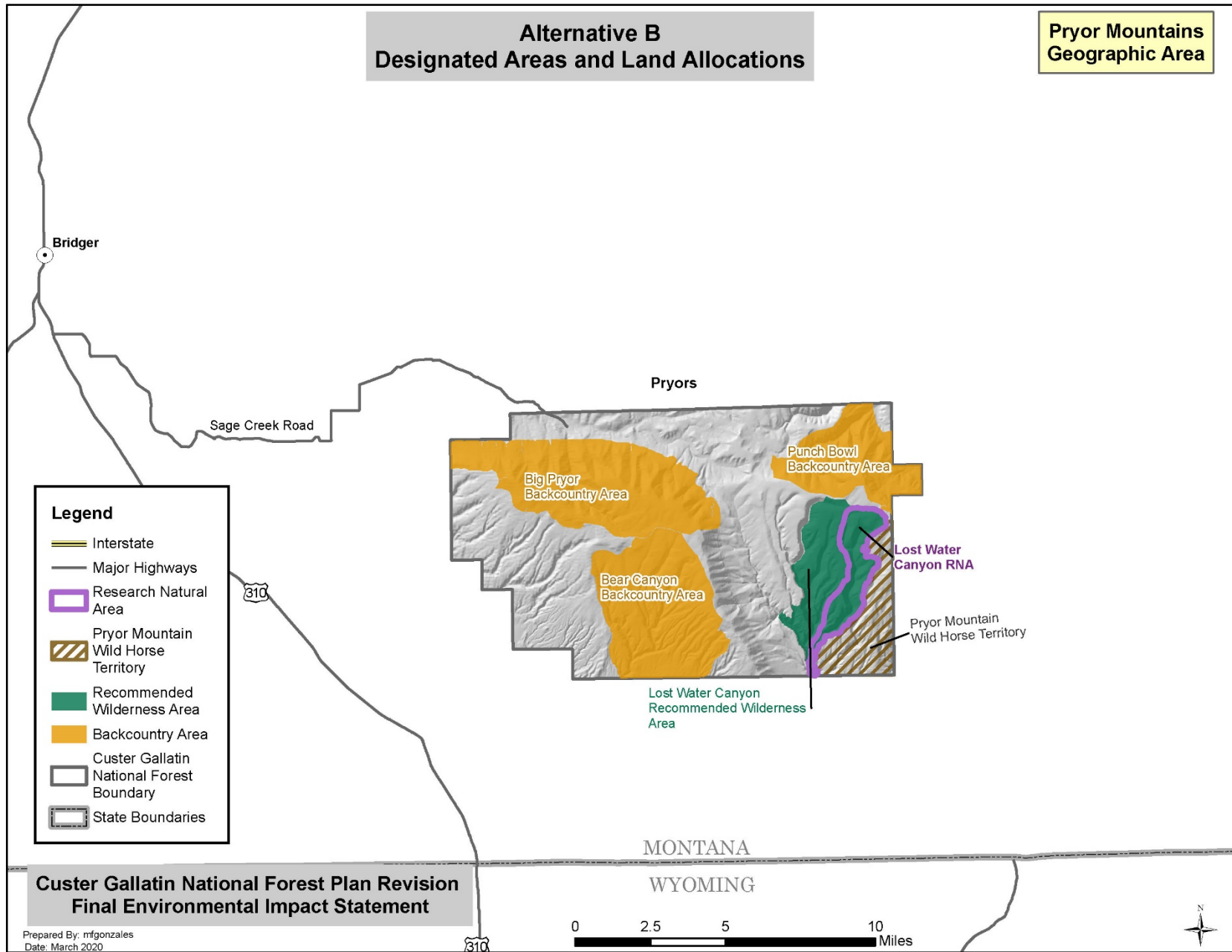
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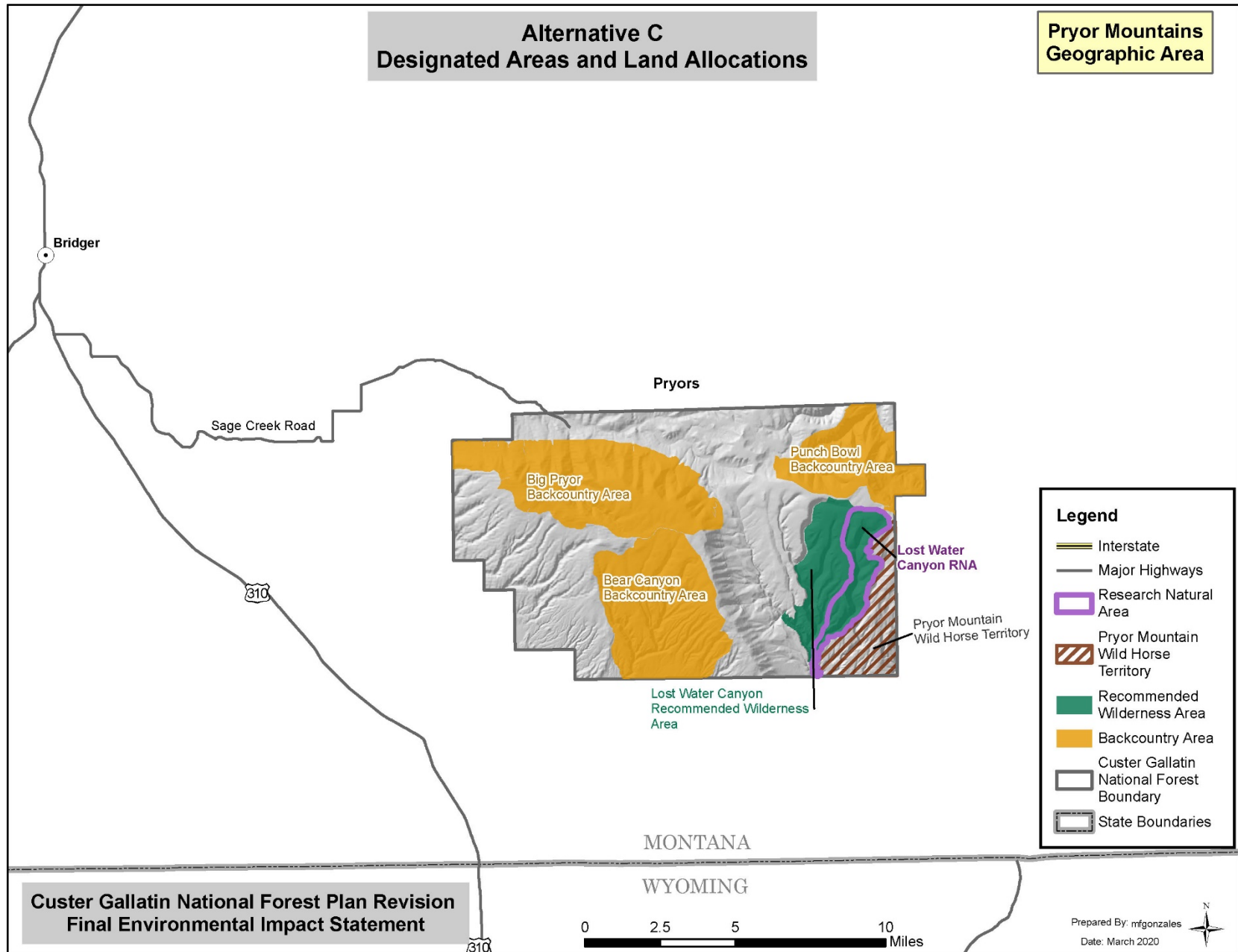
Land Ownership

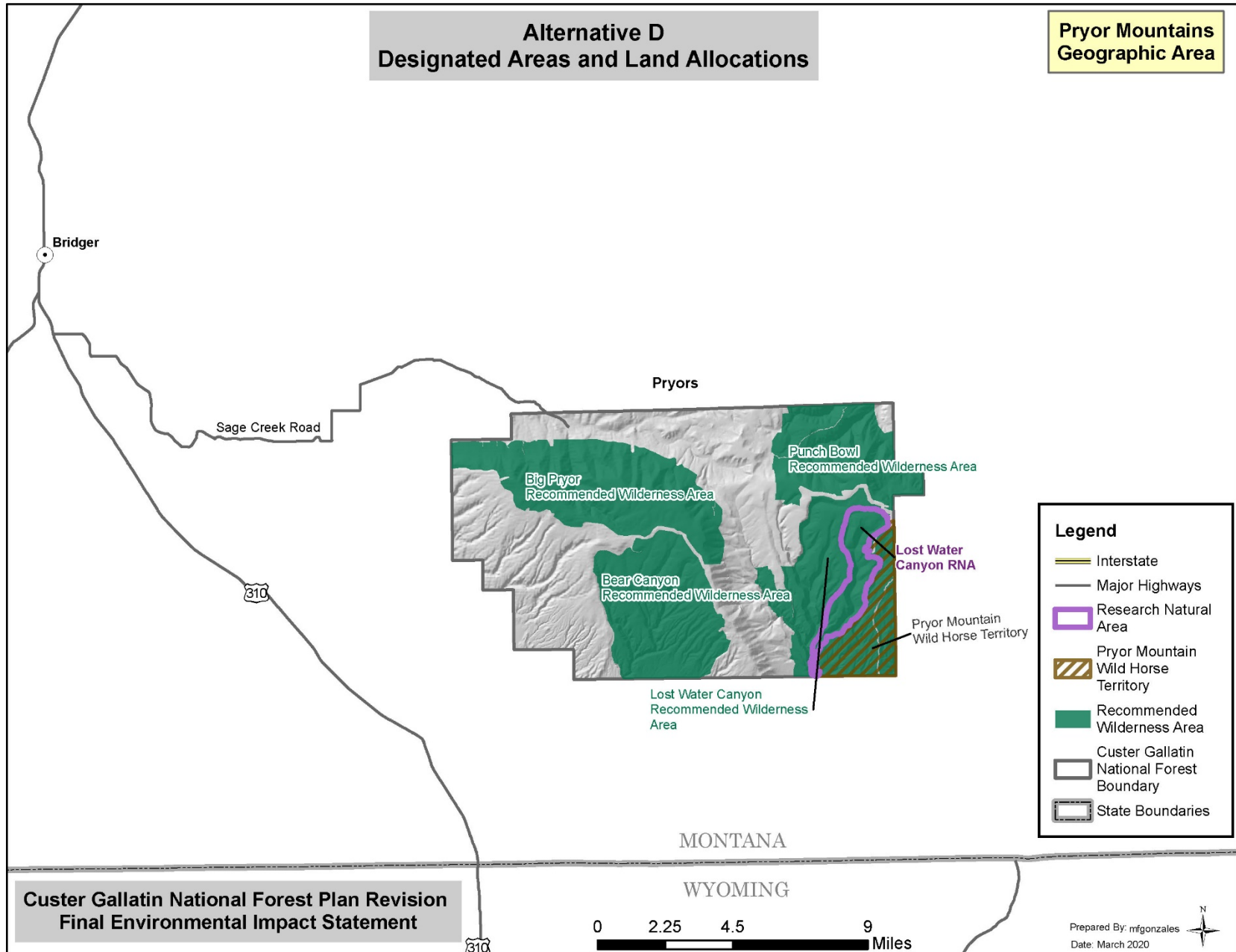


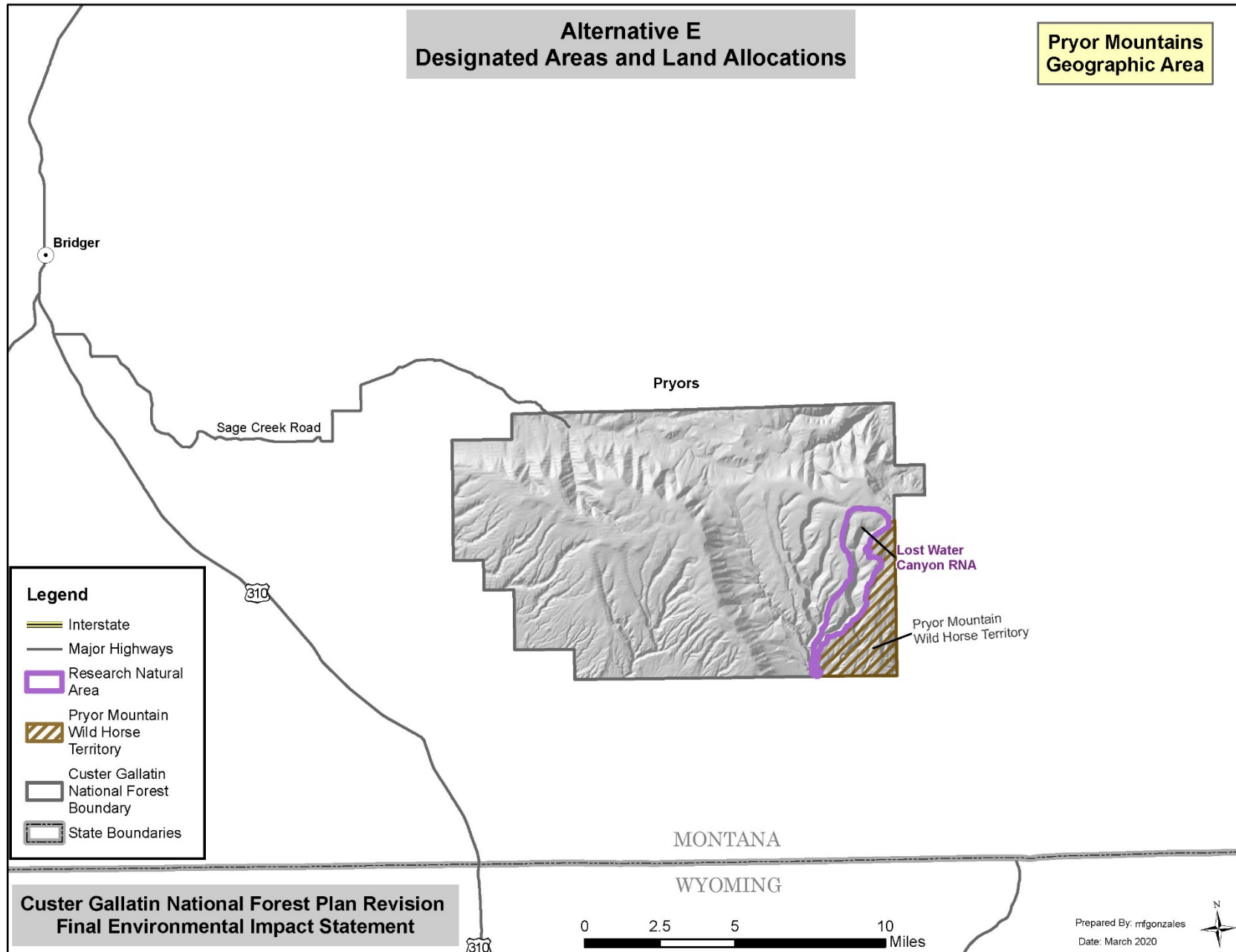
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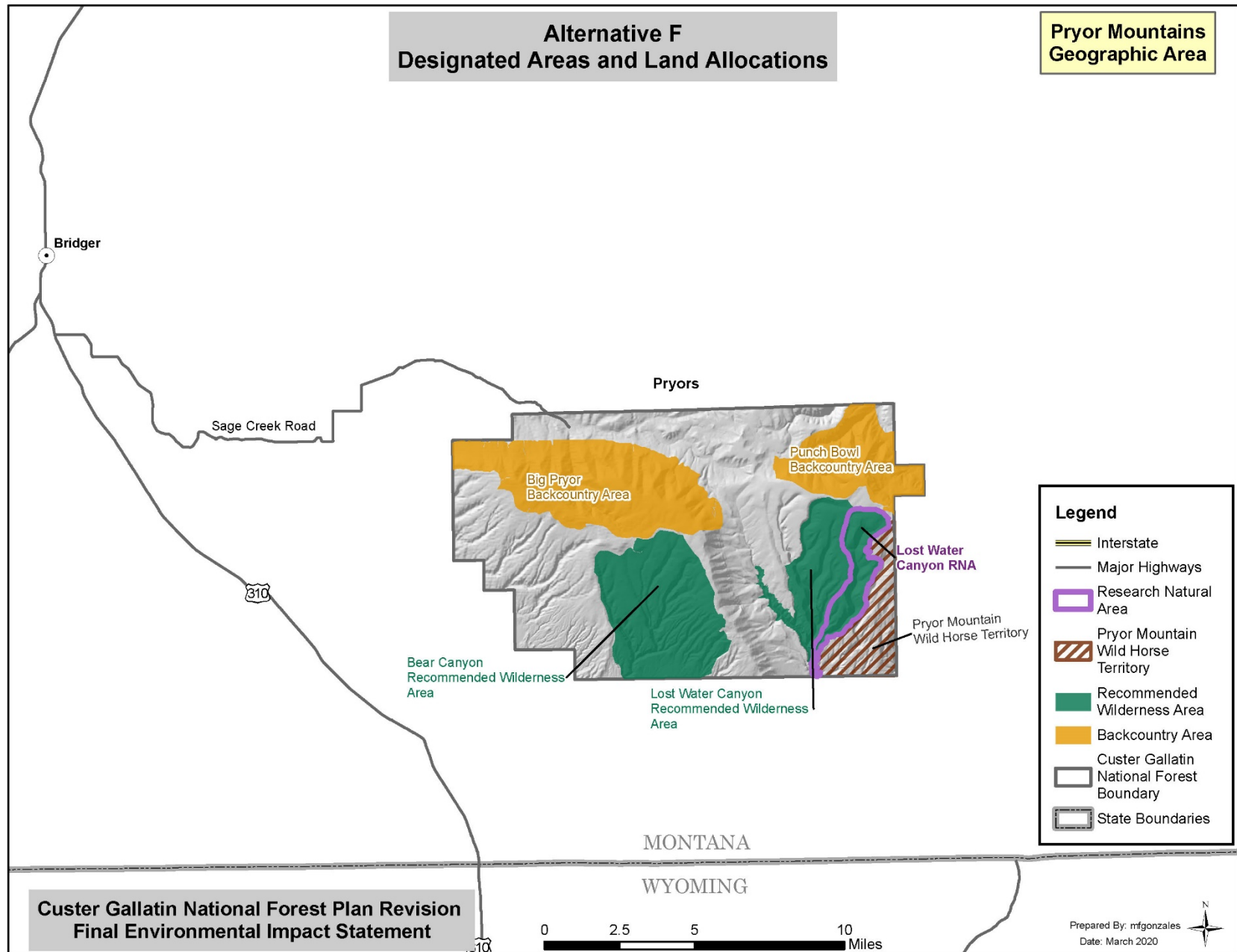




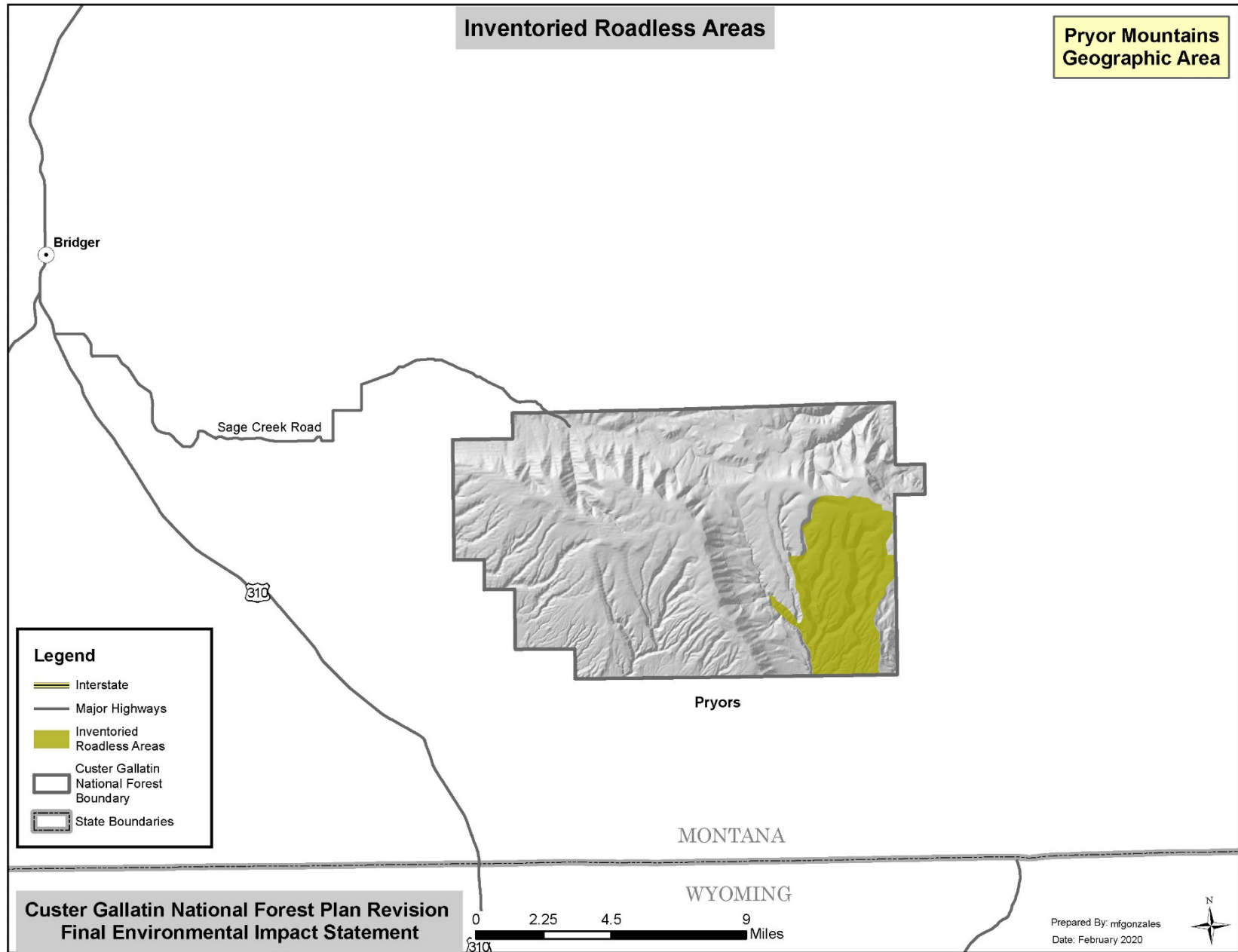




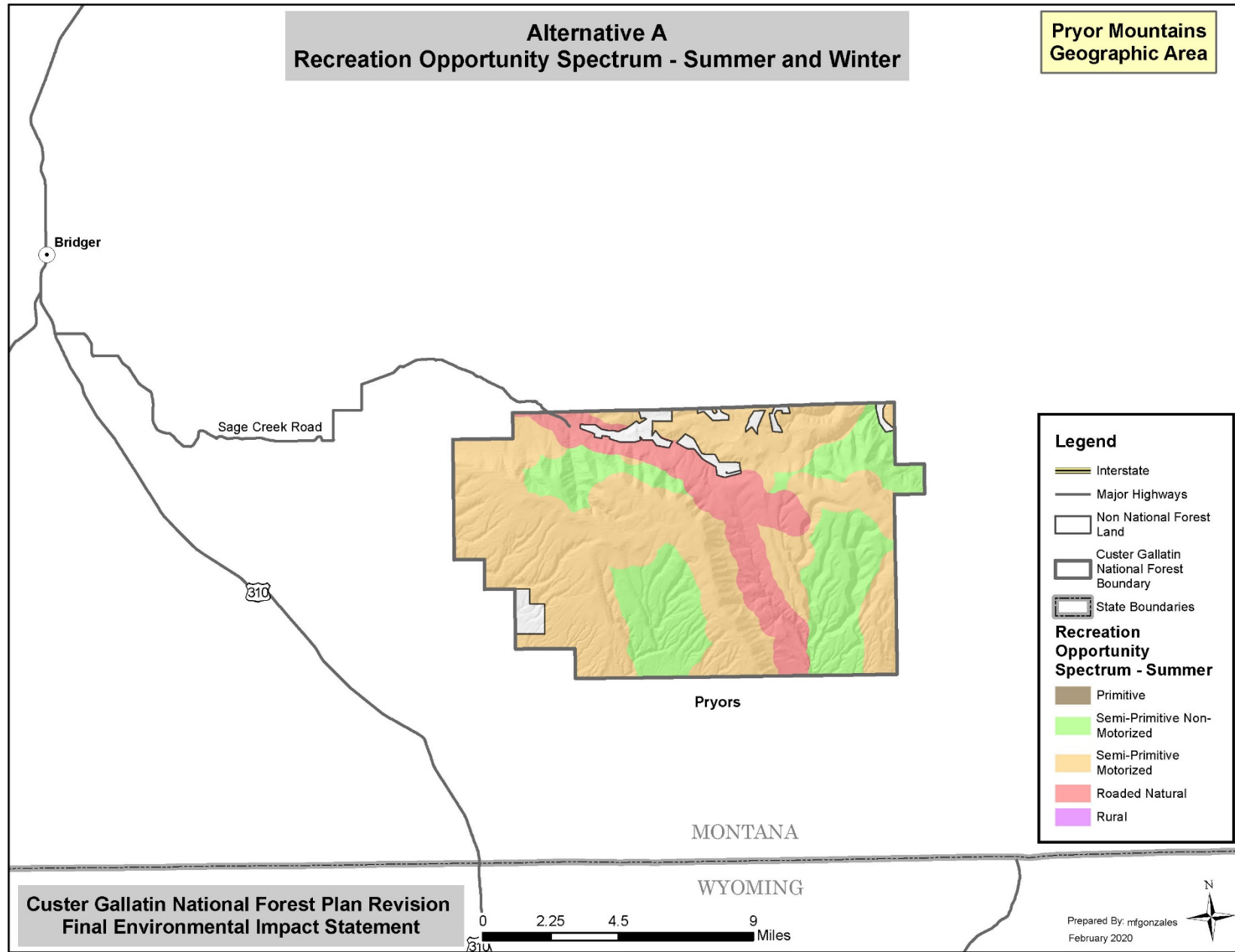


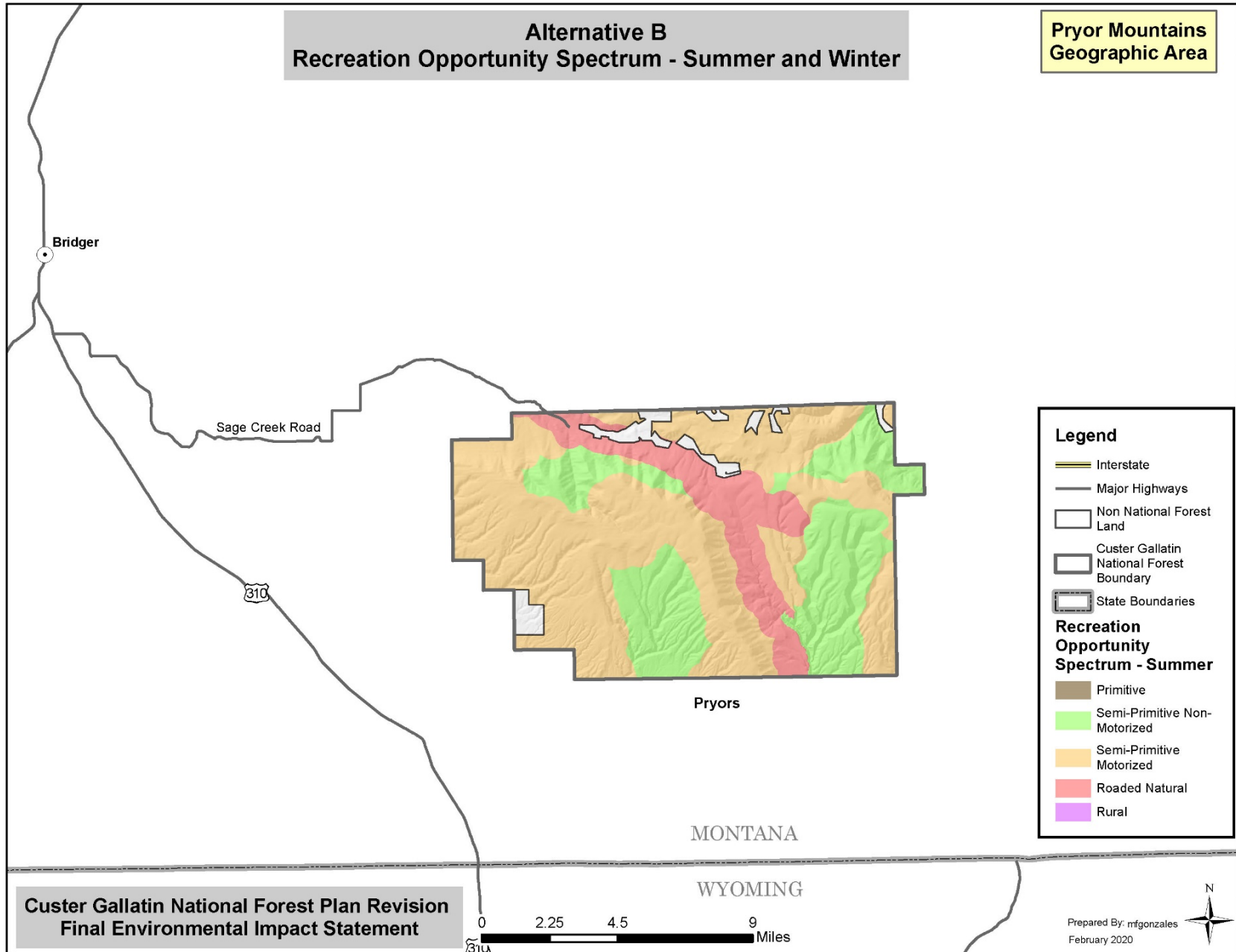


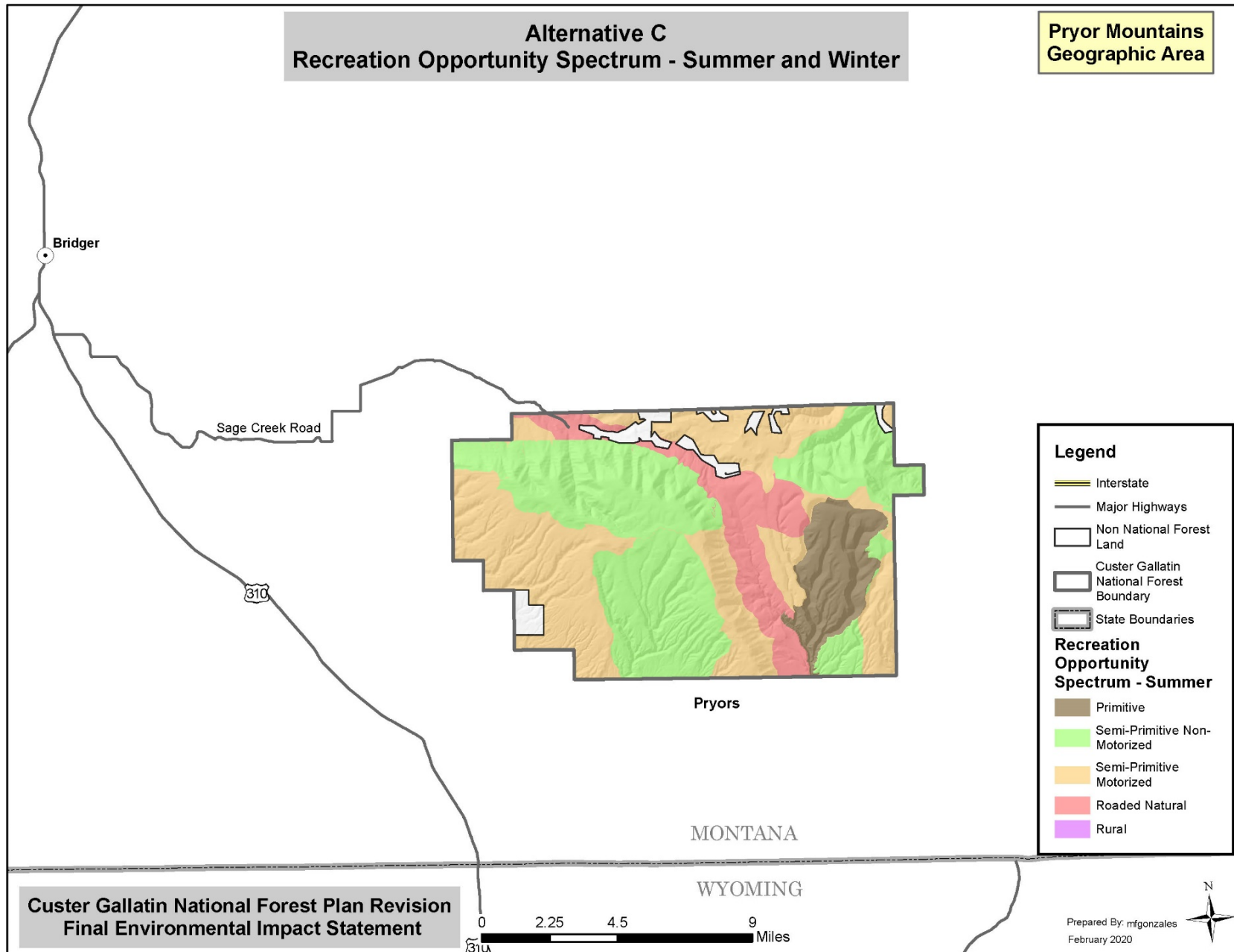
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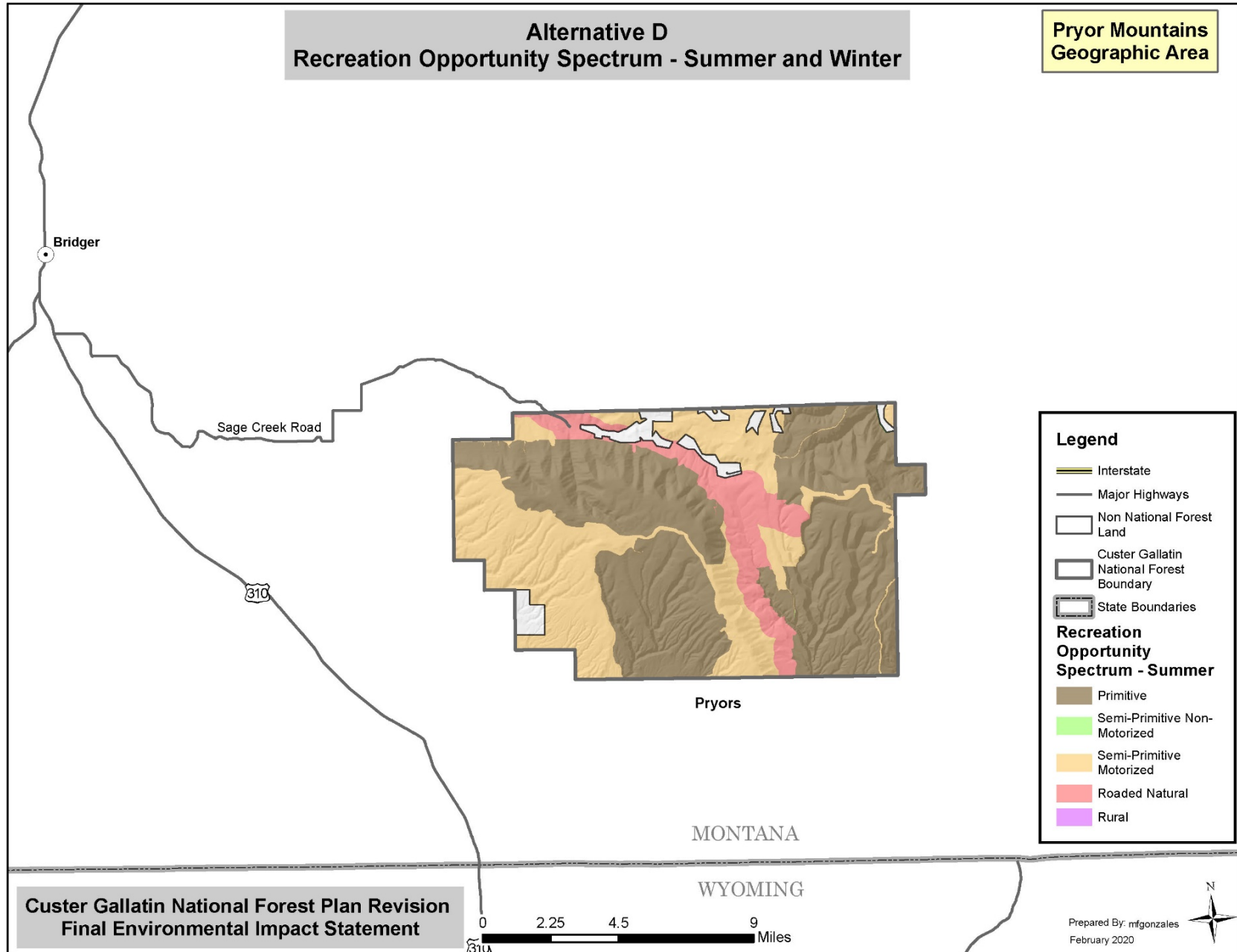


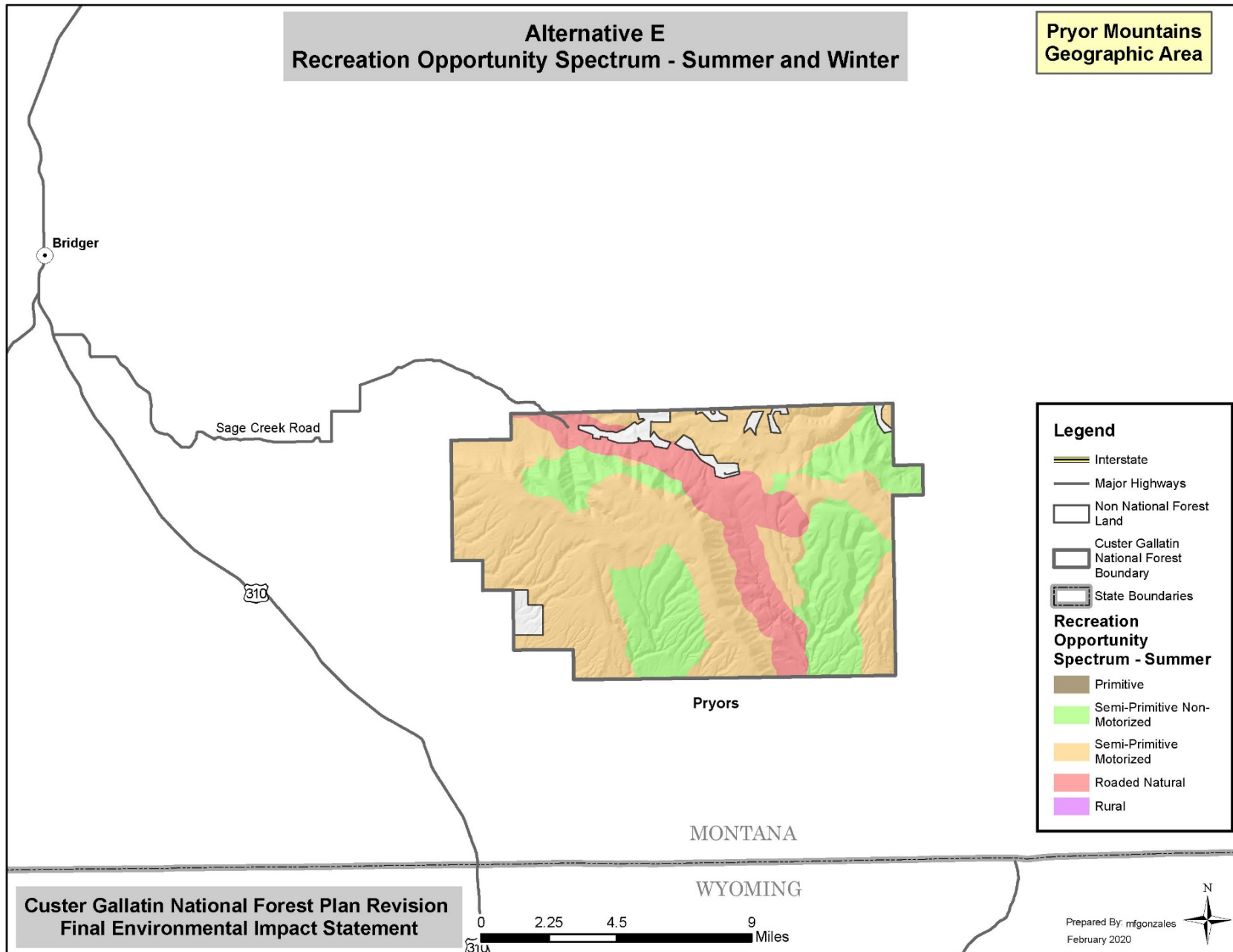
Recreation Opportunity Spectrum – Summer and Winter

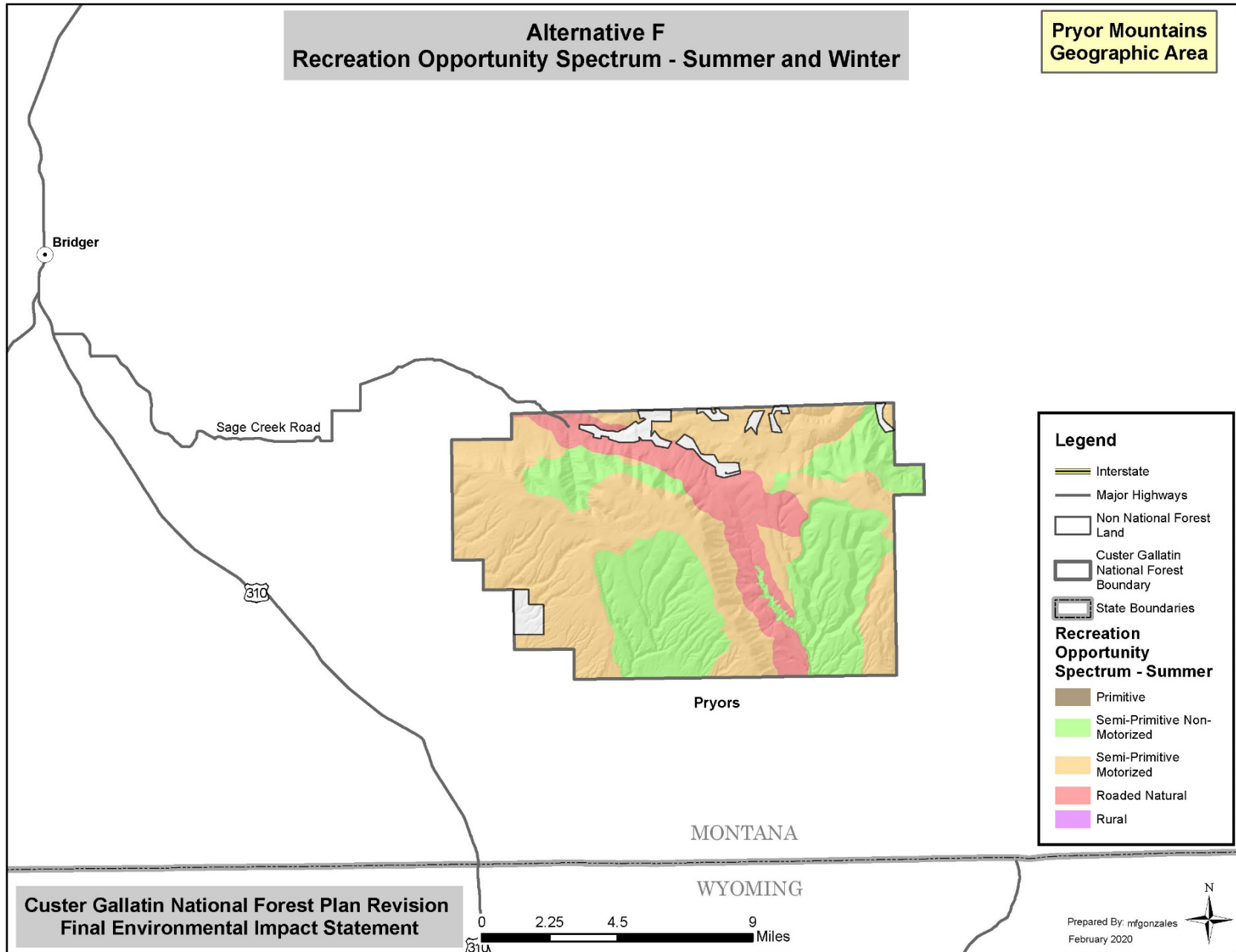




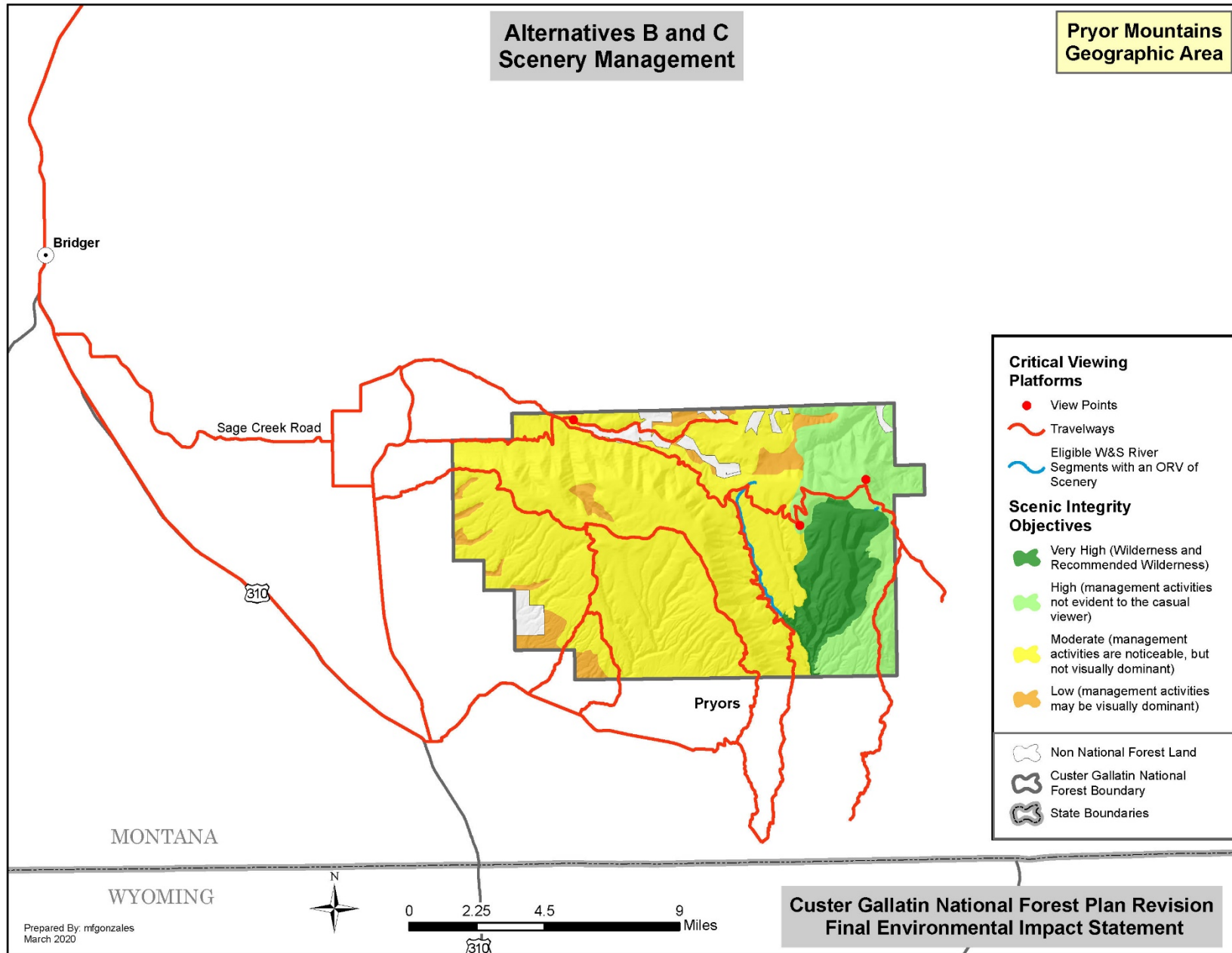


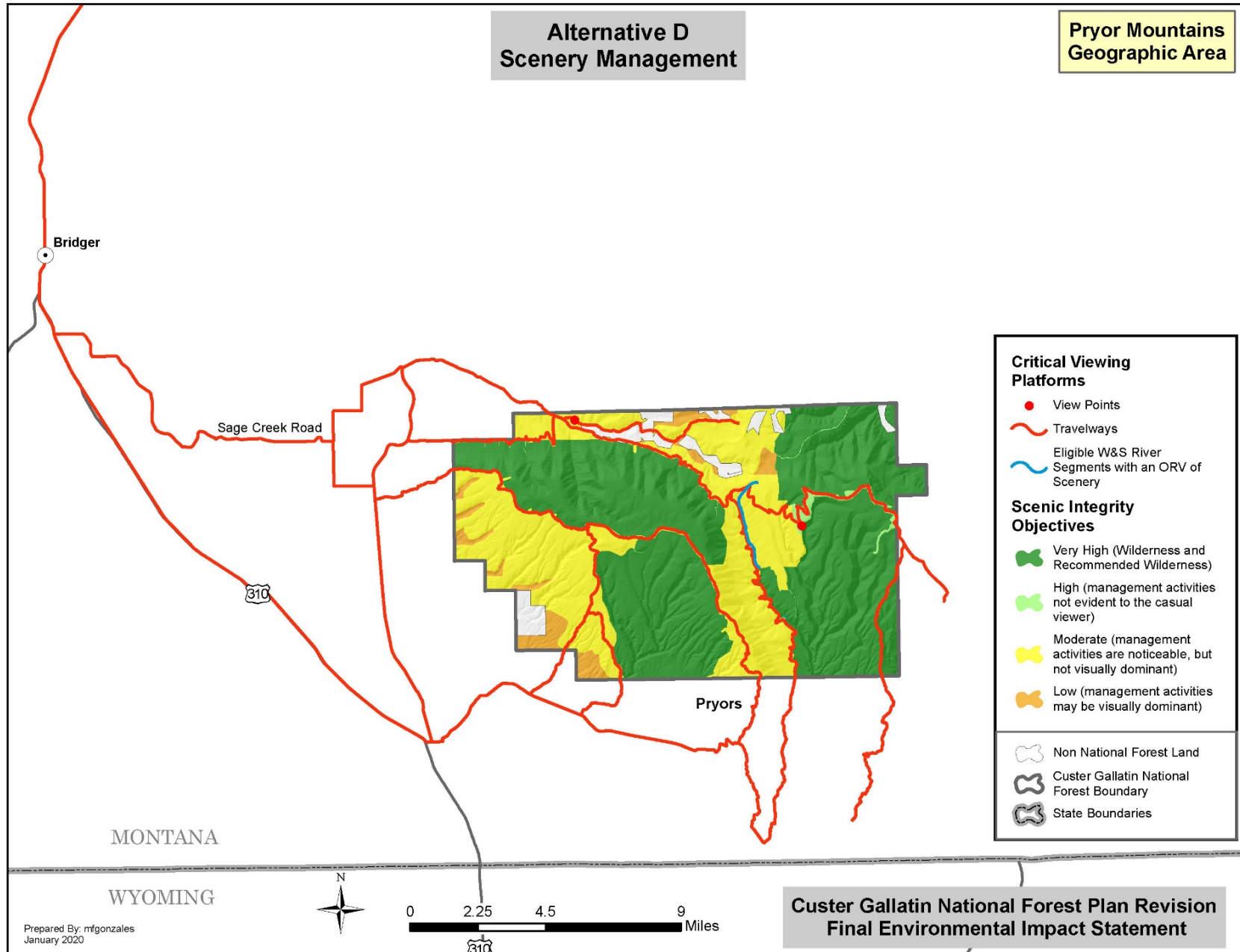


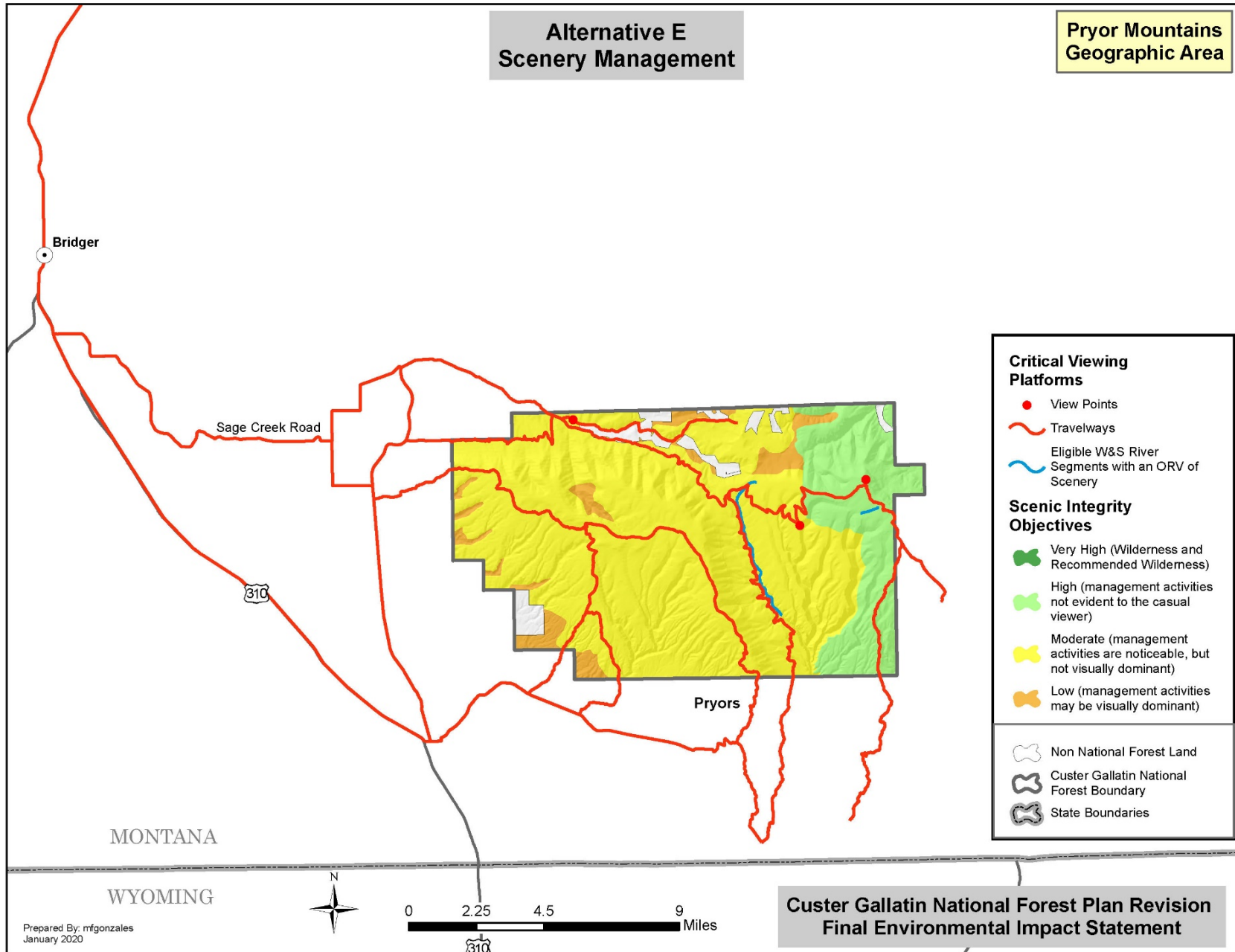


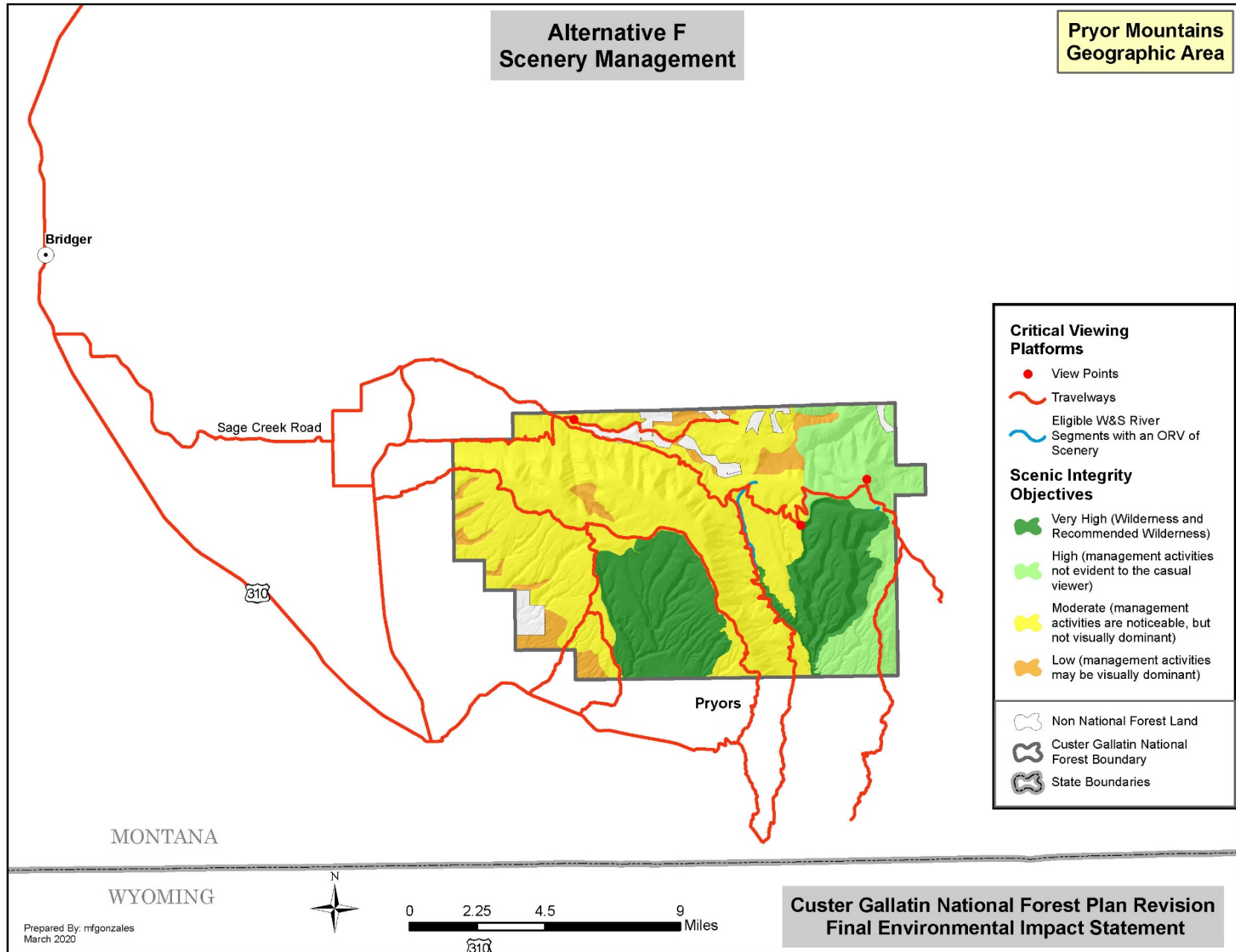


Scenery Management



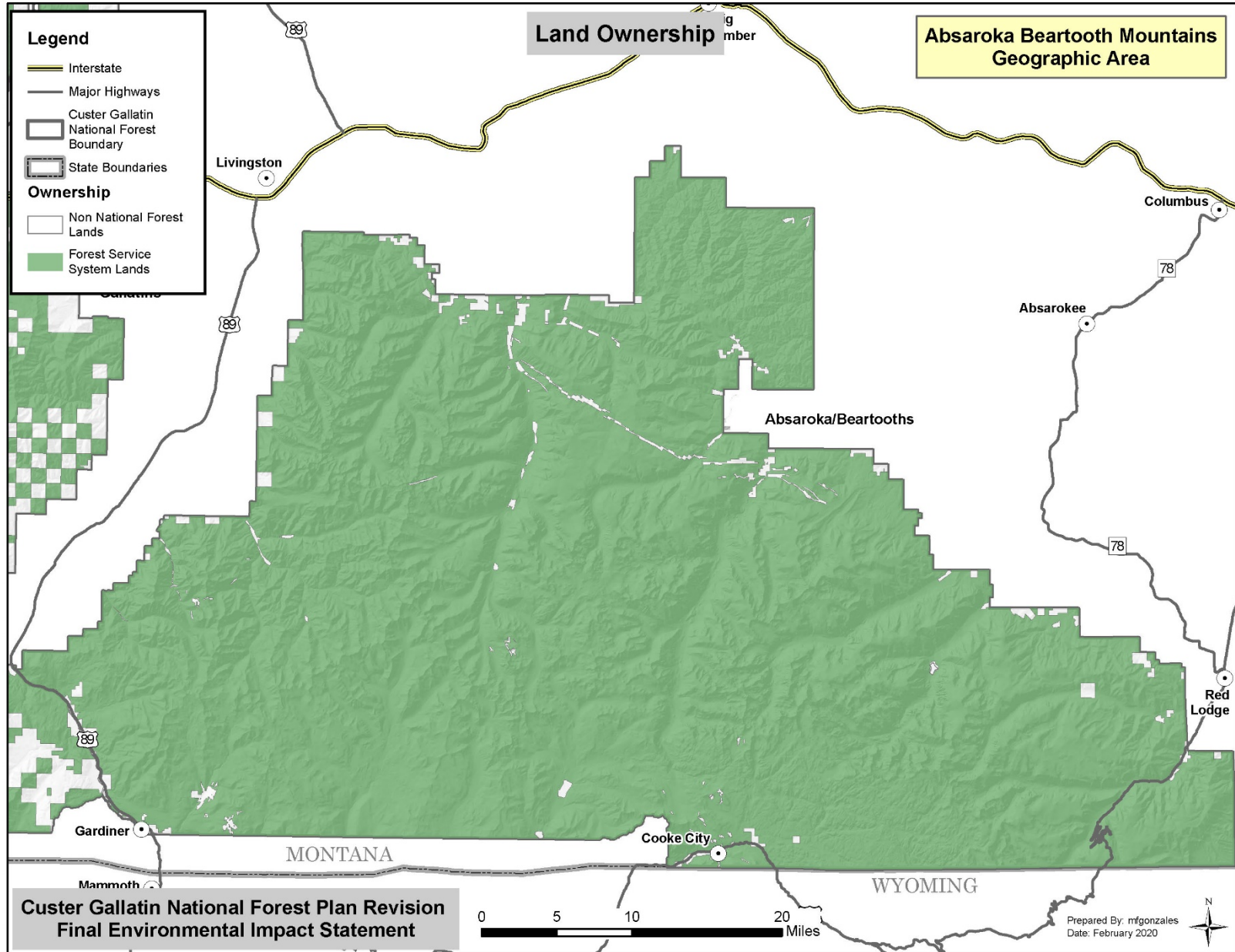




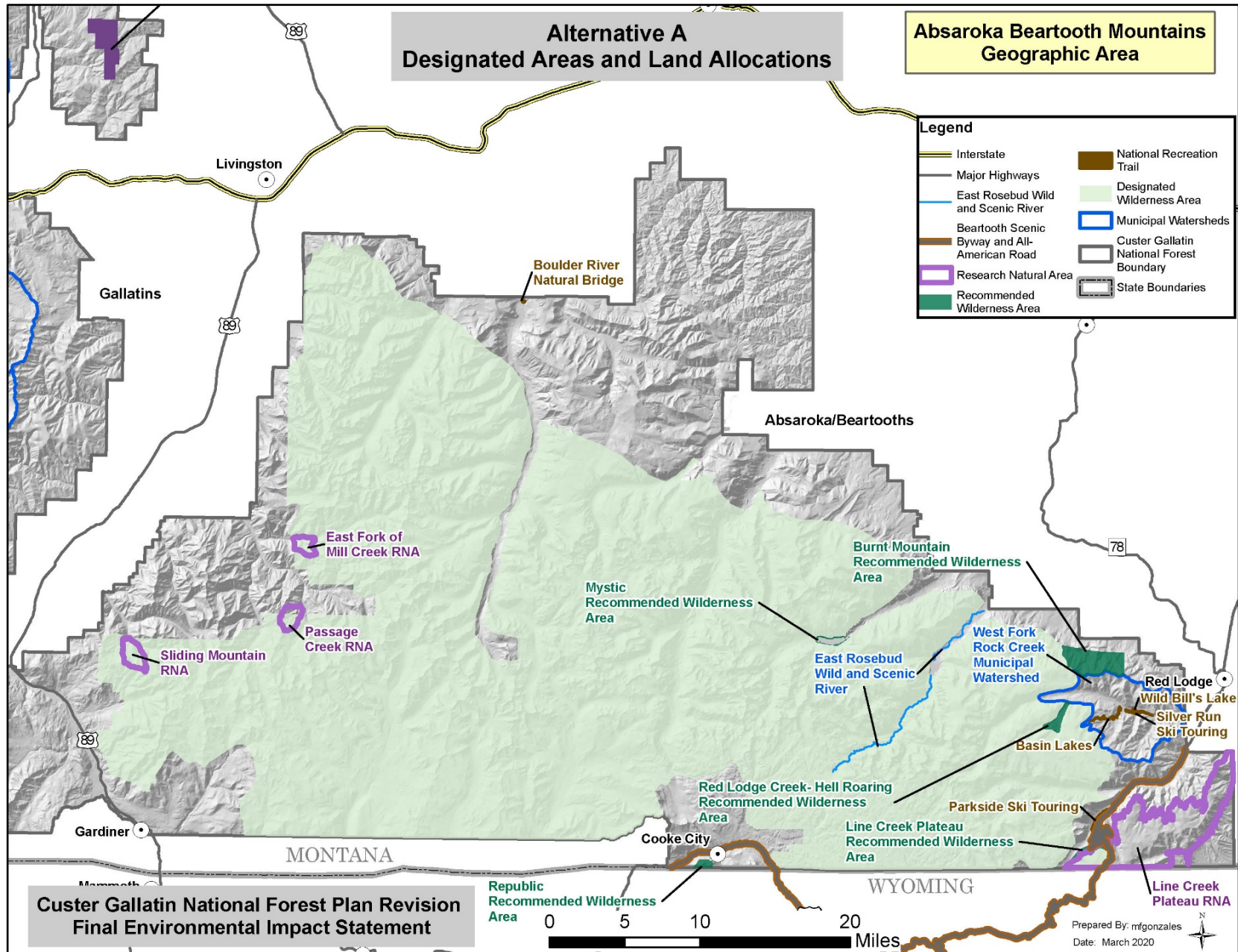


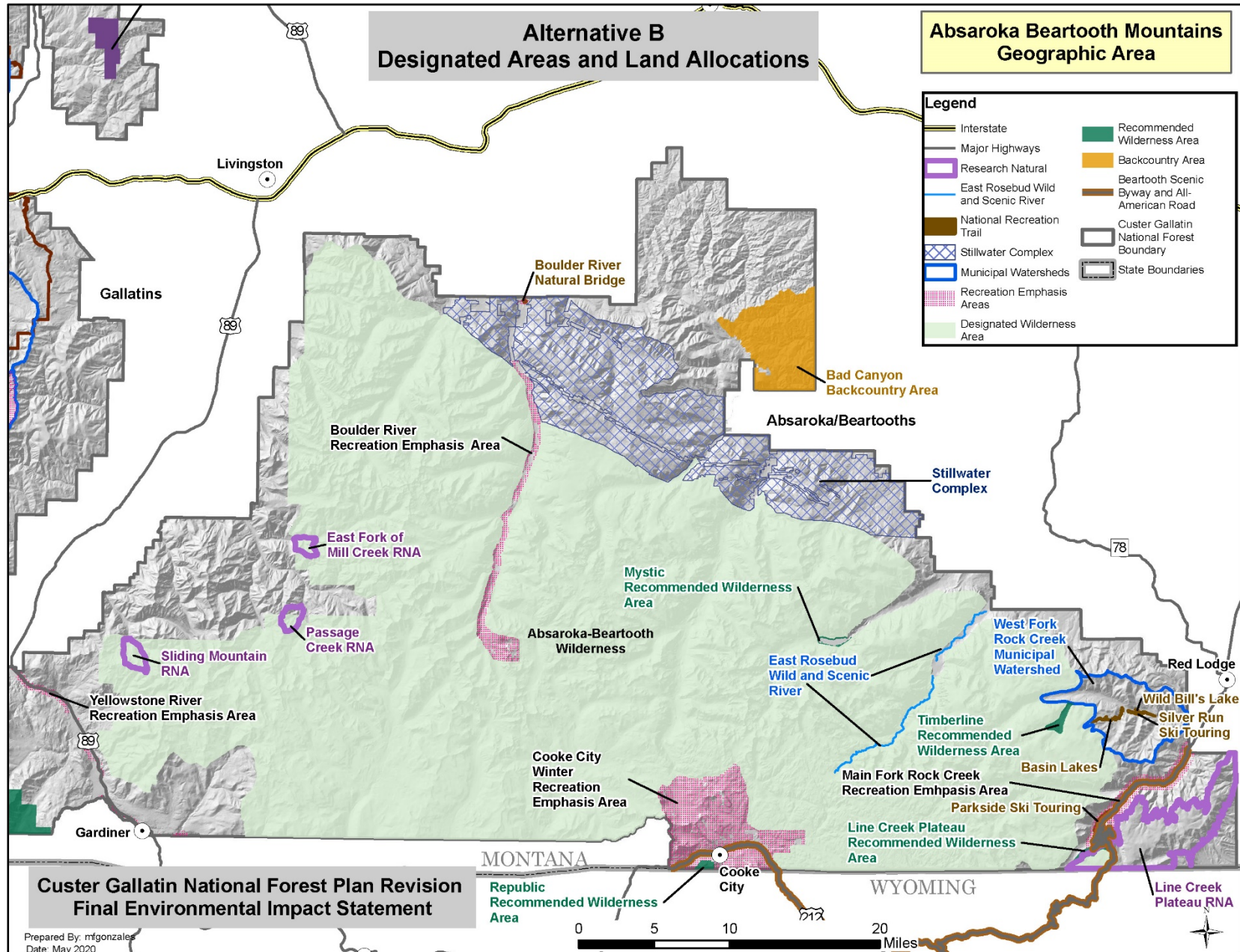
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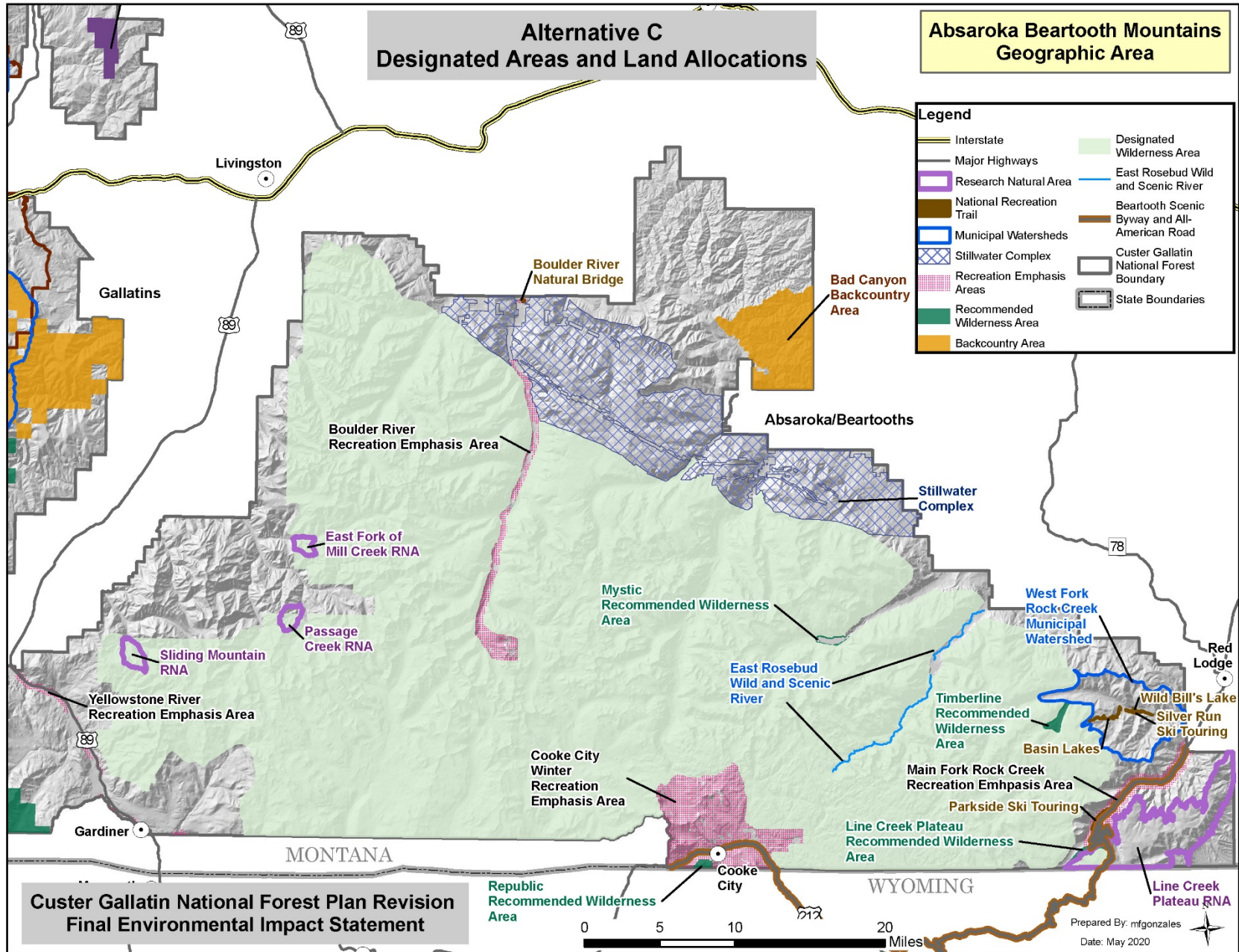
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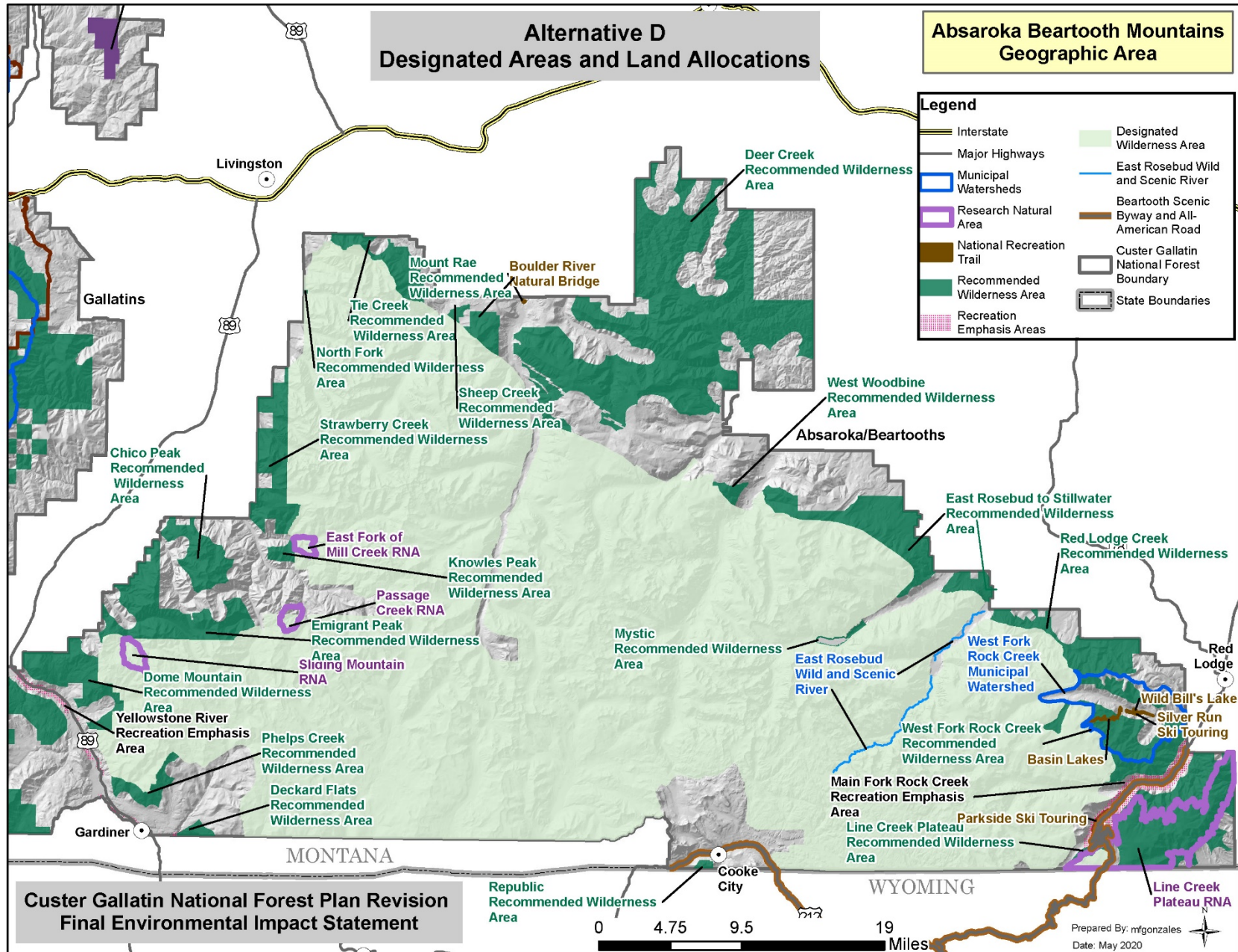


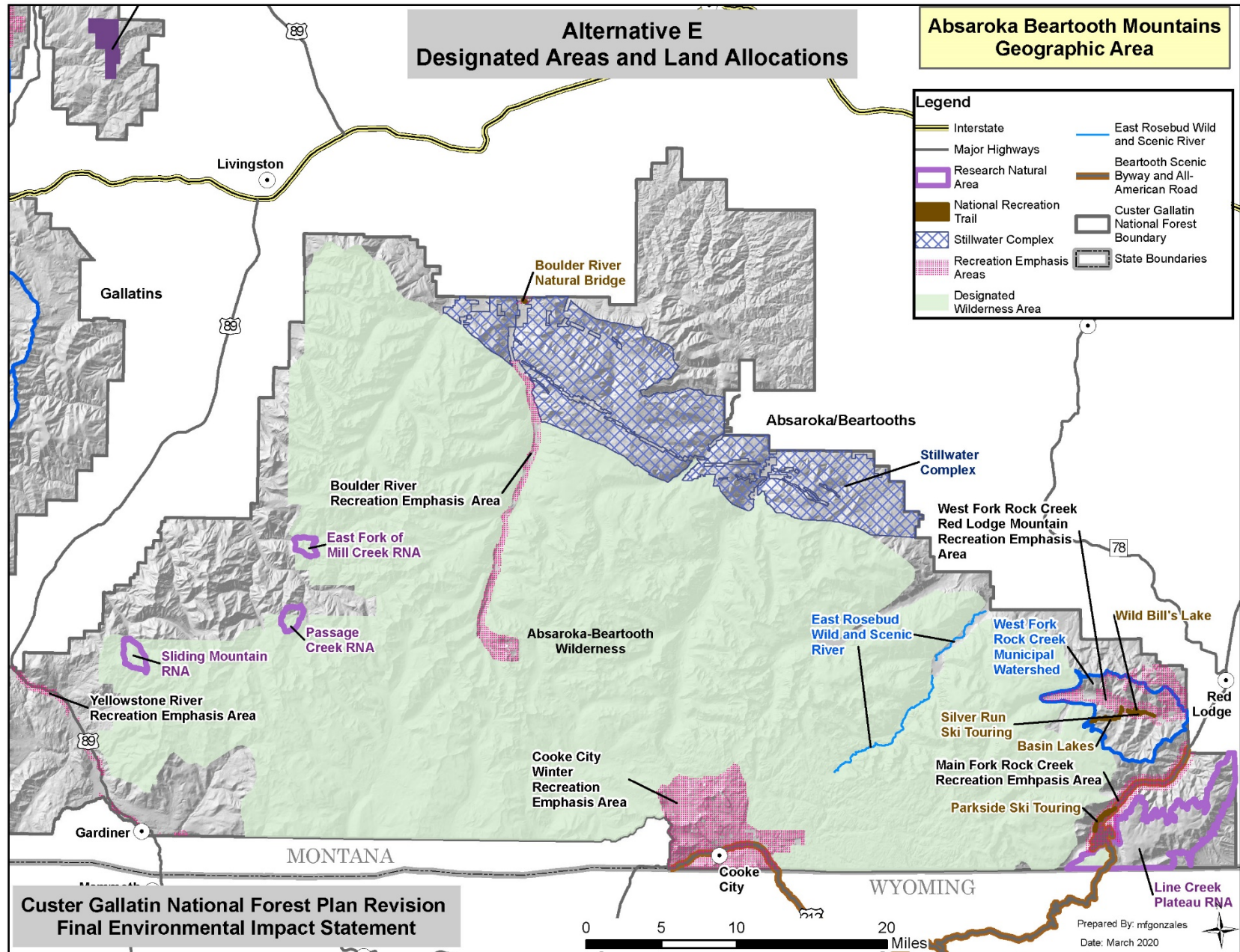
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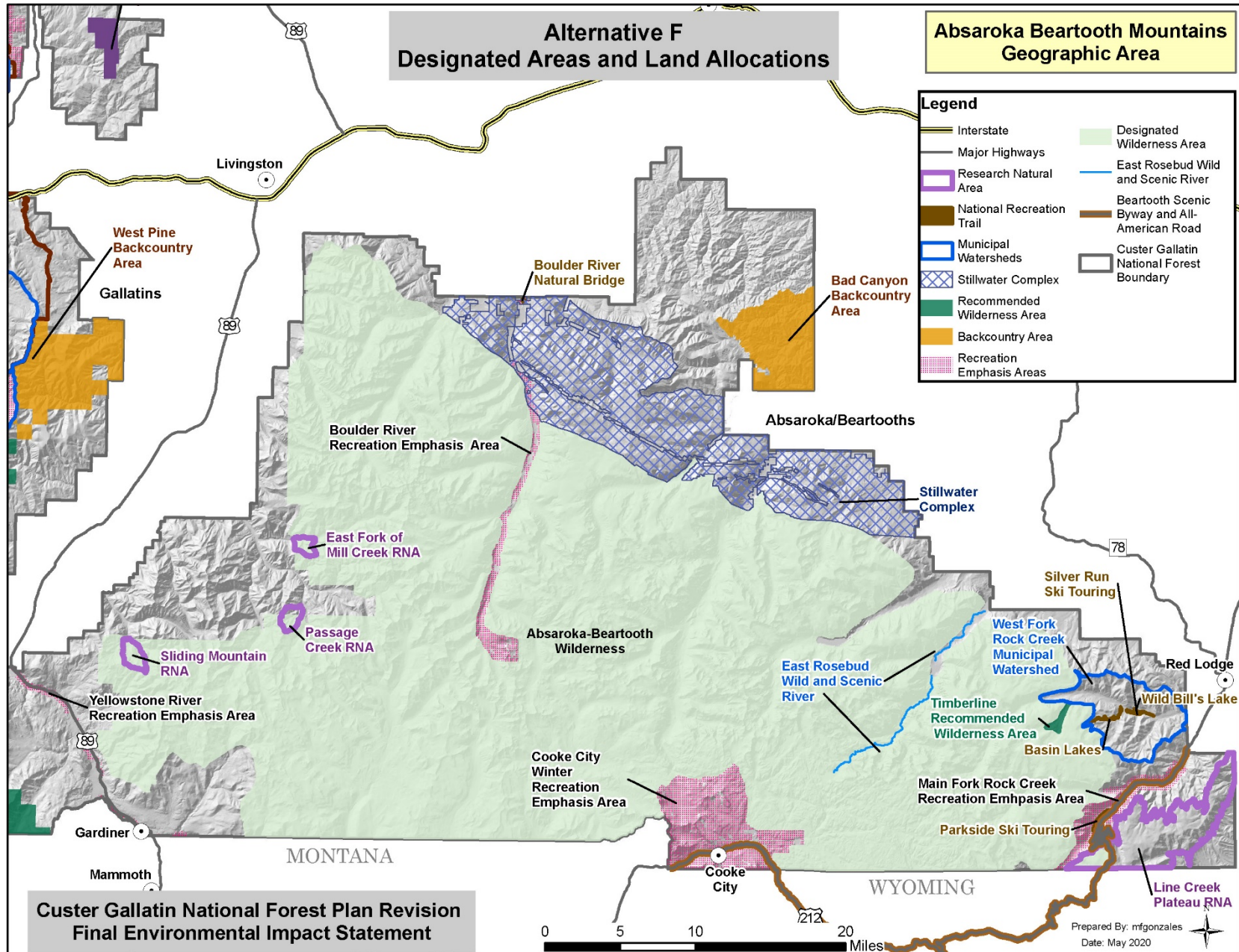




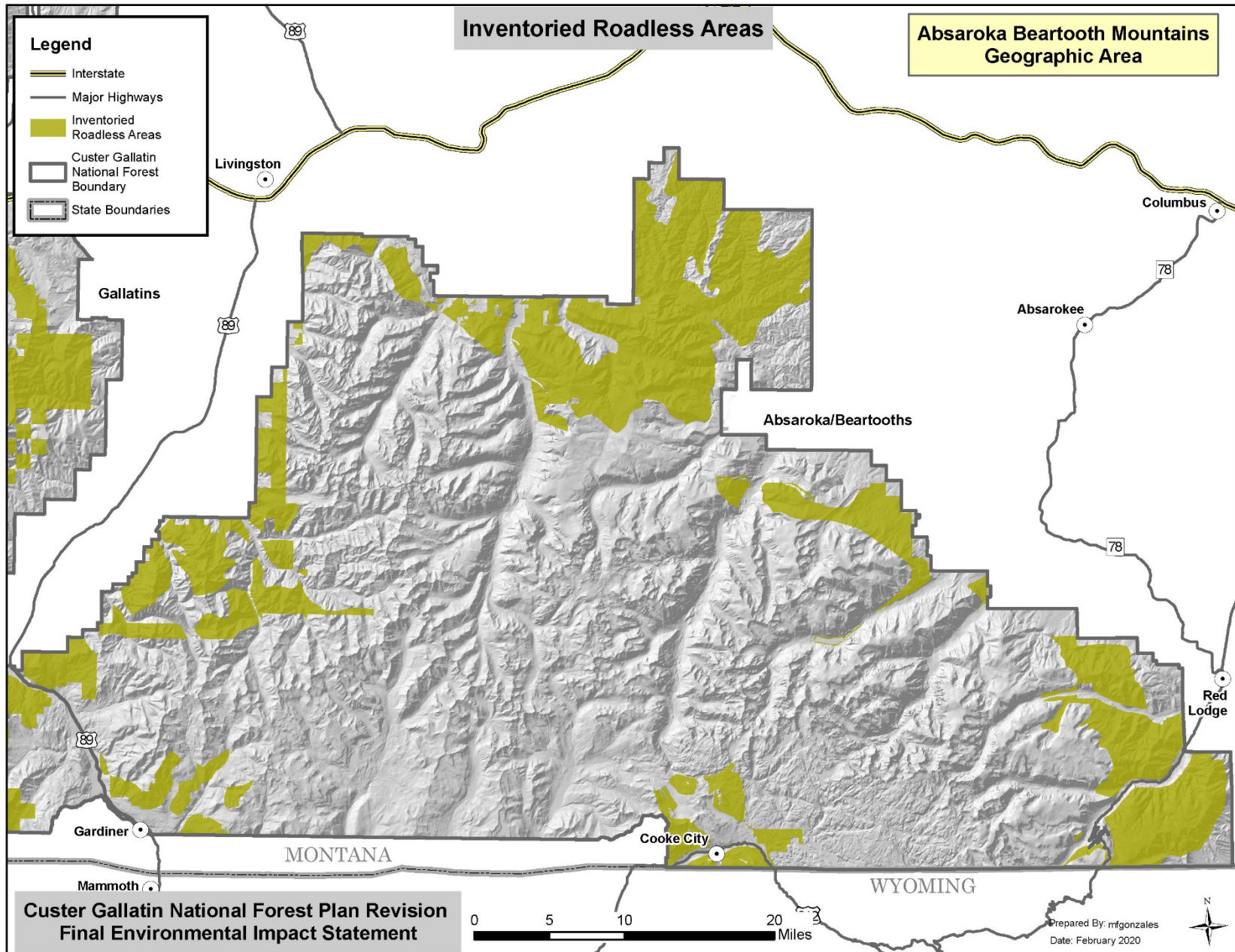




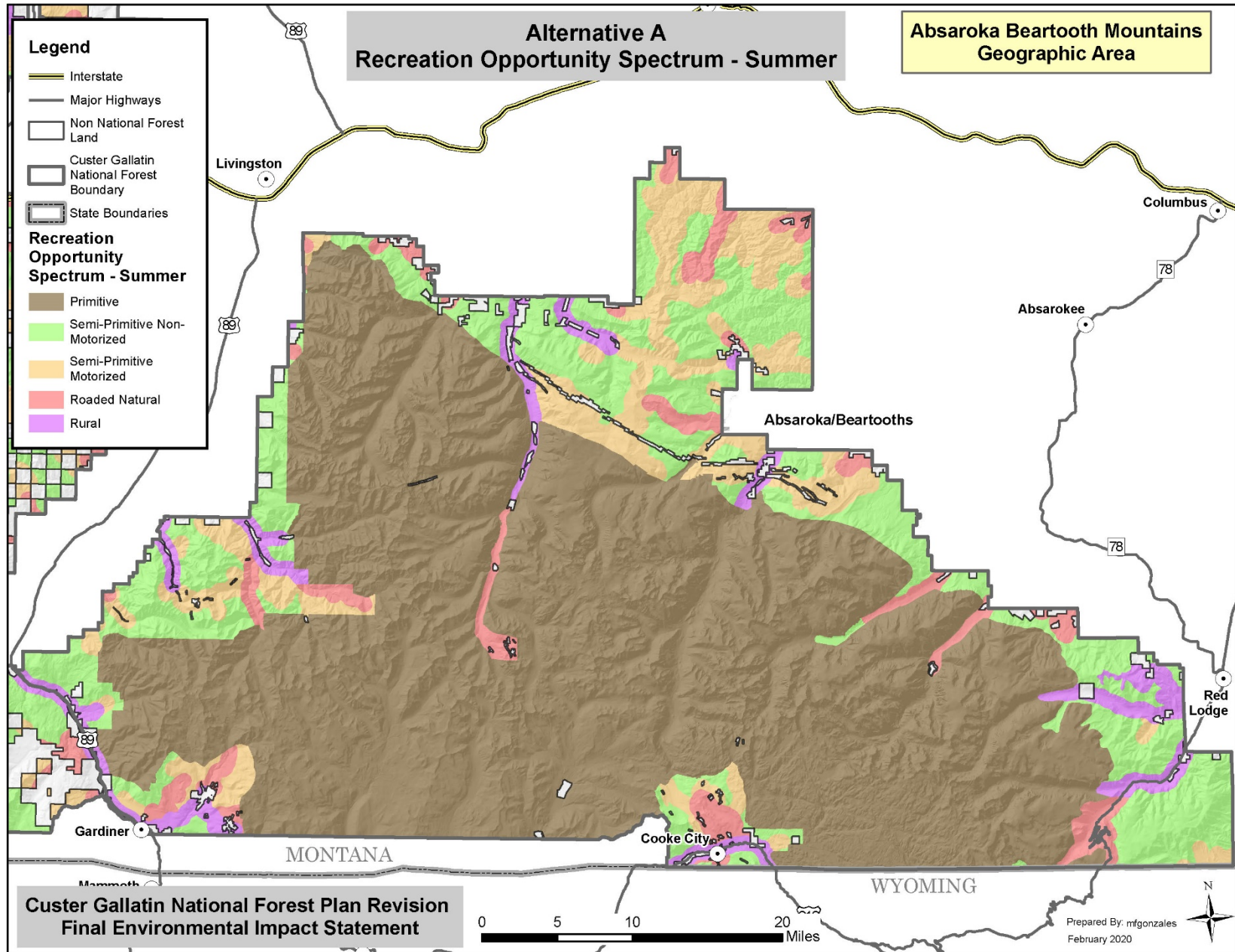


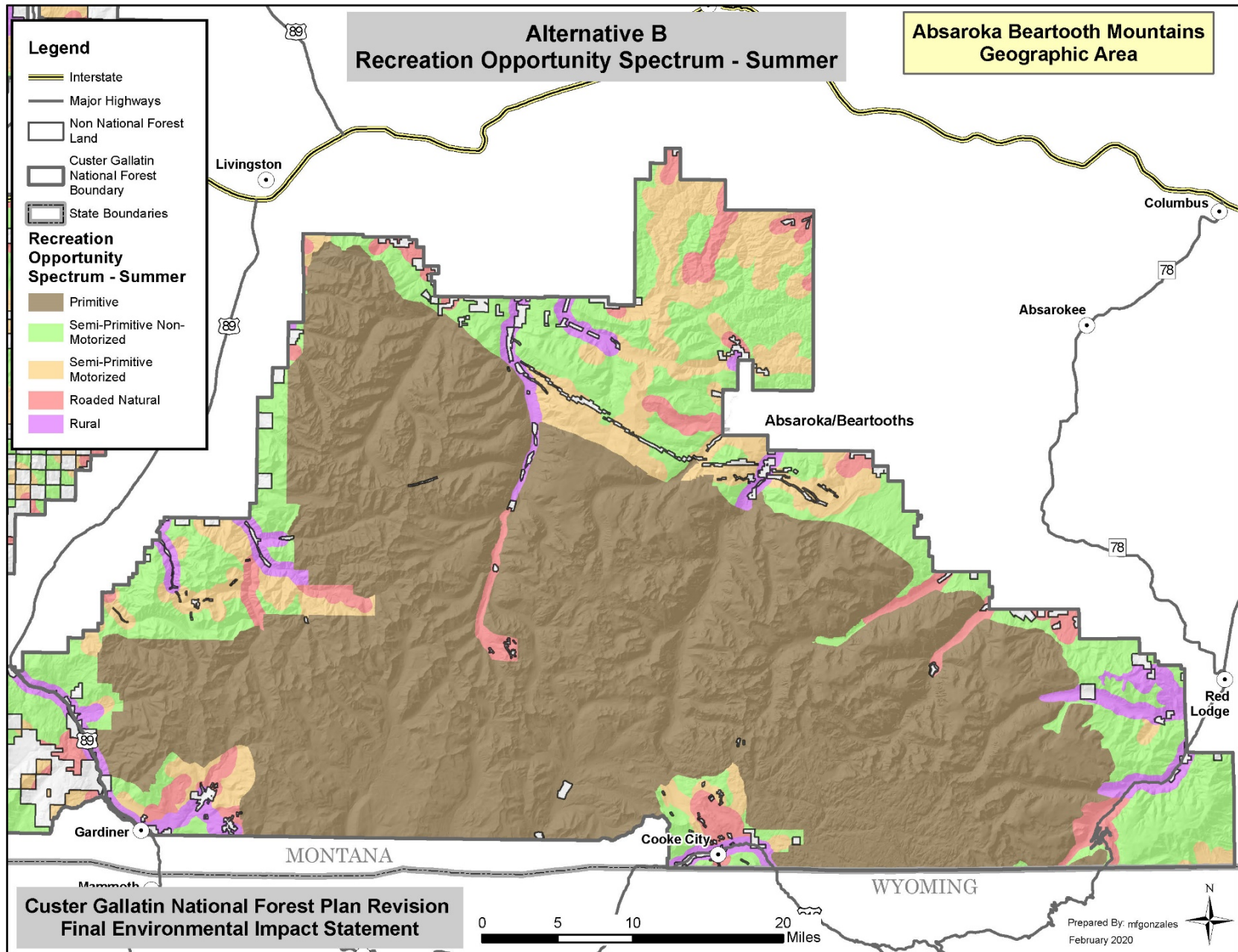


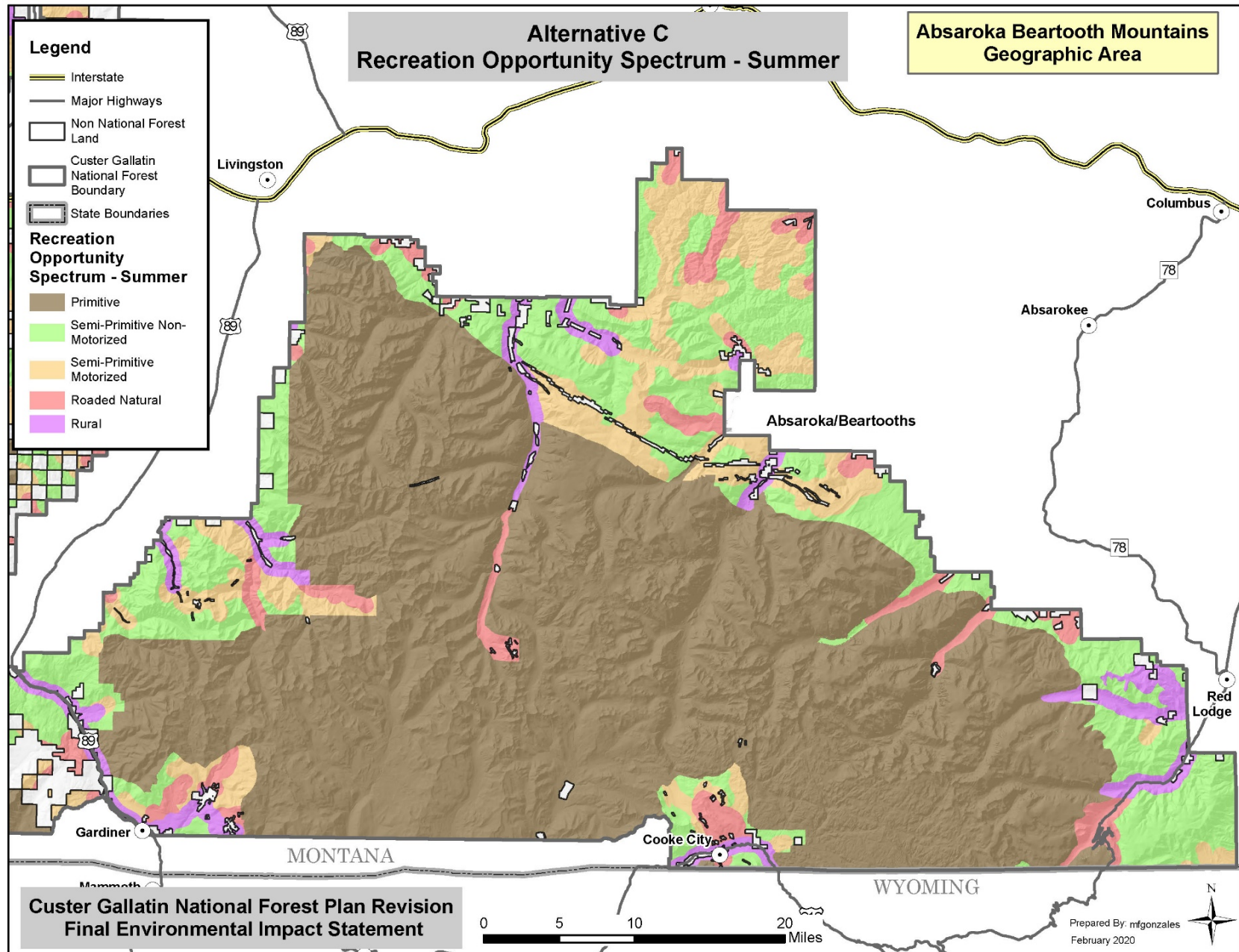
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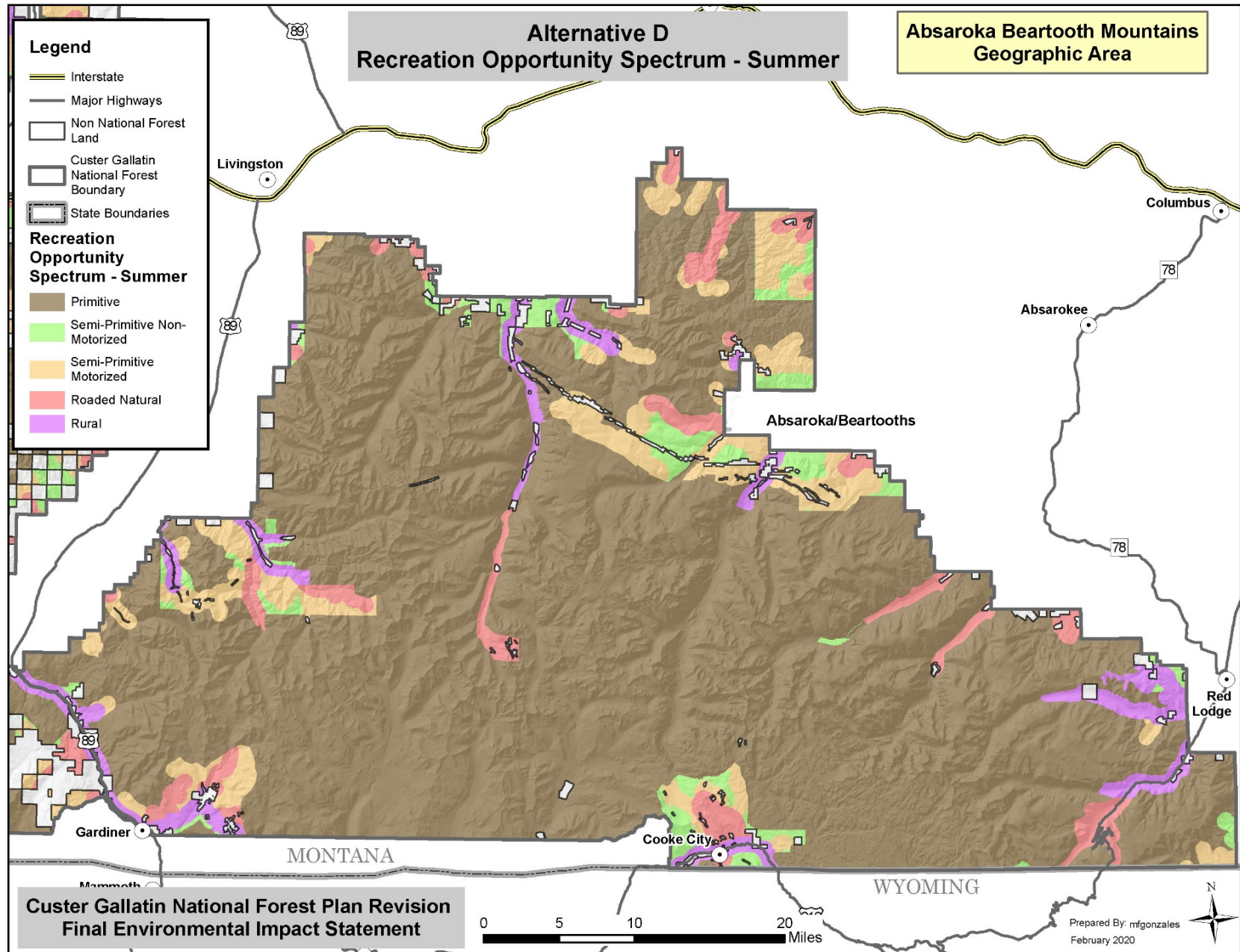


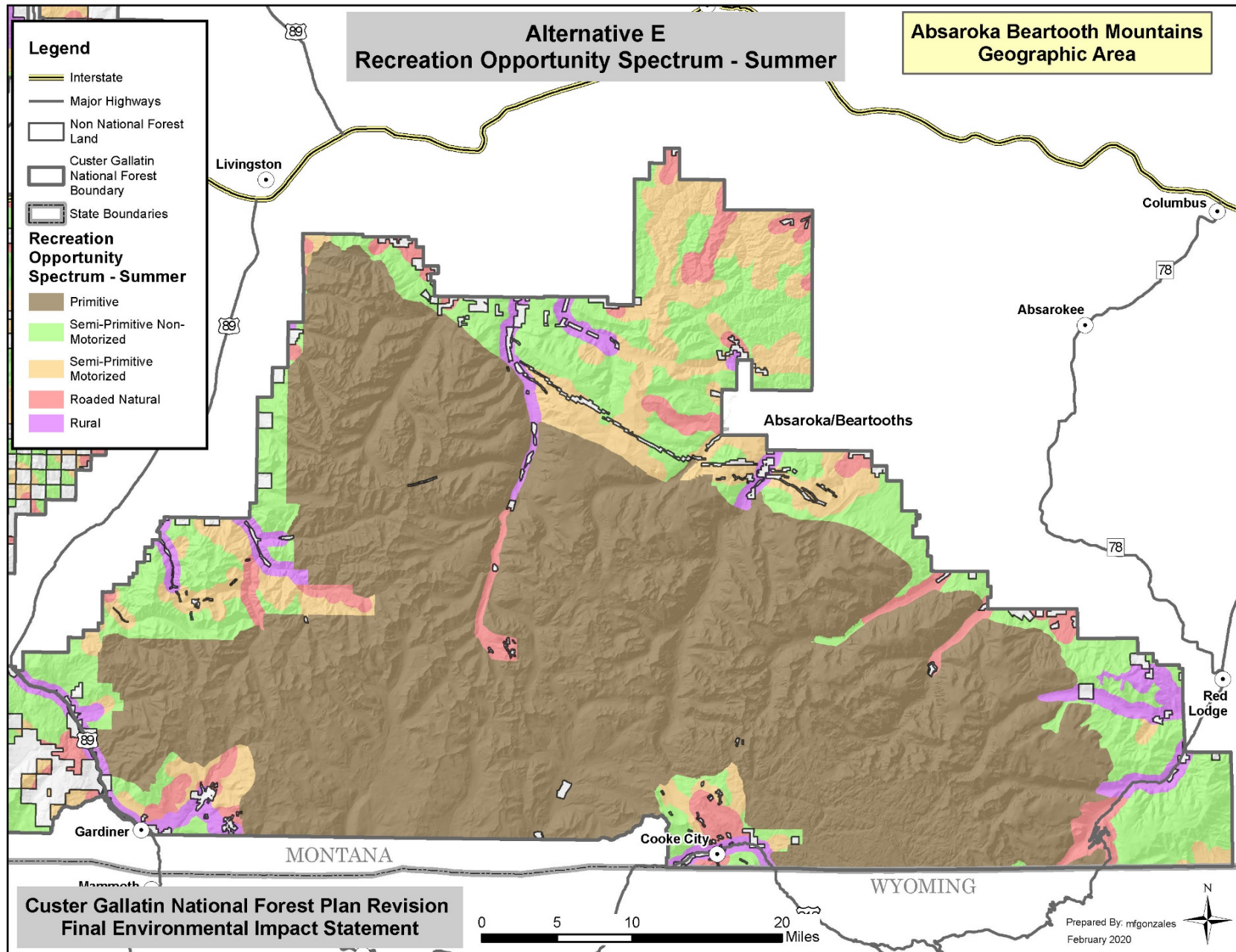
Recreation Opportunity Spectrum – Summer

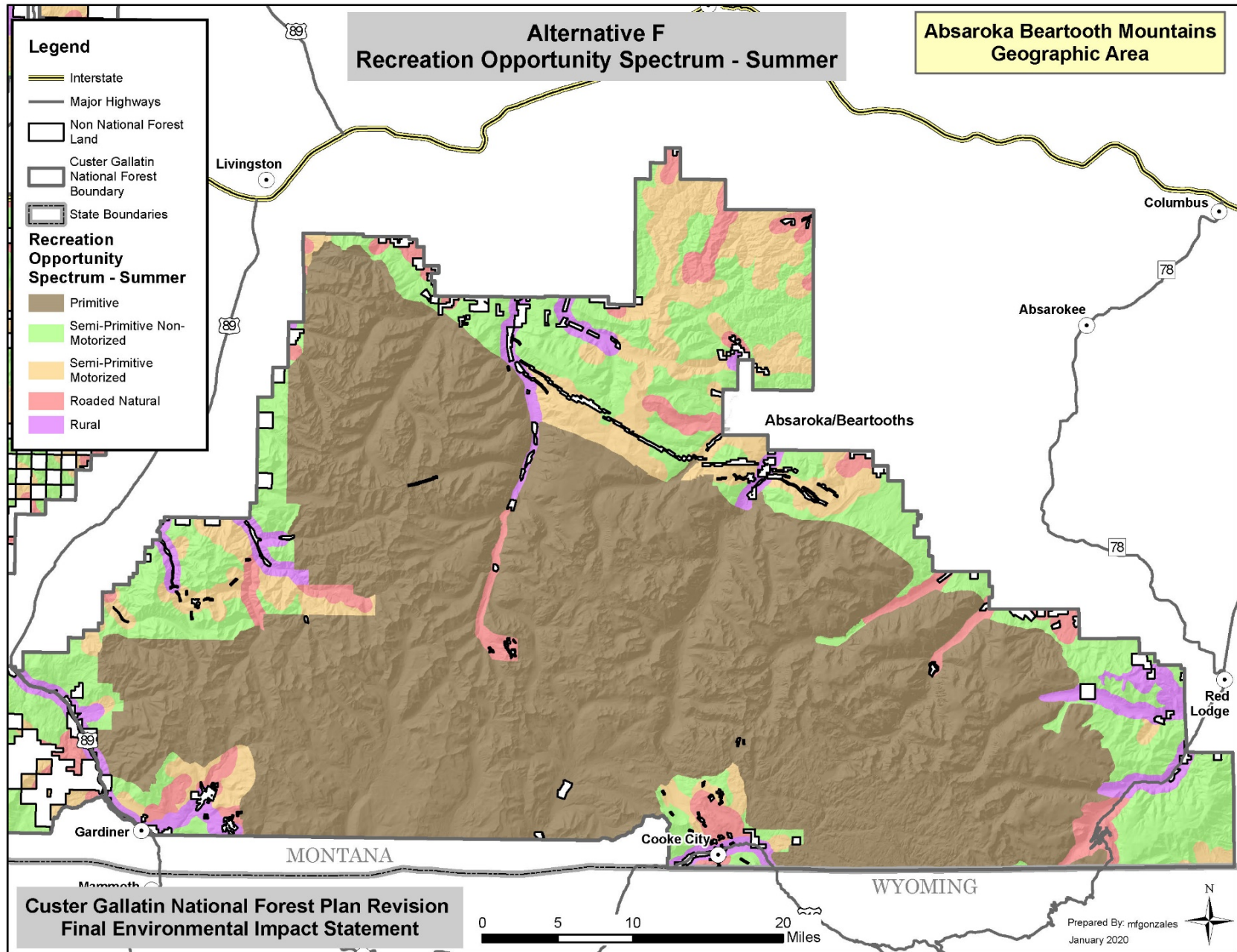




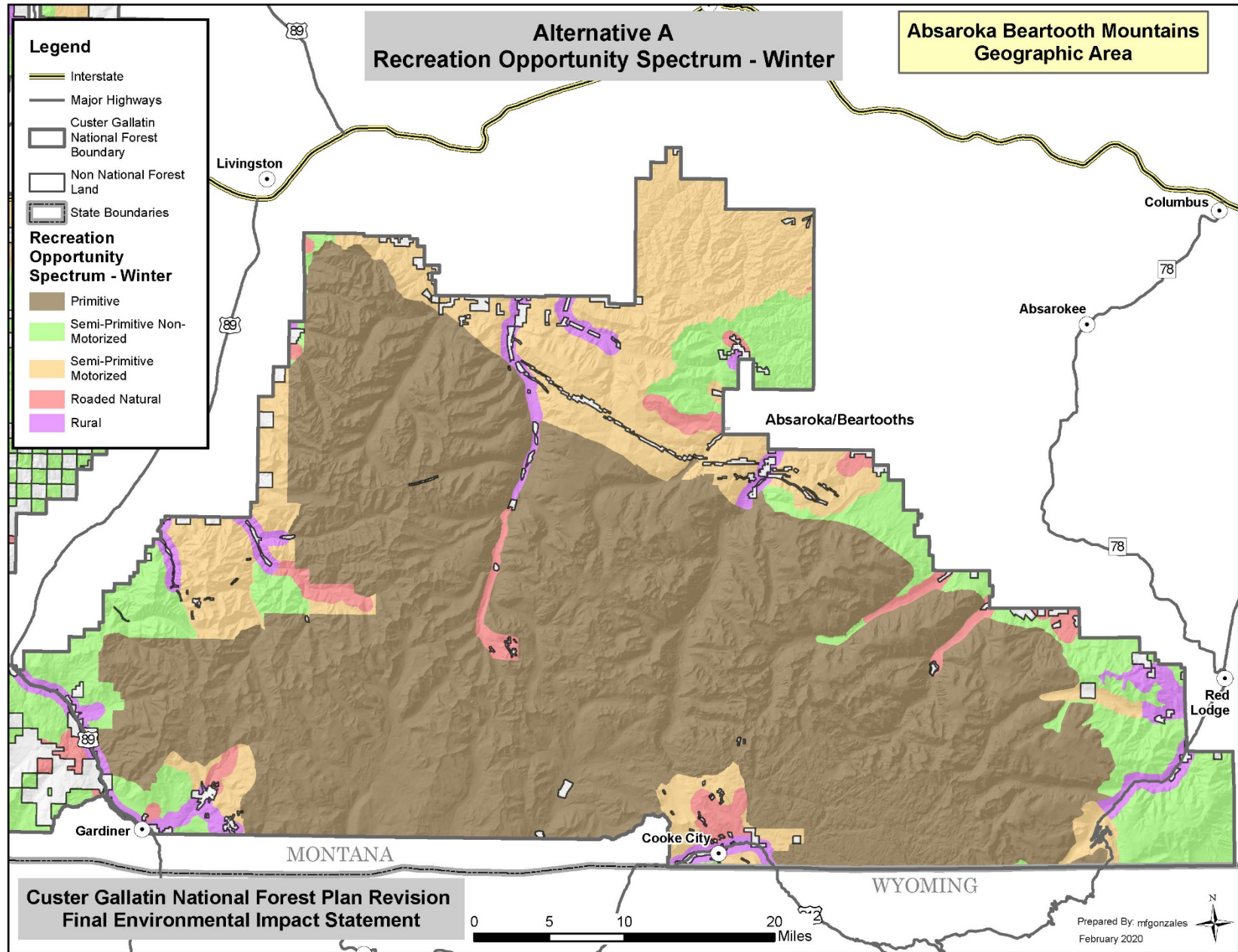


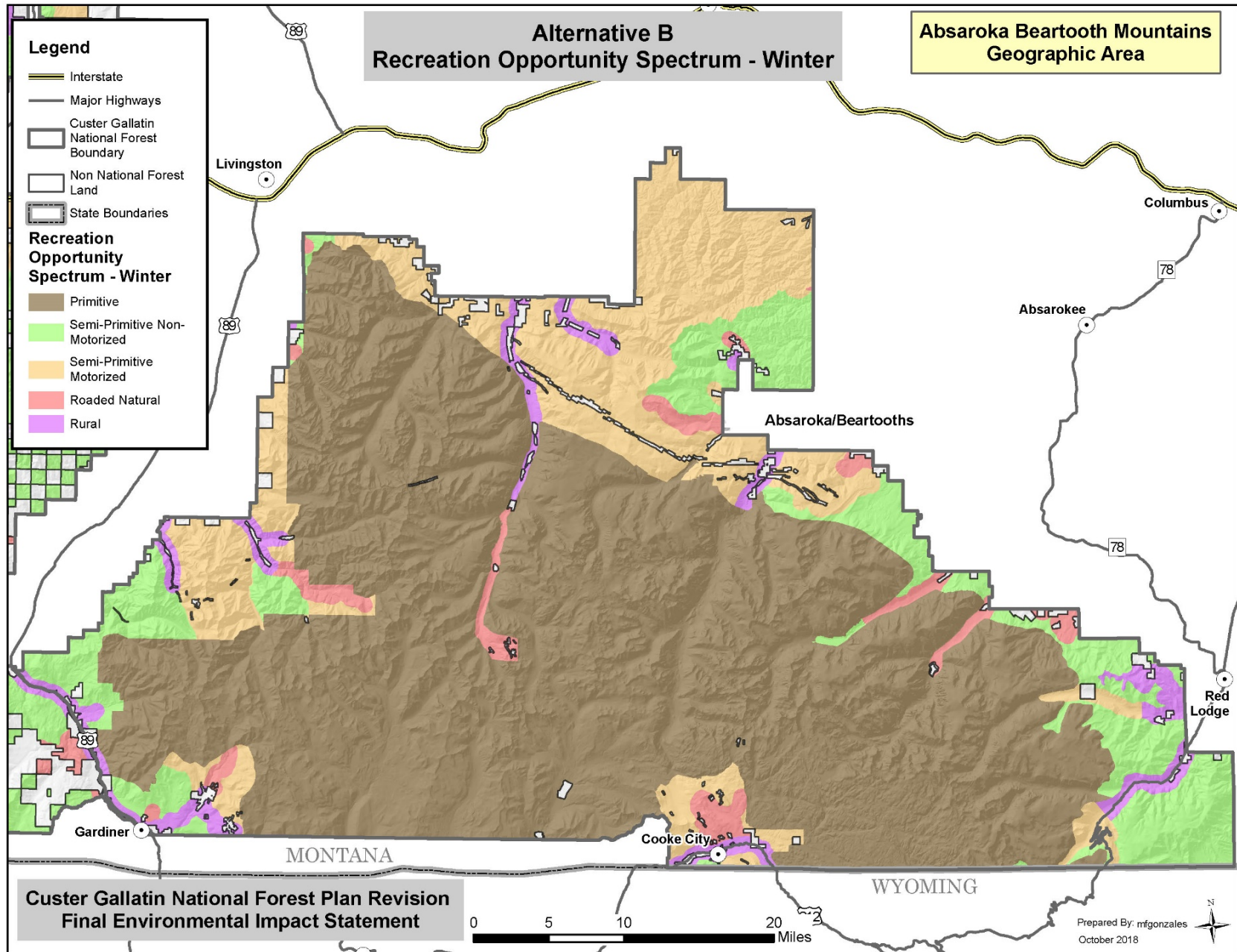


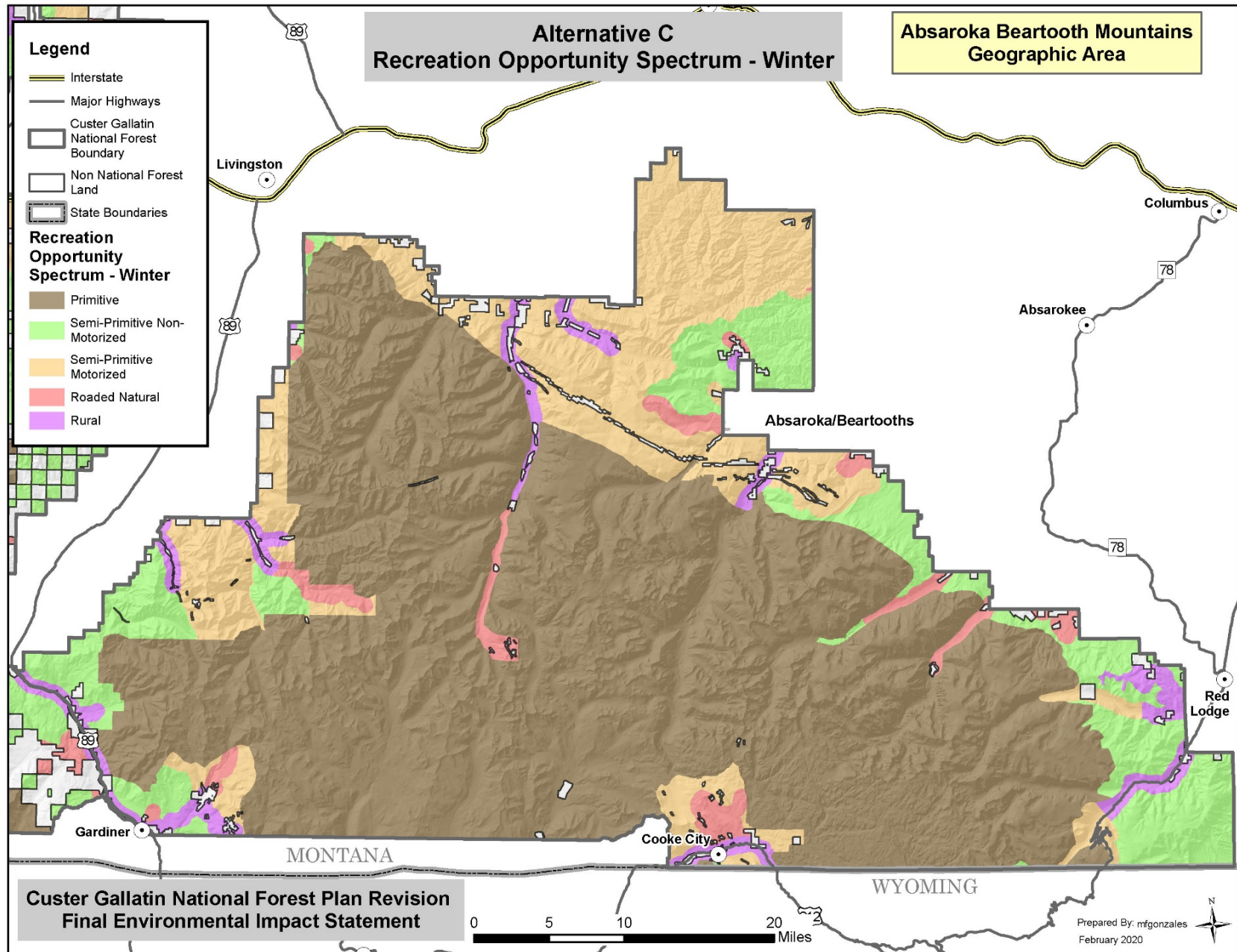


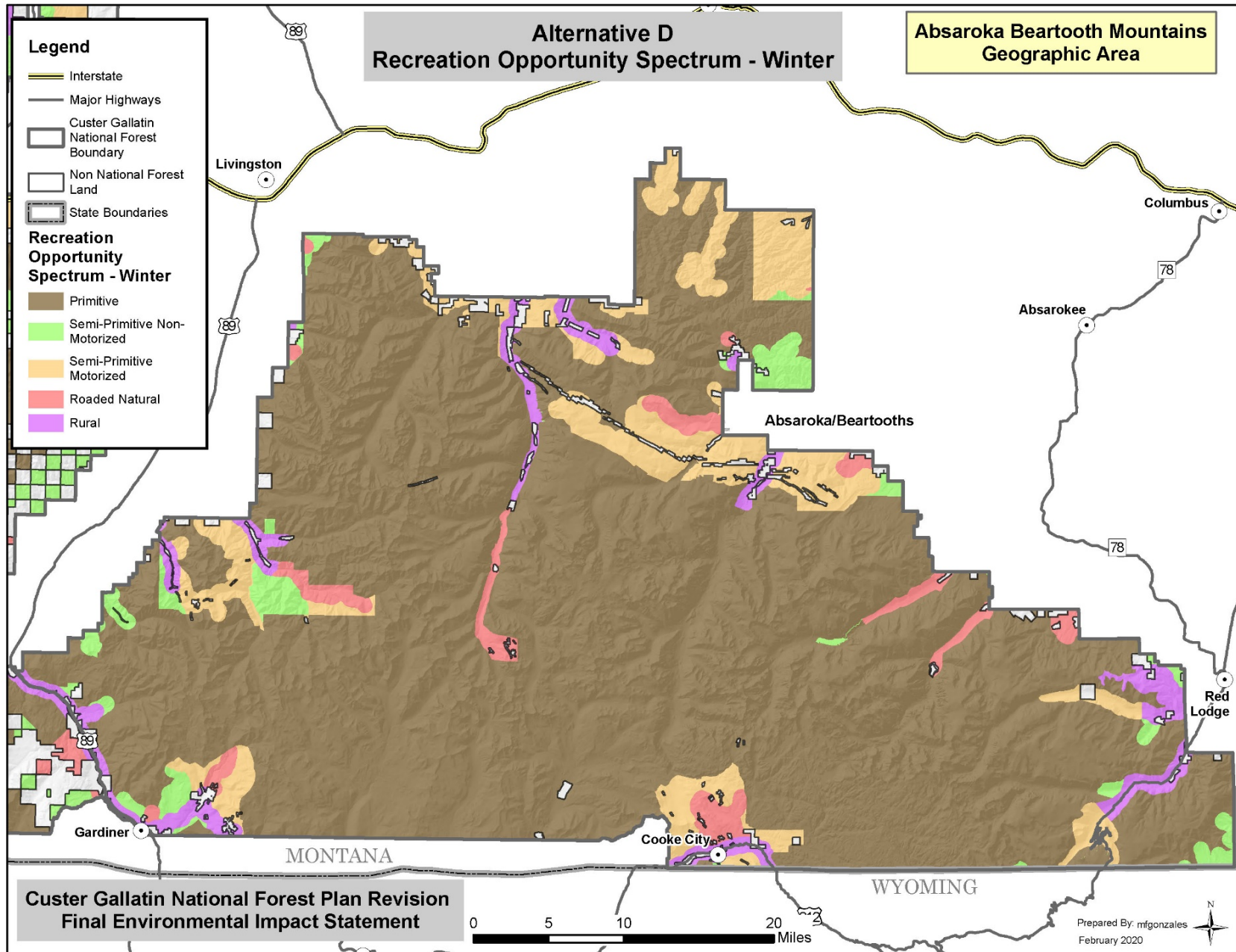


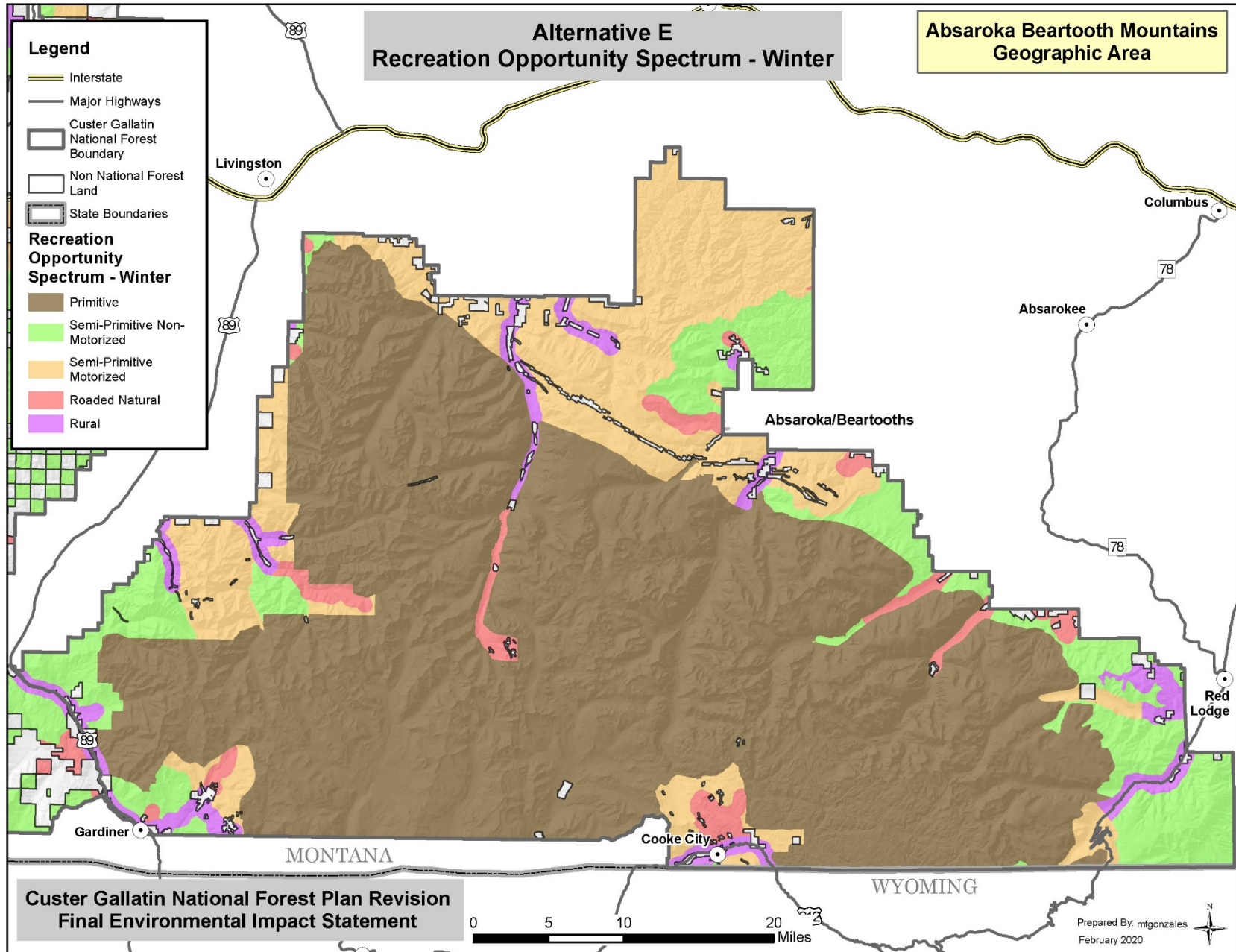
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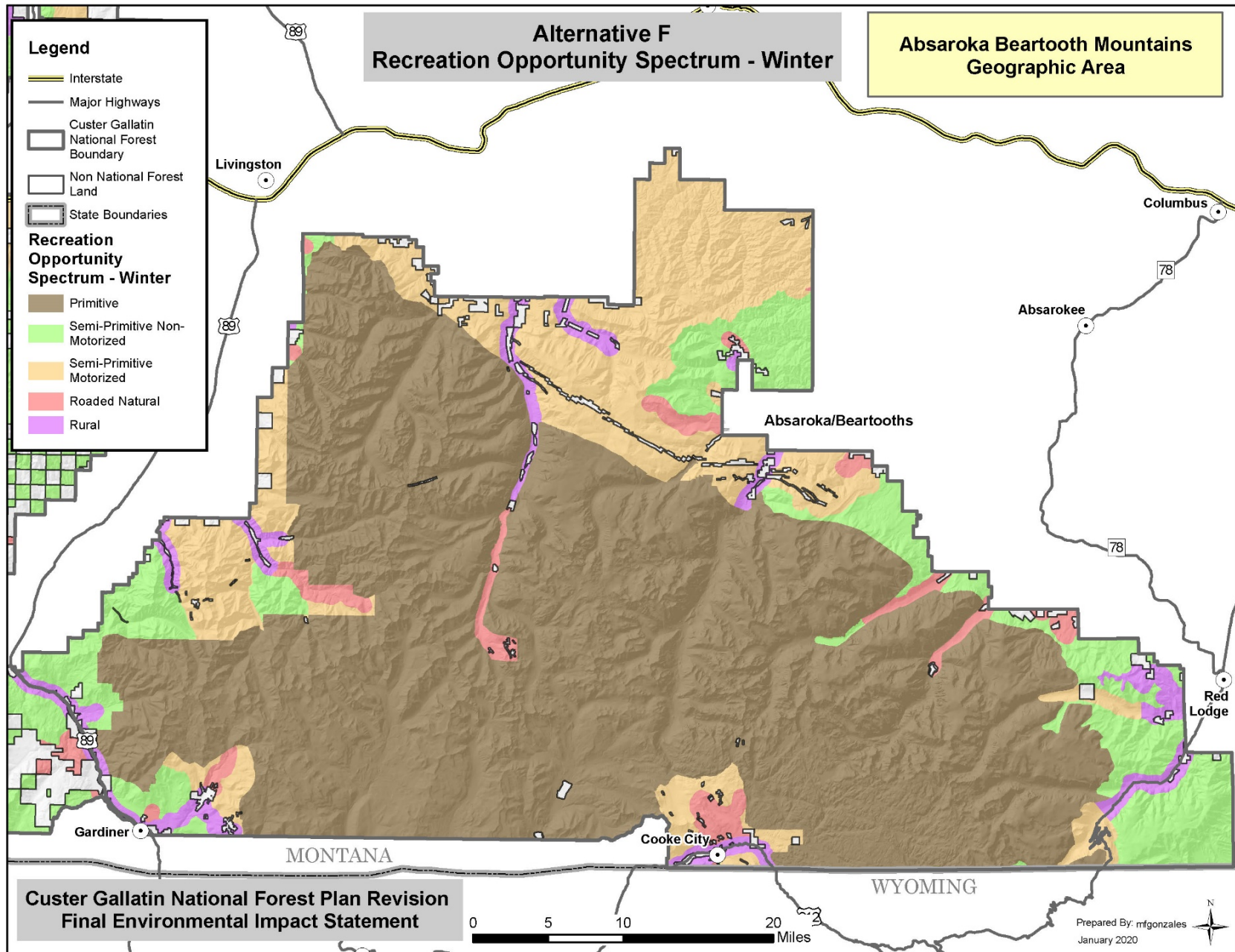




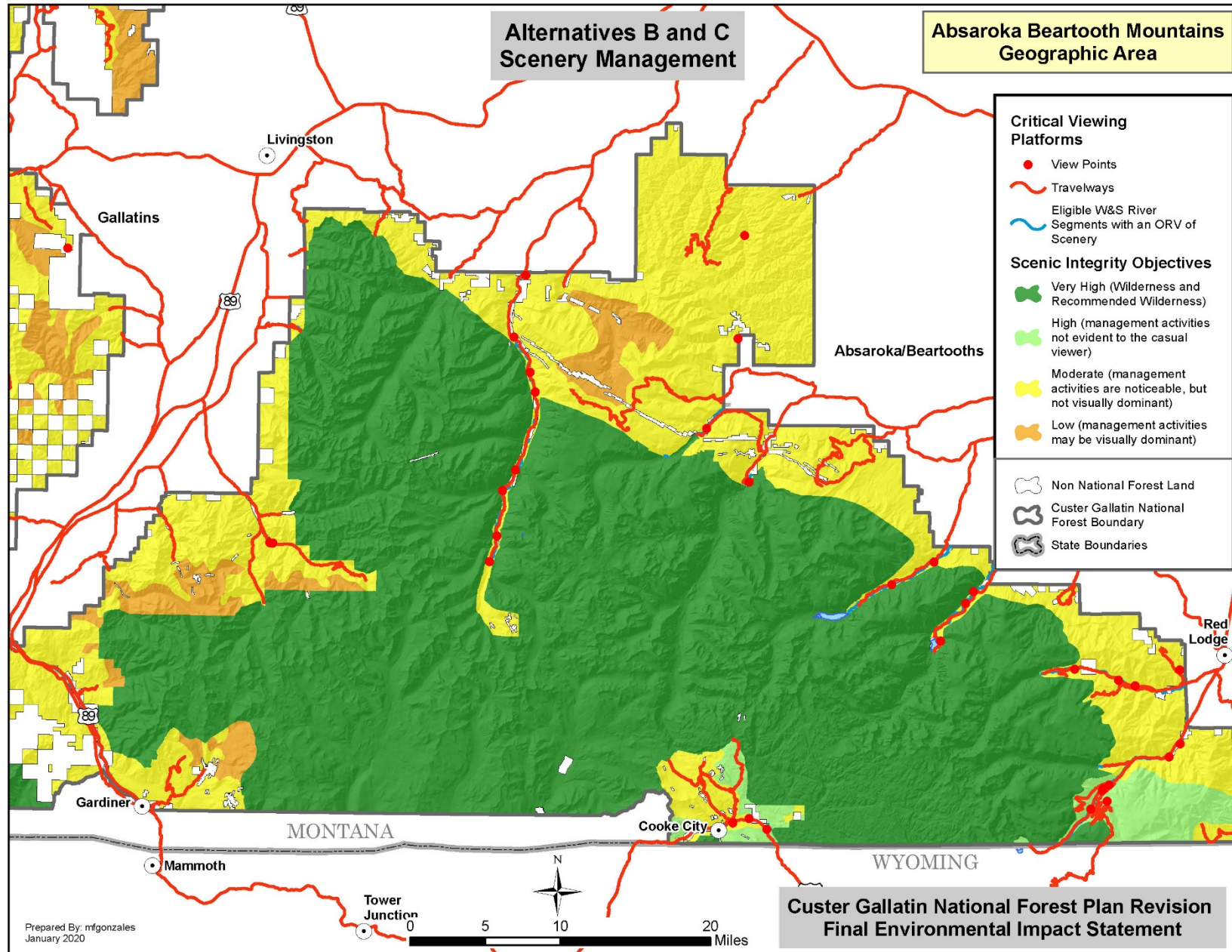


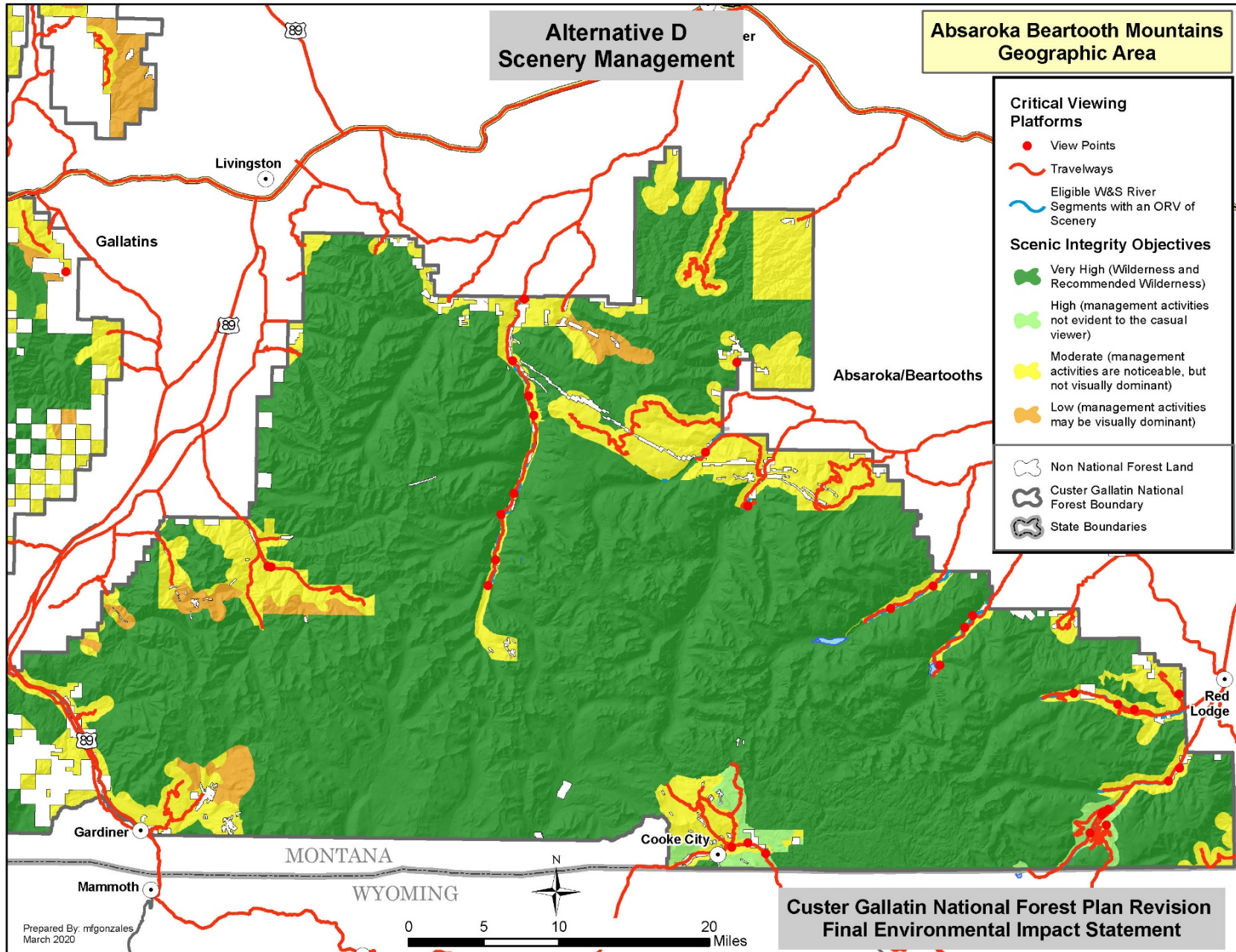


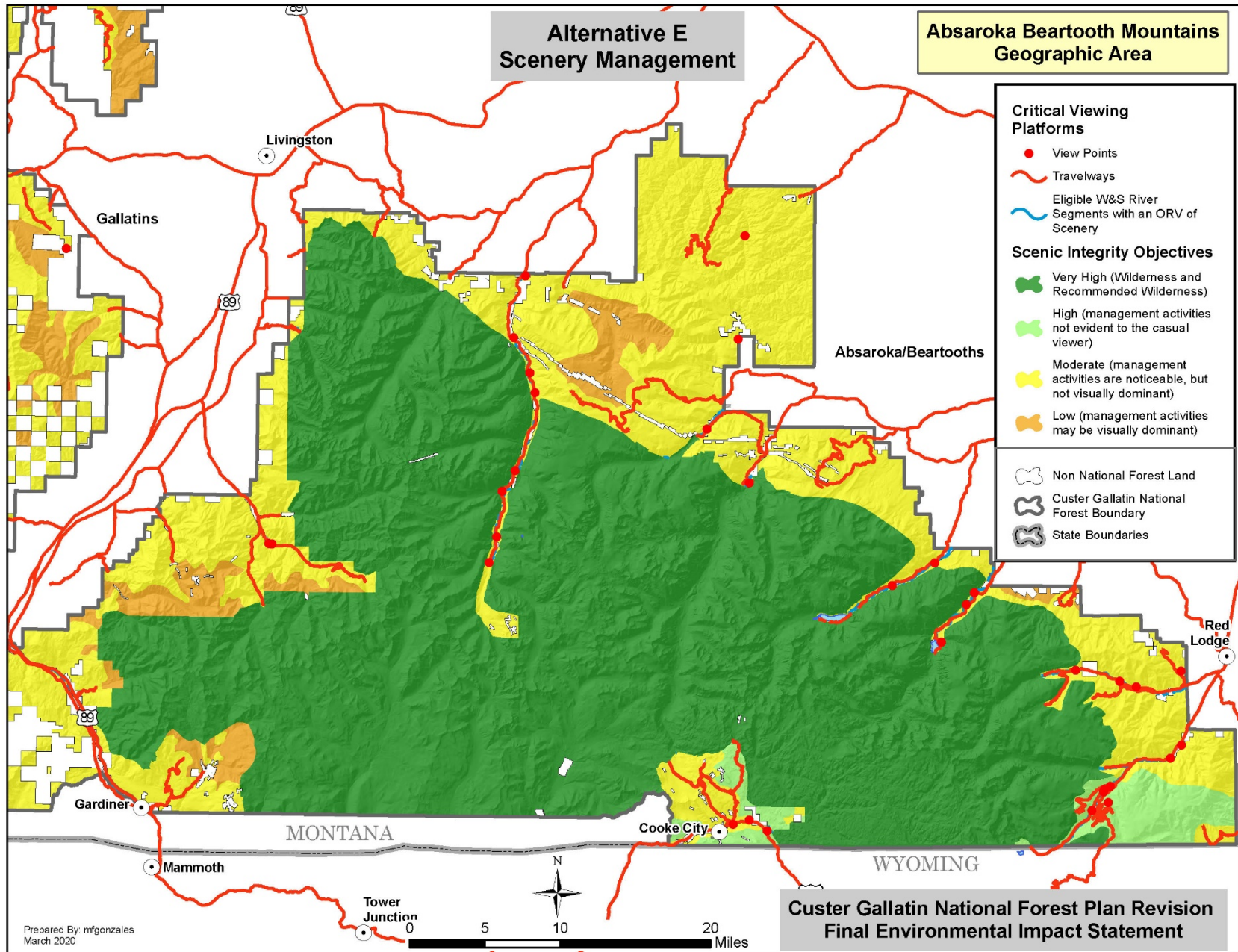


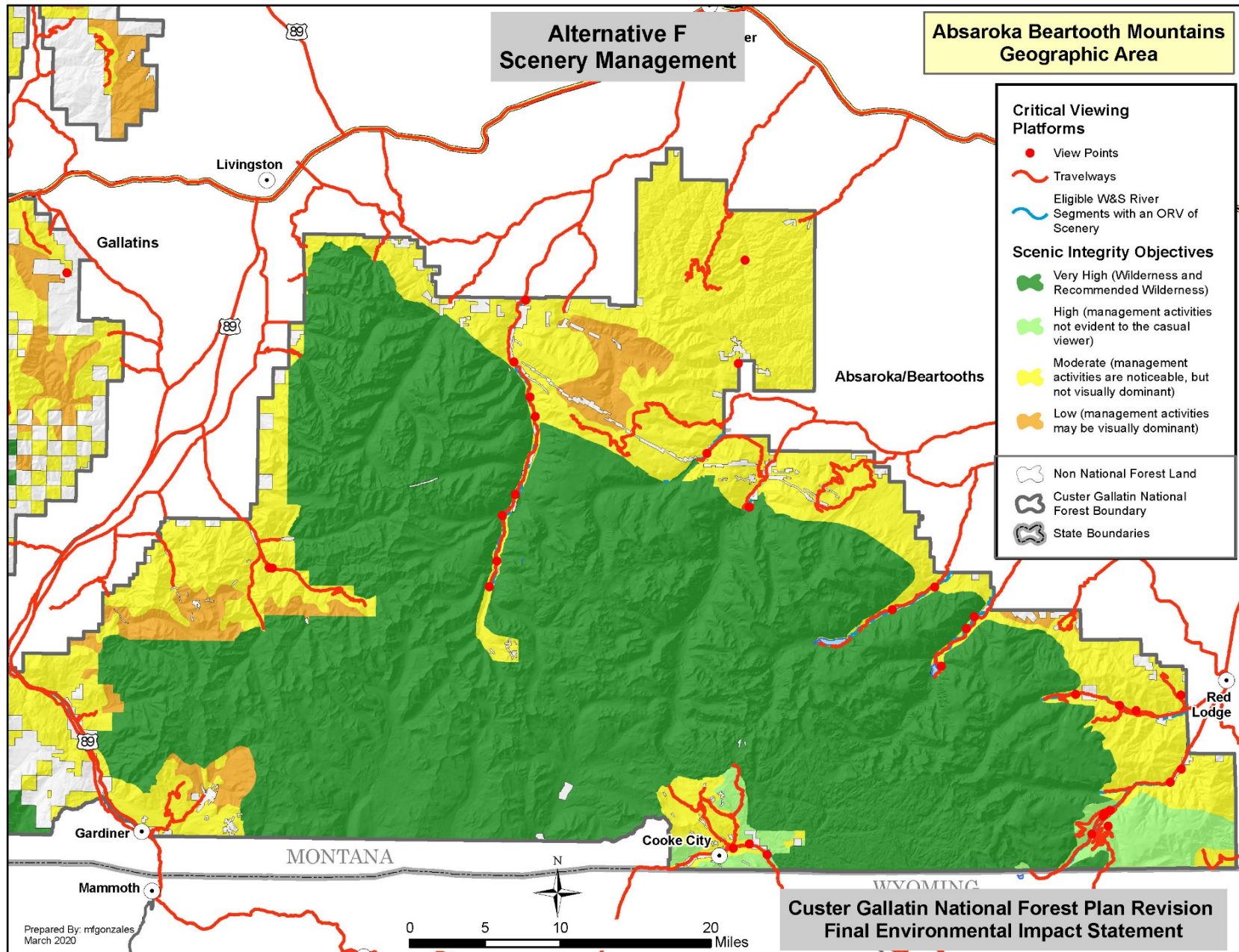


Scenery Management

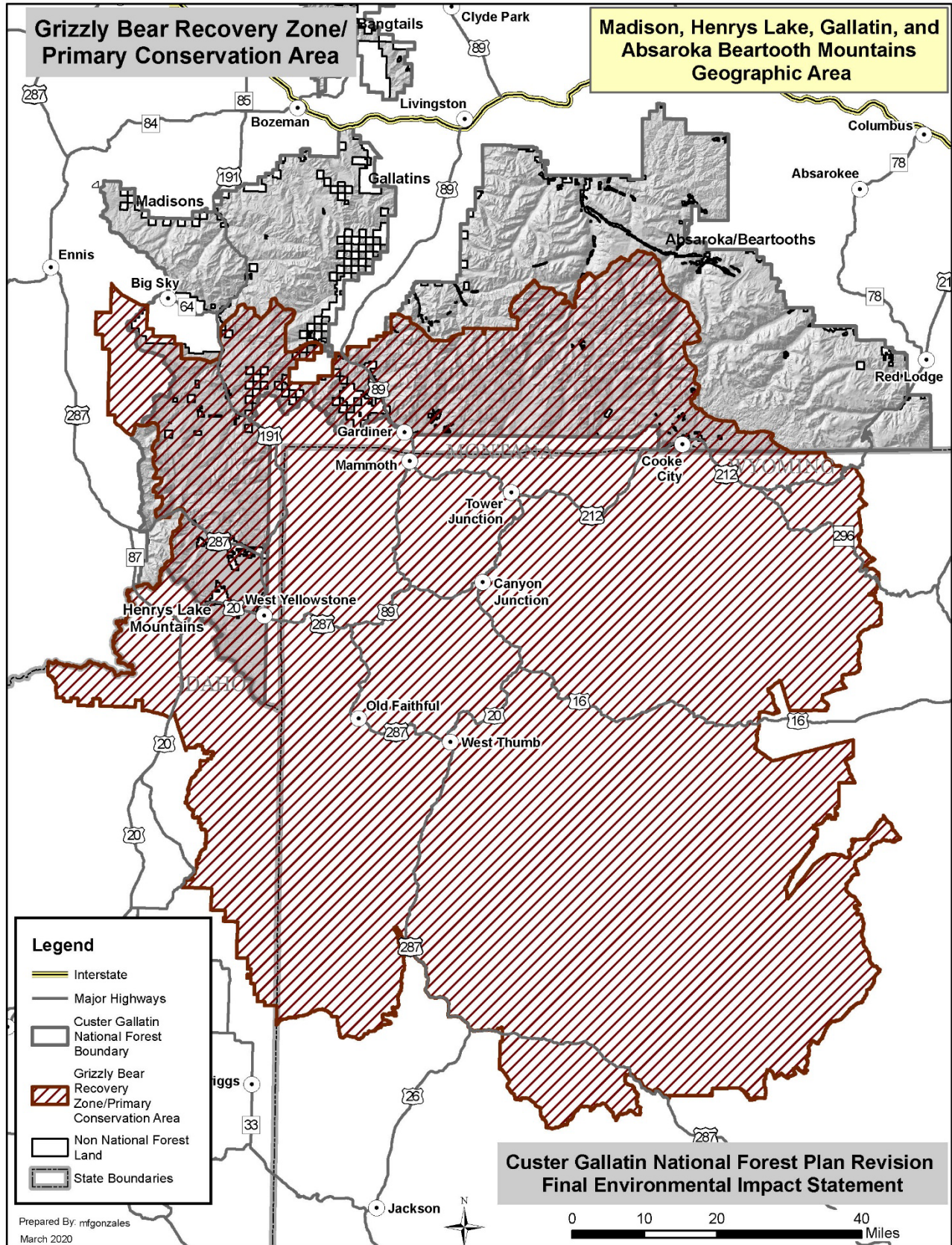




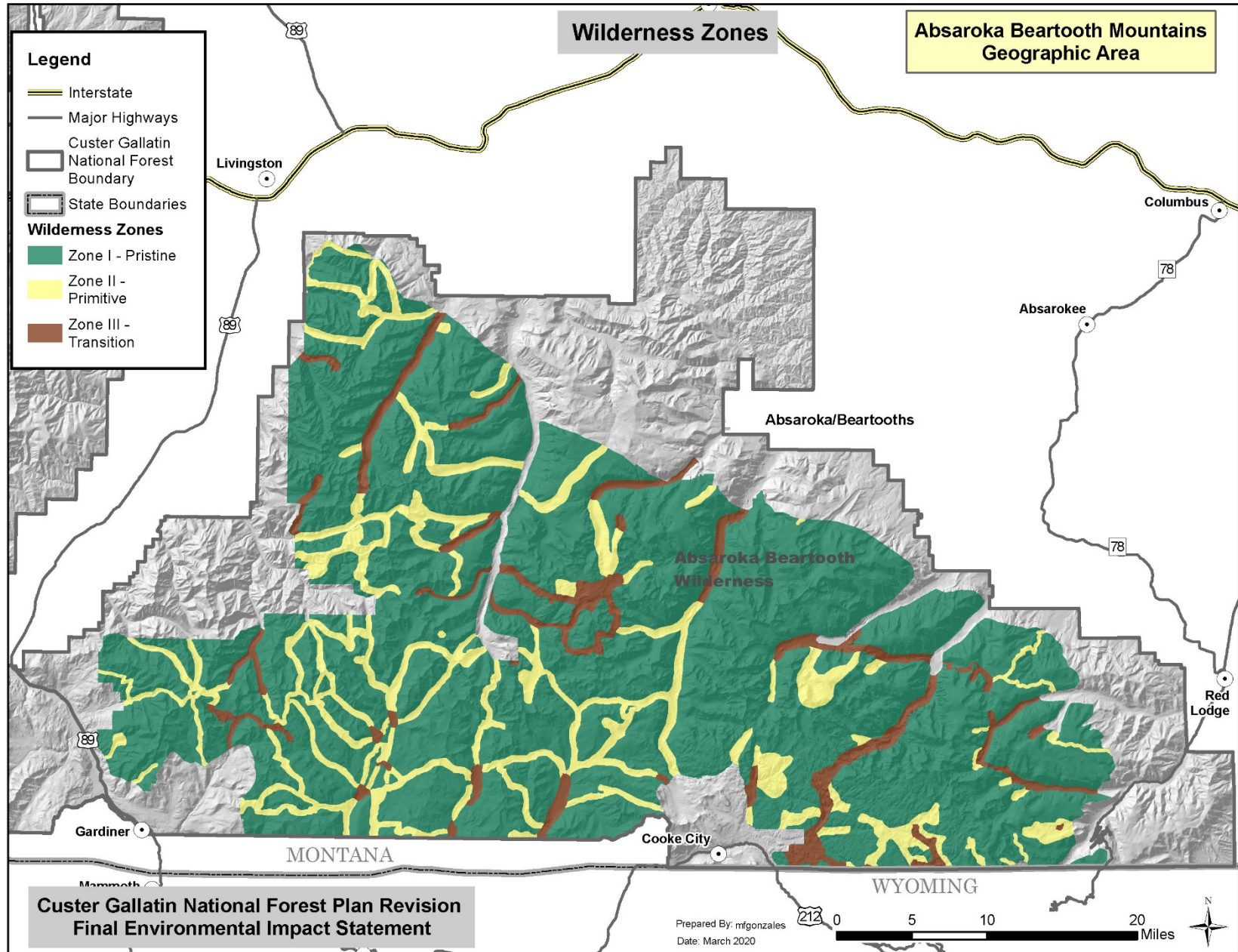




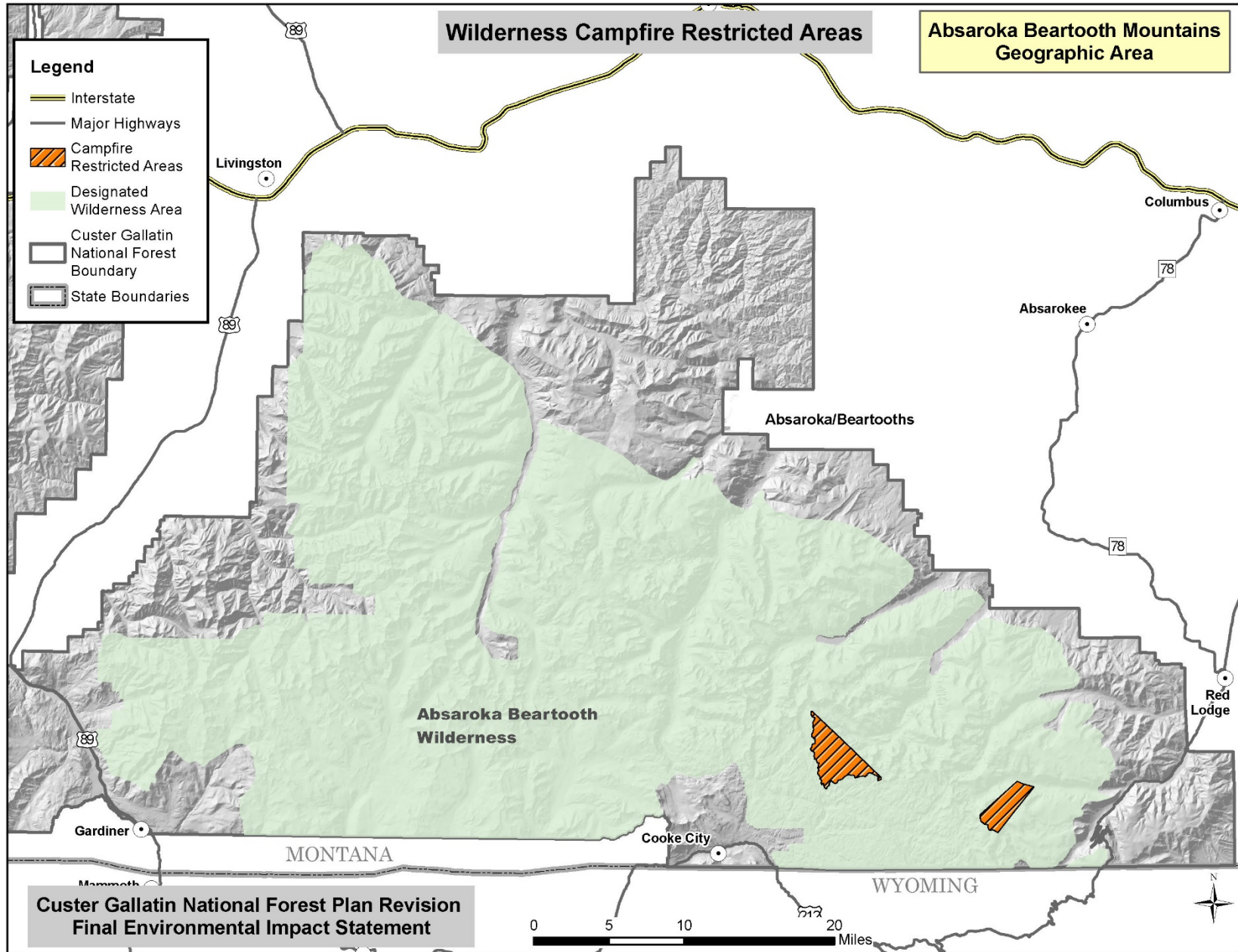
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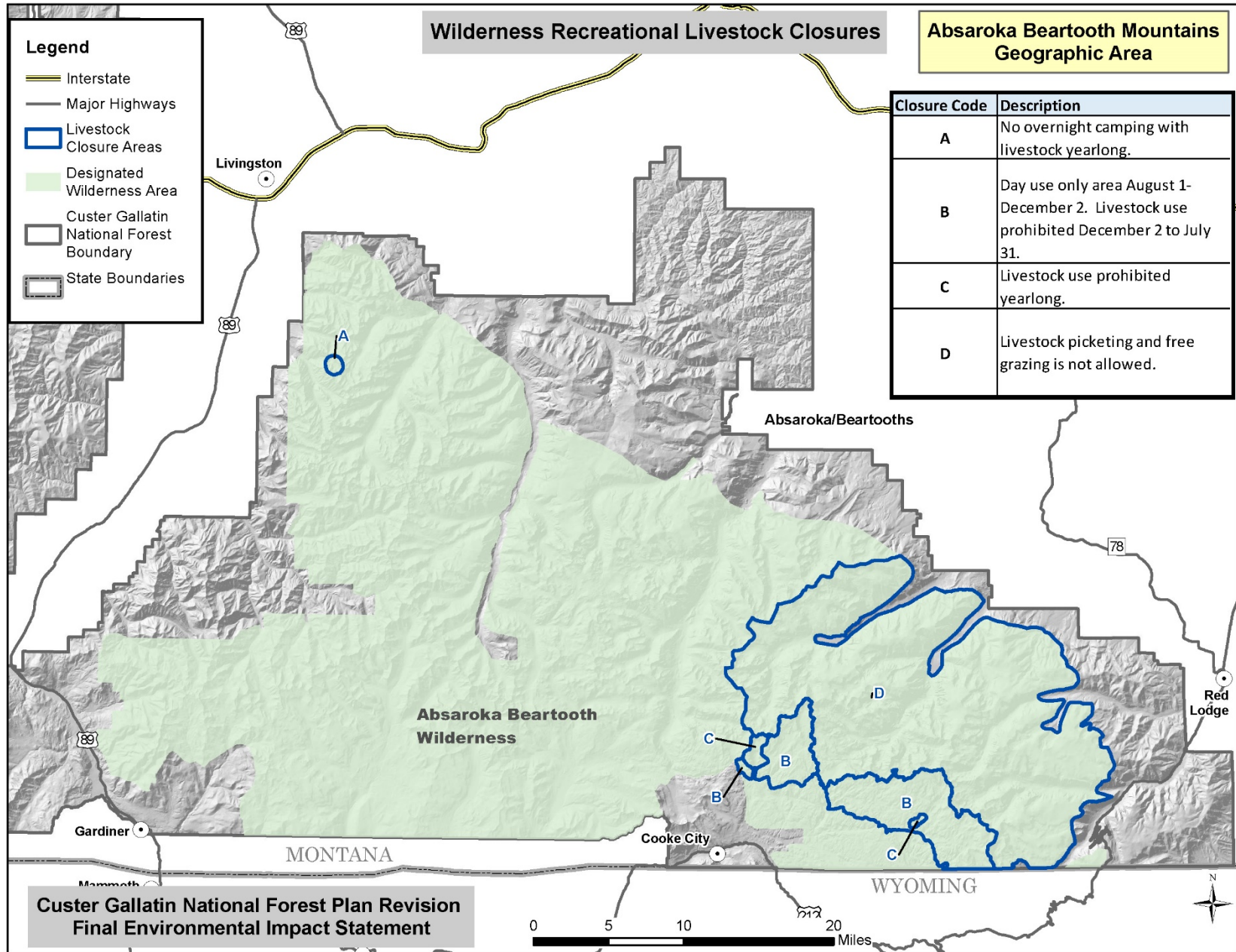
Wilderness Zones



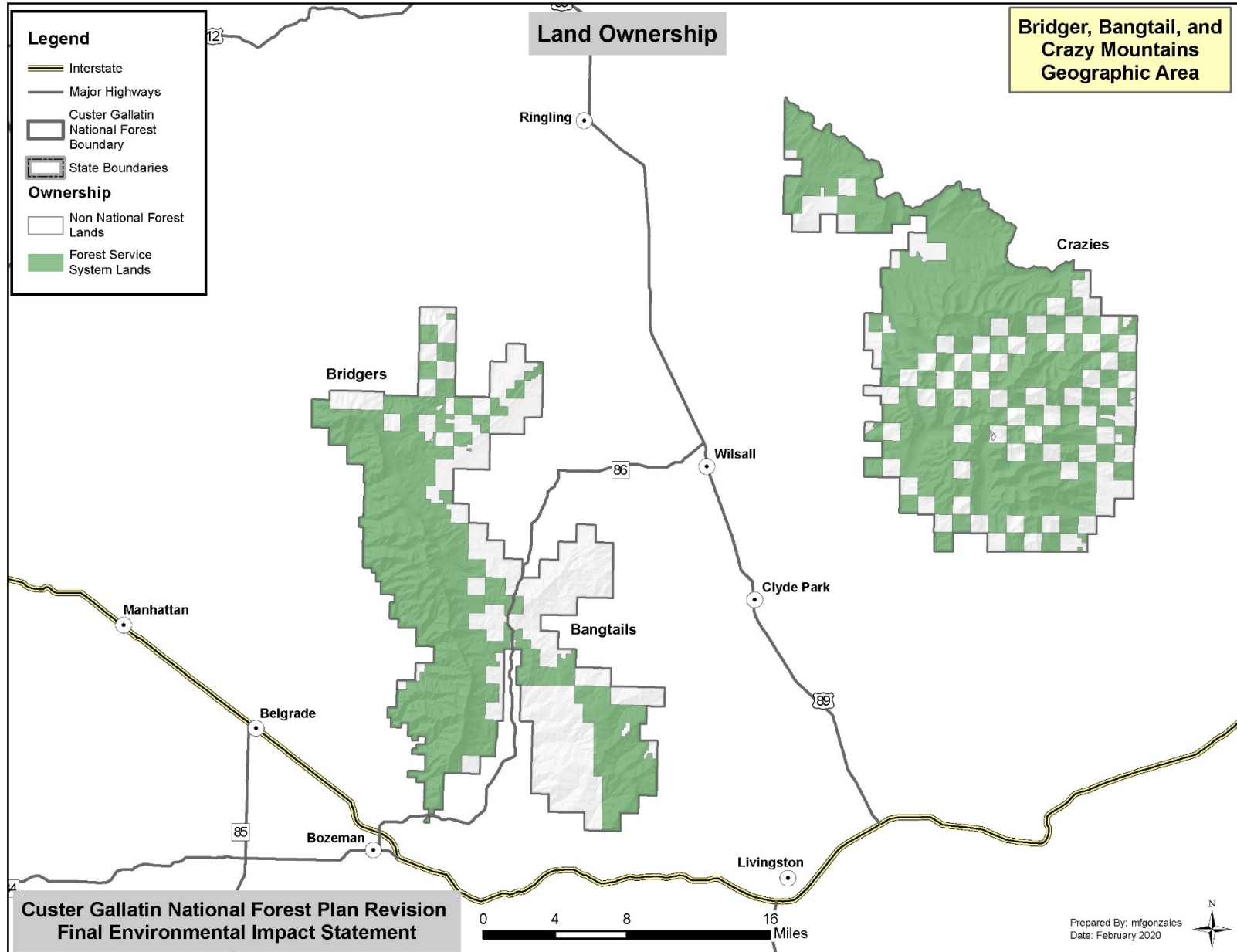
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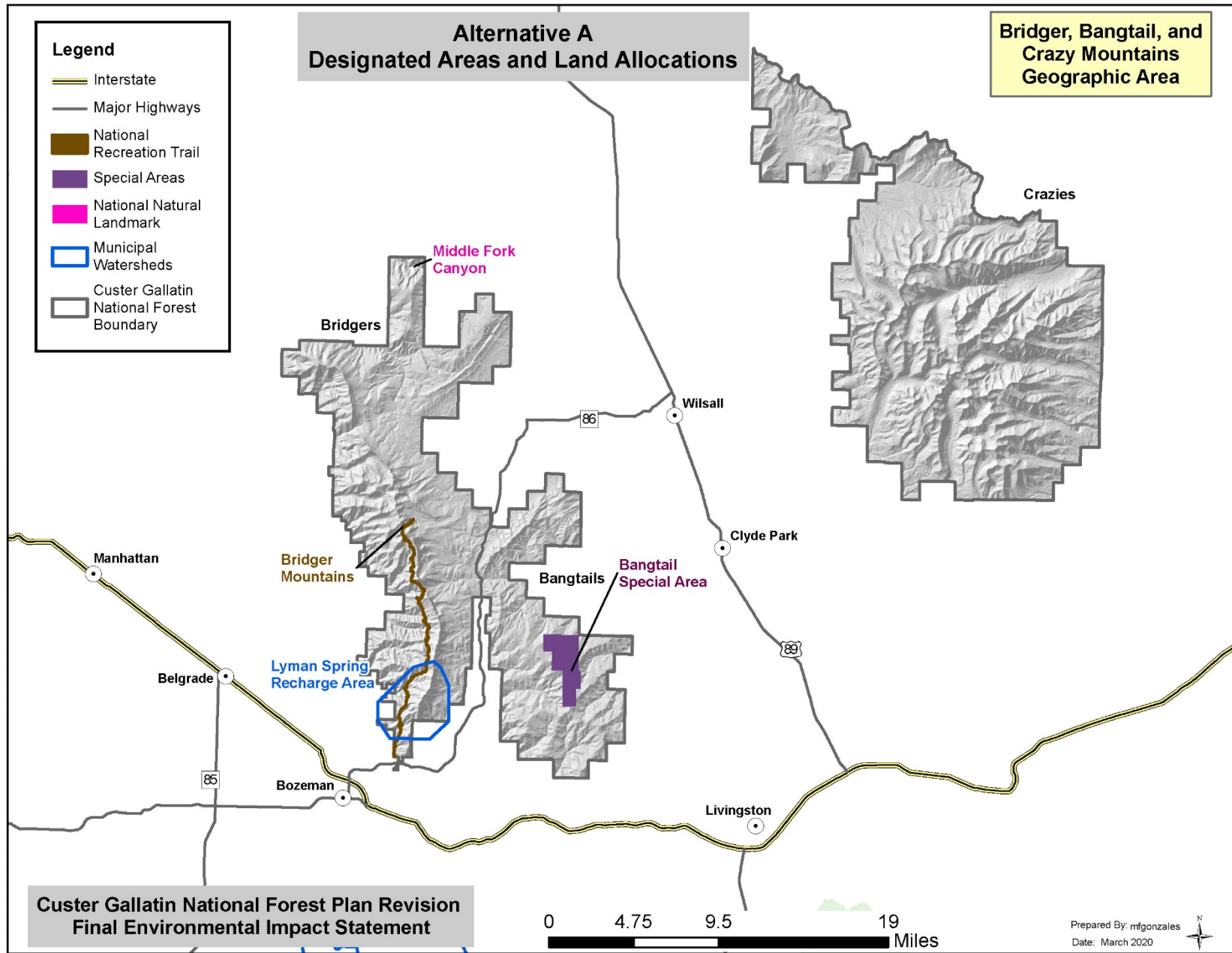
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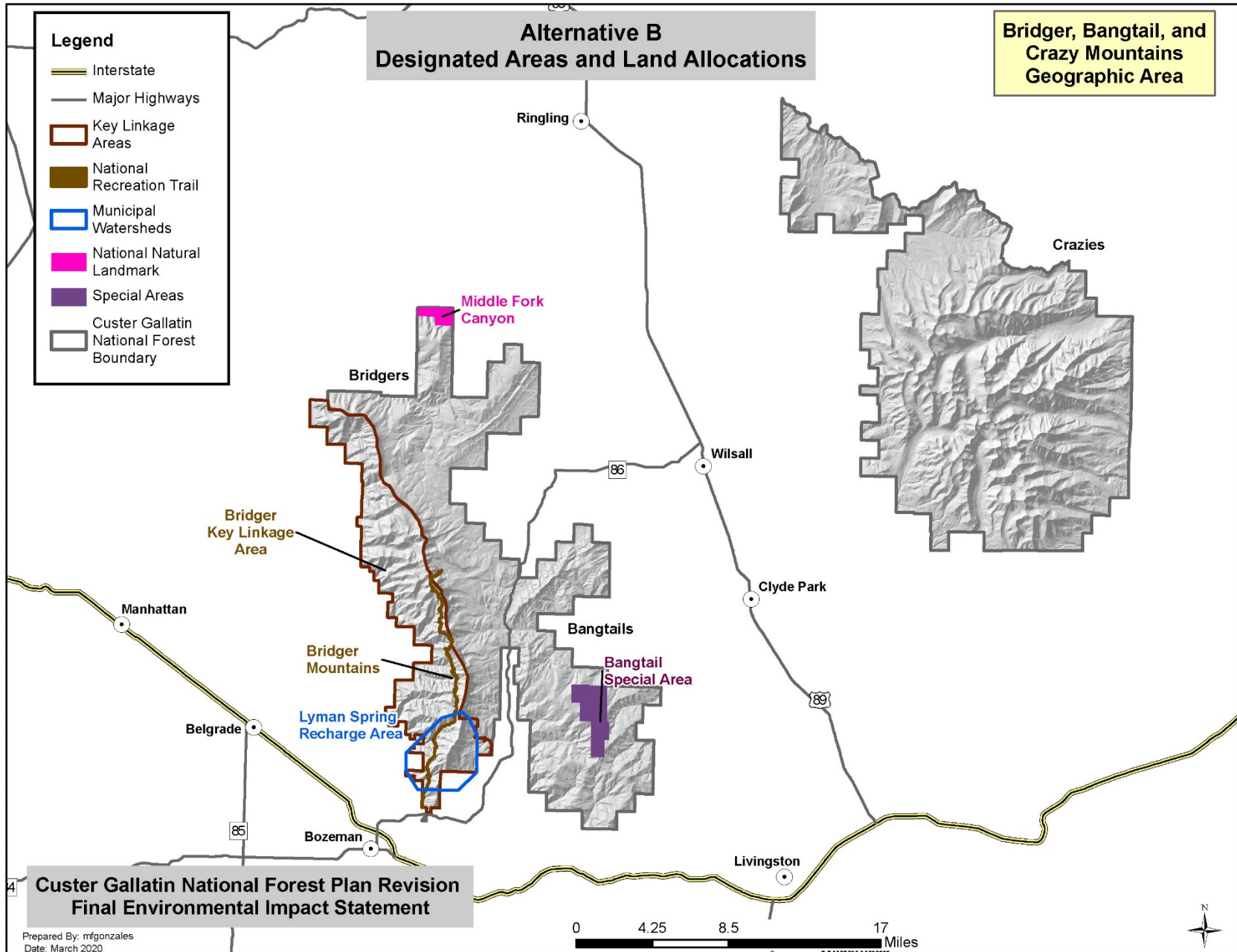


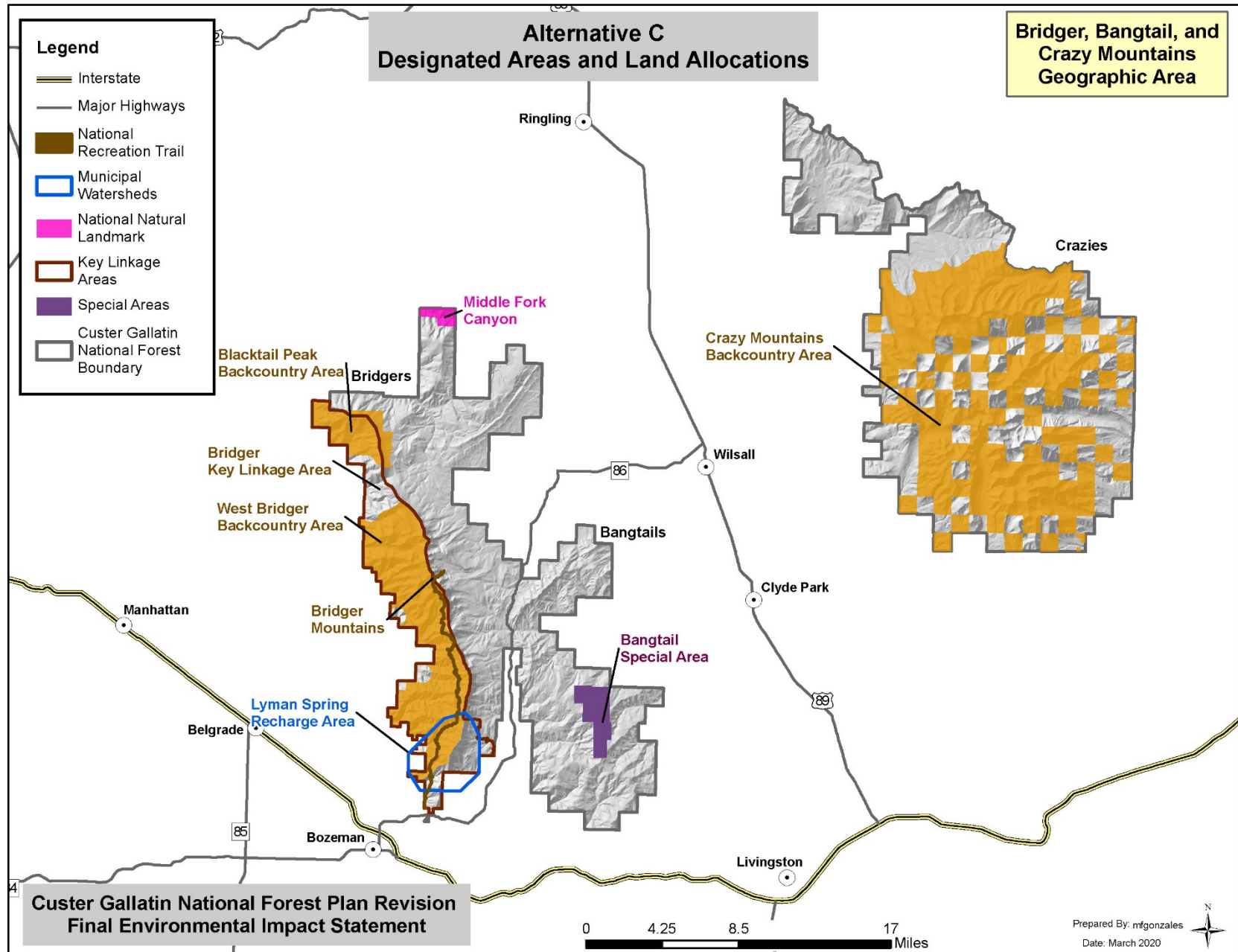
Geographic Area Maps – Bridger, Bangtail, and Crazy Mountains Geographic Area Land Ownership

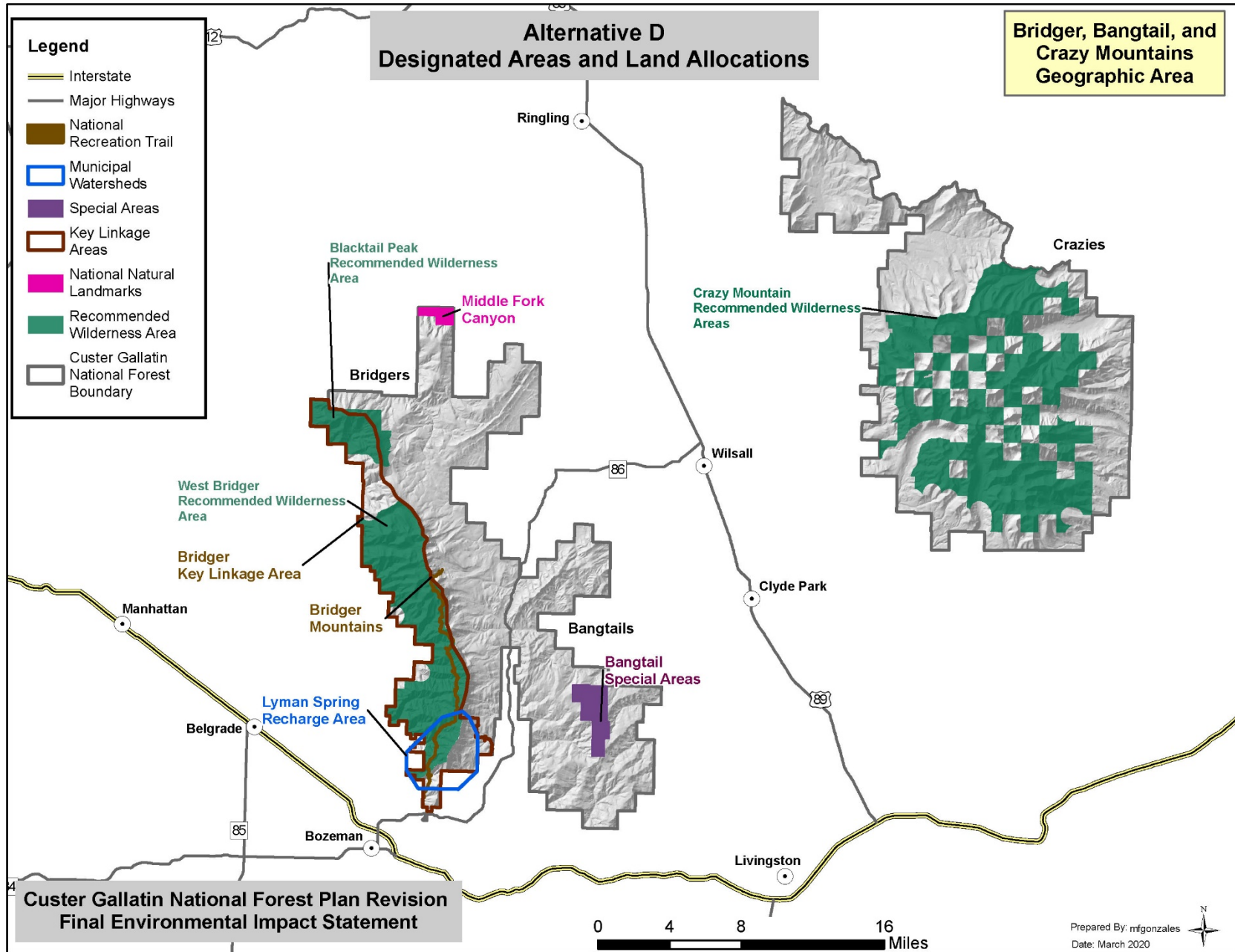


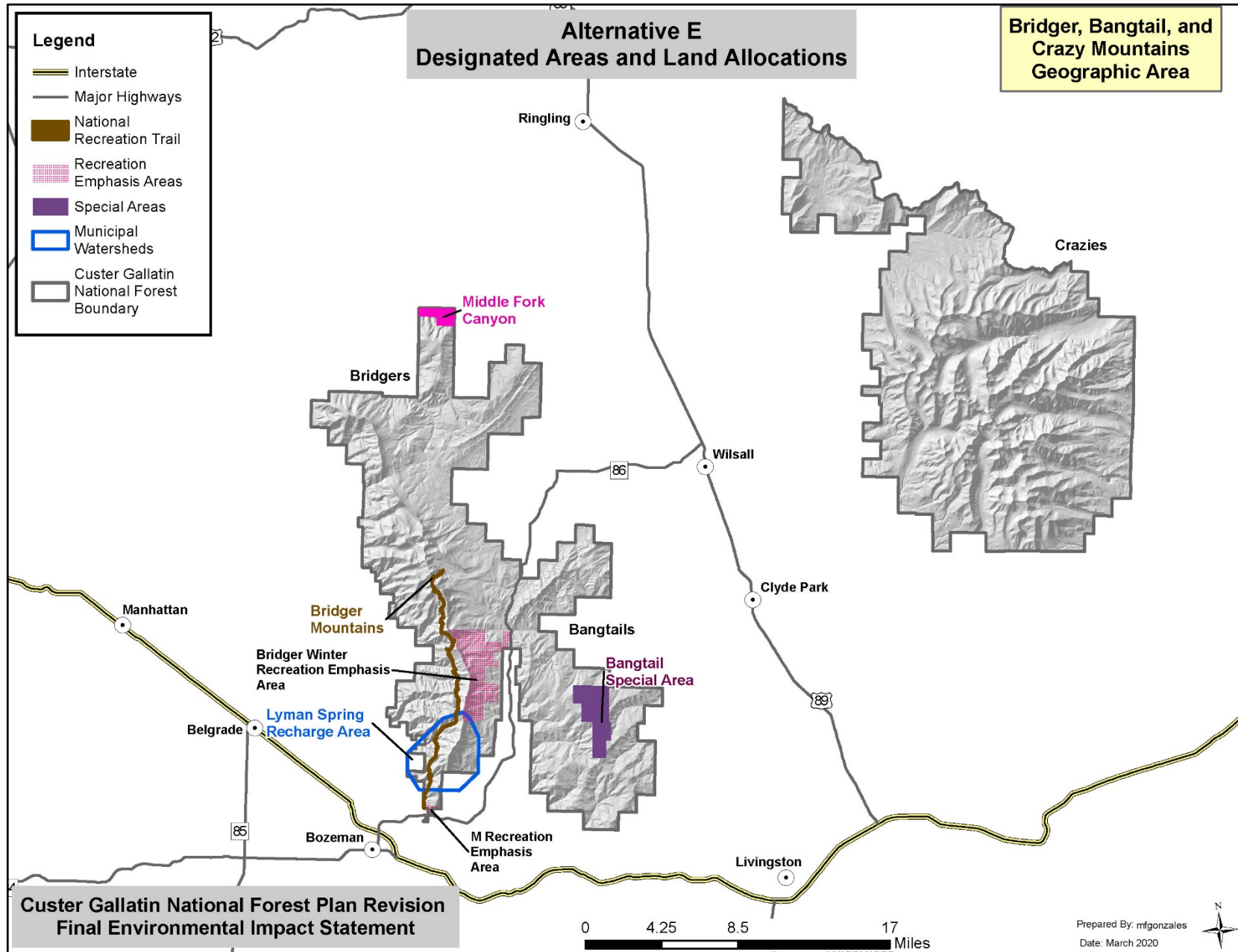
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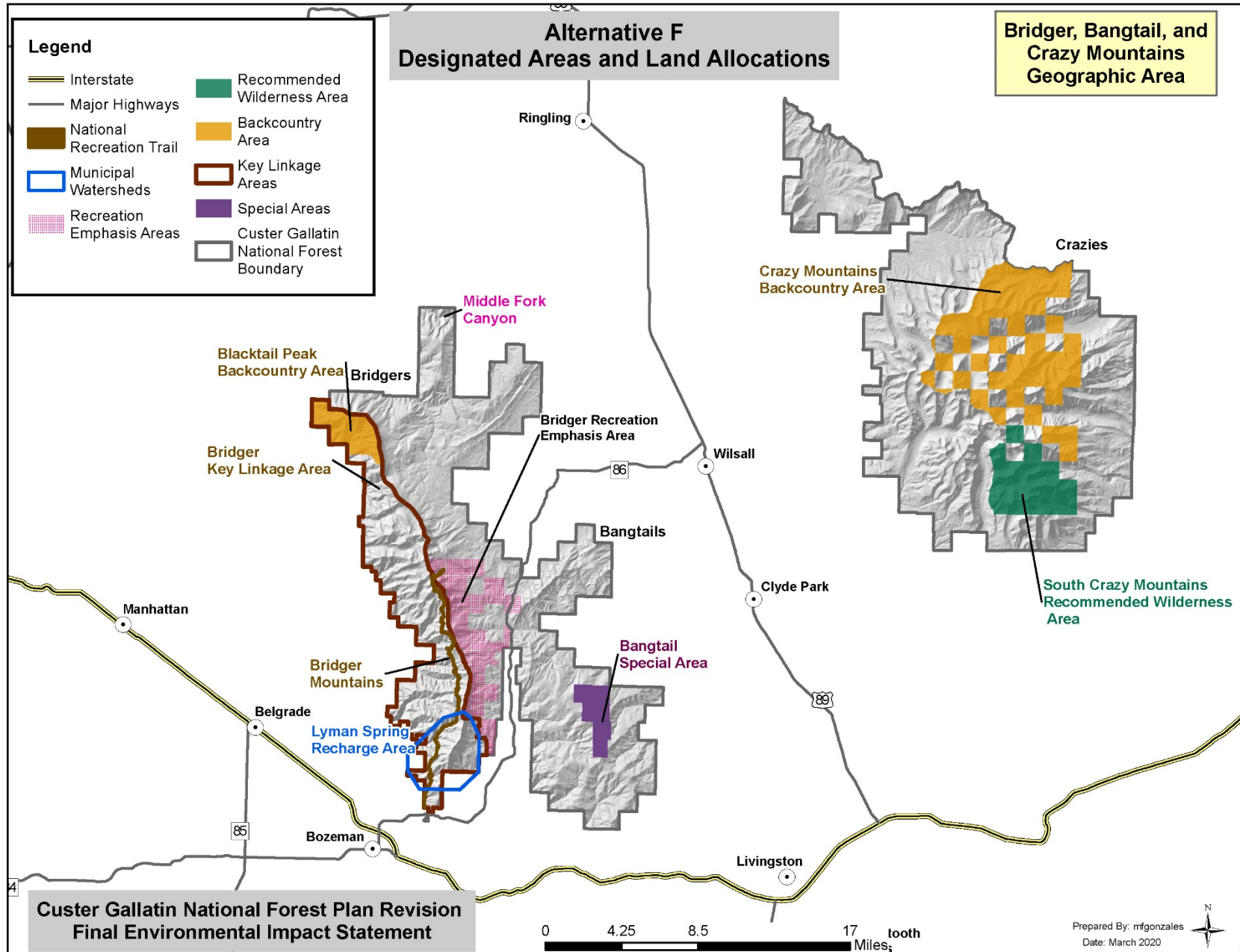




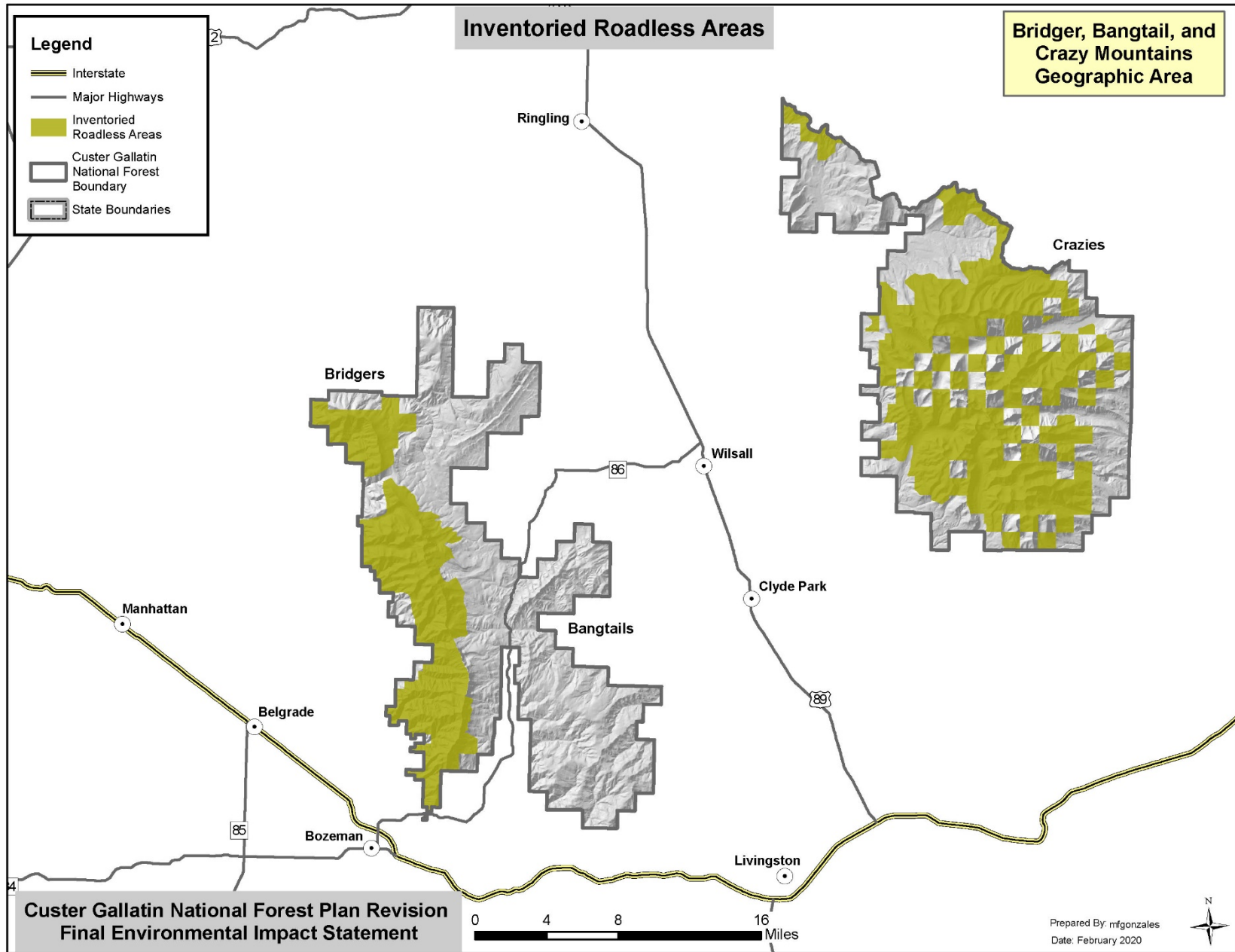




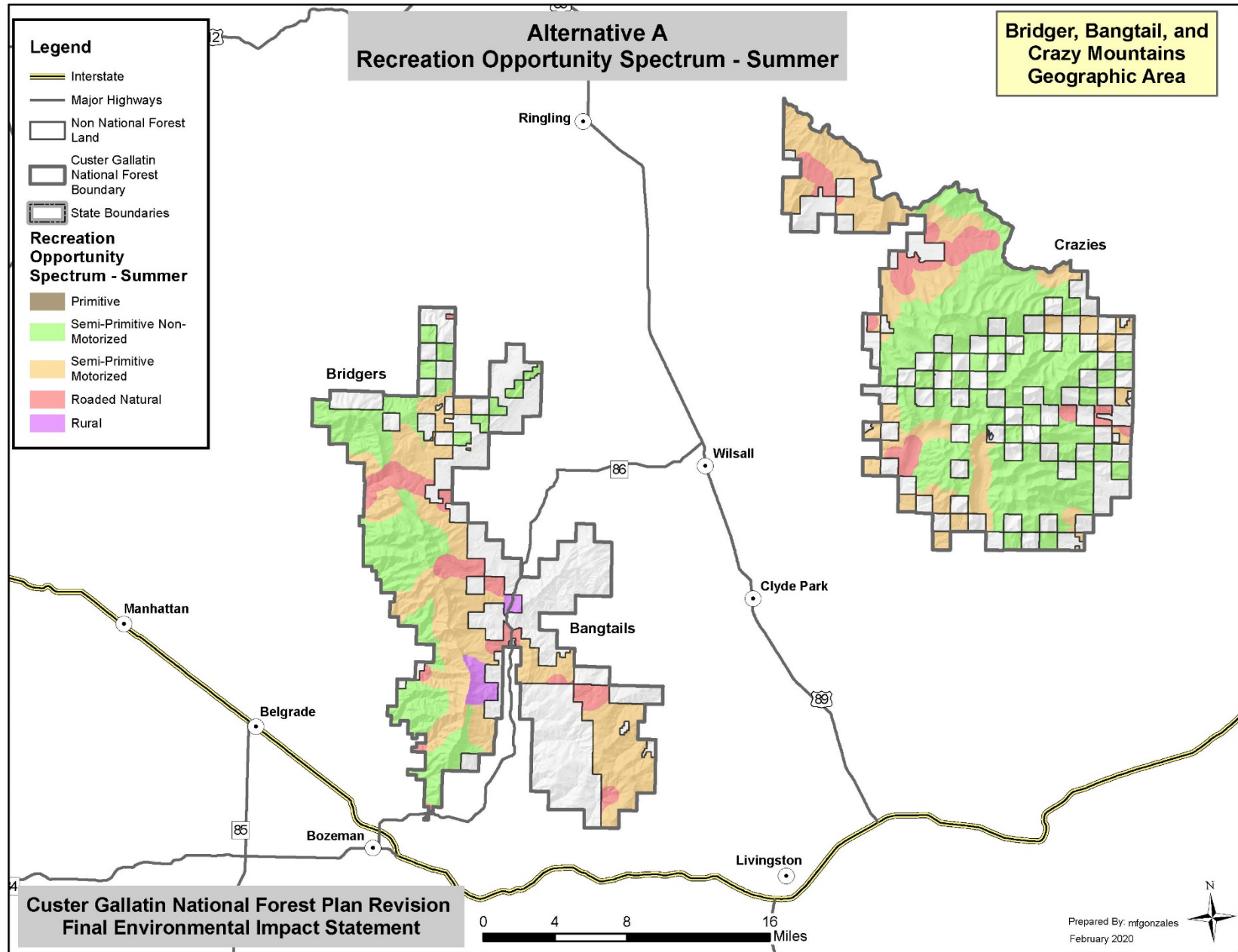


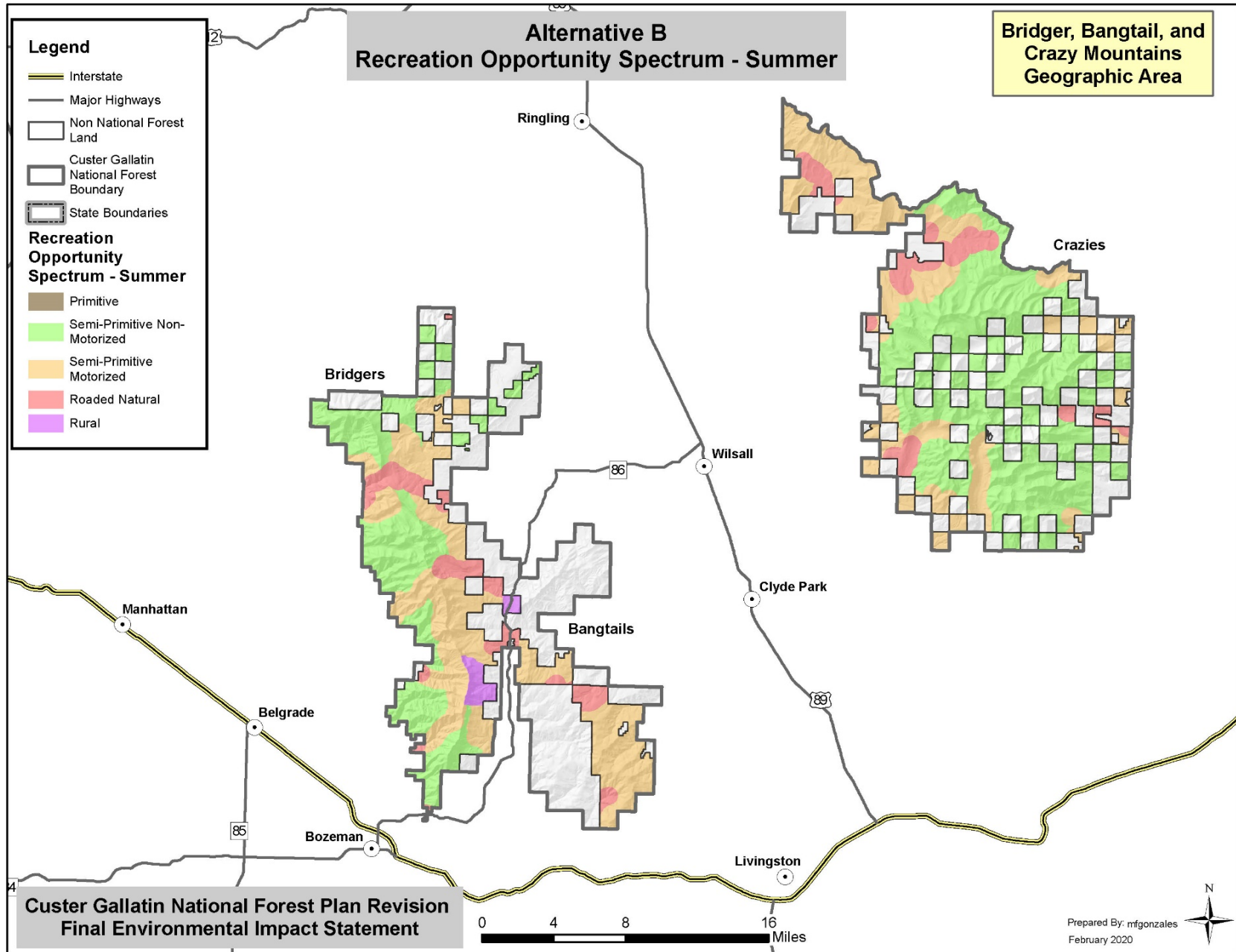


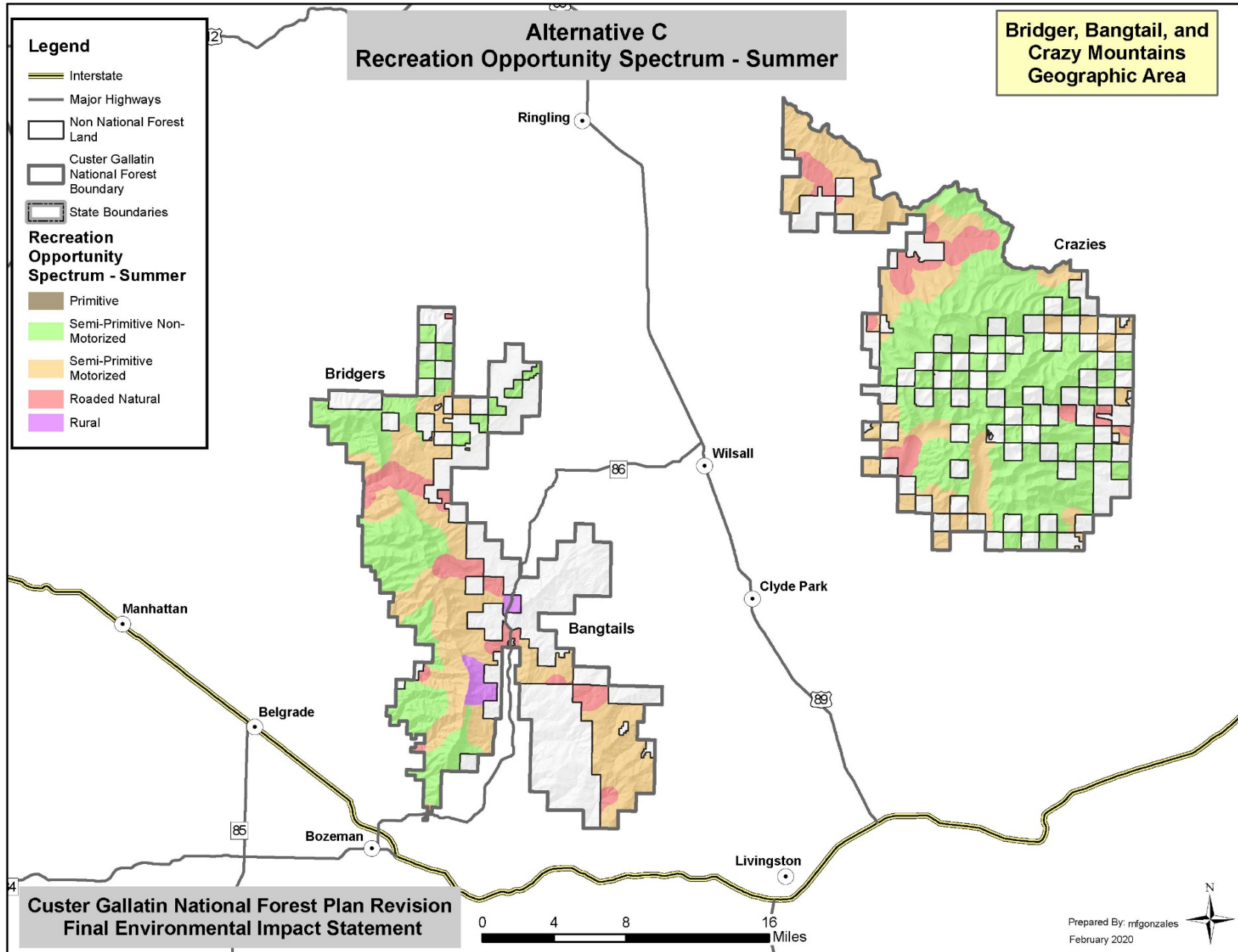
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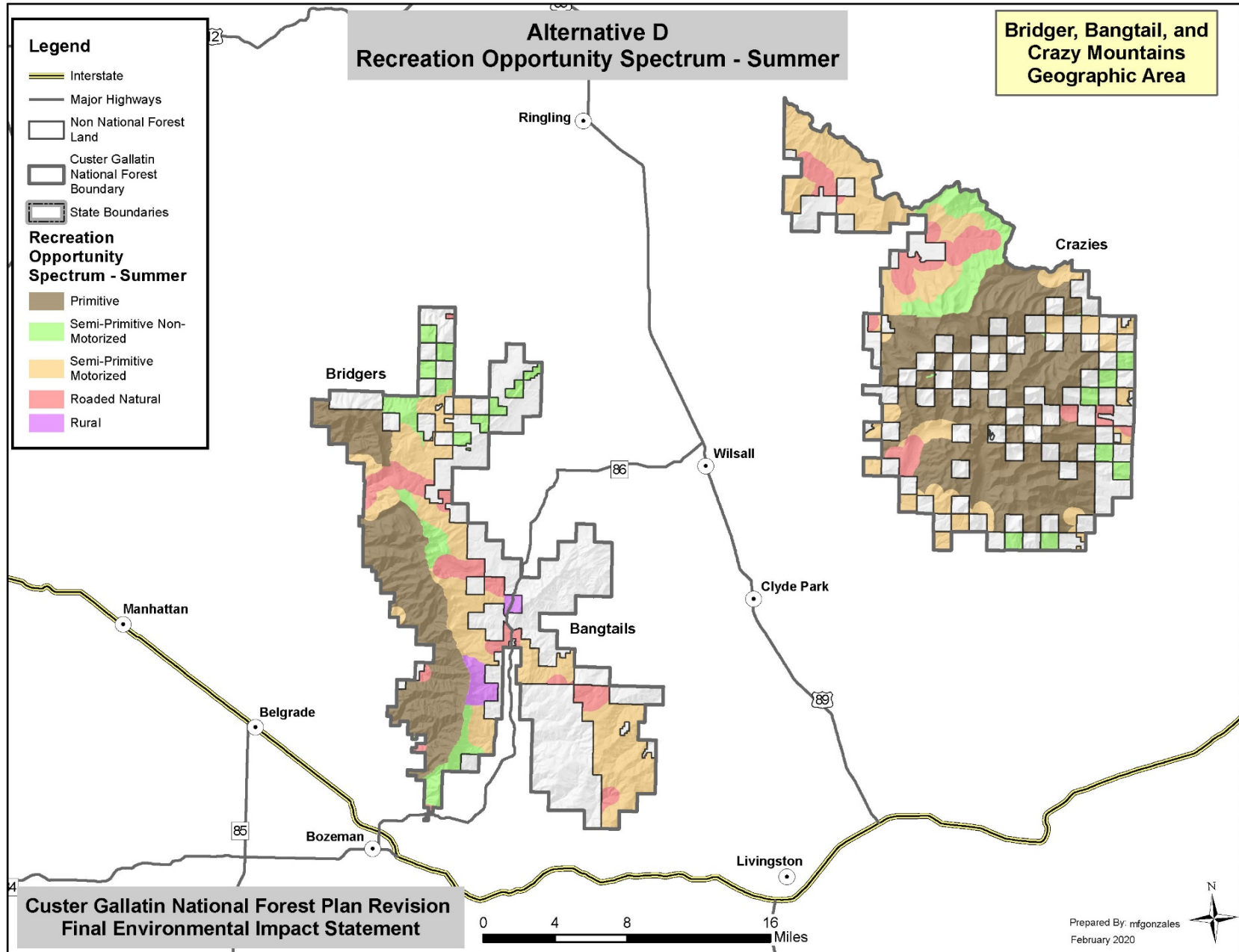


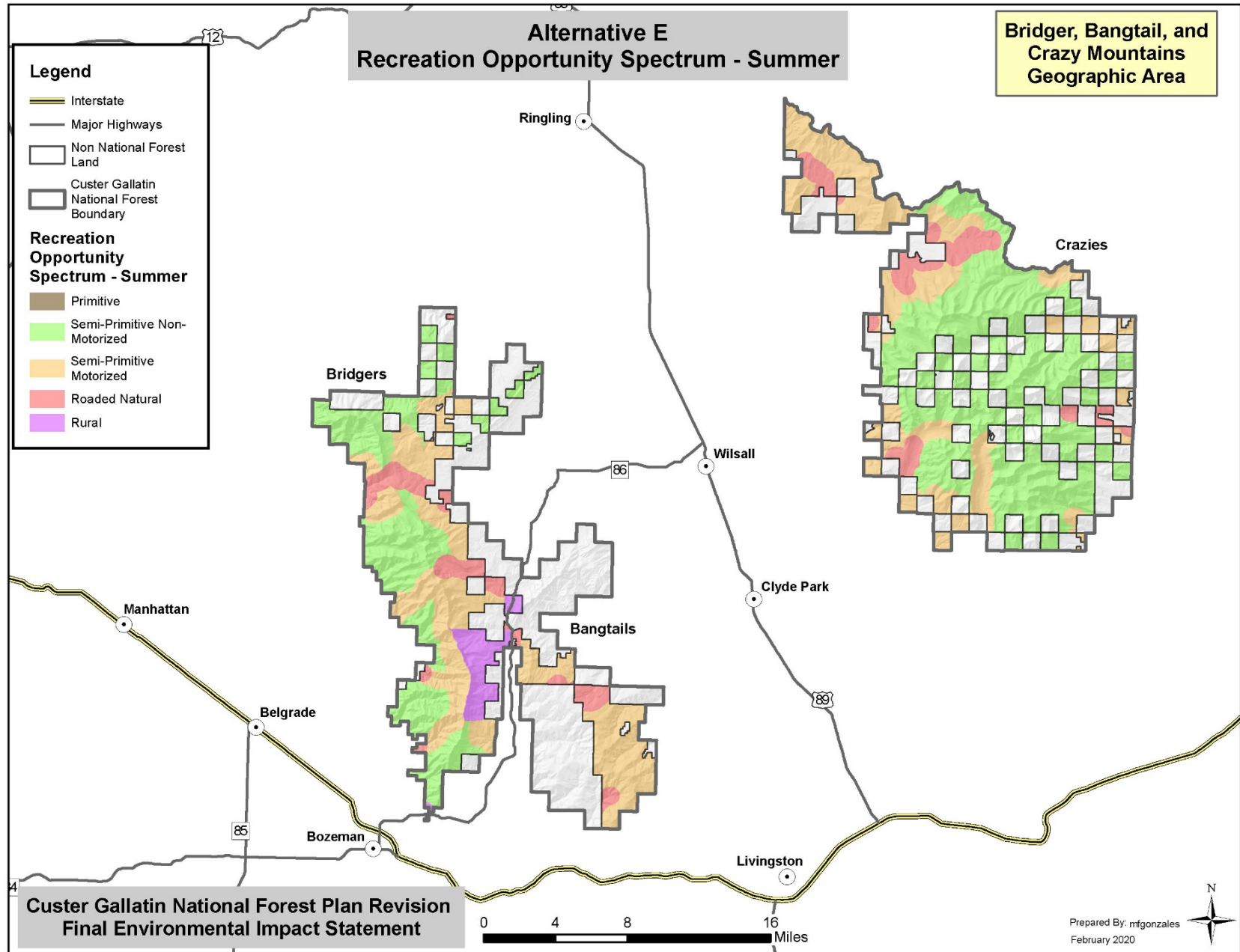
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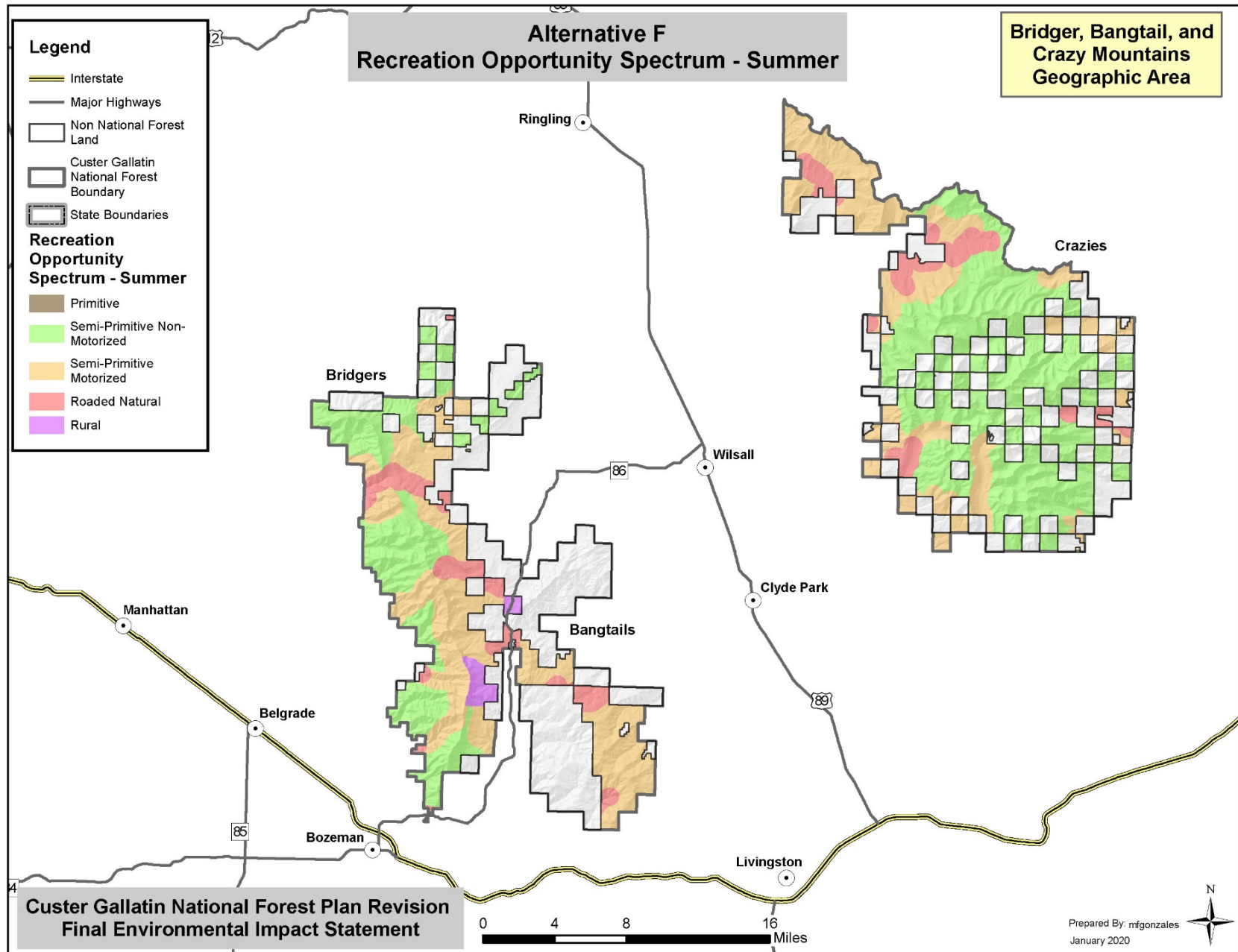




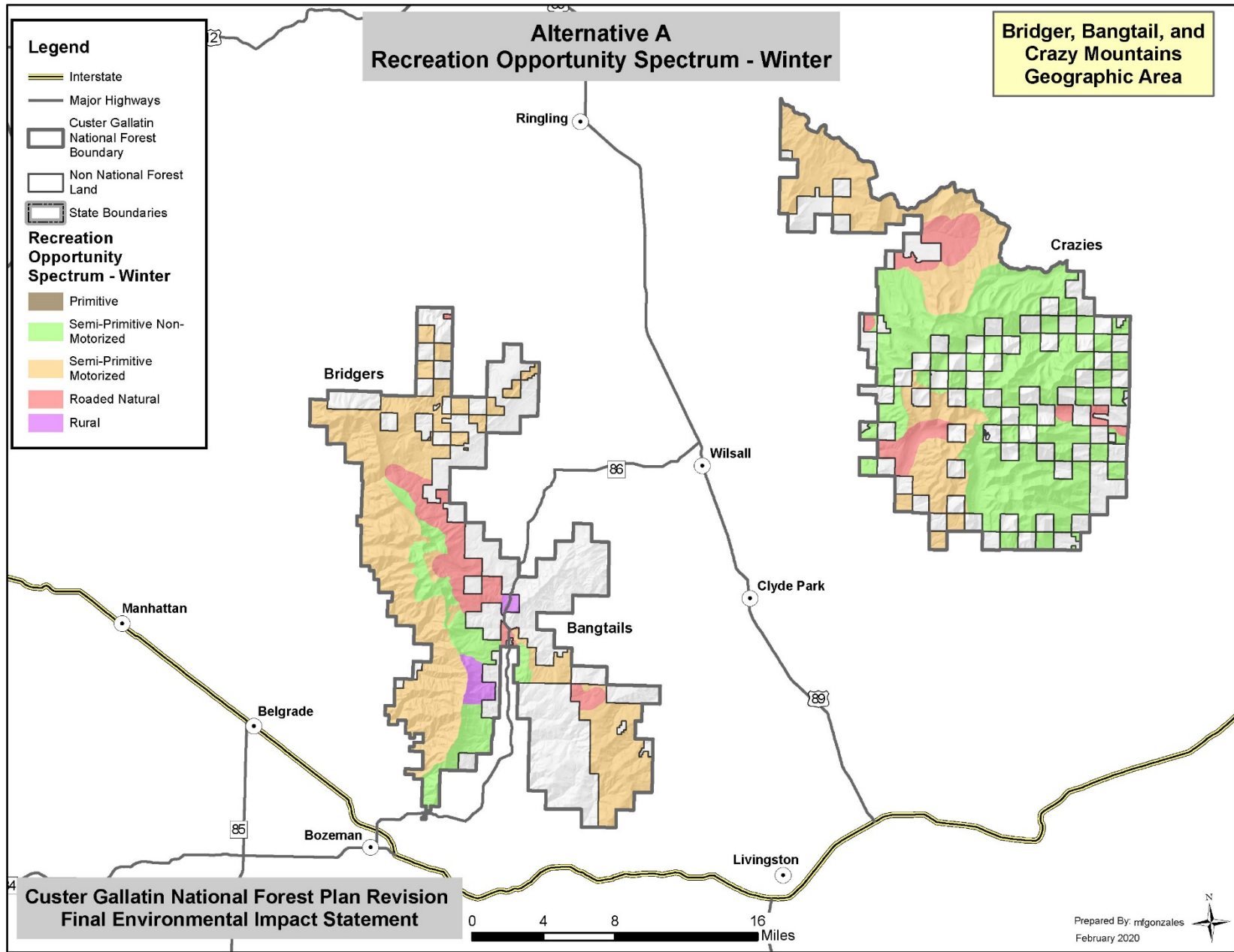


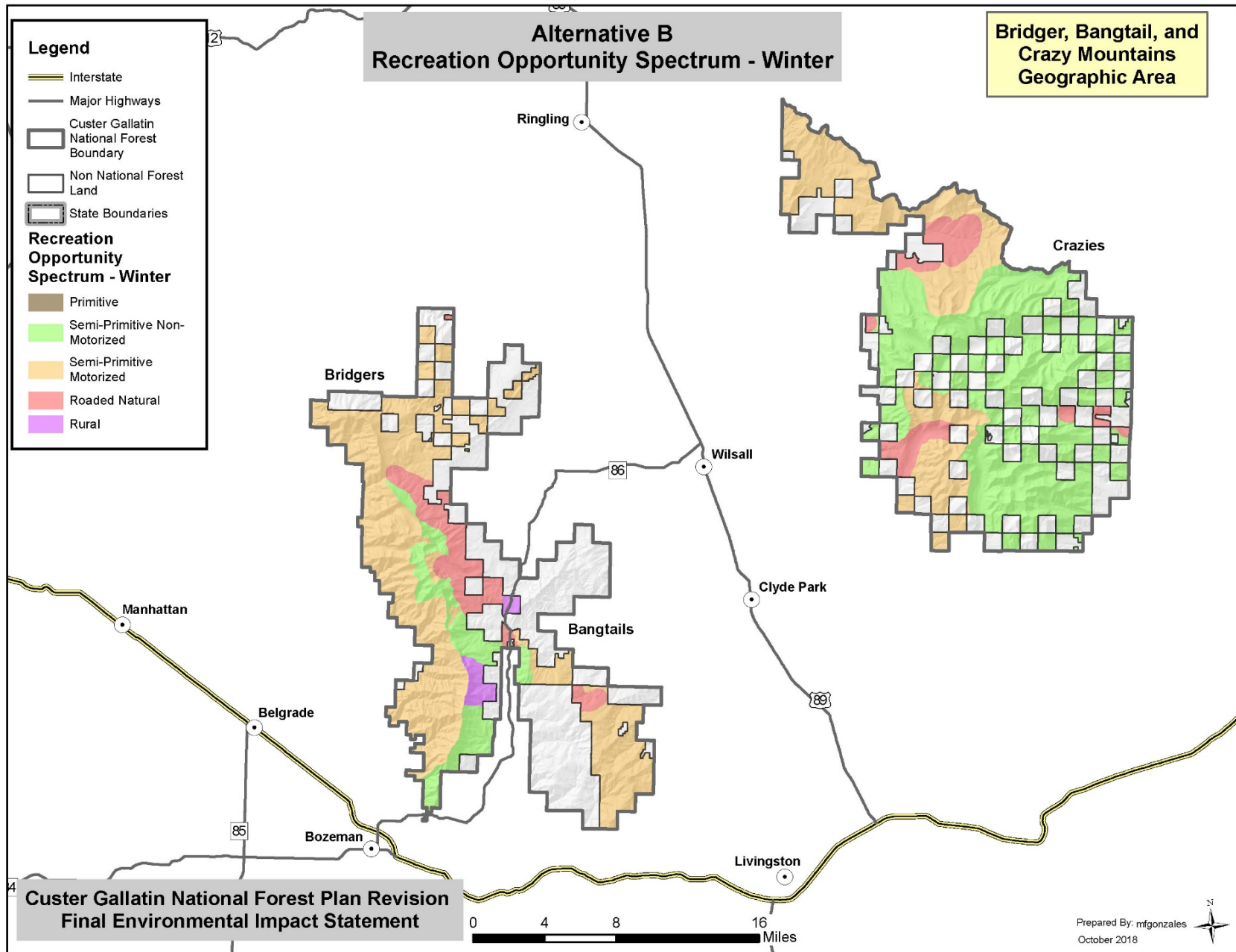


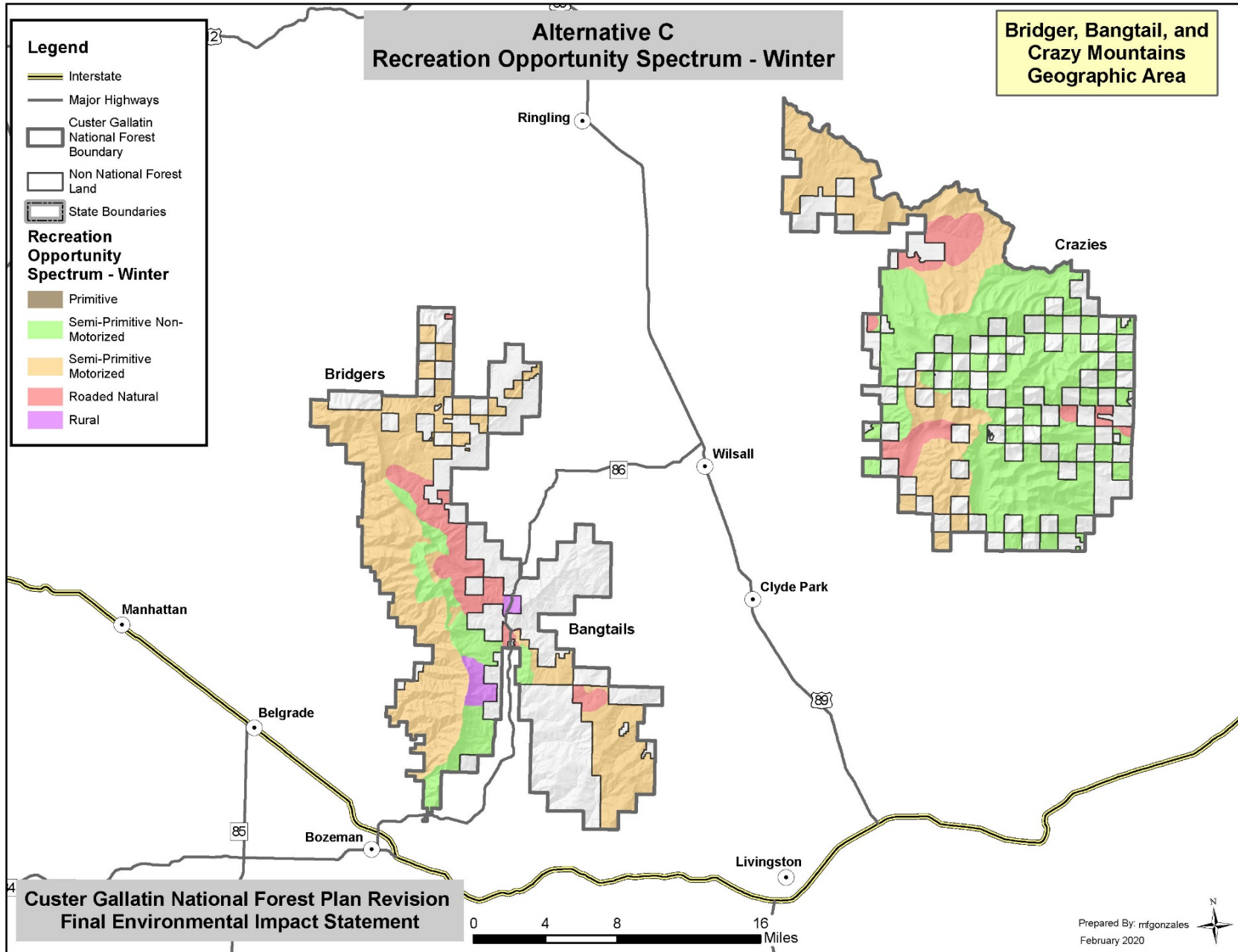


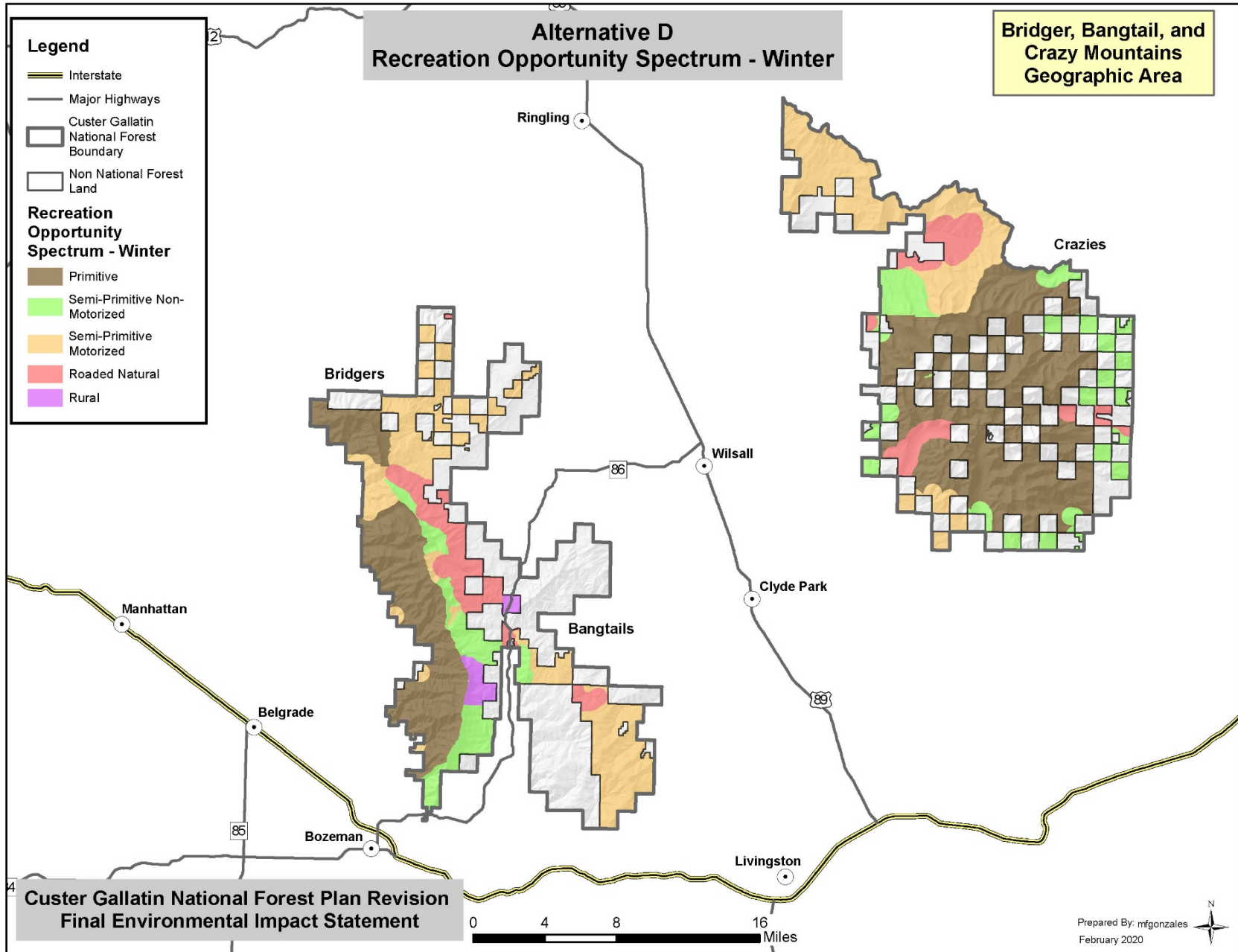


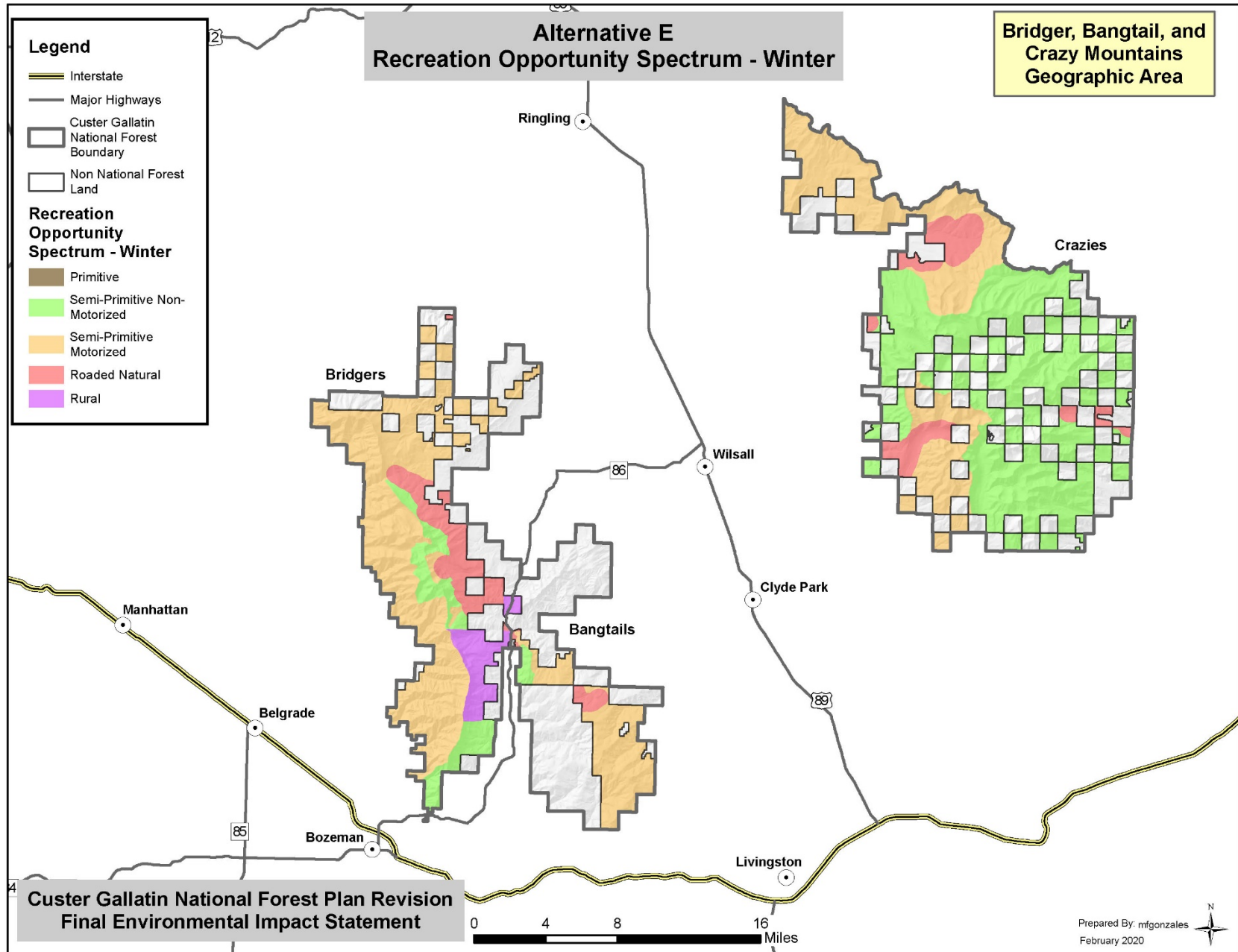
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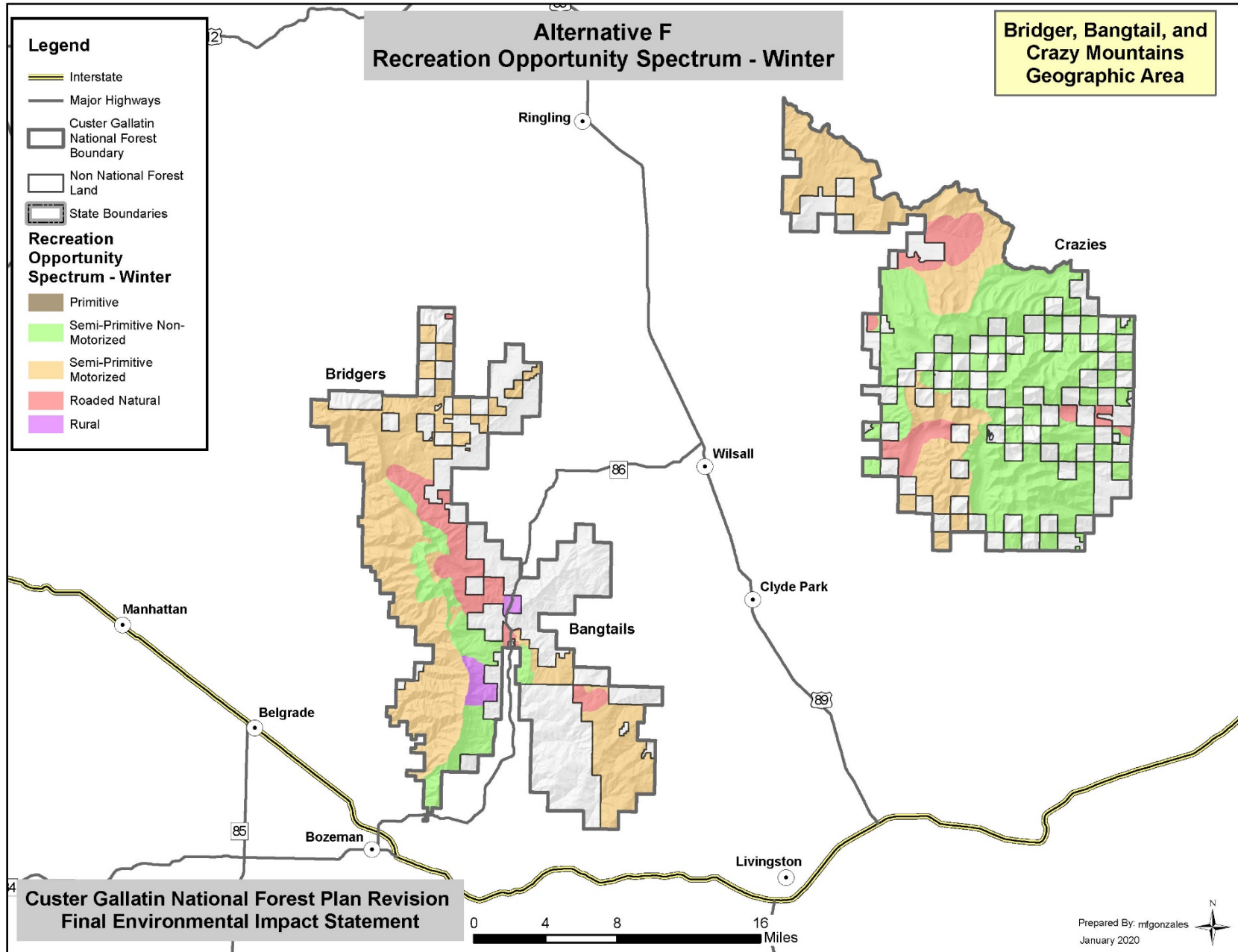




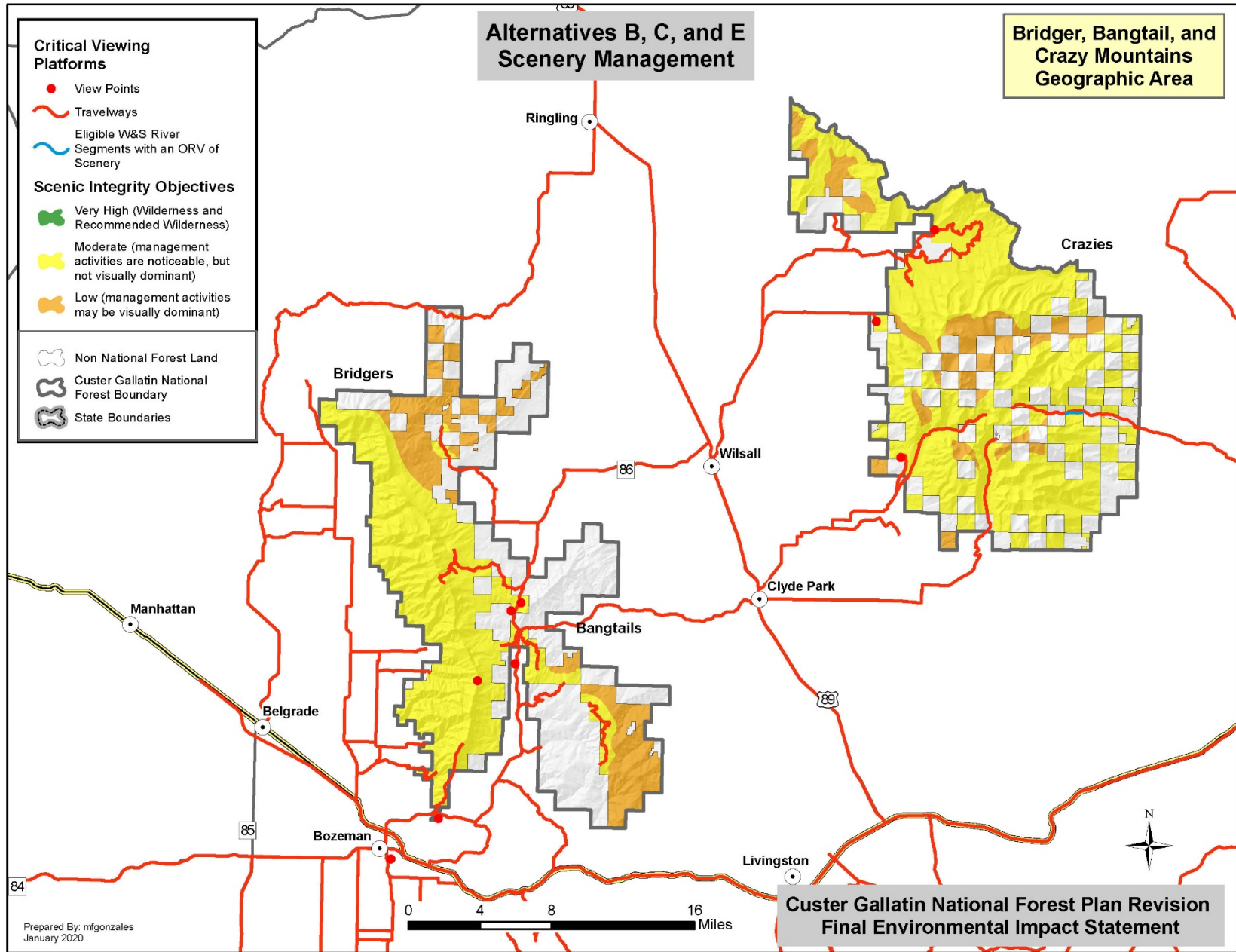


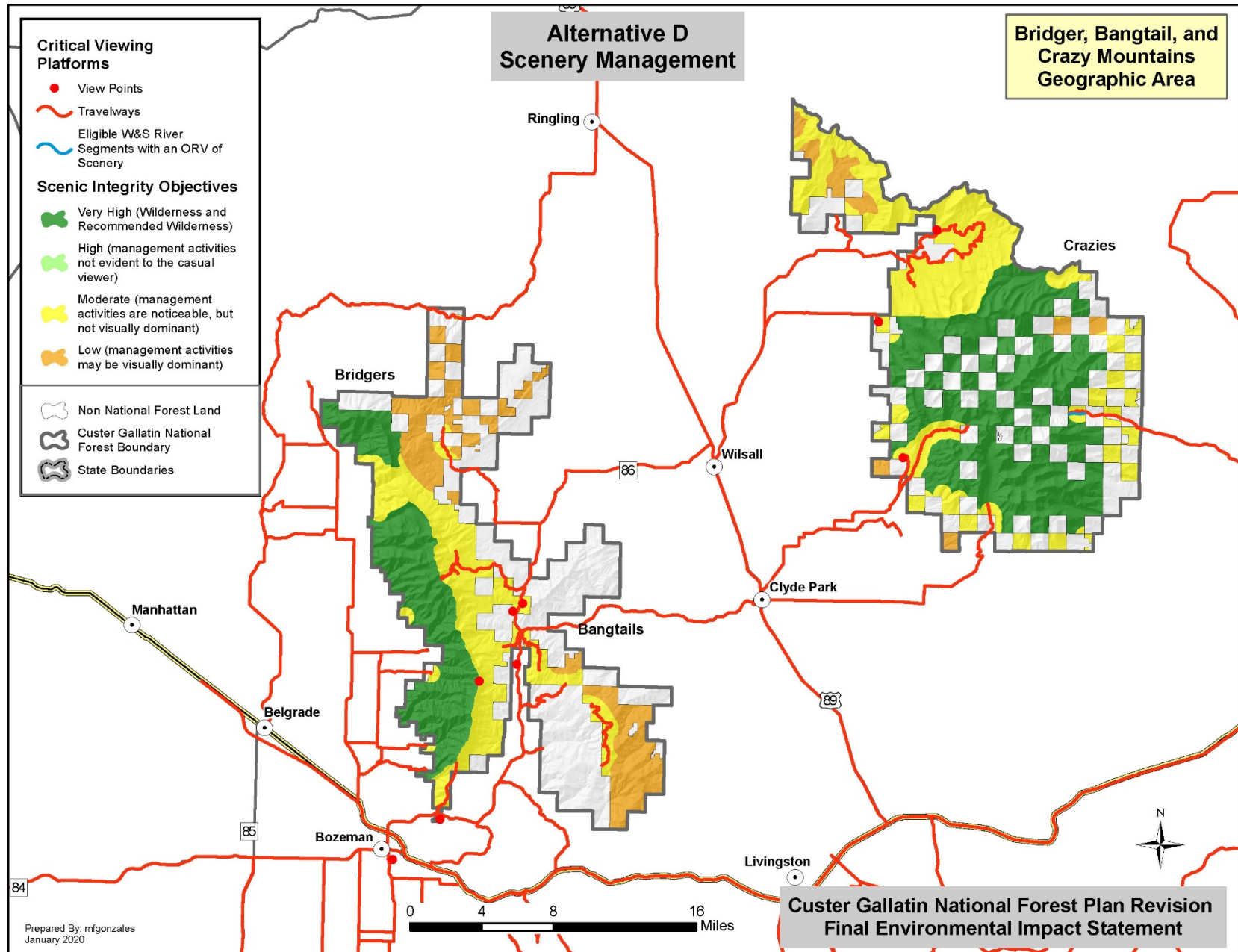


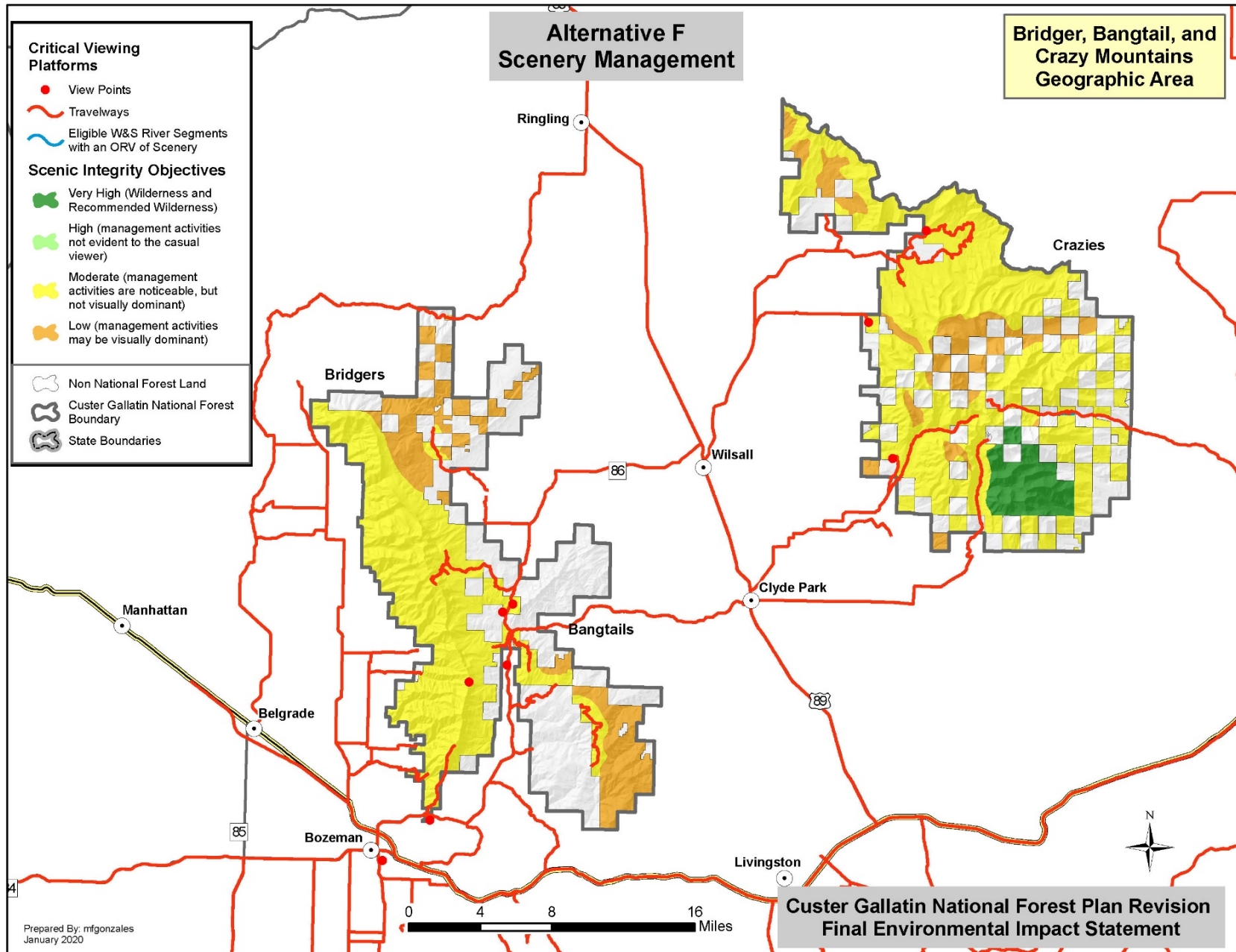




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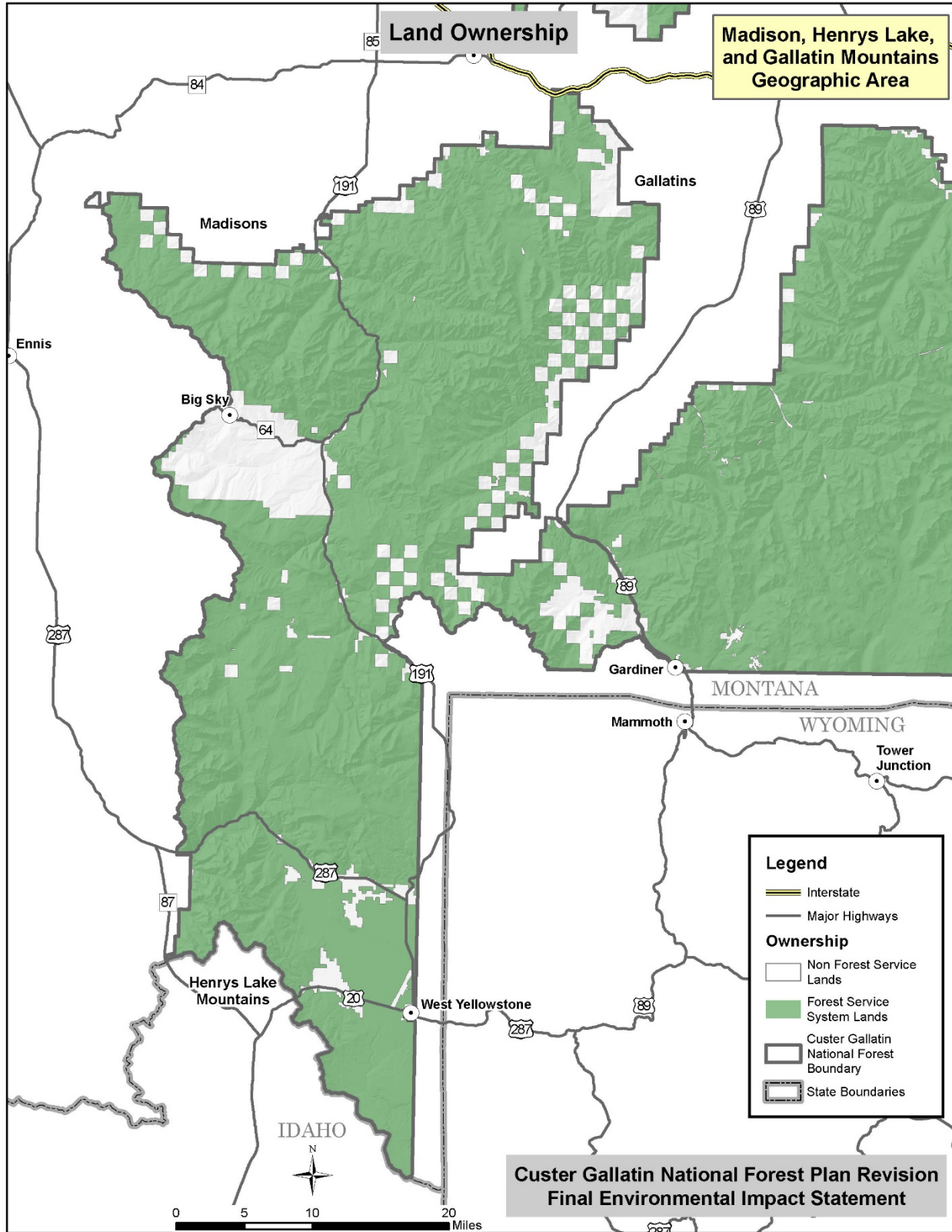




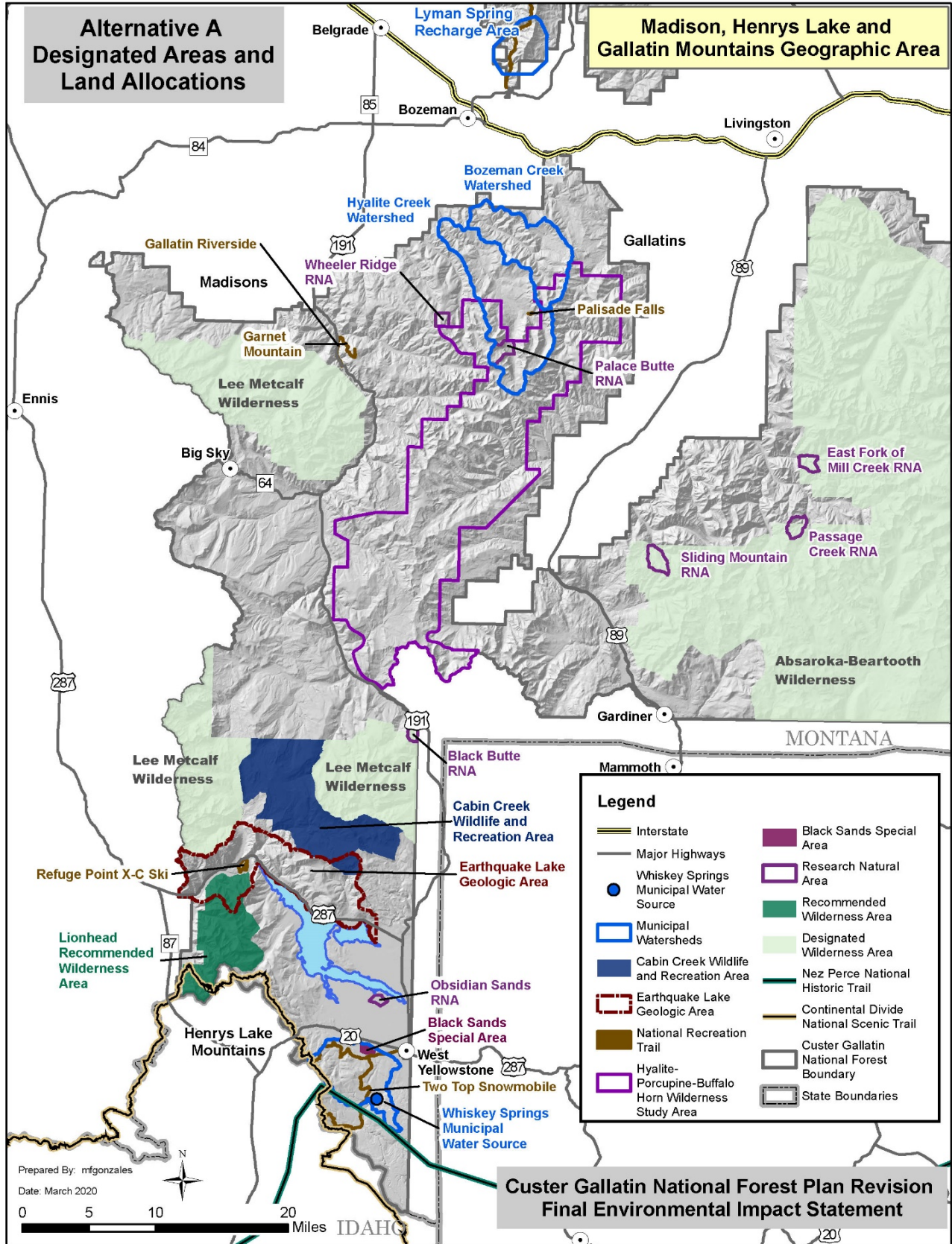


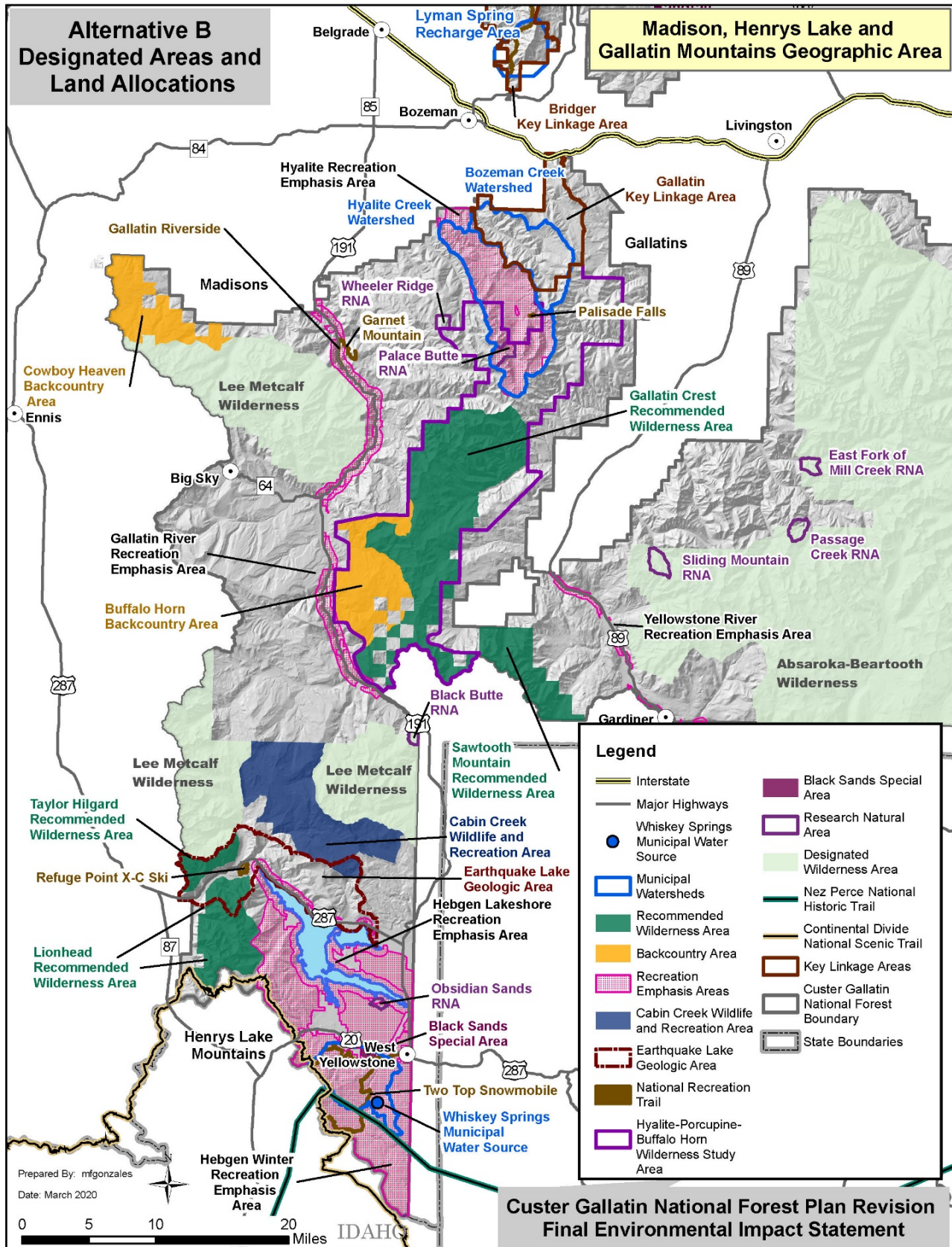
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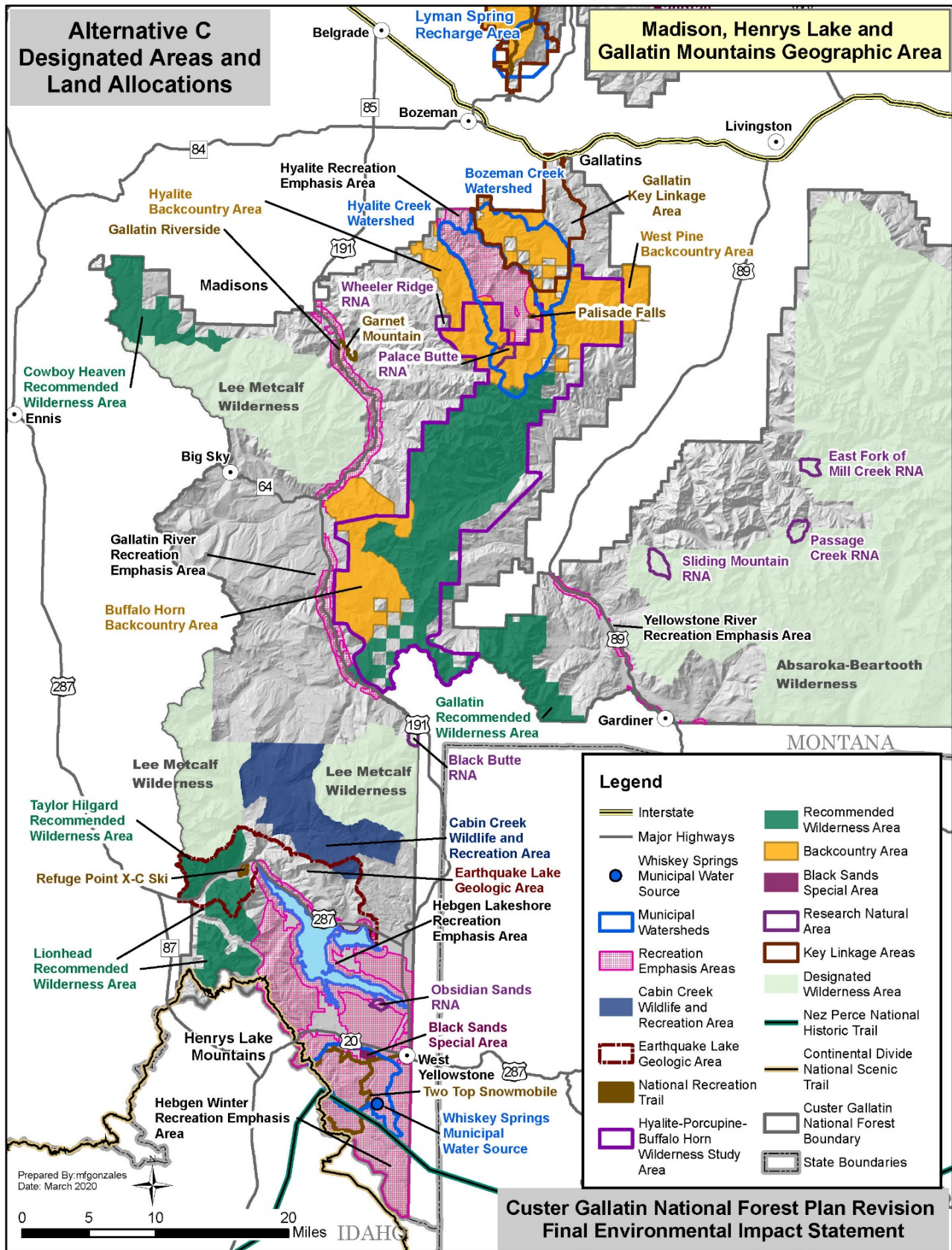
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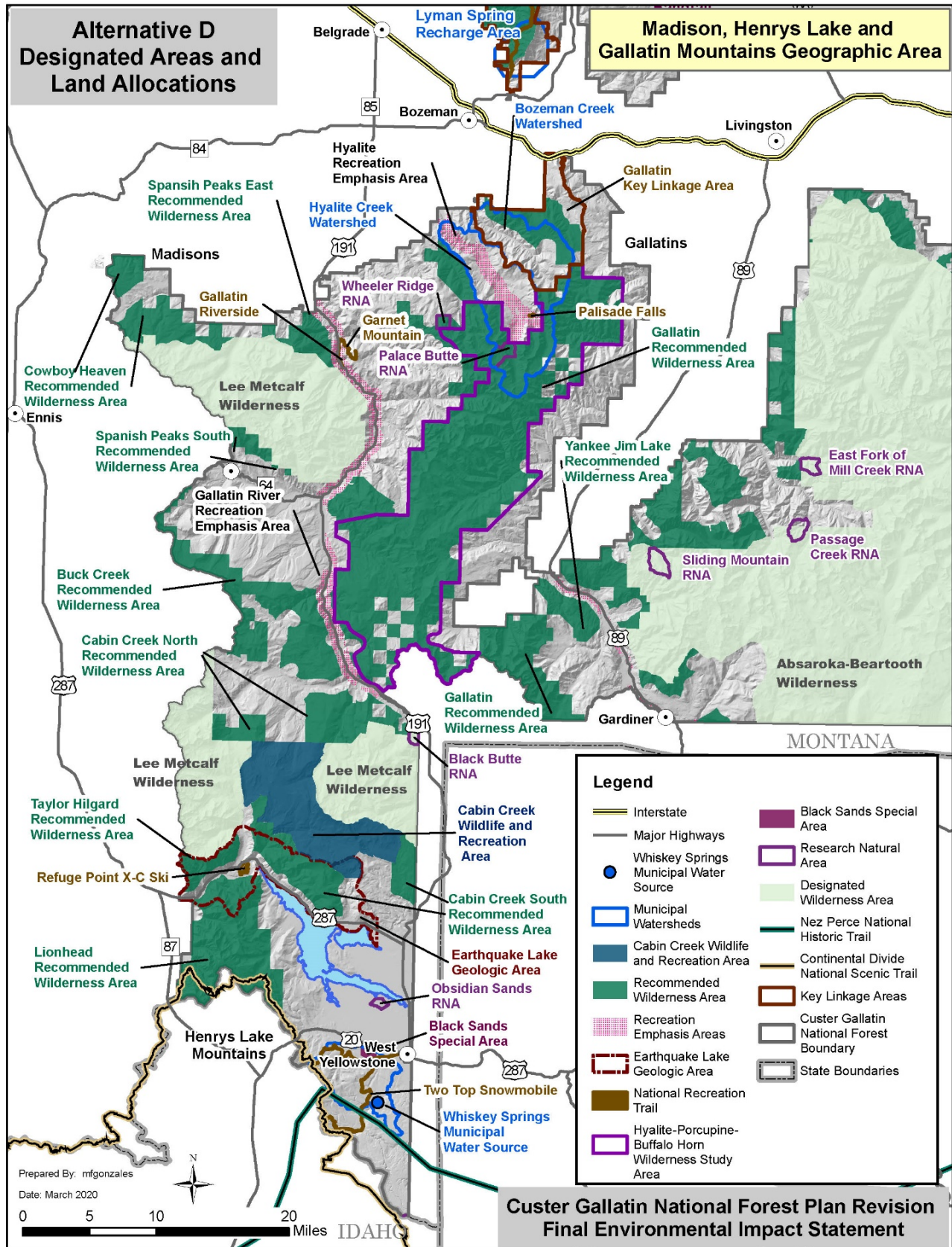


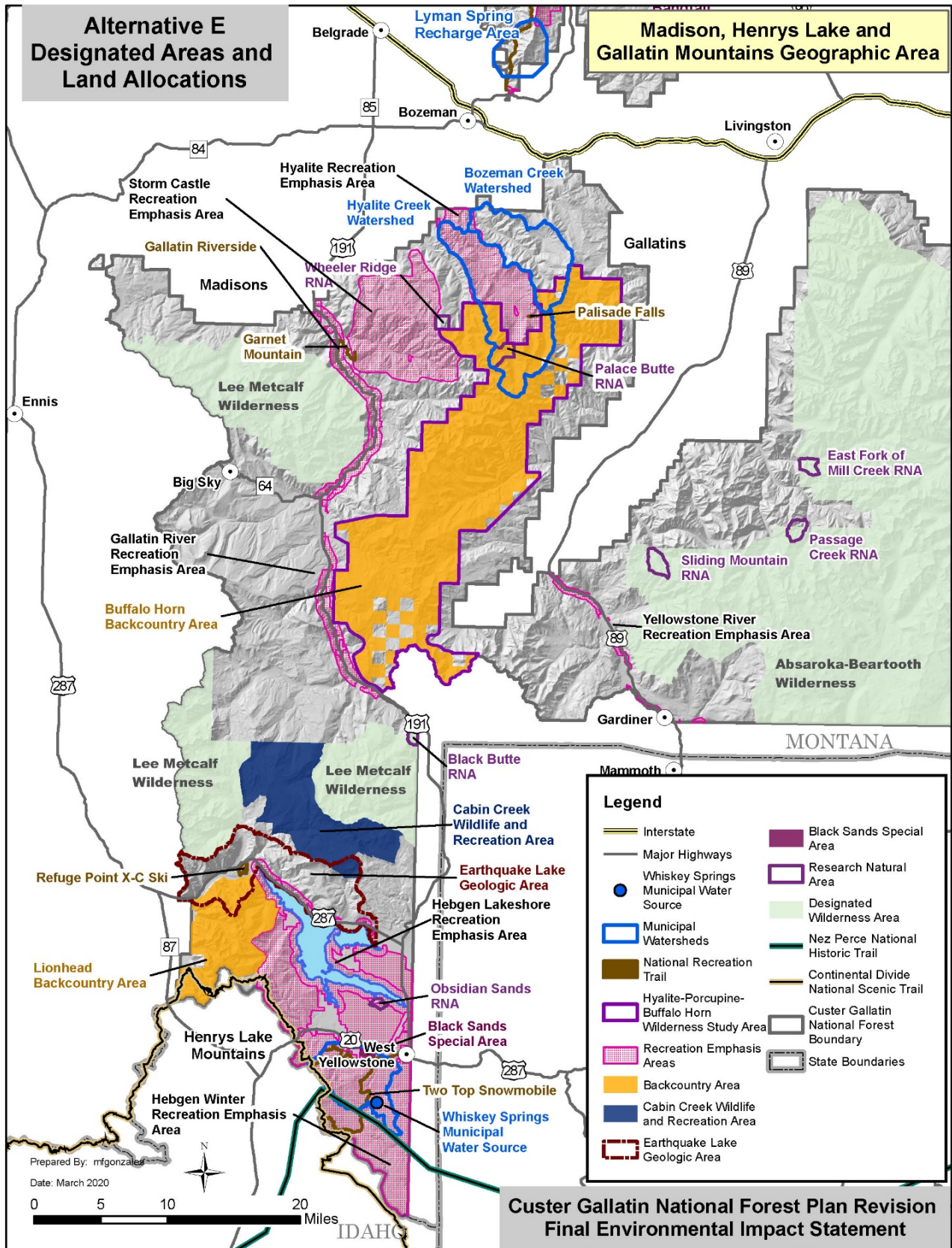
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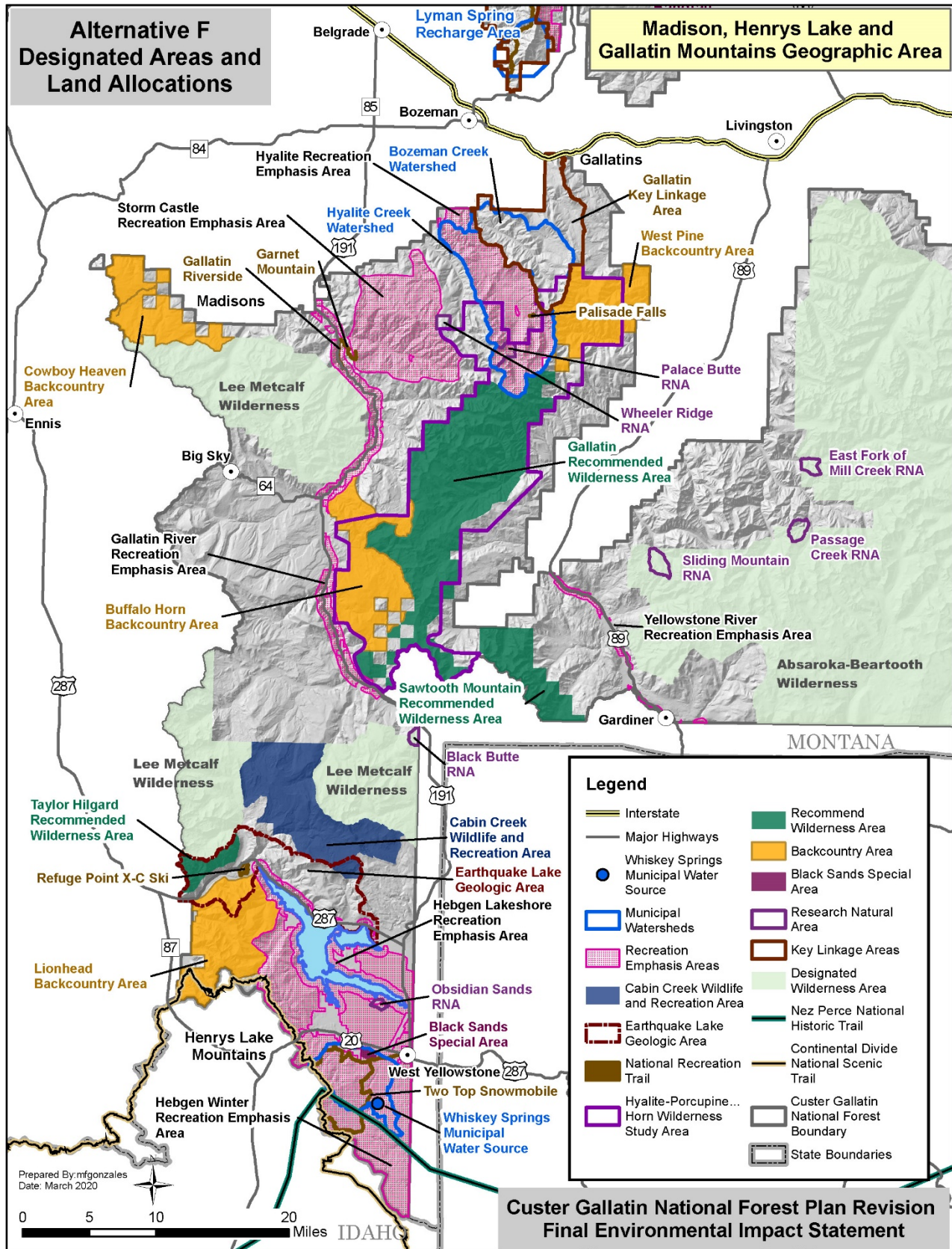




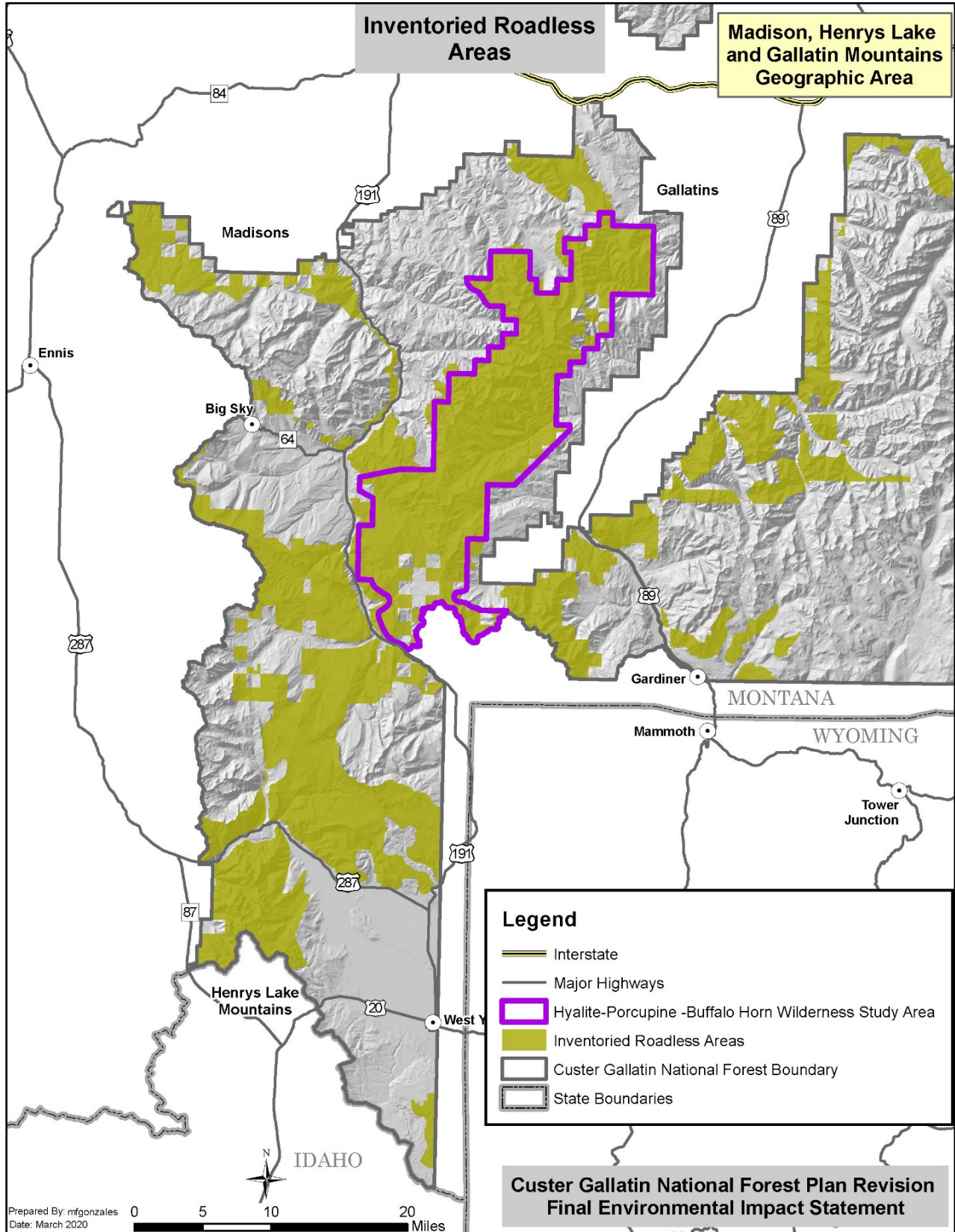




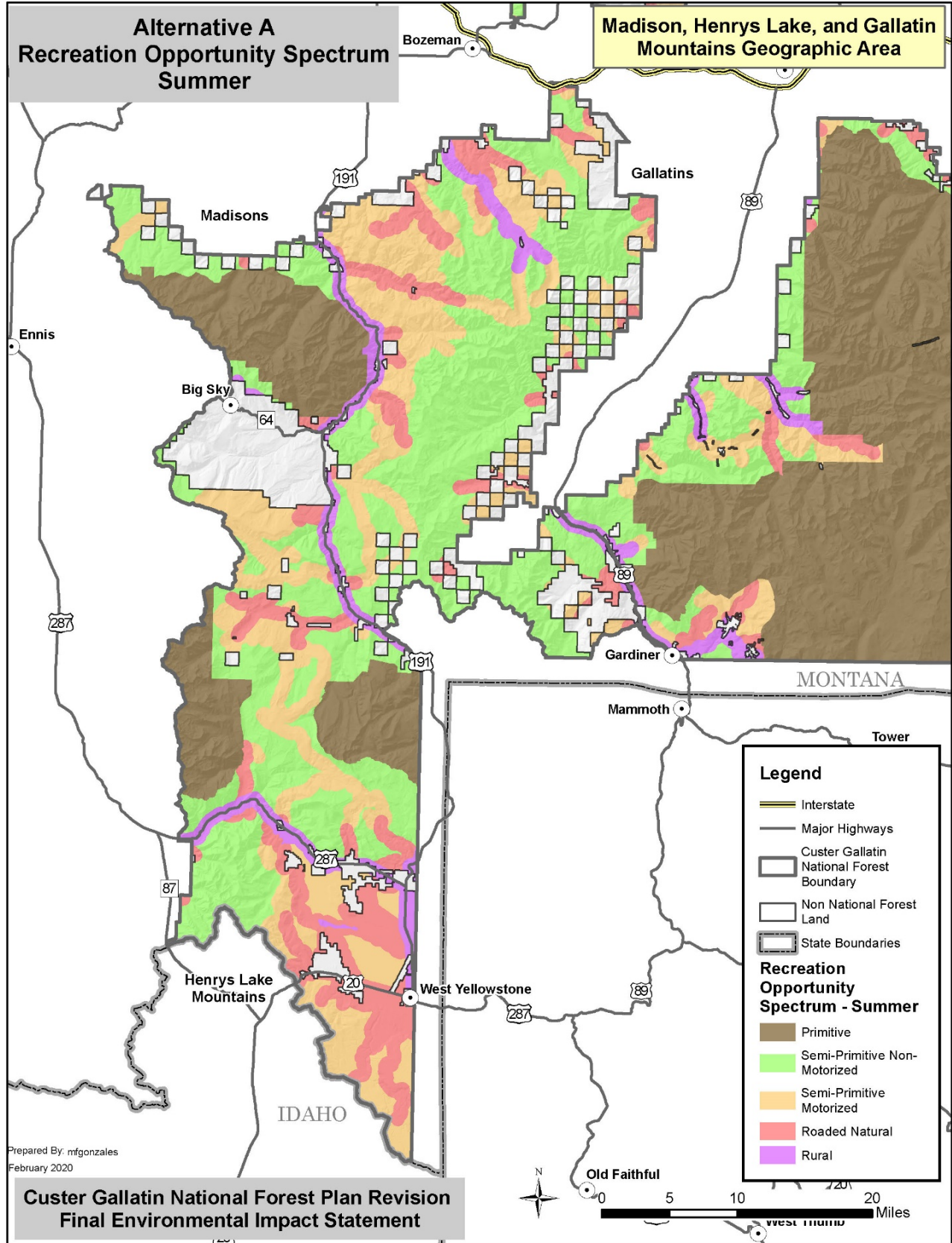


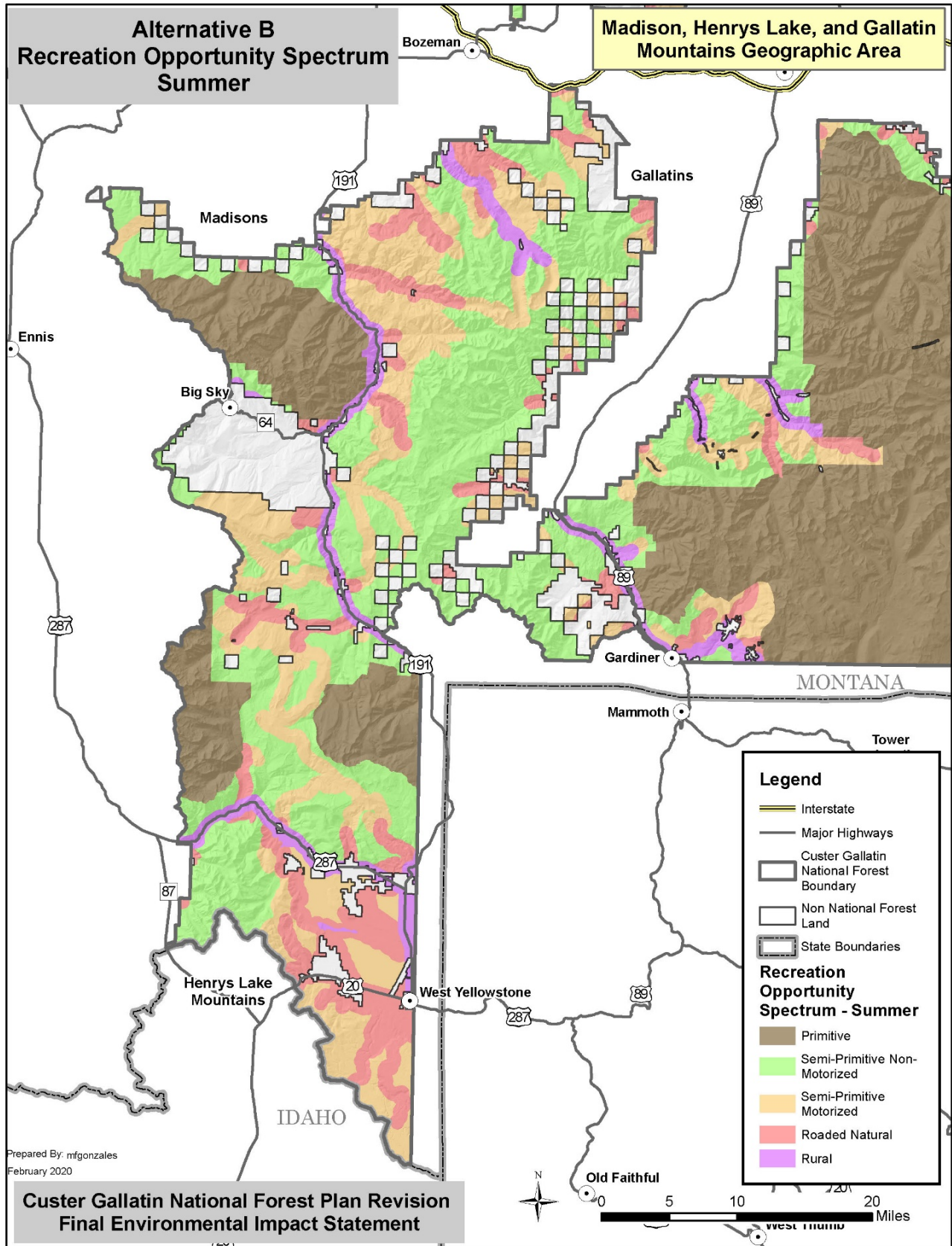


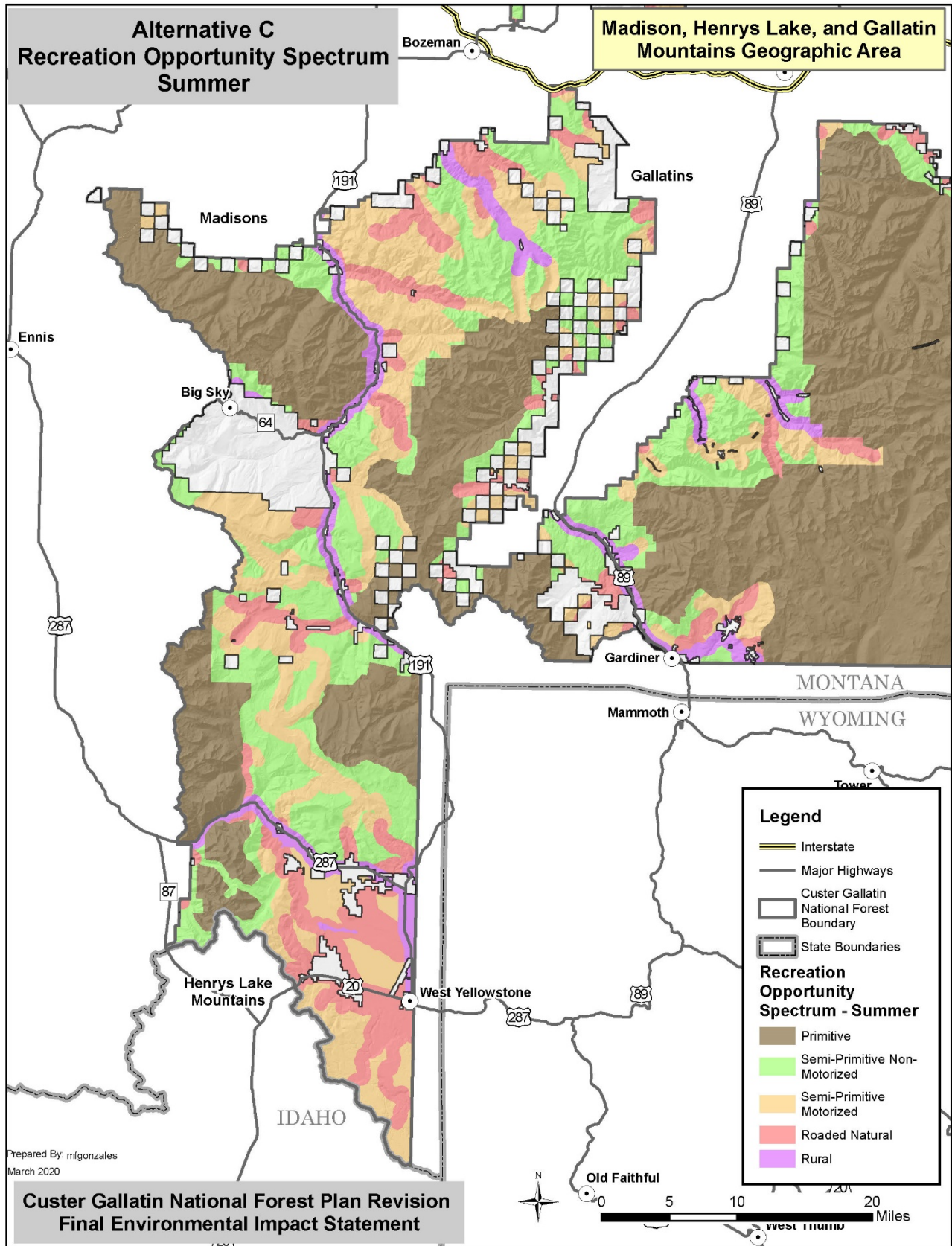
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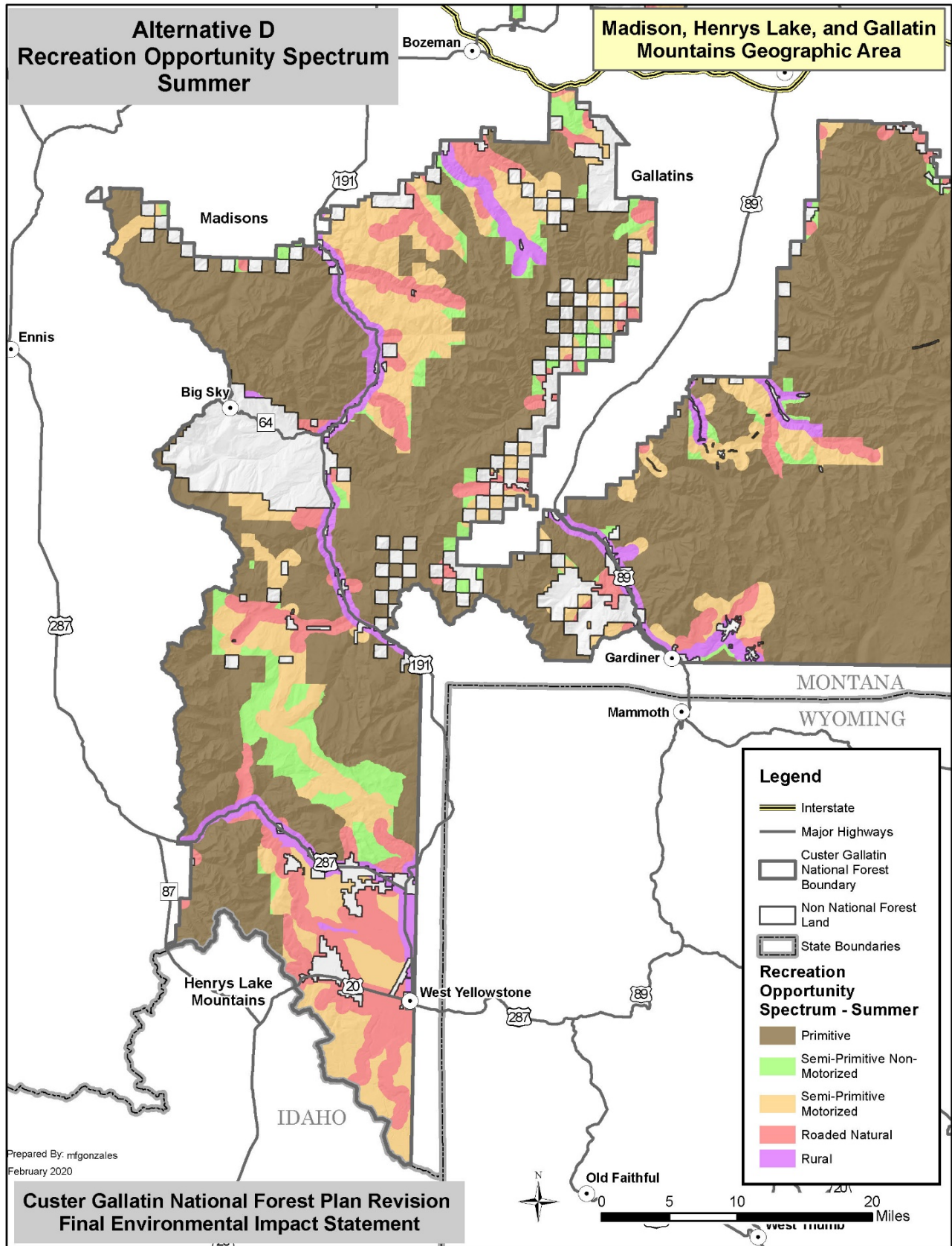


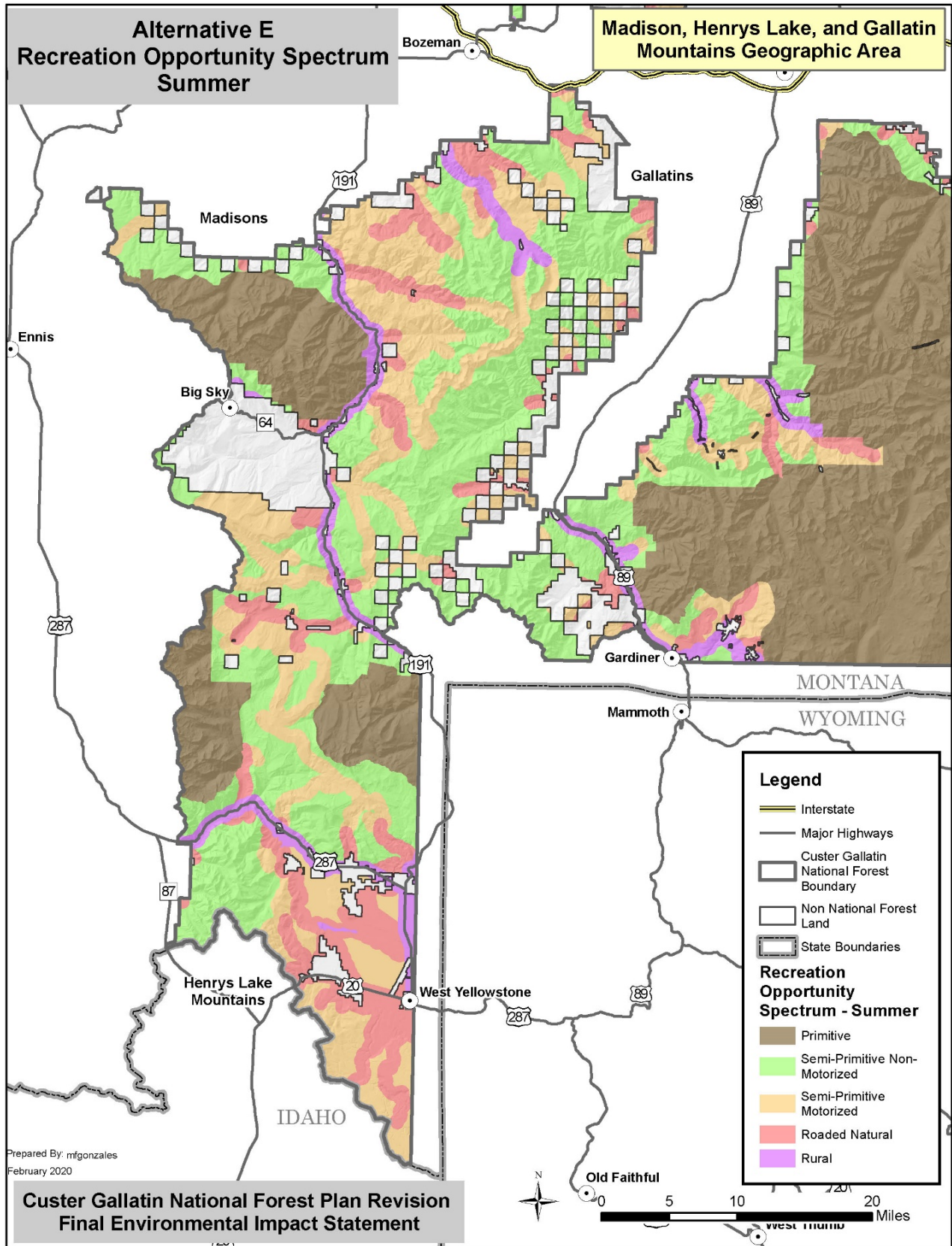
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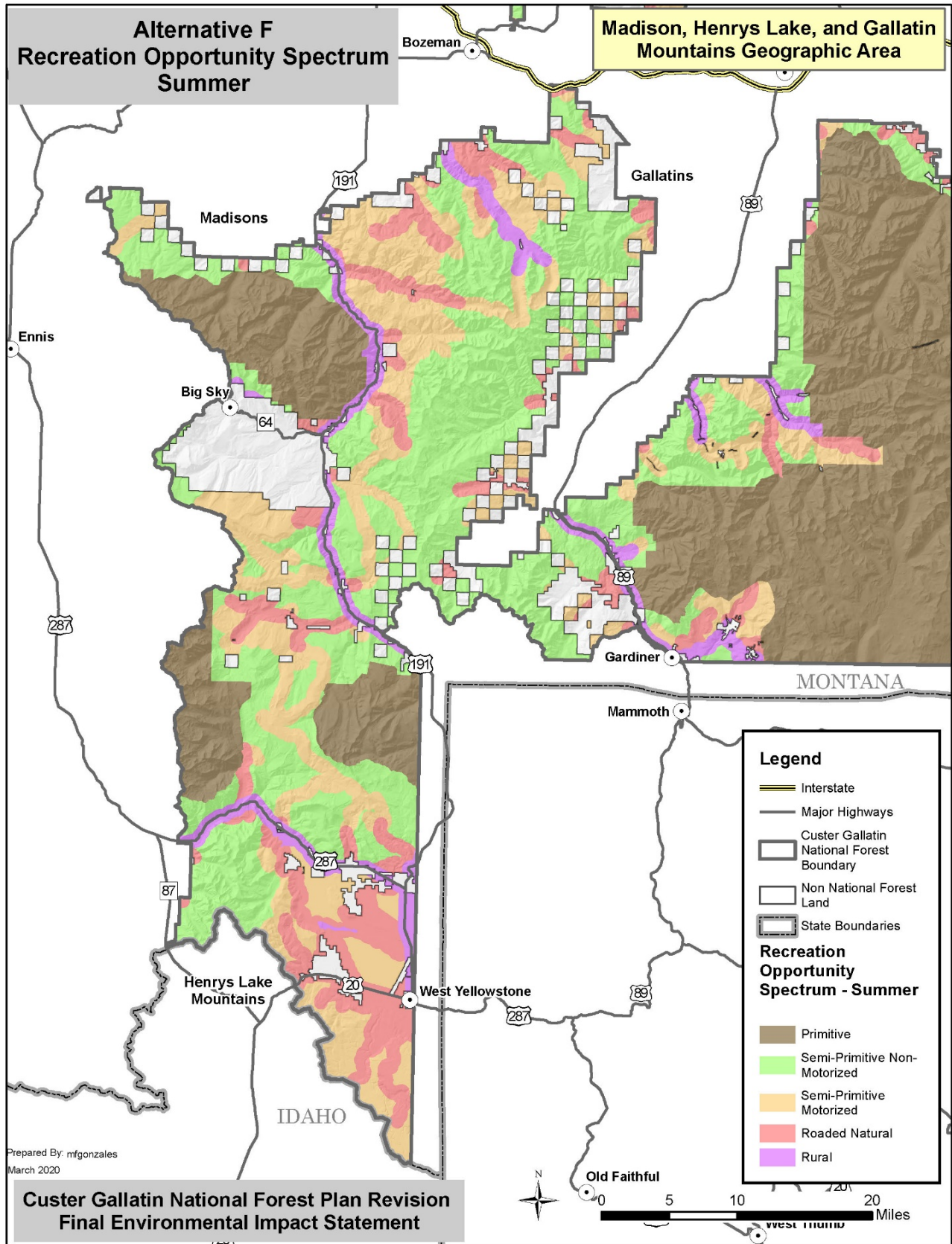




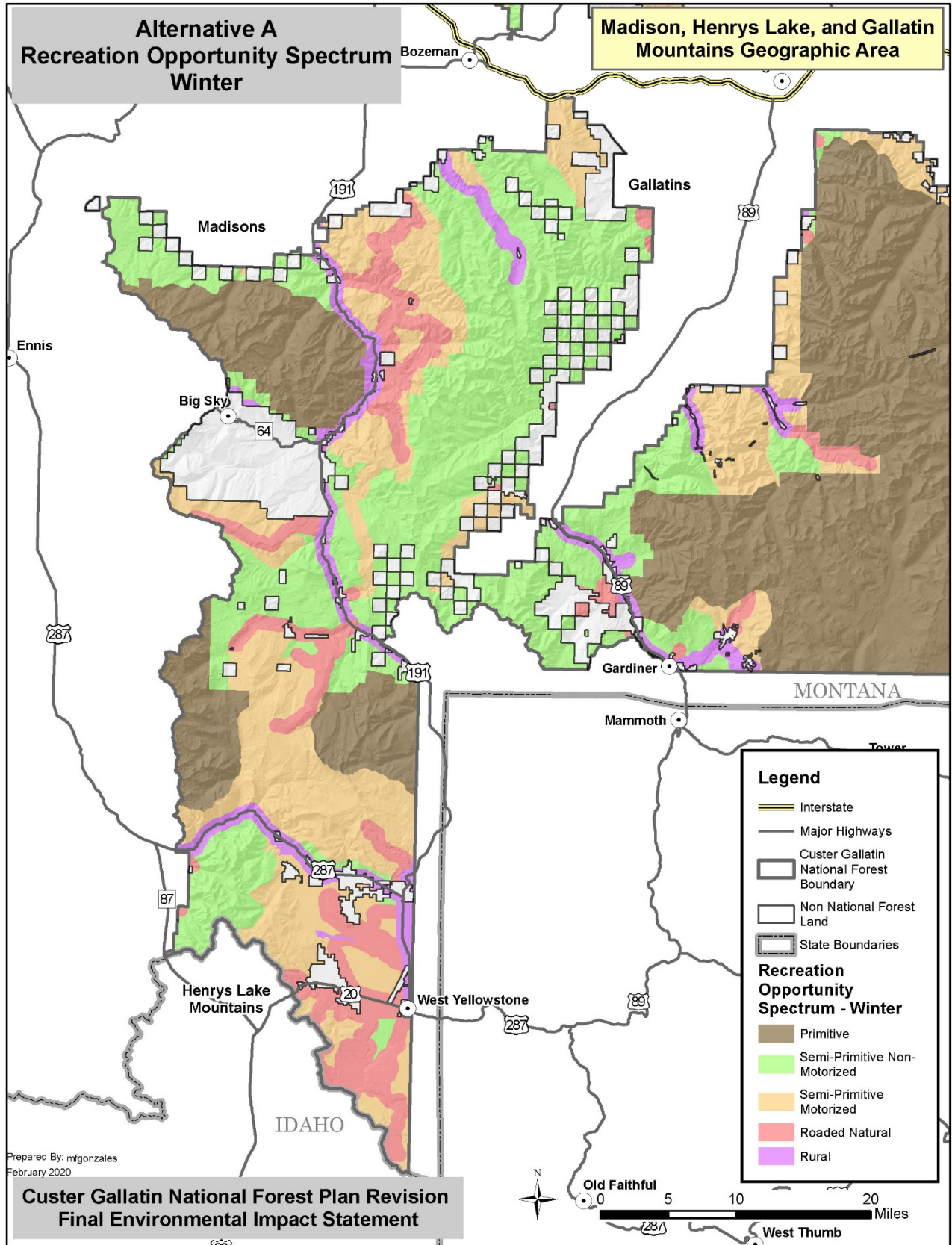


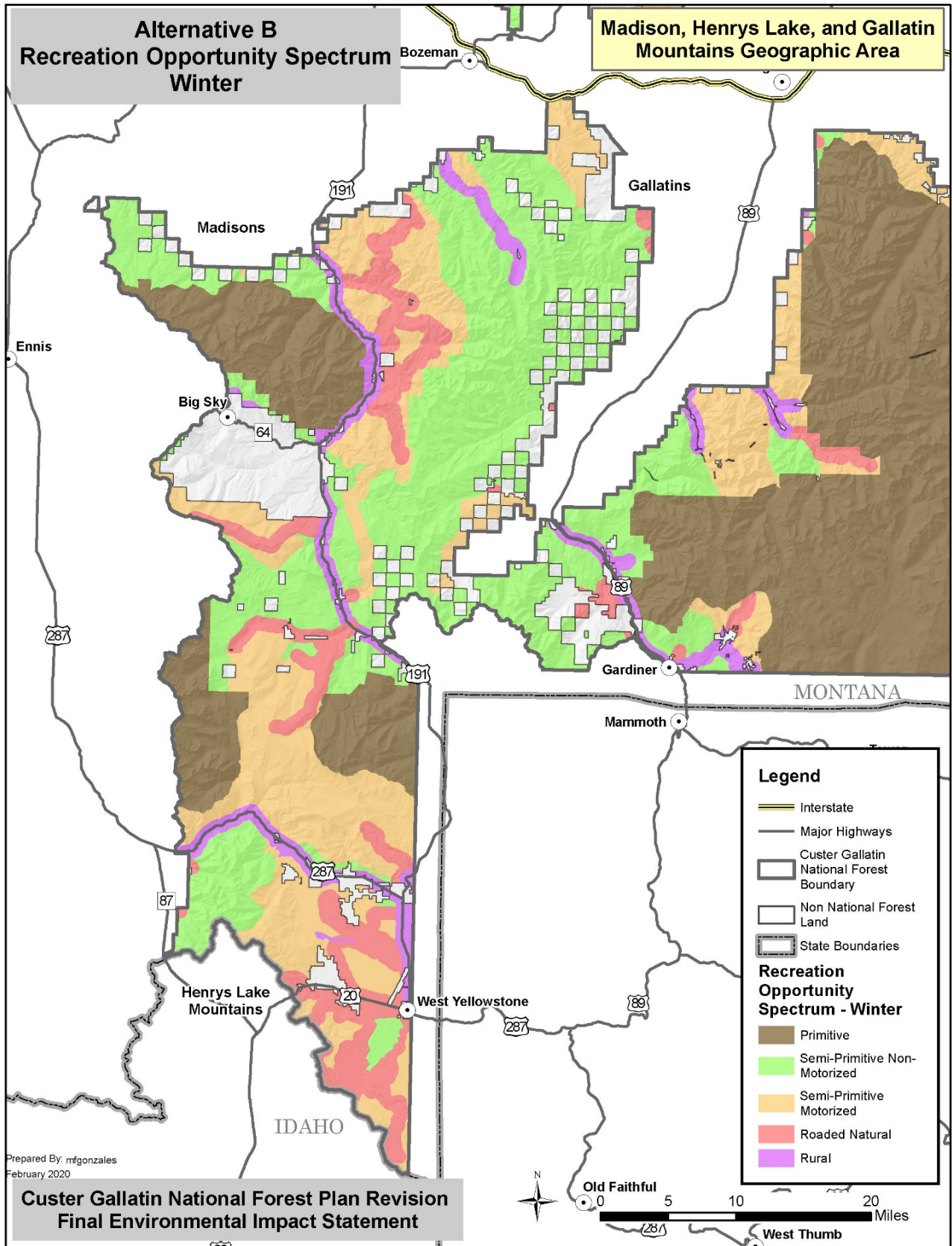


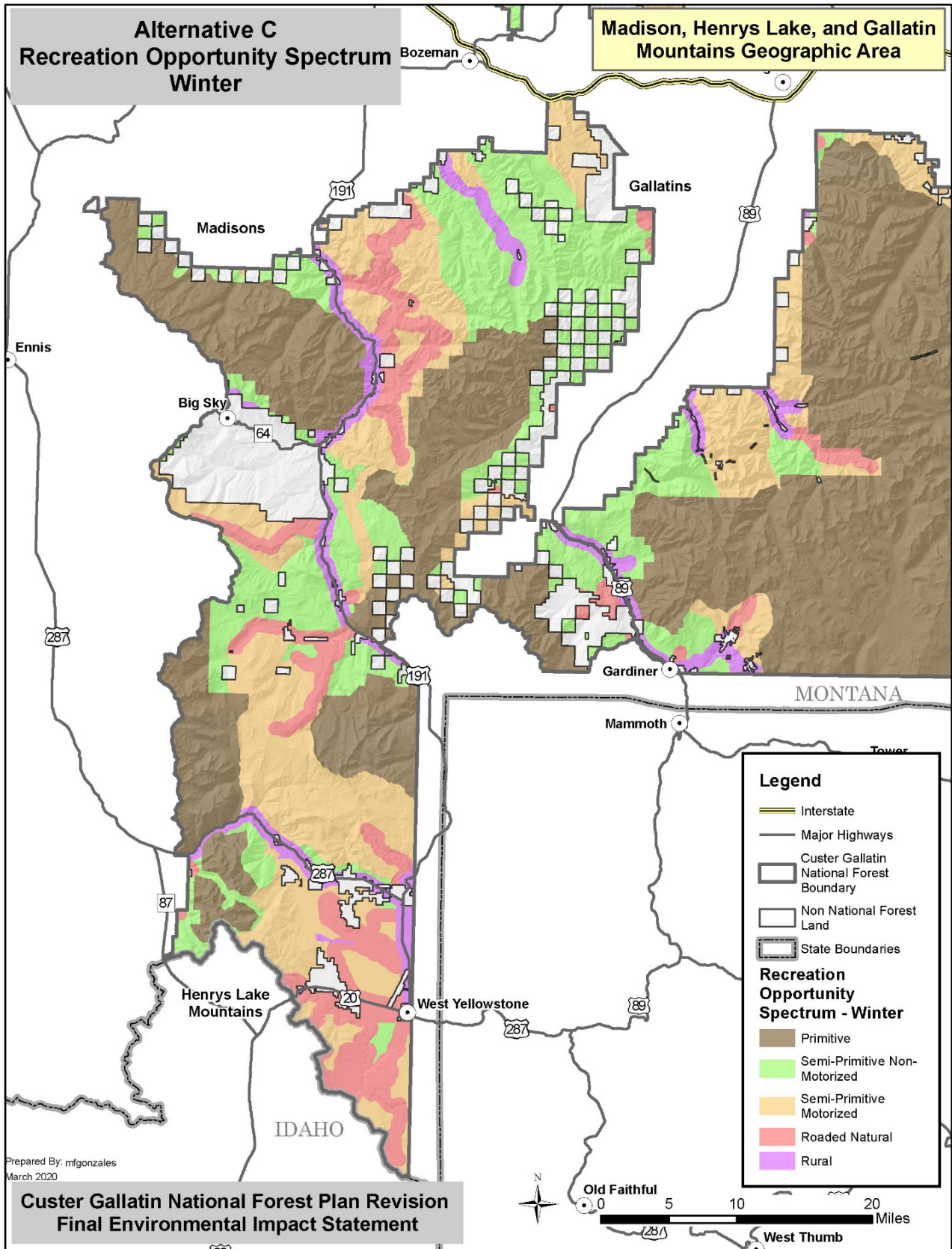


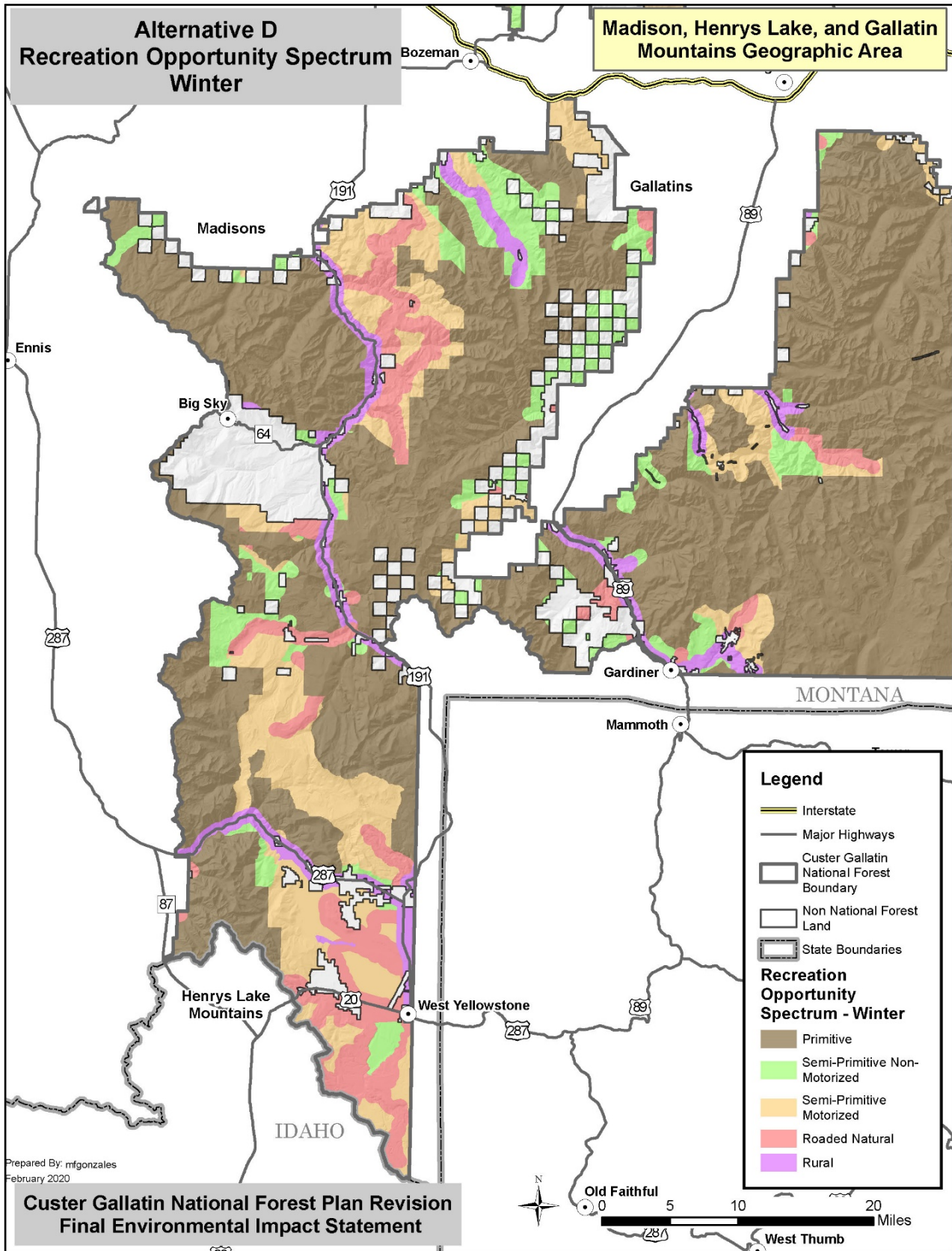


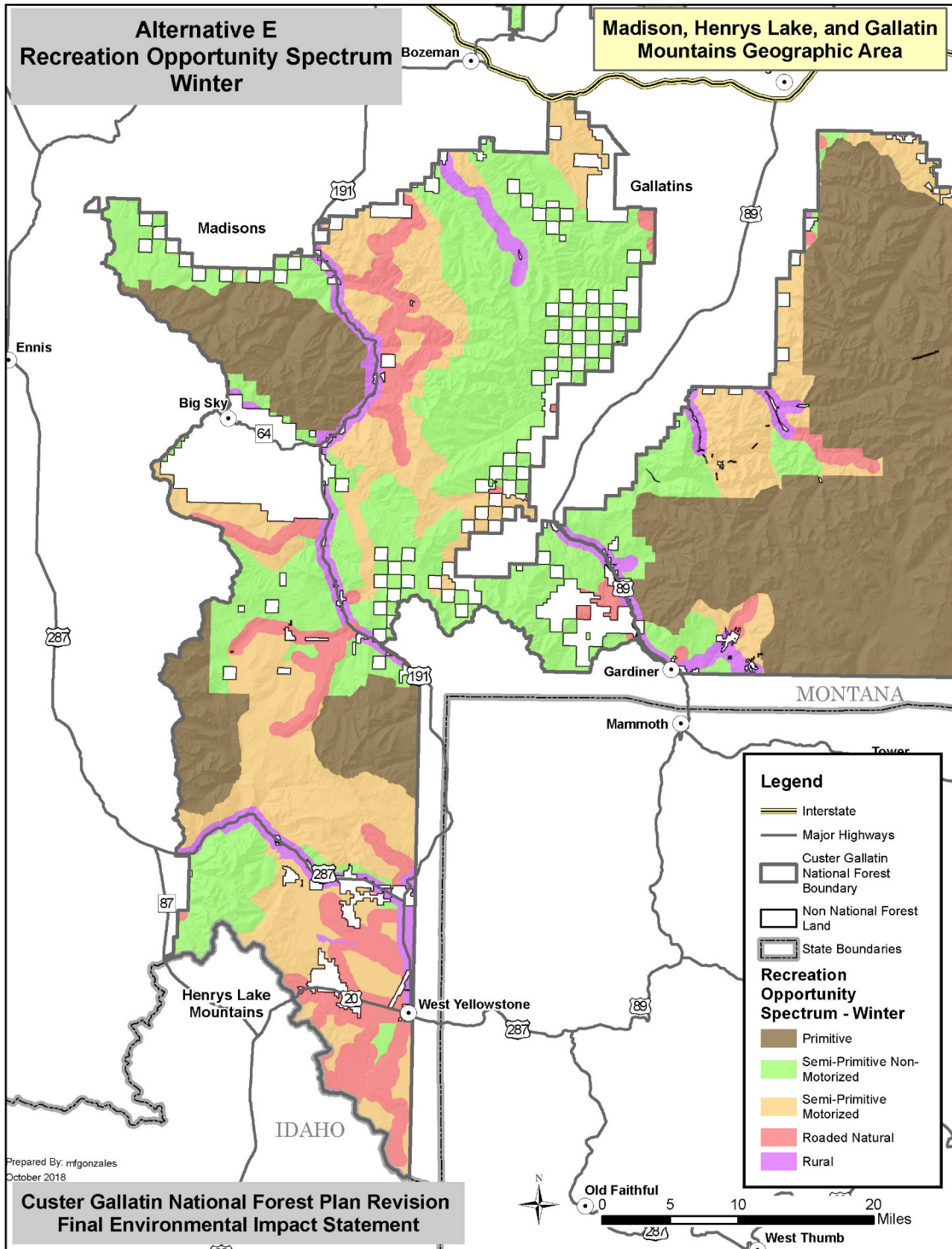
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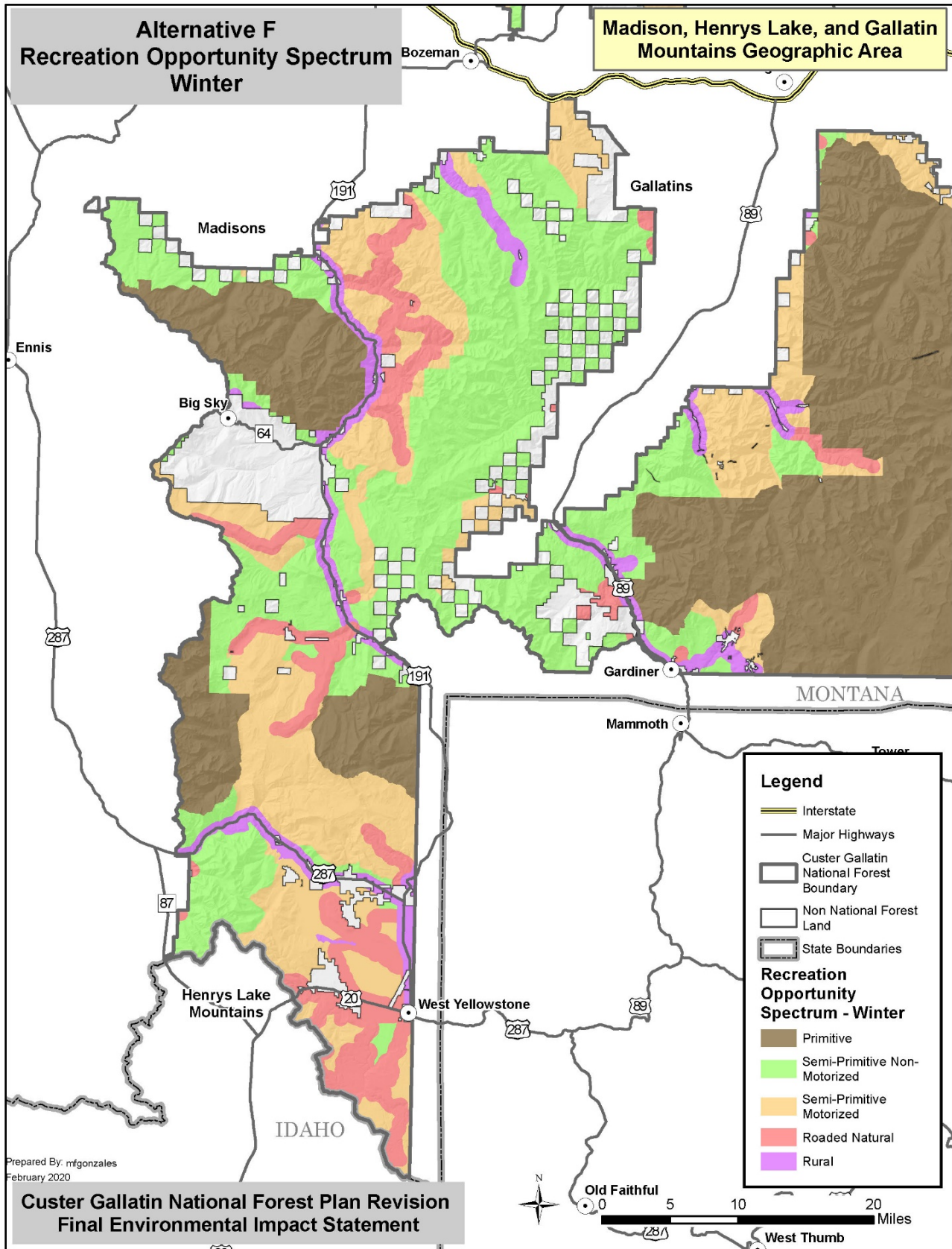




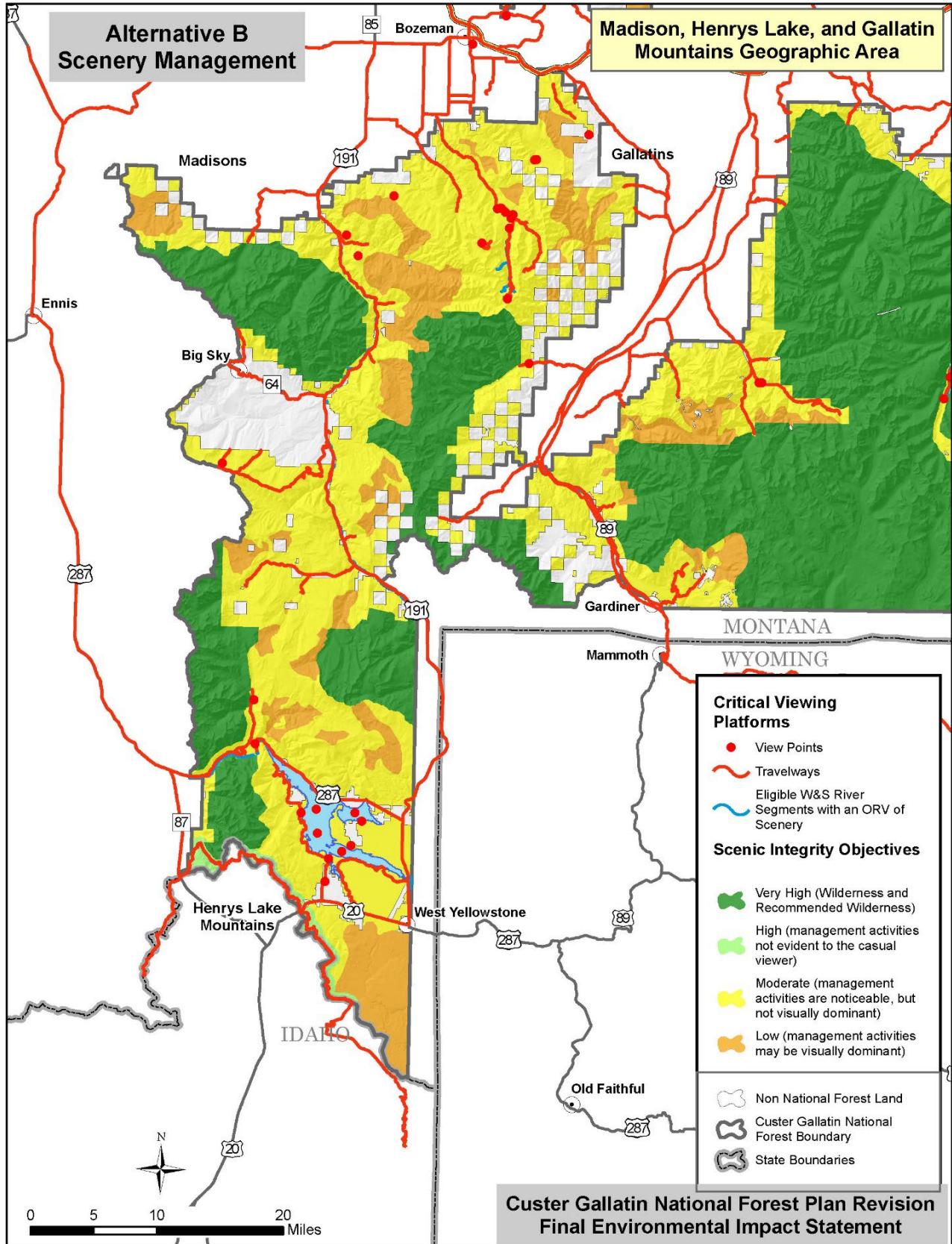


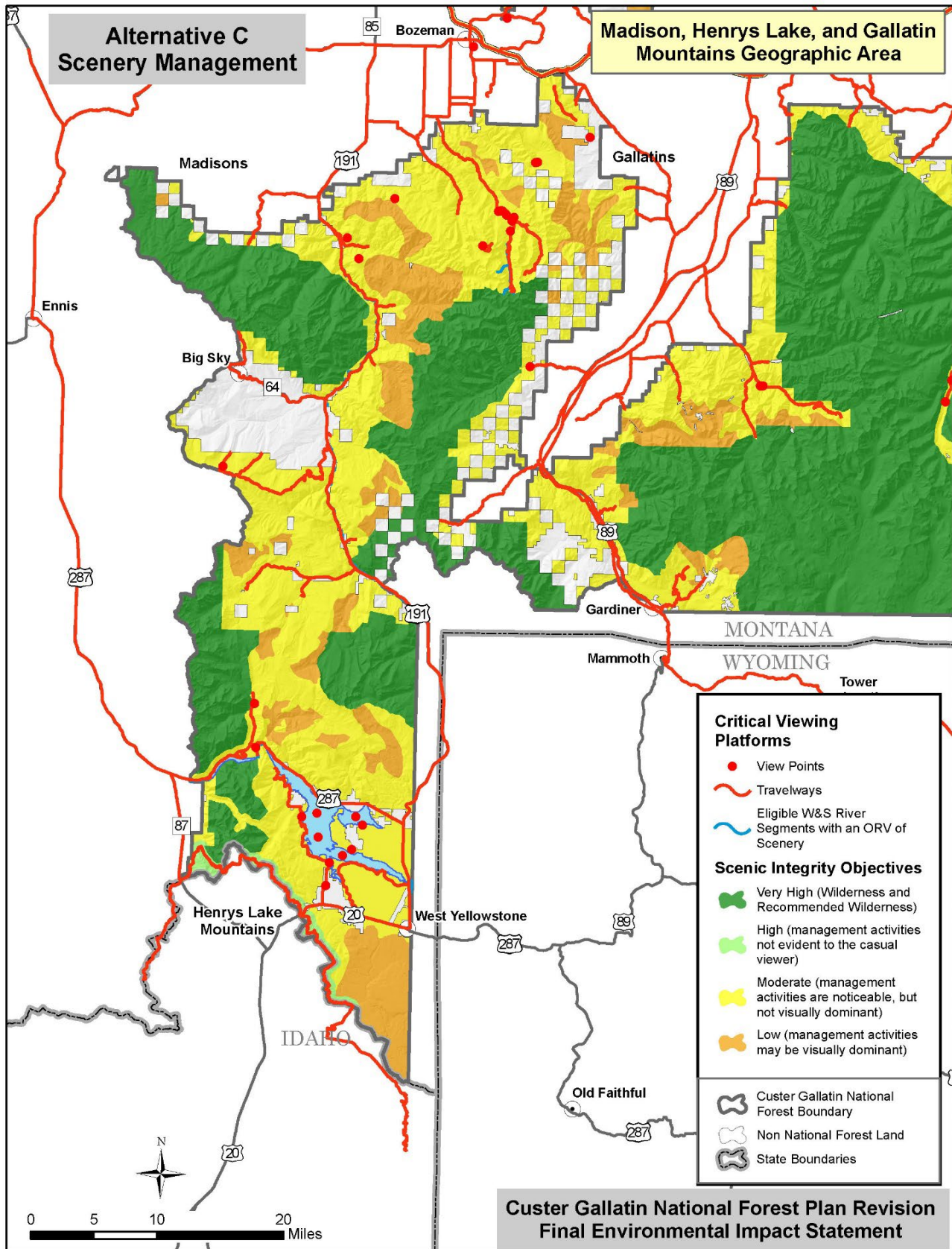


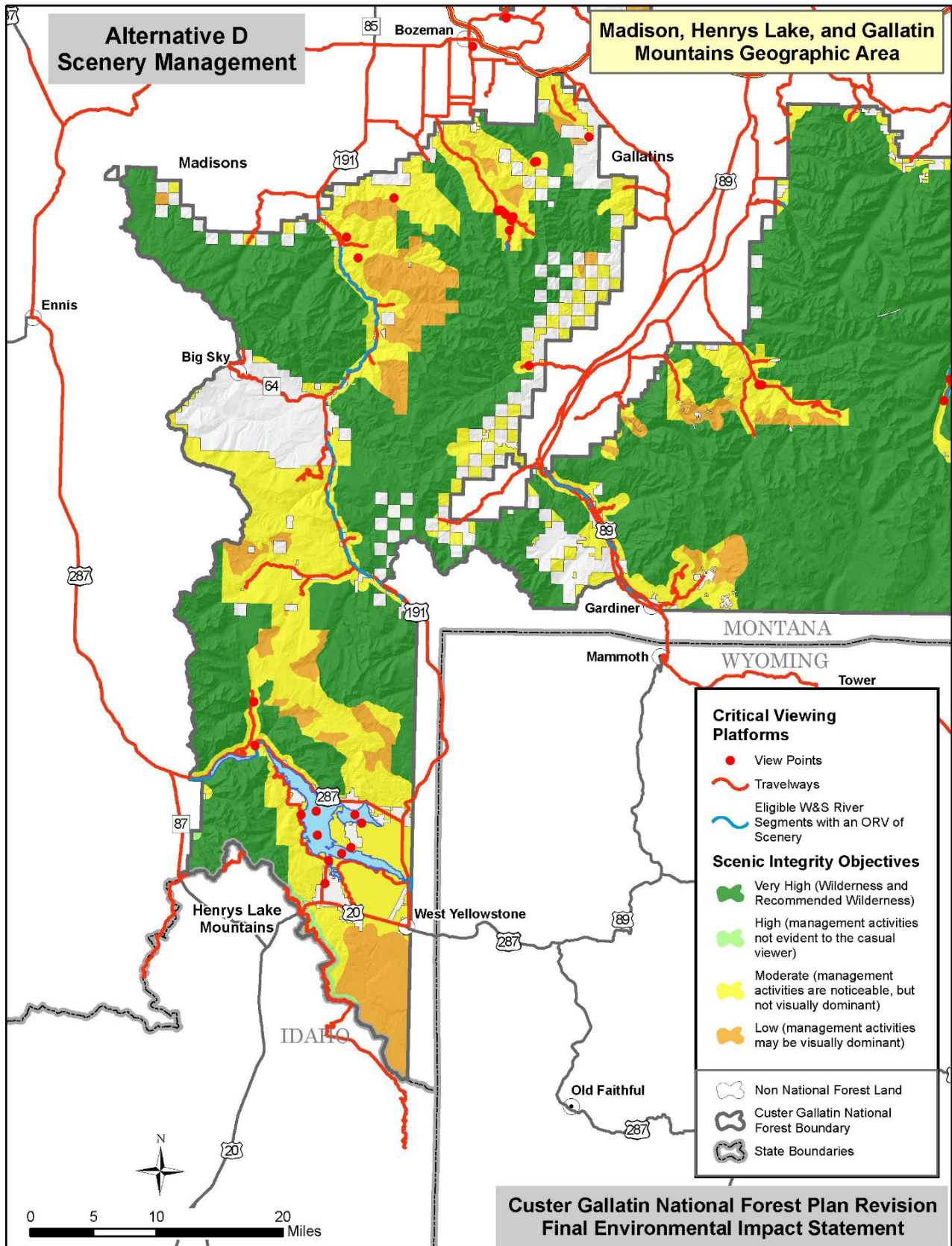


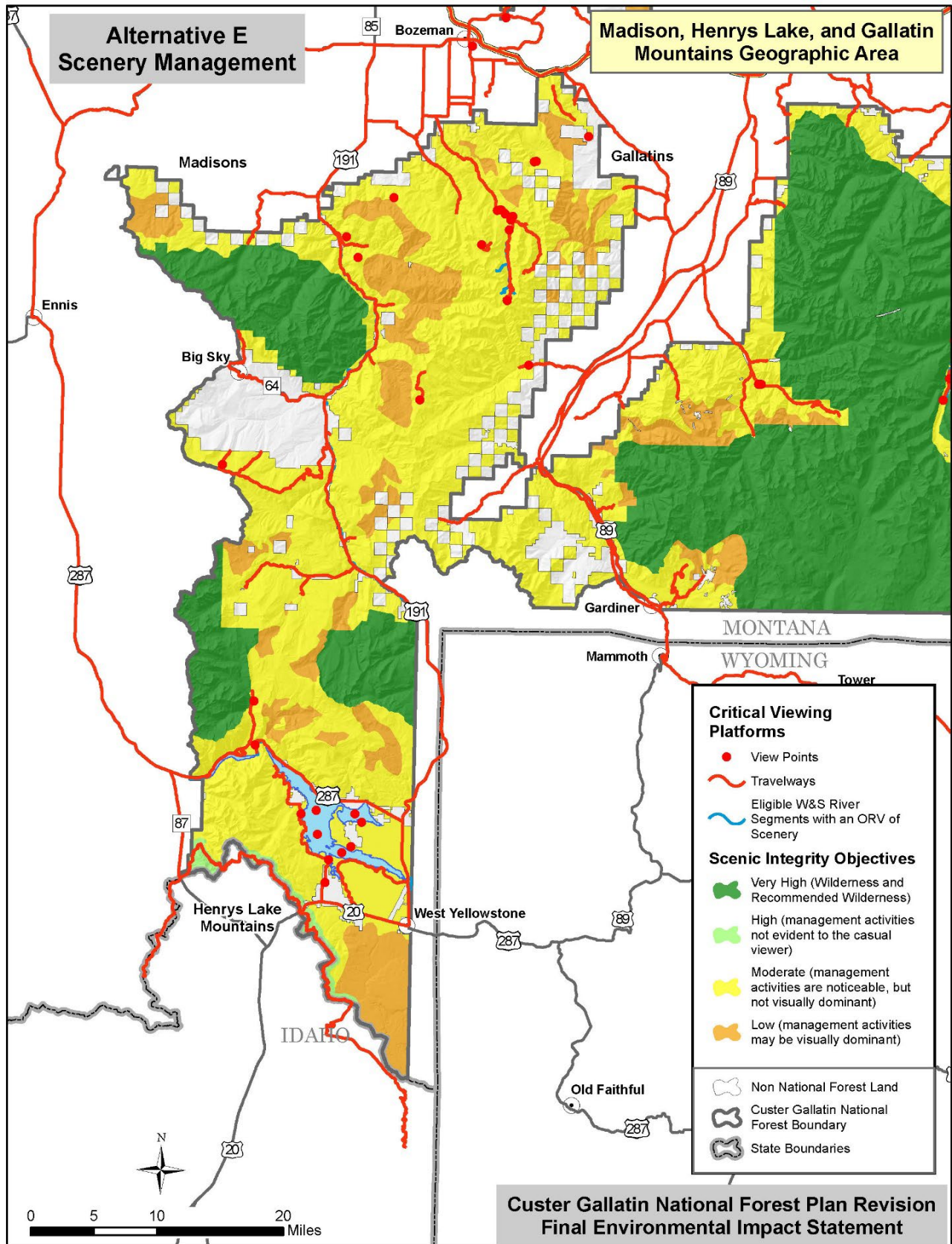


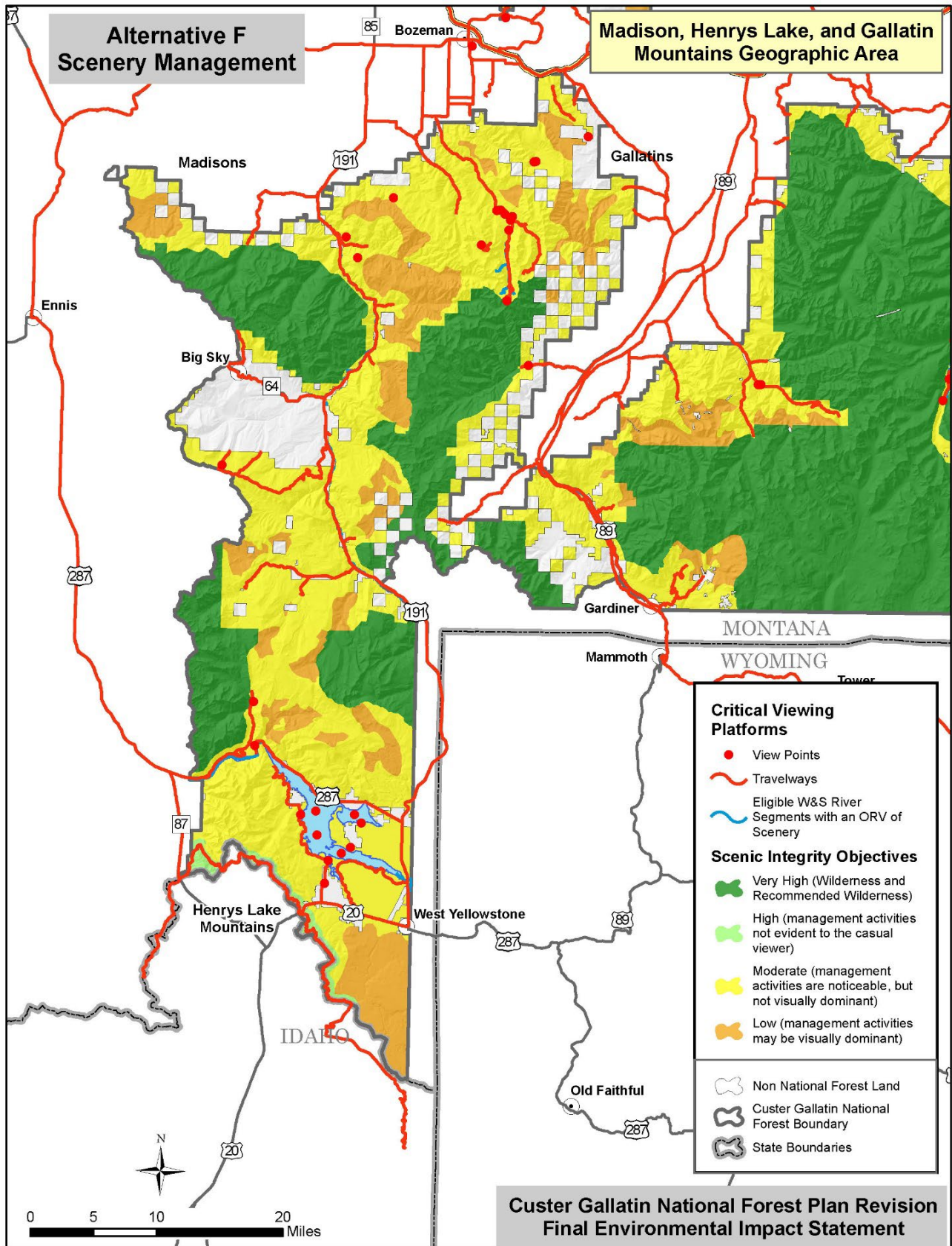
Scenery Management



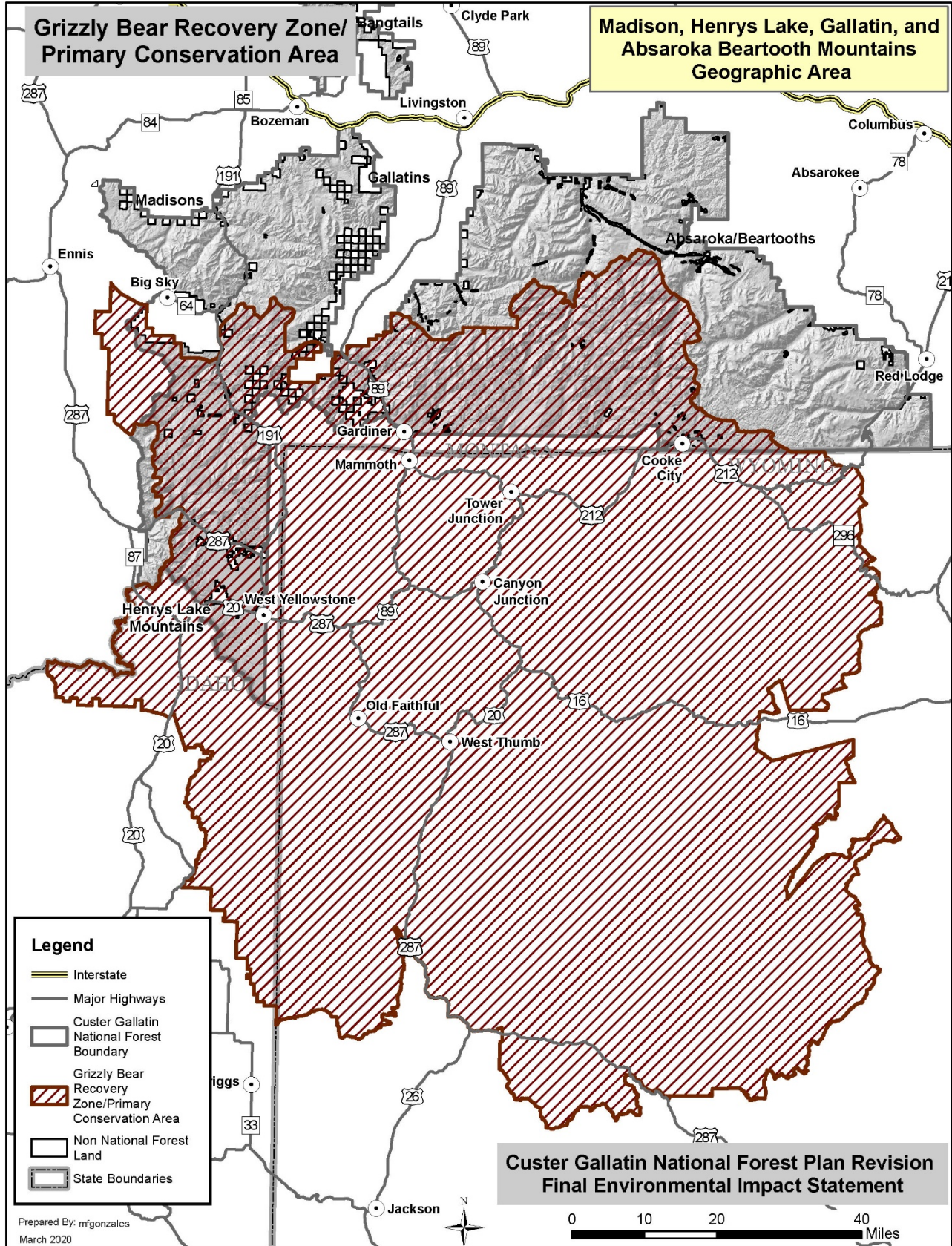




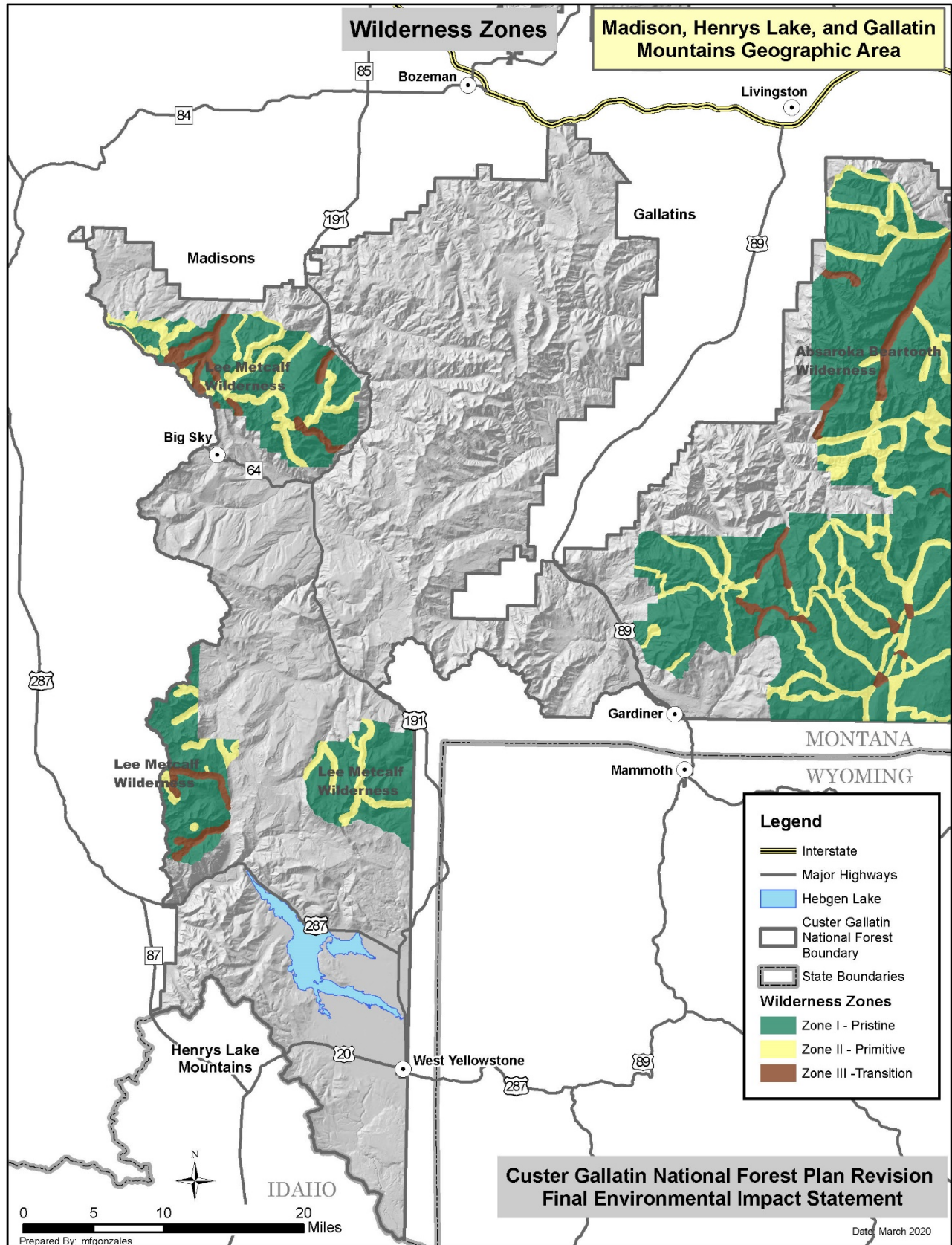




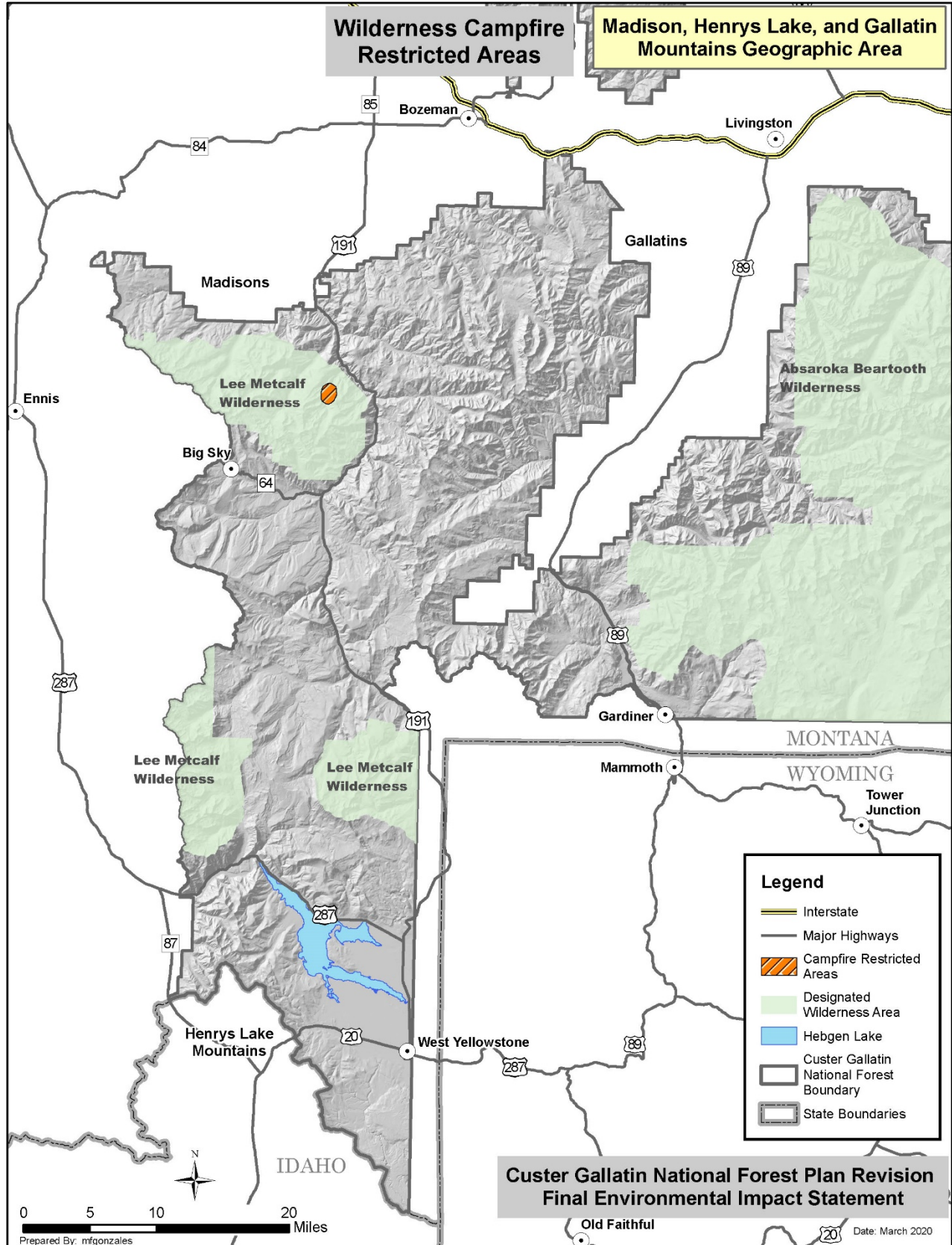
Grizzly Bear Recovery Zone



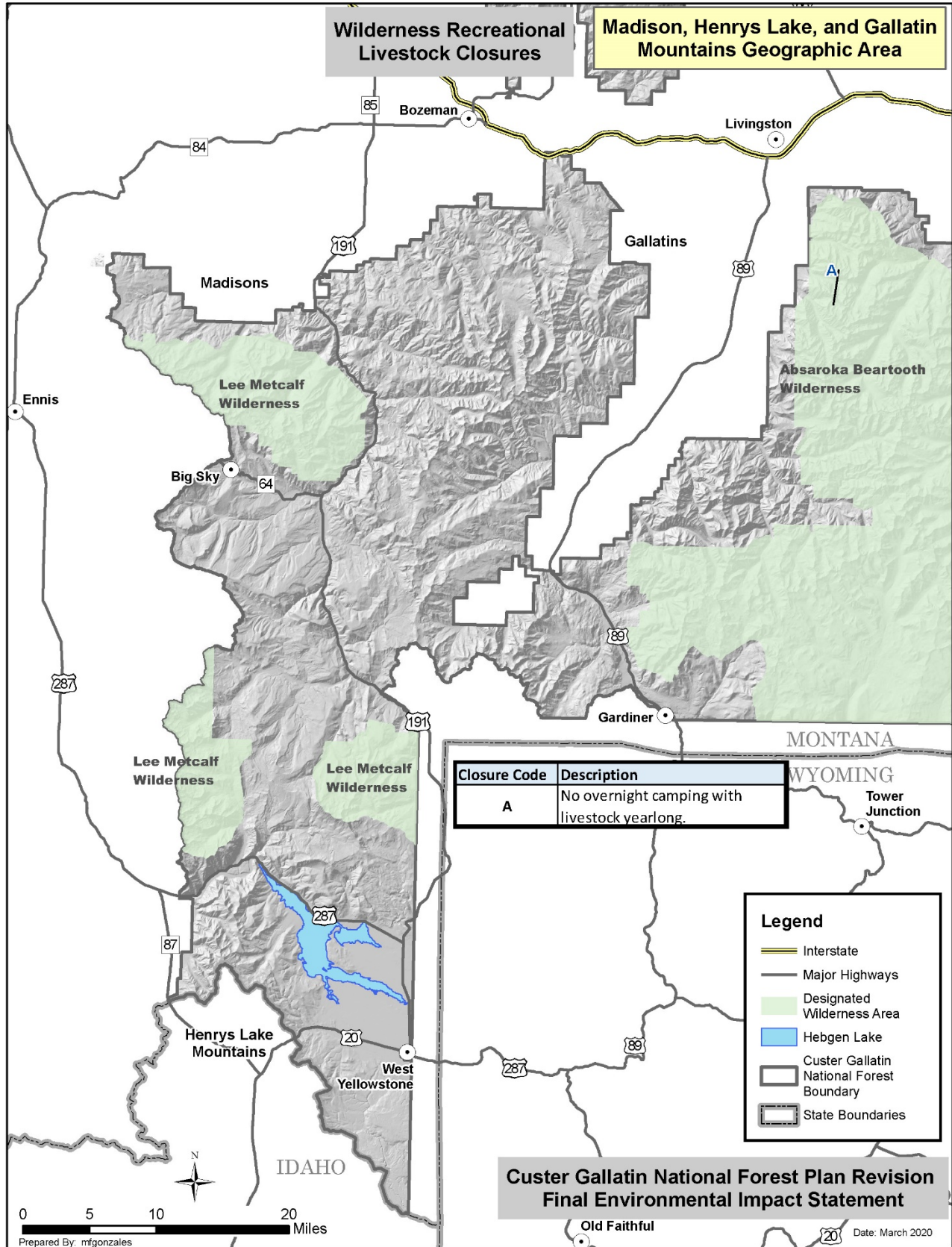
Wilderness Zones



Wilderness Campfire Restricted Areas



Wilderness Recreational Livestock Closures



Appendix B: Vegetation and Timber Analysis Process

Notable Changes between the Draft and Final Environmental Impact Statement

- Additional results and discussion were added regarding the natural range of variation analysis informing the maximum opening size.
- Non-forested vegetation management (burning) was acknowledged and accounted for outside the vegetation models.
- A maximum constraint on timber volume was added for Pine Prairie Savanna systems in the eastern portion of the national forest.
- Succession time from non-forest to forest was dependent on how far the site was from the nearest seed source.
- Desired conditions were analyzed independently for each geographic area.

Introduction

The alternatives described in this environmental impact statement were simulated with vegetation models to provide information used to compare and contrast effects to vegetation condition and timber volume through time. The analysis included an assessment on the natural range of variation to inform the development of desired conditions, identification of lands suitable for timber production, and evaluation of movement towards vegetation desired conditions and associated management activities, including timber harvest. This appendix describes the analytical methods and tools used to do the analysis supporting the comparison of alternatives and summarizes the results.

Data and Information Sources for Vegetation Analyses

A variety of well-documented datasets and tools have been used to inform the models used for the terrestrial vegetation analysis. They collectively make up the current best available information for quantifying vegetation conditions. The primary databases and information sources used in the vegetation analysis process are briefly summarized below.

Forest Inventory and Analysis

Forest inventory and analysis data consists of a set of points established on a nationwide systematic grid across all ownerships and regardless of management emphasis. The sample design and data collection methods are scientifically designed, publicly disclosed, and repeatable. For purposes of describing existing vegetation information for broad-scale analyses, it is infeasible to maintain a field inventory on every acre of a large analysis unit such as the 3.1 million acres of the Custer Gallatin National Forest. The Custer Gallatin inventory and analysis plots provide a systematic, spatially balanced, statistically reliable inventory using national protocols appropriate for providing unbiased estimates of forest conditions for use at broad scales of analysis. There are 517 plots for the entire plan area.

In 2015, the Northern Regional Office of the Forest Service, in collaboration with the Remote Sensing Application Center and Interior West Forest Inventory and Analysis developed a set of protocols to re-measure forest inventory and analysis plots after they were burned by recent wildfires; re-measurement was done for the Custer Gallatin National Forest plots and used for this analysis (Bush 2015). Plots are re-

measured on a 10-year cycle, allowing evaluation of trends in forest conditions over time. Each plot represents about 6,000 acres. For more detailed information on forest inventory and analysis, refer to the work of Bush and Reyes (2014), Czaplewski (2004), and the Interior West Forest Inventory and Analysis Program website (<http://www.fs.fed.us/rm/ogden/index.shtml>).

Region Vegetation Map (VMap)

The USDA Forest Service Northern Region, also referred to as Region 1, Vegetation Map (VMap) is a spatially explicit (mapped), polygon-based product derived from remotely sensed data that contains information about the extent, composition, and structure of vegetation across National Forest System lands in the Northern Region. The VMap database provides four primary map products: lifeform, tree canopy cover class, tree size class, and tree dominance type. Secondary map products used in this analysis include “image likeness scores” for each tree species in each polygon, as well as estimated diameter of trees in each polygon. Satellite imagery and airborne-acquired imagery are used to develop the database and are refined through field sampling and verification. The VMap was designed to allow consistent, continuous applications between regional inventory and map products and across all land ownerships with sufficient accuracy and precision. An independent accuracy assessment was conducted to provide a validation of the data, giving an indication of the reliability of the map products (Brown 2016). Refer to the Northern Region’s “Multi-level Vegetation Classification, Mapping, Inventory and Analysis System” (Barber et al. 2009) and other publications (Barber et al. 2011) for an overview of the map unit design, the process used to develop the layers, and a detailed description of VMap vegetative data.

Monitoring Trends in Burn Severity

Monitoring Trends in Burn Severity is an interagency program whose goal is to consistently map the burn severity and extent of large fires across all lands of the United States from 1984 to present. This includes all fires 1,000 acres or greater in the western United States and 500 acres or greater in the eastern United States. The extent of coverage includes the continental United States, Alaska, Hawaii, and Puerto Rico. Monitoring Trends in Burn Severity data are freely available to the public and are generated by leveraging other national programs including the Landsat satellite program, jointly developed and managed by the U.S. Geological Survey and the national Aeronautics and Space Administration (NASA). Landsat data are analyzed through a standardized and consistent methodology, generating products at a 30-meter resolution dating back to 1984. One of the greatest strengths of the program is the consistency of the data products, which would be impossible without the historical Landsat archive, the largest in the world. Additional information and data can be found at the Monitoring Trends in Burn Severity website (<https://www.mtbs.gov/>) and Eidenshink et al. (2007).

Custer Gallatin National Forest Geographic Information System

The Custer Gallatin National Forest has a library of geographic information system (GIS) data for the national forest. The library includes a large number of mapped data layers with associated metadata. Primary layers referenced for the vegetation analysis include vegetation data layers (VMap), fire history, fire start history, timber harvest history, insect and disease aerial detection survey data, grizzly bear habitat, lynx habitat layers, roads, topographical features such as elevation and slope, and administrative-related boundary layers (such as ownership, inventoried roadless areas, wilderness areas, and wildland-urban interface).¹

1. The link to forest geospatial data can be found on the Custer Gallatin National Forest’s web page: (<https://www.fs.usda.gov/main/custergallatin/home>).

Many summaries and assessments of vegetation condition were developed using GIS, which is both an analysis tool and a display technology, meaning it can be used both to track information and to display it in a variety of graphic formats. As explained later, the GIS tool was used in determining timber suitability. It was also used to build the acre summaries needed for PRISM analysis areas and spatial data for the SIMPPLLE model.

Potential Vegetation Types

Potential vegetation types are mapping units delineating areas that have similar biophysical environments (such as climate and soil characteristics) that produce plant communities of similar composition, structure, and function. Potential vegetation provides a basis for identifying and mapping unique biophysical conditions (Pfister et al. 1977) which can form as the basis of understanding ecological dynamics including successional development (Arno et al. 1985), fire regimes (Barrett 1988, Morgan et al. 2001) and site productivity (Milner 1992). The Forest Service's Northern Region has identified potential vegetation groups (broad- and mid-level groupings of habitat types) that are recommended for use at broad levels to provide consistent analysis and monitoring, as described by Milburn et al. (2015). Three coniferous forest potential vegetation types are found on the Custer Gallatin National Forest: warm dry, cool moist, and cold. For this analysis, the warm dry potential vegetation type was divided in to two types: warm dry-montane and warm dry-pine savanna. This was done to better capture the significant compositional and biophysical differences between the montane and pine savanna ecosystems. Refer to appendix D of the revised plan for a cross-reference of habitat types and other vegetation classifications to the potential vegetation types used in the plan.

For modeling and analysis, it was necessary to map the distribution of potential vegetation types across the Custer Gallatin. The potential vegetation type map used for this analysis was developed by the Northern Region in the early 2000s (Jones 2004). Sources of data included field plots and remote sensing. Lands with no field data were populated by extrapolation of plot data and the use of models that integrated site factors influencing vegetation, such as precipitation, slope, and elevation. This layer, referred to as *R1 Potential Vegetation Types* or *R1-PVT*, is the best available potential vegetation type layer. It is the only map of potential vegetation that covers the national forest, and is a mid-level depiction of ecological condition. Potential vegetation classifications were adjusted when necessary to be consistent with current vegetation maps. Reid et al. (2018) shows the vegetation grouping and adjustment logic used for the Custer Gallatin plan revision.

Vegetation Models

The vegetation management strategy for the Custer Gallatin National Forest is to maintain or trend towards the desired conditions for vegetation. Modeling changes in vegetation over time, choosing appropriate management practices, and evaluation of movement towards desired conditions was accomplished using the following set of analytical tools and models:

- FVS (Forest Vegetation Simulator)—This forest growth simulation model was used to estimate timber growth and yield as well as vegetation response to alternative management timings and methods (Dixon 2008).
- PRISM (Plan-level foRest activity Scheduling Model)—This model was used to derive a schedule for vegetation treatments in each alternative to achieve vegetative desired conditions (Nguyen 2018). Treatments were chosen from the suite of possible management options modeled with the Forest

Vegetation Simulator. Treatments were also chosen to respond to resource constraints such as watershed integrity, sustainable timber products, and budget limitations.

- SIMPPLLE (SIMulating Patterns and Processes at Landscape scaLEs)—This model was used to project the treatments scheduled by the PRISM model in the context of an uncertain future (Chew et al. 2012). Natural processes such as fire, succession, insect and disease were simulated in a stochastic fashion in and around the PRISM-scheduled treatments to provide a range of possible vegetation conditions for each alternative. This model was also used independently to reconstruct the natural range of variation used to inform desired conditions for vegetation.

These models are tools that provide information useful for understanding vegetation change over time and the relative differences between alternatives. The PRISM and SIMPPLLE models are best used to provide information of comparative value; these models are not intended to be predictive or to produce precise values for vegetation conditions. Out of necessity, the models simplify complex and dynamic relationships between ecosystem processes and disturbances (such as climate, fire, and succession) and vegetation over time and space. The best available information, including corroboration with independent data sources, professional experience, and knowledge is used to build these models; however, there is a high degree of variability and an element of uncertainty associated with the results because of the ecological complexity and the inability to predict accurately the timing and/or location of future events. The following sections provide detailed descriptions of each of the above-mentioned models.

Model Interactions

The PRISM and SIMPPLLE models are used interactively to analyze vegetation conditions for alternatives into the future. Wildland fire disturbances are first modeled in SIMPPLLE. Resultant disturbance levels are then input into the PRISM model as acres of projected wildland fire and insect disturbance. The PRISM model is then run to schedule treatments to move toward desired conditions in the context of average expected disturbance levels. The outputs from PRISM are then input into the SIMPPLLE model to evaluate treatments in the context of a range of stochastic ecological processes and disturbances (fire, insect, disease, and succession) and spatial analysis of the change in vegetation conditions over time. Figure 1 displays the interaction and relationship between the PRISM and SIMPPLLE models.

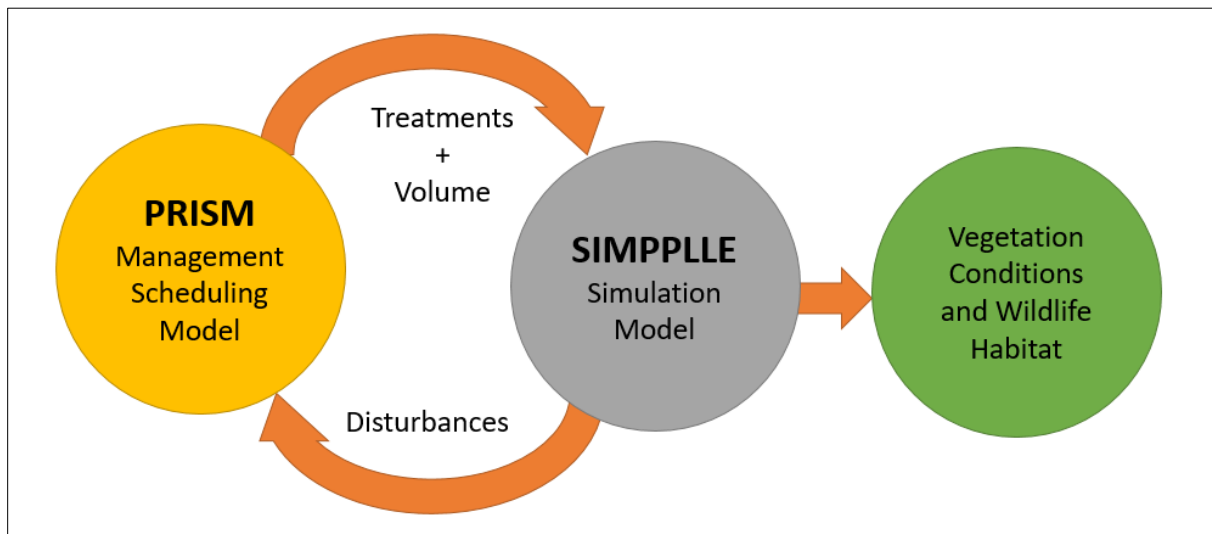


Figure 1. Use of PRISM and SIMPPLLE models in determining effects on vegetation conditions and habitat

Vegetation Analysis Process and Assumptions

Natural Range of Variation

Introduction

A critical step in assessing ecological integrity and desired conditions was to determine the natural range of variation for selected key ecosystem characteristics and then assess the status of the ecosystem based on projected trends of key ecosystem characteristics. The natural range of variation refers to the variation of ecological characteristics and processes over scales of time and space that are appropriate for a given management application (FSH 1909.12). It represents the distribution of conditions under which ecosystems developed and gives context for evaluating the integrity of current conditions, and identifying important compositional, structural, and functional elements that may warrant restoration. In contrast to the generality of historical ecology, the natural range of variation concept focuses on a distilled subset of past ecological knowledge developed for use by resource managers; it represents an explicit effort to incorporate a past perspective into management and conservation decisions (Wiens et al. 2012).

The future will not be the same as the past. Further, the analysis of natural range of variation includes inherent uncertainty: it is appropriate to use additional resources including literature and expert opinion to ensure the “envelope” of vegetation conditions described by desired conditions will meet future ecological and social needs. Therefore, desired conditions are not always equal to the natural range of variation, and additional factors were considered in the development of desired conditions. There may be other factors (social, economic, or ecological) that lead the responsible official to determine that the natural range of variation may not be an appropriate desired condition for certain characteristics. These considerations include maintaining conditions that contribute to long-term resilience given uncertainties in future climate and disturbances; sustaining stand structures or species compositions that provide habitat for at-risk wildlife or plant species; conserving rare structures or components; existing or anticipated human use patterns; the effects changing climate may have; and ecosystem services expected from national forest lands (such as reduction of fire hazard and production of forest products).

There is also potential for ecological transformations to occur in temperate ecosystems, based on the potential for interrelated drivers such as chronic and acute drought, wildfire, and insect outbreaks to push ecosystems beyond their thresholds for resilience (Millar and Stephenson 2015, Golladay et al. 2016). In some cases, management intervention might be able to ease the transition to new forest states and minimize losses of ecosystem services (Millar and Stephenson 2015). We do not currently have the capability to predict such possible shifts at the local scale. By basing the desired conditions around the full range of natural variation, with a focus on maintaining the full suite of ecosystem diversity and components that enhance resilience to disturbance, the revised plan would guide management toward maintaining functioning ecosystems in the face of uncertainty.

Process and Methods

The modeling extent for the natural range of variation analysis covers the entire Custer Gallatin National Forest plan area, including lands of other ownerships. This includes private lands around the island mountain ranges as well as wide buffers around smaller pieces of ownership, such as in the Pryor, Ashland, and Sioux geographic areas. These areas were included to allow natural processes to move across the large landscape. In addition, the entire Crazyes Geographic Area was included, for similar reasons, even though the Custer Gallatin only administers the southern half of this mountain range.

Outputs were summarized for National Forest System lands on the Custer Gallatin. The model was run for each geographic area individually due to the large extent.

When considering the period of time over which to evaluate the natural range of variation, “the pre-European influenced reference period considered should be sufficiently long, often several centuries...and should...include short-term variation and cycles in climate.”² To meet this intent, vegetation conditions 1,000 years into the past were modeled. This reference period allowed us to simulate the conditions associated with much of the time period known as the Medieval Climate Anomaly (about 950 to 1250), as well as the other end of the climate spectrum known as the Little Ice Age (early 1300s to about 1870s). The inclusion of the Medieval Climate Anomaly is valuable in that it might indicate conditions and processes that could occur in the modern climate regime. SIMPPLE was run under a scenario that included natural ecological processes and disturbances, and their interaction with climate, using the Palmer Drought Severity Index as the indicator of past climate. Data for this index is reconstructed for localized points, and the data point nearest the Custer Gallatin National Forest was used to evaluate the climate. The data was categorized into three climate scenarios—wetter, dryer, and normal—and the appropriate scenario was applied to each modeling period (decade). Key model processes, such as wildfire, insects, and disease function differently depending on the climate scenario.

Wildfire processes, including the probability of ignition, fire sizes, fire regimes (severities), weather ending events, and effects to successional pathways are key drivers in the model. Wildfire processes were calibrated using local fire history data, applicable fire history studies and publications, previous modeling efforts, and expert judgment. Most notably, a detailed analysis was done to estimate historical fire regimes using LANDFIRE reference data (Rollins and Frame 2006). The probability and effects of key insect and disease processes (bark beetles, defoliators, and root diseases) were also calibrated using the latest science regarding insect hazard and mortality trends, local data, and expert judgment.

For the natural range of variation, the model was run for 30 iterations. Multiple iterations were used to capture the unpredictable nature of disturbances and their influence on vegetation dynamics on the landscape. Since we do not have data on the exact vegetation and disturbance histories, simulating multiple scenarios within the range of known and understood uncertainty results in a range of outcomes that collectively represent the natural condition of the past. It was important to create a range of random starting points so that the analysis reflected conditions unaffected by modern influences. To accomplish this, current vegetation conditions were run for 50 periods (500 years) to remove the influence of modern-day management and fire suppression effects on the landscape. The landscape condition resulting from the 50-period run was then used as an input seed for the natural range of variation iterations. The 30 iterations were done in three batches of 10. Each batch was run for 119 time periods and had a unique random climate stream for the first 19 time periods. The final 100 time periods followed the known historical climate stream according to the Palmer Drought Severity Index. Only the results from the last 100 periods (1,000 years) were used for the final natural range of variation results. In this way, each iteration represented a unique vegetation condition for the full 100 periods. Conditions between runs for the first 19 periods potentially were correlated due to starting with the same vegetation conditions in each batch.

2. Forest Service Handbook 1909.12, definition in zero code.

Table 1 shows the results of the natural range of variation analysis for species composition and structure.

Table 1. Natural range of variation (NRV)* shown as the proportion of the specified Northern Region (Region 1) broad potential vegetation type containing the specified characteristic

Ecosystem Characteristic	Region 1 broad potential vegetation type (PVT)	Metric (species, size class, density class)	NRV Low (percentage of PVT)	NRV High (percentage of PVT)
Dominance (Dominant tree species)	All	Douglas-fir	25.2%	30.1%
	All	Ponderosa pine	12.5%	13.8%
	All	Lodgepole	10.9%	16.4%
	All	Spruce/Fir	19.2%	25.5%
	All	Whitebark	15.5%	19.2%
Species Presence (Presence of at least one tree per acre)	All	Douglas-fir	36.2%	40.4%
	All	Ponderosa pine	12.5%	13.9%
	All	Lodgepole	21.0%	29.8%
	All	Spruce	20.6%	24.9%
	All	Fir	31.3%	40.5%
	All	Whitebark	17.0%	20.8%
Size (Mean basal area weighted diameter)	Cold	Seed/Sap (0–5 inches d.b.h.)	2.2%	24.7%
	Cold	Pole (5–10 inches d.b.h.)	5.8%	24.3%
	Cold	Medium (10–15 inches d.b.h.)	48.7%	71.5%
	Cold	Large (<15 inches d.b.h.)	8.2%	20.9%
	Cool Moist	Seed/Sap (0–5 inches d.b.h.)	5.6%	34.4%
	Cool Moist	Pole (5–10 inches d.b.h.)	5.0%	27.7%
	Cool Moist	Medium (10–15 inches d.b.h.)	34.1%	60.8%
	Cool Moist	Large (<15 inches d.b.h.)	9.4%	25.8%
	Warm Dry – Montane	Seed/Sap (0–5 inches d.b.h.)	9.8%	37.8%
	Warm Dry – Montane	Pole (5–10 inches d.b.h.)	3.6%	15.5%
	Warm Dry – Montane	Medium (10–15 inches d.b.h.)	20.9%	35.1%
	Warm Dry – Montane	Large (<15 inches d.b.h.)	28.7%	62.1%
	Warm Dry – Pine Savanna	Seed/Sap (0–5 inches d.b.h.)	2.3%	37.2%
	Warm Dry – Pine Savanna	Pole (5–10 inches d.b.h.)	0.0%	24.7%
	Warm Dry – Pine Savanna	Medium (10–15 inches d.b.h.)	0.0%	24.5%
Warm Dry – Pine Savanna	Large (>15 inches d.b.h.)	54.2%	92.5%	
Density (Canopy cover)	Cold	Low (0–40%)	19.9%	62.8%
	Cold	Medium (40–60%)	20.3%	54.8%
	Cold	High (>60%)	13.8%	30.4%
	Cool Moist	Low (0–40%)	8.4%	33.7%
	Cool Moist	Medium (40–60%)	25.3%	44.1%
	Cool Moist	High (>60%)	29.9%	64.6%
	Warm Dry – Montane	Low (0–40%)	33.6%	67.2%
	Warm Dry – Montane	Medium (40–60%)	27.2%	49.4%
	Warm Dry – Montane	High (>60%)	4.4%	19.9%
	Warm Dry – Pine Savanna	Low (0–40%)	61.3%	99.0%
	Warm Dry – Pine Savanna	Medium (40–60%)	0.0%	17.7%
	Warm Dry – Pine Savanna	High (>60%)	0.7%	24.0%

*The range shown is the middle 90 percent of the full range of variability calculated in the analysis of 30 runs of 1,000 years each. d.b.h. = diameter at breast height

Table 2 shows results for the patch size distribution.

Table 2. Natural range of variation in patch size distribution* shown here as the proportion of the specified Northern Region (Region 1) broad potential vegetation type containing the specified patch size and type

Region 1 broad potential vegetation (PVT) type	Patch Size (acres)	Early Seral (less than 10 inches diameter; percentage of PVT)	Mid Seral (10 to 15 inches diameter; percentage of PVT)	Late Seral (greater than 15 inches diameter; percentage of PVT)
Cold	<40	3–6%	11–16%	11–14%
	40–100	1–2%	4–8%	4–6%
	100–500	1–5%	6–14%	7–11%
	500–1,000	0–2%	2–6%	3–6%
	>1,000	0–8%	3–16%	8–32%
Cool Moist	<40	5–11%	11–14%	12–15%
	40–100	1–4%	4–6%	4–5%
	100–500	1–6%	6–10%	6–9%
	500–1,000	0–2%	2–5%	2–4%
	>1,000	0–8%	4–15%	8–19%
Warm Dry – Montane	<40	7–15%	10–16%	19–23%
	40–100	2–4%	2–4%	6–9%
	100–500	3–6%	2–5%	7–15%
	500–1,000	1–3%	0–2%	2–6%
	>1,000	1–10%	0–4%	4–23%
Warm Dry – Pine Savanna	<40	1–11%	0–9%	5–6%
	40–100	0–1%	0–2%	2–3%
	100–500	0–4%	0–5%	4–7%
	500–1,000	0–3%	0–3%	2–4%
	>1,000	0–20%	0–21%	35–76%

*Patches are defined by a combination of seral stage and vegetation type for five patch-size categories. The range shown is the middle 90 percent of the full range of variability calculated in the analysis of 30 runs of 1,000 years each.

Maximum Size of Regeneration Harvest Openings Standard

An analysis of the natural range of variation of early seral patch sizes was used to inform whether an alternate standard for maximum patch size of even-aged regeneration harvest treatments may be warranted for the Custer Gallatin National Forest. Size distributions of early seral patches were quantified at two scales: 1) forestwide and 2) within individual potential vegetation types to explore the potential effects of different disturbance regimes associated with each potential vegetation type. As seen in figure 2, average patch size within a given potential vegetation type is always smaller than the forestwide average. This result reflects the fact that potential vegetation types are tightly interdigitated across the landscape. Consequently, when disturbances spread across the landscape, often driven by weather and structural conditions, they will often create large patches of early seral forest spanning multiple potential vegetation types. As such, stratifying by potential vegetation type resulted in large patches of early seral forest being artificially broken into smaller patches in the results. For example, if a large warm dry seedling/sapling patch is separated by a narrow strip of cool moist forest (such as a riparian area) it would be summarized as two smaller patches, even if the whole area experienced the same disturbance and constituted a single patch of early seral forest. Based on these considerations, a maximum even-aged regeneration harvest opening size limit of 75 acres is used in FW-TIM-STD-08. This value represents a point well below the forestwide average but within the range for any single potential vegetation type.

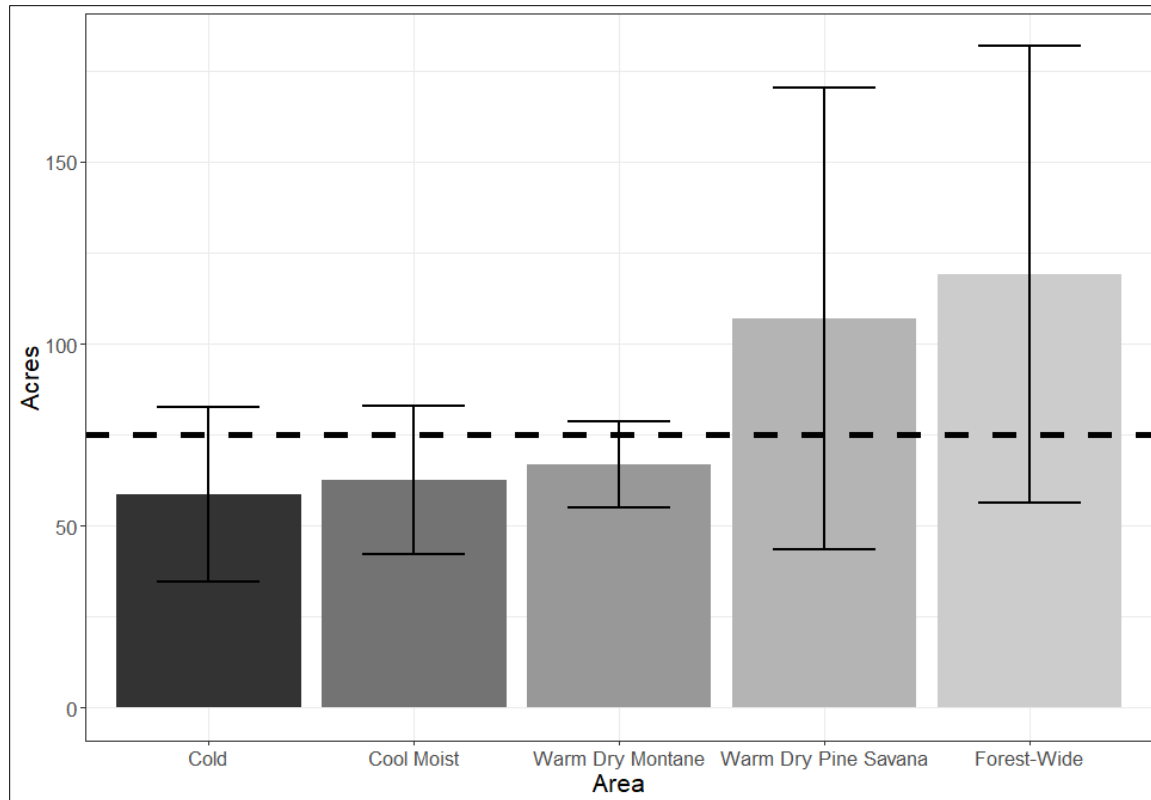


Figure 2. Average patch size of early successional forest based on an analysis of the natural range of variation. Error bars represent one standard deviation. Dashed line represents the maximum opening size (75 acres).

Timber Suitability

For each alternative, we made a determination of “lands suited for timber production” according to the direction in the Forest Service Handbook (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.

As described below, identifying suitable timber land depends, in part, on assessing the biophysical properties of the land (such as site productivity, soils, potential vegetation, or other factors). The available spatial data depicting this information is often derived from coarse-scale assessments, satellite

imagery, and statistical models. Consequently, while broad-scale estimates of timber suitability are fairly reliable (for example, the total number of suitable acres within a given geographic area), there is far less certainty about the spatial precision and classification accuracy of any given acre (or pixel). Some areas will certainly be misclassified on our “maps” due to inherent error in the input data. As such, the purpose of this exercise is to model and estimate the acres of suitable timber land for broad-scale planning purposes, not to create precise maps of suitable timber lands for use in project planning or implementation. The final determination of timber suitability must consider plan direction but should be made on the ground at the project-level, using site-specific information and analysis.

Step 1: Identification of Lands that May be Suited for Timber Production

The first step of the timber suitability analysis consists of identifying lands that are not suited based on legal and technical factors.³ If any of these factors apply to the land, the land is not suited for timber production. **These lands do not vary by alternative in the plan revision environmental impact statement.**

To address 36 CFR 219.11(a)(i) and (ii)—lands that have been withdrawn or prohibited from timber production—the areas in table 3 were subtracted from the total National Forest System land ownership area (about 3.04 million acres). The area eliminated was approximately 1,903,892 acres, about 63 percent of the National Forest System lands, leaving roughly 1,141,188 acres remaining for consideration as suitable for timber production. In some withdrawn areas, timber harvest may be used as a tool to meet other resource objectives.

Table 3. Designated areas that have been withdrawn from timber production. Because there is overlap in some designations, the total amount of a particular designation may exceed what is shown.

Designated Area	Acres	Rationale for Not being Suitable for Timber Production
Designated Wilderness	1,050,448	The Custer Gallatin National Forest manages portions of the Absaroka-Beartooth Wilderness and the Lee Metcalf Wilderness. Designated wilderness areas are excluded from timber production and harvest. <i>Recommended wilderness</i> is NOT excluded in this step because it is re-evaluated as a part of revision; it would be excluded in step 2 and may vary by alternative.
Wilderness Study Area	144,064	The Custer Gallatin National Forest manages one congressionally designated wilderness study area, the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area. Per the Wilderness Study Act, these areas are to be managed as wilderness until Congress decides whether to designate them as wilderness.
Research Natural Areas	22,715	The Custer Gallatin National Forest has ten existing research natural areas. The designation of research natural areas precludes suitability for timber production.
Cabin Creek Recreation and Wildlife Management Area	36,439	The Cabin Creek Recreation and Wildlife Management Area was designated by the Lee Metcalf Wilderness Act in 1983. Public law 98-140, October 31, 1983, established the Cabin Creek area for the purpose of wildlife and recreation.
Additional Inventoried Roadless	644,162	The Roadless Area Conservation Rule does not allow for timber production to be a management objective.
Continental Divide Scenic Trail	6,618	The Continental Divide National Scenic Trail was designated by Congress in 1978. A half-mile buffer (one half-mile on either side) is not suitable for timber production.

3. Described at 36 CFR 219.11 (a) (i), (ii), (iv), (v), and (vi), and further described in sections 61.11 to 61.14 of FSH 1909.12.

Designated Area	Acres	Rationale for Not being Suitable for Timber Production
Wild Horse Territory	1,297	The Wild Free-Roaming Horse and Burro Act of 1971 (P.L. 92-195), as amended by the Federal Land Policy and Management Act of 1976 and the Public Rangelands Improvement Act of 1978, established wild free-roaming horses as a part of the natural system. This area is not suitable timber production.
National Natural Landmarks	1,267	The National Natural Landmarks Program was established in 1962 to encourage the preservation of sites illustrating the geological and ecological character of the United States, to enhance the scientific and educational value of sites thus preserved, to strengthen public appreciation of natural history, and to foster a greater concern for the conservation of the nation's natural heritage. Three national natural landmarks are located on the Custer Gallatin National Forest. These areas are not suitable timber production.
Total Acres	1,907,010	

A detailed data analysis was conducted to address lands for which the technology is not currently available to harvest without irreversible soil damage; there is no reasonable assurance of restocking within 5 years after harvest; or the land is non-forest land.⁴ The following ruleset in table 4 was determined to capture these factors. This step eliminated approximately 458,789 acres. The remaining 680,117 acres (22 percent) of the Custer Gallatin National Forest System lands may be suited for timber production table 5.

Table 4. Additional areas eliminated¹

Factor	Acres	Areas eliminated from Lands that May be Suitable
Non-forest land and lands developed for non-forest uses; Lands not suitable for timber production due to technology or site considerations, where harvest operations may result in either irreversible damage; Lands where adequate restocking within 5 years is not assured	458,789	A 33-foot total width, including buffer, was applied to roads, corridors, and railroads. All existing roads are assumed to be "improved." Developed campgrounds, picnic areas, interpretive sites, cabin and lookout rentals, trailheads, ski areas, and visitor centers. All lakes and streams in National Hydrologic Dataset. Smaller streams are left in as small inclusions. Region 1 Broad PVT ² = Alpine, Grassland, Riparian/Wetland, Shrubland/Woodland, Sparse Adjusted PVT ² = pifl, pial Percent Slope > 80% (PCT_SLP_AV >80% from VMap data)

1. See 36 CFR 219.11(a), (iv)(v)(vi). 2. See Reid et al. 2018

Table 5. Acres that may be suited for timber production, by geographic area*

Geographic Area	Total National Forest System Acres	May Be Suited Acres	Percentage of Geographic Area
Sioux	164,460	65,959	40%
Ashland	436,134	196,127	45%
Pryors	75,067	34,145	45%
Absaroka Beartooths	1,358,541	105,647	8%
Bridgers, Bangtails, Crazies	205,148	61,491	30%
Gallatin, Madison, Henrys	806,615	216,714	27%
Custer Gallatin National Forest	3,045,965	680,117	22%

*Slivers were manually cleaned up in the "may be suitable" feature class, and that resulted in a reduction of 56 acres.

4. Code of Federal Regulations 219.11(a), (iv)(v)(vi).

Step 2: Identify Lands that Are Suited for Timber Production

In step 2, lands that *are* suited for timber production are identified by further subtracting lands that are not suited for timber production (based on specific plan components) from the lands identified as *may be* suitable (the results of step 1). Table 6 displays the lands that were removed due to plan components or area designations that vary across alternatives, thereby leading to different amounts of land suitable for timber production.

Table 6. Additional areas removed from lands that may be suitable for timber production based on the compatibility of timber production with the desired conditions and objectives for those lands

Area	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Eligible Wild and Scenic Rivers	12,834	13,821	13,821	13,821	13,821	13,821
Special Interest Areas	2,567	2,567	2,567	2,567	2,567	2,567
Riparian Management Zones	0	69,035	69,035	69,035	69,035	69,035
Recommended Wilderness	85	716	1,364	47,134	0	3,962
Backcountry Areas	0	20,700	47,221	2,282	955	25,192
Total Acres	15,486	106,839	134,008	134,839	86,378	114,577

Note: Acres of each category will not match total acres within that designation if lands have been removed in a previous step of the suitability analysis. For example, the vast majority of existing recommended wilderness or backcountry areas were within an inventoried roadless area, so most of these areas were removed in step 1.

Here again, due to the scale of analysis and data limitations, there are small inclusions of unsuitable areas in areas mapped as suitable, and vice versa. Site-specific suitability must be determined at the project level. 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.

The layer resulting after steps 1 and 2 depicts lands that *are suited* for timber production. The lands identified as suitable for timber production are listed by geographic area in table 7 and summarized in table 8 below

Table 7. Acres and percentage of each geographic area suited for timber production for each alternative

Geographic Area	Total NFS acres	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Sioux	164,460	65,959 (40%)	59,061 (36%)	59,860 (36%)	56,779 (35%)	59,061 (36%)	56,779 (35%)
Ashland	436,134	196,127 (45%)	186,299 (43%)	186,299 (43%)	186,305 (43%)	186,449 (43%)	186,299 (43%)
Pryors	75,067	32,888 (44%)	12,628 (17%)	12,628 (17%)	11,349 (15%)	27,371 (36%)	12,618 (17%)
Absaroka Beartooth	1,358,541	98,637 (7%)	80,108 (6%)	80,108 (6%)	71,558 (5%)	85,962 (6%)	80,108 (6%)

Geographic Area	Total NFS acres	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Bridgers, Bangtails, and Crazy	205,148	59,203 (29%)	51,355 (25%)	43,780 (21%)	50,528 (25%)	51,355 (25%)	50,578 (25%)
Madison, Henrys Lake, and Gallatin	806,615	211,814 (26%)	183,823 (23%)	167,239 (21%)	168,755 (21%)	183,538 (23%)	179,153 (22%)
Custer Gallatin National Forest	3,045,965	664,628 (22%)	573,275 (19%)	549,115 (18%)	545,274 (18%)	593,735 (19%)	565,536 (19%)

NFS = National Forest System

Table 8. Summary of suitability of lands for timber production for each alternative, by acres

Land Classification Category	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
A. Total National Forest System lands in the plan area	3,045,965	3,045,965	3,045,965	3,045,965	3,045,965	3,045,965
B. Lands not suited for timber production due to legal or technical reasons	2,365,855	2,365,855	2,365,855	2,365,855	2,365,855	2,365,855
C. Lands that may be suited for timber production (A minus B)	680,110	680,110	680,110	680,110	680,110	680,110
D. Total lands suited for timber production because timber production is compatible with the desired conditions and objectives established by the plan	664,628	573,275	549,115	545,274	593,735	565,536
E. Lands not suited for timber production because timber production is not compatible with the desired conditions and objectives established by the plan (C minus D)	15,482	106,835	130,995	134,836	86,375	114,574
F. Total lands not suited for timber production (B plus E)	2,381,337	2,472,690	2,487,850	2,500,691	2,452,230	2,480,429

PRISM Assumptions and Model Formulation

Landscape Classification

Model formulations in PRISM allow up to four map themes to delineate the landscape, a description of the vegetation types in the forest, and a description of the size class. The four map themes must be specific enough to allow for the plan direction of each alternative to be considered, yet not so specific as to cause the model to be more complex than the high-level planning effort we are analyzing. Together, combinations of the four map themes and two vegetation descriptors make up six “layers” that define the analysis areas used in the PRISM model formulation (table 9).

Table 9. Descriptions of layers used in the PRISM model

Layer (map theme)	Description
Geographic Area	Due to the diversity of the Custer Gallatin, six geographic areas are identified. There are four montane geographic areas distinguished by a diversity of tree species. The four montane areas are 1) Madison-Gallatin, 2) Absaroka-Beartooth, 3) Bridger/Bangtail Crazies, and 4) Pryor Mountains. The two pine savanna geographic areas are generally flatter, drier, and are primarily composed of the ponderosa pine cover type; these are the Ashland and Sioux geographic areas.
Proclaimed National Forest	Runs to determine the sustained-yield limit are distinguished for each proclaimed national forest, with layer 2. This calculation reflects all lands that <i>may be suited for timber production</i> , consistent with the timber suitability analysis process described above. This run does not represent a planning alternative, but rather a baseline calculation that applies to all alternatives. This layer is also in analysis of the all alternatives except no action to ensure that volume harvested in a proclaimed national forest does not exceed the sustained-yield limit of that national forest.
Management Area Groups	The map for management area groups varies by alternative, according to the theme and desired conditions of the alternative. These layers influence the calculation of the projected wood sale quantity and projected timber sale quantity, as well as which type and how much management may occur. Wildland-urban interface is used to stratify the management area layer for two reasons: lynx constraints apply differently to lands within the wildland-urban interface and budget is allocated according to fuel treatments in wildland-urban interface. In PRISM, the Healthy Forests Restoration Act wildland-urban interface definition was applied to provide for consistent interpretation of results (treatment needs and scheduling) across the analysis area. There were 6 management area groups identified, from least management intensity (1) to most allowable management (6).
Wildlife Condition	Key wildlife habitats (grizzly bear and Canada lynx) are identified where certain constraints may apply. These habitats may overlap, and are consistent for all alternatives.
Vegetation Type	Combinations of potential vegetation and cover type describe the vegetation type in this layer. Only forested portions of the forest or areas where forests are expected to regenerate (recent burns, for example) are included in the PRISM model. Areas with non-forested habitat types or disturbed areas not expected to regenerate are excluded from the model.
Structure Class	Combinations of size and density class define the structure classes in the model.

Available Treatments

Treatments in PRISM are aggregated into three broad silvicultural treatment categories: Even-aged management treatments that result in stand-level regeneration (EA), uneven-aged treatments that do not result in stand-level regeneration (GS), and prescribed fire treatments that do not result in stand-level regeneration or timber volumes (PB). There is also a no management, natural growth option available for each stand by default (NG). Table 10 displays which treatments were modeled in which management area groups. This ranges from natural growth allowed everywhere to even-aged only allowed on the suited for timber production lands (MAG 5 and MAG 6). Maximum amounts of these treatments and/or proportions of treatments allowed in different management area groups are described in the constraint section below.

Table 10. Allowable silvicultural methods (treatments) by management area group (MAG)

Silvicultural Method*	MAG 1	MAG 2	MAG 3	MAG 4	MAG 5	MAG 6
NG	yes	yes	yes	yes	yes	yes
GS	no	no	yes	yes	yes	yes
PB	no	yes	yes	yes	yes	yes
EA	no	no	no	no	yes	yes

*See previous paragraph for silvicultural method abbreviations.

Each of these treatments can be tailored to the vegetation type it is applied to through activity and timing information in the yield tables. Activities result in changed vegetation, timber yields, and/or costs. For example, in lodgepole types the EA treatment may be used to represent a clearcut activity, whereas in spruce/fir types, the EA treatment could represent a shelterwood activity. Activities can be modeled to occur at any point in time during the treatment’s timing schedule. At any point in the treatment’s cycle, activities can be stand-alone or grouped as part of a package. Examples in the Custer Gallatin model include precommercial thinning, commercial thinning, harvest-related prescribed burn, and planting.

Table 11 displays a full list of activities used in PRISM yield tables on the Custer Gallatin.

Table 11. List of activities found in yield tables

Activity Label	Activity Code
Broadcast burn	bb
Insect infestation – bark beetle or other	bs
Clearcut with broadcast burn	cs-bb
Commercial thin	ct
Commercial thin with broadcast burn	ct-bb
Commercial thin with underburn	ct-ub
Group selection with commercial thin and underburn	gp-ct-ub
Mixed-severity fire event	msf
Natural attrition	na
Grow-only/no action	no action
Precommercial thin	pct
Planting regeneration*	plant
Seed cut (shelterwood) with broadcast burn	sc-bb
Lynx harvest related treatment	ss
Underburn	ub

*Plant activity is for U type. Planting costs for other types are linked to other activities such as “cs-bb.”

Natural Disturbances

There are two types of natural disturbances recognized by the PRISM model, including stand replacing and non-stand replacing. Stand-replacing disturbances result in a newly regenerated stand condition. The number of stand-replacing disturbance types is unlimited in the model; however, the Custer-Gallatin only used one: stand-replacing fire. There were two non-stand-replacing natural disturbances used in the model; namely, mixed-severity fire (MS) and insect disturbance (BS). Unlike management treatments, natural disturbances are not a scheduling decision that the model gets to choose. Rather the model is calibrated to recognize natural disturbances as they are projected to occur in the future.

The amount of natural disturbances (SR, MS, and BS) was determined using Monitoring Trends in Burn Severity data for the past decade and historical records of insect outbreaks. The amount of wildfire was assumed to double relative to the previous three decades (Erdody and Carnwath 2018). Disturbance levels were modeled in PRISM, requiring a certain percentage of acres to undergo natural disturbance every decade. The following assumptions were used in this modeling.

- **Stand-replacing disturbance** (SR) was defined by vegetation type and size/density class. Numbers are based on historical records, anticipated burning levels into the future, and knowledge about burn vulnerabilities by density classes. Generally, the higher density classes are more at risk of burning with stand-replacing fire. These numbers result in stand-replacing fire that is approximately 11,500 acres per year in early decades, but reaches equilibrium at about 9,000 acres per year in later decades as the forest moves to lower density classes through time. Vegetation was expected to regenerate at the same type that burned, with the exception of the Prairie Ponderosa Pine type (B), which does not always have a seed source and thus can remain unforested for a time (convert to U type). Based on recent history and projected trends, 30 percent of stand-replacing fires in Prairie Ponderosa Pine results in a conversion to an unforested state, where it remains for 40 years before naturally seeding to the Ponderosa Pine type (U.S. Department of Agriculture 2014).
- **Mixed-severity fire** (MS) is allocated by initial type and size, in proportion to their historical occurrence within the last three decades. The fire interval assumption for mixed-severity fire is every 50 years on a given site.
- **Insect disturbance** (BS) includes insect effects for most types. Lodgepole and other pine types get bark beetle (older sizes are more susceptible), and Douglas-fir gets a defoliator. The interval for outbreaks is every 60 years starting in decade 4 to capture the episodic nature of mountain pine beetle infestations, acknowledging that the latest episode has occurred fairly recently within the last 20 years. Note that insect outbreaks are not modeled in smaller size classes due to the relative resilience of these types.
- **Disturbance distribution constraint:** Disturbances are equally portioned by their associated vegetation type's occurrence in the landscape. For instance, if the input is 10 percent of Vegetation Type Low Density burns with stand-replacing fire, all acres meeting that criterion at each time step will lose 10 percent of their acres to stand-replacing fire regardless of their spatial context. For mixed-severity fire and insect disturbances, if the input is 10 percent of a certain Vegetation Type and Structure Class gets the disturbance, all analysis areas with that type, regardless of their spatial context, will have 10 percent of their acres allocated that regime. Furthermore, mixed-severity fire was evenly distributed through time to represent anticipated future fire levels and trends (approximately 75,000 acres each decade).

Management Costs

The 2012 Planning Rule and Directives at Forest Service Handbook 1909.12, chapter 60, section 64.32 dictate that timber quantity projections must take into account the fiscal capability of the planning unit. This is accomplished in PRISM by recognizing the costs associated with the different management activities and ultimately weighing them against the unit's projected budget. Management activity costs incurred per acre of treatment represent an average cost that mixes acres of full treatment with acres without treatment. For example, when weed treatments occur, it costs approximately \$141 per acre. However, these costs are incurred only about 15 percent of the time, which makes average per-acre weed costs \$21.15. The assumptions used are described below.

In addition to these per-acre costs, there is a per-volume cost associated with **planning and administering sales**. This cost is \$1.24 per cubic foot of sawlog volume and is based on regional office budget allocations to the Custer Gallatin National Forest, which encompass the variability in project location, cost, complexity, logging system, and other factors. Unit cost data comes from a 3-year budget

allocation average for timber. The Custer Gallatin typically is funded at the constrained budget request level for timber and fuels dollars. The per-cubic foot cost includes the cost of litigation. Litigation incurs an administrative cost that can result in 0 volume. Therefore, that cost is amortized to projects that result in volume.

Reforestation costs are based on local costs developed from planting contracts over the previous 6 years. For timber-related sales, regeneration costs, including site preparation treatments such as prescribed fire, are typically funded by Knutson-Vandenberg (KV) trust funds. Therefore, harvest-related regeneration costs do not count against the budget constraint in the PRISM model. 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.

For insect, mixed-severity fire, and stand-replacing fire disturbances, 90 percent of affected area utilizes natural regeneration and 10 percent requires full planting. However, not all acres in an affected area require treatment. For natural regeneration, 50 percent of the area incurs a \$21 per acre regeneration cost. In the full planting areas, 20 percent of the area incurs a \$702 per acre regeneration cost. The regeneration need is generated from a natural disturbance event and not a prescribed harvest activity so KV funding is not available for funding of reforestation activities. Reforestation efforts from these prescriptions would be funded out of the constrained budget. In PRISM, we used a \$23.50 planting cost for natural disturbances on lands suitable for timber production (MAG 5 and MAG 6). [Note: Implementation of this is for every acre of disturbance, 90 percent is natural regeneration, of which 50 percent incurs a cost ($0.9 \times 0.5 = 0.45$ acre) and 10 percent is planting, of which 20 percent incurs a cost ($0.1 \times 0.2 = 0.02$ acre). This results in $0.45 * \$21 + 0.02 * \$702 = \$23.50$ per acre].

Timber Stand Improvement costs are based on local costs from the Custer Gallatin's 3-year budget data call and sale specific KV plans. Knutson-Vandenberg (KV) can cover timber stand improvement but is nonessential and therefore not assumed. The production coefficient is based on history by vegetation type of how often these treatments actually occur on the ground, as documented in detailed prescriptions. Timber stand improvement costs vary by vegetation type to reflect different stem densities encountered in the activity.

Road reconstruction and administration reflect local costs for road work associated with timber or fuels projects that are counted against the constrained budget. Purchaser-related road work, including new construction and decommissioning of roads associated with projects, is assumed to be \$0 against the constrained budget. Costs borne by the purchaser are inherently included in log values. New road construction is done only minimally on the Custer Gallatin National Forest.

Prescribed burning reflects all costs for preparation and burning (excluding site-prep burning), including intermediate entries as part of a harvest prescription and ecosystem burns not tied to harvest. While burning (of non-activity fuels) associated with harvests can be eligible for KV funding, it is non-essential and therefore not assumed. The 3-year average of treatment unit costs were pulled from the budget data call for wildland-urban interface (\$236 per acre) and non-wildland-urban interface (\$107 per acre).

Weed treatment costs reflect work done pre and/or post vegetation management. The cost assumes an average of treatment types based on the contract documentation (\$49 per acre for roadside; \$74 for off-road; \$225 for backpack), plus \$25 per acre for the cost of herbicide for a total \$141 per acre. Weed treatments accompany harvest or burning on approximately 15 percent of the acres treated.

Whitebark pine surcharge is designed to capture the costs of implementing activities within the vegetation types that contain whitebark pine as a component. Activities such as protection of leave trees, inaccessibility, higher reforestation costs (labor, site prep, etc.) are \$321 per acre more expensive in this vegetation type. Approximately half of the acres of this vegetation type have whitebark pine and incur this cost.

Objective Function

The objective function value of the PRISM model is a mathematical measurement of the quality of a solution. To analyze the Custer Gallatin National Forest plan alternatives, the objective function was the cumulative deviation from desired conditions across all geographic areas, potential vegetation types, vegetation types, structure classes, and time periods. The PRISM model then searches for a forest-level management strategy across all vegetation types and decades that minimizes the objective function value, or total deviation from desired conditions. Deviations in the first five decades of the projection had a value of 1 for every acre either above or below the desired condition. Deviations for decades 6–15 were assigned a value of 0.5. Using these varied weights, the model places more emphasis on short-term desired conditions attainment than longer-term attainment when the actual conditions of the landscape are much less certain. Desired conditions were stratified into broad potential vegetation type, vegetation type, and structure class. Desired conditions were valued within each geographic area independently to reflect plan direction and facilitate good spatial distribution of vegetation conditions.

Resource Constraints

Constraints in the PRISM model define limitations on scheduling management activities to improve the value of objective function (barriers to achieving desired conditions for vegetation). Many of these constraints are used to ensure compliance with laws and policy, as well as to ensure sustainability of other resources such as wildlife, watershed, and the economy. This section describes the constraints used in the PRISM model.

Budget Constraint

The projected timber sale quantity and projected wood sale quantity must be calculated within the fiscal capability of the planning unit. This is accomplished by imposing budget limitations on scheduling management activities. The historical budget available to the Custer Gallatin National Forest was calculated from a 3-year average of actual timber and fuels budgets for fiscal years 2014, 2015, and 2016, at approximately \$3,000,000 per year. This includes three components: timber (approximately 35 percent), wildland-urban interface fuels (approximately 40 percent), and non-wildland-urban interface fuels (approximately 25 percent). The timber portion of this budget supports environmental analysis teams, program management, sale administration and preparation, preconstruction and construction engineering cost, and prescribed burning activities. Fuel treatment funding is included since treatments may contribute volume toward the projected timber sale quantity, projected wood sale quantity, vegetation desired conditions, and fuels reduction targets. For alternative E, the budget was based on a 15 million board feet target and required additional timber funding. This resulted in lower budgets for other program areas which is reflected in the full suite of objectives for this alternative.

The following proportions are applied to ensure the budget is allocated in the appropriate management areas, according to historical proportional allocation:

- Ensure that costs in management area groups 3 and 5 (wildland-urban interface) add up to at least 42 percent of all dollars spent in the time period. [Constraint applied to Periods 1-5 in the model.]

- Ensure that costs in management area groups 4 and 6 (non-wildland-urban interface) add up to at least 23 percent of all dollars spent in the time period. [Constraint applied to Periods 1-5 in the model.]
- The remainder of the timber and fuels funding can be applied anywhere in management area groups 1 through 6.
- These proportional constraints were applied to all alternatives regardless of budget (see below) for the first five decades of the model. Later decades were proportionally unconstrained, and the budget could be applied anywhere.

Harvest Policy Constraints

There are four harvest policy constraints applied to the model, constructed to approximate the direction set by the National Forest Management Act and the 2012 Planning Rule: non-declining yield, geographic area volume, management area volume, and ending inventory.

- *Non-declining Yield:* The non-declining yield constraint requires the volume in each decade to be at or above the volume in the previous decade. This constraint is not directly required by the 2012 Planning Rule, but it ensures that harvest is at or below the sustained-yield limit, and contributes to a sustainable timber sector of the economy.
- *Geographic Area Volume:* The volume from the Ashland and Sioux geographic areas is limited to a maximum of 3 million board feet per year for alternatives A, B, C, D, and F. This constraint contributes to a sustainable economy at local levels, which is a finer scale than the national forest as a whole. The constraint was relaxed for alternative E to accommodate the higher volume of the alternative (4.5 million board feet annually).
- *Management Area Volume:* The model was constrained in the first five decades to schedule at least 80 percent but no more than 95 percent of the volume from management area groups 5 and 6. Between 5 and 20 percent of the volume could come from management area groups 3 and 4. Note there are no volume producing prescriptions allowed in management area groups 1 and 2. This constraint is intended to allow for restoration activities and prevent timber production in areas not suited for timber production.
- *Ending Inventory:* An ending inventory constraint is applied using the standing volume (cubic feet) calculated in the final planning period (15). This must be greater-than or equal the average standing volume of the prior 10 decades (5–14). This prevents the model from artificially over-harvesting in the final period of the simulation.

Dispersion of Openings

To distribute treatments across the landscape, this constraint limits the amount of area that can be in an opening at one time. The amount of area in openings is limited to less than 30 percent of each management area group, excluding management area group 1, since there is no assumed management potential in management area group 1. Openings in management area group 1 are created exclusively by natural processes and are therefore not a management limitation. Openings were modeled by entry as shown in table 13, where the effective opening size was assigned at the time the activity occurred. The opening recovers over 40 years at the rates shown in table 12.

Table 12. Opening recovers over 40 years

Treatment	Effective Opening Size (initial)
Prescribed fire only (PB) – low/mixed severity bb entry	0.45 acre opening for each acre burned
Stand-replacing wildfire (SR)	0.85 acre opening for each acre burned
Mixed-severity wildfire (MS)	0.65 opening for each acre burned
Severe bark beetle (BS)	0.30 opening for each acre infested
Uneven-aged/group selection (GS)	0.30 acre opening for each acre harvested
Even-aged clearcut or shelterwood (EA) – at final harvest activity	0.95 acre opening for each acre harvested
Existing seedling/sapling stands	0.75 acre opening for each acre

Table 14 shows opening recovery rates reflect the gradual recruitment of trees through time. Note that natural disturbances contribute to the opening constraints and therefore must be considered when scheduling management activities that create additional openings.

Table 13. Openings modeled by treatment

Treatment	Effective Opening Size (initial)
Prescribed fire only (PB) – low/mixed severity bb entry	0.45 acre opening for each acre burned
Stand-replacing wildfire (SR)	0.85 acre opening for each acre burned
Mixed-severity wildfire (MS)	0.65 opening for each acre burned
Severe bark beetle (BS)	0.30 opening for each acre infested
Uneven-aged/group selection (GS)	0.30 acre opening for each acre harvested
Even-aged clearcut or shelterwood (EA) – at final harvest activity	0.95 acre opening for each acre harvested
Existing seedling/sapling stands	0.75 acre opening for each acre

Table 14. Recovery of openings through time

Decade After Harvest	Percentage Effective Opening
1	100 %
2	75 %
3	50 %
4	25 %
5	0 % (fully recovered)

Constraints on Prescribed Burning

To address operational capacity, air quality standards, and weather window limitations, the amount of prescribed burning was limited in the model to 10,000 acres or less every year. Prescribed burning includes acres burned as a part of site preparation activities after harvest, as well as acres burned for fuels reduction, wildlife habitat improvement, or other reason. There were specific distribution requirements for where prescribed burning must occur, described by broad potential vegetation type.

- Cold: Maximum 1,500 acres per year and no more than 15 percent of all prescribed burn acres
- Cool Moist: Maximum of 4,000 acres per year and no more than 40 percent of all prescribed burn acres

- Warm Dry Montane: Maximum of 3,000 acres per year and no more than 30 percent of all prescribed burn acres
- Warm Dry Pine Savanna: At least 60 percent of all prescribed burns must be in the warm dry pine savanna system, consistent with the forest's historical and projected management strategy.

Constraints on Wildlife Habitat

Potential habitat areas for both grizzly bear and lynx were one of the map layers used to delineate the landscape into planning units (analysis areas) in the PRISM model. Constraints were considered for these species to reflect direction in the revised plan.

- *Grizzly Bears*: For coarse-scale modeling purposes, a constraint for grizzly bears is not needed in the Custer Gallatin PRISM model due to the small amount of grizzly bear recovery zone eligible to be selected for management. Most of these areas are in management area group 1 or 2 where little to no treatment can occur.
- *Lynx*: Specific constraints in lynx habitat are applied to comply with the Northern Rockies Lynx Management Direction, as shown in table 15. "Lynx habitat" here refers to the envelope of potential habitat, regardless of its suitability for lynx at the time of treatment.
 - ◆ Constraints are applied to both "occupied" and "unoccupied" habitat to be consistent with the direction of the Northern Rockies Lynx Management Direction.
 - ◆ A maximum of 15 percent of the lynx habitat (occupied and unoccupied) can be treated with an even-aged activity or burned with stand-replacing fire in management area groups 2, 4, and 6 in any decade. This implements standard 1 of the Northern Rockies Lynx Management Direction, which limits openings to 30 percent within a two-decade span. Management area group 1 (wilderness) is exempt from this constraint since there is little or no management that occurs in wilderness. Management area groups 3 and 5 (wildland-urban interface) are not constrained so that treatment may occur around communities for protection and safety purposes.
 - ◆ No precommercial thinning is allowed in cool moist cover types within lynx habitat (occupied and unoccupied). This implements standard 5 of the Northern Rockies Lynx Management Direction.
 - ◆ Nothing classified as lynx multistory (within occupied or unoccupied lynx habitat) can be treated with any treatment method. Lynx multistory conditions were identified in the yield table development process and supplied for PRISM modeling. This implements standard 6 of the Northern Rockies Lynx Management Direction.

Table 15. Constraints in occupied and unoccupied lynx habitat

Prescription	MAG	Vegetation Type	Period	Constraint
Even-aged clearcut or shelterwood (EA), Prescribed fire only (PB)	MAG 2, MAG 4, MAG 6	Any	Each decade	No more than 15% of each management area group harvested or with a final broadcast burn in a prescribed burn regime. Stand-replacing wildfire acres should also factor into the 15%.
Any	Any	CMLP, CMSF	Any	No precommercial thinning activities allowed.
Even-aged clearcut or shelterwood (EA), Uneven-aged/group selection (GS), Prescribed fire only (PB)	Any	Any	Any	Nothing classified as lynx multistory habitat can be treated.

Note: Prescribed fire only (PB) – low/mixed severity bb entry; Uneven-aged/group selection (GS); Even-aged clearcut or shelterwood (EA) – at final harvest activity. CMLP = cool moist lodgepole, CMSF = cool moist spruce/fir.

Constraints on Acres Treated

Several constraints on treatment levels and methods were used to implement projected targets, planned activities, and other recognized best practices. To meet the intent of management intensity by management area group and account for operational constraints, prescriptions and activities are allocated spatially as follows.

- **Minimum Acres Treated:** A minimum acres per year must be treated in order to meet fuel reduction targets. Multiple treatments on the same acre count individually. For example, a thin followed by a slash burn on the same acre would count as two acres worth of treatment. This constraint varied by alternative, from 4,000 acres (alternative E) to 7,000 acres (alternative D). Alternatives A, B, C, and F were constrained at a minimum of 5,000 acres per year. For all alternatives, there is an assumed 1,000 acres per year of prescribed burning on grassland types, which are not included in the PRISM model, but can be used to achieve the national forest’s fuel acre targets.
- **Pine Savanna Commercial Thinning:** Limit the proportion of commercial thins in the pine savanna systems to 70 percent or less of the total commercial treatments in the pine savanna type.
- **Montane Warm Dry Thinning:** Limit the proportion of commercial thins in the warm dry montane to 65 percent or less of the total commercial treatments in the montane warm dry type.
- **Cool Moist Thinning:** Limit commercial thinning in cool moist non-lodgepole types to less than 70 percent of the total commercial treatments in the cool moist type.
- **Cool Moist Lodgepole Thinning:** Limit thinning in cool moist lodgepole to less than 25 percent of the total commercial harvest acres in the cool moist type.

PRISM Results

The PRISM model was used to calculate timber volumes and management activities to move the forest toward vegetation desired conditions, while at the same time maintaining wildlife, watershed, and economic sustainability as described above. Each alternative was evaluated with a limit on the fiscal capability of the planning unit (budget constraint). Additionally, alternative F was evaluated without the budget constraint in order to determine the maximum level of management that could occur within the design of the alternative (Alt FUN). In Alt FUN, in order to show the effects of unlimited budget, the

maximum volume constraint on the Custer was relaxed as well as any constraints on acres treated. Together, these three constraints (budget, volume, and acres) were more limiting than any one constraint independently. The objective of Alt FUN was twofold; first, determine the decade 1 volume associated with managing to meet desired conditions in the short term (20 years). Then, hold that volume constant for decade 1 while managing to meet desired conditions in the long term (50 plus years). This results in a management strategy driven by short-term objectives in the context of longer-term outcomes. Outputs for each alternative are shown in table 16.

Table 16. Output volumes and harvest activities scheduled; average of five decades of the PRISM projection

Item	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. FUN
Intermediate (acres per year)	719	672	674	609	777	668	1,183
Fuels (acres per year)	2,256	2,332	2,330	4,473	1,215	2,343	3,027
Regeneration (acres per year)	409	398	394	287	523	400	870
Prescribed fire (acres per year)	2,746	2,756	2,766	2,981	2,732	2,744	3,734
Total area treated (acres per year)	6,130	6,158	6,165	8,349	5,247	6,155	8,814
Sawtimber meeting utilization standards (MMBF per year)	10	10	10	6	15	10	22.7

MMBF = millions of board feet

PRISM Sensitivity Analysis

PRISM was used to analyze which constraints were the most limiting on the Custer Gallatin National Forest’s management opportunities. The analysis intends to determine the most important factors when considering plan implementation at levels above the projected timber sale quantity and below the sustained-yield limit. A sensitivity analysis was conducted by systematically eliminating constraints from the model and measuring the resulting maximum achievable volume in the first decade without limits on budget, maximum volume on the Custer, or the amount of acres that could be treated. Through a series of tests, these three constraints (budget, volume, and treated acres) were determined to be both co-limiting and dominant. Co-limiting means that relaxing any one of these constraints independently will not significantly affect the outcome. Dominant means that the other constraints in the model have no effect independently and the sensitivity analysis would show no effects. A baseline run (SR10) was conducted with the full suite of constraints listed in table 17. If eliminating a constraint resulted in a higher harvest level than the baseline, the constraint is a limiting factor to management.

Table 17 shows the set of sensitivity runs, the associated constraints, and the resulting maximum first decade volume. Two sensitivity runs are not shown here (SR4 and SR5) because they were intended to evaluate the proportional volume and treated acres constraints that were co-limiting with the budget constraint, and therefore not included in any of the sensitivity runs. Sensitivity run 2 (SR2) evaluated the draft environmental impact statement constraint of limiting the minimum volume proportion on each side of the forest (Custer vs. Gallatin) to 20 percent of the total. However, this constraint was not used in the final environmental impact statement.

The sensitivity analysis shows that the non-declining yield constraint has the largest impact on the first decade volume. This is not surprising since it does not maintain a sustainable harvest level through time. The constraint with the second largest impact is SR8 which controls the proportion of commercial treatment that must be commercial thin activities. This is followed closely by SR1 which evaluated the impact of prescribed burn constraints. There are two types of prescribed burn constraints, one on the maximum allowable acres and one on the proportion of prescribed burn activity that must occur in each broad potential vegetation type. The other constraint that had an impact was lynx (SR6), which implements the three lynx constraints described above. Other constraints evaluated in the sensitivity analysis did not have an impact on decade 1 volume.

Table 17. Constraints used in sensitivity runs 1–10 and associated first decade harvest level (millions of board feet annually)

Constraint	SR1	SR2	SR3	SR6	SR7	SR8	SR9	SR10
Ending Inventory	yes	yes	yes	yes	yes	yes	yes	yes
Non-declining yield	yes	yes	yes	yes	yes	yes	no	yes
Thinning Constraints	yes	yes	yes	yes	yes	no	yes	yes
Dispersion of Openings (MAG)	yes	yes	yes	yes	no	yes	yes	yes
Lynx Wildlife Constraints	yes	yes	yes	no	yes	yes	yes	yes
Management Area Volume (80%)	yes	yes	no	yes	yes	yes	yes	yes
Custer vs. Gallatin Volume 20%	yes	no	yes	yes	yes	yes	yes	yes
Prescribed Burn Constraints	no	yes	yes	yes	yes	yes	yes	yes
Decade 1 MMBF volume per year	33.53	28.12	28.12	29.36	28.12	33.95	94.96	28.12

SR = sensitivity run; MMBF = millions of board feet

Modeling Future Vegetation Conditions with SIMPPLLE

Whereas the PRISM model is used to develop a treatment schedule to move vegetation towards desired conditions, the SIMPPLLE model is used to simulate vegetation dynamics in response to these treatments as well other disturbances on the landscape that occur in an unpredictable manner. While PRISM assumes that future disturbances occur in a predictable manner (see table 18 and table 19), in reality managers cannot accurately predict when and where disturbances will occur during the lifespan of the revised plan. Therefore, for each alternative, treatments scheduled by the PRISM model are modeled on the landscape within a spatial context of unpredictable futures to measure combined effects of treatment and disturbance on the vegetation condition of the landscape into the future. Multiple simulations for each alternative create a range of possible futures that can be evaluated for trends and effects. For each alternative, 20 simulations of five decades each were modeled in SIMPPLLE.

Landscape Current Conditions

The current condition of the landscape for SIMPPLLE was compiled from the GIS layers used for the PRISM model. This included the landscape descriptor layers described previously. The layers were all the same except for the management area group designation of each alternative. Vegetation detail in SIMPPLLE is finer-scale than in PRISM, but the vegetation information in SIMPPLLE can readily be aggregated into the types used by the plan and the PRISM model.

In SIMPPLLE, the landscape was simulated in three geographic areas: the Western Montane area consisting of the Madison, Bridger, and Bangtail mountains; the Eastern Montane area, consisting of the Absaroka, Beartooth, and Pryor ranges; and the Pine Savanna, consisting of the Ashland and Sioux areas. These landscapes are simulated with two-acre pixels and they include areas of Custer Gallatin National Forest ownership, private inholdings, and a buffer around the landscape to allow for simulated fire spread from starts outside the national forest boundary.

To account for possible effects of climate change on regeneration, particularly in dry forest types (e.g. Stevens-Rumann et al. 2017), approximately 13,000 acres in the ponderosa pine forest type were assumed to experience long delays in regeneration. These acres were identified based on the Ashland Postfire Landscape Assessment (U.S. Department of Agriculture 2014). Specifically, in the SIMPPLLE model, these acres were assigned to the juniper type in the A2 ecosystem at the beginning of the simulation. They generally remain as this type for the duration of the 50-year simulation, unless a fire burns the juniper and it converts to a grass type.

Additionally, we accounted for regeneration potential based on the nearest seed source. Non-forest types (such as grass or shrub) on sites capable of growing trees were modeled as taking longer to seed the farther the site was from the nearest seed source.

Treatments

A key component of using SIMPPLLE to depict the future condition is to incorporate projected vegetation treatments that would occur on the landscape under each alternative. To accomplish this, PRISM reports the management schedule of activities for each analysis area for the first five decades. PRISM schedules treatments by (a) activity type, (b) land allocation, (c) vegetation type and size, and (d) time period. Activity types are prescribed burning, uneven-aged prescriptions (such as group selection), thinning (both commercial and precommercial), and even-aged activities such as clearcutting and shelterwood harvests. Land allocation is analogous to the “analysis areas” described in the PRISM document. It is a combination of geographic area, administrative forest, management area group, wildlife habitat classification (lynx, grizzly, both, or neither), existing dominance type, and existing size/structure. There are approximately 4,000 uniquely recognized land allocations in each alternative. Each of these unique allocations, or “analysis areas (AA)” is assigned an AA code, a seven-character alphanumeric string. Treatments scheduled by PRISM for the first five time periods are modeled in SIMPPLLE for each alternative.

To integrate the two models, the land allocation map (analysis areas) for each alternative was used to assign the AA code to each two-acre pixel in the SIMPPLLE model. A treatment schedule input file for SIMPPLLE was developed for each of the three geographic areas for each alternative based on the PRISM treatment type and timing schedule of each analysis area.

Assumptions of the resulting SIMPPLLE condition (type/size/density) were developed for each activity, and were adapted from the Helena Lewis and Clark National Forest SIMPPLLE model, and tuned to reflect the effects the forest vegetation simulator projected in the PRISM yield tables. Generally, even-aged treatments (clearcut and shelterwood) regenerated the stand, and intermediate treatments reduced the density and accelerated the stand consecutively.

Future Fire and Climate

As explained in detail below, future climate for this analysis was modeled by assuming that all future time periods would experience a fire level (overall acres burned) and mix of severities approximately two times the levels seen in the recent past. Thus, one key impact of climate change—changes to disturbance regimes—was modeled by calibrating fire assumptions rather than directly fitting a set of climate assumptions to the future. This section documents the rationale and decisions made regarding modeling future fire regimes.

Area Burned

Projections for fire activity in the planning area under future climate scenarios have been accomplished with both statistical and mechanistic models. For example, a statistical modeling considering climate variables only, not fuel (vegetation) characteristics, was completed for the Greater Yellowstone Ecosystem (Westerling et al. 2011). Westerling et al. (2011) projected changes in annual area burned and fire-return intervals driven by climate scenarios from three global climate models under a medium-high emissions scenario (A2, similar to the RCP8.5 scenario). By 2075, annual area burned is predicted to exceed 1988 levels, and years with no large fires become rare by 2050. Mechanistic models include fuel characteristics such as type, abundance, and moisture content as dynamic components that influence modeled fire behavior. Clark et al. (2017) used the mechanistic model FireBGCv2 to project future fire regimes under three future climate simulations (A2-low, A2-avg, and A2-high) for a landscape in Yellowstone National Park. Annual area burned was projected to increase between 1.2 to 4.2 times more than historical simulation values, under the coolest and warmest climate scenarios respectively. Due to the uncertainty in future climates, the relative simplicity of statistical modeling approaches, and the compounded error from model limitations, assumptions, and uncertainties in the mechanistic modeling, the levels of uncertainty are high for future fire projections.

These results are consistent with other studies in the western United States showing human-caused climate change has led to drier fuels and a significantly longer fire season than would be expected in its absence, resulting in a doubling of forest fire area during the period 1984–2015 (Abatzoglou and Williams 2016). Recent human-caused emissions of greenhouse gases are the highest in history and climate trends will continue to be warmer and drier in the planning area (Halofsky et al. 2018b;a). As such, the area burned in the SIMPPLLE model in future decades represents a 100 percent increase, or two times the average area burned per decade during the period 1986–2015 based on Monitoring Trends in Burn Severity data. Based on the recent literature, this represents as a conservative estimate and falls as an average of the results in table 18 below.

Table 18. Studies related to future fire assumptions

Source	Reference Period	Model period	Results
(Spracklen et al. 2009)	1980 to 2004	2046 to 2055	175% increase in area burned for Rocky Mountains forest. Little change for Eastern Rocky Mountains/Great Plains
(Yue et al. 2013)	1980 to 2004	2051 to 2063	Rocky Mountains forest: 71% increase Eastern Rocky Mountains/Great Plains: 62% increase
(McKenzie et al. 2004)	1916 to 2002	2070 to 2100	Area burned increased by factor of 3 in Montana
(Riley and Loehman 2016)	1992 to 2010	2030 to 2059	Burn probability increase of 50% in northern Idaho
(Clark et al. 2017)	No specific years	Mid-21 st century	1.2 to 4.2 times more burned area in Yellowstone

Fire Size Distribution

Large fire probability is another important parameter to estimate. If the number of fires increases by 100 percent, the frequency of large fires (more than 10,000 acres) will also increase 100 percent. This is a conservative estimate, based on the results of studies listed in table 19.

Table 19. Studies related to fire probability

Source	Reference Period	Model period	Results
(Barbero et al. 2015)	1980 to 2004	2041 to 2070	-Very large fires (more than 5,000 hectares) increase by a factor of 4 in the montane. -Very large fires (more than 5,000 hectares) increase by a factor of 6 in the Pine Savanna.
(Westerling et al. 2011)	1951 to 1990	2005 to 2099	In the Greater Yellowstone Area, "Fire seasons comparable to 1988 became more frequent, with between 1 and 5 such events occurring between 2011 and 2050. After 2050, all models predicted that annual area burned would exceed 100,000 ha during most years."

Fire Severity

For fire severity, the scientific literature is mixed. (Parks et al. 2017) suggest that cold and moist forest types will see a reduction in severity and dry forests will see an increase by 2100. However, (Parks et al. 2016) suggest that fire severity is predicted to decrease throughout the west. Unfortunately, recent papers that predict future increases in area burned do not quantify severity (Westerling et al. 2011, Barbero et al. 2015) or make simplified assumptions based on the historical fires (Spracklen et al. 2009, Yue et al. 2013). Moreover, historically, an increase in area burned does not necessarily mean that these fires burn with higher severity (Kitzberger et al. 2017). Given the uncertainty in the literature, we will maintain the current distribution from Monitoring Trends in Burn Severity of low/mixed/high into the future.

Reburning

Parks et al (2018) suggested a range of potential reburning of roughly 20 to 30 years in western Montana forests. This did not account for fire severity, which could influence the reburn potential. Based on expert opinion for the eastern Montana ponderosa prairies, reburn potential has been seen at 3 to 5 years (Studiner 2018). Because SIMPPLLE uses a decadal time series for modeling, a reburn of 20 years for montane and 10 years for pine savanna was used.

Baseline Conditions

The Monitoring Trends in Burn Severity initiative represents the most accurate and consistent data on fire size and severity in recent decades; unfortunately, it does not include data before 1984. As such, the period from 1986–2015 was used to represent the “current” fire regime. This period includes 1988, which is the type of fire year that we will see more frequently in the future (Westerling et al. 2011). Data used only includes burned acres (Monitoring Trends in Burn Severity codes 2 through 4).

Calibrating Fire in SIMPPLLE

Fire calibration for the analysis happened in two stages. In the first stage, the overall level of fire by broad potential vegetation type was adjusted to match the expected fire activity. To simplify the analysis process and emulate actual fire suppression success rates, the fire suppression logic option in SIMPPLLE was not used. Rather, weather-ending probabilities at the Class A level (less than 0.25) were adjusted to emulate the effect of successful fire suppression. This was a trial-and-error search and resulted in different suppression rates by broad potential vegetation type.

The second step of the calibration was to adjust fire activity to the expected severity mix. To do this, we examined which spread rules in SIMPPLLE were most commonly used to model fire on the landscape. Typically, these rules were rather general in nature. Consider a rule such as, “if the site has trees, the fire will spread with a stand-replacing severity.” This rule may be split to recognize circumstances where fire spread would be a different intensity; for example, sites with a lower density might have a lower severity, or different potential vegetation types might burn differently, or different sizes, species, elevational position, etc. Fire spread rules were revised and refined until the expected burn severity mix by broad potential vegetation type was generally achieved.

Insects and Diseases

Insect and disease outbreaks were modeled in SIMPPLLE to account for vegetation changes not accounted for by succession, fire, or treatment. The probability of occurrence varies by species, size, density, and disturbance history. Changes to species composition, size class, and/or density were associated with these infestations according to relevant literature and expert opinion as described in the project record. SIMPPLLE was also able to capture some of the episodic nature of these disturbances, by recognizing historical trends in increased susceptibility of certain species after a non-lethal fire event or resilience of a species for a period of time following an outbreak. Probabilities of occurrence and effects of these disturbances are detailed in the project record.

Successional Pathways for Analysis Modeling

Pathways in SIMPPLLE are the successional trajectories for vegetation. They describe such things as growth rates, species recruitment, and effects from change agents (processes) if they occur. Pathways were calibrated to better match the growth times and successional trajectories from the yield tables used for PRISM modeling. PRISM yield tables were developed using the Forest Vegetation Simulator. The Forest Vegetation Simulator projects the influence of different potential management actions (such as prescribed fire, group selection, clearcut with reserves, etc.) on the vegetation types of the Custer Gallatin National Forest. These projections also included a “natural growth” run that included no management and no disturbance, which described how long a stand needed to grow through the different successional stages and size classes. These results were compiled in a set of yield tables, which described, among other attributes, the timber volumes and vegetation conditions according to the Northern Region classification system. Upon closer examination, it was clear that in some instances the amount of time it took to grow from a pole-sized stand (5 to 10 inches diameter) to a medium-sized stand (10 to 15 inches diameter) and from a medium-sized stand to a large-sized stand (15 to 20 inches diameter) was longer in the Forest Vegetation Simulator-derived yield tables than in the default SIMPPLLE assumptions. This is largely due to a difference in classification systems, where SIMPPLLE historically has recognized when the largest trees in the stand grow in to the size class, and the Northern Region (Region 1) classification system quantifies size by considering the average size of all trees in the stand (basal area weighted mean diameter). Therefore, the pathways in the SIMPPLLE model were adjusted to better reflect the Northern Region classification system and the assumptions used in the PRISM scheduling model. Adjustments were dependent on the density class the stand was growing from and the size class the stand was growing into. The details of these assumptions are described in the project record.

SIMPPLLE Results

The SIMPPLLE model is used to project vegetation conditions on the forest 50 years into the future for each alternative. The treatments scheduled by PRISM are applied over this time period. The model was run 20 times for each alternative to account for the unpredictable nature of fires and other disturbances.

Results presented here display the range of projected outcomes for forest structure (figure 3 through figure 6), species dominance (figure 7), and patch size distribution (figure 8 through figure 11). In the end, the range in outcomes between alternatives was relatively narrow, mainly due to the low levels of treatments projected by any alternative. Therefore, the range bar in the figures below at each point in time represents one standard deviation across all model runs and all alternatives. In each figure, decade 0 represents current conditions. The shaded area represents the range of desired conditions. Generally, more distant projections into the future (decade 4 and decade 5) show a broader range of possible vegetation conditions as uncertainty increases.

Appendix B: Vegetation and Timber Analysis Process

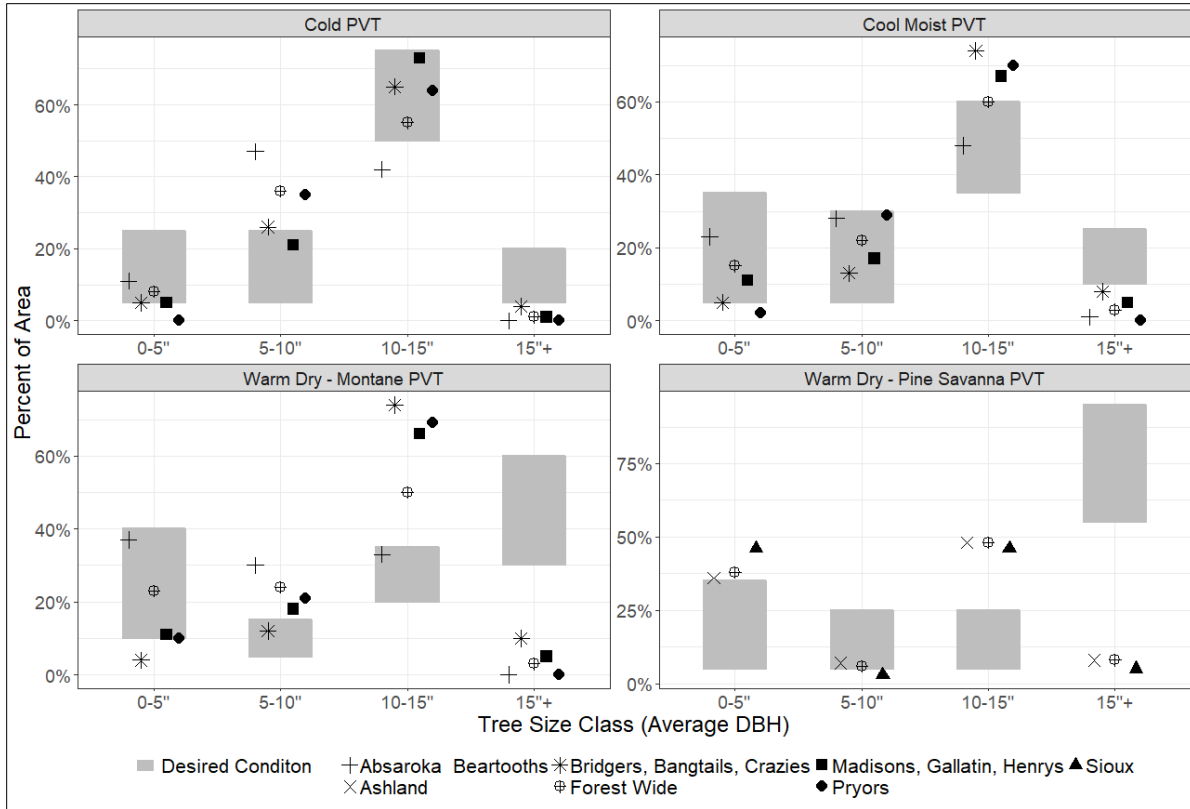


Figure 3. Current versus desired condition for tree size distribution. Grey shaded area represents the desired condition; points represent current condition at the forestwide scale and for each geographic area.

Appendix B: Vegetation and Timber Analysis Process

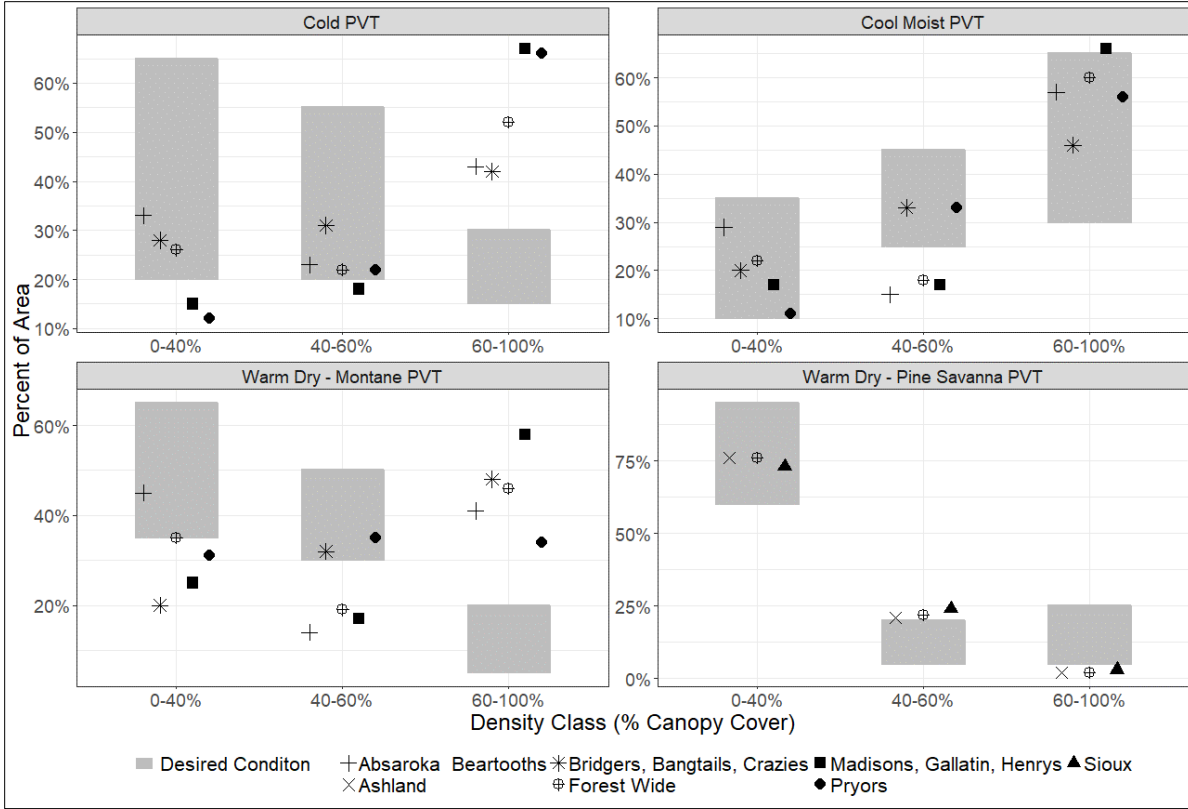


Figure 4. Current versus desired condition for forest density. Grey shaded area represents the desired condition; points represent current condition at the forestwide scale and for each geographic area.

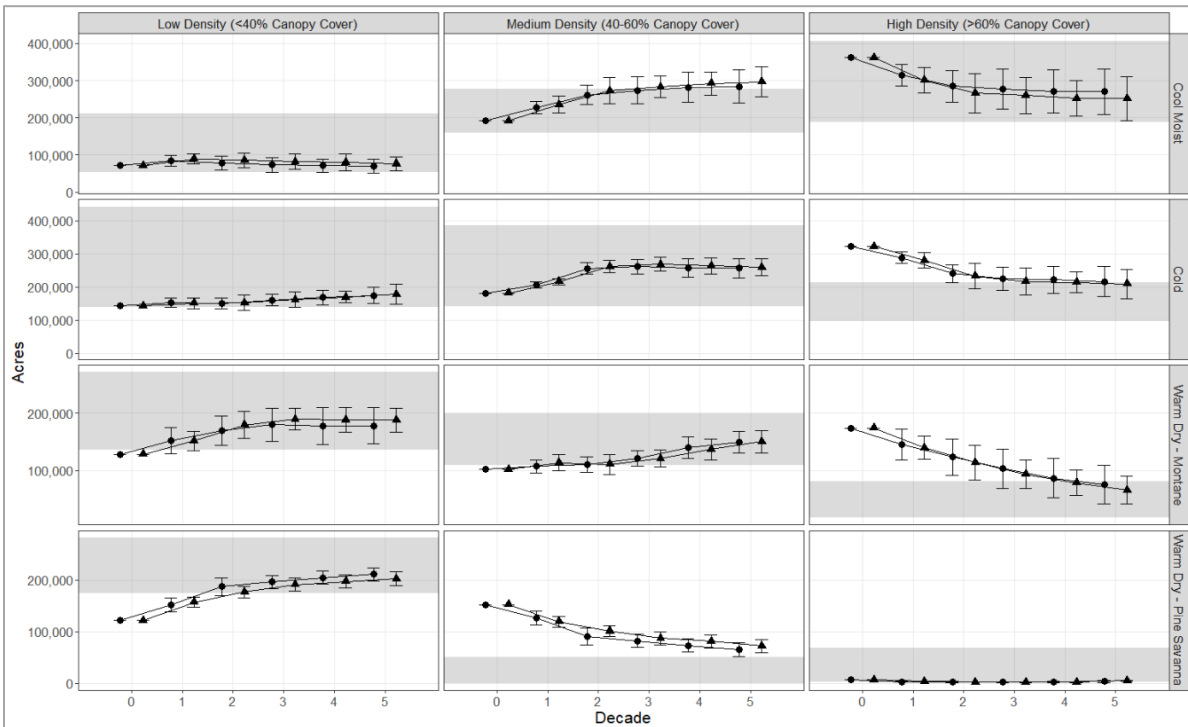


Figure 5. Projected change in forest density for alternatives A-F (circles) compared to the no budget constraint scenario (triangles) and the desired conditions (grey shaded area). Error bars represent two standard deviations.

Appendix B: Vegetation and Timber Analysis Process

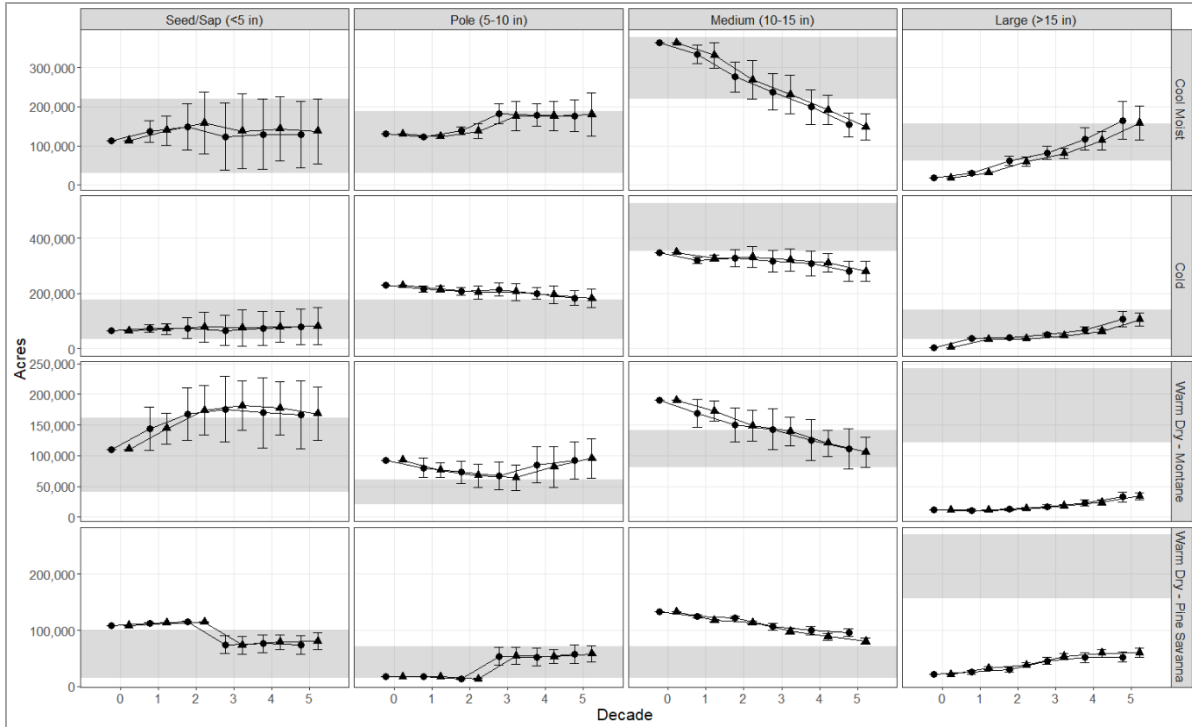


Figure 6. Projected change in size class for alternatives A–F (circles) compared to the no budget constraint scenario (triangles) and the desired conditions (grey shaded area). Error bars represent two standard deviations.

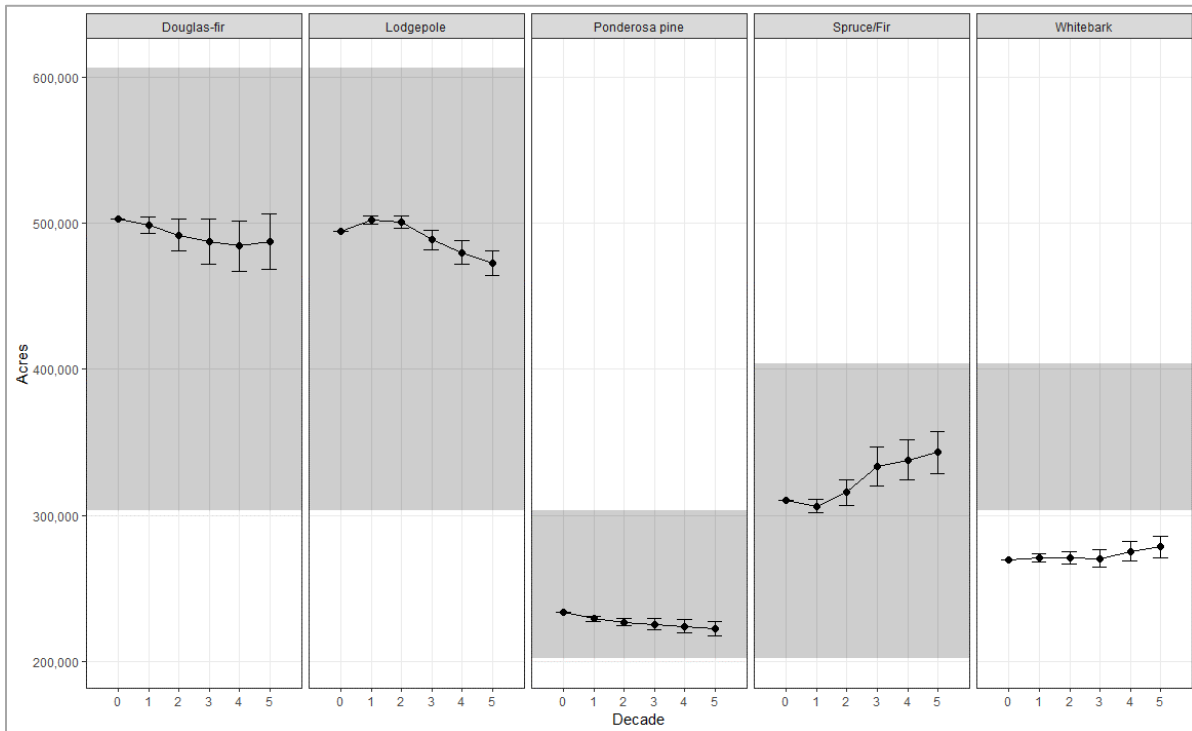


Figure 7. Projected species dominance across all broad potential vegetation types for all alternatives measured against desired conditions

Appendix B: Vegetation and Timber Analysis Process

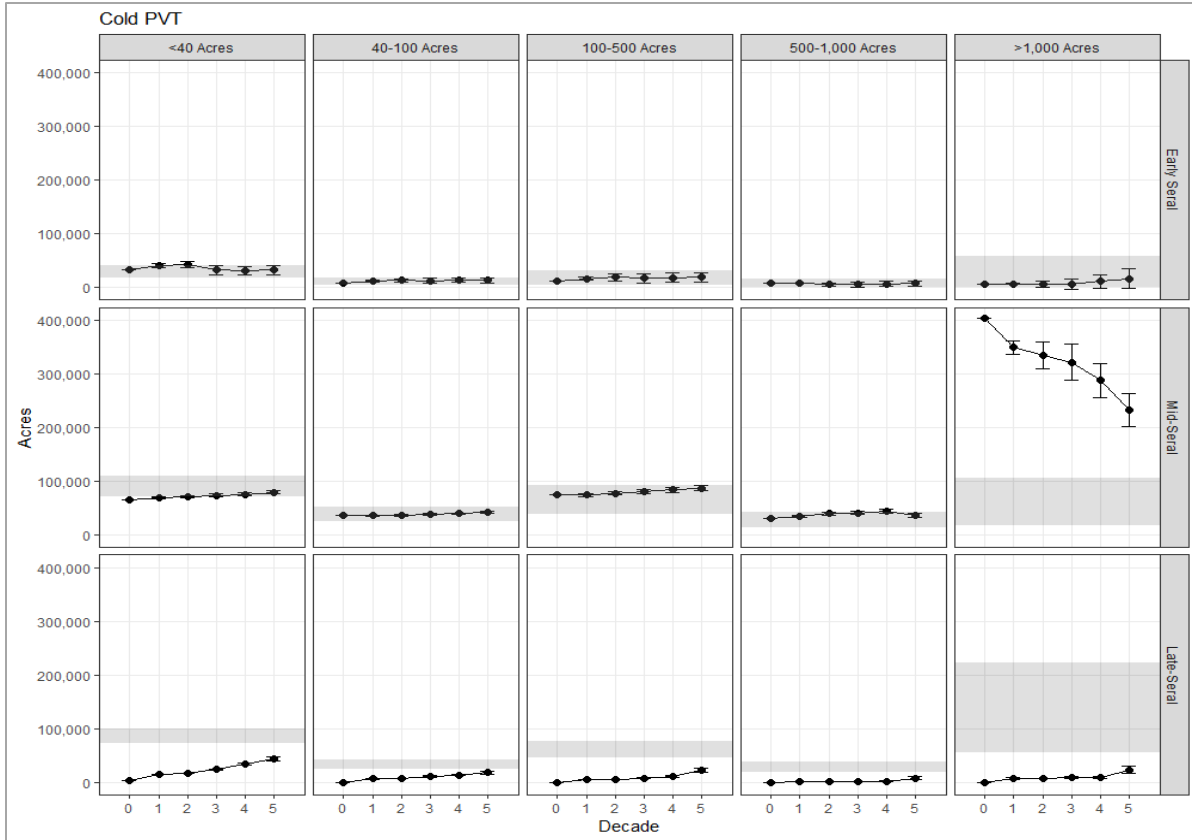


Figure 8. Projected patch size distributions in the cold potential vegetation type (PVT) across all alternatives measured against desired conditions

Appendix B: Vegetation and Timber Analysis Process

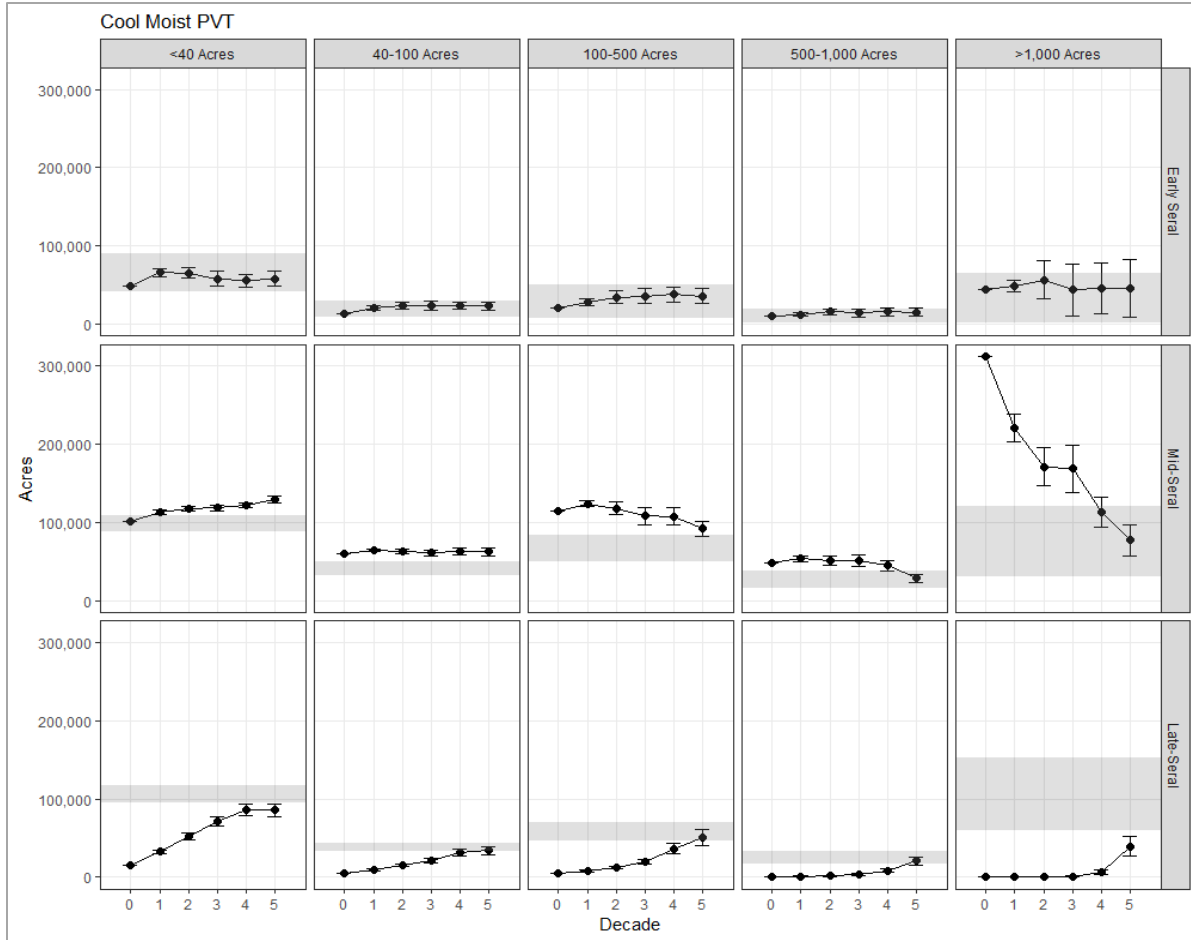


Figure 9. Projected patch size distributions in the cool moist potential vegetation type (PVT) across all alternatives measured against desired conditions

Appendix B: Vegetation and Timber Analysis Process

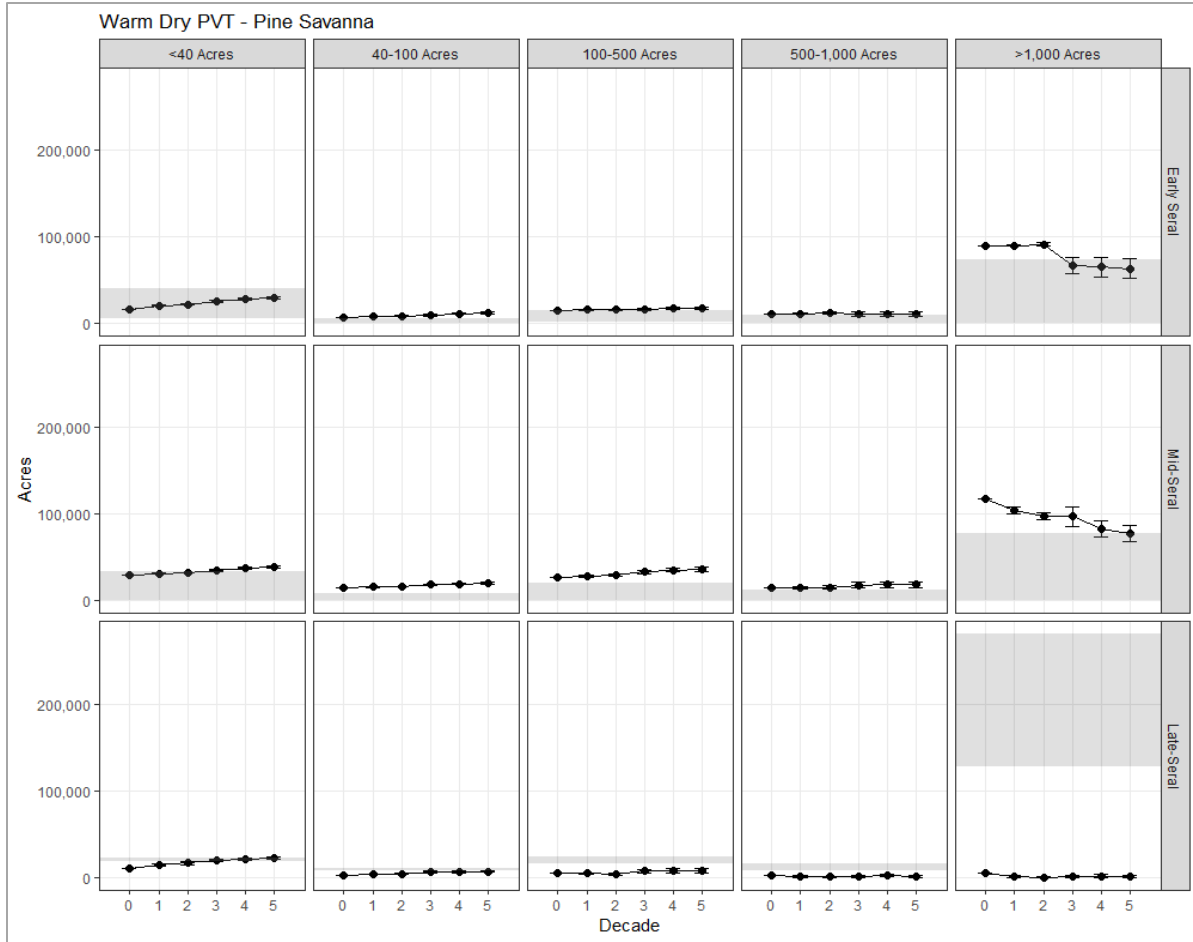


Figure 10. Projected patch size distributions in the warm dry pine savanna potential vegetation type (PVT) across all alternatives measured against desired conditions

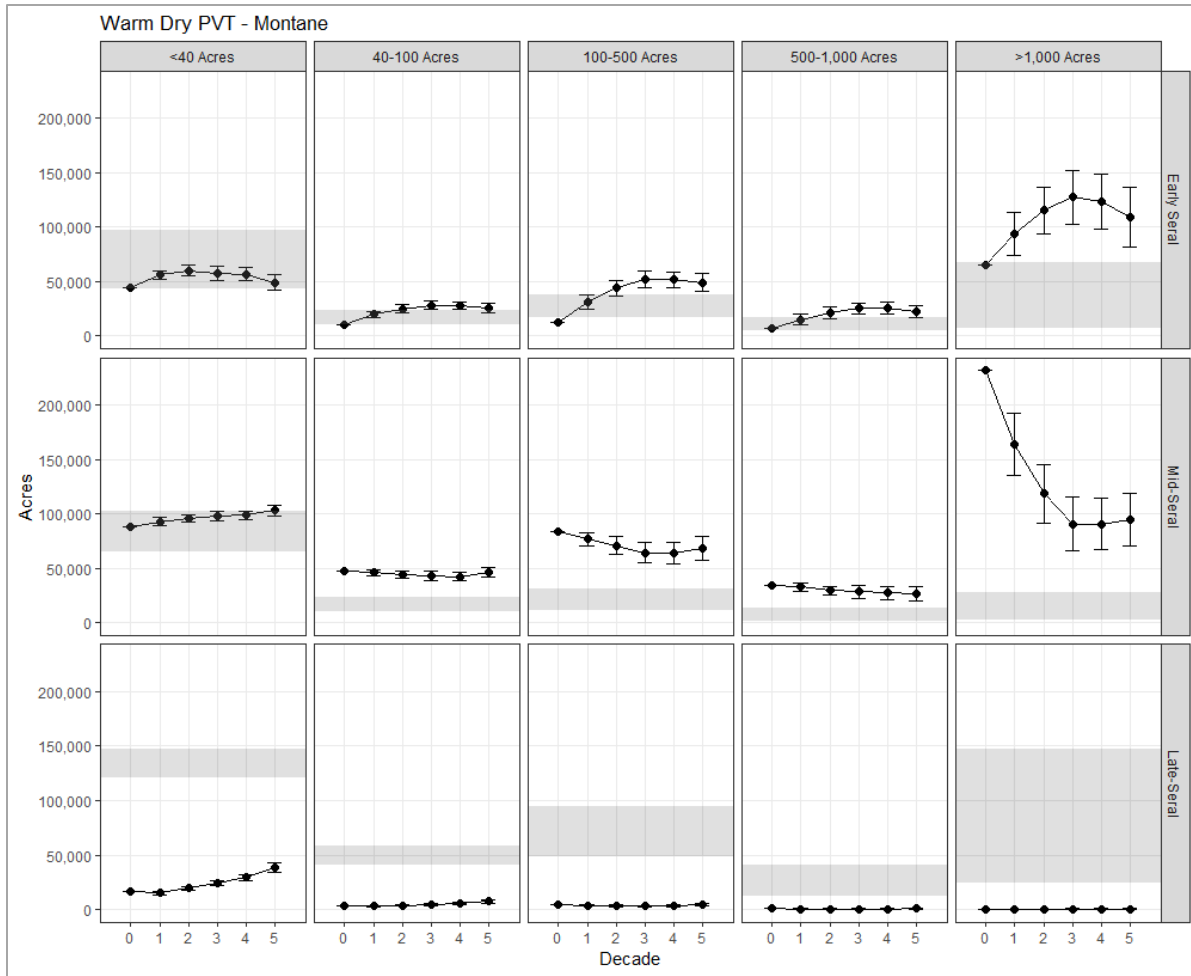


Figure 11. Projected patch size distributions in the warm dry pine montane potential vegetation type (PVT) across all alternatives measured against desired conditions

Connectivity Modeling for Custer Gallatin National Forest

Ecosystems have integrity when their composition, structure, function, and connectivity are operating normally over multiple spatial and temporal scales (FSH 1909.12). The 2012 Planning Rule defines connectivity⁵ as “ecological conditions that exist at several spatial and temporal scales that provide landscape linkages that permit the exchange of flow, sediments, and nutrients; the daily and seasonal movements of animals within home ranges; the dispersal and genetic interchange between populations; and the long-distance range shifts of species, such as in response to climate change.”

Although this definition includes many components, reasonable consideration of ecological connectivity can be deeply enriched by a well-designed analysis, the scope and objectives of which can be boiled down to the questions: “What should be connected, for whom, and at what scale?” “What should be connected” refers to the specific locations among which maintaining or restoring connectivity is particularly important for maintaining ecological integrity. Because administrative boundaries often have little influence on ecological flows within a landscape, and national forest units may not represent

5. 36 Code of Federal Regulations 219.19.

the most ecologically valuable lands in the region, ecological characteristics were used to identify patches of high-quality habitat that served as the locations within the landscape to ensure connectivity.

“For whom” refers to the organisms (or ecological processes) that will be sustained by ensuring landscape connectivity. The Custer Gallatin revised plan strives to ensure connectivity for all elements of biodiversity including ecological processes as well as the more than 1,500 plant and animal species known to occur in the planning area. An analysis approach that considers connectivity for each species and ecological element individually is not just infeasible, it is also not necessarily the best approach given the lack of empirical data to drive such an analysis. As such, for this analysis, the modeling approach was based on generic species, which are virtual species whose profiles consist of sets of ecological requirements designed to reflect habitat conditions as well as the needs of groups of real species. This approach has been applied to other connectivity conservation planning efforts (Watts et al. 2010, Foster et al. 2017, Lechner et al. 2017), and it attempts to strike an appropriate balance between fine-filter connectivity models designed for individual species and coarse-filter models that are entirely species agnostic.

“At what scale” refers to the spatial extent included in the connectivity analysis. Although lands administered by the Custer Gallatin National Forest are the primary focus of the planning effort, analyses should reflect the scale at which biological populations operate and should facilitate connectivity planning across land ownerships to link national forest lands with ecologically intact lands of other ownership. Accordingly, connectivity was analyzed for a spatial extent encompassing all lands within 100 miles of any Custer Gallatin National Forest unit—an approximately 380,000 square kilometer area including portions of Montana, Wyoming, Idaho, North Dakota, and South Dakota.

For this analysis, connectivity was modeled for 10 generic species that represented different combinations of five vegetation type preferences (forest, alpine, grassland, and shrubland specialists, as well as habitat generalists) and two body sizes (large or small animals), under the assumption that body size was positively correlated with an animal’s dispersal range and perceptual range (Mech and Zollner 2002, Jenkins et al. 2007). For each generic species, the analysis:

1. Mapped high-quality “core habitat” areas that are relatively homogenous patches of preferred vegetation type and have a low degree of human modification (Theobald 2013).
2. Generated a landscape conductance surface that represents an animal’s ease of movement through the landscape (Zeller et al. 2012), assuming that preferred vegetation types and minimally human-modified areas are easier to move through (Theobald et al. 2012).
3. Modeled connectivity among core habitat areas across the landscape conductance surface using different assumptions about animal movement behavior—whether animals move between two locations in an optimal fashion that minimizes the total cost of movement (Adriaensen et al. 2003), or move in a random fashion along non-optimal pathways (McRae 2006).

The outputs of the connectivity models were gridded surfaces in which the value of each grid cell indicated the overall importance of that cell for promoting connectivity among all core areas within the landscape (hereafter, “connectivity value”) for a given generic species and movement behavior. Figure 12 shows model results for “large forest specialists.” Similar results were produced for the other nine generic species. Not surprisingly, connectivity models predicted markedly different spatial patterns of connectivity value for different generic species. For instance, areas within the Custer Gallatin expected to have greatest connectivity value for large forest specialists and large shrubland specialists, respectively, showed little overlap. See Williamson et al. (2020) for more detail on model and assumptions used to assess connectivity.

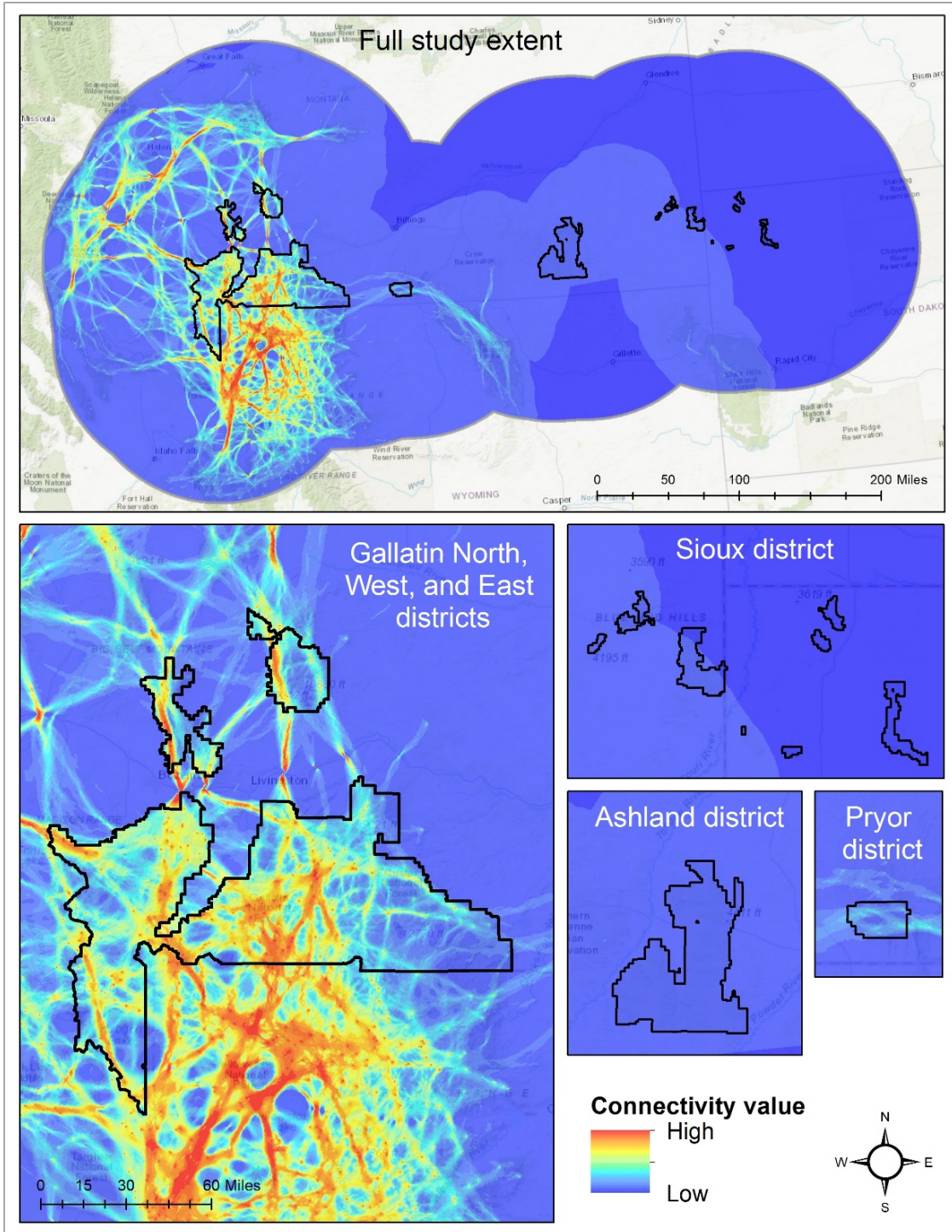


Figure 12. Results of connectivity analysis for the “large forest specialist” generic species, assuming near-optimal movement behavior. Results are shown for the full study extent (top panel) and in greater detail for national forest units. Warmer colors represent landscape pixels predicted to have greater value for promoting connectivity of large forest specialists across the study extent.

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Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Introduction

The Custer Gallatin National Forest adopted an ecosystem and species-specific approach, known as a coarse-filter and fine-filter approach, to provide for the diversity of plant and animal communities and the long-term persistence of native species in the plan area. The coarse-filter plan components are designed to maintain or restore ecological conditions for ecosystem integrity and ecosystem diversity in the plan area within agency authority and the inherent capability of the land. Plan components found in the “terrestrial ecosystem and vegetation” and “aquatic ecosystem” sections address most needs of animal and plant species. Fine-filter plan components are designed to provide for additional habitat or species-specific needs when those needs are not met through the coarse-filter plan components.

This appendix displays the plan components specific to ecological conditions that support long-term persistence of plant, aquatic, and wildlife species of conservation concern. This appendix also displays the Northern Region Regional Forester’s sensitive plant, aquatic, and wildlife species.

Species of Conservation Concern Plan Components

Species of conservation concern for plant, wildlife, and aquatic species are displayed in this section.

Plant Species of Conservation Concern

Table 20 displays plan components specific to ecological conditions that support long-term persistence of plant species of conservation concern.

Table 20. Plant species of conservation concern, associated habitats and related plan components

Name	Habitat	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
<i>Salix barrattiana</i> (Barratt's willow)	Alpine	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-RT-01 FW-DC-REC-05 FW-DC-VEGNF-04	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-GRAZ-01	FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-GRAZ-01 FW-STD-SOIL-01 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 FW-GDL-INV-01 FW-GDL-VEGNF-02 FW-GDL-VEGNF-05 AB-SUIT-RNA-01 AB-SUIT-RNA-02 AB-SUIT-RNA-03 AB-SUIT-RNA-04
<i>Carex gravida</i> var. <i>gravida</i> (heavy sedge)	Broadleaf Woodlands	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-GRAZ-03 FW-DC-RT-01 FW-DC-REC-05 FW-DC-INV-01 FW-DC-VEGNF-04	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-OBJ-VEGNF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-VEGNF-02 FW-GO-GRAZ-01	FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-SOIL-01 FW-STD-GRAZ-01 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 FW-GDL-VEGNF-05 FW-GDL-VEGNF-06 FW-GDL-VEGNF-07 FW-GDL-EMIN-02 FW-GDL-INV-01

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Name	Habitat	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
<p><i>Asclepias ovalifolia</i> (oval-leaf milkweed)</p> <p><i>Asclepias stenophylla</i> (narrowleaf milkweed)</p> <p><i>Botrychium gallicomontanum</i> (Frenchman's Bluff moonwort)</p> <p><i>Botrychium paradoxum</i> (peculiar moonwort)</p> <p><i>Castilleja exilis</i> (annual Indian paintbrush)</p> <p><i>Grayia spinosa</i> (spiny hopsage)</p> <p><i>Pyrrocoma carthamoides</i> var. <i>subsquarrosus</i> (Beartooth large-flowered goldenweed)</p> <p><i>Sidalcea oregana</i> Oregon checker-mallow</p>	Grasslands or Shrublands	<p>FW-DC-PRISK-01</p> <p>FW-DC-GRAZ-01</p> <p>FW-DC-RT-01</p> <p>FW-DC-REC-05</p> <p>FW-DC-INV-01</p> <p>PR-DC-VEGNF-02</p> <p>FW-DC-VEGNF-04</p>	<p>FW-OBJ-PRISK-01</p> <p>FW-OBJ-VEGF-01</p> <p>FW-OBJ-VEGNF-01</p> <p>PR-GO-VEGNF-01</p> <p>FW-GO-PRISK-02</p> <p>FW-GO-PRISK-03</p> <p>FW-GO-VEGNF-01</p> <p>FW-GO-VEGNF-02</p> <p>FW-GO-GRAZ-01</p>	<p>FW-STD-PRISK-01</p> <p>FW-STD-EMIN-03</p> <p>FW-STD-INV-01</p> <p>FW-STD-INV-02</p> <p>FW-STD-INV-03</p> <p>FW-STD-INV-04</p> <p>FW-STD-SOIL-01</p> <p>FW-STD-GRAZ-01</p> <p>PR-STD-VEGNF-01</p> <p>PR-STD-VEGNF-02</p> <p>FW-GDL-INV-01</p> <p>FW-GDL-VEGNF-05</p> <p>FW-GDL-PRISK-01</p> <p>FW-GDL-FIRE-03</p> <p>FW-GDL-GRAZ-04</p> <p>FW-GDL-GRAZ-05</p> <p>FW-GDL-RECSUP-01</p> <p>FW-GDL-VEGNF-01</p> <p>PR-GDL-VEGNF-01</p> <p>PR-GDL-VEGNF-02</p>
<p><i>Adoxa moschatellina</i> (muskroot)</p> <p><i>Draba densifolia</i> (denseleaf draba)</p> <p><i>Ericameria discoidea</i> var. <i>discoidea</i>; (Whitestem Goldenweed)</p> <p><i>Eriogonum visherii</i> (Dakota buckwheat)</p> <p><i>Heterotheca fulcrata</i> (rockyscree false goldenaster)</p> <p><i>Lomatium nuttallii</i> (Nuttall Desert-Parsley)</p> <p><i>Mimulus nanus</i> (dwarf purple monkeyflower)</p> <p><i>Physaria didymocarpa</i> var. <i>lanata</i> (wooly twinpod)</p> <p><i>Shoshonea pulvinata</i> (Shoshonea)</p>	Sparsely Vegetated (for example talus scree rocky exposed badlands etc.)	<p>FW-DC-PRISK-01</p> <p>FW-DC-GRAZ-01</p> <p>FW-DC-RT-01</p> <p>FW-DC-REC-05</p> <p>PR-DC-VEGNF-01</p> <p>PR-DC-VEGNF-02</p> <p>FW-DC-VEGNF-04</p>	<p>FW-OBJ-PRISK-01</p> <p>FW-OBJ-VEGF-01</p> <p>FW-OBJ-VEGNF-01</p> <p>PR-GO-VEGNF-01</p> <p>FW-GO-PRISK-02</p> <p>FW-GO-PRISK-03</p> <p>FW-GO-VEGNF-01</p> <p>FW-GO-GRAZ-01</p>	<p>FW-STD-PRISK-01</p> <p>FW-STD-EMIN-03</p> <p>PR-STD-VEGNF-01</p> <p>PR-STD-VEGNF-02</p> <p>FW-STD-INV-01</p> <p>FW-STD-INV-02</p> <p>FW-STD-INV-03</p> <p>FW-STD-INV-04</p> <p>FW-STD-SOIL-01</p> <p>FW-STD-GRAZ-01</p> <p>FW-GDL-INV-01</p> <p>FW-GDL-VEGNF-03</p> <p>FW-GDL-VEGNF-04</p> <p>FW-GDL-PRISK-01</p> <p>FW-GDL-FIRE-03</p> <p>FW-GDL-GRAZ-04</p> <p>FW-GDL-GRAZ-05</p> <p>FW-GDL-RECSUP-01</p> <p>PR-GDL-VEGNF-01</p> <p>PR-GDL-VEGNF-02</p>

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Name	Habitat	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
<p><i>Cypripedium parviflorum</i> (small yellow lady's-slipper)</p> <p><i>Drosera anglica</i> (English sundew)</p> <p><i>Eleocharis rostellata</i> (beaked spikerush)</p> <p><i>Gentianopsis simplex</i> (hiker's gentian)</p> <p><i>Meesia triquetra</i> (meesia moss)</p> <p><i>Thelypodium paniculatum</i> (northwestern thelypody)</p>	<p>Riparian or Wetlands</p>	<p>FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-RT-01 FW-DC-REC-05 FW-DC-RMZ-01 FW-DC-RMZ-02</p>	<p>FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-OBJ-VEGNF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-VEGNF-02 FW-GO-GRAZ-01</p>	<p>FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-RMZ-01 FW-STD-RMZ-02 FW-STD-RMZ-03 FW-STD-RMZ-04 FW-STD-RMZ-05 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-SOIL-01 FW-STD-GRAZ-01 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-01 FW-GDL-GRAZ-02 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 FW-GDL-RMZ-01 FW-GDL-RMZ-02 FW-GDL-RMZ-03 FW-GDL-RMZ-04 FW-GDL-RMZ-05 FW-GDL-RMZ-06 FW-GDL-RMZ-07 FW-GDL-RMZ-08 FW-GDL-RT-03 FW-GDL-RT-05 FW-GDL-RT-07 FW-GDL-RT-09 FW-GDL-RT-11 FW-GDL-FAC-01 FW-GDL-EMIN-02 FW-GDL-INV-01 FW-GDL-VEGNF-05 FW-SUIT-RMZ-01 FW-SUIT-RMZ-02</p>

Wildlife Species of Conservation Concern

Table 21 displays plan components specific to ecological conditions that support long-term persistence of wildlife species of conservation concern.

Table 21. Wildlife species of conservation concern and related plan components

Name	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
Greater sage-grouse	FW-DC-VEGNF 01, 04; FW-DC-CARB 01; FW-DC-INV 01; FW-DC-WLSG 01; FW-DC-GRAZ 03	FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01; FW-GO-INV 01-04; FW-OBJ-INV 01; FW-GO-WL 01; FW-GO-WLSG 01	FW-GDL-VEGNF 03, FW-GDL-FIRE 03; FW-GDL-WL 07; FW-STD-WLSG 01; FW-GDL-WLSG 01-07
White-tailed prairie dog	FW-DC-VEGNF 01-04; FW-DC-INV 01; FW-DC-WLPD 01; FW-DC-WLSG 01; FW-DC-GRAZ 03	FW-GO-VEGNF 01-02; FW-OBJ-VEGNF 01; FW-OBJ-INV 01; FW-GO-WLPD 01	FW-VEGNF-GDL 01, 03; FW-STD-WLPD 01, 02; FW-STD-GRAZ 01

Aquatic Species of Conservation Concern

Table 22 displays plan components specific to ecological conditions that support long-term persistence of aquatic species of conservation concern.

Table 22. Aquatic species of conservation concern and related plan components

Name	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
Western pearlshell mussel	FW-DC-WTR 01-07;09-11; FW-DC-RMZ-01-02; FW-DC-CWN-01	FW-GO-WTR-01 FW-OBJ-WTR-01 FW-OBJ-WTR-02 FW-OBJ-WTR-03 FW-OBJ-CWN-01	FW-STD-WTR-02-03 FW-GDL-WTR-01-05 FW-STD-INV-04 FW-STD-RMZ-02-05 FW-GDL-RMZ-01-08 FW-STD-GRAZ-01 FW-GDL-GRAZ-01-02 FW-GDL-CWN-01
Westslope cutthroat trout	FW-DC-WTR 01-07;09-11; FW-DC-RMZ-01-02; FW-DC-CWN-01	FW-GO-WTR-01 FW-OBJ-WTR-01 FW-OBJ-WTR-02 FW-OBJ-WTR-03 FW-OBJ-CWN-01	FW-STD-WTR-02-03 FW-GDL-WTR-01-05 FW-STD-INV-04 FW-STD-RMZ-02-05 FW-GDL-RMZ-01-08 FW-STD-GRAZ-01 FW-GDL-GRAZ-01-02 FW-GDL-CWN-01

Sensitive Species

The Northern Region Regional Forester's sensitive plant, aquatic, and wildlife species are displayed in this section.

Regional Forester's Sensitive Species – Plants

Portions of the Custer Gallatin National Forest fall within montane (Absaroka-Beartooth Mountains; Madison, Henrys Lake, and Gallatin Mountains; Bridger, Bangtail, and Crazy Mountains; and the Pryor Mountains geographic areas) and pine savanna (Ashland and Sioux geographic areas) ecological settings. As a result of a review of existing information relative to Regional Forester's sensitive plant species extent of distribution and ecological requirements, a list of sensitive plant species have been screened as to its potential habitat. Thus, not all Custer Gallatin listed sensitive species can be found on all districts due to suitable habitat constraints.

Suitable habitat for 31 currently listed Regional Forester's sensitive plant species exists on the Custer Gallatin National Forest. Twenty-five of the 31 have known populations that occur on the forest while six species are not known, but are suspected to occur.

Table 23 outlines current 2011 Northern Region Regional Forester's sensitive plant species (Regional Forester's list dated February 25, 2011) along with species' conservation rankings, general distribution in the plan area, and habitats.

Of the 31 plant species currently identified as sensitive by the regional forester that are known to occur on the Custer Gallatin National Forest, 14 have been identified as species of conservation concern by the regional forester for the final environmental impact statement. One species, whitebark pine (*Pinus albicaulis*), is a candidate species for federal listing as threatened. Effects to these species are discussed above. Sixteen of the regional forester's sensitive species would no longer be covered under a protected designation with the final plan. Of these 16 species, ten occupy a habitat group that is also associated with the identified plant species of conservation concern. Thus, the habitat and stressors, as well as the effects of the action alternatives, would be like those disclosed in the environmental impact statement for the species of conservation concern within the group. The protections provided by plan components to plant species of conservation concern and their habitats (described in the At-Risk Plants section of the final environmental impact statement) would also help protect sensitive plant species and communities that occupy these habitats.

Six species identified as sensitive that are not being carried forward as a species of conservation concern occur within cool moist forest habitat. These species would be protected by desired conditions, and supporting objectives, standards, and guidelines (such as treating invasive species and limiting soil disturbance), to provide for resilient, diverse, and sustainable habitat. See tables above for a complete list of plan components that would apply to these species. These measures should adequately protect plant species associated with this habitat previously identified as sensitive and should result in a low risk of impact.

Table 23. Regional Forester's Sensitive Species – plant species for the Custer Gallatin National Forest

Name	Conservation Categories ⁶	Habitat
<i>Salix barrattiana</i> Barratt's willow (Known – Montane)	G5; S1 – MT; RFSS	Alpine. Forms extensive thickets in alpine habitats. Grows on boggy meadows, moist open hillsides in mountains, lakeshores, streambanks, rock slides, and recent alluvial deposits. Soils range from very calcareous to very acidic. Elevation 6,800–10,500 feet. Known - Beartooth Ranger District; Suspected on Yellowstone, Gardiner, Bozeman, and Hebgen Lake Ranger Districts
<i>Pinus albicaulis</i> ⁷ Whitebark Pine (Known – Montane)	G3G4; S3 – MT; RFSS, Federal Candidate Species	Cold Forest. Moderate shade tolerance. Most often growing with other conifers on weakly developed (immature) soils. Cold, windy, snowy, and generally moist climatic zone. In moist mountains, it is most abundant on warm, dry exposures. In semiarid ranges, it is found on cool exposures and moist sites. In all but the driest regions, whitebark pine is most abundant on warm aspects and ridgetops having direct exposure to sun and wind. Elevation 7,000–9,300 feet. Known - Beartooth, Yellowstone, Gardiner, Bozeman, and Hebgen Lake Ranger Districts
<i>Aquilegia brevistyla</i> Short-styled Columbine (Known – Montane)	G5; S2S3 – MT; RFSS	Cool Moist Forest. Open woods and streambanks, limestone sites, northern aspect; often associated with limestones. Elevation 5,000–6,000 feet. Known ⁸ - Yellowstone Ranger District
<i>Botrychium hesperium</i> Western moonwort (Known – Montane)	G4; S3 – MT; RFSS	Cool Moist Forest. Low canopy cover settings. Mesic meadows associated with spruce and lodgepole pine forests in the montane and subalpine zones. Elevation 5,000–9000 feet. Known - Yellowstone Ranger District; Suspected - Beartooth Ranger District
<i>Goodyera repens</i> Northern rattlesnake plantain (Suspected – Montane)	G5; S3 – MT; RFSS	Cool Moist Forest. Open mossy forests, mountains, limestone, shale or moist limestone slopes of old growth Douglas-fir, montane zone or cool north aspects characterized by spruce and twinflower or subalpine-fir and twinflower habitat types. Elevation 5,600–6,800 feet. Suspected - Yellowstone Ranger District
<i>Juncus hallii</i> Hall's rush (Suspected – Montane)	G4G5; S4 – MT (no longer a species of concern); RFSS	Cool Moist Forest. Moist to dry meadows and slopes from valley to montane. Elevation 4,000–8,860 feet. Suspected - Beartooth, Yellowstone, Gardiner, Bozeman, and Hebgen Lake Ranger Districts
<i>Thalictrum alpinum</i> Alpine Meadowrue (Suspected – Montane)	G5; S2 – MT; RFSS	Cool Moist Forest. On hummocks w/low shrubs in moist, alkaline meadows in montane, subalpine. Elevation 6,500–7,000 feet. Suspected - Hebgen Lake Ranger District
<i>Carex gravida</i> var. <i>gravida</i> Heavy sedge (Known – Pine Savanna)	G5; S3 – MT; RFSS	Broadleaf Woodlands. Open woods, often in ravines with deciduous trees, on the plains. Elevation 3,880–4,000 feet. Known - Ashland and Sioux Ranger Districts
<i>Asclepias ovalifolia</i> Ovalleaf milkweed (Known – Pine Savanna)	G5?; S1S2 – MT; RFSS	Grasslands or Shrublands. Sandy, gravelly or clayey soils of prairies and open woodlands. Shallow soils. Elevation 3,760–3,840 feet. Known - Sioux Ranger District

⁶ Gx = Global ranking. Sx - MT = Montana species of concern state ranking; Sx - SD = South Dakota species of concern state ranking.

RFSS = Regional Forester's Sensitive Species

⁷ Added to Region 1 Sensitive Species List 2011

⁸ In 1967, one *Aquilegia brevistyla* occurrence was reported along the Boulder River in Montana. From the location information, it is not clear if the specimen was actually collected from the Gallatin National Forest (Northern Region) or from private land. *Aquilegia brevistyla* has not been found in the area since this original collection despite subsequent surveys (Mathews 1989, Ladyman 2006, MNHP 2016). Ladyman, J. A. R. 2006. *Aquilegia brevistyla* Hooker (smallflower columbine): A Technical Conservation Assessment. Montana Natural Heritage Program. 2016. Montana Natural Heritage SOC report: Plant species of concern. in, Helena, MT.

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Name	Conservation Categories ⁶	Habitat
<i>Balsamorhiza macrophylla</i> Large-leaved Balsamroot (Known - Montane)	G3G5; S3S4 – MT (no longer a species of concern); RFSS	Grasslands or Shrublands. Open hills, associated with bunchgrasses; most often east-facing slopes (8-15%). Elevation 7,000–8,500 feet. Known - Hebgen Lake Ranger District
<i>Botrychium</i> ⁹ <i>ascendens</i> Upward-lobed moonwort Known – Montane)	G3; S3 – MT; RFSS	Grasslands or Shrublands. Low canopy cover settings. Stream floodplain habitats dominated by deciduous shrubs with lush cover by forbs, graminoids, and mosses in north west Montana. Mesic meadows, alpine vegetated talus in south central Montana; areas of light to moderate disturbance. Elevation 5,000–9000 feet. Known - Yellowstone Ranger District; Suspected - Beartooth Ranger District
<i>Botrychium paradoxum</i> Peculiar moonwort (Known – Montane)	G3G4; S3 – MT; RFSS	Grasslands or Shrublands. Low canopy cover settings. Dry to moist, often gravelly and lightly disturbed soil of bunchgrass, meadows, and mid-succession gravel bars in the valley and montane zones. Alpine vegetated talus in south central Montana; areas of light to moderate disturbance. Elevation 5,000–9000 feet. Known - Yellowstone Ranger District; Suspected - Beartooth Ranger District
<i>Pyrrocoma carthamoides</i> var. <i>subsquarrosus</i> (Beartooth large-flowered goldenweed)	G4G5T3; S3 – MT; RFSS	Grasslands or Shrublands. Grasslands and sagebrush steppe on sandy calcareous soils in the foothills and montane zones. Elevation 5,520–7,200'. Known - Beartooth Ranger District
<i>Adoxa maschatellina</i> Musk-root (Known – Montane)	G5; S3 - MT and SD; RFSS	Sparse Vegetation. Vernal moist places in the mountains at the bottom of undisturbed, open rock slides that have cold air drainage. Generally shaded, montane to subalpine. Elevation 4,400–6,000 feet. Known - Beartooth Ranger District
<i>Astragalus barrii</i> Barr's milkvetch (Known – Pine Savanna)	G3; S3 - MT and SD; RFSS	Sparse Vegetation. Gullied knolls, buttes, and barren hilltops, often on calcareous soft shale and siltstone. Elevation 2,940–4,000 feet. Known - Ashland Ranger District; Suspected - Sioux Ranger District
<i>Ericameria discoidea</i> var. <i>discoidea</i> (Syn. <i>Haplopappus macronema</i> var. <i>macronema</i>) Discoïd Goldenweed - (Known – Montane)	G4G5T4; S2 – MT; RFSS	Sparse Vegetation. Rocky, open or sparsely wooded slopes, talus, above timberline. Elevation 7,640 feet plus. Known - Hebgen Lake Ranger District
<i>Eriogonum visherii</i> Dakota buckwheat (Known – Pine Savanna)	G3; S2 – MT; S3 – SD; RFSS	Sparse Vegetation. Barren, often bentonitic badlands slopes and outwashes in the plains. Elevation 3,140–3,760 feet. Known - Sioux Ranger District (SD)
<i>Mimulus nanus</i> Dwarf Purple Monkeyflower (Known – Montane)	G5; S2S3 – MT; RFSS	Sparse Vegetation. Dry gravelly or sandy slope; may prefer bare areas with minimal competition. Elevation 6,565 feet plus. Known - Hebgen Lake Ranger District
<i>Polygonum douglasii</i> spp. <i>austiniae</i> Austin's Knotweed (Known – Montane)	G4; S3S4 – MT; RFSS	Sparse Vegetation. Open, gravelly, shale soils with eroding slopes and banks in montane. Elevation 5,800–6,600 feet. Known - Gardiner and Yellowstone Ranger Districts
<i>Shoshonea pulvinata</i> Shoshonea (Known – Montane)	G2G3; S1 – MT; RFSS	Sparse Vegetation. Open, exposed limestone outcrops, ridgetops and canyon rims, in thin rocky soils. Elevation 6,440–7,800 feet. Known - Beartooth Ranger District

9. Two *Botrychium* species, although not listed in the Northern Region 2011 sensitive plant list for the Custer National Forest, have been added due to new information that there are known populations of these regional sensitive species adjacent to the Beartooth District. Concurrence with this action made by Regional Botanist, June 2011.

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Name	Conservation Categories ⁶	Habitat
<i>Cypripedium parviflorum</i> Small yellow lady's slipper (Known – Pine Savanna; Suspected – Montane)	G5; S3S4 – MT; S3? – SD; RFSS	Riparian or Wetlands. No known occurrences. Fens, damp mossy woods, seepage areas, and moist forest-meadow ecotones in valley to lower montane. Elevation 2,520–6,200 feet. Known - Sioux; Suspected - Beartooth, Yellowstone, Gardiner, Bozeman, Hebgen Lake Ranger Districts
<i>Drosera anglica</i> English sundew (Known – Montane)	G5; S3 – MT; RFSS	Riparian or Wetlands. Peat lands, on floating organic mats--undisturbed sphagnum bogs. Elevation 3,000–9,000 feet. Known - Hebgen Lake Ranger District
<i>Eleocharis rostellata</i> Beaked spikerush (Known – Montane)	G5; S1 – SD; S3 – MT; RFSS	Riparian or Wetlands. Bogs. Elevation 2,700–6,100 feet. Known - Gardiner Ranger District
<i>Epipactis gigantea</i> Giant helliborine (Suspected – Montane)	G4; S2S3 - MT; RFSS	Riparian or Wetlands. No known occurrences. Streambanks, fens with springs/seeps, often near thermal waters. Elevation 2,900–6,200 feet. Suspected Bozeman, Hebgen Lake, Gardiner, Yellowstone, Beartooth Ranger Districts
<i>Eriophorum gracile</i> Slender cottongrass (Suspected – Montane)	G5; S1 – SD; S3 – MT; RFSS	Riparian or Wetlands. No known occurrences. Peat land, fen, bog species. Elevation 3,000–7,600 feet. Suspected - Hebgen Lake, Bozeman, Yellowstone, Gardiner Ranger Districts ¹⁰
<i>Gentiana affinis</i> Prairie gentian (Known – Pine Savanna)	G5; S2 – SD; S4 – MT; RFSS	Riparian or Wetlands. Wet meadows, shores, springs, seepage areas and low prairie. Elevation 5,870–9,740 feet. Known - Sioux Ranger District
<i>Gentianopsis simplex</i> Hiker's gentian (Known – Montane)	G5; S2 – MT; RFSS	Riparian or Wetlands. Fens, meadows, and seeps, usually in areas of crystalline parent material, in the montane and subalpine zones. Elevation 4,460–8,400 feet. Known - Beartooth, Bozeman Ranger Districts
<i>Primula incana</i> Mealy primrose (Historically Documented ¹¹ – Montane)	G4G5; S3 – MT; RFSS	Riparian or Wetlands. No known occurrences. Historically documented. Wet meadows, springs and shores, often alkaline; calcareous bog meadows; wet meadows and quaking bogs; not found in alpine or subalpine areas. Elevation 2,000–6,600 feet. Historically documented - Beartooth Ranger Districts ¹¹
<i>Meesia triquetra</i> Three-ranked hump moss (Known – Montane)	G5; S2 – MT; RFSS	Riparian or Wetlands. Rich fens having surface waters with high pH and calcium concentrations. It can also be found in alkaline swampy birch and willow woods. Elevation 5,000–6,000 feet. Known - Beartooth Ranger District
<i>Mertensia ciliata</i> Mountain bluebells (Known – Montane and Pine Savanna)	G5; S1 – SD; RFSS	Riparian or Wetlands. Forested slopes-damp thickets in course to medium textured soils. Valley bottoms associated with springs, seeps, and spring fed water courses; occasionally found in non-wetlands. Very drought intolerant. Elevation 5,500 feet plus. Known - Sioux Ranger District, Ashland, Montane Districts
<i>Veratrum californicum</i> California False Hellebore - (Suspected – Montane)	G5; S2 – MT; RFSS	Riparian or Wetlands. No known occurrences. Wet meadows and streambanks in montane and subalpine, alpine. Meadows, spruce, Doug fir. Elevation 5,000–8,500 feet.

Note: *Lomatium nuttallii* (Nuttall Desert-Parsley), although not listed in the Northern Region sensitive plant list for the Custer National Forest, has been added as a local species of concern (concurrency with this action made by Regional Botanist, June 2005), due to information that there are known populations of this traditional use species on the Ashland District. It is ranked as G3; S2 in Montana and SH in South Dakota and occurs in the sparse vegetation guild; dry gravelly or sandy slopes at 6,565 foot elevation or above.

10. Although noted as known in Northern Region 2011 sensitive species list, source documentation cannot be found, therefore this species is being shown as “suspected” rather than as “known” in the plan area.

11.. Historically known to occur, but not recently documented.

Table 24. Regional Forester’s Sensitive Species – plant species, associated habitats, and related plan components

Name	Habitat	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
<i>Pinus albicaulis</i> (Whitebark Pine)	Cold Forest	FW-DC-PRISK-01 FW-DC-PRISK-02 FW-DC-VEGF-01 FW-DC-VEGF-02 FW-DC-VEGF-03 FW-DC-VEGF-04 FW-DC-VEGF-09 FW-DC-FIRE-01	FW-GO-PRISK-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-OBJ-PRISK-02 FW-GO-VEGF-01 FW-GO-CARB-01 FW-OBJ-FIRE-02	FW-STD-SOIL-01 FW-GDL-PRISK-02 FW-GDL-VEGF-01 FW-GDL-VEGF-03 FW-GDL-VEGF-05 FW-GDL-FIRE-01 FW-GDL-FIRE-03
<i>Aquilegia brevistyla</i> (Short-styled Columbine) <i>Botrychium hesperium</i> (Western moonwort) <i>Goodyera repens</i> (Northern Rattlesnake Plantain) <i>Juncus hallii</i> (Hall’s rush) <i>Thalictrum alpinum</i> (Alpine Meadowrue)	Cool Moist Forest	FW-DC-PRISK-01 FW-DC-VEGF-01 FW-DC-VEGF-02 FW-DC-VEGF-03 FW-DC-VEGF-04 FW-DC-VEGF-09 FW-DC-FIRE-01	FW-GO-PRISK-02 FW-GO-PRISK-03 FW-OBJ-PRISK-02 FW-GO-VEGF-01 FW-GO-CARB-01 FW-OBJ-FIRE-02	FW-STD-SOIL-01 FW-GDL-PRISK-02 FW-GDL-VEGF-01 FW-GDL-VEGF-03 FW-GDL-VEGF-05 FW-GDL-FIRE-01 FW-GDL-FIRE-03
<i>Salix barrattiana</i> (Barratt’s willow)	Alpine	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-RT-01 FW-DC-REC-05 FW-DC-VEGNF-04	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-GRAZ-01	FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-GRAZ-01 FW-STD-SOIL-01 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 FW-GDL-INV-01 FW-GDL-VEGNF-02 FW-GDL-VEGNF-05 AB-SUIT-RNA-01 AB-SUIT-RNA-02 AB-SUIT-RNA-03 AB-SUIT-RNA-04

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Name	Habitat	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
<i>Carex gravida</i> var. <i>gravida</i> (heavy sedge)	Broadleaf Woodlands	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-GRAZ-03 FW-DC-RT-01 FW-DC-REC-05 FW-DC-INV-01 FW-DC-VEGNF-04	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-OBJ-VEGNF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-VEGNF-02 FW-GO-GRAZ-01	FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-SOIL-01 FW-STD-GRAZ-01 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 FW-GDL-VEGNF-05 FW-GDL-VEGNF-06 FW-GDL-VEGNF-07 FW-GDL-EMIN-02 FW-GDL-INV-01
<i>Asclepias ovalifolia</i> (Ovalleaf milkweed) <i>Balsamorhiza macrophylla</i> (Large-leaved Balsamroot) <i>Botrychium paradoxum</i> (Peculiar moonwort) <i>Haplopappus carthamoides</i> var. <i>subsquarrosus</i> (Beartooth goldenweed)	Grasslands or Shrublands	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-RT-01 FW-DC-REC-05 FW-DC-INV-01 PR-DC-VEGNF-02 FW-DC-VEGNF-04	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-OBJ-VEGNF-01 PR-GO-VEGNF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-VEGNF-02 FW-GO-GRAZ-01	FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-SOIL-01 FW-STD-GRAZ-01 PR-STD-VEGNF-01 PR-STD-VEGNF-02 FW-GDL-INV-01 FW-GDL-VEGNF-05 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 FW-GDL-VEGNF-01 PR-GDL-VEGNF-01 PR-GDL-VEGNF-02
<i>Adoxa maschatellina</i> (Musk-root) <i>Astragalus barrii</i> (Barr's milkvetch) <i>Ericameria discoidea</i> var. <i>discoidea</i> (Syn. <i>Haplopappus macronema</i> var. <i>macronema</i>) (Discoïd Goldenweed) <i>Eriogonum visherii</i> (Dakota buckwheat) <i>Mimulus nanus</i> (Dwarf Purple Monkeyflower) <i>Polygonum douglasii</i> spp. <i>austiniae</i> (Austin's Knotweed) <i>Shoshonea pulvinata</i> (Shoshonea)	Sparsely Vegetated (for example talus scree rocky exposed badlands etc.)	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-RT-01 FW-DC-REC-05 PR-DC-VEGNF-01 PR-DC-VEGNF-02 FW-DC-VEGNF-04	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-OBJ-VEGNF-01 PR-GO-VEGNF-01 FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01 FW-GO-GRAZ-01	FW-STD-PRISK-01 FW-STD-EMIN-03 PR-STD-VEGNF-01 PR-STD-VEGNF-02 FW-STD-INV-01 FW-STD-INV-02 FW-STD-INV-03 FW-STD-INV-04 FW-STD-SOIL-01 FW-STD-GRAZ-01 FW-GDL-INV-01 FW-GDL-VEGNF-03 FW-GDL-VEGNF-04 FW-GDL-PRISK-01 FW-GDL-FIRE-03 FW-GDL-GRAZ-04 FW-GDL-GRAZ-05 FW-GDL-RECSUP-01 PR-GDL-VEGNF-01 PR-GDL-VEGNF-02

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Name	Habitat	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
<i>Cypripedium parviflorum</i> (small yellow lady's slipper)	Riparian or Wetlands	FW-DC-PRISK-01 FW-DC-GRAZ-01 FW-DC-RT-01	FW-OBJ-PRISK-01 FW-OBJ-VEGF-01 FW-OBJ-VEGNF-01	FW-STD-PRISK-01 FW-STD-EMIN-03 FW-STD-RMZ-01
<i>Drosera anglica</i> (English sundew)		FW-DC-REC-05 FW-DC-RMZ-01 FW-DC-RMZ-02	FW-GO-PRISK-02 FW-GO-PRISK-03 FW-GO-VEGNF-01	FW-STD-RMZ-02 FW-STD-RMZ-03 FW-STD-RMZ-04
<i>Eleocharis rostellata</i> (beaked spikerush)			FW-GO-VEGNF-02 FW-GO-GRAZ-01	FW-STD-RMZ-05 FW-STD-INV-01 FW-STD-INV-02
<i>Epipactis gigantea</i> (Giant helleborine)				FW-STD-INV-03 FW-STD-INV-04
<i>Eriophorum gracile</i> (Slender cottongrass)				FW-STD-SOIL-01 FW-STD-GRAZ-01
<i>Gentiana affinis</i> (Prairie gentian)				FW-GDL-PRISK-01 FW-GDL-FIRE-03
<i>Gentianopsis simplex</i> Hiker's gentian)				FW-GDL-GRAZ-01 FW-GDL-GRAZ-02
<i>Primula incana</i> (Mealy primrose)				FW-GDL-GRAZ-04 FW-GDL-GRAZ-05
<i>Meesia triquetra</i> (Three-ranked hump moss)				FW-GDL-RECSUP-01 FW-GDL-RMZ-01 FW-GDL-RMZ-02
<i>Mertensia ciliata</i> (Mountain bluebells)				FW-GDL-RMZ-03 FW-GDL-RMZ-04 FW-GDL-RMZ-05
<i>Veratrum californicum</i> (California False Hellebore)				FW-GDL-RMZ-06 FW-GDL-RMZ-07 FW-GDL-RMZ-08 FW-GDL-RT-03 FW-GDL-RT-05 FW-GDL-RT-07 FW-GDL-RT-09 FW-GDL-RT-11 FW-GDL-FAC-01 FW-GDL-EMIN-02 FW-GDL-INV-01 FW-GDL-VEGNF-05 FW-SUIT-RMZ-01 FW-SUIT-RMZ-02

Biological Determination and Rationale. For all Northern Region sensitive plant species known or suspected to occur on the Custer Gallatin National Forest, the revised plan may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species because plan components for terrestrial and riparian ecosystems will protect associated habitats. Plan components for resource uses will minimize effects to terrestrial and riparian resources.

Regional Forester's Sensitive Species – Aquatic Species

Table 25 outlines current Northern Region sensitive aquatic species, habitat, and their distribution.

Table 25. Regional Forester's Sensitive Species – fish, amphibian, and mussel species for the Custer Gallatin National Forest

Name*	Conservation Categories ¹²	Habitat
<i>Oncorhynchus clarkii lewisi</i> Westslope cutthroat trout (Known – MHG and BBC geographic areas) (montane)	G4; S2 – MT; RFSS	They inhabit relatively clear, cold streams, rivers, and lakes.
<i>Oncorhynchus clarkii bouvieri</i> Yellowstone cutthroat trout (Known – CGNF; AB, MHG, Pryors, and BBC geographic areas) (montane)	G4; S2 – MT; RFSS	They inhabit relatively clear, cold streams, rivers, and lakes.
<i>Thymallus arcticus</i> Arctic grayling (Known – CGNF; MHG, and AB geographic areas) (montane)	G5; S1 – MT; RFSS	Found primarily small, cold, clear lakes with tributaries suitable for spawning. Also found in tributaries and streams with cold water.
<i>Chrosomus eos</i> Northern redbelly dace (Documented near Ashland and Sioux geographic areas)	G5; S3 – MT; ST – SD; RFSS	Clear, cool, slow-flowing creeks, ponds and lakes with aquatic vegetation, including filamentous algae, and sandy or gravelly bottoms interspersed with silt. May be perennial or intermittent stream systems.
<i>Anaxyrus boreas</i> Western toad (Known – CGNF; MHG, and BBC geographic areas) (montane)	G4; S2 – MT; RFSS	Habitat includes streams, wetlands, beaver ponds, lake shores, wet meadows, marshes, high elevation ponds at tree-line. Have been found associated with canopy cover and in open grassland areas.
<i>Spea bombifrons</i> Plains spadefoot (Known – MHG; Suspected other geographic areas) (montane and pine savanna)	G5; S3 – MT; RFSS	Found in areas with soft sandy and gravelly soils near permanent or temporary bodies of water. For much of each year it lives largely inactive in burrows it constructs or occupies rodent burrows, and enters water only to breed. Following heavy rains, adults have been reported in water up to 30 centimeters deep in flooded wagon wheel ruts, temporary rain pools formed in wide flat-bottom coulees, water tanks, and badland seep ponds. Tadpoles and toadlets are observed in stock ponds and small ephemeral reservoirs, usually in sagebrush-grassland habitats.
<i>Anaxyrus cognatus</i> Great Plains Toad (Known – Ashland and Sioux geographic areas) (pine savanna)	G5; S2 – MT; RFSS	Have been documented in rainwater pools in road ruts, in stream valleys, at small reservoirs and stock ponds, and around rural farms; breeding has been documented in small reservoirs and backwater sites along streams.
<i>Lithobates pipiens</i> Northern Leopard Frog (Known – Ashland and Sioux geographic areas) (montane and pine savanna)	G5; S1,S4 – MT; RFSS	S1 – alpine lakes, locally extirpated from these locations for reason unknown. S4 – not Montana Fish, Wildlife, and Parks species of concern in pine savanna; Low elevation and valley bottom ponds, spillway ponds, beaver ponds, stock reservoirs, lakes, creeks, pools in intermittent streams, warm water springs, potholes, and marshes.
<i>Margaritifera falcata</i> Western pearlshell (Known – MHG geographic area) (montane)	G5; S2 – MT; RFSS	Clean cold streams with a moderate gradient and stable sand or gravel substrates where westslope cutthroat trout are present

* CGNF = Custer Gallatin National Forest; MHG = Madison, Henrys Lake, and Gallatin Mountains; AB = Absaroka Beartooth Mountains; BBC = Bridger, Bangtail and Crazy Mountains.

12. [Gx = Global ranking](#), [Sx - MT = Montana species of concern state ranking](#); [Sx - SD = South Dakota species of concern state ranking](#). RFSS = Regional Forester's Sensitive Species.

Table 26. Regional Forester’s Sensitive Species – fish, amphibian, and mussel species for the Custer Gallatin National Forest and related plan components

Name	Desired Conditions	Goals and Objectives	Suitability, Standards and Guidelines
Regional Foresters Sensitive Species- Aquatic Species	FW-DC-WTR 01-07;09-11; FW-DC-RMZ-01-02; FW-DC-CWN-01	FW-GO-WTR-01 FW-OBJ-WTR-01 FW-OBJ-WTR-02 FW-OBJ-WTR-03 FW-OBJ-CWN-01	FW-STD-WTR-02-03 FW-GDL-WTR-01-05 FW-STD-INV-04 FW-STD-RMZ-02-05 FW-GDL-RMZ-01-08 FW-STD-GRAZ-01 FW-GDL-GRAZ-01-02 FW-GDL-CWN-01

Biological Determination and Rationale. For all Northern Region sensitive aquatic species known or suspected to occur on the Custer Gallatin, the revised plan may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species because plan components for aquatic and riparian ecosystems will protect aquatic species habitats. The conservation watershed network provides a long-term conservation approach at the watershed scale, including protecting important areas that would be more resilient in light of climate change impacts, and plan components for resource uses will minimize effects to aquatic and riparian resources.

Regional Forester’s Sensitive Species – Wildlife Species

Table 27 and table 28 outline current Northern Region sensitive wildlife species, where they are known or suspected to occur and where the species is addressed in the revised plan.

Table 27. Regional Forester’s Sensitive Species – wildlife species for the Custer Gallatin National Forest

Species	Conservation Categories ¹³	Habitat
<i>Ammodramus bairdii</i> Baird’s sparrow	G4; MT S3B; SD S2B	Grassland: mixed grass prairie; dense vegetation
<i>Haliaeetus leucocephalus</i> Bald eagle	G5; MT S4; SD S1B S2N	Aquatic-riparian; large rivers, lakes; large trees or snags for nesting
<i>Ovis canadensis</i> Bighorn sheep	G4; MT S4; SD S4	Grass/shrub with nearby rock/cliff features for escape terrain
<i>Picoides arcticus</i> Black-backed woodpecker	G5; MT S3; SD S3	Recently burned forest; insect infested forest
<i>Cynomys ludovicianus</i> Black-tailed prairie dog	G4; MT S3; SD S4	Grassland: short-grass prairie
<i>Polioptila caerulea</i> Blue-gray gnatcatcher	G5; MT S2B; SD S1	Woodlands, shrubs, riparian willow, cottonwood
<i>Athene cunicularia</i> Burrowing owl	G4; MT S3B; SD S3 S4B	Grassland, shrubland, Black-tailed prairie dog colonies
<i>Otus flammeolus</i> Flammulated owl	G4; MT S3; SD S1	Open, parklike ponderosa pine or Douglas-fir forest
<i>Myotis thysanodes</i> Fringed myotis	G4; MT S4; SD S2	Grass, shrub, spruce/fir forest; caves, mines, buildings as roost sites
<i>Canis lupus</i> Gray wolf	G5; MT S4; SD NR	Generalist – forest and non-forest; associated with big game herds

¹³ [Gx = Global ranking. Sx - MT = Montana species of concern state ranking; Sx - SD = South Dakota species of concern state ranking.](#)

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Species	Conservation Categories ¹³	Habitat
<i>Centrocercus urophasianus</i> Greater sage-grouse	G3G4; MT S2; SD S2	Sagebrush
<i>Phrynosoma hernandesi</i> Greater short-horned lizard	G5; MT S3; SD S2	Short grass, sagebrush, rocky/sandy areas, sparse vegetation
<i>Histrionicus histrionicus</i> Harlequin duck	G4; MT S2B; SD NR	Fast-moving mountain streams; riparian vegetation for nesting
<i>Lanius ludovicianus</i> Loggerhead shrik	G4; MT S3B; SD S3 S4B	Grassland, shrubland, wooded draws
<i>Numenius americanus</i> Long-billed curlew	G5; MT S3B; SD S3	Short-grass prairie; sparse vegetation
<i>Myotis evotis</i> Long-eared myotis	G5; MT S4; SD S1	Mature to older forest; caves for roosts, winter hibernacula
<i>Myotis Volans</i> Long-legged myotis	G4G5; MT S4; SD S5	Conifer forest, riparian; tree roosts; caves for hibernacula
<i>Lampropeltis Triangulum</i> Milksnake	G5; MT S2; SD S4	Dry conifer, riparian, woody draws, grass, shrub, rocky-sandy areas
<i>Antrozous pallidus</i> Pallid bat	G4; MT S3; SD NR	Dry, sparse vegetation; rocks and caves for roosts and hibernacula
<i>Falco peregrinus</i> Peregrine falcon	G4; MT S3; SD SX	Cliffs for nesting; riparian associate for foraging
<i>Euderma maculatum</i> Spotted bat	G4; MT S3; SD NR	Montane forest; sparse vegetation; rocks, caves roosting, hibernacula
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	G3 G4; MT S3; SD S2	Forest, woodland, shrubland; rocks, caves for roosting, hibernacula
<i>Cygnus buccinators</i> Trumpeter swan	G4; MT S3; SD S3	Aquatic: rivers, lakes, marshes
<i>Heterodon nasicus</i> Western hognose snake	G5; MT S2; SD S5	Riparian, woody draws, shrubs, sandy, rocky areas
<i>Cynomys leucurus</i> White-tailed prairie dog	G4; MT S1; SD NR	Grass/shrub
<i>Gulo gulo</i> Wolverine	G4; MT S3; SD SX	High elevation, alpine tundra and boreal forest

Table 28. Regional Forester’s Sensitive Species (RFSS) terrestrial wildlife species for the Custer Gallatin National Forest and plan components that will contribute to long-term persistence for these species

Species Name	Desired Conditions	Goals and Objectives	Standards, Guidelines and Suitability
Row 1: Revised Plan Components that pertain to all RFSS known or suspected to occur on the Custer Gallatin National Forest ¹	FW-DC-SOIL 01; FW-DC-WTR 01, 04, 10, 12; FW-DC-FIRE 01, 02; FW-DC-CARB 01; FW-DC-INV 01; FW-DC-WL 01, 03-06, 08, 09; FW-DC-RT 03; FW-DC-REC 05; FW-DC-RECDEV 06, 08, 09; FW-DC-LAND 01	FW-GO-CARB 01; FW-GO-WL 01-05; FW-OBJ-WL 02; FW-GO-RT 03	FW-GDL-FIRE 01, 03; FW-STD-GRAZ 01; FW-GDL-GRAZ 07, 08, 10; FW-EMIN-STD 01; FW-STD-RT 02; FW-GDL-RT 01, 02
<i>Ammodramus bairdii</i> Baird’s sparrow	FW-DC-VEGNF 01-04; FW-DC-INV 01; FW-DC-CARB 01; FW-DC-GRAZ 03;	FW-GO-VEGNF 01-02; FW-OBJ-VEGNF 01; FW-OBJ-INV 01	FW-VEGNF-GDL 01, 03; FW-GDL-WL 07; FW-STD-GRAZ 01
<i>Haliaeetus leucocephalus</i> Bald eagle	FW-DC-WTR 02-07, 10; FW-DC-RMZ 01-02; FW-DC-VEGF 01, 03, 05, 07, 09; FW-DC-VEGNF 01, 04; FW-DC-WL 08; FW-DC-RT 01	FW-GO-WTR 01; FW-OBJ-WTR 01, 03; FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01; FW-GO-INV 01-04;	FW-STD-WTR 01-03; FW-GDL-WTR 01-05; FW-GDL-WTR 01-05; FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-SUIT-RMZ 01, 02; FW-GDL-VEGF 01-03, 05; FW-GDL-VEGNF 05, 08; FW-STD-INV 01, 04; FW-STD-WL 01; FW-GDL-WL 06, 07; FW-GDL-EMIN 02; FW-STD-RT 03, 04; FW-GDL-FAC 01-04; FW-SUIT-AIRFIELDS 01; FW-GDL-RECSUP 01; FW-GDL-LANDUSE 03, 04
<i>Ovis canadensis</i> Bighorn sheep	FW-DC-VEGNF 01-04; FW-DC-FIRE 01; FW-DC-INV 01; FW-DC-WL 07, 09; FW-DC-WLBHS 01, 02	FW-GO-VEGNF 01-02; FW-OBJ-VEGNF 01; FW-OBJ-INV 01; FW-GDL-WL 01-05; FW-GO-WLBHS 01, 02; FW-GO-RT 03	FW-VEGNF-GDL 01-04; FW-GDL-WL 01; FW-GDL-WLGB 02; FW-GDL-WLGB 06; FW-STD-GRAZ 01-04; FW-GDL-GRAZ 03, 07; FW-SUIT-REC 01, 02; FW-STD-RECOG 01, 02
<i>Picoides arcticus</i> Black-backed woodpecker	FW-DC-VEGF 01, 03-05, 07-09; FW-DC-FIRE 01;	FW-OBJ-FIRE 02	FW-GDL-VEGF 01, 03-05; FW-GDL-WL 07; FW-STD-TIM 01, 04; FW-GDL-TIM 01, 02; FW-GDL-RECDEV 02
<i>Cynomys ludovicianus</i> Black-tailed prairie dog	FW-DC-VEGNF 01-04; FW-DC-INV 01; FW-DC-WLPD 01	FW-GO-VEGNF 01-02; FW-OBJ-VEGNF 01; FW-OBJ-INV 01; FW-GO-WLPD 01	FW-VEGNF-GDL 01, 03; FW-GDL-WLPD 01, 02; FW-STD-GRAZ 01
<i>Polioptila caerulea</i> Blue-gray gnatcatcher	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGNF 01-04; PR-DC-VEGNF 01-03; FW-DC-CARB 01	FW-GO-VEGNF 02; FW-OBJ-VEGNF 01; PR-GO-VEGNF 01-03; FW-GO-GRAZ 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGNF 05-08; FW-GDL-WL 07; FW-STD-GRAZ 01; FW-GDL-GRAZ 01, 02, 04, 05, 10

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Species Name	Desired Conditions	Goals and Objectives	Standards, Guidelines and Suitability
<i>Athene cunicularia</i> Burrowing owl	FW-DC-VEGNF 01-04; FW-DC-INV 01; FW-DC-WLPD 01	FW-GO-VEGNF 01-02; FW-OBJ-VEGNF 01; FW-OBJ-INV 01; FW-GO-WLPD 01	FW-VEGNF-GDL 01, 03; FW-GDL-WL 06, 07; FW-STD-WLPD 01, 02; FW-GDL-WLPD 01, 02; FW-STD-GRAZ 01
<i>Otus flammeolus</i> Flammulated owl	FW-DC-VEGF 01-05, 07-09; FW-DC-CARB 01	FW-OBJ-VEGF 01	FW-GDL-VEGF 01-05; FW-GDL-WL 06, 07; FW-GDL-RECDEV 02
<i>Myotis thysanodes</i> Fringed myotis	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGF 01-07; FW-DC-CARB 01; FW-DC-WL 09; FW-DC-WLBAT 01; FW-DC-EMIN 05, 06	FW-GO-WLBAT 02; FW-GO-EMIN 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGF 01, 03, 05; FW-GDL-WL 07; FW-STD-WLBAT 01; FW-GDL-WLBAT 01-05; FW-STD-EMIN 03-07
<i>Canis lupus</i> Gray wolf	FW-DC-VEGF All; FW-DC-VEGNF All; FW-DC-CARB 01; FW-DC-WL 07-09; FW-DC-WLBHS 01; FW-DC-WLBI 01, 02, 04	FW-GO-WL 02, 03; FW-GO-WLBG 01; FW-GO-WLBHS 01, 02; FW-GO-WLBI 01; FW-OBJ-WLBI 01; FW-GO-RT 03	FW-STD-WL 02; FW-GDL-WL 01-05; FW-GDL-WLBG 01-03; FW-GDL-WLBI 01-03; FW-STD-GRAZ 02-04; FW-GDL-GRAZ 03; FW-SUIT-REC 01, 02; FW-STD-RECOG 01, 02
<i>Centrocercus urophasianus</i> Greater sage-grouse	FW-DC-VEGNF 01, 04; FW-DC-CARB 01; FW-DC-INV 01; FW-DC-WLSG 01; FW-DC-GRAZ 03	FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01; FW-GO-INV 01-04; FW-OBJ-INV 01; FW-GO-WL 01; FW-GO-WLSG 01	FW-GDL-VEGNF 03, FW-GDL-FIRE 03; FW-GDL-WL 07; FW-STD-WLSG 01; FW-GDL-WLSG 01-07
<i>Phrynosoma hernandesi</i> Greater short-horned lizard	FW-DC-VEGNF 01, 04	FW-OBJ-VEGNF 01; FW-GO-INV 01-04; FW-OBJ-INV 01; FW-GO-WL 04	FW-GDL-VEGNF 04; FW-GDL-WL 08
<i>Histrionicus histrionicus</i> Harlequin duck	FW-DC-WTR 01-07, 10-11; FW-DC-RMZ 01-02; FW-DC-VEGF 05; FW-DC-VEGNF 01, 04; FW-DC-GRAZ 03; FW-DC-RT 01; FW-DC-RECDEV 07	FW-GO-WTR 01; FW-OBJ-WTR 01, 03; FW-GO-VEGNF 02; FW-GO-GRAZ 01; FW-GO-RT 03; FW-OBJ-REC 01	FW-STD-WTR 01-03; FW-GDL-WTR 01; FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-SUIT-RMZ 01, 02; FW-GDL-VEGNF 05, 07; FW-STD-INV 01, 04; FW-STD-WLGB 04c; FW-STD-GRAZ 01; FW-GDL-GRAZ 01, 02, 04, 05, 10; FW-GDL-EMIN 02; FW-STD-RT 03, 04; FW-GDL-FAC 01-04; FW-SUIT-AIRFIELDS 01; FW-GDL-RECSUP 01; FW-GDL-LANDUSE 03, 04
<i>Lanius ludovicianus</i> Loggerhead shrike	FW-DC-VEGNF 02, 04; FW-DC-CARB 01; FW-DC-GRAZ 03	FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01; FW-GO-GRAZ 01, 02;	FW-GDL-VEGNF 05-07; FW-GDL-WLSG 02, 05; FW-GDL-GRAZ 04, 05

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Species Name	Desired Conditions	Goals and Objectives	Standards, Guidelines and Suitability
<i>Numenius americanus</i> Long-billed curlew	FW-DC-WTR 02, 06, 07; FW-DC-VEGNF 02, 04; FW-DC-CARB 01; FW-DC-GRAZ 03	FW-OBJ-WTR 01; FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01	FW-STD-RMZ 01; FW-GDL-VEGNF 01, 03, 04; FW-GDL-EMIN 02; FW-STD-RT 01; FW-GDL-RT 09
<i>Myotis evotis</i> Long-eared myotis	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGF 01-07; FW-DC-CARB 01; FW-DC-WL 09; FW-DC-WLBAT 01; FW-DC-EMIN 05, 06	FW-GO-WLBAT 02; FW-GO-EMIN 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGF 01, 03, 05; FW-GDL-WL 07; FW-STD-WLBAT 01; FW-GDL-WLBAT 01-05; FW-STD-EMIN 03-07
<i>Myotis volans</i> Long-legged myotis	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGF 01-07; FW-DC-CARB 01; FW-DC-WL 09; FW-DC-WLBAT 01; FW-DC-EMIN 05, 06	FW-GO-WLBAT 02; FW-GO-EMIN 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGF 01, 03, 05; FW-GDL-WL 07; FW-STD-WLBAT 01; FW-GDL-WLBAT 01-05; FW-STD-EMIN 03-07
<i>Lampropeltis triangulum</i> Milksnake	FW-DC-RMZ 01, 02; FW-DC-VEGF 01-03; FW-DC-VEGNF 01, 04; FW-DC-WLSG 01; FW-DC-GRAZ 03	FW-OBJ-VEGF 01; FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01; FW-GO-INV 01-04; FW-OBJ-INV 01; FW-GO-WL 04; FW-GO-WLSG 01; FW-GO-GRAZ 01	FW-STD-RMZ 02-05; FW-GDL-RMZ 01-08; FW-GDL-VEGNF 05-07; FW-GDL-WL 08; FW-STD-WLSG 01; FW-GDL-GRAZ 04-05; FW-GDL-EMIN 02
<i>Antrozous pallidus</i> Pallid bat	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGF 01-07; FW-DC-CARB 01; FW-DC-WL 09; FW-DC-WLBAT 01; FW-DC-EMIN 05, 06	FW-GO-WLBAT 02; FW-GO-EMIN 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGF 01, 03, 05; FW-GDL-WL 07; FW-STD-WLBAT 01; FW-GDL-WLBAT 01-05; FW-STD-EMIN 03-07
<i>Falco peregrinus</i> Peregrine falcon	FW-DC-WTR 07; FW-DC-RMZ 01, 02; FW-DC-VEGNF 01, 04; FW-DC-RECDEV 07; FW-DC-DWSR 01, 02;	FW-GO-WTR 01; FW-OBJ-WTR 01, 03; FW-GO-VEGNF 02; FW-GO-GRAZ 01; FW-GO-RT 03; FW-OBJ-REC 01; FW-GO-DWSR 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-WL 06, 07; FW-GDL-EMIN 02; FW-GDL-FAC 01; FW-SUIT-AIRFIELD 01; FW-STD-DWSR 01; FW-GDL-DWSR 01; FW-SUIT-DWSR 01
<i>Euderma maculatum</i> Spotted bat	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGF 01-07; FW-DC-CARB 01; FW-DC-WL 09; FW-DC-WLBAT 01; FW-DC-EMIN 05, 06	FW-GO-WLBAT 02; FW-GO-EMIN 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGF 01, 03, 05; FW-GDL-WL 07; FW-STD-WLBAT 01; FW-GDL-WLBAT 01-05; FW-STD-EMIN 03-07
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	FW-DC-WTR 10; FW-DC-RMZ 01, 02; FW-DC-VEGF 01-07; FW-DC-CARB 01; FW-DC-WL 09; FW-DC-WLBAT 01; FW-DC-EMIN 05, 06	FW-GO-WLBAT 02; FW-GO-EMIN 01	FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-VEGF 01, 03, 05; FW-GDL-WL 07; FW-STD-WLBAT 01; FW-GDL-WLBAT 01-05; FW-STD-EMIN 03-07

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Species Name	Desired Conditions	Goals and Objectives	Standards, Guidelines and Suitability
<i>Cygnus buccinator</i> Trumpeter swan	FW-DC-WTR 01-07, 09-12; FW-DC-RMZ 01, 02; FW-DC-VEGNF 01-04;	FW-OBJ-WTR 01; FW-GO-DWSR 01	FW-STD-WTR 01-03; FW-GDL-WTR 01, 03; FW-STD-RMZ 01-05; FW-GDL-RMZ 01-08; FW-GDL-WL 07; FW-GDL-EMIN 02; FW-STD-RT 01, 09; FW-GDL-FAC 01; FW-SUIT-AIRFIELD 01; FW-STD-DWSR 01; FW-GDL-DWSR 01; FW-SUIT-DWSR 01
<i>Heterodon nasicus</i> Western hognose snake	FW-DC-VEGNF 01, 04; FW-DC-WLSG 01; FW-DC-GRAZ 03	FW-GO-VEGNF 01, 02; FW-OBJ-VEGNF 01; FW-GO-INV 01-04; FW-OBJ-INV 01; FW-GO-WL 01; FW-GO-WLSG 01; FW-GO-GRAZ 01	FW-GDL-VEGNF 03, 05-07; FW-GDL-FIRE 03; FW-GDL-WL 08; FW-STD-WLSG 01; FW-GDL-WLSG 01-07; FW-GDL-GRAZ 04, 05; FW-GDL-EMIN 02
<i>Cynomys leucurus</i> White-tailed prairie dog	FW-DC-VEGNF 01-04; FW-DC-INV 01; FW-DC-WLPD 01; FW-DC-WLSG 01; FW-DC-GRAZ 03	FW-GO-VEGNF 01-02; FW-OBJ-VEGNF 01; FW-OBJ-INV 01; FW-GO-WLPD 01	FW-VEGNF-GDL 01, 03; FW-STD-WLPD 01, 02; FW-STD-GRAZ 01
<i>Gulo gulo</i> Wolverine	FW-DC-PRISK 02; FW-DC-VEGF 01-09; FW-VEGNF 01, 03, 04; FW-DC-FIRE 01; FW-DC-WL 03-08; FW-DC-WLBG 01; FW-DC-WLBHS 01, 02; FW-DC-WLBI 01, 02, 04; FW-DC-WLGB 02; FW-DC-WLWV	FW-GO-PRISK 01; FW-OBJ-PRISK 02; FW-OBJ-VEGF 01; FW-GO-VEGNF 01; FW-GO-WL 01-05; FW-GO-WLBG 01; FW-GO-WLBHS 02; FW-GO-WLBI 01; FW-OBJ-WLBI 01; FW-GO-RT-03	FW-GDL-PRISK 02; FW-GDL-VEGF 01-03; FW-GDL-VEGNF 01-04; FW-STD-WL 01, 02; FW-GDL-WL 01-05; FW-GDL-WLBG 01-03; FW-GDL-WLBI 01-03; FW-STD-WLLX 01; NRLMD Objective ALL 01; Objective HU 01, HU 02, HU 03, HU 04; Guideline HU G1, HU G2, HU G3, HU G4, HU G7, HU G9, HU G10, HU G11, HU G12; FW-STD-WLGB 01-07; FW-GDL-WLWV 01; FW-STD-GRAZ 02-04; FW-SUIT-AIRFIELD 01; FW-SUIT-REC 01, 02; FW-STD-RECOG 01, 02; FW-STD-RECSKI 01; FW-GDL-RECSKI 01

Table 29. Northern Region sensitive terrestrial wildlife species for the Custer Gallatin National Forest – biological evaluation determination and rationale

Species known or suspected to occur on the Custer Gallatin	Biological Determination and Rationale
Baird's sparrow (<i>Ammodramus bairdii</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation will maintain or restore grassland habitats and plan components for permitted livestock will minimize grazing impacts.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation will maintain or restore very large trees used for nesting or roosting and limit the risk of disturbance during key time periods. Aquatic plan components will protect habitats used for feeding.
Bighorn sheep (<i>Ovis canadensis</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation will maintain or restore habitat, while plan components for permitted livestock grazing and recreation will minimize potential for disease transmission from domestic livestock.
Black-backed woodpecker (<i>Picoides arcticus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation plan components for timber will maintain or restore burned forests used for nesting and feeding. Objectives for wildland fires will promote continued presence of habitat for the species.
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation will maintain or restore grassland habitats. Plan components for prairie dogs will limit impacts from human uses.
Blue-gray gnatcatcher (<i>Poliophtila caerulea</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation will maintain or restore shrublands and woody draws used as breeding habitat.
Burrowing owl (<i>Athene cucularia</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore grasslands, and plan components for prairie dogs will benefit the food supply.
Flammulated owl (<i>Otus flammeolus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation help maintain or restore open forest structure and snags needed for nesting, feeding and roosting.
Fringed myotis (<i>Myotis thysanodes</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems vegetation and riparian zones will maintain foraging habitat, while plan components for bats and geologic areas will preserve conditions for roosting and hibernacula, minimize potential human-caused spread of white-nose syndrome.
Gray wolf (<i>Canis lupus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for wildlife diversity (including those for big game habitat) will provide for prey species.

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Species known or suspected to occur on the Custer Gallatin	Biological Determination and Rationale
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore sagebrush habitat, while plan components for sage-grouse will minimize habitat loss and disturbance from human uses.
Greater short-horned lizard (<i>Phrynosoma hernandesi</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore habitat used for shelter and foraging, while plan components for wildlife will protect known breeding areas.
Harlequin duck (<i>Histrionicus histrionicus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for aquatic ecosystems (including riparian management zones) will limit habitat alterations and disturbance impacts in breeding areas.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore shrublands and woody draws used as nesting and foraging habitat.
Long-billed curlew (<i>Numenius americanus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore grasslands used for nesting and foraging.
Long-eared myotis (<i>Myotis evotis</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems vegetation and riparian zones will maintain or restore habitat used for roosting and foraging. Plan components for geologic areas and bats will preserve cave conditions for roosting and hibernacula, as well as minimize potential human-caused spread of white-nose syndrome and limit the risk of disturbance during key time periods.
Long-legged myotis (<i>Myotis Volans</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems vegetation and riparian zones will maintain or restore habitat used for roosting and foraging. Plan components for geologic areas and bats will preserve cave conditions for roosting and hibernacula, as well as minimize potential human-caused spread of white-nose syndrome and limit the risk of disturbance during key time periods.
Milksnake (<i>Lampropeltis Triangulum</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore habitat used for shelter and foraging, while plan components for wildlife will protect known breeding areas.
Pallid bat (<i>Antrozous pallidus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems vegetation, aquatic and riparian zones will maintain or restore foraging habitat. Plan components for geologic areas and bats will preserve habitat for roosting and hibernacula, as well as minimize potential human-caused spread of white-nose syndrome.
Peregrine falcon (<i>Falco peregrinus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because wildlife plan components will protect nest sites and limit the risk of disturbance during key time periods. Aquatic and riparian plan components will maintain or restore habitats used for feeding.

Species known or suspected to occur on the Custer Gallatin	Biological Determination and Rationale
Spotted bat (<i>Euderma maculatum</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems vegetation and aquatics will maintain foraging habitat. Plan components for geologic areas and bats will preserve roosting areas and hibernacula, as well as minimize potential human-caused spread of white-nose syndrome.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for bats, caves, aquatic ecosystems and riparian management zones will limit human-caused spread of white-nose syndrome, protect sites used for maternity roosts and hibernacula, and limit the risk of disturbance during key time periods.
Trumpeter swan (<i>Cygnus buccinators</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for aquatics and riparian areas will maintain or restore habitats used for breeding, feeding and wintering.
Western hognose snake (<i>Heterodon nasicus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore habitat used for shelter and foraging, while plan components for wildlife will protect known breeding areas.
White-tailed prairie dog (<i>Cynomys leucurus</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and non-forest vegetation will maintain or restore grassland and shrubland habitats, while plan components for prairie dogs will limit negative impacts from human uses.
Wolverine (<i>Gulo gulo</i>)	The revised plan <i>may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species</i> because plan components for terrestrial ecosystems and vegetation will maintain or restore habitat for prey species. Plan components for wolverine and lynx will limit impacts from human-caused snow compaction.

Table 30. Northern Region sensitive terrestrial wildlife species for the Custer Gallatin National Forest – location of pertinent analyses in the environmental impact statement

Species	Addressed in: Environmental Impact Statement, Chapter 3, Affected Environment and Environmental Consequences
Baird's sparrow (<i>Ammodramus bairdii</i>)	Terrestrial Vegetation – Grasslands and Shrublands; Wildlife Diversity - Unique Habitats: Grassland
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; Wildlife Diversity – Unique Habitats: Aquatic and Riparian
Bighorn sheep (<i>Ovis canadensis</i>)	Wildlife Diversity – General Wildlife – Bighorn Sheep; Unique Habitats: Rock, Cliff and Cave
Black-backed woodpecker (<i>Picoides arcticus</i>)	Terrestrial Vegetation - Ecosystem Function, Fire/Insects and Disease Wildlife Diversity – Unique Habitats: Recently Burned Forest
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	Terrestrial Vegetation - Grasslands and Shrublands; Wildlife Diversity – Species of Conservation Concern; Unique Habitats: Grassland
Blue-gray gnatcatcher (<i>Polioptila caerulea</i>)	Terrestrial Vegetation – Mesic Deciduous Woodlands, Xeric Woodlands, Shrublands, and Riparian; Wildlife Diversity – Unique Habitats
Burrowing owl (<i>Athene cunicularia</i>)	Terrestrial Vegetation – Grasslands and Shrublands; Wildlife Diversity - Unique Habitats

Appendix C: Species of Conservation Concern Plan Components, Sensitive Species Lists

Species	Addressed in: Environmental Impact Statement, Chapter 3, Affected Environment and Environmental Consequences
Flammulated owl (<i>Otus flammeolus</i>)	Terrestrial Vegetation – Ponderosa Pine, Douglas fir, Snags; Wildlife Diversity – Unique Habitats: Coniferous Forest
Fringed myotis (<i>Myotis thysanodes</i>)	Grass, shrub, spruce/fir forest; caves, mines, bldgs. used for roost sites
Gray wolf (<i>Canis lupus</i>)	Wildlife Diversity – Unique Habitats: Coniferous Forest
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Terrestrial Vegetation – Shrublands; Wildlife Diversity – Species of Conservation Concern
Greater short-horned lizard (<i>Phrynosoma hernandesi</i>)	Terrestrial Vegetation – Sparse Vegetation Types; Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave Habitats
Harlequin duck (<i>Histrionicus histrionicus</i>)	Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; Wildlife Diversity – Unique Habitats: Aquatic and Riparian
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Terrestrial Vegetation – Mesic Deciduous Woodlands, Xeric Woodlands, Shrublands; Wildlife Diversity – Unique Habitats: Shrublands
Long-billed curlew (<i>Numenius americanus</i>)	Terrestrial Vegetation - Grasslands and Shrublands; Wildlife Diversity – Unique Habitats: Grassland Habitats
Long-eared myotis (<i>Myotis evotis</i>)	Terrestrial Vegetation – Coniferous Forest, Snags, Old Growth; Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Long-legged myotis (<i>Myotis volans</i>)	Terrestrial Vegetation – Coniferous Forest, Riparian, Snags; Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Milksnake (<i>Lampropeltis triangulum</i>)	Terrestrial Vegetation – Pine Savanna Grasslands, Sparse Vegetation; Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Pallid bat (<i>Antrozous pallidus</i>)	Energy, Minerals and Geologic Areas – Caves and Karst Areas Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Peregrine falcon (<i>Falco peregrinus</i>)	Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Spotted bat (<i>Euderma maculatum</i>)	Energy, Minerals and Geologic Areas – Caves and Karst Areas Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Energy, Minerals and Geologic Areas – Caves and Karst Areas Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
Trumpeter swan (<i>Cygnus buccinators</i>)	Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; Wildlife Diversity – Unique Habitat: Aquatic and Riparian Habitat
Western hognose snake (<i>Heterodon nasicus</i>)	Terrestrial Vegetation – Pine Savanna Grasslands, Sparse Vegetation; Wildlife Diversity – Unique Habitats: Rock, Cliff and Cave
White-tailed prairie dog (<i>Cynomys leucurus</i>)	Terrestrial Vegetation - Grasslands and Shrublands; Wildlife Diversity - Species of Conservation Concern
Wolverine (<i>Gulo gulo</i>)	Terrestrial Vegetation – Coniferous Forest, Alpine Wildlife Diversity – Federally Listed, Proposed Species

Appendix D: Recommended Wilderness Analysis

Introduction

When developing or revising a land management plan, the Forest Service must identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend any such lands to be designated as wilderness. This is done in four steps: 1) inventory, 2) evaluation, 3) analysis, and 4) recommendation. An opportunity for public input and review is required after each of these steps. The inventory and evaluation steps are completed; this appendix documents the analysis requirements found in the Forest Service Handbook 1909.12, chapter 70. In all of the tables in this document, the acres reported are approximate.

Inventory and Evaluation

The wilderness inventory was developed using both the size and the improvements criteria outlined in chapter 70 of the 2015 Final Land Management Planning Directives, Forest Service Handbook 1909.12. The Custer Gallatin National Forest identified 80 distinct areas that had potential for inclusion based on this criteria. In July 2017, the Custer Gallatin released for public feedback a draft inventory of areas suitable to continue to step 2, evaluation. A detailed discussion of the wilderness inventory process and changes made to the draft inventory were made available in November 2017 on the plan revision website. Subsequent to the November 2017 release, three additional changes were made: the addition of polygon PRYORS_96, and modifications to the boundaries for PRYORS_1 and PRYORS_10. These modifications were made at the request of the forest supervisor to allow for evaluation of these areas.

Each of the areas identified in the wilderness inventory step were evaluated to determine their potential suitability for inclusion in the National Wilderness Preservation System using the criteria included in the Wilderness Act of 1964. An opportunity for public review of the evaluation of the wilderness polygons was made available with the release of the proposed action in January of 2018.

A more detailed review of the inventory and evaluation steps is documented in appendix D of the January 2018 proposed action.

Analysis

Based on the evaluation of the inventory areas and input from public participation, the responsible official identified specific areas to take forward as recommended wilderness areas in the alternatives. Not all of the lands included in the inventory and studied in the evaluation steps are required to be carried forward in an alternative and studied in the environmental impact statement. Maps of each recommended wilderness area included in the alternatives are located in appendix A of the final environmental impact statement. In addition to the analysis in the final environmental impact statement, Forest Service Handbook 1909.12, chapter 70, requires that the following items be discussed for each recommended wilderness area in each alternative where it was identified:

- The name of the area and number of acres to be considered for recommendation;
- The location and a summarized description of a boundary for each recommended area;

- A brief description of the general geography, topography, and vegetation of the recommended area;
- A brief description of the current uses and management of the area;
- A description of the area’s wilderness characteristics and the ability to protect and manage the area to preserve its wilderness characteristics;
- A brief summary of the factors considered and the process used in evaluating the area and developing the alternatives;
- A brief summary of the ecological and social characteristics that would provide the basis for the area’s suitability for inclusion in the National Wilderness Preservation System.

Alternatives

Recommended wilderness areas are drawn from lands in the wilderness inventory prepared for land management plan revision. There may be ongoing management activities on the lands in the wilderness inventory; however, these activities do not preclude the consideration of these lands as recommended wilderness.

Table 31 provides a summary of the recommended wilderness areas included in each alternative, the geographic area where it is located, and the approximate acres. There are no recommended wilderness areas in alternative E.

Table 31. Recommended wilderness areas included in each alternative

Name	Geographic Area	Current Plans	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. F (acres)
Cook Mountain	Ashland	Not applicable	Not applicable	Not applicable	9,794	Not applicable
King Mountain	Ashland	Not applicable	Not applicable	Not applicable	10,502	Not applicable
Tongue River Breaks	Ashland	Not applicable	Not applicable	Not applicable	16,883	Not applicable
Bear Canyon	Pryor Mountains	Not applicable	Not applicable	Not applicable	10,366	10,366
Big Pryor	Pryor Mountains	Not applicable	Not applicable	Not applicable	12,737	Not applicable
Lost Water Canyon	Pryor Mountains	6,804	6,797	6,797	12,992	7,692
Punch Bowl	Pryor Mountains	Not applicable	Not applicable	Not applicable	7,766	Not applicable
Burnt Mountain	Absaroka Beartooth Mountains	3,917	Not applicable	Not applicable	Not applicable	Not applicable
Chico Peak	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	7,036	Not applicable
Deckard Flats	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	935	Not applicable
Deer Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	85,444	Not applicable

Appendix D: Recommended Wilderness Analysis

Name	Geographic Area	Current Plans	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. F (acres)
Dome Mountain	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	9,540	Not applicable
East Rosebud to Stillwater	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	17,422	Not applicable
Emigrant Peak	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	15,829	Not applicable
Knowles Peak	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	1,223	Not applicable
Line Creek Plateau	Absaroka Beartooth Mountains	809	801	801	26,605	Not applicable
Mount Rae	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	2,839	Not applicable
Mystic	Absaroka Beartooth Mountains	247	247	247	136	Not applicable
North Fork	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	36	Not applicable
Phelps Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	3,177	Not applicable
Red Lodge Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	12,039	Not applicable
Republic	Absaroka Beartooth Mountains	388	388	388	388	Not applicable
Sheep Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	557	Not applicable
Strawberry Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	11,597	Not applicable
Tie Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	5,886	Not applicable
Timberline*	Absaroka Beartooth Mountains	802	802	802	Not applicable	802
West Fork Rock Creek	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	12,470	Not applicable
West Woodbine	Absaroka Beartooth Mountains	Not applicable	Not applicable	Not applicable	1,091	Not applicable
Blacktail Peak	Bridger, Bangtail, Crazy Mountains	Not applicable	Not applicable	Not applicable	6,147	Not applicable
Crazy Mountains	Bridger, Bangtail, Crazy Mountains	Not applicable	Not applicable	Not applicable	59,636	Not applicable
South Crazy Mountains	Bridger, Bangtail, Crazy Mountains	Not applicable	Not applicable	Not applicable	Not applicable	10,257
West Bridger	Bridger, Bangtail, Crazy Mountains	Not applicable	Not applicable	Not applicable	26,106	Not applicable
Buck Creek	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	Not applicable	28,966	Not applicable
Cabin Creek North	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	Not applicable	17,092	Not applicable

Appendix D: Recommended Wilderness Analysis

Name	Geographic Area	Current Plans	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. F (acres)
Cabin Creek South	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	Not applicable	19,272	Not applicable
Cowboy Heaven	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	15,536	14,357	Not applicable
Gallatin	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	98,644	194,709	Not applicable
Gallatin Crest	Madison, Henrys Lake, Gallatin Mountains	Not applicable	67,394	Not applicable	Not applicable	77,631
Lionhead	Madison, Henrys Lake, Gallatin Mountains	20,774	17,983	15,738	31,389	Not applicable
Sawtooth Mountain	Madison, Henrys Lake, Gallatin Mountains	Not applicable	14,828	Not applicable	Not applicable	14,461
Spanish Peaks East	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	Not applicable	5,861	Not applicable
Spanish Peaks South	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	Not applicable	2,845	Not applicable
Taylor Hilgard	Madison, Henrys Lake, Gallatin Mountains	Not applicable	4,466	6,824	4,466	4,466
Yankee Jim Lake	Madison, Henrys Lake, Gallatin Mountains	Not applicable	Not applicable	Not applicable	6,292	Not applicable
Total Acres	No data	33,741	113,382	145,777	711,425	125,675

*Formerly Red Lodge Creek/Hell Roaring Creek

Alternative A, the no-action alternative, is based on the current forest plans, which have seven recommended wilderness areas totaling approximately 33,741 acres. These recommended wilderness areas are under the guidance of either the 1986 Custer National Forest Plan or the 1987 Gallatin Forest Plan.

Alternative B identifies nine recommended wilderness areas located on three geographic areas and total approximately 113,382 acres. These recommended wilderness areas were derived from the wilderness inventory polygons identified in the first step of the wilderness evaluation process, but do not necessarily include all of the original acres. They were selected based on consideration of the information in the wilderness evaluation, as well as factors such as potential resource threats, existing uses, public input and public values, and manageability. The 113,382 acres recommended for wilderness under this alternative were carefully considered in the context of balancing recommended wilderness, backcountry areas, other potential land management direction, and other multiple use considerations for the national forest. Boundaries for the recommended wilderness areas were drawn to tie the boundary lines to naturally occurring ridges, boundary lines, or other locatable features on the

landscape to make them more manageable, or to buffer existing roads or trails to provide for continued road or trail operation, including potential work outside of the existing road or trail prism.

Alternative C identifies nine recommended wilderness areas located on three geographic areas and total approximately 145,777 acres. These recommended wilderness areas were derived from the wilderness inventory polygons identified in the first step of the wilderness evaluation process, but do not necessarily include all of the original acres. Alternative C differs from alternative B by using the configuration of the Gallatin, Cowboy Heaven, and Taylor Hilgard recommended wilderness areas submitted by Gallatin Forest Partnership. Alternative C also excludes most mountain biking trails from the Lionhead Recommended Wilderness Area in response to multiple comments received during public scoping.

Alternative D identifies 39 recommended wilderness areas. Alternative D responds to comments received during public scoping asking the Custer Gallatin National Forest to consider an alternative that increased the amounts of recommended wilderness areas and primitive recreation opportunities. These recommended wilderness areas include the areas identified for alternatives B and C as well as 30 additional areas. This alternative also includes additional acreages for the Gallatin, Cowboy Heaven, Taylor Hilgard, and Lionhead recommended wilderness areas from either alternative B or alternative C. The recommended wilderness areas in alternative D are located across five geographic areas and total about 711,425 acres. All of the recommended wilderness areas for alternative D were derived from the original wilderness inventory polygons identified in the first step of the wilderness evaluation process, but do not necessarily include all of the original acres of those wilderness inventory polygons. Boundaries for the recommended wilderness areas were drawn to tie to features such as naturally occurring ridgelines or boundary lines, or to buffer existing roads to provide for continued road operation, including potential work outside of the existing road prism.

No areas were recommended for wilderness in alternative E to respond to issues identified in the scoping of the proposed action. Scoping comments identified a desire to not recommend any acres to be managed as recommended wilderness. This alternative is designed to respond to the public input received in scoping and to display a reasonable range of alternatives as required under the National Environmental Policy Act.

In alternative F, seven areas would be recommended for wilderness across four geographic areas with a total of 125,675 acres. These recommended wilderness areas were derived from the wilderness inventory polygons identified in the first step of the wilderness evaluation process, but do not necessarily include all of the original acres. Boundaries for the recommended wilderness areas were drawn to tie to features such as naturally occurring ridgelines or boundary lines, or to buffer existing roads to provide for continued road operation, including potential work outside of the existing road prism. Alternative F draws from recommended wilderness areas proposed in alternatives B, C, or D.

Recommended Wilderness Area Analysis by Area

The potential recommended wilderness areas are ordered from the eastern geographic areas, starting with Ashland, to the western geographic areas, and alphabetically within each geographic area.

Cook Mountain Recommended Wilderness Area

The area description is based on the Ashland #33 wilderness inventory polygon, which is 12,691 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 32. Cook Mountain Recommended Wilderness Area

Analysis Criteria	Description
Acres	9,794 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with private landownership along portions of the north and western boundaries. The eastern boundary is buffered from adjacent roads. All lands follow the same boundaries as the Cook Mountain Low Development Area from the 1986 Custer National Forest Plan.
Description of the geography, topography, and vegetation	Much of the area is rolling hillsides. All of these lands burned during a 2012 wildfire. Current vegetation composition is 50 percent dry grass, 25 percent transitional forest, and 20 percent ponderosa pine.
Current uses and management	This area has been managed as the Cook Mountain Low Development Area from the 1986 Custer National Forest Plan and 98 percent of the recommended wilderness area is within inventoried roadless area. All but a few acres of this area are within a permitted grazing allotment and water development features are scattered across the landscape. There are no trails or motorized over snow transport.
Description of the wilderness characteristics	<p>Natural Quality – As this area burned entirely within the past six or seven years, wildfire contributes to a generally natural appearance. Grazing and the associated infrastructure are found in the recommended wilderness area. Forty-five percent of the area is classified as moderate to low departure from historical vegetation conditions; 40 percent of this area is classified as high departure from historical vegetation conditions.</p> <p>Undeveloped – The majority of this area is undeveloped, but affected by needs for access and water provision for cattle grazing allotments. There is a major portion of grazing allotment and primary range in the recommended wilderness area along with 16 water developments and three miles of fence. Grazing administrative motorized transport is present.</p> <p>Unconfined and/or primitive recreation – This area has nonmotorized recreation opportunities and is used by the public primarily during hunting seasons. The three miles of cattle fencing could interfere with foot travel cross-country.</p> <p>Solitude –The sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance. This solitude can be diminished by encounters with herds of cattle or grazing permittees.</p> <p>Other Features of Value – None noted.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	About 98 percent of this recommended wilderness area is included in inventoried roadless area. Much of the area is bordered by private ranch lands. Grazing and fuels management are emphasized on adjacent federal lands. Protecting adjacent lands from future fires could mean aggressively treating fuels within the recommended wilderness area. Within the boundaries are 1,405 acres of outstanding mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is affected primarily by natural forces, in this case fire. • The entire area is also grazed by cattle which has impacted the ecological integrity of natural vegetation. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

King Mountain Recommended Wilderness Area

The area description is based on the Ashland #95 wilderness inventory polygon, which is 10,502 acre total. This entire polygon is included as a recommended wilderness area in alternative D.

Table 33. King Mountain Recommended Wilderness Area

Analysis Criteria	Description
Acres	10,502 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with private landownership along portions of the north and western boundaries. The eastern and portions of the northern boundaries are buffered from adjacent roads. All lands but a few thousand acres to the south follow the same boundaries as the King Mountain Low Development Area from the 1986 Custer National Forest Plan.
Description of the geography, topography, and vegetation	There is a thousand foot elevation difference within the boundary. More than half the area is composed of dry grass, the remainder about equally split between transitional forest, ponderosa pine, then shrub land and sparse vegetation.
Current uses and management	The 1986 Custer National Forest Plan includes this entire area as a part of a low development area and almost all of it is within an inventoried roadless area. In addition, the entire area is within an authorized grazing allotment. There are no national forest system recreation trails or motorized over snow transport. Under the terms of their permit, the grazing permittee may use motorized vehicles to maintain infrastructure and administer their grazing use.
Description of the wilderness characteristics	<p>Natural Quality – Currently 25 percent is classified as high and 50 percent is moderate to low departure from historical vegetation conditions. Four natural ignition fires since 2006 have been contained at 156 acres or less. Therefore, due to fire suppression and wide spread grazing, most of the current vegetation is not primarily affected by natural ecological processes and would be associated with human intervention.</p> <p>Undeveloped – Twelve miles of grazing allotment fences dissect the area and there are 14 scattered water developments throughout as needed for grazing management. Several “cherry-stemmed” roads access the interior of the recommended wilderness area. The area has a generally natural appearance but can appear modified around pipelines, roads and water developments.</p> <p>Unconfined or primitive recreation – The area is available for non-motorized transport, however there are miles of internal stock fences which can affect movement cross-country. The primitive setting may be affected at times by motorized transport by the grazing permittee and the presence of fences and herds of cattle.</p> <p>Solitude – There is potential for solitude as, aside from grazing permittees, there is little public use of the area except during hunting seasons.</p> <p>Other Features of Value – This area is somewhat unique on the Ashland landscape because it is relatively unroaded and comparatively undeveloped. Historically, a number of drainages with headwaters along the flanks of King Mountain divide provided access routes from O’Dell Creek to Otter Creek. Prehistoric campsites, stone circles and stone quarries are found along these routes with overlooks provided by the divide. The area includes areas of general sage-grouse habitat.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>All of this area is included in inventoried roadless area.</p> <p>Within the boundaries are 142 acres of outstanding and reserved mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. Grazing would continue, along with the need for fences, water infrastructure and motorized access by the permittee.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The natural ecological characteristics are limited due to the historical fire suppression and ongoing grazing. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Tongue River Breaks Recommended Wilderness Area

The area description is based on portions of the Ashland #22 wilderness inventory polygon, which is 22,920 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 34. Tongue River Breaks Recommended Wilderness Area

Analysis Criteria	Description
Acres	16,883 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with a small private landownership in the center, although the private lands are excluded from the recommended wilderness area proposal. Much of the boundary is defined by national forest boundary to the west and north. The boundary follows the 1986 Custer National Forest Plan’s Low Development Management Area boundary.
Description of the geography, topography, and vegetation	The Tongue River Breaks varies from 3,100 feet to 4,100 feet in elevation. The river is a local geographic term describing the rugged coulees, bluffs, ridgeline rock outcrops and sandstone cliffs that provide a visual contrast to the surrounding prairies. Vegetation in this area is characterized by open canopy ponderosa pine woodland, dry grassland, Wyoming sagebrush steppe, and sparsely vegetated badlands. Ponderosa pine and mountain juniper are the only trees present in the uplands, due to limited rainfall.
Current uses and management	The 1986 Custer National Forest Plan includes this area as a low development area. The entire recommended wilderness area is within inventoried roadless area. The entire area is within an authorized grazing allotment, which allows for motorized transport throughout to administer the allotment and infrastructure repairs. There are no trails or motorized over snow transport. With this area is the 464 acres of the Poker Jim Research Natural Area, where grazing also occurs. This area has one private inholding with a non-system route that is visible on the ground and used to access the property.
Description of the wilderness characteristics	<p>Natural Quality – Currently 45 percent is classified as moderate to low and 40 percent is classified as high departure from historical vegetation conditions, in part due to fire suppression. Five of six natural ignition fires since 1991 have been contained at 30 acres or less; the larger one stopped at 100 acres. Therefore, due to fire suppression and wide spread grazing, most of the current vegetation is not primarily affected by natural ecological processes and would be associated with human intervention.</p> <p>Undeveloped – The entire area is actively grazed in an allotment and is primary range, has 11 water developments and 14 miles of fence. There is no motorized transport, however the entire area allows grazing permittee motorized access. This area has one private inholding with a non-system route that is visible on the ground and used to access the property.</p> <p>Unconfined and/or primitive recreation – The area is available for non-motorized transport, with no trails or other recreation facilities and would provide the public with opportunities for unconfined and primitive recreation. However, range fencing may impede public travel. This area offers recreation opportunities such as hunting.</p> <p>Solitude – Opportunities for solitude can be found within the recommended wilderness area but would be disrupted in all settings during periods when ongoing motorized administrative access is needed for grazing allotment management.</p> <p>Other Features of Value – The Tongue River Breaks area are an especially important landscape to the Northern Cheyenne who collected plants, buried their ancestors, and left rock imagery, cairns and campsites. A number of landmarks such as the “stone teepee” have important stories associated with them. A few homesteads are found along the old wagon road from Tongue River to Otter Creek, as well as Fraternity Wall where a number of inscriptions mark their passing. The area includes general sage-grouse habitat.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	All of this area is included in inventoried roadless areas. The area has one private inholding with a non-system route that is visible on the ground and used to access the property.
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of the designation.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The natural ecological characteristics are limited due to historical fire suppression and ongoing grazing. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Bear Canyon Recommended Wilderness Area

The area description is based on the Pryors #9 wilderness inventory polygon, which is 41,976 acres total. Portions of this polygon are included as a recommended wilderness area in alternatives D and F. Of the Pryors #9 polygon, 10,366 acres are proposed in the Bear Canyon Recommended Wilderness Area, and 12,737 acres in are proposed in the Big Pryor Recommended Wilderness Area (see table 36 for those details).

Table 35. Bear Canyon Recommended Wilderness Area

Analysis Criteria	Description
Acres	10,366 acres (alternatives D and F).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with its southern boundary along the national forest boundary, then bounded on the north, west and east by national forest system trails that are open to all vehicles.
Description of the geography, topography, and vegetation	Bear Canyon is the largest canyon locally, with three drainages and very steep sidewalls. It is generally naturally appearing consisting of open sage covered slopes at the lower elevations, timber covered slopes at mid to upper elevations and large expanses of open meadow and high elevation grass at the upper elevations.
Current uses and management	None of this area is included in inventoried roadless area and there are no trails. There are 9,627 acres within a grazing allotment in the recommended wilderness area. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping 3,936 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – More than half of the area is classified as in departure from historical vegetation conditions. Due to grazing and the lack of natural fire, ecological conditions that would be associated with the area without human intervention may be limited.</p> <p>Undeveloped – The majority of the recommended wilderness area is a major portion of one allotment and primary range within the recommended wilderness area, along with nine water developments and 3.5 miles of fence. There is no motorized transport, but motorized access would be allowed for the grazing permittee and infrastructure would be maintained.</p> <p>Unconfined and/or primitive recreation – The area is available for summer non-motorized recreational use. This area has opportunities for unconfined and primitive recreation, however much of the terrain is very rugged.</p> <p>Solitude – There is opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance. This diminishes in areas closer to the all vehicle trails adjacent to boundaries.</p> <p>Other Features of Value – This area contains some of the most unique cultural sites in the Pryor Mountains, including homesteads, lodges, cribbed log structures, and mines. The area includes secure habitat for grizzly bear and general habitat for sage-grouse.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>None of this area is included in inventoried roadless areas.</p> <p>There is no motorized summer transport, however, grazing permittees would be able to continue their permitted motorized transport, along with maintenance of infrastructure. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 3,936 acres in alternatives D and F.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The undeveloped quality of the area is lower where grazing infrastructure exists and then higher where there are no administrative motorized transport or developments. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude due to rugged terrain. • There are opportunities for primitive and/or unconfined recreation.

Big Pryor Recommended Wilderness Area

The area description is based on the Pryors #9 wilderness inventory polygon, which is 41,976 acres total. Portions of the polygon are included as a recommended wilderness area in alternative D. Of the Pryors #9 polygon, 10,366 acres are proposed in the Bear Canyon Recommended Wilderness Area (see table 35 for those details), and 12,737 acres are proposed in the Big Pryor Recommended Wilderness Area.

Table 36. Big Pryor Recommended Wilderness Area

Analysis Criteria	Description
Acres	12,737 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land. The northern boundary buffers Forest Service Road 2308, spur roads and a water pipeline. The southern boundary buffers trails 1091, 2850 and 2496. The western boundary follows the forest boundary and the eastern boundary buffers road 2085.
Description of the geography, topography, and vegetation	The Big Pryor area is generally naturally appearing consisting of open sage covered slopes at the lower elevations, timber covered slopes at mid to upper elevations and large expanses of open meadow/high elevation grass at the upper elevations.
Current uses and management	<p>None of this area is included in inventoried roadless areas. Within these recommended wilderness area boundaries are three allotments with 12,622 acres of grazing or almost the entire area. There are a total of 10.5 total miles of Forest Service system trail, with 4.78 miles of motorized trails on which bikes are also allowed. There are another 5.73 miles of nonmotorized trails that allow bikes.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 9,376 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – More than half of the area is classified as departed from historical vegetation conditions. Much of the area has been grazed for a number of years. Due to grazing and the lack of natural fire, ecological conditions that would be associated with the area without human intervention may be limited.</p> <p>Undeveloped – The majority of this area is undeveloped however there are areas with water infrastructure for cattle grazing. There are numerous abandoned mine sites, which vary in degree of their noticeability on the landscape. Grazing permittees would be able to continue their permitted motorized transport. There are three separate grazing allotments, with a total of 5.5 miles of fence, 0.7 mile of pipeline, and 11 water developments in place.</p> <p>Unconfined and/or primitive recreation – This area has a high amount of unconfined and primitive recreation opportunities, however much of the terrain is very rugged and difficult to access.</p> <p>Solitude – Most of the area provides for low levels of solitude because of the existing roads and motorized trails that run along the ridges between the canyons and across the top of the mountains. Away from these boundaries, opportunities increase due to large expanses of terrain.</p> <p>Other Features of Value – This area contains some of the most unique cultural sites in the Pryor Mountains including homesteads, lodges, and cribbed log structures. The area includes secure habitat for grizzly bear and general sage-grouse habitat.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>None of this area is included in inventoried roadless areas.</p> <p>In alternative D, motorized and mechanized recreation transport would no longer be suitable on 4.8 miles of motorized trail and another 5.7 miles of mechanized trail. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 9,376 acres in alternative D.</p> <p>Grazing permittees would be able to continue their permitted motorized transport.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p><u>The ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • Many areas influenced by years of grazing and lack of natural fire have departed from historical vegetation conditions. • Range fencing and water development infrastructure development are noted. <p><u>The social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers some areas of high opportunity for solitude due to rugged terrain. • There are opportunities for primitive and/or unconfined recreation.

Lost Water Canyon Recommended Wilderness Area

The Lost Water Canyon Recommended Wilderness Area was included in the 1986 Custer National Forest Plan, and follows the same boundaries in alternatives A, B, and C. For those alternatives, as well as alternative F, the area description is based on the Pryors #1 wilderness inventory polygon, which is 13,547 acres total. In alternative D, the recommended wilderness area would nearly double in size, as more of Pryors #1 wilderness inventory polygon and almost all of the 1,152 acre Pryors #96 wilderness inventory polygon are also included. The recommended wilderness area in alternative F is about 870 acres larger than in alternatives A, B, and C.

Table 37. Lost Water Canyon Recommended Wilderness Area

Analysis Criteria	Description
Acres	6,804 acres (alternative A); 6,797 acres (alternatives B and C); 12,992 acres (alternative D); 7,692 acres (alternative F).
Description of the recommended boundary – alternatives A, B, and C	In alternatives A, B, and C, the recommended wilderness area is contiguous land comprised of part of Pryors #1 wilderness inventory polygon, and follows the 1986 recommended wilderness area boundary. The eastern boundary is the line for the Pryor Mountain Wild Horse Territory. The recommended wilderness area includes none of the wild horse territory and includes all of the Lost Water Canyon Research Natural Area.
Description of the recommended boundary – alternative D	In alternative D, the recommended wilderness area is comprised of two separate parts, divided by the Burnt Timber road, 2849. Compared to alternatives A, B and-C, the boundary of the first part extends furthers southwest where it is buffered by Forest Service Roads 2085 and 2092 and further east to Forest Service Road 2849. The recommended wilderness area also includes Pryor #1 wilderness inventory polygon and extends to the forest boundary to the east and south. The west side portion is 11,930 acres and the east side 1,062 acres.
Description of the recommended boundary – alternative F	In alternative F, the recommended wilderness area is contiguous land comprised of part of Pryors #1 wilderness inventory polygon. It is larger than the 1986 recommended wilderness area boundary by an additional 868 acres further up Crooked Creek and extends that original boundary slightly to the west. The eastern boundary is the line for the Pryor Mountain Wild Horse Territory. The recommended wilderness area includes none of the wild horse territory and includes all of the Lost Water Canyon Research Natural Area.
Description of the geography, topography, and vegetation	The area consists of subalpine meadows and subalpine fir at higher elevations with lodgepole, Douglas-fir, ponderosa pine and dry shrub lands/grasslands at lower elevations. There are deep rugged canyons with Crooked Creek, Commissary Creek, Cave Creek and Lost Water Creek running between them.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Current uses and management	<p>The recommended wilderness area is almost entirely within inventoried roadless areas and contains the Lost Water Canyon Research Natural Area. The 1986 Custer National Forest Plan included as recommended wilderness area the 6,804 acres as mapped in alternative A; very similar to 6,797 acres in alternatives B and C.</p> <p>In alternatives A, B, and C there are no grazing allotments or infrastructure. Alternative D would include 1,681 acres of a grazing allotment (a portion of the allotment and primary range). A grazing allotment is included in the additional acres added in alternative F.</p> <p>In alternative D only, the Forest Service lands within the Pryor Mountain Wild Horse Territory are almost entirely included. Routine wild horse management activities include population counts, immuno-contraception darting, bait trapping, periodic gathers, research activities, and weed treatment. Forest Service Road 2849 is an open road providing access to the area, including visitors to the wild horse territory. Cross-country motorized transport is authorized for administration within the territory, as required.</p> <p>There are no motorized trails, with only 0.12 mile of a hiker only trail included. In alternatives A, B, and C no motorized transport is suitable within the recommended wilderness area boundary. Areas mapped as a winter motorized recreational opportunity spectrum in alternative D (5,900 acres) and alternative F (2,362 acres) are open to winter recreation activities such as snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – In alternatives A, B, and C, much of the area is classified as moderate to low departure from historical vegetation. Within the research natural area, the majority of the area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. In alternative F, small areas have received prior vegetation treatments. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>The wild horse territory portion of alternative D appears generally modified due to wild horse grazing. There is a one-quarter acre fenced area that serves as a study enclosure. Ninety-five percent of the vegetation is categorized as being moderate to low departure from historical vegetation conditions.</p> <p>Undeveloped – In alternatives A, B, C, and F, the majority of the recommended wilderness area is undeveloped and not affected by human intervention. In alternative D, the Burnt Timber road would remain open between the two parts of this recommended wilderness area. Alternative D would include 1,681 acres of a grazing allotment with one water feature, where motorized access would be authorized for the grazing permittee. Alternative F includes one grazing allotment and a water reservoir.</p> <p>Unconfined and/or primitive recreation – This area has a high amount of unconfined, cross-country recreation opportunities. The open road between two parts of the recommended wilderness area would create difficulty for those seeking a wilderness experience.</p> <p>Solitude – Access into the canyons is difficult due to the limestone cliffs that rim most of them creating high level opportunities for solitude and high levels of challenge.</p> <p>Other Features of Value – Unique characteristics include caves and scenic canyons found within portions of the area that overlaps with the Lost Water Canyon Research Natural Area (approximately 2,800 acres). Rock shelters, caves and sinkholes dot this area, most of which were occupied and/or used by aboriginal people. The area includes secure habitat for grizzly bear and contains streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>In alternatives A, B, and C, the recommended wilderness area is entirely within inventoried roadless area, and in alternative F, 91 percent of the recommended wilderness area is within inventoried roadless area.</p> <p>The recommended wilderness area encompasses nearly an entire watershed, (research natural area) in pristine condition. In alternatives A through F, there is no summer recreational motorized transport. In alternative D motorized cross-country transport would continue to be authorized for management of the Pryor Mountain Wild Horse Territory and the grazing permittee. The active management actions required of the herd of horses within the wild horse territory are out of character with wilderness character, where natural processes dominate. The Burnt Timber road would remain open between the two parts of this recommended wilderness area.</p> <p>Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 5,900 acres in alternative D and 2,362 acres in alternative F.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>The recommended wilderness area described in alternatives A, B, and C was previously included as a recommended wilderness area in the 1986 Custer National Forest Plan.</p> <p>There were public comments received in favor of recommended wilderness area designation for this area, and public comments requesting a larger recommended wilderness area than was included in the 1986 Custer National Forest Plan.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • Within the portion of the recommended wilderness area described in alternatives A, B, C, and F and within the research natural area in particular, the naturalness of the area is very high as it is affected primarily by natural forces and has mostly intact ecological integrity. • A range water development is noted in alternatives D and F. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Punch Bowl Recommended Wilderness Area

The area description is based on the Pryors #10 wilderness inventory polygon, which is 8,125 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 38. Punch Bowl Recommended Wilderness Area

Analysis Criteria	Description
Acres	7,766 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with the northern boundary following the National Forest boundary. The eastern boundary continues to follow the forest boundary, excluding private lands. The southern boundary largely buffers the Forest Service Road 2308 (the Pryor Mountain Road). The western boundary buffers private inholdings and Forest Service Road 2144. Forest Service Road 2144 is “cherry-stemmed” nearly the entire northwest portion of the recommended wilderness area.
Description of the geography, topography, and vegetation	This area is generally natural appearing consisting of steep timber covered slopes in the Punchbowl Creek drainage and north facing slopes below Dry Head Vista. Open meadow/high elevation grass at the upper elevation is found around Dry Head Vista. Current vegetation composition is about half Douglas-fir, the remainder lodgepole pine and dry grass.
Current uses and management	<p>None of the recommended wilderness area is within an inventoried roadless area. There are 4,778 acres within four grazing allotments. There are no system trails.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 4,106 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is categorized as in departure from historical vegetation conditions, likely due to grazing and suppression of natural fire.</p> <p>Undeveloped – Forest Service Road 2144 nearly dissects the northwest portion of the recommended wilderness area. There are parts of four different grazing allotments with the recommended wilderness area, which contain five miles of fence and three water developments.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities for those seeking cross-country travel.</p> <p>Solitude – No roads or trails provide access to the area east and south of Forest Service Road 2144, creating opportunities for primitive recreations and solitude once away from open motorized routes, including Forest Service Road 2308.</p> <p>Other Features of Value – This area encompasses a continuation, both to the east and west, of sites related to the use of Dryhead overlook by the Crow. The viewshed into Punch Bowl is an integral part of these traditional activities. A number of rock shelters used by aboriginal people are located within the Punch Bowl. The upper reaches of Sage Creek contains the remains of homestead activity. There are three known caves in the area. The area includes secure habitat for grizzly bear. There are streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>None of this area is included in inventoried roadless areas.</p> <p>Adjacent lands to the north are within the Crow Indian Reservation. Lands to the east contain private ranches used for ranching and recreation. Pryor Mountain Road 2308 delineates the southern boundary and is considered a main access route within this mountain range. A commercial communication site located along the road outside the recommended wilderness area is operated under special use authorization.</p> <p>Manageability as wilderness of the area in its entirety would be challenging with the long motorized incursion, as Forest Service Road 2144 nearly dissects the northwest portion of the recommended wilderness area. This road would make the 7,766 acre recommended wilderness area more difficult to manage for wilderness characteristics.</p> <p>Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 4,106 acres in alternative D.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p><u>The ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is higher where it is affected primarily by natural forces. Other areas influenced by years of grazing and lack of natural fire have departed from historical vegetation. • Range fencing and water development infrastructure development are noted. <p><u>The social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers some areas of high opportunity for solitude due to rugged terrain. • There are opportunities for primitive and/or unconfined recreation.

Burnt Mountain Recommended Wilderness Area

The Burnt Mountain Recommended Wilderness Area had 3,917 acres included in the 1986 Custer National Forest Plan. The area description is based on the AB #11 wilderness inventory polygon, which is 34,613 acres total. The 3,917 acres described in alternative A are included in a larger recommended wilderness area in alternative D.

Table 39. Burnt Mountain Recommended Wilderness Area

Analysis Criteria	Description
Acres	3,917 acres (alternative A).
Description of the recommended boundary - alternative A	The recommended wilderness area is contiguous land and follows the recommended wilderness area boundary of the 1986 Custer National Forest Plan. It follows the existing the Absaroka-Beartooth Wilderness boundary to the west, buffers the West Fork Rock Creek road to the south, private lands to the east, and east/west section lines to the north, about a mile south of the forest boundary.
Description of the geography, topography, and vegetation	Much of the area is rugged and very steep, with Douglas-fir and whitebark pine, along with transitional forest.
Current uses and management	The 1986 Custer National Forest Plan included this area as a recommended wilderness area. The area is entirely within inventoried roadless area. There are no trails or easy access. The eastern boundary is near the Red Lodge Mountain ski area. There is no motorized transport.
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport or grazing infrastructure. The eastern boundary is near the Red Lodge Mountain downhill ski area. In the northeastern corner, 110 acres are on a small portion of a grazing allotment with no infrastructure.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities for those cross-country uses.</p> <p>Solitude – There are good opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance, with the exception of the eastern boundary influenced by the nearby Red Lodge Mountain downhill ski area.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary habitat for wolverine. Whitebark pine grows in the area.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	The area has been managed as a recommended wilderness area since 1986. The area is all within inventoried roadless area. The area is near a downhill ski area along the eastern boundary.
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	This area was previously included as a recommended wilderness area in the 1986 Custer National Forest Plan. There were public comments received in favor of recommended wilderness area designation for wilderness inventory polygon AB #11, which includes this area.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, and has mostly intact ecological integrity. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude, once away from the eastern boundary. • There are opportunities for primitive and/or unconfined recreation.

Chico Peak Recommended Wilderness Area

The area description is based on the AB #15 wilderness inventory polygon which is 56,221 acres total. A portion of this polygon is included as the Chico Peak Recommended Wilderness Area in alternative D. Other portions of this polygon are included in the Dome Mountain and Emigrant Peak recommended wilderness areas in alternative D.

Table 40. Chico Peak Recommended Wilderness Area

Analysis Criteria	Description
Acres	7,036 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is continuous land. Located south and east of the town of Emigrant, the boundaries start a short distance from Chico Hot Springs and follow the forest boundaries to the north, then buffer roads to the east, south and west.
Description of the geography, topography, and vegetation	Much of the area is moderately steep leading up to and including Chico Peak in the center. Steeper creeks flow off the peak. Current vegetation composition is mostly Douglas-fir and lodgepole pine, and the remaining split among dry grass, whitebark pine and transitional forest.
Current uses and management	Virtually the entire area is within inventoried roadless area. There are 130 acres from one grazing allotment within the recommended wilderness area. The boundaries are close to Chico Hot Springs, a major resort in the Paradise Valley. There are no trails. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, all 7,036 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – There have been six recent fires suppressed in the area since 1989, all of them 4,500 acres or less. The suppression of natural fire plays a part in the 40 percent of the area showing in moderate to high departure from historical vegetation condition. Ranches and private ownership are adjacent to the recommended wilderness area, making this area part of the wildland-urban interface.</p> <p>Undeveloped – There is one grazing allotment with a minor portion of allotment and primary range in the recommended wilderness area, with no improvements on site. Only a small portion of the area is within grazing allotment. Abandoned mines are scattered in areas close to the road buffers.</p> <p>There is no summer motorized or mechanized transport.</p> <p>Unconfined and/or primitive recreation – The recommended wilderness area has no trail system and features Chico Peak in the center for cross-country recreation access. Nearby is Mill Creek, a very popular developed recreation corridor.</p> <p>Solitude – As this is a roadless area without trails, the inner core of this area should offer opportunities for solitude. The sights and sounds of the Paradise Valley and Highway 89 would likely reach this area.</p> <p>Other Features of Value – Chico Peak. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in the area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>Virtually the entire area is within inventoried roadless area. Motorized administrative transport may be authorized for the grazing permittee. Allowing the natural role of fire to occur where boundaries are shared with private lands in the wildland-urban interface would be difficult. There are mining claims present in the recommended wilderness area. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. In 2018 the Secretary of Interior signed a 20 year locatable mineral withdrawal for portions of this recommended wilderness area, meaning new locatable mineral claims cannot be filed, and any current claims need to have a valid existing rights determination for future locatable minerals use. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 7,036 acres in alternative D.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high in places, however fire suppression and minor grazing has affected historical vegetation conditions. • The area is largely undeveloped. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude and off-trail travel. • There are opportunities for primitive and/or unconfined recreation.

Deckard Flats Recommended Wilderness Area

The area description is based on the AB #52 wilderness inventory polygon, which is 2,460 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 41. Deckard Flats Recommended Wilderness Area

Analysis Criteria	Description
Acres	935 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land bordered to the south by Yellowstone National Park. The western and eastern boundaries are buffered from the Jardine road to the west and Crevice Mountain road to the east.
Description of the geography, topography, and vegetation	Much of the area is relatively flat, with current vegetation composition about half dry grass, the rest shrub land, and a small amount of Douglas-fir.
Current uses and management	<p>This recommended wilderness area is near the towns of Gardiner and Jardine and almost the entire area is within inventoried roadless area.</p> <p>There are a mixture of activities occurring on adjacent and nearby private lands, including ongoing mining activity and associated infrastructure, a guest ranch and private summer cabins. There are no grazing allotments. The area contains a small segment of 0.86 mile of trail open to hiker and horse only. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 81 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is in moderate to high departure from historical vegetation conditions, with weed infestations dominating the conditions.</p> <p>Undeveloped – Powerlines are along the western and eastern boundaries.</p> <p>Unconfined and/or primitive recreation – Once away from the town of Gardiner there are some opportunities for foot and stock trail use which provides for primitive recreation.</p> <p>Solitude –Most of Deckard Flats is visible from the Jardine Road and a local outfitter has outfitter trails as well as authorization to provide numerous day rides in the area which affects opportunities for solitude during the operating season.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and there are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Almost the entire area is within inventoried roadless area.</p> <p>This small 935 acre area qualified to be within the wilderness inventory based on the shared boundary with land Yellowstone National Park manages as recommended wilderness. The small size presents difficulty to be a manageable “stand alone” Forest Service recommended wilderness area. It is surrounded on two sides by roads, and is a short distance from the town of Gardiner, Montana. The vegetation is dominated by weeds and nonnative species.</p> <p>Within the boundaries are 32 acres of outstanding mineral rights. There could be potential impacts resulting from mineral actions, thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 81 acres in alternative D.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for inventoried roadless areas.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is poor, due to weeds and nonnative species. • Powerlines are along the western and eastern boundaries. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers limited opportunities for solitude. • There are some opportunities for primitive recreation.

Deer Creek Recommended Wilderness Area

The area description is based on the AB #32 wilderness inventory polygon, which is 129,575 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 42. Deer Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	85,444 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with the northern boundary following Forest Service ownership and/or the forest boundary, and road buffers for West Deer Creek Road 421, 2660-series roads, and Iron A 482-A. The eastern boundary follows the section lines to the forest boundary. The southern boundary buffers the 249-series roads, Meyers Creek County Road, Meyers Creek Work Center Road 2143, Picket Pin Road 2140, 140-series roads, and the Absaroka-Beartooth Wilderness boundary. The western boundary follows Forest Service ownership and/or the forest boundary and section lines, a buffer on Main Boulder Road 298, East Boulder Road 205, Lewis Gulch Road 6644, Dry Fork Road 6645, and Elk Creek Road 2606.
Description of the geography, topography, and vegetation	Largely bordering private ranchlands, much of the terrain is unique for this region with lower elevations and undulating foothills, more comparable to the eastern side of the forest. Current vegetation composition is 35 percent transitional forest, 25 percent Douglas-fir, 15 percent lodgepole pine, and 10 percent whitebark pine. The remaining vegetation is split between dry grass and sparse vegetation. Thousands of acres burned in the Derby Fire in 2006.
Current uses and management	Eighty-nine percent of the recommended wilderness area is within inventoried roadless area. Thirteen grazing allotments total 65,007 acres of this recommended wilderness area. Deer Creek offers a total of 87.9 miles of trail. There are 6.78 miles of trail open to all-terrain vehicles and bicycles, 35.65 miles of non-motorized trails open to bicycles and about 45.46 miles of motorcycle trails also open to bicycles. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 62,477 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality – About 65 percent of the area is classified as moderate to high departure from historical vegetation. The majority of the area is in grazing allotments, and several thousand acres of weeds have been inventoried. The large fire in 2006 may help restore some natural qualities, but also contributes to weeds. This area contains acres of prior timber harvest which were burned over in 2006, removing some of the substantially noticeable indications of prior treatment, such as stumps and changing vegetation boundaries.</p> <p>Undeveloped – The recommended wilderness area has thirteen grazing allotments. There are 10.5 miles of fence and 53 water developments. The majority of this area is affected by grazing allotments and permitted motorized transport. There are abandoned mines scattered throughout the area. There are approximately 88 miles which would no longer be suitable for motorized or mechanized trail transport in alternative D.</p> <p>Unconfined and/or primitive recreation – This area has been noted as offering the most motorized/mechanized transport on the western portion of the forest, therefore it does not currently offer primitive recreation opportunities.</p> <p>Solitude – This area is noted for use by motorized transport, so noise from that use would intrude on opportunities for solitude. There are busy, recreationally-used road corridors which penetrate into the area on multiple sides. Only a very short segment of Deer Creek Recommended Wilderness Area shares a boundary with the existing wilderness.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in the area and there are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Eighty-nine percent of the recommended wilderness area is within inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>There are 12 miles of range fence and 48 water developments in the recommended wilderness area, which would continue under grazing allotments.</p> <p>There are mining claims present in the recommended wilderness area. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>Mechanized and motorized transport would no longer be suitable on about 88 miles of rails in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 62,477 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is affected by grazing and weeds. Areas that burned in 2006 may have more natural characteristics. Some areas of previous timber harvest are included. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The recommended wilderness area offers limited areas which offer opportunity for solitude.

Dome Mountain Recommended Wilderness Area

The area description is based on the AB #15 wilderness inventory polygon, which is 56,221 acres total. A portion of this polygon is included as the Dome Mountain Recommended Wilderness Area in alternative D. Other portions of this polygon are included in the Chico Peak and Emigrant Peak recommended wilderness areas in alternative D.

Table 43. Dome Mountain Recommended Wilderness Area

Analysis Criteria	Description
Acres	9,540 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land extending around Dome Mountain then to the east. The northern boundary follows the forest boundary and the eastern boundary buffers short sections of roads then follows the adjacent Absaroka-Beartooth Wilderness boundary. The western boundary follows the national forest boundaries, excludes the road to the OTO Ranch, then buffers Highway 89 to tie back in to the forest boundary.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep around Dome Mountain, and includes slopes above Highway 89 a few miles from Gardiner, Montana. Current vegetation composition is mostly Douglas-fir and lodgepole pine, and the remaining is dry grass, whitebark pine and transitional forest.
Current uses and management	<p>About 76 percent of the recommended wilderness area is within inventoried roadless area. The area contains two grazing allotments for a total of 5,946 acres. The permittee is authorized motorized access through their permit to administer their allotment.</p> <p>There are 4.53 total miles, of which 4.52 miles are suitable for mechanized transport. There are no motorized trails.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 51 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – There have been six recent fires suppressed in the area since 1989, and each fire was 4,500 acres or smaller in size. The suppression of natural fire plays a part in the 40 percent of the area showing in moderate to high departure from historical vegetation. Adjacent ranches and private ownership make this area part of the wildland-urban interface. A large amount of the recommended wilderness area is within grazing allotments, which has also played a part in the current vegetation being departed from historical conditions. Weed infestations have been inventoried and mapped.</p> <p>Undeveloped – There is almost an entire range allotment and primary range with 8.8 miles fence and five water developments. There is no summer motorized transport.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined recreation, with only five miles of trail.</p> <p>Solitude – The inner core of this area should offer opportunities for solitude although the sights and sounds of the Paradise Valley and Highway 89 would likely reach this area.</p> <p>Other Features of Value – Dome Mountain. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. There are streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>About three quarters of the area is within inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area. There is no summer motorized transport, however the grazing permittee would retain motorized access to administer their allotment, and fencing and water developments would be maintained. Mechanized transport would no longer be suitable on four and a half miles of trail in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 51 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area has been affect by lack of natural fire, grazing, fencing, and water developments. Weed infestations have been inventoried and mapped. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude within the core of the recommended wilderness area, otherwise the area is affected by development along boundaries that aren't shared with the wilderness. • The area offers unconfined recreation

East Rosebud to Stillwater Recommended Wilderness Area

The area description is based on the AB #16 wilderness inventory polygon, which is 24,886 acres total. Portions of the polygon are included as the East Rosebud to Stillwater Recommended Wilderness Area in alternative D. Another portion of this polygon is included as the Mystic Recommended Wilderness Area in alternatives A, B, C, and D.

Table 44. East Rosebud to Stillwater Recommended Wilderness Area

Analysis Criteria	Description
Acres	17,422 acres (alternative D).
Description of the recommended boundary – alternative D	<p>The recommended wilderness area is comprised of three separate parts, separated by the West Rosebud Road. The western boundary of the northern piece, at 14,545 acres, follows the Absaroka-Beartooth Wilderness boundary. The northern boundary buffers roads, the eastern boundary follows the forest boundary, and the southern boundary buffers the West Rosebud Road.</p> <p>The second parcel at 2,842 acres is south of West Rosebud Creek and is defined on all sides by the forest boundary and the existing wilderness boundary.</p> <p>The third piece consisting of 395 acres is comprised of the south side of Mystic Lake and lands between Mystic Dam and the road end.</p>
Description of the geography, topography, and vegetation	The area is generally natural appearing consisting of steep timber covered slopes adjacent to the wilderness that connect to the higher elevations and sub alpine tundra plateaus. Current vegetation is half lodgepole, 15 percent Douglas-fir, with the remainder dry grass and sparse vegetation.
Current uses and management	Eighty-one percent of the recommended wilderness area is within inventoried roadless area. There are three grazing allotments totaling 4,526 acres of this recommended wilderness area. The area offer a total of 5.37 miles of trail, with 2.11 miles of nonmotorized trail open to mechanized transport. There are no motorized summer trails. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 695 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality – Two natural fires are recorded since 1996, one about 1,500 acres the other only 230 acres. Due to the long boundary with private lands, natural fires have been suppressed in this area. Due to grazing and fire suppression, about 40 percent of the area has a moderate to high level of departure from historical vegetative conditions.</p> <p>Undeveloped – There are three separate grazing allotments in the recommended wilderness area. All have just a portion of the allotments and primary range in the recommended wilderness area, with a total of 6 miles of fence. The majority of this area is undeveloped. There is no summer motorized transport.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities, mostly horse use and hiking. The area is close to the town of Red Lodge, Montana so it is not an isolated location.</p> <p>Solitude – The area is dissected by highly used recreational road corridors and includes many of the very popular corridors into the wilderness. Areas with cross-country travel near the existing wilderness boundaries would provide better opportunities for solitude.</p> <p>Other Features of Value – This area has premier recreation opportunities on a local, regional and national level. The area includes many of the very popular corridors into the wilderness. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in the area and there are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Slightly over 80 percent of the recommended wilderness area is within inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>Within the recommended wilderness area boundaries are 0.22 acres of oil and gas leases and mining claims. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. Mechanized recreation transport would no longer be suitable on about two miles of trail in alternative D. Using winter recreational opportunity spectrum as described above winter motorized transport would no longer be suitable on 695 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The undeveloped quality of the area is high and there is no summer motorized transport. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers some areas of opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Emigrant Peak Recommended Wilderness Area

The area description is based on the AB #15 wilderness inventory polygon, which is 56,221 acres total. A portion of this polygon is included as the Emigrant Peak Recommended Wilderness Area in alternative D. Other portions of this polygon are included in the Chico Peak and Dome Mountain recommended wilderness areas in alternative D.

Table 45. Emigrant Peak Recommended Wilderness Area

Analysis Criteria	Description
Acres	15,829 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land which meanders around Emigrant Peak. The southern boundary is adjacent to the Absaroka-Beartooth Wilderness boundary. The western boundary follows the forest boundary, then buffers the North Fork Sixmile Road. The northern boundary follows the forest boundary, then uses a north/south township and range line to create a portion of the eastern boundary. From there the eastern boundary buffers private lands in Emigrant Gulch and roads. The southeastern boundary buffers Mill Creek Road in one corner.
Description of the geography, topography, and vegetation	Much of the area is very steep hillside up Emigrant Peak. Current vegetation composition is Douglas-fir, followed by lodgepole pine, and the remaining is dry grass, transitional forest, and sparse vegetation.
Current uses and management	Seventy-three percent of the recommended wilderness area is within inventoried roadless area. There are two grazing allotments totaling 5,122 acres. The area offers a total of 5.53 miles of trail, with no motorized summer trails, but there are about 4.86 miles of non-motorized trail open to mechanized transport. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 4,856 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – There have been six recent fires suppressed in the area since 1989, all of 4,500 acres or less. The suppression of natural fire plays a part in the 40 percent of the area in moderate to high departure from historical vegetation conditions. Adjunct ranches and private ownership make this area part of the wildland-urban interface. About a third of the area is within grazing allotments.</p> <p>Undeveloped – There are two grazing allotments with a total of four miles of fence, four water developments, and 0.7 miles of pipeline. There is no summer motorized transport, other than by permitted grazing use. There are a series of abandoned mines.</p> <p>Unconfined and/or primitive recreation – This area has opportunities for off-trail travel over much of the acreage, with only five miles of trail within the boundaries.</p> <p>Solitude – There is limited access and much of it is a steep hillside up Emigrant Peak. There are opportunities for solitude, although the sights and sounds of the Paradise Valley and Highway 89 may be within reach.</p> <p>Other Features of Value – Emigrant Peak. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in the area and there are streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>About three quarters of the area is within inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>Within the boundaries are 31 acres of outstanding mineral rights and 623 acres of oil and gas leases, and mining claims. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. In 2018 the Secretary of Interior signed a 20 year locatable mineral withdrawal for portions of this recommended wilderness area, meaning new locatable mineral claims cannot be filed, and any current claims need to have a valid existing rights determination for future locatable minerals use.</p> <p>Motorized administrative transport may be authorized for the grazing permittee.</p> <p>Mechanized recreation transport would no longer be suitable on 4.86 miles of trail in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 4,856 acres in alternative D.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high in places, however fire suppression and minor grazing has affected historical vegetation conditions. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Knowles Peak Recommended Wilderness Area

The area description is based on the AB #84 wilderness inventory polygon, which is 2,497 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 46. Knowles Peak Recommended Wilderness Area

Analysis Criteria	Description
Acres	1,223 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land buffered to the north, west and south by roads and the Absaroka-Beartooth Wilderness to the east. Portions of the northern and southwestern boundaries are adjacent to privately owned lands.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep with existing vegetation primarily Douglas-fir forest, along with small amounts of dry grass, and transitional forest. A non-prescribed fire of almost 500 acres burned in 2007, with five acres of trees planted in 2010.
Current uses and management	<p>Ninety-seven percent of the recommended wilderness area is within inventoried roadless area. Four acres are within the East Fork Mill Creek Research Natural Area. There are no grazing allotments.</p> <p>There are a total of 2.93 miles of trail in the recommended wilderness area, with 2.08 miles of non-motorized trails open to mountain bikes. A small segment of 0.85 mile is open to hiker and horse only. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 1,223 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – Weed infestations of about 100 acres have been tallied in surveys. About 75 percent of the area is in moderate to high departure from historical vegetation conditions. Five acres of trees were planted in 2010. The recommended wilderness area is generally naturally appearing with few developments.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no summer motorized transport, however the entire area is open to winter motorized over-snow transport. One abandoned mine is recorded.</p> <p>Unconfined and/or primitive recreation – This area has opportunities for unconfined and primitive recreation opportunities, once away from adjacent boundaries.</p> <p>Solitude – Sights and sounds from the Mill Creek roads, nearby motorized trails and adjacent private property influence opportunities for solitude in the area. There is opportunity for solitude and primitive recreation once away from the Mill Creek and East Fork Mill road corridors.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx habitat, and primary wolverine habitat. There are streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The recommended wilderness area is almost entirely within inventoried roadless area</p> <p>The steep and rugged terrain, limited infrastructure and adjacency to wilderness would provide for manageability as wilderness in portions of the area away from the influence of the Mill Creek Road, the East Fork Mill Creek road and the private ranch inholdings.</p> <p>Mechanized transport would no longer be suitable on 2.08 miles of trail in alternative D. Using winter recreational opportunity spectrum as described above, winter transport would no longer be suitable on 1,223 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area has been altered by vegetation not being within the historical conditions, but is generally naturally appearing with few developments. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers some opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Line Creek Plateau Recommended Wilderness Area

The Line Creek Plateau Recommended Wilderness Area, as described in alternatives A, B, and C, was included in the 1986 Custer National Forest Plan. The area description is based on the AB #57 wilderness inventory polygon for alternatives A, B, and C. In alternative D, a portion of AB #6 wilderness inventory polygon is added to this recommended wilderness area. The boundary is nearly the same for alternatives A, B, and C, and expands in alternative D.

Table 47. Line Creek Plateau Recommended Wilderness Area

Analysis Criteria	Description
Acres	809 acres (alternative A); 801 acres (alternatives B and C); 26,605 acres (alternative D).
Description of the recommended boundary – alternative A, B, C	In alternatives A, B, and C the recommended wilderness area is contiguous land with its southern boundary adjacent to the Absaroka-Beartooth Wilderness, and remaining boundaries buffered from the Beartooth Highway and Rock Creek Road. The recommended wilderness area is slightly smaller in alternatives B and C to provide a larger trailhead buffer.
Description of the recommended boundary – alternatives D	In alternative D, the recommended wilderness area is comprised of two separate parts, divided by the Beartooth Highway. The same boundaries west of the Beartooth Highway used in alternatives B and C are included, and expanded by over 25,000 acres east of the Highway. Most of the Custer Gallatin National Forest portion (16,127 acres) of the Line Creek Plateau Research Natural Area is included in alternative D. The boundaries of the added area buffer the Beartooth Highway to the west and northwest; follow the forest boundary to the north, south and east; and buffer roads in the southeast.
Description of the geography, topography, and vegetation	<p>In alternatives A through C, steep hillsides rise on the northwest part of the recommended wilderness area. As the area circles the plateau there is less elevation change closer to the Beartooth Highway. Vegetation ranges from dry grass, lodgepole, and whitebark pine.</p> <p>In alternative D, elevation ranges from about 7,400 to 10,900 feet. The Line Creek Plateau Research Natural Area is characterized by extensive areas of alpine tundra vegetation, a cirque basin with alpine lakes and ponds, and many unique plant species. It is the easternmost, warmest alpine plateau in the Beartooth Mountains. The area is composed of alpine snow beds, alpine wetlands, alpine turf, alpine cushion plants (compact, low growing, mat forming plants), alpine grasslands, conifer forests, and shrublands. The majority of the forested portions on the east flank of the research natural area experienced high burn severity from the 2011 Hole-in-the-Wall Fire.</p>
Current uses and management	<p>In alternatives A, B, and C all of the recommended wilderness area is also within inventoried roadless area. The 1986 Custer National Forest Plan included the area in alternatives A, B, and C as a recommended wilderness area. There are no grazing allotments. There are no trails in alternatives A, B or C; however there are 26.02 miles of non-motorized trail open to mechanized transport in alternative D.</p> <p>In alternative D, 89 percent of the area is within inventoried roadless area. Alternative D has one grazing allotment with 598 acres, a portion of the allotment and primary range in the recommended wilderness area. Motorized transport, without roads, may be authorized for the permittee to administer their allotment. The grazing allotment is not within the Line Creek Plateau Research Natural Area.</p> <p>Areas mapped as a motorized winter recreation opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping in alternative D only, 1,023 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped – In alternatives A, B, and C there are no grazing allotments or infrastructure. In alternative D there are 598 acres of grazing allotment, with no infrastructure. The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport in alternatives A, B, and C, however 1,023 acres is open to winter motorized over-snow transport in alternative D.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, and hunting.</p> <p>Solitude – Due to the flat and open topography, sounds from the highway can be heard, impacting a feeling of isolation or solitude.</p> <p>Other Features of Value – The Line Creek Plateau Research Natural Area was established as a landscape scale research natural area and consists of lands managed by the Custer Gallatin and Shoshone National Forests. This research natural area is characterized by extensive areas of alpine tundra vegetation, a cirque basin with alpine lakes and ponds, and many unique plant species. It is the easternmost, warmest alpine plateau in the Beartooth Mountains. The area is composed of alpine snow beds, alpine wetlands, alpine turf, alpine cushion plants (compact, low growing, mat forming plants), alpine grasslands, conifer forests, and shrublands. Of the 21 vegetation types, 17 meet research natural area network-targeted vegetation types (nine alpine, seven coniferous, and one shrubland). There are several rare plant species and many plant species that are disjunctive from the main portion of their range in the arctic. The area includes secure habitat for grizzly bear and primary habitat for wolverine. Whitebark pine grows in the area and there are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Alternatives A, B, C and D have approximately 800 acres that have been managed as recommended wilderness area since 1986, and this area is within inventoried roadless area.</p> <p>Under alternative D, mechanized transport would no longer be suitable on 26.02 miles of trail. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 1,023 acres in alternative D.</p> <p>When research natural areas fall within congressionally designated areas, such as designated wilderness areas or wilderness study areas, research natural Area activities must meet the applicable congressionally designated area statutory mandates (FSM 4063.32 and FSM 1920) and plan direction. Similarly, research natural area activities would meet plan components for recommended wilderness areas. The overlapping research natural area is compatible with designated wilderness and recommended wilderness areas.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>About 800 acres were previously included as a recommended wilderness area in the 1986 Custer National Forest Plan. There were public comments received in favor of recommended wilderness area designation for this area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, has mostly intact ecological integrity. Some small areas where grazing has occurred may be less so. • The majority of this area is undeveloped. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Mount Rae Recommended Wilderness Area

The area description is based on the AB #26 wilderness inventory polygon, which is 5,375 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 48. Mount Rae Recommended Wilderness Area

Analysis Criteria	Description
Acres	2,839 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with its southern boundary adjacent to the Absaroka-Beartooth Wilderness. The western boundary follows section lines to avoid private lands, the northern boundary largely follows private land boundaries and the eastern boundary buffers the Main Boulder Creek Road largely on section lines.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep. Existing vegetation composition is 65 percent Douglas-fir, 20 percent lodgepole pine, and the remainder transitional forest.
Current uses and management	Almost all of the recommended wilderness area is within an inventoried roadless area. Most of the area, 2,500 acres, is within a grazing allotment. About 0.69 mile of non-motorized trail near the north-eastern border are open to bicycles. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, all 2,839 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – About 70 percent of this area is moderate to high departure from historical vegetation conditions. A 22 acre weed infestation is mapped west of the eastern boundary.</p> <p>Undeveloped –There are three separate grazing allotments totaling 2,500 acres, with a total of 2 miles of fence and one water development. There is no summer motorized transport, however grazing permittees would be authorized motorized transport for management and repair of grazing infrastructure.</p> <p>Unconfined and/or primitive recreation – this area offers opportunities especially near the existing Absaroka-Beartooth Wilderness boundary.</p> <p>Solitude – There are good opportunities for solitude close the south western boundary with the wilderness, as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance. Areas nearer the busy Main Boulder road corridor on the eastern side may reduce the solitude with sights and sounds of traffic and human presence. Areas closer to private inholdings would have less opportunity for solitude.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Almost all of the recommended wilderness area is within an inventoried roadless area.</p> <p>There are mining claims present in the recommended wilderness area. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>There is no summer motorized transport. Mechanized transport would no longer be suitable on about 0.69 miles of trail in alternative D. Existing grazing infrastructure and motorized transport associated with the grazing permittee would continue. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 2,839 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers good opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Mystic Recommended Wilderness Area

The Mystic Recommended Wilderness Area was included in the 1986 Custer National Forest Plan. The area description is based two wilderness inventory polygons. The AB #93 wilderness inventory polygon which is 132 acres total is included within the recommended wilderness area in alternatives A, B, C, and D. In addition, 144 acres of the 24,886 acre AB #16 wilderness inventory polygon is also included in alternatives A, B, C. The recommended wilderness area proposed boundary is smaller for alternative D, using only the 136 acres in AB #93, because the remaining acreage included in alternatives A, B, and C is included in the East Rosebud to Stillwater Recommended Wilderness Area in alternative D.

Table 49. Mystic Recommended Wilderness Area

Analysis Criteria	Description
Acres	247 acres (alternatives A, B, and C); 136 acres (alternative D).
Description of the recommended boundary – alternatives A, B, and C	In alternatives A, B, and C, the recommended wilderness area consists of the area located around the perimeter of the Mystic Lake inundation zone (Federal Energy Regulatory Commission license #2301) boundary to the Absaroka-Beartooth Wilderness boundary on both the north and south sides of the lake. This area was included as a recommended wilderness area in the 1986 Custer National Forest Plan.
Description of the recommended boundary – alternative D	In alternative D, the recommended wilderness area consists of the area located around the perimeter of the Mystic Lake inundation zone (Federal Energy Regulatory Commission license #2301) boundary to the Absaroka-Beartooth Wilderness boundary on the north side of the lake. The south side of the lake is included in the East Rosebud to Stillwater Recommended Wilderness Area in alternative D.
Description of the geography, topography, and vegetation	The area consists of steep slopes adjacent to Mystic Lake. Current vegetation composition is 60 percent lodgepole pine, 15 percent Douglas-fir, with the remaining split between whitebark pine and dry grass.
Current uses and management	Approximately 84 percent of the recommended wilderness area is within inventoried roadless area. The 1986 Custer National Forest Plan included this area as a recommended wilderness area. The Mystic Lake hydroelectric plant is immediately adjacent to the recommended wilderness area on the northeast shore of the lake, at the end of the West Rosebud road with infrastructure placed at the lake itself and throughout the drainage. There are two and a half total miles of hiker and horse trails in alternatives A, B, and C and no motorized transport within the recommended wilderness area. There are no trails in alternative D. There is no winter motorized transport. There is no grazing allotment.
Description of the wilderness characteristics	<p>Natural Quality – The majority within this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped – The area is adjacent to the Absaroka-Beartooth Wilderness. However, there is also Federal Energy Regulatory Commission infrastructure including outbuildings, a caretaker’s cabin, dam, and railway immediately adjacent on the northeast shore of the lake.</p> <p>Unconfined and/or primitive recreation – This area is small, but adjacent to the designated wilderness and offers nonmotorized recreation opportunities.</p> <p>Solitude – As this is a small area with adjacent infrastructure, this opportunity is diminishes in areas closer to the road, dam and facilities. However, as most of the remaining area is surrounding wilderness, opportunities increase with distance from the dam.</p> <p>Other Features of Value – The area has outstanding scenic quality with the surrounding lake and wilderness. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	The area could improve manageability of the adjacent wilderness by continuous designated wilderness. There is no motorized transport.
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	This area was previously included as a recommended wilderness area in the 1986 Custer National Forest Plan. There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high as it is affected primarily by natural forces, has mostly intact ecological integrity. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The opportunities for solitude are present as part of the wider setting. • There are opportunities for primitive and/or unconfined recreation.

North Fork Recommended Wilderness Area

The area description is based on the AB #78 wilderness inventory polygon, which is 36 acres total. This polygon is entirely included as a recommended wilderness area in alternative D.

Table 50. North Fork Recommended Wilderness Area

Analysis Criteria	Description
Acres	36 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is comprised of one very small parcel, bordered on three sides by the Absaroka-Beartooth Wilderness, and by the forest boundary on the fourth side.
Description of the geography, topography, and vegetation	Much of the area is moderately steep. Existing vegetation is predominately Douglas-fir forest.
Current uses and management	None of the recommended wilderness area is within inventoried roadless area. There are no trails, no winter motorized recreation transport, and no grazing allotments.
Description of the wilderness characteristics	<p>Natural Quality – Although records do not show previous harvest or grazing or suppressed natural ignition fires, 90 percent of the area is moderate to high departure from historical vegetation conditions.</p> <p>Undeveloped – The majority of this area is undeveloped and not currently affected by human intervention. There is no motorized transport.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive off-trail recreation opportunities.</p> <p>Solitude – One boundary line is adjacent to private land at the forest boundary; therefore the area may be affected by activities within the sights and sounds of human activities and improvements. The adjacent private is used for recreational, agricultural and residential purposes.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>None of the recommended wilderness area is within inventoried roadless area.</p> <p>There are no Forest Service system trails or motorized transport. The opportunities for solitude and primitive recreation are commensurate with its size; although user created trails from the adjacent private property are found within the area.</p> <p>The unique feature of this recommended wilderness area is its small size, and adjacent wilderness on three sides. It could improve manageability of the adjacent wilderness by continuous designated wilderness, although challenged by its proximity to private property.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area shows no records of weeds, structures or other unnatural features. • The undeveloped quality of the area is affected by non-system user created trails leading from private lands, however there is no recorded motorized transport. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Phelps Creek Recommended Wilderness Area

The area description is based on the AB #7 wilderness inventory polygon, which is 7,259 acres total. Portions of this polygon are included in part of a recommended wilderness area in alternative D.

Table 51. Phelps Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	3,177 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with the northern boundary adjacent to the Absaroka-Beartooth Wilderness. The western boundary borders private land and the eastern and southern buffer roads.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep, with current vegetation composition at 30 percent dry grass, 20 percent Douglas-fir, 20 percent shrub land, 10 percent lodgepole pine, and 5 percent whitebark pine.
Current uses and management	This area is almost entirely within an inventoried roadless area and there are no grazing allotments. There is 0.70 mile of mechanized trail and another 0.23 mile of trail open to hiker and horse use only. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 317 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – The area is largely without past harvest units. The naturalness of the area is affected primarily by natural forces, has mostly intact ecological integrity.</p> <p>Undeveloped – The majority of this area is undeveloped and without fences or water developments.</p> <p>Unconfined and/or primitive recreation – This area has a high level of opportunity for unconfined and primitive recreation opportunities; with a short segment of trail, other activities would require cross-country access.</p> <p>Solitude – Adjacent lands contain private land mining activities, the town of Gardiner, Highway 89, the Yellowstone River, state fishing/ boat access points, roads, trails and trailheads. There are power lines and cell towers, and repeaters nearby, as well as an administrative gravel pit. To the southeast is the Travertine Mine.</p> <p>Other Features of Value – this area has a long history of tribal uses along with early settlement around Gardiner and Yellowstone National Park. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in the area and there are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>This recommended wilderness area is almost entirely with an inventoried roadless area.</p> <p>There is no summer motorized transport. Mechanized transport would no longer be suitable on 0.7 miles of trail in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 317 acres in alternative D.</p> <p>Areas adjacent to the boundaries are developed, with powerlines, cell towers, repeaters, and Highway 89.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for inventoried roadless areas adjacent to the Absaroka-Beartooth Wilderness.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is affected primarily by natural forces, has mostly intact ecological integrity. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Red Lodge Creek Recommended Wilderness Area

The area description is based on the AB #11 wilderness inventory polygon, which is 34,613 acres total. A portion of this polygon is included as the Red Lodge Creek Recommended Wilderness Area in alternative D. Other portions of this polygon are included in the Red Lodge Creek Recommended Wilderness Area in alternative D, and the Timberline Recommended Wilderness Area (formerly named Red Lodge Creek/Hellroaring) in alternatives A, B, C, and F. A portion of the Red Lodge Creek Recommended Wilderness Area is included in the Burnt Mountain Recommended Wilderness Area in alternative A.

Table 52. Red Lodge Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	12,039 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land that follows the Absaroka-Beartooth Wilderness boundary to the west. The southern boundary buffers the West Fork of Rock Creek road. The northern and eastern boundaries follow the forest boundary and private land boundaries except where buffered from roads in places.
Description of the geography, topography, and vegetation	Much of the area is very steep, generally natural appearing; consisting of steep timber covered slopes adjacent to the wilderness that connect to the higher elevations and sub alpine tundra plateaus. Vegetation is lodgepole, some transitional forest, Douglas-fir and whitebark pine.
Current uses and management	Sixty-six percent of the recommended wilderness area is within an inventoried roadless area. All of the 3,917 acres of the Burnt Mountain Recommended Wilderness Area from the 1986 Custer National Forest Plan are included within the larger boundaries of this recommended wilderness area. There are 2,914 acres in two grazing allotments. Motorized transport would be allowed to administer the grazing permits. There are 2.39 total trail miles, with no summer motorized trails. The area has 1.95 miles of non-motorized trail are open to mechanized transport, and a small segment of 0.44 miles open only to hiker and horse use. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 390 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – Much of this area is natural appearing, although there are previous harvest units close to the recommended wilderness area boundary. Away from the grazing allotments, the current vegetation is primarily affected by natural ecological processes. There have been six natural fires suppressed since 1985, the largest reaching 5,000 acres.</p> <p>Undeveloped – There is a portion of grazing allotment and primary range along with 4.5 miles of fence in the recommended wilderness area. The majority of this area away from grazing is undeveloped and not affected by human intervention. There is no summer motorized transport.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, hunting, and cross-country skiing.</p> <p>Solitude – Part of this area, especially near the wilderness boundary, should offer opportunities for solitude.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in parts of the area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>About two-thirds of the recommended wilderness area is within an inventoried roadless area.</p> <p>There are 671 acres of reserved mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>Administrative motorized transport would continue for the two grazing permits.</p> <p>Mechanized transport would no longer be suitable on 1.95 miles of trail in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 390 acres in alternative D.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>About 3,900 acres within this area were previously included as a recommended wilderness area in the 1986 Custer National Forest Plan.</p> <p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is good as it is still offers some areas affected primarily by natural forces, and has mostly intact ecological integrity. • While some grazing infrastructure is noted, the majority of this area is undeveloped and not affected by human intervention. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The recommended wilderness area offers areas with opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Timberline Recommended Wilderness Area (formerly Red Lodge Creek/Hellroaring)

The Timberline Recommended Wilderness Area was included in the 1986 Custer National Forest Plan. The area description is based on the AB #11 wilderness inventory polygon which is 34,613 acres total. A portion of this polygon is included as a recommended wilderness area in alternatives A, B, C, and F and the boundary is the same for all three alternatives. Other portions of AB #11 were included in the Red Lodge Creek Recommended Wilderness Area and the West Fork Rock Creek Recommended Wilderness Area in alternative D.

Table 53. Timberline Recommended Wilderness Area

Analysis Criteria	Description
Acres	802 acres (alternatives A, B, C, and F).
Description of the recommended boundary – alternative A, B, C, and F	(This area was renamed Timberline, as it is a more geographically accurate name). The recommended wilderness area is contiguous land that follows the same recommended wilderness area boundary as the 1986 Custer National Forest Plan. The boundary follows Timberline Creek and trails paralleling the creek up to the current designated boundary for the Absaroka-Beartooth Wilderness. The area currently is largely surrounded by wilderness.
Description of the geography, topography, and vegetation	This area moderately steep as trails follow Timberline Creek into the adjacent wilderness. Existing vegetation includes lodgepole, some transitional forest, and Douglas-fir.
Current uses and management	The entire area is within inventoried roadless area. The 1986 Custer National Forest Plan included this area as a recommended wilderness area. In alternatives A, B, C, and F there are a total of 3.64 miles of hiker and horse trails, but no motorized or mechanized trails, or motorized over snow transport.
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped –There are no grazing allotments or infrastructure. The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities for horseback and hiking trail access.</p> <p>Solitude – Although this is a small area, once the trailheads are left behind, there should be opportunities for solitude as the designated wilderness surrounds this area on three sides.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, primary wolverine habitat, and critical habitat for lynx. Whitebark pine is also located in the area.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The area has been managed as a recommended wilderness area since 1986. It could improve manageability of the adjacent wilderness by continuous designated wilderness.</p> <p>The entire area is within inventoried roadless area.</p> <p>There is no mechanized transport or summer or winter motorized transport.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>This area was previously included as a recommended wilderness area in the 1986 Custer National Forest Plan.</p> <p>There were public comments received in favor of recommended wilderness area designation for wilderness inventory polygon AB #11, which includes this area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, has mostly intact ecological integrity. • The undeveloped quality of the area is very high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. There are opportunities for primitive and/or unconfined recreation.

Republic Mountain Recommended Wilderness Area

The Republic Mountain Recommended Wilderness Area was included in the 1987 Gallatin Forest Plan. The area description is based on the AB #80 wilderness inventory polygon, which is 388 acres total. This polygon is included as a recommended wilderness area in alternatives A, B, C, and D. The boundary is the same for alternatives A, B, C, and D.

Table 54. Republic Mountain Recommended Wilderness Area

Analysis Criteria	Description
Acres	388 acres (alternatives A, B, C, and D).
Description of the recommended boundary – alternatives A B, C, and D	The recommended wilderness area is contiguous land, bounded to the south by the North Absaroka-Wilderness on the Shoshone National Forest in Wyoming. The other boundaries follow topographic features, with a short segment adjacent to private lands.
Description of the geography, topography, and vegetation	The area is very steep, rugged, cliffy, relatively inaccessible terrain, and natural in appearance. Half the area is sparse vegetation, one-third is whitebark pine, and 10 percent is subalpine fir.
Current uses and management	The area is entirely within an inventoried roadless area. The 1987 Gallatin Forest Plan includes this area as a recommended wilderness area. There is no access by Forest Service system trails, no grazing allotments and no motorized transportation, therefore providing a primitive off-trail experience.
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities especially noted for backcountry skiing “The Fin” on the side of Republic Peak.</p> <p>Solitude – There is opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance.</p> <p>Other Features of Value – There are many features in this polygon including proximity to the North Absaroka Wilderness, steep, rugged, high altitude terrain with whitebark pine and other high elevation species. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The area has been managed as a recommended wilderness area since 1987 and is entirely within an inventoried roadless area.</p> <p>The area would be manageable as wilderness due to its proximity to the North Absaroka Wilderness, steep, high elevation terrain. It has a buffer from other developments other than one small area of private land, and is generally inaccessible with no system trails or other developments.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>This area was previously included as a recommended wilderness area in the 1987 Gallatin Forest Plan.</p> <p>There were public comments received in favor of recommended wilderness area designation for this area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, and has mostly intact ecological integrity. • The undeveloped quality of the area is very high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There is high level of opportunity for primitive and/or unconfined recreation for rugged cross-country travel and expert level backcountry skiing.

Sheep Creek Recommended Wilderness Area

The area description is based on the AB #77 wilderness inventory polygon, which is 1,109 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 55. Sheep Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	557 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with the southern boundary adjacent to the Absaroka-Beartooth Wilderness, then mostly follows topographic features and avoids private lands.
Description of the geography, topography, and vegetation	Much of the area is moderately steep. Existing vegetation is split between Douglas-fir forest, and transitional forest. Although there are prior harvest units included, those areas and more burned over in 2006.
Current uses and management	The area is almost entirely within inventoried roadless area and all acres are covered by two grazing allotments. There are no trails. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, all 557 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area has burned in the past twelve years which has assisted in restoring some natural appearances where there were multiple previous harvest units. There is active grazing with a short half-mile of fence. The vegetative condition is 85 percent moderate to high departed from historical vegetative conditions.</p> <p>Undeveloped – There is no infrastructure listed for the two grazing allotments.</p> <p>Unconfined and/or primitive recreation – This area would offer unconfined and primitive recreation opportunities especially along the wilderness boundary. Some other boundaries are shared with private lands.</p> <p>Solitude – There are opportunities for solitude and opportunities for primitive recreation throughout the area.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and critical habitat for lynx.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The area is almost entirely within inventoried roadless area.</p> <p>Motorized cross-country transport would continue by grazing permittees. Adjacent private property is primarily used for recreation and agriculture.</p> <p>There is no mechanized or summer motorized transport. Using winter recreational opportunity spectrum as described above, winter transport would no longer be suitable on 557 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area has been assisted through the recent natural fire event. • The area is not developed, as no infrastructure is noted, but the entire area is grazed. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Strawberry Creek Recommended Wilderness Area

The area description is based on the AB #23 wilderness inventory polygon, which is 13,037 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 56. Strawberry Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	11,597 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land that shares a long eastern boundary with the Absaroka-Beartooth Wilderness. The northern and western boundaries follow the forest boundary and private property lines. The southern boundary buffers adjacent roads and private property lines.
Description of the geography, topography, and vegetation	The terrain is steep and relatively inaccessible other than by foot. Existing vegetation includes Douglas-fir forest, lodgepole, and a small amount of whitebark pine.
Current uses and management	<p>Almost the entire area is within inventoried roadless area. There are 114 acres of a grazing allotment. Immediately adjacent to the northern boundary are Forest Service summer homes and access points to the wilderness and Mt. Cowan (a climbing destination), and Pine Creek Falls and Lake, among the busiest areas on the district. Adjacent private lands are primarily used for recreation, residences and agricultural use.</p> <p>This recommended wilderness area has a total of 3.61 miles of trail, with 2.88 miles open to mechanized transport in the northern part of the recommended wilderness area. There are no summer motorized trails, but a small 0.73 miles open to hiker and horse only. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, all 11,597 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – Forty percent of the vegetation is moderate to high levels of departure from historical conditions. A four-hundred-acre natural fire burned in 2012. Due to the long-shared boundary with private lands, this area likely has had little natural fires allowed to burn, thus contributing to the change in natural vegetation.</p> <p>Undeveloped – There is a very small acreage of grazing allotment in recommended wilderness area, which includes 0.1 mile of fence, and one water development. The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport. An abandoned mine is inventoried in the southern area.</p> <p>Unconfined and/or primitive recreation – This area has large areas with opportunities for unconfined and primitive recreation, with little trail access.</p> <p>Solitude – There are opportunities for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance, especially closer to the wilderness boundary.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in some of the area and there are streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Almost the entire recommended wilderness area is within inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>There is no summer motorized transport. Mechanized recreation transport would no longer be suitable on 2.88 miles of trail in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 11,597 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is affected primarily by the lack of allowing natural fire, due to concern for adjacent private lands. • The undeveloped quality of the area is high. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Tie Creek Recommended Wilderness Area

The area description is based on the AB #30 wilderness inventory polygon, which is 7,969 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 57. Tie Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	5,886 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with the southern boundary adjacent to the Absaroka-Beartooth Wilderness, and the northwestern boundary follow the forest boundary. Remaining boundaries buffer roads and private lands.
Description of the geography, topography, and vegetation	Much of the area is moderately steep and primarily composed of Douglas- fir, with some lodgepole pine.
Current uses and management	Almost the entire recommended wilderness area is within inventoried roadless area. There are three grazing allotments and 2.59 total miles of trail, all open to hiker and horse use only. Areas mapped as a semi-primitive motorized winter recreation opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 5,790 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – Sixty percent of the area has moderate to high departure from historical vegetation condition. The area is mostly within a grazing allotment. An area of heavy weed infestation is just outside of the northwest boundary.</p> <p>Undeveloped – There are three grazing allotments with a total of 4.5 miles of fence and three water developments in the recommended wilderness area.</p> <p>Unconfined and/or primitive recreation – This area has a potential for unconfined and primitive recreation opportunities with two nonmotorized trails totaling four miles that pass through the area. The remaining adjacent lands contain developed private properties, including infrastructure along the Livingston Peak road and the guest ranch along Mission Creek road.</p> <p>Solitude – While there are opportunities for solitude closer to the designated wilderness, there is less at the forest boundary.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. There are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Almost the entire area is within inventoried roadless area.</p> <p>The grazing allotments would be authorized for motorized transport and there would be continued maintenance of fence lines and water features.</p> <p>The area has adjacent occupied private lands and is close to the town of Livingstone.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>There is no mechanized or summer motorized transport. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 5,790 acres in alternative D.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area has been affected by grazing and infrastructure. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

West Fork Rock Creek Recommended Wilderness Area

The area description is based on the AB #11 wilderness inventory polygon, which is 34,613 acres total. A portion of this polygon is included as the West Fork Rock Creek Recommended Wilderness Area in alternative D. Other portions of this polygon are included as the Burnt Mountain Recommended Wilderness Area in alternative A and the Red Lodge Creek Recommended Wilderness Area in alternative D. A portion of the West Fork Rock Creek Recommended Wilderness Area is included in the Timberline Recommended Wilderness Area (formerly named Red Lodge Creek/Hellroaring) in alternatives A, B, C, and F.

Table 58. West Fork Rock Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	12,470 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land that follows the Absaroka-Beartooth Wilderness boundary to the west, the forest boundary to the east, and buffers roads on all other sides; the northern boundary from the West Fork Rock Creek road and the southern boundary from Highway 12, the Beartooth Highway.
Description of the geography, topography, and vegetation	Much of the area is rugged and very steep, with Douglas-fir and whitebark pine, along with transitional forest.
Current uses and management	Almost all of the recommended wilderness area is within inventoried roadless area. The 1986 Custer National Forest Plan included 802 acres of this area as a recommended wilderness area. There are 1,221 acres in a grazing allotment. There are a total of 13.94 total trail miles, with 9.99 miles of non-motorized trails are open to mechanized transport, the remaining 3.95 open to hiker and horse use only. There is no motorized transport.
Description of the wilderness characteristics	<p>Natural Quality – Aside from the area within grazing allotment, the majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped –There is a portion of one allotment and primary range in the recommended wilderness area, with no infrastructure noted. The majority of this area is undeveloped and not affected by human intervention. There is no recreational motorized transport year-round.</p> <p>Unconfined and/or primitive recreation – This area has offers unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, and hunting.</p> <p>Solitude – Much of the interior area provides for high levels of solitude because of the limited number of trails and its overall steep and remote location. Lands to the east contain state of Montana managed properties. Private land uses adjacent to this recommended wilderness area include residential areas, agricultural uses, recreation purposes and a variety of other types of management scenarios. Adjacent national forest lands contain high density developed recreation opportunities.</p> <p>Other Features of Value – This area has trails that are important to the local community as they are close to Red Lodge, for hiking, biking, stock use and skiing. The Beartooth Highway, adjacent to this area is an international destination. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in some of the area and there are streams with Artic grayling.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	The recommended wilderness area is almost all within inventoried roadless area. While motorized transport would not be suitable, the grazing permittee may be allowed motorized transport for administration of their permit. Mechanized transport on 9.99 miles of trail would no longer be suitable in alternative D.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high as it is affected primarily by natural forces, with mostly intact ecological integrity. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There is high amount of primitive and/or unconfined recreation opportunity for horseback riding, hiking, backpacking, dispersed camping, and hunting and backcountry skiing.

West Woodbine Recommended Wilderness Area

The area description is based on the AB #73 wilderness inventory polygon, which is 2,725 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 59. West Woodbine Recommended Wilderness Area

Analysis Criteria	Description
Acres	1,091 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land bounded on the south and west by the Absaroka-Beartooth Wilderness boundary. The remainder of the boundaries buffer private lands to the north and roads to the east.
Description of the geography, topography, and vegetation	Much of the area is moderately steep and natural appearing, consisting of timber covered slopes located south of the Stillwater mine complex. Current vegetation composition is 45 percent lodgepole pine, 35 percent Douglas-fir, and 5 percent whitebark pine, with the remaining land dry grass and sparse vegetation.
Current uses and management	Ninety-four percent of the recommended wilderness area is within inventoried roadless area. The only trail is a small 0.35 mile segment of a hiker and horse trail which crosses the far western area before entering the wilderness. There are no summer motorized or mechanized trails or grazing allotments. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, all 1,091 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – The area is 55 percent moderate to high departure from historical vegetation conditions. However, the remainder of this area is very natural appearing and the current vegetation is affected by natural ecological processes.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no mechanized or summer motorized transport.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities for primarily cross-country travel.</p> <p>Solitude – This area is just south of Stillwater mining complex permit boundary, which is an area with active minerals activity and includes a variety of mining infrastructure. Areas closest to that operation would be impacted by the mining activities, while areas closer to the wilderness boundary should offer more opportunities for solitude.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear, critical lynx habitat, and primary habitat for wolverine.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Ninety-four percent of the recommended wilderness area is within inventoried roadless area.</p> <p>There are mining claims present in the recommended wilderness area. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>There is no mechanized or summer motorized transport. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 1,091 acres in alternative D.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for inventoried roadless areas adjacent to the Absaroka-Beartooth Wilderness.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is affected primarily by natural forces, and has mostly intact ecological integrity. • The area is largely undeveloped. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • There are unconfined recreation opportunities. • The adjacent mining activities would impact a feeling of solitude.

Blacktail Peak Recommended Wilderness Area

The area description is based on the Bridgers #35 wilderness inventory polygon, which is 12,453 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 60. Blacktail Peak Recommended Wilderness Area

Analysis Criteria	Description
Acres	6,147 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with western and northern boundaries following the forest boundary or private land boundaries. The southern boundary buffers roads, and the eastern boundary buffers Horsethief Mountain Trail 523.
Description of the geography, topography, and vegetation	Much of the area is characterized by lower-elevation foothills ranging up toward low mountains. Existing vegetation includes mostly Douglas-fir, along with small amounts of dry grasses.
Current uses and management	<p>Almost the entire recommended wilderness area is within inventoried roadless area. The entire recommended wilderness area is within a grazing allotment. Motorized cross-country transport would be authorized to the grazing permittee to manage the allotment. The area contains elk habitat and hunting constitutes the primary recreational opportunity. There are no trails.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, all 6,147 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – Although entirely within a grazing allotment, vegetation condition class shows only a small percentage is heavily modified from historical conditions. Current vegetation over the majority of this area is primarily affected by grazing.</p> <p>Undeveloped – There is one grazing permittee with most of the allotment and primary range in the recommended wilderness area along with 0.8 mile of fence and one water development.</p> <p>Unconfined and/or primitive recreation – This area has opportunities for unconfined and primitive recreation opportunities.</p> <p>Solitude – There are opportunities for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance. Areas closer to northern portion bordered by multiple private sections on the edge of the recommended wilderness area may lack those opportunities.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	Nearly the entire recommended wilderness area is within inventoried roadless area. There are 6,147 acres of oil and gas leases, which is almost the entire recommended wilderness area. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 6,147 acres in alternative D.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is relatively high. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Crazy Mountains Recommended Wilderness Area

The area description is based on parts of two wilderness inventory polygons: Crazies #36 (35,644 acres total; 29,726 acres included) and Crazies #37 (48,141 acres total; 29,910 acres included). Portions of these polygons are included as a recommended wilderness area in alternative D.

Table 61. Crazy Mountains Recommended Wilderness Area

Analysis Criteria	Description
Acres	59,636 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land. The highly checker boarded ownership pattern of the area has a northern boundary which follows the section line boundaries, then the watershed divide, then the Custer Gallatin National Forest and Helena Lewis and Clark National Forest boundary, then a road buffer for American Fork 7154. The eastern boundary follows Forest Service ownership plus road buffers for Sweet Grass Creek 990 and Big Timber Creek 197. This boundary does not include sections of National Forest System Lands isolated by private sections. The southern boundary follows Forest Service ownership plus road buffers for Swamp Lake Road 7080, North Rock Creek Road 199, and buffers on private roads in sections 31 and 33. Finally the western boundary follows Forest Service ownership and/or Forest Service administrative boundary plus buffers for Cottonwood Creek Road 198, Ibex Road 2510, unnamed logging roads in section 2, and buffers on private roads in section 15.
Description of the geography, topography, and vegetation	Much of the area is very steep and rugged. Current vegetation composition is 40 percent sparse vegetation, 25 percent Douglas-fir, 15 percent ponderosa pine, and 10 percent subalpine fir.
Current uses and management	Almost the entire recommended wilderness area is within an inventoried roadless area. Sixteen grazing allotments cover 37,970 acres of the recommended wilderness area. There are a total of 33.14 miles of trail, with about 13.37 miles of nonmotorized trails open to mechanized transport. There are 4.5 miles of motorcycle trails and another 15.28 miles open to hiker/horse use only. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 8,701 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality –Much of the area outside of grazing allotments is natural appearing and much of that current vegetation is primarily affected by natural ecological processes.</p> <p>Undeveloped – Thirteen of the grazing allotments have a total of about 1.5 miles of fence, and one water development within the recommended wilderness area. In the portions of the recommended wilderness area not under grazing allotments, areas are undeveloped and not affected by human intervention. There is no summer motorized transport, aside from authorized grazing permitted use.</p> <p>Unconfined and/or primitive recreation – Some portions of the recommended wilderness area provide quick access into the high country and scenic mountain lakes, creating numerous opportunities for backcountry recreation. Interspersed private landownership disrupts opportunities for unconfined recreation.</p> <p>Solitude – There is opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance.</p> <p>Other Features of Value – This area of the Crazy Mountains is beautifully rugged and stunning. It is a meaningful area for the Crow Tribe and contains many sacred sites. There are ample elk hunting opportunities, and the southern portion has mountain goats. The area includes secure habitat for grizzly bear and primary wolverine habitat. Whitebark pine grows in some of the area and there are streams with Yellowstone cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Virtually the entire area is within an inventoried roadless area.</p> <p>Interspersed private land ownership would be problematic to managing for wilderness characteristics and disrupts opportunities for unconfined recreation.</p> <p>While recommended wilderness area is largely natural and undeveloped, the private sections within the boundary hold possibilities of future private development and make management difficult as a recommended wilderness area. Managing for wilderness character would be difficult where there is interspersed private land every other mile.</p> <p>There are 9,974 acres of outstanding and 634 acres reserved mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>Mechanized transport would no longer be suitable on about 13.37 miles of trail and also 4.5 miles of motorized transport on motorcycle trails in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 8,701 acres in alternative D.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, it has mostly intact ecological integrity and contains many indigenous species. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There is high amount of primitive and/or unconfined recreation for hiking and horseback as well as hunting.

South Crazy Mountains Recommended Wilderness Area

The area description is based on a wilderness inventory polygon Crazies #36 (35,644 acres total; 10,257 acres included in alternative F). Portions of this polygon are also included as a recommended wilderness area in alternative D.

Table 62. South Crazy Mountains Recommended Wilderness Area

Analysis Criteria	Description
Acres	10,257 acres (alternative F).
Description of the recommended boundary – alternative F	The recommended wilderness area is contiguous land and includes one section of private ownership. All boundaries follow section lines, except for the west boundary which uses a half mile buffer from the motorized trail 270, then follows ridge top for a short segment to tie into the northern boundary.
Description of the geography, topography, and vegetation	Much of the area is very steep and rugged. Current vegetation composition is 40 percent sparse vegetation, 25 percent Douglas-fir, 15 percent ponderosa pine, and 10 percent subalpine fir.
Current uses and management	The entire recommended wilderness area is within an inventoried roadless area. Two grazing allotments cover 1,921 acres, with less than 200 acres as primary range. There are a total of 3.42 miles of trail, with about 1.43 miles of the Smeller Lake nonmotorized trail open to mechanized recreation travel. There are 1.99 miles of the Swamp Lake trail open to hiker/horse use only. Per the winter recreational opportunity spectrum mapping, none of these acres are currently open to snowmobiling.
Description of the wilderness characteristics	<p>Natural Quality – Much of the area outside of grazing allotments is natural appearing and much of that current vegetation is primarily affected by natural ecological processes. Outside of grazing allotments, there are no records of previous vegetation management projects. There are no documented areas of concentrated invasive plants.</p> <p>Undeveloped – There are two grazing allotments that have a portion of the allotment and small amount of primary range in the recommended wilderness area; one portion of an allotment is 644 acres and the other 1,271 acres. There are no records of grazing infrastructure. In the portions of the recommended wilderness area not under grazing allotments, areas are undeveloped and not affected by human intervention. There is no summer motorized transport.</p> <p>Unconfined and/or primitive recreation – Some portions of the recommended wilderness area provide quick access into the high country and scenic mountain lakes, creating numerous opportunities for backcountry recreation. Interspersed private landownership is limited to one section using these boundaries.</p> <p>Solitude – There is opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance.</p> <p>Other Features of Value – This area of the Crazy Mountains is beautifully rugged and stunning. It is a meaningful area for the Crow Tribe and contains many sacred sites. There are ample elk hunting opportunities, and the southern portion has mountain goats. The area includes secure habitat for grizzly bear, primary habitat for wolverine, and contains streams with Yellowstone cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The entire area is within an inventoried roadless area.</p> <p>Interspersed private land ownership includes one section of private ownership.</p> <p>There are 1,275 acres of outstanding mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>Mechanized transport would no longer be suitable on about 1.43 miles of the Smeller Lake trail. Using winter recreational opportunity spectrum as described above, there would be no change of opportunities for winter motorized use, as this area is already not suitable for winter motorized transport.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, it has mostly intact ecological integrity and contains many indigenous species. • There is no range fencing or water development infrastructure developments. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There is high amount of primitive and/or unconfined recreation for hiking and horseback as well as hunting.

West Bridger Recommended Wilderness Area

The area description is based on the Bridgers #34 wilderness inventory polygon, which is 41,500 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 63. West Bridger Recommended Wilderness Area

Analysis Criteria	Description
Acres	26,106 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land with the western boundary the forest boundary or private land boundaries, except where buffered for the Corbly Gulch 6912, Truman Gulch 1178, and Middle Cottonwood 1177 roads. The northern boundary buffers roads, the eastern boundary follows the Bridger ridgeline, and the southern boundary is watershed divide between Sypes and Lyman Creeks.
Description of the geography, topography, and vegetation	This recommended wilderness area includes much of the west side of Bridger Range, with elevations from 5,000 ft. to over 9,000 ft. Current vegetation composition is 55 percent Douglas-fir, 20 percent sparse vegetation/dry grass, 15 percent lodgepole pine, the remainder subalpine fir and various vegetation groups.
Current uses and management	<p>Ninety-five percent of the recommended wilderness area is within inventoried roadless area. About 8,503 acres are in eight grazing allotments There are a total of 48.85 miles of trail in this recommended wilderness area. This includes about 0.61 miles open to all-terrain vehicles and bicycles, 22.62 miles open to bicycles, and 25.62 open to motorcycles and bicycles. There are no non-motorized/mechanized trails.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 23,988 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – Almost half of this area is within grazing allotments, however most of the vegetation is classified as moderate or below in its departure from historic vegetation conditions. Little area has burned, (non-prescribed) since 1991, which shows a limited amount of natural fire allowed.</p> <p>Undeveloped – There is just over 1 mile of grazing fence line and an abandoned mine in the recommended wilderness area.</p> <p>Unconfined and/or primitive recreation – This area has a large amount of recreation opportunities, although the current use includes motorized and mechanized trail transport, which would no longer be suitable under alternative D.</p> <p>Solitude –The overall popularity of the area for numerous types of year-round motorized and non-motorized recreation limits the opportunities for solitude. Solitude is further compromised by the adjacency to the development of the Gallatin Valley and Bridger Bowl Ski Area.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat. There are streams with westslope cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>Ninety-five percent of the recommended wilderness area is within inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>There are 81 acres of outstanding mineral rights and 15,862 acres of oil and gas leases. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. There are 48.85 miles combined of summer motorized and mechanized trail transport which would no longer be suitable under alternative D, affecting all trails in the recommended wilderness area. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 23,988 acres.</p> <p>What makes this area unique—the close accessibility to Bozeman and prime recreational opportunities—would also make it challenging to manage as recommended wilderness area.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is relatively high considering much of the area has included grazing. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • Solitude is compromised by heavy use. • There are opportunities for primitive and/or unconfined recreation.

Buck Creek Recommended Wilderness Area

The area description is based on the Madisons #13 wilderness inventory polygon, which is 42,646 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 64. Buck Creek Recommended Wilderness Area

Analysis Criteria	Description
Acres	28,966 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land that follows the Lee Metcalf Wilderness border (Taylor Hilgard unit on the Beaverhead-Deerlodge National Forest) to the west, private property boundaries and road buffers to the east and north, then the Gallatin River Canyon to the east, and the boundary buffers roads to the south.
Description of the geography, topography, and vegetation	This area varies in topography with small valleys and then steep slopes across multiple ridgelines. Current vegetation composition is 20 percent Engelmann spruce, 15 percent Douglas-fir, and the remainder shrub land, dry grass, whitebark pine, subalpine fir, and lodgepole pine.
Current uses and management	<p>Ninety-six percent of the recommended wilderness area is within inventoried roadless area. Two grazing allotments total 1,966 acres. The area has a total of 45.54 miles of trails open to a variety of uses. There are 9.14 miles of all-terrain vehicle routes (also open to mechanized transport); 10.58 miles of motorcycle trails (also open to mechanized transport); and 22.13 miles of nonmotorized routes open to mechanized transport. There are 3.69 miles open to hiker and horse only.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 11,547 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is natural appearing. Most of the area is low to moderate departure from historical vegetation condition. Some area of weeds and non-native plants have been inventoried. Along some boundaries, much of the adjacent areas have received prior vegetation treatments.</p> <p>Undeveloped – There are two grazing allotment in the recommended wilderness area. One has a major portion of the allotment and primary range in the recommended wilderness area, 2.9 miles of fence, and one water development. The second has a portion of the allotment and primary range in the recommended wilderness area and 0.5 mile of fence. These are minor disruptions across a much larger acreage, however the use of motorized access to grazing areas may be authorized by permit. Over 40 miles of either motorized or mechanized recreational trails would no longer be suitable for these uses in alternative D.</p> <p>Unconfined and/or primitive recreation –The area is crossed by multiple trails, including multiple mechanized and motorized trails, providing trail access to most of the recommended wilderness area.</p> <p>Solitude – The eastern border is formed by Gallatin Canyon, a very popular recreation corridor. The number and density of trails may reduce opportunities for solitude.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat. Whitebark pine grows in the area and there are streams with westslope cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>Ninety-six percent of the recommended wilderness area is within inventoried roadless area.</p> <p>There are 3,372 acres of outstanding mineral rights and 360 acres of oil and gas leases. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>Under alternative D a total of 41.85 miles of motorized and mechanized trail transport would no longer be suitable in this recommended wilderness area.</p> <p>Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 11,547 acres.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high, as much of the area is affected primarily by natural forces. • The undeveloped quality of the area is high. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers limited opportunity for solitude due to the density of the trail system, and proximity to Big Sky and the busy Gallatin River corridor. • There are opportunities for primitive and/or unconfined recreation.

Cabin Creek North Recommended Wilderness Area

The area description is based on the Madisons #12 wilderness inventory polygon, which is 111,565 acres total. A portion of this polygon is included as the Cabin Creek North Recommended Wilderness Area in alternative D. Other portions of this polygon are included as the Cabin Creek South Recommended Wilderness Area in alternative D, and the Taylor Hilgard Recommended Wilderness Area in alternatives B, C, and D.

Table 65. Cabin Creek North Recommended Wilderness Area

Analysis Criteria	Description
Acres	17,092 (alternative D).
Description of the recommended boundary – alternative D	<p>The recommended wilderness area is comprised of two separate parts. The western piece at 4,457 acres shares a western and southern boundary with the Lee Metcalf Wilderness Taylor Hilgard unit, and also borders in part the Cabin Creek Recreation and Wildlife Management Area to the south. The eastern and northern boundaries follow section lines to buffer roads and exclude inholdings of private ownership.</p> <p>The eastern piece at 12,635 acres shares a southern boundary with the Cabin Creek Recreation and Wildlife Management Area and the Lee Metcalf Monument Mountain unit, then buffers Highway 191 to the east excluding private ownership. The northern boundary buffers roads and the western boundary follows section lines.</p>
Description of the geography, topography, and vegetation	<p>The western piece includes steep slopes off the side of Woodward Mountain then enters the river valley along Lightning Creek with open forest and many meadows. The eastern piece varies in elevation with open meadows and Snowflake Ridge running north to south. Current vegetation composition is subalpine fir, Engelmann spruce, Douglas-fir, dry grass, and transitional forest.</p>
Current uses and management	<p>The recommended wilderness area is almost entirely within inventoried roadless area. One grazing allotment totals 4,430 acres.</p> <p>There are a total of 21.48 miles of trail, with 3.54 miles of all-terrain vehicle trail are also open to mechanized transport and 6.89 miles of nonmotorized trail are also open to mechanized transport. In addition there are 11.05 miles of hiker and horse use only trails.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 7,972 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access, or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is classified as moderate to low departure from historical vegetation conditions.</p> <p>Undeveloped –A grazing allotment has a portion of the allotment and primary range and 5.6 miles of fence in the recommended wilderness area.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, hunting. It also offers motorized and mechanized transport which would no longer be suitable uses in alternative D.</p> <p>Solitude – This area has a fair density of trails and is adjacent to private ranches which may hinder opportunities for solitude. Much of the trail system is used by local outfitter guides.</p> <p>Other Features of Value – The northern portion borders the Taylor Fork, a popular recreation corridor that has rental cabins and guest ranches. The area includes secure habitat for grizzly bear and primary wolverine habitat. There are streams with westslope cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Nearly the entire recommended wilderness area is within an inventoried roadless area.</p> <p>There are 1,912 acres of outstanding mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. The acres within grazing allotment may have authorized motorized transport for the administration of the allotment, and infrastructure consisting of almost five miles of fencing, would be maintained. Boundaries shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>There would be a total of 10.43 miles of motorized or mechanized transport on trails which would no longer be suitable in the recommended wilderness area.</p> <p>Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 7,972 acres within these boundaries.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high as it is affected primarily by natural forces, has mostly intact ecological integrity, aside from areas within grazing allotments. • The undeveloped quality of the area is high, however there is range fencing infrastructure noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers some areas with opportunity for solitude, primarily off-trail. • There is high amount of primitive and/or unconfined recreation for horseback riding, hiking, backpacking, dispersed camping, hunting. Near the wilderness, much of this area feels remote and has little adjacent development due to designated wilderness.

Cabin Creek South Recommended Wilderness Area

The area description is based on the Madisons #12 wilderness inventory polygon, which is 111,565 acres total. A portion of this polygon is included as the Cabin Creek South Recommended Wilderness Area in alternative D. Other portions of this polygon are included as the Cabin Creek North Recommended Wilderness Area in alternative D, and the Taylor Hilgard Recommended Wilderness Area in alternatives B, C, and D.

Table 66. Cabin Creek South Recommended Wilderness Area

Analysis Criteria	Description
Acres	19,272 acres (alternative D).
Description of the recommended boundary – alternative D	<p>The recommended wilderness area is comprised of two separate parts, bisected by the Cabin Creek Recreation and Wildlife Management Area. The western piece is 14,765 acres and follows a northern and eastern boundary with the Cabin Creek Recreation and Wildlife Management Area and all other boundaries are buffered from surrounding roads or recreation developments.</p> <p>The smaller 4,507 acre eastern parcel shares its northwestern boundary with the Cabin Creek Recreation and Wildlife Management Area, the northern boundary with the Monument Mountain unit of the Lee Metcalf Wilderness, and the eastern boundary with Yellowstone National Park. The southern boundary buffers a road spur following Little Teepee Creek and southwestern follows section lines.</p>
Description of the geography, topography, and vegetation	<p>The larger western piece is predominately steep terrain, including parts of Boat Mountain and Mount Hebgen and Hebgen Ridge to the south, along with several creek drainages. The eastern piece has East Teepee Creek flowing through the center and contains meadows and rock outcrops. Current vegetation composition is subalpine fir, Engelmann spruce, Douglas-fir, dry grass, and transitional forest.</p>
Current uses and management	<p>This recommended wilderness area is 93 percent inventoried roadless area. Some motorized and mechanized trails occur in the larger western portion, and no trails are located in the eastern portion. There are a total of 13.89 miles of trail, with 0.76 mile of all-terrain vehicle trail that is also open to mechanized transport, and 9.64 miles of nonmotorized trail that is open to mechanized transport. There are also 3.49 miles of motorcycle trails. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 17,794 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – Most of this area is classified as moderate to low departure from historical vegetation conditions. This area contains open forest and many meadows, making for a scenic, natural landscape.</p> <p>Undeveloped – Although 1,700 acres were historically grazed, that allotment is now closed with no remaining infrastructure noted. The majority of this area is undeveloped and not affected by human intervention.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities, but also includes motorized and mechanized transport which would no longer be suitable uses in alternative D. It provides high quality elk hunting and is used by several outfitter/guides.</p> <p>Solitude – The southern part of the large western polygon is subject to sights and sounds from Hebgen Lake, however much of the rest of both polygons would offer opportunities for solitude, especially the untrailed eastern polygon.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat. There are streams with westslope cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	Approximately 93 percent is within inventoried roadless area. There are 0.76 miles of all-terrain vehicle trail also currently open to mechanized transport, and 9.64 miles of nonmotorized trails open to mechanized use and 3.49 miles of motorcycle trails also open to mechanized transport, which would no longer be suitable uses in alternative D as recommended wilderness area. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 17,794 acres within these boundaries.
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high as it is affected primarily by natural forces. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers many places with opportunities for solitude. • There is high amount of primitive and/or unconfined recreation in the untrailed eastern polygon.

Cowboy Heaven Recommended Wilderness Area

The area description is based on the Madisons #25 wilderness inventory polygon, which is 17,588 acres total, and Madisons #75 wilderness inventory polygon, which is 11 acres. Portions of this polygon are included as a recommended wilderness area in alternatives C and D.

Table 67. Cowboy Heaven Recommended Wilderness Area

Analysis Criteria	Description
Acres	15,536 acres (alternative C); 14,357 acres (alternative D).
Description of the recommended boundary – alternative C	<p>In alternative C, the recommended wilderness area is comprised of two nearly adjacent separate parts. The boundary follows the Lee Metcalf Spanish Creek unit boundary to the south, the forest boundary to the west and north (adjacent to the Lee Metcalf Wilderness Bear Trap Canyon Unit) and sections lines to the east. A narrow cherry–stem around the administrative road cuts deeply in to the area.</p> <p>In addition, the recommended wilderness area includes the 11 acres of the Madisons #75 wilderness inventory polygon which was left as a wedge between the Lee Metcalf Wilderness Boundary and the Custer Gallatin National Forest boundary when the wilderness boundary was legally described.</p>
Description of the recommended boundary – alternative D	<p>In alternative D, the recommended wilderness area is comprised of three separate parts. The boundary is similar to alternative C, except a much wider ¼ mile each side buffer of the administrative road results in a northern and southern section of the recommended wilderness area. In addition, the recommended wilderness area includes the 11 acres of the Madisons #75 wilderness inventory polygon.</p>
Description of the geography, topography, and vegetation	<p>The Madisons #25 portion has a foothills feel with rolling timber, many meadows, and perennial streams. Vegetation is equally mixed with lodgepole and Douglas-fir, and lesser amounts of Engelmann spruce The Madison #75 portion is comprised of whitebark pine and grass.</p>
Current uses and management	<p>In both alternatives, almost the entire recommended wilderness area is within inventoried roadless area. In alternative C, there are 6,130 acres within grazing allotments; in alternative D 4,390 acres are within grazing allotments.</p> <p>Alternative C has a total of 15.86 miles of trail; alternative D has 16.82 total miles. The Madisons #25 piece has about 3.57 miles of trail currently open to mechanized transport in alternative C, and about 4.97 miles in alternative D. Alternative C have 12.29 miles and alternative D has 11.85 miles of hiker and horse use only trails. There is no current winter motorized transport.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality – The area is naturally appearing, with exceptions in areas of non-native grass. Although outside the recommended wilderness area boundary, there is an influence from the administrative road and cabin which are near the boundary in alternative C and a further distance away in alternative D.</p> <p>Undeveloped – Several trails access the area. There are two abandoned mines noted in the inventory. Alternative C has a portion of an allotment and primary range within the recommended wilderness area, along with 7.1 miles of fence. Under alternative D there is a portion of the allotment and primary range within the recommended wilderness area, and 2.8 miles of fence.</p> <p>Unconfined and/or primitive recreation – The area within Madisons #25 receives heavy use during big game season. Apart from hunting season, recreational use is light. A cherry-stemmed administrative road and coincident public trail lead to an administrative cabin and nearly bisects this area, which can affect cross-country access deeper into the recommended wilderness area.</p> <p>Solitude – Apart from hunting season, recreational use is light and the area retains a remote feel with opportunities for solitude. There is an administrative road and coincident public trail that leads to an administrative cabin which nearly bisects this area. Madisons #75 Recommended Wilderness Area receives very little use.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat. Whitebark pine grows in the area and there are streams bearing westslope cutthroat trout.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Almost the entire recommended wilderness area in both alternatives is within inventoried roadless area. The 11 acre Madisons #75 area is sandwiched between the Spanish Peaks Unit of the Lee Metcalf Wilderness and recommended wilderness on the Beaverhead-Deerlodge National Forest. The addition of these acres to recommended wilderness area would make for a more logical and manageable wilderness boundary than now exists. The Jourdan Creek trail is difficult to find on the ground, has little tread and is marked with the occasional cairn. This area is very lightly visited.</p> <p>In Madisons #25, mechanized recreation transport would no longer be suitable on approximately 3.57 miles of trails in alternative C, and on about 4.97 miles of trails in alternative D. In alternative C 12.29 miles of trail would no longer be suitable for motorized and mechanized transport; in alternative D it is 11.85 miles.</p> <p>Both alternatives include areas of outstanding mineral rights; 1,770 acres in alternative C and 1,930 acres in alternative D. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high where it is not affected in areas of grazing allotments, with those acres having mostly intact ecological integrity. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area is very highly used during big game season, but outside of that, areas exist with opportunities for solitude. • There are opportunities for primitive and/or unconfined recreation.

Gallatin Recommended Wilderness Area

The area description is based on the Gallatin #28 wilderness inventory polygon, which is 251,700 acres total. A portion of this polygon is included as the Gallatin Recommended Wilderness Area in alternatives C and D. Portions of this polygon are included as the Gallatin Crest Recommended Wilderness Area in alternative B. The Gallatin Recommended Wilderness Area also includes all of the 276 acre Gallatins #62 wilderness inventory polygon.

Note: There are two different, similarly named recommended wilderness areas—“Gallatin Crest” in alternatives B and F, and “Gallatin” in alternatives C and D—with unique boundaries in all alternatives

Table 68. Gallatin Recommended Wilderness Area

Analysis Criteria	Description
Acres	98,644 acres (alternative C); 193,709 acres (alternative D).
Description of the recommended boundary – alternative C	The recommended wilderness area is contiguous land, which follows the proposal of the Gallatin Forest Partnership. This recommended wilderness area d includes the adjacent area described as the Sawtooth Recommended Wilderness Area in alternative B. Otherwise it mainly follows the boundary of the “Gallatin Crest Recommended Wilderness Area” in alternative B, with a northern boundary line going further north to a shared line with the proposed Hyalite Recreation Emphasis Area.
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land, almost 50 miles long and very nearly double the size in alternative C. Alternative D encompasses all of alternative C, includes all of the wilderness study area to the north, adds a portion of Wheeler Ridge, a portion of the South Cottonwood watershed; and a portion of the Bozeman Creek watershed.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep, following miles of the Gallatin Mountain range. Current vegetation composition is one-third Douglas-fir, followed by subalpine fir, lodgepole pine, Engelmann spruce, and whitebark pine.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Current uses and management	<p>In alternative C, 97 percent of the recommended wilderness area is within inventoried roadless area; in alternative D, 91 percent of the recommended wilderness area within Inventoried Roadless.</p> <p>Seven grazing allotments total 21,654 acres in alternative C; and 15 allotments total 28,567 acres in alternative D.</p> <p>In alternative C there are a total of 112.93 miles of trail; in alternative D there a total of 229.36 miles. Alternative C has 8.84 miles of nonmotorized trail open to mechanized transport. In alternative D, 10.69 miles of all-terrain vehicle trails also open to bikes, 46.14 miles of nonmotorized trails open to bikes, 40.65 miles of motorcycle trails also open to bikes for a total of approximately 97.48 miles of trails open to motorized or mechanized transport. In alternative C there are 104.09 miles open to horses or hikers only; in alternative D there are 131.68 miles.</p> <p>Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, alternative C has 2,060 acres and alternative D 24,927 acres as currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p> <p>The Windy Pass cabin is located in the recommended wilderness area in alternative C. In alternative D, three rental cabins are in recommended wilderness area; Yellow Mule, Deer Creek and Windy Pass cabins.</p> <p>In alternatives C and D, the communication uses on Steamboat Mountain, Twin Peaks, and Eaglehead are located in the Gallatin Recommended Wilderness Area. An additional communication use on Sheep Mountain is also in this area. Qwest Corporation has an authorization for operation of a 40' x 48' passive reflector on Sheep Mountain. The reflector is used to reflect microwave radio beams between the radio terminal located in West Yellowstone and the radio terminal at the Tom Minor repeater.</p>
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. There have been multiple large natural fires over the larger area in the past twenty years. Much of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention. Areas with grazing may have less vegetation classified as within the historical condition.</p> <p>Undeveloped – In alternative C, there are seven separate grazing allotments, with a total of 5.6 miles of fence, 0.7 mile of pipeline, and six water developments.</p> <p>In alternative D, there are fifteen grazing allotments with a total of 5.8 miles of fence and four water developments.</p> <p>The majority of the area is undeveloped and not affected by human intervention. From some locations communication facilities can be seen over a wide area.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, and hunting.</p> <p>Solitude – Opportunities for solitude are primarily found in the southern and eastern areas and at the interior where there is less visitation and recreation density. Much of the area in both alternatives includes highly visited destinations within a network of trails.</p> <p>Other Features of Value – Two research natural areas are included within alternative D, as are the upper reaches of the Bozeman Creek Watershed area. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary wolverine habitat. Whitebark pine grows in the area and there are streams with westslope cutthroat trout.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>Most of the recommended wilderness areas are within inventoried roadless area in both alternatives.</p> <p>Alternative C has 2,619 acres of outstanding mineral rights and 13,069 acres of reserved rights and 479 acres of oil and gas leases. Alternative D has 11,839 acres of outstanding mineral rights and 17,245 acres of reserved rights, along with 5,385 acres of oil and gas leases. There could be potential impacts resulting from mineral actions, thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>In both alternatives four commercial communication facilities and uses currently authorized by special use authorization that would no longer be suitable uses would be modified or otherwise removed from recommended wilderness.</p> <p>In alternative C, rental use of the Windy Pass cabin would continue to be a suitable use. Rental use of the three cabins in of alternative D would no longer be a suitable use.</p> <p>The motorized and mechanized trail transport listed would not be suitable in recommended wilderness area for alternatives C and D.</p> <p>In alternative C, winter motorized transport would no longer be suitable on 2,060 acres. In alternative D, winter motorized transport would no longer be suitable on 24,956 acres.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area. The boundaries for each alternative were primarily designed as a result of public comments.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include, under both alternatives:</p> <ul style="list-style-type: none"> • The naturalness of the area is high in many places where it is affected primarily by natural forces, has mostly intact ecological integrity. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include, under both alternatives:</p> <ul style="list-style-type: none"> • The recommended wilderness area offers some locations with opportunity for solitude. • There is high amount of primitive and/or unconfined recreation for horseback riding, hiking, backpacking, dispersed camping, and hunting.

Gallatin Crest Recommended Wilderness Area

The area description is based on the Gallatin #28 wilderness inventory polygon, which is 251,700 acres total. A 67,358 acre portion of this polygon is included as the Gallatin Crest Recommended Wilderness Area in alternative B and 77,631 acres in alternative F. This portion, and other portions of this polygon are included as the Gallatin Recommended Wilderness Area in alternatives C and D. The Gallatin Crest Recommended Wilderness Area also includes all of the 276 acre Gallatins #62 wilderness inventory polygon in both alternatives B and F.

Note: There are two different, similarly named recommended wilderness areas—“Gallatin Crest” in alternatives B and F, and “Gallatin” in alternatives C and D—with unique boundaries in all alternatives.

Table 69. Gallatin Crest Recommended Wilderness Area

Analysis Criteria	Description
Acres	67,394 acres (alternative B); 77,631 acres (alternative F).
Description of the recommended boundary – alternative B	The Gallatin Crest Recommended Wilderness Area is contiguous land within the larger boundaries of the Hyalite Porcupine Buffalo Horn Wilderness Study Area. The boundary follows the forest boundary with Yellowstone National Park to the south, buffers motorized trails and roads in the southwest, follows the wilderness study area boundary in the northwest, to the north follows section lines, creeks and forest boundaries with private ownership to the east. Private or State land ownership within the boundary is excluded from the recommended wilderness area.
Description of the recommended boundary – alternative F	The Gallatin Crest Recommended Wilderness Area is contiguous land within the larger boundaries of the Hyalite Porcupine Buffalo Horn Wilderness Study Area. The boundary follows the forest boundary with Yellowstone National Park to the south, buffers motorized trails and roads in the southwest, follows the wilderness study area boundary in the northwest, and to the north it follows the Hyalite Recreation Emphasis Area boundary and forest boundaries with private ownership to the east. Private or State land ownership within the boundary is excluded from the recommended wilderness area.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep, with ridgetops and boundaries dropping down on either side. Vegetation includes Douglas-fir, and lesser amounts of subalpine fir, lodgepole pine, Engelmann spruce, and whitebark pine.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Current uses and management	<p>In alternative B, the recommended wilderness area is contained within the Hyalite Porcupine Buffalo Horn Wilderness Study Area and almost all within inventoried roadless area. Four grazing allotments total 7,008 acres. The area offers 84.66 miles of trail open to hiker and horse use. There are no motorized or mechanized trails. Areas mapped as a motorized winter recreation opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreation opportunity spectrum mapping, 919 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p> <p>The Forest Service currently operates the historic Windy Pass cabin as a rental cabin. Three communication uses are authorized. Two of these uses are single user sites located on Steamboat Mountain and Twin Peaks. Northwestern Energy has authorization for the operation of a microwave facility on Steamboat Mountain. The facility consists of a small, 10 foot by 10 foot metal building, a 20 foot antennae and associated solar panels. Qwest Corporation has an authorization for operation of two, 24 foot by 30 foot, passive reflectors on Twin Peaks. The two reflectors are used for microwave telephone relay. The third site is a Forest Service owned building and tower on Eaglehead. Gallatin County, Montana Department of Transportation and a private commercial user are co-located in this Forest Service building and provide additional communication services from this site.</p> <p>In alternative F, much is the same as alternative B with the following exceptions. There are 100 miles of trail open currently to hiker and horse use. There are three grazing allotments totaling 7,652 acres. Per the winter recreation opportunity spectrum mapping, no acres are currently open to snowmobiling.</p>
Description of the wilderness characteristics	<p>Natural Quality – Outside of areas with grazing, the majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Repeated natural fires occurred across portions of the area since 2000.</p> <p>Undeveloped – In alternative B, there are four separate grazing allotments, with a 0.2 mile segment of fence, 0.7 mile of water pipeline, and four water developments. In alternative F, there are three grazing allotments, with 0.1 mile of fence, and just over one-half mile of water pipeline. However, the majority of this area is undeveloped and not affected by human intervention. Grazing permittees may be authorized motorized transport for administration of their allotment. Under alternative B only, the communication facilities within the recommended wilderness area would continue.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, and hunting.</p> <p>Solitude – There is opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance.</p> <p>Other Features of Value – All of this recommended wilderness area would also have the management direction of the Hyalite Porcupine Buffalo Horn Wilderness Study Area in effect, unless that direction was changed by Congress. The area includes secure habitat for grizzly bear, critical habitat for lynx, primary habitat for wolverine, and contains streams with Yellowstone and westslope cutthroat trout. Whitebark pine is located in the area.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The recommended wilderness area is almost entirely within inventoried roadless area.</p> <p>In alternative B only, winter motorized recreation would remain a suitable use on 919 acres with a winter motorized recreational opportunity spectrum.</p> <p>Rental use of the Windy Pass cabin would no longer be a suitable use in alternatives B and F. The existing communication uses would continue to be suitable uses only in alternative B. There are 1,804 acres of outstanding mineral rights in alternatives B and F, and 3,823 acres of reserved mineral rights in alternative B, with 6,799 in alternative F. There could be potential impacts resulting from mineral actions, thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>The area was included due to factors such as potential resource threats, existing uses, public input and public values, and manageability.</p> <p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • For the majority of the recommended wilderness area, naturalness is very high as it is affected primarily by natural forces, and has mostly intact ecological integrity. • The undeveloped quality of the area is very high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There is high amount of primitive and/or unconfined recreation for horseback riding, hiking, backpacking, dispersed camping, and hunting.

Lionhead Recommended Wilderness Area

The Lionhead Recommended Wilderness Area was included in the 1987 Gallatin Forest Plan. The area description is based on the Henrys #39 wilderness inventory polygon, which is 43,759 acres total. Portions of this polygon are included as a recommended wilderness area in alternatives A, B, C, and D; however, the boundaries are different for each alternative.

Table 70. Lionhead Recommended Wilderness Area

Analysis Criteria	Description
Acres	20,774 acres (alternative A); 17,983 acres (alternative B); 15,738 acres (alternative C); 31,389 acres (alternative D).
Description of the recommended boundary – alternative A	In alternative A, the recommended wilderness area is contiguous land that follows the 1987 Gallatin Forest Plan boundary for this recommended wilderness area. The boundary follows the forest boundary (with the Caribou-Targhee National Forest) to the south, section and half section lines to the west, the Earthquake Lake Geologic Area to the north, follows topographic features such as ridgelines and a buffered trail 215 to the east.
Description of the recommended boundary – alternative B	In alternative B, the recommended wilderness area is contiguous land that follows the boundaries described above except where the southwestern boundary is buffered from (and excludes) the Continental Divide National Scenic Trail corridor.
Description of the recommended boundary – alternative C	In alternative C, the recommended wilderness area follows the same boundaries as alternative B, except the recommended wilderness area is split into two separate pieces, bisected by a Sheep Creek/Coffin Creek trail corridor, which is excluded from the recommended wilderness area.
Description of the recommended boundary – alternative D	In alternative D, the recommended wilderness area is contiguous land that follows a longer forest boundary with the Caribou-Targhee National Forest to the south, the forest boundary to the west except where trailheads are buffered, a longer boundary with Earthquake Lake to the north and section lines to the east.
Description of the geography, topography, and vegetation	Much of the area is moderately steep to very steep, climbing to the top of Lionhead Mountain. There are broad open meadows at higher elevations with views of Hebgen Lake and the surrounding area. While much of the high elevations are open, vegetation is a mix of subalpine fir and Douglas-fir, then lesser amounts of dry grass, lodgepole pine, and Engelmann spruce.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Current uses and management	<p>The entire recommended wilderness area is within inventoried roadless area in alternatives A, B, and C; 94 percent of the recommended wilderness area is within inventoried roadless area in alternative D.</p> <p>The alternative A recommended wilderness area was included in the 1987 Gallatin Forest Plan. Alternatives B and C are within the boundaries of that Gallatin Forest Plan Recommended Wilderness Area and alternative D is larger than the Gallatin Forest Plan Recommended Wilderness Area.</p> <p>There are 295 acres within a vacant grazing allotment in alternative A, 5 acres in alternative B, no acres in alternative C, and 1,043 acres in two grazing allotments in alternative D.</p> <p>There are approximately 17.52 total miles of trail in alternative A, all of which are currently open to mountain bikes; 10.91 total miles in alternative B, all open to mountain bikes; 1.5 total miles in alternative C all open to mountain bikes, and 34.77 miles in alternative D, with 5.22 miles open to all-terrain vehicles and 29.55 non-motorized miles open to mountain bikes.</p> <p>In all alternatives backcountry skiing is popular in places. In alternatives A, B, and C, there are no existing winter motorized activities present. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, in alternative D there are 6,240 acres currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.</p>
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. Most of this area has intact ecological integrity and generally appears to reflect ecological conditions that would be associated with the area without human intervention.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport. Under alternative A there are 295 acres of a vacant grazing allotment that is held as a forage reserve area, with no infrastructure. In alternative B there is a very minor portion of vacant allotment and minor amount of primary range and alternative C has no allotments. There are two allotments in the boundaries of alternative D, a major portion of the allotment and primary range along with a total of 3.8 miles fence.</p> <p>Unconfined and/or primitive recreation – This area offers unconfined and primitive recreation opportunities: horseback riding, hiking, backpacking, dispersed camping, hunting, and backcountry skiing.</p> <p>Solitude – There is opportunity for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat. There are streams with westslope cutthroat trout in the area.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Much of the area has been managed as recommended wilderness since 1987.</p> <p>Under all alternatives, all or nearly all, of the area is within inventoried roadless area.</p> <p>All 18.02 miles of nonmotorized trail open to mechanized transport would still be suitable in alternative A. Mountain biking would continue to be a suitable use on 11.40 trail miles in alternative B. In alternative C, most of the trails used by mountain bikes have been excluded from the recommended wilderness area; mountain bike use would no longer be suitable on about 1.49 miles of trail to Coffin Lake. In alternative D, all-terrain vehicle use would no longer be suitable on about 5.22 miles of trail, and mountain bike use would no longer be suitable on about 30.04 miles of trail.</p> <p>Using the winter recreational opportunity spectrum discussion from above, winter motorized transport would no longer be suitable on 6,240 acres.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>Much of this area was previously included as a recommended wilderness area in the 1987 Gallatin Forest Plan. There were public comments received in favor of recommended wilderness area designation for this area; the topic of existing mountain bike use on trails in the area was discussed by many public commenters.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is very high as it is affected primarily by natural forces, has mostly intact ecological integrity. • The undeveloped quality of the area is very high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There is high amount of primitive and/or unconfined recreation for horseback riding, hiking, backpacking, dispersed camping, hunting, and backcountry skiing.

Sawtooth Mountain Recommended Wilderness Area

The area description is based on the Gallatin #28 wilderness inventory polygon, which is 251,700 acres total. Portions of this polygon are included in the Sawtooth Recommended Wilderness Area in alternatives B and F. Portions of this polygon are included in the Gallatin Crest Recommended Wilderness Area in alternative D, and the Gallatin Recommended Wilderness Area in alternatives C and D. The land in the Sawtooth Recommended Wilderness Area is included in the Gallatin Recommended Wilderness Area in alternatives C and D.

Table 71. Sawtooth Mountain Recommended Wilderness Area

Analysis Criteria	Description
Acres	14,828 acres (alternative B); 14,461 acres (alternative F).
Description of the recommended boundary – alternative B	The recommended wilderness area is contiguous land that shares its long southern boundary with Yellowstone National Park. The western boundary follows private ownership boundaries and the northern boundary follows the forest boundary and private ownership boundaries. The eastern boundary follows sections lines and private ownership boundaries.
Description of the recommended boundary – alternative F	The recommended wilderness area is contiguous land that shares its long southern boundary with Yellowstone National Park. The western boundary follows private ownership boundaries. Compared to alternative B, the recommended wilderness area is about 45 acres smaller on the western portion to exclude a larger area around Sheep Mountain communication site. The northern boundary follows the forest boundary and private ownership boundaries. The eastern boundary follows sections lines and private ownership boundaries.
Description of the geography, topography, and vegetation	The western portion includes Sawtooth Mountain and Shooting Star Mountain along with several creek drainages. Existing vegetation includes Douglas-fir, subalpine fir, and lodgepole pine, then lesser amounts of Engelmann spruce and whitebark pine.
Current uses and management	Ninety-three percent of the recommended wilderness area is within inventoried roadless area. Four grazing allotments total 10,728 acres in alternative B and 10,687 acres in alternative F. There are 8.82 miles of nonmotorized trails also open to mechanized transport, however current access to those trails from national forest is difficult due to private land ownership patterns. Bicycles are not allowed to enter through the Yellowstone National Park section of trails. None of this recommended wilderness area is within the Hyalite Porcupine Buffalo Horn Wilderness Study Area. There is no current winter motorized transport.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area has been grazed under allotments, with vegetation condition class showing the majority of the area departed from historical vegetation conditions.</p> <p>Undeveloped – There are four grazing allotments within recommended wilderness area and a total of 0.5 mile of fence in both alternatives. Motorized use for the grazing permittee may be authorized to maintain their allotment. There is no recreational motorized transport.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities for cross country travel and use of three trails. Current trails are suitable for mechanized transport and would continue to be suitable in alternative B. However, since public access to these trails is only open from within Yellowstone National Park where bicycles are prohibited, mountain bike riders cannot access the trail systems. In alternative F, those trails would no longer be suitable for mountain bikes within the recommended wilderness boundaries.</p> <p>Solitude – There are opportunities for solitude as the sights and sounds of human activities and improvements are screened by topography or do not have impact due to distance. Areas that are closer to the boundaries with private lands may have less opportunity. There is a communication site just outside the southern boundary with Yellowstone National Park, which may receive occasional maintenance trips by helicopter.</p> <p>Other Features of Value – The western portion of the recommended wilderness area includes part of the Gallatin Petrified Forest. Several of the trails continue into Yellowstone National Park. The area includes secure habitat for grizzly bear, critical habitat for lynx, and primary habitat for wolverine, and also contains streams with Yellowstone cutthroat trout. Whitebark pine is located in the area.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>Approximately 93 percent of the recommended wilderness area is within inventoried roadless area. Ongoing grazing would continue in the recommended wilderness area, including motorized access.</p> <p>There are 604 acres of outstanding mineral rights and 4,667 acres of reserved mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted. Under alternative B only, access for bikes remains technically allowed, but on the ground access is not provided.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>The area was included due to factors such as potential resource threats, existing uses, public input and public values, and manageability.</p> <p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area has had vegetation affected by lack of natural fire and grazing. • Range fencing and water development infrastructure development are noted. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Spanish Peaks East Recommended Wilderness Area

The area description is based on the Madisons #21 wilderness inventory polygon, which is 10,235 acres total. Portions of this polygon are included as a recommended wilderness area in alternative D.

Table 72. Spanish Peaks East Recommended Wilderness Area

Analysis Criteria	Description
Acres	5,861 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land, which is a narrow area bordered by the Lee Metcalf Wilderness to the west and Gallatin Canyon to the east, private inholdings to the north and a trail junction to the south.
Description of the geography, topography, and vegetation	A river corridor, it is generally timbered and steep with current vegetation dominantly Douglas-fir.
Current uses and management	The area is 97 percent inventoried roadless area. Most of this area is in the Gallatin Canyon Day Use Area and is closed to camping and overnight use. There are no grazing allotments. It contains a total of 8.24 miles of hiker and horse use only trail. The trails are all closed to mechanized and motorized transport as they are portals to the wilderness. There is no winter motorized recreation transport.
Description of the wilderness characteristics	<p>Natural Quality – Most of the area would appear natural, although 65 percent of the area has moderate to high departure from historical vegetation conditions. Due to the shared boundaries with private lands, this area likely has had few natural fires allowed to burn, thus contributing to the change in natural vegetation conditions.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no motorized transport.</p> <p>Unconfined and/or primitive recreation – This area offers nonmotorized, hiker and horse trail access.</p> <p>Solitude – There are significant sights and sounds from the recreation activities and Highway 191, but areas closer to the Lee Metcalf Wilderness boundary should offer better opportunities for solitude.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>The area is 97 percent inventoried roadless area.</p> <p>There are 617 acres of outstanding mineral rights. There could be potential impacts resulting from mineral actions, thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>There is no current recreational motorized or mechanized transport.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area has had vegetation affected by lack of natural fire. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • There are opportunities for solitude. • The area offers primitive and/or unconfined recreation for horseback riding, hiking, backpacking, but not overnight camping due to restrictions in place for Gallatin Canyon.

Spanish Peaks South Recommended Wilderness Area

The area description is based on three wilderness inventory polygons: Madisons #64 (160 acres), Madisons #65 (80 acres), and Madisons #66 (2,951 acres), which is 3,191 acres total. All of Madisons #64 and #65, as well as a portion of Madisons #66 polygons, are included as a recommended wilderness area in alternative D.

Table 73. Spanish Peaks South Recommended Wilderness Area

Analysis Criteria	Description
Acres	2,845 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is comprised of three nearly adjacent separate parts, sharing a northern and eastern boundary with the Spanish Peaks unit of Lee Metcalf Wilderness. The south and western boundaries follow the forest boundary, private property boundaries and a road buffer. The northwest portion is 2,605 acres, the central 80 acres and the south east portion 160 acres.
Description of the geography, topography, and vegetation	Slopes are steep with patchy timber. Current vegetation is a mix of whitebark pine, subalpine fir, lodgepole, and Engelmann spruce.
Current uses and management	Virtually all of this area is within inventoried roadless area. There are no summer motorized trails. There are 4.79 total miles trail in the recommended wilderness area with 1.62 miles are non-motorized trail open to mechanized transport. The remaining 3.17 are open to hiker and horse use only. There are no grazing allotments. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 230 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is natural appearing, with most of the vegetation classified as moderate or below in the amount of departure from historical vegetation conditions.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There is no summer motorized transport.</p> <p>Unconfined and/or primitive recreation – This area offers nonmotorized recreation, however the 1.6 miles of current mechanized transport would no longer be suitable in alternative D.</p> <p>Solitude – This area is adjacent to the Big Sky town and ski area. Private homes and roads are apparent. A Nordic ski center is also adjacent, groomed ski trails are in close proximity.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary wolverine habitat. Whitebark pine grows in some of the area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
<p>The ability to protect and manage the area to preserve its wilderness characteristics</p>	<p>Almost all of this recommended wilderness area is within inventoried roadless area.</p> <p>There are 120 acres of oil and gas leases. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>The long boundary shared with highly developed and utilized private lands, and the management complexities associated with municipal boundaries would detract from the area's manageability as wilderness and could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>There is no summer motorized transport. About 1.6 miles of trail would no longer be suitable for mechanized transport in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 230 acres in alternative D.</p>
<p>Summary of the factors considered and the process used in evaluating the area and developing the alternatives</p>	<p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
<p>Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System</p>	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high as it is affected primarily by natural forces, with mostly intact ecological integrity. • The undeveloped quality of the area is high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • There are areas that provide opportunities for solitude. • There are opportunities for primitive and/or unconfined recreation.

Taylor Hilgard Recommended Wilderness Area

The area description is based on the Madisons #12 wilderness inventory polygon, which is 111,565 acres total. A portion of this polygon is included as the Taylor Hilgard Recommended Wilderness Area in alternatives B, C, D, and F. The boundary is the same for alternatives B, D, and F, and larger in alternative C. Other portions of this polygon are included as the Cabin Creek North Recommended Wilderness Area and the Cabin Creek South Recommended Wilderness Area in alternative D.

Table 74. Taylor Hilgard Recommended Wilderness Area

Analysis Criteria	Description
Acres	4,466 acres (alternatives B, D and F); 6,824 acres (alternative C).
Description of the recommended boundary – alternatives B, D, and F	The recommended wilderness area is contiguous land. The northern boundary is adjacent the Taylor Hilgard Unit of the Lee Metcalf Wilderness. The southern boundary buffers by one half mile Highway 287 which parallels Earthquake Lake. The western boundary follows the forest boundary and the eastern buffers a road along Beaver Creek.
Description of the recommended boundary – alternatives C	The recommended wilderness area is contiguous land. The boundaries are similar to alternative B and D, however the width of the buffers from roads to the east and south have been reduced resulting in 2,358 acres added to the recommended wilderness area, as proposed by the Gallatin Forest Partnership.
Description of the geography, topography, and vegetation	This area is very steep, rising up from the edge of the highway to the ridgeline above. Current vegetation composition is 25 percent subalpine fir, 20 percent Engelmann spruce, 15 percent Douglas-fir, the remainder dry grass, and transitional forest.
Current uses and management	In alternatives B, D, and F, the entire area is within inventoried roadless area; in alternative C it is 89 percent within inventoried roadless area. No summer-use trails are within the area. There are no grazing allotments. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping for alternatives B, C, D, and F boundaries all acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access, or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – The majority of this area is very natural appearing and the current vegetation is primarily affected by natural ecological processes. There is no history of grazing allotments. Most of the area is within the historical vegetation conditions.</p> <p>Undeveloped – The majority of this area is undeveloped and not affected by human intervention. There are no trails.</p> <p>Unconfined and/or primitive recreation – This area has unconfined and primitive recreation opportunities, for summer off-trail use, however the steep terrain may limit access.</p> <p>Solitude – There is opportunity for solitude. Under alternative C, where areas are adjacent to the highway, there would be more impact of sights and sounds.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and primary habitat for wolverine. Whitebark pine is located in the area.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
The ability to protect and manage the area to preserve its wilderness characteristics	<p>All of the recommended wilderness area in alternatives B, D, and F, and 89 percent of the recommended wilderness area in alternative C, is within inventoried roadless area.</p> <p>Winter motorized transport would remain a suitable use on the 4,466 acres in alternative B. Winter motorized transport would no longer be suitable on 6,824 acres in alternative C, and on 4,466 acres in alternatives D and F.</p> <p>There is no summer motorized transport. The area is adjacent to designated wilderness with limited summer access.</p>
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	<p>The area was included due to factors such as potential resource threats, existing uses, public input and public values, and manageability.</p> <p>There were public comments received in favor of recommended wilderness area designation for this area.</p>
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The naturalness of the area is high as it is affected primarily by natural forces, and has mostly intact ecological integrity. • The undeveloped quality of the area is very high. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area offers opportunity for solitude. • There are opportunities for primitive and/or unconfined recreation.

Yankee Jim Lake Recommended Wilderness Area

The area description is based on the Gallatins #2 wilderness inventory polygon, which is 8,199 acres total. A portion of this polygon is included as a recommended wilderness area in alternative D.

Table 75. Yankee Jim Lake Recommended Wilderness Area

Analysis Criteria	Description
Acres	6,292 acres (alternative D).
Description of the recommended boundary – alternative D	The recommended wilderness area is contiguous land. The north, east and south boundaries buffer powerlines and roads. The western boundary follows the forest boundary and private land boundaries and in places uses straight lines to cut diagonally across sections.
Description of the geography, topography, and vegetation	Much of the area is moderately steep and includes Sphinx Mountain and Yankee Jim Lake. Existing vegetation includes mostly Douglas-fir forest, along with dry grass.
Current uses and management	About 60 percent of the recommended wilderness area is within an inventoried roadless area. Grazing allotments cover 4,281 acres. There are a total of 1.45 miles of trail, all is non-motorized trail open to mechanized transport. Areas mapped as a motorized winter recreational opportunity spectrum are open to winter recreation activities such as snowmobiling. Per the winter recreational opportunity spectrum mapping, 107 acres are currently open to snowmobiling. It should be noted that this is a mapping exercise. The acreage calculations do not consider topography, access or consistent snow. It only reflects the number of acres legally open to snowmobiling, whether the terrain is accessible by snowmobile or not.
Description of the wilderness characteristics	<p>Natural Quality – Ninety percent of the vegetation is classified as in moderate to high departure from historical vegetation conditions. There are almost thirty acres of noxious weeds inventoried and much of the area is grazed.</p> <p>Undeveloped – There are three allotments in the recommended wilderness area, with a total of 13 miles of fence, and six water developments.</p> <p>Unconfined and/or primitive recreation – This area has two miles of a trail open to hiker, horse and mountain bikes.</p> <p>Solitude – This area is located along the west side of the Yellowstone River corridor, a major byway into Yellowstone National Park and is surrounded by private lands. As it is not adjacent to designated wilderness, the relatively small area does not lend itself to opportunities for solitude.</p> <p>Other Features of Value – The area includes secure habitat for grizzly bear and critical habitat for lynx.</p>
The ability to protect and manage the area to preserve its wilderness characteristics	<p>About 60 percent of the recommended wilderness area is within an inventoried roadless area.</p> <p>A long segment of boundary shared with private ownership could influence the ability to allow natural fire within the recommended wilderness area.</p> <p>Managing for wilderness character would be difficult with the heavy adjacent infrastructure associated with Highway 89 south, and private lands nearly surrounding the recommended wilderness area.</p> <p>There are 1,370 acres, (about 20 percent of the area), with outstanding mineral rights. There could be potential impacts resulting from mineral actions thereby detracting from existing wilderness characteristics. It is not predictable whether these rights would be exerted.</p> <p>There are no summer motorized transport. About 1.45 miles of trail would no longer be suitable for mechanized transport in alternative D. Using winter recreational opportunity spectrum as described above, winter motorized transport would no longer be suitable on 107 acres.</p>

Appendix D: Recommended Wilderness Analysis

Analysis Criteria	Description
Summary of the factors considered and the process used in evaluating the area and developing the alternatives	There were public comments received in favor of recommended wilderness area designation for this area.
Summary of the ecological and social characteristics that would provide the basis for suitability for inclusion in the National Wilderness Preservation System	<p>The <u>ecological characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • Most vegetation is classified as in moderate to high departure from historical vegetation conditions. • Range fencing and water development infrastructure development are noted. <p>The <u>social characteristics</u> that provide the basis for suitability include:</p> <ul style="list-style-type: none"> • The area does not offer much opportunity for solitude, with a relatively small size for an area not attached to existing wilderness. • There are opportunities for primitive and/or unconfined recreation.

Rationale for Areas not Included as Recommended Wilderness in Final Environmental Impact Statement Alternatives

Not all of the lands in the wilderness inventory are included as recommended wilderness in an alternative. The rationale for excluding wilderness inventory polygons, or portions thereof, from further analysis in any alternative in the draft environmental impact statement is documented in table 76 and table 77. Maps of all wilderness inventory polygons are provided in appendix D of the 2018 Proposed Action (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd567792.pdf).

The primary factor for including or excluding all or a portion of a wilderness inventory polygon is the future manageability of a recommended wilderness area to support management of the area for wilderness and other adjacent uses.

Per Forest Service Handbook 1909.12, Chapter 70, each area recommended as wilderness in any alternative considered in detail must have a clearly defined boundary that supports management of the area for wilderness and other adjacent uses. Boundaries should be easy to identify and locate on the ground and may use locatable natural features (such as ridges and perennial streams), locatable human features and setbacks from locatable human features (such as roads, trails, and powerlines), boundary lines, section lines, lines between locatable points, or a metes and bounds survey.

Proposed recommended wilderness area boundaries were buffered from adjacent roads or trails to provide a manageable buffer for road or trail maintenance. Non national forest lands may also have been excluded from recommended wilderness areas. Once manageable boundaries were established, some areas larger than 5,000 acres in the wilderness inventory were smaller than 5,000 acres; too small to be recommended wilderness area.

Many areas less than 5,000 acres were included in wilderness inventory because they are attached to existing designated wilderness or lands managed as wilderness by other Federal agencies. Small areas attached to other Federal lands tend to be surrounded by non-wilderness use and difficult to manage for wilderness character.

Small additions to existing designated wilderness areas would result in less manageable boundaries than the boundaries in existence for the past 30 years, unless small additions are well defined blocks of land.

In addition, the wilderness character of some wilderness inventory areas in the Sioux, Ashland, and Pryor Mountain geographic areas is affected by the density of all motor vehicle trails, which are under permit for motorized access for grazing infrastructure, and may be through-routes used for access beyond the forest boundary.

Table 76 displays the rationale for excluding all acres within 40 of the 80 wilderness inventory polygons from any alternative.

Table 76. Wilderness inventory polygons not analyzed for recommended wilderness

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Acres	Rationale
Sioux	Sioux 3	5,235	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area.
Sioux	Sioux 29	8,515	Wilderness characteristics were affected by: density of all motor vehicle trails, trails under permit for motorized access for grazing infrastructure, through-routes used for access beyond the forest boundary, and an isolated road in center of polygon.
Ashland	Ashland 14	12,218	Wilderness characteristics affected by: density of all motor vehicle trails under permit for grazing access, through routes used for access beyond the forest boundary, and roads extending into polygon.
AB	AB 8	9,170	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area. Even though small remaining areas were adjacent to wilderness, they would not enhance manageability.
AB	AB 17	5,085	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area.
AB	AB 18	5,660	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area. Even though small remaining areas were adjacent to wilderness, they would not enhance manageability.
AB	AB 20	7,772	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area.
AB	AB 46	268	This small area would not enhance the manageability of the adjacent wilderness.
AB	AB 48	94	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone wilderness.
AB	AB 50	406	This small area would not enhance the manageability of the adjacent wilderness.
AB	AB 54	1,249	This small area would not enhance the manageability of the adjacent wilderness.
AB	AB 63	649	This small area is very narrow after buffering the adjacent road and powerline, and would not enhance the manageability of the adjacent wilderness.
AB	AB 67	1,556	The area becomes smaller and narrower after buffering adjacent roads, and would not enhance the manageability of the adjacent wilderness.
AB	AB 68	30	Very small and the addition would not enhance the manageability of the adjacent existing Absaroka Beartooth Wilderness, bringing roads closer to the wilderness.
AB	AB 69	21	This very small area would not enhance the manageability of the adjacent wilderness, bringing roads closer to the wilderness.

Appendix D: Recommended Wilderness Analysis

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Acres	Rationale
AB	AB 70	16	This very small area would not enhance the manageability of the adjacent wilderness, bringing roads closer to the wilderness.
AB	AB 71	378	This very small area would not enhance the manageability of the adjacent wilderness, bringing roads closer to the wilderness.
AB	AB 72	2,035	The area becomes smaller and narrower after buffering adjacent roads, and would not enhance the manageability of the adjacent wilderness.
AB	AB 74	4,323	The area becomes a small, narrow polygon after buffering roads and pipelines, and would not enhance the manageability of the adjacent wilderness.
AB	AB 79	349	This very small area would not enhance the manageability of the adjacent wilderness.
AB	AB 83	2,536	The area becomes even smaller and narrower after buffering roads, and would not enhance the manageability of the adjacent wilderness
AB	AB 85	1,941	The area becomes even smaller and narrower after buffering roads, and would not enhance the manageability of the adjacent wilderness.
AB	AB 94	993	The area becomes even smaller and narrower after buffering roads, and would not enhance the manageability of the adjacent wilderness
BBC	Crazies 38	6,885	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area.
MHG	Gallatins 19	7,853	After roads were buffered, the remaining area was not large enough for a stand-alone recommended wilderness area.
MHG	Gallatins 24	6,065	After roads were buffered, the remaining area was not large enough for a stand-alone recommended wilderness area.
MHG	Gallatins 31	5,193	After roads were buffered, the remaining area was not large enough for a stand-alone recommended wilderness area.
MHG	Gallatins 55	40	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Gallatins 56	609	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Madisons 76	632	The small addition would not enhance the manageability of the adjacent wilderness as it is bounded on three sides by private lands.
MHG	Hebgen 4	5,680	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area.
MHG	Hebgen 40	271	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Hebgen 41	93	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Hebgen 42	36	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Hebgen 43	7	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.

Appendix D: Recommended Wilderness Analysis

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Acres	Rationale
MHG	Hebgen 44	364	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Hebgen 45	297	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Hebgen 81	1,097	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Hebgen 82	3,579	The area adjacent to Yellowstone National Park is too small to be manageable as a stand-alone recommended wilderness area.
MHG	Henrys 5	7,453	After adjacent roads were buffered, the remaining area was not large enough to qualify as a stand-alone recommended wilderness area.

*AB = Absaroka Beartooth Mountains; BBC = Bridgers, Bangtail, and Crazy Mountains; MHG = Madison, Henrys Lake, and Gallatin Mountains

Table 77 below displays the alternatives in which 40 of the 80 wilderness inventory polygons are included, and the partial acreages of these polygons which are not included in any alternative. The acreage not included in any alternative is the area omitted to create a manageable boundary, by following natural features, property lines, or buffering roads, powerlines or other features. Where relevant, additional rationale is provided.

Table 77. Wilderness inventory polygons included (in whole or in part), in alternatives A, B, C, D, or F

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Total Acres	Polygon Acres not Analyzed in any Alternative	Inventoried Polygon Inclusion in Alternatives
Ashland	Ashland 22	22,920	6,037	Alternative D: 16,883 acres included in Tongue River Breaks Recommended Wilderness Area. The boundary follows the 1986 Low Development Area boundary; using this boundary avoids including additional infrastructure in the recommended wilderness area.
Ashland	Ashland 33	12,691	2,897	Alternative D: 9,794 acres included in Cook Mountain Recommended Wilderness Area. The boundary follows the 1986 Low Development Area boundary; using this boundary avoids including additional infrastructure in the recommended wilderness area.
Ashland	Ashland 95	10,502	0	Alternative D: 10,502 acres included in King Mountain Recommended Wilderness Area.
Pryors	Pryors 1	13,547	1,602	Alternatives A, B, C: 6,797 acres; Alternative D: 11,929 acres, and alternative F: 7,692 acres included in Lost Water Canyon Recommended Wilderness Area.

Appendix D: Recommended Wilderness Analysis

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Total Acres	Polygon Acres not Analyzed in any Alternative	Inventoried Polygon Inclusion in Alternatives
Pryors	Pryors 9	41,976	18,873	Alternatives D and F: 10,366 acres included Bear Canyon Recommended Wilderness Area. Alternative D: 12,737 acres included in Big Pryor Recommended Wilderness Area. Wilderness characteristics in remaining area were affected by density of all motor vehicle trails, including through-routes used for access beyond the forest boundary.
Pryors	Pryors 10	8,125	359	Alternative D: 7,766 acres included in Punch Bowl Recommended Wilderness Area.
Pryors	Pryors 96	1,152	90	Alternative D: 1,062 acres included in Lost Water Canyon Recommended Wilderness Area.
AB	AB 6	32,983	7,180	Alternative A: 809 acres; Alternative B and C: 801 acres; Alternative D: 25,803 acres included in Line Creek Plateau Recommended Wilderness Area.
AB	AB 7	7,259	4,082	Alternative D: 3,177 acres included in Phelps Creek Recommended Wilderness Area.
AB	AB 11	34,613	10,104	Alternatives A, B, C, F: 802 acres included in Timberline (formerly named Red Lodge/Hell Roaring) Recommended Wilderness Area; Alternative A: 3,917 acres in Burnt Mountain Recommended Wilderness Area; Alternative D: 12,039 acres included in Red Lodge Creek Recommended Wilderness Area and 12,470 acres in West Fork Rock Creek Recommended Wilderness Area.
AB	AB 15	56,221	23,816	Alternative D: 7,036 acres in Chico Peak Recommended Wilderness Area, 9,540 acres in Dome Mountain Recommended Wilderness Area, and 15,829 acres in Emigrant Peak Recommended Wilderness Area.
AB	AB 16	24,886	7,464	Alternatives A, B, C: 114 acres in Mystic Recommended Wilderness Area. Alternative D: 17,422 acres in East Rosebud to Stillwater Recommended Wilderness Area.
AB	AB 23	13,037	1,440	Alternative D: 11,597 acres include in Strawberry Creek Recommended Wilderness Area.
AB	AB 26	5,375	2,536	Alternative D: 2,839 acres included in Mount Rae Recommended Wilderness Area.
AB	AB 30	7,969	2,083	Alternative D: 5,886 acres included in Tie Creek Recommended Wilderness Area.
AB	AB 32	129,575	44,135	Alternative D: 85,444 acres included in Deer Creek Recommended Wilderness Area.
AB	AB 52	2,460	1,525	Alternative D: 935 acres included in Deckard Flats Recommended Wilderness Area.
AB	AB 57	1,643	842	Alternatives B, C and D: 801 acres included in Line Creek Plateau Recommended Wilderness Area.
AB	AB 73	2,725	1,634	Alternative D: 1,091 acres included in West Woodbine Recommended Wilderness Area.
AB	AB 77	1,109	552	Alternative D: 557 acres included in Sheep Creek Recommended Wilderness Area.

Appendix D: Recommended Wilderness Analysis

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Total Acres	Polygon Acres not Analyzed in any Alternative	Inventoried Polygon Inclusion in Alternatives
AB	AB 78	36	0	Alternative D: 36 acres included in North Fork Recommended Wilderness Area.
AB	AB 80	388	0	Alternative A, B, C: 388 acres included in Republic Recommended Wilderness Area. Alternative D: 362 acres included in Republic Recommended Wilderness Area.
AB	AB 84	2,497	1,274	Alternative D: 1,223 acres included in Knowles Peak Recommended Wilderness Area.
AB	AB 93	136	0	Alternatives A, B, C: 132 acres included in Mystic Recommended Wilderness Area. Alternative D: 136 acres included in Mystic Recommended Wilderness Area.
BBC	Bridgers 34	41,500	15,394	Alternative D: 26,106 acres included in West Bridger Recommended Wilderness Area.
BBC	Bridgers 35	12,453	6,302	Alternative D: 6,151 acres included in Blacktail Peak Recommended Wilderness Area.
BBC	Crazies 36	35,664	5,938	Alternative D: 29,726 acres included in Crazy Mountains Recommended Wilderness Area. Alternative F: 10,257 acres included in South Crazy Mountains Recommended Wilderness Area.
BBC	Crazies 37	48,141	18,231	Alternative D: 29,910 acres included in Crazy Mountains Recommended Wilderness Area.
MHG	Gallatins 2	8,199	1,907	Alternative D: 6,292 acres included in Yankee Jim Lake Recommended Wilderness Area.
MHG	Gallatins 28	251,700	56,317	Alternative B: 67,358 acres in Gallatin Crest Recommended Wilderness Area and in alternatives B and D 14,828 acres in Sawtooth Mountain Recommended Wilderness Area. Alternative C: 99,139 acres in Gallatin Recommended Wilderness Area. Alternative D: 193,709 acres included in Gallatin Recommended Wilderness Area. Alternative F: 77,631 acres in Gallatin Crest Recommended Wilderness Area and 14,461 in Sawtooth Recommended Wilderness Area.
MHG	Gallatins 62	276	0	Alternative B and F: 276 acres in Gallatin Crest Recommended Wilderness Area; Alternative C and D: 276 acres included in Gallatin Recommended Wilderness Area.
MHG	Madisons 12	111,565	68,377	Alternative B and F: 4,466 acres; Alternative C: 6,824 acres in Taylor Hilgard Recommended Wilderness Area. Alternative D: 17,092 acres in Cabin Creek North and 19,272 acres in Cabin Creek South and 4,466 acres included in Taylor Hilgard Recommended Wilderness Area.
MHG	Madisons 13	42,646	13,680	Alternative D: 28,966 acres included in Buck Creek Recommended Wilderness Area.
MHG	Madisons 21	10,235	4,374	Alternative D: 5,861 acres included in Spanish Peaks East Recommended Wilderness Area.

Appendix D: Recommended Wilderness Analysis

Geographic Area*	Wilderness Inventory Polygon Name	Wilderness Inventory Polygon Total Acres	Polygon Acres not Analyzed in any Alternative	Inventoried Polygon Inclusion in Alternatives
MHG	Madisons 25	17,588	1,170	Alternative C: 15,536 acres and D: 14,357 acres included in Cowboy Heaven Recommended Wilderness Area.
MHG	Madisons 64	160	0	Alternative D: 160 acres included in Spanish Peaks South Recommended Wilderness Area.
MHG	Madisons 65	80	0	Alternative D: 80 acres included in Spanish Peaks South Recommended Wilderness Area.
MHG	Madisons 66	2,951	346	Alternative D: 2,605 acres included in Spanish Peaks South Recommended Wilderness Area.
MHG	Madisons 75	11	0	Alternative D: 11 acres included in Cowboy Heaven.
MHG	Henrys 39	43,759	12,296	Alternative A: 20,774 acres; Alternative B: 17,983 acres; Alternative C: 15,738 acres; Alternative D: 31,389 acres included in Lionhead Recommended Wilderness Area.
Totals		1,060,753	342,857	Of those polygons that were selected to be in Alternatives A, B, C, or D, 68 percent of the land within the polygon areas were included in an alternative.

*AB = Absaroka Beartooth Mountains; BBC = Bridgers, Bangtail, and Crazy Mountains; MHG = Madison, Henrys Lake, and Gallatin Mountains

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Introduction

The Forest Service reviews the relevant planning and land use policies of other public agencies to understand and consider those agencies' objectives. The Forest Service is not required to ensure that a Forest Service land management plan is in accord with State, local or Tribal resource and land management plans. In the course of considering those agencies' objectives, however, the Forest Service considers ways the Forest Service land management plan could contribute to common objectives, address impacts, resolve or reduce conflicts, and contribute to compatibility between Forest Service and other agencies' plans.

The Custer Gallatin National Forest reviewed county growth policies and a county comprehensive plan, the City of West Yellowstone growth policy, state forest action plans, state wildlife action plans, statewide comprehensive outdoor recreation plans, Bureau of Land Management resource management plans, the Yellowstone National Park Foundation Document, and management plans for the Beaverhead-Deerlodge, Caribou-Targhee, and Shoshone national forests. Because the Helena-Lewis and Clark National Forest is undergoing plan revision, a compatibility review is not provided for that plan. Cooperating agencies contributed the review of plans within their jurisdictions.

Plans set forth a vision through desired conditions and goals, and then specify the standards, guidelines, objectives, and suitable uses to achieve this vision. This compatibility review focuses on the higher-level desired conditions (DC) and goals, rather than the more specific plan components, except where provided by a cooperating agency. The review is structured to display the most closely related plan component adjacent to the corresponding county plan component. Not all elements of another agency's plan are relevant to a land management plan. Individual sections of the Custer Gallatin National Forest's Final Environmental Impact Statement for the 2020 Land Management Plan may evaluate more specific components of the plans evaluated in this appendix, or may evaluate additional plans.

County and City Growth Policies (Montana); County Comprehensive Plan (South Dakota); and City of Bozeman, Montana Plans

In 1999, Montana passed a "growth policy" statute (MCA 76-1-601 through 76-1-606) that changed the terms "master plan" and "comprehensive plan" to "growth policy" and established minimum requirements for growth policies. A growth policy is optional and non-regulatory. Montana State statutes allow, but do not require zoning. A number of elements are required in a growth policy, including community goals and objectives; existing characteristics and projected trends; policies, regulations, and other tools to achieve the goals and objectives of the growth policy; a public infrastructure strategy; an implementation strategy; an explanation of coordination and cooperation with other jurisdictions; an explanation of subdivision decision making and public hearings process; and an evaluation of the potential for fire and wildland fire. The extent to which a growth policy addresses these elements is at the full discretion of the governing body. Ten Montana counties contain Custer Gallatin National Forest lands, and each county has a growth policy.

One county in South Dakota, Harding County, contains Custer Gallatin National Forest lands; Harding County has a county comprehensive plan. South Dakota Codified Law Title 11 Chapter 2 addresses county planning and zoning. Purposes of a county comprehensive plan are to protect and guide the physical, social, economic, and environmental development of the county; to protect the tax base; to encourage a distribution of population or mode of land utilization that will facilitate the economical and adequate provisions of transportation, roads, water supply, drainage, sanitation, education, recreation, or other public requirements; to lessen governmental expenditure; and to conserve and develop natural resources.

Growth policies and county comprehensive plans set an overall vision. The goals, objectives, policies, and strategies of growth policies and county comprehensive plans are similar to land management plan desired conditions and goals. Plan standards, guidelines, and suitability are the rules the Forest Service must follow to achieve its vision. Growth policies and county comprehensive plans do not typically contain the rules to achieve the vision. The review of compatibility of the county planning documents therefore focuses on the revised plan desired conditions and goals, rather than the objectives, standards, guidelines and suitability, except where noted by a cooperating agency. The review is structured to display the most closely related revised plan component adjacent to the corresponding county plan component. Not all elements of a county plan are relevant to a land management plan, for instance guidance for housing or industrial development. Review of the ten county growth policies and one county comprehensive plan is arranged west to east; from Madison County, Montana to Harding County, South Dakota.

Cities, as well as counties, in Montana may adopt growth policies. The growth policy for West Yellowstone, Montana is reviewed for compatibility with the revised plan because the city limits are adjacent to the national forest.

The City of Bozeman, Montana requested the Forest Service review several city plans for compatibility with the revised plan. The following city plans are reviewed for compatibility with the revised plan: Bozeman Community Plan, Integrated Water Resource Plan, 2017 Water Facility Plan Update, and Forest Management Plan. The review focuses on the city's water supply that originates on the national forest and on city-owned land in the Sourdough municipal watershed.

Madison County, Montana

Revised Plan Components	Madison County, Montana 2012 Growth Policy Components
<p>Air Quality DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses, and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p>	<p>Goal 3. The Environment. Protect the quality of our air</p>
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function, and providing for social and economic benefits.</p>	<p>Goal 3. The Environment. Protect the quality of our soils Development Policy 6. New development should be...located, designed, and scaled to preserve...any environmentally sensitive areas (such as steep slopes and erodible soils).</p>
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity. DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species. DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation. DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists. Riparian Management Zones DC-1. Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities. Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p>	<p>Guiding Principle 2. Protect our river corridors Land Use Objective (c) Keep development out of the floodplain and riparian areas. (d) Locate and design developments to maintain the water resource and water rights (in accordance with state law). Goal 3. The Environment. Protect the quality of our groundwater, surface waters, fish habitat Development Policy 2. New development should be...demonstrate that surface water and groundwater will not be degraded, according to state standards. Developments adjoining streams or lakes should use appropriate best management practices to protect water quality and riparian habitats. Development Policy 6. New development should be...located, designed, and scaled to preserve...any environmentally sensitive areas (for example, riverbank, floodplain, and critical watersheds). Land Conservation Policy 1. Land conservation/utilization activities should be... targeted towards...watershed protection including river corridors and riparian areas.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Madison County, Montana 2012 Growth Policy Components
<p>Vegetation Multiple Desired Conditions for forested and other vegetation types.</p> <p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Goal 3. The Environment. Protect the quality of our vegetation</p> <p>Development Policy 6. New development should be...located, designed, and scaled to preserve...any environmentally sensitive areas (for example, plants of special concern).</p>
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Environment Objective (f). Promote and support noxious weed control</p>
<p>Fire and Fuels Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p>	<p>Development Policy 5. New development should be evaluated according to the fire risk rating factors developed by the State of Montana (5) and the fire management objectives listed in (6). Where new development falls into high-extreme risk categories, it should be redesigned to reduce risk to the low level category. Include Madison County Subdivision Planning, Fire Protection Board and the local fire district in fire risk evaluations.</p>
<p>Wildlife DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p>	<p>Goal 3. The Environment. Protect the quality of our wildlife habitat</p> <p>Development Policy 6. New development should be...located, designed, and scaled to preserve...any environmentally sensitive areas (for example, animals of special concern and important wildlife habitat).</p> <p>Land Conservation Policy 1. Land conservation/utilization activities should be...targeted towards...important wildlife habitat.</p>
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p>	<p>Goal 2. The Economy. Strengthen the major sectors of our local economy, and diversify the economic base. Encourage the responsible development of natural resources.</p> <p>Objective (a). Support growth in agriculture, forestry, mining, renewable energy, recreation, and tourism, retirement and senior-related services, entrepreneurial enterprises, and construction activity. (b). Utilize and protect the resources which support these major economic sectors. (d). Acknowledge the economic value of the county's fisheries, wildlife, and wildlife habitat.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Madison County, Montana 2012 Growth Policy Components
<p>Cultural and Historic Resources DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices. DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Goal 3. The Environment. Protect the quality of our cultural and historic resources Development Policy 7. New development should be...designed and scaled to respect neighboring land uses, including historic resources. Land Conservation Policy 1. Land conservation/utilization activities should be...targeted towards historic preservation.</p>
<p>Infrastructure, Roads, and Trails DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>Goal 5. Public Services. Provide high-quality public services to local residents and visitors in safe, fair, and cost-effective ways.</p>
<p>Recreation Developed Recreation DC-2. Quality, well-maintained recreation facilities at key locations accommodate concentrations of use, enhance the visitor's experience, provide for a range of opportunities in various settings, public health and safety, and protect the natural resources of the area. Developed recreation sites accommodate current and appropriate new levels of recreation use and integrate accessibility for users who have disabilities. Dispersed Recreation DC-1. Dispersed opportunities are available across the Custer Gallatin for a wide variety of users where compatible with environmental resources, cultural resources, recreation settings, and social interactions such as user conflicts and crowding.</p>	<p>Goal 4. Recreation. Support a variety of recreational opportunities for both local residents and visitors Land Conservation Policy 1. Land conservation/utilization activities should be...targeted towards...areas of recreational opportunity.</p>
<p>Scenery DC-1. The forest's scenery provides for public enjoyment of the forest's varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>Goal 3. The Environment: Protect the quality of our scenic views Development Policy 8. New development should be... located, designed, and scaled to preserve scenic views and vistas from public lands and public rights-of-way. Land Conservation Policy 1. Land conservation/utilization activities should be...targeted towards...scenic views and vistas.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Madison County, Montana 2012 Growth Policy Components
<p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p> <p>DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p>	<p>Recreation objective (a) Retain public access to public lands and waters. (b). Support opportunities to create additional public access in cooperation with willing private landowners. (c). Minimize conflicts between recreationalists and private landowners. (d). Support opportunities for public/private land exchanges which will secure high-value recreational resources for public use.</p> <p>Development Policy 14. New development should...in the case of land exchanges which put public lands into private ownership, uses of a privately acquired exchange tract should reflect the prevailing land use in the area immediately surrounding the tract. The exchange of lands should not trigger more intensive land use (for example, residential development in an area of livestock grazing). Similarly, privately held leases on public lands should not introduce residential development into an area of traditional resource-based use (for example, agriculture, logging, mining, and outdoor recreation).</p>
<p>Social and Economic Sustainability</p> <p>Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Goal 6. Communication, Coordination, Citizen Participation</p> <p>Objective (b). Meet regularly with State and Federal land managers to discuss respective land use plans, management strategies, and specific projects/project proposals.</p> <p>Development Policy 17. New development should...involve consultation with appropriate land management agencies during project design and review stages, in the case of any proposed development located within two miles of public lands. Involve consultation with appropriate resource management agencies as well.</p>

Gallatin County, Montana

Revised Plan Components	Gallatin County, Montana 2003 Growth Policy Components
<p>Air Quality DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur. Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Goal. Protect Air Quality Policies: 2. Require development to demonstrate compliance with local, State and Federal air quality regulations or standards. 3. Encourage development to protect air quality and reduce particulate matter.</p>
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function, and providing for social and economic benefits. Invasive Species Goal-3. The Custer Gallatin National Forest participates in agreements and memorandums of understanding with other Federal, State or County agencies, Tribes, non-government organizations, and other partner organizations to address invasive species issues. Collaborative efforts such as “cooperative weed management areas,” “cooperative invasive species management areas,” or similar collaborative partnerships support invasive species management across the landscape.</p>	<p>Goal. Minimize Soil Erosion Policies: 1. Ensure development demonstrates compliance with local, State and Federal regulations and standards relating to soil erosion. Support erosion and sediment control measures during road construction. 2. Encourage development to comply with revegetation and weed control plans as prescribed by the Gallatin County Weed Department through proper weed management plans and memorandums of understanding.</p>

Revised Plan Components	Gallatin County, Montana 2003 Growth Policy Components
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species. DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation. DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists. DC-8. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them. DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p>	<p>Goal. Protect Water Quality Policies: 1. Minimize adverse impacts of development on rivers, streams and riparian areas. Encourage development to demonstrate adequacy of setbacks and buffers. 2. Require development to demonstrate compliance with local, State and Federal water quality regulations and standards. 3. Encourage development to mitigate adverse impacts to neighboring properties, rivers, streams and riparian areas due to runoff. 5. Encourage development to mitigate adverse impacts on wetlands, and require compliance with local, State and Federal wetland protection regulations and standards. 6. Limit development to appropriate uses in identified source water protection areas. 7. Encourage development to document efforts to protect water quality. Goal. Assure Sustained Water Quantity Policies: 1. Encourage development to assess both the immediate and the long-term, cumulative impacts on water quantity. 2. Encourage development to document adequate water quantity. Goal. Protect Important Habitat (Fish, Wildlife and Plant) Policies: 2. Encourage development to conserve important habitat. Encourage livestock operations to minimize adverse impacts on important habitat areas. Encourage development to buffer important habitat areas.</p>
<p>Vegetation Multiple Desired Conditions for forested and other vegetation types. At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Goal. Protect Important Habitat (Fish, Wildlife, and Plant) Policies: 2. Encourage development to conserve important habitat. Promote open space corridors for identified wildlife migration corridors. Encourage livestock operations to minimize adverse impacts on important habitat areas. Encourage development to buffer important habitat areas.</p>

Revised Plan Components	Gallatin County, Montana 2003 Growth Policy Components
<p>Soils, Watershed, and Aquatics DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>Fire and Fuels Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p>	<p>Goal: Protect Human Life and Property From Natural Hazards. Policies:</p> <ol style="list-style-type: none"> 1. Encourage development in natural hazard areas to mitigate the potential hazard(s). 2. Encourage development on steep slopes to mitigate potential hazards. Prohibit development and road building on slopes greater than 25 percent. 3. Restrict development in flood hazard areas to protect property and life from flooding. Encourage compliance with the floodplain regulations and the standards developed by the Department of Health. Encourage development to protect neighboring properties and communities from potential flood hazards associated with new development. 4. Discourage development in areas prone to wildland fire to protect property and life from fires. Encourage mitigation of fire hazards, including creation of defensible space for each structure, prior to final plat.
<p>Wildlife DC-5. Landscape patterns throughout the Custer Gallatin provide habitat connectivity for wildlife, particularly wide-ranging species such as medium to large carnivores and wild ungulates. Resulting habitat connectivity facilitates daily and seasonal movement, as well as long-range dispersal of wildlife to support genetic diversity, allowing animals to adapt to changing conditions over time.</p> <p>DC-6. Habitat conditions within the Custer Gallatin near boundaries provide structural and functional diversity, and are resilient to existing and predictable future stressors, thereby supporting natural movement patterns for a wide variety of species across administrative boundaries.DC-8. Human-related foods and attractants are unavailable to wildlife. Natural wildlife foraging patterns are the norm, while food conditioning and habituation of animals, and associated wildlife conflicts with humans do not occur.</p> <p>Watershed and Aquatics DC-10. Riparian vegetation provides breeding, feeding and sheltering opportunities, as well as habitat connectivity and movement corridors for a wide range of terrestrial, semi-aquatic and avian wildlife species.</p> <p>Permitted Livestock Grazing DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Goal. Protect Important Habitat (Fish, Wildlife, and Plant) Policies:</p> <ol style="list-style-type: none"> 2. Encourage development to conserve important habitat. Promote open space corridors for identified wildlife migration corridors. Encourage livestock operations to minimize adverse impacts on important habitat areas. Encourage development to buffer important habitat areas.

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Gallatin County, Montana 2003 Growth Policy Components
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Goal. Protect Historic and Pre-Historic Features</p>
<p>Infrastructure, Roads, and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p> <p>DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>Goal. Provide a Safe and Efficient Transportation System</p> <p>Policies:</p> <ol style="list-style-type: none"> 1. Promote multi-modal transportation opportunities. Encourage development to be consistent with countywide trails plan (see computability review below). 2. Encourage development to provide coordinated circulation patterns. Encourage development to document proposed access and road systems, and their relationship to existing and future arterial locations, and proposed trail plans. Encourage development to coordinate proposed new roads with both existing and planned roads, taking into consideration current, proposed and future circulation and development patterns. Encourage development to provide and develop access to land not previously reviewed under the Subdivision regulations when reasonable access to that land is through the proposed development and the circulation pattern is enhanced with multiple access points. 3. Encourage development to document mitigation of erosion, noxious weed infestation and visual impacts associated with the construction of new roads. 4. Encourage development to document mitigation of dust, noise, and general safety related to speed, intersections, and pedestrian crossings.

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Gallatin County, Montana 2003 Growth Policy Components
<p>Infrastructure, Roads, and Trails</p> <p>DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p> <p>DC-5. The trail system accommodates current and reasonably foreseeable recreational demands and ability of the Forest Service to provide sustainable maintenance through volunteer, partnership, or agency resources.</p> <p>Recreation Emphasis Areas</p> <p>DC-1. Recreation emphasis areas provide sustainable recreational opportunities and settings that respond to changing recreation desires. Local communities can readily access these areas for a variety of motorized and non-motorized experiences.</p> <p>DC-2. Trail systems connect communities to recreation emphasis areas.</p> <p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p>	<p>Gallatin County Trails Report and Plan 2001</p> <p>High priority trails address needs to: connect residential areas with community amenities; connect with schools; parks, national forest trailheads and some commercial districts are included; serving both recreation and transportation; enhance the safety of non-motorized travel through communities; and connect with existing trails. Long-distance routes crossing the county's borders that may not be realized for many years are also included. The proposed highest-priority trails are concentrated in and around the communities of Gallatin County:</p> <p>The trail linking Belgrade and Bozeman; Valley Center Corridor; Bozeman – “M” Corridor; Springhill – Bozeman Corridor; Four Corners – Bozeman Corridor; Four Corners – Gallatin Gateway Corridor; Three Forks – Trident Corridor; extension of a recreational trail from Bozeman south to Gallatin Gateway.</p>
<p>Scenery</p> <p>DC-1. The forest's scenery provides for public enjoyment of the forest's varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>Goal. Conserve Scenic Resources and Views</p> <p>Policies:</p> <p>Encourage development to document efforts to conserve scenic resources and views; considering ridge tops and hillsides, signage, off-premise advertising, telecommunication towers, and light pollution and landscaped buffers.</p>
<p>Not applicable</p>	<p>Not applicable: Open Space Residential; Commercial and Industrial, Light; Commercial and Industrial, Heavy; Local Services, Agriculture</p>

Park County, Montana

Revised Plan Components	Park County, Montana 2017 Growth Policy Components
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function, and providing for social and economic benefits.</p>	<p>Growth and Development Objective 16.5: Identify areas of critical agricultural importance and implement mechanisms in these areas that support the ability of agricultural landowners to continued operations.</p>
<p>Watershed and Aquatics GDL-04. To prevent capture of fish and aquatic biota such as amphibians, new and reconstructed water surface withdrawal systems (such as new stream diversions and associated ditches) should be screened; water drafting should be screened and located away from native fish spawning locations. STD-01. Management activities in source water protection areas shall be consistent with applicable source water protection requirements and goals. Short-term effects from activities in source water protection areas may be acceptable when those activities support long-term benefits to source water protection areas and aquatic resources. Table 3 provides the current source water protection areas designated as municipal waters on the Custer Gallatin National Forest. STD-03. Project-specific best management practices (including the more protective of both Federal and the states' of Montana and South Dakota best management practices) shall be incorporated in project plans as a principle mechanism for controlling non-point pollution sources, preventing the introduction and spread of invasive species, to meet soil and watershed desired conditions, and to protect beneficial uses. To restore watersheds, management activities in watersheds with approved total maximum daily loads shall be designed to comply with the total maximum daily load allocations. Projects that produce short-term sediment or nutrient increases should result in a long-term decrease in sediment or nutrient delivery and sediment or nutrient yield in the stream system, which would comply with total maximum daily loads. Infrastructure, Roads, and Trails STD-05. To maintain fish and other organism passage new, replacement, and reconstructed stream crossing sites (culverts, bridges, and other stream crossings) shall accommodate at least the 100-year flow and be designed to withstand and to route stream flows into the downstream thalweg in the event the crossing is plugged or is exposed to a flow greater than for which the crossing was designed to pass through. Exceptions may be allowed when an evaluation of site conditions, resource values, infrastructure values, or passage design features demonstrates fish and other organism passage can be maintained without installing a structure that accommodates the 100 year flow.</p>	<p>Water Availability and Water Quality Goal 8: Be prepared to make decisions on how to manage water resources: Objective 8.1: Build on recent efforts to establish baseline water quantity and quality information for the major watersheds in Park County. Action 8.1.1: Coordinate with Department of Natural Resources and Conservation, U.S. Geological Survey, The Yellowstone River Council, and the Montana Bureau of Mines and Geology Groundwater Investigation Program to identify and assemble available studies on groundwater and surface water. Action 8.1.2: Coordinate with Department of Natural Resources and Conservation, U.S. Geological Survey, The Yellowstone River Council, and the Montana Bureau of Mines and Geology Groundwater Investigation Program to conduct studies in areas of Park County where studies have not been completed Objective 8.2: Conduct water resource studies that analyze sources, long term availability; potential conflicts and drought, and include recommendations for management. Action 8.2.1: Coordinate with Department of Natural Resources and Conservation to produce a scientifically based document identifying Park County's long term water requirements Action 8.2.2: Based on baseline data and longer term water requirements, work the Department of Natural Resources and Conservation to prepare a water management plan that provides recommendations to Count Commissioners on how to manage county resources impacted by water, and for irrigators who use water for their livelihoods. Action 8.2.3: Create a drought management plan</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Park County, Montana 2017 Growth Policy Components
<p>Fire and Fuels</p> <p>Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p> <p>Goal-2. The Custer Gallatin National Forest coordinates fire management actions with State, local, tribal and adjacent Federal agencies. Opportunities to manage fire and fuels are expanded across the planning area through coordination and collaboration.</p> <p>STD-01. All wildfires shall have a management response that considers risk to life and safety, taking into account the costs and effects to resources and values at risk.</p> <p>GDL-01. In order to meet multiple resource desired conditions, the forest should use wildland fires forestwide where and when conditions permit.</p> <p>GDL-02. To reduce the negative impacts of wildfires to values at risk, improve fire control opportunities, or decrease risk to fire personnel and the public, fuels treatments should be designed to remove or rearrange the live and dead vegetation as necessary to reduce fire intensity.</p> <p>GDL-03. To minimize resource damage, minimum impact suppression tactics should be used forestwide. Exceptions to this guideline may occur in order to protect life or adjacent property or mitigate risks to responders.</p>	<p>Intergovernmental Coordination</p> <p>Goal 3: Support efforts of fire manager to manage fuels on public and private lands</p> <p>Objective 3.1: Implement the Community Wildfire Protection Plan</p> <p>Action 3.1.1 Meet with fire management officials to identify parties responsible for implementing the actions of the wildfire protection plan.</p> <p>Action 3.1.2: Take action to implement the tasks identifies as being responsible for the county.</p> <p>Objective 3.2: Increase support of rural fire districts</p> <p>Action 3.2.1: Assist rural fire districts in developing a consolidated targeted recruitment program to increase volunteers</p> <p>Action 3.2.2: Provide assistance in researching grant sources and writing grants for funding equipment, training, and implementing projects.</p>
<p>Wildlife</p> <p>DC-5. Landscape patterns throughout the Custer Gallatin provide habitat connectivity for wildlife, particularly wide-ranging species such as medium to large carnivores and wild ungulates. Resulting habitat connectivity facilitates daily and seasonal movement, as well as long-range dispersal of wildlife to support genetic diversity, allowing animals to adapt to changing conditions over time.</p> <p>DC-6. Habitat conditions within the Custer Gallatin near boundaries provide structural and functional diversity, and are resilient to existing and predictable future stressors, thereby supporting natural movement patterns for a wide variety of species across administrative boundaries.</p> <p>GDL-1. To maintain or restore habitat connectivity for wildlife, management actions should not create movement barriers to wide-ranging species such as medium to large carnivores and wild ungulates, except where necessary to provide for human or wildlife safety.</p> <p>GDL-2. To protect long distance movements and range shifts for wide ranging wildlife species, vegetation management activities in key linkage areas should include design features to restore, maintain or enhance habitat connectivity</p> <p>GDL-4. To maintain wildlife habitat connectivity, new recreation development designed for the purpose of increasing recreation use should not be allowed within key linkage areas. New recreation developments may be constructed to</p>	<p>Intergovernmental Coordination</p> <p>Goal 2: Partner with State and Federal agencies to reduce human-wildlife conflicts.</p> <p>Objective 2.1: Develop and implement a shared strategy with wildlife management agencies and community organizations to educate the public on living with wildlife.</p> <p>Objective 2.2: Identify critical wildlife corridors for development, infrastructure and conservation planning.</p> <p>Action 2.1.1: Assist with the distribution of materials on living with wildlife developed or distributed by State and Federal wildlife officials.</p> <p>Action 2.2.1: Use expertise, information and data from State and Federal wildlife managers to identify and map corridors.</p> <p>Action 2.2.2: Incorporate wildlife corridor mapping into the Park County Atlas</p> <p>Action 2.2.3: Encourage Montana Department of Transportation to include mitigation of wildlife corridors in planning and implementing highway projects.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Park County, Montana 2017 Growth Policy Components
<p>address on-going or imminent ecological resource concerns within the key linkage area, including but not limited to, degradation of wildlife habitat connectivity,</p> <p>GDL-4. To limit habitat alternations that could impede long range movement to wide-ranging species, new permanent facilities or structures and relocation of existing facilities within key linkage areas should be designed and located so that wildlife movement patterns are not permanently disrupted.</p> <p>GDL-5. To maintain habitat quality and limit disturbance effects on wildlife movement patterns, key linkage areas should be free of sustained substantial disturbance for at least four years out of every 10-year period, including at least two consecutive years of no sustained substantial disturbance. Sustained substantial disturbance is the use of heavy equipment or low-level helicopter flights for vegetation management actions for a total of more than 30 days throughout the collective key linkage s in a calendar year.</p> <p>Big Game Goal-1. The Forest Service engages 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, high quality hunting experiences on National Forest System lands.</p>	
<p>Social and Economic Sustainability</p> <p>Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Growth and Development</p> <p>Objective 17.2: Recognize the value of Park County’s unique natural amenities and recreational opportunities as competitive strengths, attracting talent and companies that diversify and strengthen the economy.</p>

Revised Plan Components	Park County, Montana 2017 Growth Policy Components
<p>Infrastructure, Roads, and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p> <p>DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p> <p>DC-3. Invasive species are infrequent or non-existent along forest roads, trails or around facilities.</p> <p>DC-4. Roads and bridges provide for the health and safety of each user, are cost effective, preserve the integrity of the road or trail, and reasonably protect the natural, cultural, and aesthetic values within the roadway or trailway.</p> <p>DC-5. The trail system accommodates current and reasonably foreseeable recreational demands and ability of the Forest Service to provide sustainable maintenance through volunteer, partnership, or agency resources.</p> <p>Goal-1. The road system is part of a broader public road system that is under the jurisdiction of multiple road agencies. Road agencies cooperate routinely to reduce conflicts, ensure cost effective partnering, and provide a seamless transportation system to the public and reduces the overall footprint of the entire transportation system.</p> <p>Goal-2. The Custer Gallatin National Forest pursues road maintenance agreements with users, so that residential subdivisions, commercial enterprises, utility companies, etc., using a National Forest System road share in the fair cost of road maintenance and improvement, based generally on type and timing of use.</p>	<p>Infrastructure</p> <p>Goal 11: Provide for a safe and efficient county road network</p> <p>Objective 11.1: Update the subdivision regulations to ensure new subdivision pay a proportional share of their impact when upgrading county roads to meet county road standards.</p> <p>Action 11.1.1: Research and present options to the Planning and Development Board on how other counties in Montana use subdivision regulations to require improvements to off-site county roads that are directly attributable to the impacts of a proposed subdivision.</p> <p>Action 11.1.2: Update the design and improvement standards in the subdivision regulations to include a procedure for making improvements to off-site county roads based on the direct proportional impact of a proposed subdivision.</p> <p>Objective 11.3: Prioritize the use of rural special improvement districts to upgrade substandard county roads in areas that are already developed.</p> <p>Objective 11.4: Continue to secure Federal funding sources to upgrade county roads and bridges that provide access to recreation areas on public lands.</p>
<p>Recreation General</p> <p>DC-1. Recreation activities contribute to jobs and income in the local economy, community stability or growth, and the quality of lifestyles in the area.</p> <p>DC-2. Recreation opportunities promote long-term physical and mental health of the public by encouraging opportunities to connect with nature while pursuing adventure and by instilling a culture of stewardship and appreciation.</p>	<p>Growth and Development</p> <p>Objective 17.2: Recognize the value of Park County's unique natural amenities and recreational opportunities as competitive strengths, attracting talent and companies that diversify and strengthen the economy.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Park County, Montana 2017 Growth Policy Components
<p>DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources.</p> <p>DC-4. Existing developed facilities, roads, and trails for both summer and winter recreation activities are adaptable for new recreation demands.</p> <p>DC-5. Recreational uses and facilities including trails and dispersed sites, and their use have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species.</p>	
<p>Land Status and Ownership, Access, and Land Uses</p> <p>Goal-1. The Forest Service works with local county road authorities to grant public road easements (under the Forest Road and Trails Act) for routes that serve predominantly non-National Forest System purposes.</p>	<p>Infrastructure</p> <p>Objective 11.4: Continue to secure Federal funding sources to upgrade county roads and bridges that provide access to recreation areas on public lands.</p>
<p>Social and Economic Sustainability</p> <p>Goal-1. The Custer Gallatin Forest Service engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Intergovernmental Coordination</p> <p>Objective 5.1: Establish Cooperating Agency status with the U.S. Forest Service and National Park Service.</p> <p>Action 5.1.1: Reach out to the U.S. Forest Service and National Park Service and determine the specific requirements to achieve Cooperating Agency status.</p> <p>Action 5.1.2: Complete the requirements to achieve Cooperating Agency status.</p>
<p>Not applicable</p>	<p>Not applicable: Housing</p>

Prepared by Michael Inman, Director, Park County Montana Planning Department.

Meagher County, Montana

Revised Plan Components	Meagher County, Montana 2014 Growth Policy Components
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p>	<p>2003 Development Policy F. Protect the rivers and streams, floodplains, riparian areas and wetlands in the county.</p>
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p>	<p>Economic Development Promote Tourism. Meagher County and White Sulfur Springs have a rich history and many natural resources that should be used to promote tourism in the area.</p>
<p>Cultural and Historic Resources DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence. DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Economic Development. Promote Tourism. Meagher County and White Sulfur Springs have a rich history and many natural resources that should be used to promote tourism in the area.</p>
<p>Social and Economic Sustainability Goal-1. The Custer Gallatin Forest Service engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Interjurisdictional Collaboration Collaboration needs to be improved with the Federal government pertaining to natural resource uses for timber and environmental regulations that affect the county and city economy and population.</p>
<p>Not applicable</p>	<p>Not applicable: Support Opening New Mine, Sustainable Development, Improve Built Environment and Land Use (Adopt Building Codes, Implement Land Use Codes), Cluster Development (Residential Clusters, Commercial Clusters).</p>

Sweet Grass County, Montana

Revised Plan Components	Sweet Grass County, Montana 2014 Growth Policy Components
<p>Air Quality</p> <p>DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p> <p>Watershed and Aquatics</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p> <p>Wildlife</p> <p>DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p> <p>Goal-2. The Custer Gallatin National Forest coordinates management actions with other federal, state and local agencies, Tribes, and adjacent land owners. Opportunities to manage wildlife habitat and provide for connectivity are expanded through coordination and collaboration along and across administrative boundaries.</p> <p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>Permitted Livestock Grazing</p>	<p>Environment and Wildlife Resources</p> <p>Goal 1. To maintain, preserve, and enhance the environmental, ecological, and historical qualities of Sweet Grass County.</p> <p>Goal 2. To maintain or mitigate critical wildlife habitat and to consider the effects humans have on wildlife.</p> <p>Goal 3. Review subdivisions for their effects on humans and wildlife</p> <p>Objective a) Protect areas of environmental significance such as wetlands, floodplains and critical wildlife habitat.</p> <p>Objective b) Improve the visual appearance, attractiveness to business, or quality of life in our communities.</p> <p>Objective c) Maintain high quality groundwater, surface water, air and general environment qualities.</p> <p>Objective d) Encourage responsible livestock grazing practices as an essential process in maintaining healthy grasslands.</p> <p>Policy (e): Designation of any resource areas, wilderness, wild and scenic rivers or national monuments must be done in consultation and coordination with Sweet Grass County and its residents, to the maximum extent allowed by law.</p> <p>Growth Policy Recommendations for Wildlife include:</p> <p>e) Wildlife management plans should maintain healthy balanced wildlife populations consistent with the needs of domestic livestock and the rights of private property owners;</p> <p>g) Collaborate and coordinate with federal and state agencies on planning and regulations affecting wildlife to ensure coordination with the Growth Policy;</p> <p>m) Utilize the county's right under state and federal law to be involved in all local decisions regarding predators, game species, and endangered species.</p> <p>n) Develop suggested wildlife impact mitigation measures for critical wildlife habitat.</p> <p>p) Support wildlife management techniques that minimize conflicts with agricultural operations</p> <p>Growth Policy Recommendations on Weeds</p> <p>a) Contain the existing infestation of weeds with the goal of control and strive to prevent the infestation of new weeds.</p> <p>b) Monitor road, utilities, and highway construction activities to ensure all is being done to prevent new infestation and the spread of existing weeds.</p> <p>d) Coordinate weed control and education efforts with other governmental agencies.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Sweet Grass County, Montana 2014 Growth Policy Components
<p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p> <p>Scenery</p> <p>DC-1. The forest’s scenery provides for public enjoyment of the forest’s varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p> <p>Social and Economic Sustainability</p> <p>Goal-1 The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Invasive Species</p> <p>DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p> <p>Goal-4. A coordinated (internally and externally) invasive species management, awareness, and education approach supports: a) Improved invasive species awareness. b) Opportunities for cooperators, organizations and members of the public to adopt areas on the forest for invasive species management are provided. This would include survey, inventory, monitoring, and treatment. c) Development and distribution of invasive species education materials at high use areas and Forest Service offices.</p> <p>Permitted Livestock Grazing</p> <p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	
<p>Fire and Fuels</p> <p>DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p> <p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p>	<p>Land Use</p> <p>Goal 2.To protect, encourage and support the agricultural base of the county and its agricultural resources, and to achieve the most appropriate use of land within the County so sufficient areas are provided for existing and future residential, commercial and industrial needs.</p> <p>Objective f) Continue evaluation of the potential for fire and wildland fire in the county and measures to mitigate that fire potential. Protect private property rights and encourage no net gain of State or Federal land.</p>

Revised Plan Components	Sweet Grass County, Montana 2014 Growth Policy Components
<p>Social and Economic Sustainability</p> <p>DC-1. Key forest resources, products, services, and opportunities including: clean air, clean water and aquatic ecosystems, terrestrial ecosystems, education and volunteer programs, flood control, infrastructure, forest products, mineral and energy resources, historic, cultural, tribal or archeological sites, geologic features, grazing, scenery, recreation, spiritual inspiration, opportunities to experience peace, quiet and solitude in nature, free roaming wildlife and designated areas (including their intrinsic values) contribute to the well-being, quality of life, mental, physical, and spiritual health and safety of the public.</p> <p>DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>Timber</p> <p>DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p> <p>Wildlife</p> <p>DC-9. There is low or no risk of disease transmission between domestic animals and wildlife.</p>	<p>Natural Resources</p> <p>Goal. To maintain a policy of wise use of natural resources, including a focus on sustainability, economic growth, conservation strategies and involvement in land use planning decisions at the local, State and Federal level.</p> <p>Objective a) To ensure that Federal And State agencies proposing or implementing natural resource policy, uses or restrictions and administration of Federal and State lands within Sweet Grass County require the involvement and participation of local government and Sweet Grass County citizens in the development and implementation of actions that affect the county’s tax base, local economy, private property rights, self-determination and the use, and protection of agricultural resources.</p> <p>Objective b) To balance growth and development with protection of agricultural land and heritage, as well as water quality, tourism, and quality of life</p> <p>Objective c) To recognize Sweet Grass County has a heritage of agriculture, mineral activities, timber, and tourism that provide economic benefits and that the administration of natural resources should ensure the utilization and availability of the natural resources, in conjunction with sustainable preservation of the resource.</p> <p>Policy g): Enhance the economic impact of the use and production of natural resources through value added enterprises.</p> <p>Policy h): Encourage and plan for responsible, orderly energy development, including alternative energy.</p> <p>Policy j): Support proper forest management, including timber harvest.</p> <p>Policy (i): Support agricultural producers in their efforts to maintain brucellosis-free status, and keep Sweet Grass County out of any Designated Surveillance Area for brucellosis.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Sweet Grass County, Montana 2014 Growth Policy Components
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>Energy, Minerals and Geologic Areas of Interest DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use. DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>Timber DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p>	<p>Economic Development Goal. To stabilize existing employment areas and pursue diverse employment opportunities in order to achieve full employment within the available county labor force. Objective a) Encourage value adding by manufacturing of finished products from local raw material. Objective b) Encourage and plan for responsible energy exploration and development, including alternative energy Objective c) To encourage and support economic development that would create more jobs, enhance community commerce, and improve the quality of life that residents now enjoy. Objective d) Strengthen and broaden the economy of Sweet Grass County in order to reduce the adverse effects of a downturn in a specific economic sector. Objective e) Explore the capacity for public land resources to provide more economic return for rural economies. Objective f) Encourage economic diversity to avoid over-reliance on any industry segment.</p>
<p>Infrastructure, Roads and Trails DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>Public infrastructure and Services Goal 2. Provide county infrastructure which satisfies transportation, utility and solid waste disposal needs of county residents, businesses/industries and visitors in an effective and efficient manner. Objective c) Improve county road systems to efficiently serve transportation needs within the county.</p>
<p>Not applicable</p>	<p>NOTE: Sweet Grass County's Growth Policy emphasizes multiple use of federal lands (including but not limited to agricultural uses, livestock grazing, timber harvest, mineral development, outfitting and recreational use). While goals and objectives provide a vision, the details will determine the actual effect on the county and whether a particular alternative under the Custer Gallatin revised plan may be incompatible with the County Growth Policy.</p>

Prepared with Sweet Grass County, Montana.

Stillwater County, Montana

Revised Plan Components	Stillwater County, Montana 2007` Growth Policy Components
<p>Energy, Minerals and Geologic Areas of Interest DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Mining and Natural Resources Development Impacts and Managed Growth Goal 3.9.1.2. Identify the appropriate entity or entities having authority to deal with the responsible development of any natural resource proposed for development within the county, and monitor any such development to ensure that negative impacts are minimized.</p>
<p>Infrastructure, Roads, and Trails DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms. DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>County Roads and Bridges Goal 3.4.1.1. Provide the safest and most cost effective surface transportation system possible to the taxpayers and traveling public.</p>
<p>Social and Economic Sustainability Goal 1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Other County Issues Goal 3.11.1.2. The county should be active in the legislative process and intergovernmental relations among Federal, State, and local government. Objective 3.11.2.5. Encourage cooperation among Federal, State, and local governments on intergovernmental decisions or actions.</p>
<p>Not applicable</p>	<p>Not applicable: Law enforcement and emergency services, solid waste and recycling, subdivisions, affordable housing and manufactured homes, land use conflicts and development regulation, town sites and public facilities, economic development.</p>

Carbon County, Montana

Revised Plan Components	Carbon County, Montana 2015 Growth Policy Components
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists. DC-8. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them. DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p>	<p>Goal 2. Water Resources Management Objective 2.5: Assist in protecting public and private drinking water supplies due to growth causing increased pressure on scarce drinking water resources. Objective 2.6: Continue to administer the floodplain program for unincorporated areas of Carbon County.</p>
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Goal 1. Land Use and Development Objective 1.3.6. Continue to fund and support an active county weed control program which includes both education and regulation. Streamline the process to treat noxious weeds and recover costs when landowners do not treat their weeds. Continue to require weed inspections and bonding as necessary for any land use change and new development with fees to cover staff time for inspections.</p>
<p>Fire Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p>	<p>Goal 4. Cooperation with Other Governments Objective 4.4.B. Continue to work with the Forest Service to educate the public about dangers and challenges associated with the continued growth and building within the wildland-urban interface. Support rural departments applying for State and Federal grant monies for staffing, training, and equipment. Update the Community Wildfire Protection Plan as necessary.</p>
<p>Wildlife DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p>	<p>Goal 1. Land and Community Development Objective h. Encourage the voluntary preservation of open space and wildlife habitat in the county.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Carbon County, Montana 2015 Growth Policy Components
<p>Social and Economic Sustainability</p> <p>DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>DC-4. High quality terrestrial and aquatic habitats and opportunities for fishing, trapping, and hunting exist on the Custer Gallatin and contribute to local economies as well as the well-being, quality of life, mental, physical, and spiritual health of the public.</p> <p>Multiple Desired Conditions, Goals, and other plan components protect natural resources.</p>	<p>Goal 3. Financial Management and Public Services</p> <p>Objective 3.8: Continue to support current economic drivers such as agriculture, tourism and natural resource development.</p> <p>Goal 5. Natural and Environmental Resources</p> <p>Develop the county’s natural resources balancing economic development with environmental responsibility.</p> <p>Objective 5.1: Leverage natural resource development to promote economic and community development.</p> <p>Objective 5.1.B. Promote renewable resource development.</p>
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Goal 1. Land and Community Development</p> <p>Objective 1.5.B. Allow the Planning Board more involvement when significant archaeological or historical properties are affected a development, and when recommending impact mitigation to significant sites (listed on the National Register of Historic Places or determined eligible for listing).</p>
<p>Infrastructure, Roads and Trails</p> <p>Goal-1. The road system is part of a broader public road system that is under the jurisdiction of multiple road agencies. Road agencies cooperate routinely to reduce conflicts, ensure cost effective partnering, and provide a seamless transportation system to the public and reduces the overall footprint of the entire transportation system.</p>	<p>Goal 4. Cooperation with Other Governments</p> <p>Objective 4.3: Continue to provide cost-effective services to residents for road maintenance and construction.</p> <p>Objective 4.3.A. Communicate with MDT, the Forest Service, the Bureau of Land Management, and adjacent counties to discuss road projects, coordinate schedules, and look for efficiencies through working cooperatively.</p>
<p>Social and Economic Sustainability</p> <p>Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Goal 1. Land and Community Development</p> <p>Objective 1.5.A. Request information and briefings, and actively respond to requests for comment by State and Federal agencies proposing projects such as land exchanges, and large scale mineral or recreation development in the county.</p> <p>Goal 4. Cooperation with Local Governments</p> <p>Objective 4.4: Promote the public health and safety through cooperation with the State and Federal governments.</p>

Rosebud County, Montana

Revised Plan Components	Rosebud County, Montana 2013 Growth Policy Components
<p>Air Quality Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Natural Resources Goal Monitor changes in condition and development of all natural resources. Objective. Encourage acceptable air quality standards.</p>
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists. DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p>	<p>Natural Resources Goal Monitor changes in condition and development of all natural resources. Objective. Support efficient water quality and quantity activities.</p>
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p>	<p>Economy Goal Monitor growth and development opportunities and pitfalls. Objectives. Encourage stable economic development. Encourage value-added prospects for agriculture and timber. Encourage economic diversity.</p>
<p>Cultural and Historic Resources DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices. DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence. DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Economy Goal Objective. Encourage tourism, historical and heritage promotion projects.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Rosebud County, Montana 2013 Growth Policy Components
<p>Energy and Minerals</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Natural Resources Goal</p> <p>Objectives.</p> <p>Support efficient and responsible mineral development activities.</p> <p>Protect and maintain sufficient sand and gravel resources.</p> <p>Develop standards for renewable energy development.</p>
<p>Social and Economic Sustainability</p> <p>Goal 1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Natural Resources Goal</p> <p>Objective. Develop public/private partnerships to guide resource development.</p>
<p>Not applicable</p>	<p>Not applicable: Land use, population and demographics, housing and development, local services, public facilities.</p>

Powder River County, Montana

Revised Plan Components	Powder River County, Montana 2012 Growth Policy Components
<p>Air Quality, Soils, Water, Vegetation, Wildlife Multiple Desired Conditions, Goals, and other plan components protect natural resources.</p>	<p>Natural Resources Goal. Minimize negative environmental effects from increase in local and regional natural resource development and housing development.</p>
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p>	<p>Land Use Policy Recommendations Natural Resources 1. Preserve water resources throughout the county by adopting buffer standards for development along rivers and streams as well as around well-heads and groundwater supply facilities. Natural Resources 2. Continue implementing water severance policy. Floodplain 1. Enforce floodplain regulations so future development limits damage to people and property.</p>
<p>Fire and Fuels Goal-2. The Custer Gallatin National Forest coordinates fire management actions with State, local, tribal and adjacent Federal agencies. Opportunities to manage fire and fuels are expanded across the planning area through coordination and collaboration.</p>	<p>Local Services Goal 2. Improve wildfire suppression activities. Objective. Enhance local, State, and Federal dialogue regarding fire suppression policies and opportunities.</p>
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities. DC-4. High quality terrestrial and aquatic habitats and opportunities for fishing, trapping, and hunting exist on the Custer Gallatin and contribute to local economies as well as the well-being, quality of life, mental, physical, and spiritual health of the public.</p>	<p>Land Use Goal. Plan for compatible land uses throughout the county while preserving multiple uses for existing and future agricultural, ranching, natural resource extraction, forestry, and recreational land. Land Use Policy Recommendations Natural Resources 6. Encourage tourism related businesses that promote the county's natural resources, yet do not interfere with established land uses while (sic). Economic Goal 2. Develop and enhance the agriculture industry. Objective: Work with the Forest Service to enhance ways to increase agricultural-based opportunities in Custer National Forest. Economic Goal 3. Support local natural resource development. Economic Goal 4. Enhance local tourism.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Powder River County, Montana 2012 Growth Policy Components
<p>Permitted Livestock Grazing DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions. Social and Economic Sustainability Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Land Use Policy Recommendations Agriculture and Farmsteads 1. Continue to promote the “multiple use” concept of allowing farmers and ranchers to use Federal and State land for farming, ranching and agricultural activities. In addition, no changes in Federal or State land use should be allowed without the county receiving adequate notice having the opportunity to comment on any proposed plan or land use activity. Powder River County requests all State and Federal agencies to coordinate with the county growth plan. Economic Objective: Work with the Forest Service to enhance ways to increase agricultural-based opportunities in Custer National Forest. Intergovernmental Coordination 2. Continue to require that Powder River County shall be notified of all state, interstate and Federal actions that have any impact on water resources. Official notification must be acknowledged in writing by the commissioners and that they understand the proposed actions. In addition, actions regarding wild and scenic river designations shall be coordinated with the commissioners and the growth policy. Intergovernmental Coordination 3. Continue to assist Federal and State agencies in the planning and management of Powder River’s natural, cultural and economic resources. Natural Resources Goal: Increase local control and awareness of programs that affect Powder River County land. Objective: Continue dialogue between community members, Forest Service, Bureau of Land Management, Department of Natural Resources, and Fish Wildlife and Parks.</p>
<p>Energy, Minerals and Geologic Areas of Interest DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Land Use Policy Recommendations Land Development 2. Support development opportunities that provide for the long-term availability and sustainable development of the county’s mineral resources.</p>
<p>Land Status and Ownership, Access, and Land Uses DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p>	<p>Land Use Policy Recommendations Agriculture and Farmsteads 2. Continue implementing the “no net gain” policy regarding public land sales or exchanges. Goal is not net loss of private lands. Intergovernmental Coordination 4. Continue to support the design and development of all Federal and State land disposals, including land adjustments and exchanges; be performed to the benefit of Powder River County residents.</p>
<p>Not applicable</p>	<p>Not applicable: Population and demographics, housing and development, public facilities</p>

Carter County, Montana

Revised Plan Components	Carter County, Montana Growth Policy Components
<p>Air Quality Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Goal 4. Natural Resources. Encourage land uses that are appropriate on the lands for which they are proposed and promote land use, which provides an optimum, long-term economic benefit, while maintaining a balance between the social, agricultural, economic, and aesthetic needs of the public. Policy f. Consult with state agencies on new developments to make sure they are in conformance with air quality and other environmental standards.</p>
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function, and providing for social and economic benefits.</p>	<p>Goal 4. Natural Resources. Policy b. Restrict development of lands that have severe physical limitations, due to steepness, instability, floodplains, etc.</p>
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists. DC-12 Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels. Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function, and providing for social and economic benefits.</p>	<p>Goal 1. Land and Community Development. Promote land use changes and development that is compatible with existing land uses and minimize negative impacts on existing and future land uses Policy a. Discourage land development in floodplain areas. All residential structures are to be located at least 100 feet outside a designated 100 year floodplain, or 100 feet from a stream or lake edge in undesignated areas. Goal 4. Natural Resources Objective c. Encourage maintenance of the quality and quantity of surface and ground water for both consumption and non-consumption use. Policy b. Restrict development of lands that have severe physical limitations, due to steepness, instability, floodplains, etc.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Carter County, Montana Growth Policy Components
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Goal 1. Land and Community Development Policy h. Continue to fund and support the county weed control program which includes education and regulation. Streamline the process to treat noxious weeds and recover costs when the landowner does not treat their weeds. Require weed inspections and bonding as necessary for any land use change and new development with fees to cover staff time and inspections. Goal 4. Natural Resources Policy c. Require weed control measures and prompt revegetation efforts of land disturbances associated with land development. Policy d. Encourage and support effective noxious weed control measures throughout the county, including Federal and State lands.</p>
<p>Wildlife DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p>	<p>Goal 1. Land and Community Development Objective h. Encourage the voluntary preservation of open space and wildlife habitat in the county.</p>
<p>Social and Economic Sustainability DC-1. Key forest resources, products, services, and opportunities including: clean air, clean water and aquatic ecosystems, terrestrial ecosystems, education and volunteer programs, flood control, infrastructure, forest products, mineral and energy resources, historic, cultural, tribal or archeological sites, geologic features, grazing, scenery, recreation, spiritual inspiration, opportunities to experience peace, quiet and solitude in nature, free roaming wildlife and designated areas (including their intrinsic values) contribute to the well-being, quality of life, mental, physical and spiritual health and safety of the public. DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities. DC-4. High quality terrestrial and aquatic habitats and opportunities for fishing, trapping, and hunting exist on the Custer Gallatin and contribute to local economies as well as the well-being, quality of life, mental, physical, and spiritual health of the public.</p>	<p>Goal 2. Economic Development. Encourage economic growth in Carter County that is a benefit to all county residents, especially in the areas of land use, services, and public infrastructure. Goal 4. Natural Resources Objective b. Encourage the protection and proper management of non-commercial lands that enhance economic wildlife, scenic, recreational, and economic opportunities of Carter County. Policy a. Develop long term plans, which promote economic benefits derived from publicly owned lands, while protecting the resources.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Carter County, Montana Growth Policy Components
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Goal 2. Economic Development</p> <p>Objective a. Encourage development that will respect historic, cultural, and lifestyle values in the county.</p> <p>Goal 5. Public Facilities</p> <p>Policy e. Promote preserving and maintaining facilities of historic interest in accordance with the State guidelines for historic places</p> <p>Policy f. Encourage the retention of public buildings that have historical significance and can be feasibly repaired, such as the Carter County Courthouse.</p>
<p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Goal 2. Economic Development.</p> <p>Objective e. Encourage, promote, and assist energy development and mining companies who are in the process of submitting a permit and who will follow State and Federal laws, rules, and regulations to locate in Carter County.</p>
<p>Infrastructure, Roads and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p> <p>DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>Goal 3. Transportation and Traffic. Develop a transportation plan that will benefit existing and future land development in the county that is sensitive to the cost of maintenance.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Carter County, Montana Growth Policy Components
<p>Social and Economic Sustainability</p> <p>Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions. Multiple additional goals to coordinate with other agencies and partners.</p>	<p>Goal 1. Land and Community Development</p> <p>Policy e. Request information and briefings, and actively respond to requests for comment by State and Federal agencies proposing projects such as land exchanges, and large scale mineral or recreation development in the county.</p> <p>Goal 4. Natural Resources</p> <p>Objective e. Encourage and assist with the implementation of State and Federal management plans that recognize many natural resources as long as they are consistent with the Carter County Comprehensive Plan and Growth Policy and the County Natural Use Resource Policy.</p> <p>Policy e. Coordinate with agencies that manage public lands on land planning issues and actively participate in the planning efforts.</p>

Harding County, South Dakota

Revised Plan Components	Harding County, South Dakota 2012 County Comprehensive Plan Components
<p>Air Quality, Soils, Water, Vegetation, Wildlife Multiple Desired Conditions, Goals, and other plan components protect natural resources.</p>	<p>Goal: Ensure that policies and regulations reduce potential land use conflicts and protect the county's natural resources without creating undue hardships on property owners Objective. Protect the county's natural resources.</p>
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p>	<p>Goal: Promote a diverse economic development strategy that will enhance the community.</p>
<p>Infrastructure, Roads and Trails DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>Goal: Promote a diverse economic development strategy that will enhance the community. Objective. Ensure safe and efficient transportation system connections throughout the county and to neighboring communities.</p>
<p>Recreation DC-2. Recreation opportunities promote long-term physical and mental health of the public by encouraging opportunities to connect with nature while pursuing adventure and by instilling a culture of stewardship and appreciation.</p>	<p>Goal: Maintain the strong sense of community and high quality of life in Harding County. Activity: Enhance public recreation opportunities and facilities throughout the community for all users.</p>

City of Bozeman, Montana

Revised Plan Components	City of Bozeman, Montana Plans
<p>Watershed and Aquatics DC-1. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them.</p> <p>Municipal Watershed (Madison, Henrys Lake and Gallatin Mountains) DC-1. Forest structure in the municipal watersheds does not support watershed scale high intensity, stand-replacing fire and is resilient to forest insect and disease through maintenance of age, size class diversity, and species diversity. Goal-1. The Custer Gallatin National Forest cooperates with the City of Bozeman in sustainable land management of the Hyalite and Bozeman Creek municipal watersheds.</p> <p>Hyalite Recreation Emphasis Area DC-1. The Hyalite Recreation Emphasis Area provides sustainable recreational opportunities and settings that respond to increasing recreation demand in concert with the demands on the municipal watershed.</p> <p>Social and Economic Sustainability Goal-1. The Custer Gallatin National Forest engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Bozeman Community Plan Public Services and Facilities Goal PS-1: Facilities and Services – All public facilities and services provided under the authority of the City of Bozeman shall be provided in a reliable, efficient, cost-effective and environmentally sound manner. Objective PS-1.8: Domestic Water – Provide for a safe and adequate water supply, distribution, storage and treatment facilities to support water demand projected by planned land uses in the planning area. Regional Coordination and Cooperation Goal RCC-1: Coordinate policies and actions between public entities to increase effectiveness and efficiency of implementation of the Bozeman Community Plan. Not applicable: Land Use, Community Quality, Historic Preservation, Housing, Art and Culture, Environmental Quality, Parks and Recreation, Transportation, Disaster and Emergency Services, Subdivision Review.</p>
<p>Watershed and Aquatics DC-1. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them.</p> <p>Hyalite Recreation Emphasis Area DC-1. The Hyalite Recreation Emphasis Area provides sustainable recreational opportunities and settings that respond to increasing recreation demand in concert with the demands on the municipal watershed.</p> <p>Wildlife GDL-04. To limit habitat alternations that could impede long range movement to wide-ranging species, new permanent facilities or structures and relocation of existing facilities within key linkage areas should be designed and located so that wildlife movement patterns are not permanently disrupted.</p>	<p>2017 Integrated Water Resource Plan Recommendation: Construct one or more improvements on Sourdough Creek providing storage above the Sourdough water treatment plant, and/or expand the storage capacity of Hyalite Reservoir by modifying the dam structure.</p>

Revised Plan Components	City of Bozeman, Montana Plans
<p>Watershed and Aquatics DC-1. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them.</p> <p>Hyalite Recreation Emphasis Area DC-1. The Hyalite Recreation Emphasis Area provides sustainable recreational opportunities and settings that respond to increasing recreation demand in concert with the demands on the municipal watershed.</p> <p>Wildlife GDL-04. To limit habitat alternations that could impede long range movement to wide-ranging species, new permanent facilities or structures and relocation of existing facilities within key linkage areas should be designed and located so that wildlife movement patterns are not permanently disrupted.</p>	<p>Water Facility Plan Update Supplying future water demands: Option 1 – If the groundwater wellfield assessment indicates good potential to develop a substantial groundwater supply, the City should implement the work necessary to capitalize on it in the near-term. Simultaneously, the near-term focus of the West Transmission Main should be to optimize delivery of this redundant source of supply to the Sourdough water treatment plant (WTP). Option 2 – If significant groundwater supply development does not appear feasible, but natural storage on Sourdough Creek and/or additional Hyalite water is, then the City should focus on implementation of projects to increase long-term supply through the Sourdough WTP. The implementation of the West Transmission Main would be adjusted (larger transmission main) to convey this additional source water from the Sourdough WTP to the western side of the City. Option 3 – If groundwater supply, the implementation natural storage in Sourdough and additional source water from Hyalite do not prove viable in the short-term, the City should consider increasing the available storage on the Lyman system. The Lyman system is not capable of providing enough additional water to significantly contribute to the City’s long-term water demands, but if other supplies or redundant sources are not viable, maximization of Lyman supply will be critical for reliability and use during potential emergencies.</p>
<p>Municipal Watershed (Madison, Henrys Lake, and Gallatin Mountains) DC-1. Forest structure in the municipal watersheds does not support watershed scale high intensity, stand-replacing fire and is resilient to forest insect and disease through maintenance of age, size class diversity, and species diversity. Goal-1. The Custer Gallatin National Forest cooperates with the City of Bozeman in sustainable land management of the Hyalite and Bozeman Creek municipal watersheds.</p>	<p>Forest Management Plan for City Owned Lands in the Sourdough Drainage Goal: Reduce the risk of a large catastrophic wildfire that could create a great source of sediments and ash to be carried into Sourdough Creek.</p>

City of West Yellowstone, Montana

Revised Plan Components	West Yellowstone, Montana 2017 Growth Policy Components
<p>Fire and Fuels DC-3. There are minimal detrimental impacts to values at risk from wildland fire. Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p>	<p>Goal 14 – Protect Lives and Property from Wildfire Objective 14.1 Reduce wildfire risk. Action 14.1.1 Carry out wildland fuels treatments on the southern and western borders of town.</p>
<p>Recreation Emphasis Areas; Hebgen Winter and Hebgen Lakeshore DC-1. Recreation emphasis areas provide sustainable recreational opportunities and settings that respond to changing recreation desires. Local communities can readily access these areas for a variety of motorized and non-motorized experiences. DC-2. Trail systems connect communities to recreation emphasis areas.</p>	<p>Goal 12 – Enhance Recreation Opportunities in and Around West Yellowstone Objective 12.1 Develop safe and connected non-motorized transportation options and recreation opportunities. Action 12.1.2 Explore a rails-to-trails conversion on the old Oregon Short Line railroad bed from West Yellowstone to Reas Pass.</p>
<p>Recreation Emphasis Areas; Hebgen Winter and Hebgen Lakeshore DC-1. Recreation emphasis areas provide sustainable recreational opportunities and settings that respond to changing recreation desires. Local communities can readily access these areas for a variety of motorized and non-motorized experiences. DC-2. Trail systems connect communities to recreation emphasis areas.</p>	<p>Goal 13. Ensure Development of the 80 Acres Supports a High Quality of Life for Residents Objective 3.1 Provide open space and recreational opportunities. Action 3.1.2 Develop a trail system that provides internal connectivity and connections to nearby national forest and national park lands.</p>
<p>Not applicable</p>	<p>Not applicable: Housing affordability and availability, short-term commercial rentals, developing the 80 acres, town appearance, zoning in old town, the economy, water, and sewer.</p>

State Plans

The compatibility review considers the Montana and South Dakota forest action plans, wildlife action plan, and statewide comprehensive outdoor recreation plans.

Montana Forest Action Plan

State forest action plans are developed to satisfy the requirements of the 2008 Farm Bill; this bill requires that each state prepare a statewide forest resource assessment and strategy to qualify for funding through USDA Forest Service state and private forestry grants. In 2010, Montana developed a Statewide Assessment of Forest Resources, a comprehensive analysis of the conditions, trends, threats, and opportunities facing the state’s forests. The Montana Forest Action Plan was subsequently developed as the implementation component of the assessment. The Montana Forest Action Plan is a strategic document designed to highlight the major issues in each state forest, identify priority actions, and define the most effective role for state governments in sustaining benefits from state and private forests.

The original forest action plan identified five focus areas. The 2017 revision of the forest action plan amends the original focus areas to align with the evolution of the Forestry Assistance Bureau, Forestry Division, and general forestry context in Montana.

Revised Plan Components	Montana 2017 Forest Action Plan Components
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>Timber DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies. DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure.</p>	<p>Focus Area: Forest Products and Industry Retention. Strategy: Retain and bolster Montana’s forest industry so that forests can be managed in an ecologically and economically practical manner.</p>
<p>Social and Economic Sustainability Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Focus Area: Federal Forest Management Strategy: Increase the amount of forest restoration on Federal lands through partnerships with government agencies and Montana communities.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Montana 2017 Forest Action Plan Components
<p>Social and Economic Sustainability Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Focus Area: Stewardship of Wildland, Rural and Urban Landscapes Strategy: Guide forest owners, managers, and communities in implementing stewardship objectives and promote the benefits of engaged forest stewardship.</p>
<p>Social and Economic Sustainability Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Focus Area: Capacity, Collaboration and Partnerships Strategy: Increase the capability of landowners, natural resource managers and communities to meet management objectives by providing financial, technical, and logistical support.</p>
<p>Timber DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies. Vegetation Multiple Desired Conditions for forested and other vegetation types. Air Quality, Soils, Water, Vegetation, Wildlife, Recreation Multiple desired conditions, goals, and other plan components protect natural resources and recreation.</p>	<p>Focus Area: Forest Restoration, Ecology and Function Strategy: Promote responsible, active forest management that ensures ecological conditions meet the needs of future generations for clean water, wildlife habitat, sustainable timber supply, and recreation opportunities.</p>

Montana State Wildlife Action Plan

The State Wildlife Action Plan was developed to meet a congressional stipulation for state wildlife grant funding. The State Wildlife Action Plan identifies community types of greatest conservation need, focal areas, species of greatest conservation need, and species of greatest inventory need. Because the Forest Service is a land management agency, and the Forest Service definition of a species of conservation concern is different from Montana’s definition of a species of greatest conservation need; this compatibility review focuses on the community types of greatest conservation need.

Revised Plan Components	Montana 2015 State Wildlife Action Plan Components
<p>Social and Economic Sustainability Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Watershed and Aquatics DC-2. Spatial connectivity is prevalent within or between watersheds. Lateral, longitudinal, vertical, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact habitat refugia. These network connections provide unobstructed physical and chemical routes to areas critical for fulfilling life history requirements of aquatic, riparian-associated, and many upland species of flora and fauna.</p> <p>DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p> <p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p> <p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>All streams and rivers Strategies related to:</p> <ul style="list-style-type: none"> • Collaboration and Outreach • Habitat Protection • Planning and Review • Training and Technical Assistance • Water Management • Habitat Fragmentation • Riparian/Water Body Management • Pollution/contamination of Resources • Wind Energy • Non-native Species • Climate Change
<p>Social and Economic Sustainability Goal-1. The Custer Gallatin engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Riparian Management Zones DC-1. Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities.</p>	<p>Terrestrial Communities</p> <ul style="list-style-type: none"> • Collaboration and Outreach • Floodplain and Riparian • Open Water • Wetlands • Conifer-dominated forest and Woodland (xeric-mesic) • Deciduous Dominated forest and Woodland • Lowland/Prairie Grassland

Revised Plan Components	Montana 2015 State Wildlife Action Plan Components
<p>Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p> <p>DC-2. Riparian management zones are, at a minimum, in a properly functioning condition to provide energy dissipation, in-stream thermal buffering, sediment capture and routing, groundwater recharge, and have an intact normative flow regime.</p> <p>Terrestrial Vegetation</p> <p>Multiple, detailed Desired Conditions for forested vegetation. Detailed Desired Conditions for grassland, shrubland, woodland, riparian, alpine, and sparsely vegetated plant communities.</p> <p>DC-6. Landscape-scale patch configuration and composition is conducive to ecological processes operating within their natural range of variation including the extent, intensity and frequency of disturbance events, to provide for habitat connectivity, wildlife movement and gene flow. In montane ecosystems, the density of patches per square mile is doubled relative to 2017. In particular, large, contiguous patches of medium-sized, closed canopy forest conditions are reduced (smaller percentage of landscape) as well as disaggregated to reduce contagion and increase landscape-level ecosystem diversity and heterogeneity. In turn, the extent and density of early and late seral patches is increased. Early seral conditions are also less aggregated and more evenly distributed across the landscape resulting in greater diversity and contrast among patches. Table 9 shows the desired patch size distribution at the geographic area and forestwide scale.</p> <p>Invasive Species</p> <p>DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p> <p>Recreation, General</p> <p>DC-5. Recreational uses and facilities including trails and dispersed sites, and their use have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species.</p>	<ul style="list-style-type: none"> • Montane Grassland • Sagebrush Steppe and Sagebrush-Dominated Shrubland • Scrub and Dwarf Shrubland <p>Strategies related to:</p> <ul style="list-style-type: none"> • Collaboration and Outreach • Habitat Protection • Planning and Review • Habitat Fragmentation • Pollution/contamination of Resources • Land Management • Wind Energy • Recreation • Climate Change • Land Use Change • Invasive Species

Montana Statewide Comprehensive Outdoor Recreation Plan

Montana’s Statewide Comprehensive Outdoor Recreation Plan was developed to satisfy the requirements of the Land and Water Conservation Fund Act. As a requirement of the Act, each state is charged with developing a plan that evaluates the demand for and the supply of outdoor

recreation resources in the state. The Montana outdoor recreation plan, also known as the 2014–2018 Montana Statewide Comprehensive Outdoor Recreation Plan, is the state’s comprehensive plan for outdoor recreation and conservation management and planning. The purpose of the plan is to outline Montana’s five-year strategy and vision for outdoor recreation management.

Revised Plan Components	Montana Statewide Comprehensive Outdoor Recreation Plan 2014
<p>Recreation, General DC-2. Recreation opportunities promote long-term physical and mental health of the public by encouraging opportunities to connect with nature while pursuing adventure and by instilling a culture of stewardship and appreciation. Goal-2. The Custer Gallatin National Forest encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p> <p>Recreation Opportunity Spectrum DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p> <p>Recreation Emphasis Areas DC-1. Recreation emphasis areas provide sustainable recreational opportunities and settings that respond to changing recreation desires. Local communities can readily access these areas for a variety of motorized and non-motorized experiences. DC-2. Trail systems connect communities to recreation emphasis areas.</p> <p>Land Status and Ownership, Access, and Land Uses DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p>	<p>Priority: Improve the quality of life of all Montanans Objective Strengthen connections between outdoor recreation, healthy lifestyles, public safety and livable communities.</p>
<p>Recreation, General DC-1. Recreation activities contribute to jobs and income in the local economy, community stability or growth, and the quality of lifestyles in the area. DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources. DC-4. Existing developed facilities, roads, and trails for both summer and winter recreation activities are adaptable for new recreation demands.</p>	<p>Priority: Sustain economic vitality Objective: Assess and adapt to the growing recreation and tourism demands and changing preferences of residents and visitors and promote the benefits of recreation to state and local economies.</p>
<p>Recreation, General DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer</p>	<p>Priority: Promote stewardship and sustainability</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	Montana Statewide Comprehensive Outdoor Recreation Plan 2014
<p>Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources.</p> <p>DC-4. Existing developed facilities, roads, and trails for both summer and winter recreation activities are adaptable for new recreation demands.</p> <p>Visitor Education and Interpretation</p> <p>DC-1. Interpretation and education products enhance visitors' understanding and appreciation for the rich natural and cultural resources of the Custer Gallatin, and builds support for public lands.</p> <p>DC-5. Education, in a variety of mediums about forest stewardship and responsible use leads to better visitor compliance with regulations.</p> <p>Infrastructure, Roads, and Trails</p> <p>DC-5. The trail system accommodates current and reasonably foreseeable recreational demands and ability of the Forest Service to provide sustainable maintenance through volunteer, partnership, or agency resources.</p>	<p>Objective: Protect and enhance Montanan's natural, cultural and heritage assets by growing a responsible recreation land ethic among residents and visitors.</p> <p>Objective: Develop creative solutions to provide adequate funds for routine and preventative maintenance of current facilities, as well as expand development of facilities to meet the growing needs of residents and visitors.</p>
<p>Recreation, General</p> <p>Goal-2. The Custer Gallatin National Forest encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p>	<p>Priority: Enhance Agency service mission.</p> <p>Objective: Promote a seamless system of coordinated management among recreation providers and agencies at all levels.</p>

South Dakota Statewide Forest Resource Strategy

South Dakota’s forest resource strategy (strategy) was developed to satisfy the requirements of the 2008 Farm Bill; this bill requires that each state prepare a statewide forest resource assessment and strategy to qualify for funding through USDA Forest Service state and private forestry grants. The strategy provides a comprehensive management plan for priority areas identified in the 2010 South Dakota Statewide Assessment of Forest Resources, and a long-term, comprehensive, coordinated strategy for investing State, Federal, and partner resources. The strategy details threats, strategies, existing resources, needs, and partners.

Revised Plan Components	South Dakota 2010 Forest Resource Strategy Components
<p>Watershed and Aquatics DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states’ water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p> <p>Riparian Management Zones DC-1. Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities. Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p>	<p>Water Quantity and Quality</p> <ul style="list-style-type: none"> • Educate forest landowners and forest workers about best management practices for protecting water quality during forestry operations and provide resources to implement best management practices and establish best management practices for riparian areas • Monitor existing best management practices through audits for proper implementation and effectiveness; implement recommendations that develop from periodic audits • Educate the general public on the values and benefits of managing for water quantity and water quality • Identify where riparian forests occur, where they occurred in the past, and where they are most likely to be successfully reestablished • Promote establishment of trees and shrubs for riparian buffers to protect and improve watersheds • Work with other Federal, State, and local agencies and boards to coordinate programs, initiatives, and incentives that encourage protection of water quality • Develop and implement management plans based on watersheds • Promote the management of forested areas to increase water quantity and quality
<p>Vegetation Multiple Desired Conditions for forested, old growth, grassland, shrubland, woodland, riparian, alpine, and sparse vegetation.</p> <p>Timber DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure.</p>	<p>Forest Health</p> <ul style="list-style-type: none"> • Monitor forest insect and disease outbreaks • Promote utilization of woody biomass for a broad spectrum of products to maintain and expand a viable and diverse forest products industry • Collaborate with other Federal, State, and local agencies to coordinate programs and incentives that encourage and implement healthy forest restoration practices • Collaborate with and engage Federal, State, and local land managers to improve forest health and implement policies that sustain forest health management practices • Promote natural species diversity within native forest lands

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	South Dakota 2010 Forest Resource Strategy Components
	<ul style="list-style-type: none"> • Develop direct suppression and preventive management options to suppress forest insect and disease outbreaks
<p>Fire and Fuels</p> <p>DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk.</p> <p>Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p> <p>Goal-2. The Custer Gallatin National Forest coordinates fire management actions with State, local, tribal and adjacent Federal agencies. Opportunities to manage fire and fuels are expanded across the planning area through coordination and collaboration.</p>	<p>Wildfire</p> <ul style="list-style-type: none"> • Mitigate the potential for catastrophic fires <ul style="list-style-type: none"> ▪ Complete, update, and implement Community Wildfire Protection Plans ▪ Increase public awareness of the need for fire prevention and fuels mitigation • Increase the training and capacity of the state's local fire suppression resources • Provide basic and advanced wildland fire training to state, local, and federal fire suppression agencies to sustain efficient suppression activities and maintain healthy forests • Manage suitable lands to achieve structurally diverse, healthy forests to develop more resilient forest landscapes • Reduce fuels by prescribed burning • Provide prescribed burning assistance to private land owners and governmental land management agencies • Provide wildfire assistance and support to other agencies
<p>Vegetation</p> <p>Multiple Desired Conditions for forested, old growth, grassland, shrubland, woodland, riparian, alpine, and sparse vegetation.</p> <p>Carbon</p> <p>DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p> <p>Timber</p> <p>DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure.</p>	<p>Climate Change</p> <ul style="list-style-type: none"> • Provide guidance to help forest landowners implement forest climate adaptation and mitigation management practices based on the best available science and proven best practices • Promote and support practices that improve resilience of forested landscapes and restore impacted landscapes to maintain ecological functions and critical ecosystem services • Explore the carbon sequestration potential of natural forest lands, woodlots, and windbreaks • Support the forest inventory and analysis program for monitoring changes to South Dakota forests • Promote utilization of woody biomass for a broad spectrum of products to maintain and expand a viable and diverse forest products industry • Track and participate in developing federal legislation
<p>Invasive Species</p> <p>Goal-1. The Custer Gallatin National Forest coordinates and cooperates with federal, state and county agencies, Tribes, non-government organizations, permittees, and adjacent landowners to support integrated pest management including invasive species prevention, early detection and rapid response,</p>	<p>Weeds and Invasive Species</p> <ul style="list-style-type: none"> • Track insect, disease, and invasive species outbreaks within the state, as well as neighboring states, as they occur • Develop rehabilitation and restoration strategies for using native or desired nonnative species for restoration and rehabilitation

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	South Dakota 2010 Forest Resource Strategy Components
<p>control and containment, restoration and rehabilitation, and inventory and monitoring activities.</p> <p>Goal-2. The Custer Gallatin National Forest coordinates with State or County agencies and Tribes to support implementation and enforcement of regulations, permits, plans, and guidance on invasive species management across the national forest, including but not limited to:</p> <ul style="list-style-type: none"> a. State regulations and protocols related to prevention and control of aquatic and terrestrial invasive species (including noxious weeds); b. State regulations associated with utilizing, storing, transporting, or certifying invasive species-free (or noxious weed-free) straw, hay, mulch, gravel, forage, seed, or other materials; c. State aquatic invasive species regulations, management plans, disinfecting protocols, fish and wildlife management plans, early detection and rapid response plans, or other statewide or region-wide invasive species management plans; d. State required wildlife handling permits, which also address disease and invasive species prevention protocol. <p>Goal-4. A coordinated (internally and externally) invasive species management, awareness, and education approach supports: a) Improved invasive species awareness. b) Opportunities for cooperators, organizations and members of the public to adopt areas on the forest for invasive species management are provided. This would include survey, inventory, monitoring, and treatment. c) Development and distribution of invasive species education materials at high use areas and Forest Service offices.</p>	<ul style="list-style-type: none"> • Implement the NISMP strategies of prevention, early detection rapid response, control and management, restoration, and organizational collaboration • Educate private landowners, the public, schoolchildren, conservation districts, and business/community leaders about the importance of forest management, planning, programs, availability of assistance, and how to implement recommendations • Explore utilization and marketing opportunities to control invasives • Work with other Federal, State, and local agencies to coordinate programs and incentives that encourage control of weeds and invasive species • Develop best management practices for treating weeds and other invasive species • Support policies that prevent exotics from entering the country • Support and encourage research for viable control options
<p>Wildlife</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p> <p>Goal-4. The Custer Gallatin National Forest engages in partnerships with state and federal agencies, Tribes, universities, permittees and other willing entities, to conduct ecological research, improve or coordinate inventories and monitoring, and expand data and knowledge collection where needed.</p>	<p>Loss or Degradation of Wildlife Habitat</p> <ul style="list-style-type: none"> • Develop a geospatial map of past, present, and potential bottomland forest types and forested habitats important to species of greatest conservation needed as identified in South Dakota’s State Wildlife Action Plan • Use silviculture and prescribed burning to manage plant communities to improve wildlife habitat • Work with Game, Fish and Parks Department to help implement strategies found in the South Dakota State Wildlife Action Plan for forested areas • Educate landowners on the value of forest management and benefits to wildlife habitat • Develop and implement management plans based on watershed or other local ecologically based boundary

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	South Dakota 2010 Forest Resource Strategy Components
<p>Permitted livestock grazing DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions. Goal-1. As opportunities arise, the Custer Gallatin National Forest works with permittees to remove or relocate existing allotment infrastructure that attract livestock use in or near aspen, woody draws, riparian areas, groundwater-dependent ecosystems and at-risk plant occurrences.</p>	<p>Livestock Grazing</p> <ul style="list-style-type: none"> • Promote grazing management techniques and best management practices that are not detrimental to riparian areas, bottomland forests, and upland hardwood forests • Work with other Federal, State, and local agencies to coordinate programs and incentives that encourage grazing management • Restore forested areas degraded by grazing activities
<p>Timber DC-1. Lands identified as suitable for timber production support a regularly scheduled timber harvest program that provides for jobs and income while also sustaining ecological integrity DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure.</p>	<p>Underutilization of Woody Biomass</p> <ul style="list-style-type: none"> • Promote a predictable, dependable supply of raw material (woody biomass) from all ownerships to help sustain a viable forest products industry • Take an active role in the federal forest land management planning process • Encourage the proper management and use of forest resources
<p>Not applicable</p>	<p>Not applicable: Fragmentation. Applies to private land. Lack of Species Diversity: Applies to windbreaks and community forests. Over Mature and Dying Trees Applies to windbreaks and community forests Loss of Urban Trees to Development: Applies to urban areas, windbreaks and community forests Inadequate Forest Inventory Information: implementation topic</p>

Prepared with South Dakota Department of Agriculture, Resource Conservation and Forestry Division.

South Dakota Wildlife Action Plan

Similar to the Forest Service’s 2012 Planning Rule approach, the 2014 South Dakota Wildlife Action Plan employs a two-tiered planning approach for terrestrial and aquatic ecosystems. 1) A coarse filter strategy as the framework under an historical range of variability-based approach to identify an estimate of the threshold level to represent each ecological community occurring under natural disturbance regimes. 2) The fine filter strategy (species of greatest conservation need) has species-specific actions, which supplements the ecosystem-based approaches.

Revised Plan Components	2014 South Dakota Wildlife Action Plan
<p>Multiple Plan Components Ecosystem approach to management, conservation of biologically unique designated and natural resource areas, and emphasis on habitats for species of greatest conservation concern, keystone species, and other relevant species.</p>	<p>Goal 1: Guide the conservation of biological diversity in South Dakota.</p>
<p>Monitoring Plan Provide feedback by testing assumptions, tracking relevant conditions over time, measuring management effectiveness, and evaluating effects of management practices.</p>	<p>Goal 2: Initiate a process to identify and monitor the status of biological diversity in South Dakota.</p>
<p>Monitoring Plan Report on adaptive management strategies. Multiple Plan Components Goals, objectives, desired conditions, guidelines and standards to meet the two-tiered approach to ecosystem management and biodiversity.</p>	<p>Goal 3: Identify challenges to maintaining or restoring biodiversity and establish a conservation action process for native ecosystem and species of concern.</p>
<p>Multiple Plan Components Goals, objectives, desired conditions, guidelines and standards to meet the two-tiered approach to ecosystem management and biodiversity.</p>	<p>Goal 4: Develop objectives and action plans to achieve these goals.</p>
<p>Fine-Filter Planning Approach Plan components provide for “at-risk species.” Wildlife DC-02: Habitat conditions contribute to species recovery needs such that population trends of listed species are stable or increasing across their range. Lands within critical habitats designated by the U.S. Fish and Wildlife Service provide the physical and biological features identified as essential to the conservation and recovery of listed species.</p>	<p>Goal 5: Satisfy legal mandates for rare species recovery.</p>
<p>2012 Planning Rule, National Environmental Policy Act, Cooperating Agency Agreements, Tribal Consultations, and other federal laws. Mandate and encourage public participation and contributions.</p>	<p>Goal 8: Implement a process that allows and encourages participation by government agencies, tribes, conservation partners, and the public.</p>

Prepared by Shelly Deisch, Wildlife Habitat Biologist and Public Lands Liaison for South Dakota Department of Game, Fish and Parks.

South Dakota Statewide Comprehensive Outdoor Recreation Plan

South Dakota’s Statewide Comprehensive Outdoor Recreation Plan was developed to satisfy the requirements of the Land and Water Conservation Fund Act. As a requirement of the Act, each state is charged with developing a plan that evaluates the demand for and the supply of outdoor recreation resources in the state. The 2018–2022 South Dakota Statewide Comprehensive Outdoor Recreation Plan examines how to best meet the needs of South Dakota’s citizens to provide quality, accessible outdoor recreational facilities in the state.

Revised Plan Components	2018–2022 South Dakota Statewide Comprehensive Outdoor Recreation Plan
<p>Recreation – Emerging Recreational Technologies DC-1. New recreational technologies contribute to visitor enjoyment and experiences, consistent with recreation settings.</p>	<p>Strategy 1: Provide and promote year around, diverse outdoor recreation opportunities for South Dakotans of all ages, interests, economic status, and ability.</p>
<p>Land Status and Ownership, Access, and Land Uses Multiple Plan Components for acquisition, boundaries, easements, access, etc.</p>	<p>Strategy 3: Acquire and protect South Dakota’s open space and natural resources for future outdoor recreation opportunities. Strategy 4 Item: Improve and increase public access to fish and wildlife related outdoor recreation opportunities.</p>
<p>Multiple Plan Components All vegetation types, air quality, soils, water, riparian, wildlife, and recreation.</p>	<p>Strategy 4: Protect and improve the state’s fish and wildlife habitat for outdoor recreation opportunities.</p>
<p>Recreational Special Uses Goal-1. The Custer Gallatin National Forest works with special use permit holders to deliver interpretation and education messages that instill an appreciation for the natural and cultural resources of the Custer Gallatin, and promotes conservation and stewardship. Recreational Visitor Education and Interpretation Multiple Desired Conditions</p>	<p>Strategy 5: Educate, promote, and improve communications related to outdoor recreation opportunities.</p>
<p>Multiple Plan Components: Wetland, watershed and aquatic functions and values</p>	<p>Conservation of wetland functions and values includes: Outdoor recreation and education, wildlife, wildlife related economic benefits, commercial and sport fisheries related economic benefits, surface and ground water supplies, and maintenance of lake water quality.</p>
<p>Multiple Plan Components: Environmental education, management, land ownership, partnerships.</p>	<p>Protection Strategies Conservation of South Dakota’s wetland resources is vital if the above described functions and values are to be preserved for future generations. Strategies include: Education, management, acquisition, support of State and Federal regulations and legislation</p>

Prepared by South Dakota Department of Game, Fish and Parks.

Bureau of Land Management

The purpose of the Bureau of Land Management resource management plans is to provide a single, comprehensive land use plan to guide management of public lands administered by each field office. The resource management plans provide goals, objectives, land use allocations, allowable uses, and management direction for the Bureau of Land Management administered surface and mineral estate to maintain, improve, or restore resource conditions and to provide long-term benefits to the public, including the economic needs of local communities based on multiple use and sustained yield, unless otherwise specified by law. The resource management plans goals are most closely aligned with the revised plan desired conditions and goals. The review includes the Dillon (2006), Butte (2009), Billings (2015), Miles City (2015) and South Dakota (2015), field office resource management plans.

Dillon Field Office, Montana

Land managed by the Dillon Field Office is adjacent to the Custer Gallatin National Forest at the Bear Trap Canyon unit of the Lee Metcalf Wilderness.

Revised Plan Components	Dillon Field Office 2006 Resource Management Plan Components
<p>Air Quality DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses, and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p>	<p>Air Quality Goal. Meet the National Ambient Air Quality Standards under the Clean Air Act (as amended in 1977), and prevent significant deterioration of air quality within the Dillon Field Office Resource Area with all authorized actions.</p>
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits.</p>	<p>Soils Goal. Maintain or improve soil health or fertility, prevent, or minimize soil erosion and compaction, and reduce the possibility of mass wasting on unstable soils.</p>
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity. DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species. DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation. DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and</p>	<p>Water Goal. Restore or maintain the chemical, physical, and biological integrity of the waters in the Dillon Field Office to protect beneficial uses. Prevent water quality degradation, and improve watershed function throughout the planning area. Riparian and Wetland Vegetation Goal. Restore or maintain riparian wetland areas so that at least 955 miles of streams and 2,050 acres of wetlands are in proper functioning condition. Fish Goal 1. Manage habitat for resident cold-water species that are of high economic, social, or scientific values. Goal 2. Ensure that aquatic habitat is of suitable quality to support a diversity of plant and animal communities.</p>

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<p>function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p>	<p>Goal 3. Ensure the long-term, self-sustaining persistence and maintain the genetic diversity of the individual populations of westslope cutthroat trout in the Dillon Field Office.</p> <p>Goal 4. Ensure the long term self-sustaining persistence of fluvial and adfluvial arctic grayling in the Dillon Field Office area.</p>
<p>At-Risk Plants</p> <p>DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p> <p>Goal-2. The Custer Gallatin National Forest works with other agencies and landowners to expand inventories, identify potential habitat for at-risk species, and promote protection and restoration of associated habitats.</p>	<p>Special Status Species – Plants</p> <p>Goal 1. Identify, conserve, and monitor rare, vulnerable, and representative habitats, plant communities, and ecosystems to ensure that there is a self-sustaining persistence of special status plants within the Dillon Field Office.</p> <p>Goal 2. Ensure that proposed land uses initiated or authorized by Bureau of Land Management avoid inadvertent damage to federal and non-federal habitats supporting special status plants and plant communities.</p> <p>Goal 3. Promote public awareness, appreciation and understanding of rare plants and their habitats.</p>
<p>Vegetation</p> <p>Multiple, detailed desired conditions for forested vegetation.</p> <p>Detailed desired conditions for grassland, shrubland, woodland, riparian, alpine, and sparsely vegetated plant communities.</p> <p>Timber</p> <p>DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p> <p>Special Forest Products</p> <p>DC-1. A variety of special forest products are available for commercial, personal, tribal, educational, and scientific uses.</p>	<p>Forests and Woodland Vegetation, and Forest Products</p> <p>Goal 1. Manage forests and woodlands to sustain their vitality, health and diversity.</p> <p>Goal 2. Provide opportunities for traditional and nontraditional uses of forest products by incorporating sound ecological principles while contributing to the economic stability of the community.</p> <p>Rangeland Vegetation</p> <p>Goal. Manage the vegetative resource to maintain a diversity of ecological conditions on upland vegetation.</p>
<p>Fire and Fuels</p> <p>DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk.</p> <p>DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p>	<p>Wildland Fire</p> <p>Goal 1. Provide the appropriate management response on all wild-land fires, with an emphasis on firefighter and public safety. When assigning priorities, decisions will be based on relative values to be protected commensurate with fire management costs.</p> <p>Goal 2. Restore or maintain desired ecological conditions and fuel loadings through use of prescribed fire, wildland fire use, and other treatment methods.</p> <p>Goal 3. Use rehabilitation to mitigate the adverse effects of fire on the soil, vegetation, and water resources in a cost effective manner.</p>

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<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Noxious Weeds, Invasive and Non-Native Species Goal. Prevent the introduction and spread of invasive and noxious plants.</p>
<p>Wildlife DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure. DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p>	<p>Wildlife, including Special Status Birds and Mammals Goal 1. Ensure that native wildlife species are provided habitat of sufficient quantity and quality to enhance biological diversity and sustain their ecological, economic and social values is a goal common to all alternatives. Improve public awareness, understanding and support for resolving issues surrounding wildlife species conservation, management and ecology. Goal 2. Ensure the long-term, self-sustaining persistence of special status bird and mammal species in the Dillon Field Office.</p>
<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities. Goal-1. The Custer Gallatin National Forest engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Social and Economic Conditions Social Conditions Goal. Provide for a diverse array of activities that result in social benefits while minimizing negative social effects. Economics Goal. Provide for a diverse array of stable economic opportunities in an environmentally sound manner. Environmental Justice Goal. Identify and remediate to the extent possible disproportionate negative effects to minority or low income populations per Executive Order 12898 titled "<i>Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations.</i>"</p>
<p>Areas of Tribal Importance DC-1. In recognition of Federal trust responsibilities, healthy and sustainable plant and animal habitats support the availability of reserved treaty rights resources for traditional cultural practices. DC-2. Tribal members have access to sacred sites, sacred places and tribal cultural landscapes within the Custer Gallatin for the exercise of reserved treaty rights and traditional cultural practices.</p>	<p>Tribal Treaty Rights Goal. Accommodate treaty and legal rights of appropriate Native American groups in management of public lands.</p>
<p>Cultural and Historic Resources DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p>	<p>Cultural Resources Goal 1. Preserve and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations. Goal 2. Reduce imminent threats from natural or human-caused deterioration, or potential conflict with other resource uses, by identifying priority geographic</p>

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<p>DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence.</p>	<p>areas for new field inventory, based upon a probability for unrecorded significant resources.</p> <p>Goal 3. Ensure that all authorizations for land and resource use avoid inadvertent damage to federal and nonfederal cultural re-source in compliance with Section 106 of the National Historic Preservation Act.</p> <p>Goal 4. Promote stewardship, conservation, and appreciation of cultural resources through educational and public outreach programs in accordance with the Bureau of Land Management Heritage Education program.</p> <p>Goal 4. Consult with Native Americans to identify any of their cultural values or religious beliefs that may be affected by Bureau of Land Management authorizations or actions.</p>
<p>Permitted Livestock Grazing</p> <p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Permitted Livestock Grazing</p> <p>Goal. Manage the public rangelands to provide for a sustainable level of livestock grazing consistent with multiple use and sustained yield.</p>
<p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p> <p>DC-4. Abandoned mines lands and areas impacted by past mining activities reflect a state of site condition comparable to pre-mineral activity and provide comparable form and function based on site potential.</p> <p>DC-5. Underground environments in abandoned mines remain unaltered, except where necessary to protect human health and safety.</p> <p>DC-9. Geologic hazards (for example, naturally occurring erionite or radioactive materials, mass wasting, floods, sinkholes, abandoned mines, etc.) do not pose associated risks to public health and safety, facilities, and infrastructure.</p>	<p>Minerals</p> <p>Goal 1. Advance dependable, affordable, and environmentally responsible production and distribution of leasable minerals by identifying lands appropriate for lease and development.</p> <p>Goal 2. Allow environmentally responsible geophysical exploration for energy resources in the Dillon Field Office on lands administered by the Bureau of Land Management.</p> <p>Locatable Minerals Goal. Encourage and facilitate development of locatable minerals in a manner to prevent unnecessary or undue degradation.</p> <p>Saleable Minerals Goal. Provide for the extraction of mineral materials to meet public demand, while minimizing adverse impacts to other re-source values.</p> <p>Renewable Energy Goal. Provide opportunities for the development of renewable energy resources from sources such as wind, biomass, solar, and low-impact hydropower while minimizing adverse impacts to other resource values.</p> <p>Geologic Resources Goal. Provide opportunities for use of the geology of the area while protecting resource values.</p> <p>Abandoned Mine Lands Goal. Protect humans and the environment from exposure to abandoned mine lands while considering associated resource values such as historic resources.</p> <p>Hazardous Materials Goal. Protect humans and the environment from exposure to hazardous materials.</p> <p>Paleontological Resources Goal. Preserve and protect significant paleontological resources and ensure that they are available for appropriate</p>

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	scientific, educational, and where appropriate recreational, uses by present and future generations.
<p>Infrastructure, Roads, and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p> <p>DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	<p>Transportation and Facilities Maintenance</p> <p>Goal. Manage facilities, including roads and trails, to provide for public access or administrative needs, while maintaining or protecting resource values and in coordination with other federal agencies, state and local governments, and private landowners.</p>
<p>Recreation (the revised plan is not a travel management plan)</p> <p>Recreation Opportunity Spectrum</p> <p>ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p>	<p>Travel Management and Access</p> <p>Goal. In coordination with other federal agencies, state and local governments, and private landowners, manage motorized travel to provide recreational experiences while maintaining or protecting resource values.</p>
<p>Recreation, General</p> <p>DC-2. Recreation opportunities promote long-term physical and mental health of the public by encouraging opportunities to connect with nature while pursuing adventure and by instilling a culture of stewardship and appreciation.</p> <p>DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources.</p> <p>Goal-2. The Custer Gallatin National Forest encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p> <p>Developed Recreation Sites</p>	<p>Recreation</p> <p>Goal 1. Provide a diverse array of quality, resource based recreation opportunities while protecting and interpreting the resource values, providing educational opportunities, minimizing user conflicts, and promoting public safety.</p> <p>Goal 2. Develop and maintain appropriate recreation facilities, balancing public demand, protection of Public Land resources, and fiscal responsibility.</p> <p>Goal 3. Issue special recreation permits in an equitable manner for specific recreational uses of the public lands and related waters as a means to minimize user conflicts, control visitor use, to protect recreation resources, and to provide for private and commercial recreation use.</p> <p>Goal 4. Develop and maintain cooperative relationships with national, state and local recreation providers, tourism entities, and local recreational groups.</p>

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Revised Plan Components	Dillon Field Office 2006 Resource Management Plan Components
<p>DC-2. Quality, well-maintained recreation facilities at key locations accommodate concentrations of use, enhance the visitor's experience, provide for a range of opportunities in various settings, public health and safety, and protect the natural resources of the area. Developed recreation sites accommodate current and appropriate new levels of recreation use and integrate accessibility for users who have disabilities.</p> <p>Recreation Special Uses</p> <p>DC-2. Services provided by recreation special uses enhance the recreation experiences of forest visitors, enhance public health and safety, and protect natural resources.</p> <p>DC-3. Recreation special uses contribute to economic sustainability and are compatible with ecological and social experience thresholds.</p>	
<p>Scenery</p> <p>DC-2. The forest's scenery, as directed by the scenic integrity objectives (table 20), contributes positively to visitors' experiences as well as the quality of life in neighboring communities while reflecting a range of allowable management activities that balance social and economic values, ecological integrity, landscape dynamics and sustainability.</p>	<p>Visual Resources</p> <p>Goal. Manage scenic values in accordance with the objectives established for visual resources management classes as presented in table 8.</p>
<p>Wilderness</p> <p>DC-1. The untrammeled quality of wilderness is essentially unhindered and free from modern human control or manipulation.</p> <p>DC-2. Natural ecological processes and disturbances (such as succession, wildfire, avalanches, insects, and disease) are the primary forces affecting the composition, structure, and pattern of vegetation. Wilderness areas provide opportunities for visitors to experience natural ecological processes and disturbances with a limited amount of human influence</p> <p>DC-3. Wilderness exhibits an undeveloped quality and is without nonconforming or unnecessary facilities, installations or human-caused surface disturbances.</p> <p>DC-4. Outstanding opportunities for solitude or primitive and unconfined recreation are available, where impacts to wilderness character are not degraded.</p>	<p>Wilderness</p> <p>Goal. Manage designated wilderness areas for the preservation of natural conditions and processes, and to provide opportunities for solitude or a primitive and unconfined type of recreation.</p>
<p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p> <p>DC-2. Consolidated surface and mineral ownership meets resource and communities needs and facilitates efficient land management.</p> <p>DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p> <p>Land Uses</p>	<p>Lands and Realty</p> <p>Goal 1. Meet public needs for use authorizations such as rights-of- way, leases, and permits while minimizing adverse impacts to other resource values.</p> <p>Goal 2. Retain public lands with high resource values in public ownership. Adjust land ownership to consolidate public land holdings, acquire lands with high public resource values, and meet public and community needs.</p> <p>Goal 3. Acquire and maintain access to public lands where needed to improve management efficiency and facilitate multiple use and the public's enjoyment</p>

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<p>Goal-2. The Custer Gallatin National Forest coordinates with project proponents to co-locate emerging technology, communication sites, energy corridors, and other permitted infrastructure to minimize environmental and visual impacts.</p>	<p>of these lands in coordination with other federal agencies, state and local governments, and private landowners.</p> <p>Goal 4. Utilize withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the required purposes.</p> <p>Utility and Communication Corridors Goal. Encourage the use of designated right-of-way corridors and use areas to the extent practical in order to minimize adverse environmental impacts and the proliferation of separate rights-of-way.</p>
<p>Not applicable</p>	<p>Not applicable: Special designations not adjacent to the Custer Gallatin National Forest.</p>

Butte Field Office, Montana

The Butte Field Office manages some 15 parcels adjacent to the Custer Gallatin National Forest east side of the Yellowstone River in the Paradise Valley.

Revised Plan Components	Butte Field Office 2009 Resource Management Plan Components
<p>Air Quality</p> <p>DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p>	<p>Air Quality.</p> <p>Goal AQ1. Ensure Bureau of Land Management authorizations and management activities protect the local quality of life and sustain economic benefits by complying with tribal, local, state, and federal air quality regulations, requirements and implementation plans.</p>
<p>Soils</p> <p>DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits.</p>	<p>Soil Resources</p> <p>Goal SR1. Manage uses to minimize accelerated soil erosion and compaction and maintain surface soil water infiltration based on site-specific conditions.</p> <p>Goal SR2. Maintain or improve soil health and fertility, prevent or minimize erosion and compaction while supporting multiple use management.</p>
<p>Watershed and Aquatics</p> <p>Multiple Desired Conditions, including:</p> <p>DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p> <p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p> <p>DC-5. The sediment regime within water bodies is within the range of conditions of the reference watersheds, as defined by agency monitoring. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.</p>	<p>Water Resources</p> <p>Goal WR1. Restore or maintain the chemical, physical, and biological integrity of water resources to protect designated beneficial uses and achieve water quality standards.</p> <p>Goal WR2. Maintain existing or acquire new water rights on lands in the Decision Area to ensure water availability for multiple-use management.</p> <p>Goal WR3. Minimize erosion and subsequent sedimentation for improved stream and watershed health.</p> <p>Goal WR4. Maintain or improve morphological conditions to a stable state that can fully support beneficial uses.</p>

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<p>DC-6. In-stream flows create and maintain riparian, aquatic, and wetland habitats; to retain patterns of sediment, nutrient, and wood routing and transport while maintaining reference dimensions (such as, bankfull width, depth, entrenchment ratio, slope, and sinuosity); to ensure floodplain inundation occurs within the natural range of variation allowing floodplain development; and to ensure the timing, magnitude, duration, and spatial distribution of peak, high, and low flows are retained, within the range of conditions of the reference watersheds, as defined by agency monitoring.</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>DC-8. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them.</p> <p>DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p> <p>Riparian Management Zones</p> <p>DC-1. Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities. Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p> <p>DC-2. Riparian management zones are, at a minimum, in a properly functioning condition to provide energy dissipation, in-stream thermal buffering, sediment capture and routing, groundwater recharge, and have an intact normative flow regime.</p>	<p>Goal WR5. Protect water quality for municipal, industrial, agricultural, recreation, and residential purposes by adopting protective measures to meet tribal, state, and local water quality requirements.</p> <p>Riparian Vegetation</p> <p>Goal RV1. Manage riparian and wetland communities to move toward or remain in proper functioning condition (appropriate vegetative species composition, density, and age structure for their specific area). Manage these communities to be sustainable and provide physical stability and adequate habitat for a wide range of aquatic and riparian dependent species.</p> <p>Goal RV2. Manage wetland and riparian habitats to support healthy, diverse and abundant populations of fish and associated aquatic and riparian dependent species.</p>

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<p>Vegetation Multiple Desired Conditions for forested, old growth, grassland, shrubland, woodland, riparian, alpine, and sparse vegetation</p> <p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Vegetation Communities Goal GS1. Manage upland vegetation communities to move toward or remain in proper functioning condition, including a full range of herbaceous and shrub species. Goal GS2. Maintain or enhance communities of priority species or habitats (for example, mountain mahogany, sagebrush, and bitterbrush) to provide desired ecological functions and values.</p>
<p>Timber DC-1. Lands identified as suitable for timber production support a regularly scheduled timber harvest program that provides for jobs and income while also sustaining ecological integrity DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p>	<p>Forests and Woodlands (including Forest Products) Goal FW1. Restore or maintain the health and productivity of public forests, to provide a balance of forest and woodland resource benefits, as well as wildlife and watershed needs to present and future generations. Goal FW2. Manage forestry resources to provide a sustained flow of local social and economic benefits and protect non-market economic values. Goal FW3. Maintain and improve sustainability and diversity of woodland communities to meet ecological site potential. Goal FW4. Manage dry forest types to contain healthy, relatively open stands with reproducing site-appropriate, desired vegetation species. Goal FW5. Manage moist forest types to contain healthy stands that combine into a diversity of age classes, densities, and structure (including dead and down material). Goal FW6. Manage old forest structure in a sustainable manner. (Note: old forest structure is defined by the following: large, old trees; large standing dead trees [snags]; fallen trees or logs on the forest floor; multiple canopy layers; and a developed, patchy understory. In forest types subject to frequent, low-intensity fire such as dry Douglas-fir or ponderosa pine, old forest structure is typically characterized by relatively open understories and fewer large fallen trees).</p>
<p>Fire and Fuels DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes. DC-2. Vegetation conditions (composition, structure, and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk. DC-3. There are minimal detrimental impacts to values at risk from wildland fire. Goal-2. The Custer Gallatin National Forest coordinates fire management actions with State, local, Tribal and adjacent Federal agencies. Opportunities to</p>	<p>Wildland Fire Management Goal FM1. Provide an appropriate management response to all wildland fires, emphasizing firefighter and public safety. Goal FM2. Move toward restoring and maintaining desired ecological conditions consistent with appropriate fire regimes. Goal FM3. Minimize the adverse effects of fire and fire suppression activities on resources, resource uses, and wildland-urban interface. Goal FM4. Promote seamless fire management planning across jurisdictions within the boundaries of the Butte Field Office. Goal FM5. Protect life and property by treating hazardous fuels on Bureau of Land Management lands.</p>

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<p>manage fire and fuels are expanded across the planning area through coordination and collaboration.</p>	
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Noxious Weed Management Goal NW1. Minimize infestations of invasive plants and noxious weeds.</p>
<p>Wildlife DC-2. Habitat conditions contribute to species recovery needs such that population trends of listed species are stable or increasing across their range. Lands within critical habitats designated by the U.S. Fish and Wildlife Service provide the physical and biological features identified as essential to the conservation and recovery of listed species. DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species. Goal-2. The Custer Gallatin National Forest coordinates management actions with other federal, state and local agencies, Tribes, and adjacent land owners. Opportunities to manage wildlife habitat and provide for connectivity are expanded through coordination and collaboration along and across administrative boundaries. Greater Sage Grouse DC-1. Greater sage-grouse habitat contains contiguous areas of native vegetation, including a variety of sagebrush-community compositions, little or no invasive species present, and variation in species composition, shrub cover, herbaceous cover and stand structure, to meet seasonal requirements for feeding, sheltering, breeding, nesting, brood rearing and habitat connectivity. Flight paths are unimpeded by man-made structures.</p>	<p>Wildlife, Fish, Wildlife Habitat, Special Status and Priority Plant and Animal Species Goal WF1. Manage to provide a variety of well-distributed plant communities to support a diversity of habitats. Goal WF2. Conserve, enhance, restore, or minimize impacts to areas of important wildlife habitat such as rare or limited seasonal habitats, corridors, and blocks of intact functional habitat across the landscape, areas of low road-density, and foraging areas. Goal WF3. Conserve, enhance, or restore special habitat features or minimize impacts to special habitat features including, but not limited to caves, cliffs, riparian areas, wetlands, snags, and down woody material. Goal WF4. With all management activities or authorizations: conserve, enhance, restore, minimize impacts to, or contribute to the recovery of threatened, endangered, or candidate plant or animal species. Goal WF5. With all management activities or authorizations: conserve or enhance sensitive and priority species and habitats; or minimize adverse effects to habitat of Bureau of Land Management sensitive plant and animal species to prevent the federal listing of these species. Goal WF6. Collaborate and cooperate with non-Bureau of Land Management entities to conserve special status species and habitats. Goal WF7. Protect, maintain, restore, and rehabilitate sagebrush habitat in occupied or historical sage grouse habitat.</p>
<p>Social and Economic Sustainability DC-1. Key forest resources, products, services, and opportunities including clean air, clean water and aquatic ecosystems, terrestrial ecosystems, education and volunteer programs, flood control, infrastructure, forest products, mineral and energy resources, historic, cultural, tribal or archeological sites, geologic features, grazing, scenery, recreation, spiritual inspiration, opportunities to</p>	<p>Social and Economic Environment Goal SE1. Provide opportunities for economic benefits while minimizing adverse impacts on resources and resource uses. Goal SE2. Provide for a diverse array of activities that result in social benefits for local residents, businesses, visitors, interested citizens, and future generations, while minimizing negative social effects.</p>

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<p>experience peace, quiet and solitude in nature, free roaming wildlife and designated areas (including their intrinsic values) contribute to the well-being, quality of life, mental, physical and spiritual health and safety of the public.</p> <p>DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>DC-3. Ecosystems structures and functions provide for clean air and water; desirable recreation and tourism opportunities; forest products; livestock forage; plant and animal food supplies, carbon sequestration, water storage; and mineral and other energy resources.</p> <p>Goal-1. The Custer Gallatin National Forest engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Goal SE3. Sustain, and where appropriate, restore the health of forest, rangeland, aquatic, and riparian ecosystems administered by the Bureau of Land Management to provide a sustained flow of economic benefits within the capability of the ecosystem.</p> <p>Goal SE4. Protect visual quality, wildlife habitats, and recreation opportunities to sustain non-market values.</p> <p>Goal SE5. Make resource commodities available to provide a sustainable flow of economic benefits within the capability of the ecosystem.</p> <p>Environmental Justice (EJ)</p> <p>Goal EJ1. Identify and remediate to the extent possible disproportionate negative effects to minority or low income populations per Executive Order 12898 – “Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations.”</p>
<p>Areas of Tribal Importance</p> <p>DC-1. In recognition of Federal trust responsibilities, healthy and sustainable plant and animal habitats support the availability of reserved treaty rights resources for traditional cultural practices.DC-2. Tribal members have access to sacred sites, sacred places and tribal cultural landscapes within the Custer Gallatin for the exercise of reserved treaty rights and traditional cultural practices.</p>	<p>Tribal Treaty Rights</p> <p>Goal TT1. Accommodate treaty and legal rights of Native American groups in management of public lands.</p>
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p>	<p>Cultural Resources, Traditional Cultural Properties, and Paleontological Resources</p> <p>Goal CP 1. Identify cultural resource sites, traditional cultural properties, and paleontological localities and mitigate impacts from natural or human-caused deterioration.</p> <p>Goal CP2. Preserve and protect eligible cultural resource sites, traditional cultural properties, and paleontological localities to ensure that they are available for appropriate uses by present and future generations.</p>
<p>Permitted Livestock Grazing</p> <p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Livestock Grazing</p> <p>Goal LG1. Manage for a sustainable level of livestock grazing while meeting or progressing toward land health standards.</p> <p>Goal LG2. Maintain, restore, or enhance Bureau of Land Management rangelands to meet the land health standards.</p> <p>Goal LG3. Manage livestock grazing to provide a sustained flow of local economic benefits and to protect non-market economic values.</p>

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<p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p> <p>DC-4. Abandoned mines lands and areas impacted by past mining activities reflect a state of site condition comparable to pre-mineral activity and provide comparable form and function based on site potential.</p> <p>DC-5. Underground environments in abandoned mines remain unaltered, except where necessary to protect human health and safety.</p> <p>DC-9. Geologic hazards (for example, naturally occurring erionite or radio-active materials, mass wasting, floods, sinkholes, abandoned mines, etc.) do not pose associated risks to public health and safety, facilities, and infrastructure.</p>	<p>Energy and Minerals</p> <p>Goal EM1. Ensure that federal minerals are available for energy and mineral exploration and development.</p> <p>Goal EM2. Manage exploration and development of mineral resources and ensure they are conducted in an environmentally sound manner.</p> <p>Goal EM3. Where possible, conserve significant, or unique geological features.</p> <p>Abandoned Mine Lands (AML)</p> <p>Goal AM1. Reclaim abandoned mine lands sites on public land to improve water quality, plant communities, and diverse fish and wildlife habitat.</p> <p>Goal AM2. Reduce or eliminate risks to human health from hazardous mine openings.</p> <p>Goal AM3. Protect historic resources and wildlife habitat commonly associated with abandoned mine lands sites.</p> <p>Hazardous Materials Management</p> <p>Goal HM1. Minimize threats and reduce risks to the public and environment from hazardous materials or sites.</p>
<p>Infrastructure, Roads, and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality, and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p>	<p>Transportation and Facilities</p> <p>Goal TF1. Maintain facilities, roads, and trails to provide for public and administrative use and safety while mitigating impacts to resources.</p>
<p>Recreation (the revised plan is not a travel management plan)</p> <p>Recreation Opportunity Spectrum</p> <p>ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p>	<p>Travel Management and Access</p> <p>Goal TM1. Provide a balanced approach to travel management that provides a sustained flow of local economic benefits, minimizes user conflicts, safety concerns, and resource impacts while taking into consideration the unique attributes and values of the various travel planning areas.</p>

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<p>Recreation, General</p> <p>DC-1. Recreation activities contribute to jobs and income in the local economy, community stability or growth, and the quality of lifestyles in the area.</p> <p>DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources.</p> <p>Developed Recreation Sites</p> <p>DC-2. Quality, well-maintained recreation facilities at key locations accommodate concentrations of use, enhance the visitor’s experience, provide for a range of opportunities in various settings, public health and safety, and protect the natural resources of the area. Developed recreation sites accommodate current and appropriate new levels of recreation use and integrate accessibility for users who have disabilities.</p> <p>Recreation Special Uses</p> <p>DC-3. Recreation special uses contribute to economic sustainability and are compatible with ecological and social experience thresholds.</p>	<p>Recreation Management</p> <p>Goal RM1. Provide a diverse array of recreational opportunities while maintaining healthy public land resources.</p> <p>Goal RM2. Establish, manage, and maintain quality recreation sites and facilities to meet a broad range of public needs subject to appropriate resource constraints.</p> <p>Goal RM3. Manage commercial, competitive, or special events with special recreation permits that eliminate or minimize impacts on resources and conflicts with other users.</p> <p>Goal RM4. Manage recreation opportunities to provide a sustained flow of local economic benefits and protect non-market economic values.</p>
<p>Scenery</p> <p>DC-2. The forest’s scenery, as directed by the scenic integrity objectives (table 20), contributes positively to visitors’ experiences as well as the quality of life in neighboring communities while reflecting a range of allowable management activities that balance social and economic values, ecological integrity, landscape dynamics and sustainability.</p>	<p>Visual Resources</p> <p>Goal VR1. Manage visual resources in accordance with visual resources management classifications described below.</p>
<p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p> <p>Land Uses</p> <p>DC-1. Opportunities are available for a variety of land special uses that include energy transmission rights-of-way, communication uses, access roads, research activities, and other public services, on lands that are suitable for these activities.</p>	<p>Lands and Realty</p> <p>Goal LR1. Seek opportunities to acquire non-federal land or interest in non-federal land with important resources and resource uses.</p> <p>Goal LR2. Provide land-use opportunities contributing to a sustained flow of economic benefits and meet local infrastructure needs while protecting or minimizing adverse impacts to resources and resource uses.</p>
<p>Not applicable</p>	<p>Not applicable: Special designations: the designations do not occur next to Custer Gallatin National Forest lands</p>

Billings Field Office, Montana

The Billings Field Office manages lands adjacent to the Custer Gallatin National Forest on the Beartooth Face and on the west, south, and east sides of the Pryor Mountains.

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<p>Air Quality</p> <p>DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses, and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p> <p>Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Air Resources</p> <p>Goal AIR 1. Ensure authorizations and management activities comply with local, State, and Federal air quality regulations and requirements.</p> <p>Goal AIR 2. Manage Bureau of Land Management authorized activities to maintain compliance with the National Ambient Air Quality Standards, Montana Ambient Air Quality Standards, and the Montana State Implementation Plan (MSIP).</p> <p>Goal AIR 3. Reduce air quality and air quality related value (AQRV) impacts, including visibility and acid deposition, by including technically and economically feasible management actions to reduce emissions of criteria and hazardous air pollutants.</p>
<p>Soils</p> <p>DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits.</p> <p>DC-2. Organic substrates (vegetative litter, coarse woody debris, and soil organic matter) are present in sufficient amounts to support soil fertility and ecological functions.</p>	<p>Soil Resources</p> <p>Goal SOIL 1. Maintain or improve soil health and productivity (for example, chemical, physical, and biotic properties) by implementing Standards for Rangeland Health and other soil protection measures.</p> <p>Goal SOIL 2. Minimize accelerated soil erosion and compaction and maintain surface soil water infiltration based on site specific conditions.</p> <p>Goal SOIL 3. Manage Bureau of Land Management-authorized activities to minimize soil mass movement (primarily from accelerated water/wind erosion) resulting from fire, above-ground disturbances, and accelerated stream bank erosion.</p> <p>Goal SOIL 4. Manage soil resources to.</p> <ul style="list-style-type: none"> • Prevent or minimize accelerated soil erosion • Prevent or minimize flood and sediment damage, as needed. • Establish desirable plant communities, maintain existing desirable vegetative ground cover composition consistent with the ecological site characteristics, and sustain other ground cover including biotic crusts and litter to increase or maintain surface soil stability and nutrient cycling • Manage Bureau of Land Management-authorized activities to minimize sediment delivery to creeks, streams, and standing bodies of water (lakes, ponds, reservoirs, etc.).
<p>Watershed and Aquatics</p> <p>DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p> <p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p>	<p>Water Resources</p> <p>Goal WATER 1. Maintain or improve surface water and groundwater resources, maintain compliance with applicable Federal and State water quality standards, and improve water quality where practical within the scope of the Bureau of Land Management’s authority.</p> <p>Goal WATER 2. Restore or maintain the chemical, physical, and biological integrity of water resources to protect designated beneficial uses and achieve water quality standards.</p>

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<p>DC-5. The sediment regime within water bodies is within the within the range of conditions of the reference watersheds, as defined by agency monitoring. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.</p> <p>DC-6. In-stream flows create and maintain riparian, aquatic, and wetland habitats; to retain patterns of sediment, nutrient, and wood routing and transport while maintaining reference dimensions (such as, bankfull width, depth, entrenchment ratio, slope, and sinuosity); to ensure floodplain inundation occurs within the natural range of variation allowing floodplain development; and to ensure the timing, magnitude, duration, and spatial distribution of peak, high, and low flows are retained, within the range of conditions of the reference watersheds, as defined by agency monitoring.</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>DC-8. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them.DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p>	<p>Goal WATER 3. Minimize erosion and subsequent sedimentation for improved stream and watershed health.</p> <p>Goal WATER 4. Maintain or improve morphological conditions to a stable state that can fully support beneficial uses.</p> <p>Goal WATER 5. Protect water quality for municipal, industrial, agricultural, recreation, and residential purposes by adopting protective measures to meet federal, tribal, state, and local water quality requirements.</p> <p>Goal WATER 6. Floodplains are properly functioning allowing for aquifer recharge, wildlife habitat, and flood water retention.</p> <p>Goal WATER 7. Stream channel conditions are representative of the site capacity and dimension and moderate flows to allow floodplain aquifer recharge and safeguard floodplains.</p> <p>Goal WATER 8. Secure and protect water rights for beneficial uses on the Bureau of Land Management administered lands to ensure water availability to the Bureau of Land Management authorized uses and programs.</p>
<p>Watershed and Aquatics</p> <p>DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p> <p>DC-11. Instream and riparian habitat conditions in managed watersheds move towards conditions similar to those in reference watersheds (conditions such as, large woody debris recruitment, pool frequency and residual depth, width-to-depth ratios, stream shading and temperature, bank stability, etc.).</p> <p>Goal-1. The Custer Gallatin National Forest cooperates with Montana Fish Wildlife and Parks and South Dakota Department of Game, Fish and Parks to reintroduce genetically pure native fish species in their historical range, introduce in locations the state(s) and the Custer Gallatin agree to for native fish species conservation, and/or conserve existing populations of native fish.</p>	<p>Fisheries Habitat and Special Status Species (FISHERIES) (FH and SSS)</p> <p>Goal FH and SSS 1. Manage aquatic habitat to provide native and desirable non-native species diversity and viability, and sustain ecological, economic, and social values while providing for multiple uses of public lands.</p> <p>Goal FH and SSS 2. Manage aquatic ecosystems to provide sustainable recreational and educational benefits to the public.</p> <p>Goal FH and SSS 3. Manage fisheries habitat to support Montana Fish, Wildlife and Park's (MTFWP) Strategic Habitat Plan and the Montana Comprehensive Fish and Wildlife Conservation Strategy</p> <p>Goal FH and SSS 4. Management activities will emphasize restoration and/or maintenance of riparian structure, composition, and processes, including physical integrity of riparian ecosystems, amount and distribution of woody debris to sustain physical and biological complexity, adequate summer and winter thermal regulation, water quality and hydrologic processes, distribution</p>

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	<p>and diversity of riparian vegetative communities and source habitats for riparian dependent species.</p> <p>Goal FH and SSS 5. Use cooperative efforts to minimize negative impacts on, or enhance aquatic ecosystems on adjacent private lands.</p> <p>Goal FH and SSS 6. Coordinate with other agencies to prevent or control diseases, pests and species that threaten the health of humans, wildlife, livestock, and vegetation.</p> <p>Goal FH and SSS 7. Manage or restore habitat on Bureau of Land Management-administered lands within the planning area to facilitate the conservation, recovery and maintenance of populations of native and special status species (Bureau of Land Management special status species, Candidate species, U.S. Fish and Wildlife Service listed, proposed, or petitioned species) consistent with appropriate local, State, and Federal management plans.</p> <p>Goal FH and SSS 8. Yellowstone Cutthroat Trout bearing waters and associated riparian habitat will be managed to protect all ecological values necessary to maintain or enhance Yellowstone Cutthroat Trout populations (using guidelines outlined in the Conservation Strategy for Yellowstone Cutthroat Trout in the States of Idaho, Montana, Utah, Nevada, and Wyoming).</p>
<p>Riparian Management Zones</p> <p>DC-1. R Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities. Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p> <p>DC-2. Riparian management zones are, at a minimum, in a properly functioning condition to provide energy dissipation, in-stream thermal buffering, sediment capture and routing, groundwater recharge, and have an intact normative flow regime.</p> <p>Terrestrial Vegetation</p> <p>Detailed Desired Conditions for riparian plant communities.</p> <p>Invasive Species</p> <p>DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Vegetation. Riparian and Wetlands (VEG/R&W)</p> <p>Goal VEG/R&W 1. Riparian and wetland areas will be managed to promote healthy wetland ecosystems, supporting physical processes and natural combinations of vegetation that work together to create stable stream banks, functional floodplains, complex fish and wildlife habitat ,and high water quality within site potential.</p> <p>Goal VEG/R&W 2. Riparian vegetation will be managed to achieve or sustain desired future conditions. The desired future conditions will be developed by an interdisciplinary team, giving consideration to restoring and promoting natural communities and complex riparian conditions valuable to water quality and wildlife habitat.</p> <p>Goal VEG/R&W 3. Invasive species management will focus on restoring native and desired non-native communities to riparian areas to attain desired future conditions.</p>

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<p>Terrestrial Vegetation Detailed Desired Conditions for forested vegetation. Detailed Desired Conditions for woodland plant communities.</p>	<p>Vegetation. Forests and Woodlands (VEG/F&W) Goal VEG/F&W 1. Restore or maintain the health and productivity of public forests and woodlands to provide a balance of forest and woodland resource benefits to current and future generations. Goal VEG/F&W 2. Manage forests and woodlands, considering factors such as species, density, canopy cover, age class, and stand health and understory components, to restore vitality, health, and diversity. Goal VEG/F&W 3. Promote forest vegetation recovery on forested lands after wildfire events. Goal VEG/F&W 4. Use fire and fuels treatments as an integrated approach to meet forest health objectives. Goal VEG/F&W 5. Return forests toward a more natural forest condition class and fire regime by implementing treatments that move forest conditions toward FRCC1. Goal VEG/F&W 6. Natural disturbance regimes will be maintained or mimicked so that plant communities are resilient to climate change and periodic outbreaks of insects, disease, and wildfire. Goal VEG/F&W 7. Manage quaking aspen stands to promote vigor and resilience and to promote expansion of its current range. Goal VEG/F&W 8. Manage coniferous and deciduous forests to promote vigor and resilience. Goal VEG/F&W 9. Manage forests and woodlands to meet or exceed the standards identified in Bureau of Land Management’s Standards for Rangeland Health (Standards 1 and 5).</p>
<p>Terrestrial Vegetation Detailed Desired Conditions for grassland and shrubland plant communities. DC-1. Native plant communities are self-sustaining relative to site potential, and represent a heterogeneous mix of seral stages, plant species, life forms and age classes to support and maintain plant diversity. DC-2. Native plant species and plant communities dominate the landscape. Nonnative species (such as cheatgrass, Kentucky bluegrass, timothy, and smooth brome) may be present, but do not increase in abundance or extent, and do not disrupt ecological processes or function.</p>	<p>Vegetation. Rangelands and Shrublands (VEG/R&S) Goal VEG/R&S 1. Manage vegetative resources to maintain a diversity of ecological conditions on rangelands while providing for a variety of multiple uses that are economically feasible, and based on sound biological principles and the best available science. Goal VEG/R&S 2. Manage vegetative communities to restore, maintain or enhance vegetation community health, habitat, composition and diversity to provide a mix of successional stages that incorporate diverse structure and composition in the desired vegetation types. Goal VEG/R&S 3. Maintain, improve, enhance, or restore habitat to facilitate the conservation, recovery, and maintenance of populations of native and desirable nonnative plant and animal species. Goal VEG/R&S 4. Promote recovery and restoration of sagebrush communities after wildfire events.</p>

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<p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Vegetation. Special Status Plants (Veg/SSP) Goal Veg/SSP 1. Conserve and recover special status plant species and the ecosystems on which they depend to prevent the need to list any of these species as threatened or endangered. Goal Veg/SSP 2. Protect or enhance areas of ecological importance for special status plant species. Manage for no net loss of habitat for any special status plant species. Goal Veg/SSP 3. Conserve and recover special status plant species by determining and implementing strategies, restoration opportunities, use restrictions, and management actions. Goal Veg/SSP 4. Manage specific environmental hazards, risks, and impacts in a manner compatible with special status plant species health.</p>
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems. Goal-1. The Custer Gallatin National Forest coordinates and cooperates with federal, state and county agencies, Tribes, non-government organizations, permittees, and adjacent landowners to support integrated pest management including invasive species prevention, early detection and rapid response, control and containment, restoration and rehabilitation, and inventory and monitoring activities.</p>	<p>Vegetation. Invasive Species and Noxious Weeds (VEG/IS&NW) Goal VEG/IS&NW 1. Manage for healthy native plant communities and desirable nonnative plant communities by reducing, preventing expansion of, or eliminating the occurrence of undesirable invasive species, undesirable nonnative, or noxious weeds (predatory plant pests or disease) by implementing management actions consistent with national guidance, state and local weed management plans. Goal VEG/IS&NW 2. Use integrated pest management to make progress towards a healthy plant community, while meeting multiple land use objectives and meeting Standards for Rangeland Health (Standards 1, 2, and 5). Goal VEG/IS&NW 3. Maintain baseline data to evaluate effectiveness of management actions and assess progress toward meeting invasive species management goals/objectives. Goal VEG/IS&NW 4. Create buffer zones to protect and/or restore fish and wildlife habitat and neighboring agricultural fields. Goal VEG/IS&NW 5. Control invasive and non-native weed species and prevent the introduction of new invasive species, including aquatic nuisance species, by implementing a comprehensive weed program including, coordination with key partners, prevention and early detection, education, inventory and monitoring, and using principles of integrated pest management and creating weed management areas.</p>
<p>Fire and Fuels DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes. DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to</p>	<p>Fire Ecology and Management (FIRE) Goal FIRE 1. Manage wildfire and fuels for the protection of public health, safety, property, and resource values. The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection.</p>

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<p>infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk.</p> <p>DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p> <p>Goal-2. The Custer Gallatin National Forest coordinates fire management actions with State, local, tribal and adjacent Federal agencies. Opportunities to manage fire and fuels are expanded across the planning area through coordination and collaboration.</p>	<p>Goal FIRE 2. Manage hazardous fuels in areas of urban and industrial interface to reduce potential loss due to fire.</p> <p>Goal FIRE 3. Maintain desired mix of seral stages within vegetation communities, including desert shrublands, forest and woodlands, grasslands, mountain shrublands, sagebrush (all sub-species), riparian/wetlands and aspen.</p> <p>Goal FIRE 4. Manage vegetation communities through cooperative efforts by restoring natural fire regimes and frequency to the landscape, where appropriate.</p> <p>Goal FIRE 5. Maintain partnerships with the public and interagency cooperators to strengthen coordination of all fire management activities and encourage the creation of fire-safe communities.</p> <p>Goal FIRE 6. Utilize an integrated management technique unless otherwise restricted (defined as prescribed fire, mechanical, chemical, or biological, followed by desired reseeding) to reduce fuels to protect high priority areas or resource values.</p>
<p>Wildlife</p> <p>DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-2. Habitat conditions contribute to species recovery needs such that population trends of listed species are stable or increasing across their range. Lands within critical habitats designated by the U.S. Fish and Wildlife Service provide the physical and biological features identified as essential to the conservation and recovery of listed species.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p> <p>DC-5. Landscape patterns throughout the Custer Gallatin provide habitat connectivity for wildlife, particularly wide-ranging species such as medium to large carnivores and wild ungulates. Resulting habitat connectivity facilitates daily and seasonal movement, as well as long-range dispersal of wildlife to support genetic diversity, allowing animals to adapt to changing conditions over time.</p> <p>DC-6. Habitat conditions within the Custer Gallatin near boundaries provide structural and functional diversity, and are resilient to existing and predictable future stressors, thereby supporting natural movement patterns for a wide variety of species across administrative boundaries.</p>	<p>Wildlife Habitat and Special Status Species (WLH & SSS)</p> <p>Goal WLH & SSS 1. Manage terrestrial habitat to provide native species diversity and viability, and to sustain ecological, economic, and social values while providing for multiple uses of public lands.</p> <p>Goal WLH & SSS 2. Manage for no net loss and connectivity of priority habitats on Bureau of Land Management-administered lands. The necessary habitat will be present to maintain, enhance, or restore T & E, special status, and priority native species populations. Sagebrush, native grasslands, seasonal or crucial wildlife ranges, special status species habitat, fisheries, cottonwood galleries, and riparian/wetlands will be priorities.</p> <p>Goal WLH & SSS 3. Manage all Bureau of Land Management actions or authorized activities to sustain wildlife populations and their habitats and to avoid contributing to the listing of or jeopardizing the continued existence or recovery of special status species and their habitats.</p> <p>Goal WLH & SSS 4. Manage or restore habitat on Bureau of Land Management-administered lands within the planning area to facilitate the conservation, recovery, and maintenance of populations of native, desirable non-native, and special status species consistent with appropriate local, state, and federal management plans.</p> <p>Goal WLH & SSS 5. Manage habitats to support Montana Fish Wildlife and Parks in the attainment of objectives and well-distributed, healthy populations of wildlife species consistent with the Montana Fish Wildlife and Parks' Strategic Habitat Plan, Montana's Comprehensive Fish and Wildlife Conservation Strategy, and strategic population plans, and to achieve the stated purpose of designated State of Montana Wildlife Management Area.</p>

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<p>Greater Sage-Grouse</p> <p>DC-1. Greater sage-grouse habitat contains contiguous areas of native vegetation, including a variety of sagebrush-community compositions, little or no invasive species present, and variation in species composition, shrub cover, herbaceous cover and stand structure, to meet seasonal requirements for feeding, sheltering, breeding, nesting, brood rearing and habitat connectivity. Flight paths are unimpeded by man-made structures.</p> <p>Goal-1. The Custer Gallatin National Forest actively engages in interagency efforts to coordinate Greater sage-grouse habitat management across administrative boundaries, and works cooperatively with willing private land owners to conserve priority and general sage-grouse habitat and provide connectivity across landownership boundaries.</p>	<p>Goal WLH & SSS 6. Minimize fragmentation of large intact blocks of wildlife habitat to maintain connectivity, population migrations and functional blocks of security habitat for big game species.</p> <p>Goal WLH & SSS 7. Manage environmental risks and associated impacts in a manner compatible with sustaining plant, fish, wildlife, and special status species populations. Environmental risks include, but are not limited to, parasites, diseases, insect outbreaks, catastrophic fires, contamination, pesticides, rodenticides, herbicides, climate, and other hazards.</p> <p>Goal WLH & SSS 8. Provide for the long-term conservation, enhancement, and restoration of the sagebrush steppe/mixed-grass prairie complex in a manner that supports sustainable greater sage-grouse populations and a healthy diversity and abundance of wildlife species.</p> <p>Goal WLH & SSS 9. Coordinate with other agencies to prevent or control diseases, pests and species that threaten the health of humans, wildlife, livestock, and vegetation.</p> <p>Goal WLH & SSS 10. Priority Habitat Management Areas (PHMA) for Greater Sage-Grouse habitat. To maintain or improve greater sage-grouse populations by maintaining greater sage-grouse habitat in good condition. Goal WLH & SSS 11. Greater Sage-Grouse Restoration Habitat Management Areas (RHMA). In these areas, Bureau of Land Management will manage habitat so that greater sage-grouse populations can be restored over the long-term. Bureau of Land Management will strive to restore historical greater sage-grouse habitat functionality, or at a minimum, have no net loss of greater sage-grouse habitat, to support greater sage-grouse populations.</p> <p>Goal WLH & SSS 12. Greater Sage-Grouse Habitat. General Habitat Management Areas (GHMA). Bureau of Land Management will maintain habitat for viable greater sage-grouse populations to promote movement and genetic diversity. Maintain, restore or enhance greater sage-grouse habitat and connectivity between sagebrush habitats, with emphasis on those habitats occupied by greater sage-grouse.</p>

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<p>Social and Economic Sustainability</p> <p>DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>Goal-1. The Custer Gallatin National Forest engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Areas of Tribal Importance</p> <p>Goal-1. Tribal cultural landscapes, sacred sites, sacred places, traditional cultural properties and other culturally significant areas identified by Tribes are maintained and managed through government to government consultation and coordination with the appropriate Tribes.</p>	<p>Social and Economic Conditions and Environmental Justice (SEC/EJ)</p> <p>Goal SEC/EJ 1. Provide opportunities for economic sustainability at the national, regional, and local level.</p> <p>Goal SEC/EJ 2. Provide for a diverse array of opportunities that result in social benefits for local residents, businesses, recreationists, visitors, interested citizens and future generations, while minimizing the negative social effects.</p> <p>Goal SEC/EJ 3. Identify and remediate, to the extent possible, disproportionate negative impacts on minority or low income populations per EO 12898.</p> <p>Goal SEC/EJ 4. Bureau of Land Management will continue to notify and consult with appropriate American Indian Tribes and Bureau of Land Management authorized actions. Consultation and coordination will be conducted on a government-to-government basis with federally recognized tribes with cultural affinity to the decision area. Management of public lands will accommodate the exercise of rights provided by treaties or law that are applicable to the planning area. Bureau of Land Management will coordinate with appropriate entities within tribal government on issues under its jurisdiction to determine appropriate protocols that provide for treaty uses of public lands.</p>
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence.</p> <p>DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p> <p>The Nez Perce (Nimiipuu or Nee-Me-Poo) National Historic Trail</p> <p>DC-1. Interpretive materials and identification signage are available for the Nez Perce (Nee-Me-Poo) National Historic Trail.</p>	<p>Cultural and Heritage Resources (C&HR)</p> <p>Goal C&HR 1. Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations (FLPMA, Section 103 (c), 201(a) and (c); National Historic Preservation Act (NHPA), Section 110(a); Archaeological Resources Protection Act, Section 14(a)).</p> <p>Goal C&HR 2. Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses (FLPMA Section 203(c), NHPA 106, 110(a) (2)) by ensuring that all authorizations for land use and resource use will comply with the National Historic Preservation Act, Section 106.</p> <p>Goal C&HR 3. Cultural resources on Bureau of Land Management-administered land will be protected and maintained in stable condition. Appropriate management actions will be determined after evaluation and allocation of cultural resource use categories through cultural resource project plans.</p> <p>Goal C&HR 4. Maintain viewsheds of important cultural resources whose settings contribute significantly to their scientific, public, traditional, or conservation values.</p>

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	<p>Goal C&HR 5. Provide and promote research opportunities that will contribute to our understanding of the ways humans have used and influenced the landscape.</p> <p>Goal C&HR 6. Manage historic trails to realize their educational, recreational, and scientific values.</p> <p>Goal C&HR 7. Enhance public understanding of, and appreciation for, cultural resources through educational outreach and heritage tourism opportunities.</p>
<p>Permitted Livestock Grazing</p> <p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Livestock Grazing (LG)</p> <p>Goal LG 1. Provide opportunities for livestock grazing as a part of multiple-use in a manner that meets and/or exceeds rangeland health standards.</p> <p>Goal LG 2. Maintain existing desirable (allotment categorization) rangeland conditions or improve rangeland health utilizing best grazing management practices.</p> <p>Goal LG 3. Monitor and evaluate rangeland health to determine appropriate management actions.</p> <p>Goal LG 4. Integrate livestock use and associated management practices with other multiple-use needs and objectives to maintain, protect, and improve rangeland health.</p>
<p>Timber</p> <p>DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p> <p>Special Forest Products</p> <p>DC-1. A variety of special forest products are available for commercial, personal, tribal, educational, and scientific uses.</p>	<p>Forestry and Woodland Products (FWP)</p> <p>Goal FWP 1. Manage forest resources to provide a sustained flow of local economic benefits and protect nonmarket economic values, consistent with other resource objectives.</p> <p>Goal FWP 2. Provide forest products while maintaining a balance between public demand and the health and productivity of native and desired vegetative communities. Forest product sales include over the-counter sales of firewood, Christmas trees or other products, and small amounts of materials removed as a result of other authorizations such as rights-of-way, road use agreements, grazing leases, or other land uses.</p> <p>Goal FWP 3. Provide forest and woodland products including, but not limited to; saw logs, pulp, post/poles, fuel wood, and biomass on a sustainable basis.</p> <p>Goal FWP 4. Manage forests and woodlands to meet or exceed the standards identified in Bureau of Land Management’s Standards for Rangeland Health (Standards 1 and 5)</p>

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<p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p> <p>DC-7. Opportunities for rock hounding and other types of noncommercial rock and mineral collecting (such as, for recreational, scientific, research, or educational purposes) are available.</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p>	<p>Energy & Mineral Resources. Solid Leasables (including coal) (SL-COAL)</p> <p>Goal SL-COAL 1. Make federal solid mineral resources available for exploration and acquisition consistent with other resource goals.</p> <p>Goal SL-COAL 2. Identify the public lands open to solid minerals leasing in accordance with existing laws and regulations (43 CFR, Parts 3400 and 3500)</p> <p>Energy & Mineral Resources. Fluid Mineral Resources (FLUIDS)</p> <p>Goal FLUIDS 1. Provide opportunities for exploration and development of fluid mineral resources on available public lands.</p> <p>Goal FLUIDS 2. Provide opportunities for exploring, leasing, and developing conventional oil and gas, coal bed natural gas, and geothermal resources while applying the appropriate lease stipulations and COA to mitigate environmental impacts from development.</p> <p>Goal FLUIDS 3. Provide opportunities for geophysical (for example seismic) exploration for oil and gas subject to the appropriate mitigating measures.</p> <p>Energy & Mineral Resources. Locatable Minerals (LOC_MIN)</p> <p>Goal LOC_MIN 1. Encourage and facilitate development of locatable minerals in the manner to prevent unnecessary or undue degradation, as defined in 3809.5. Provide land use opportunities contributing to economic benefits while protecting or minimizing adverse impacts on other resources.</p> <p>Goal LOC_MIN 2. Identify the public lands open to locatable mineral entry in accordance with existing laws and regulations (43 CFR, Part 3700 and 3800).</p> <p>Energy & Mineral Resources. Mineral Materials (Saleable) (SALE_MIN)</p> <p>Goal SALE_MIN 1. Provide land-use opportunities contributing to economic benefits and meet local infrastructure needs while protecting or minimizing adverse impacts on other resources and resource uses.</p> <p>Goal SALE_MIN 2. Identify the public lands open to minerals materials disposal in accordance with existing laws and regulations (43 CFR, Part 3600)</p> <p>Paleontological Resources (PALEO)</p> <p>Goal PALEO 1. Identify, manage, and monitor at-risk paleontological resources (scientific values); preserve and protect vertebrate fossils through best science methods; and promote public and scientific use of invertebrate and paleo-botanical fossils.</p> <p>Goal PALEO 2. Manage fossil locales with high scientific value in a stable condition, while allowing appropriate scientific and public use.</p> <p>Goal PALEO 3. Locate, evaluate, and manage paleontological resources and protect them where appropriate</p> <p>Goal PALEO 4. Facilitate suitable scientific, educational, and recreational uses of fossils</p>

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	<p>Goal PALEO 5. Ensure that significant fossils are not inadvertently damaged, destroyed, or removed from public ownership as a result of surface disturbance or land tenure adjustments.</p> <p>Renewable Energy (RE)</p> <p>Goals RE 1. Provide opportunities for the development of renewable energy resources from sources such as wind, biomass, and solar, while minimizing adverse impacts on other resource values.</p> <p>Goals RE 2. Make lands available for renewable energy development, consistent with goals and objectives of other resources.</p> <p>Goals RE 3. In cooperation with project proponents, promote and enhance scientific knowledge of renewable energy resources in the planning area.</p>
<p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-6. Cave and karst resources, inclusive of significant caves, are available for the use, enjoyment, and provision of benefits associated with the cave or karst resources, while also providing wildlife habitat requirements of stress and disease-free environments for vulnerable, cave-associated species</p>	<p>Cave and Karst Resources (CAVE)</p> <p>Goal CAVE 1. Manage all cave resources as mandated by the Federal Cave Resources Protection Act of 1988, National Environmental Policy Act, the Endangered Species Act, and other applicable laws and regulations to protect unique, nonrenewable, and fragile biological, geological, hydrological, cultural, paleontological, scientific and recreational values for present and future users.</p> <p>Goal CAVE 2. Cave and karst resources will be managed to provide opportunities for scientific research, educational study, and recreational experiences which are compatible and consistent with protection of all biologic and non-biologic resources associated with caves and karst landforms.</p>
<p>Infrastructure, Roads and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p>	<p>Transportation and Facilities (T&F)</p> <p>Goal T&F 1. Manage roads, primitive roads and trails for public access or administrative needs, while maintaining or protecting resource values, in coordination with other federal agencies, state and local governments and private landowners. This action will be done in coordination with the development and implementation of the TMAs.</p> <p>Goal T&F 2. Ensure Bureau of Land Management facilities are maintained to meet public health and safety requirements.</p>
<p>Recreation (the revised plan is not a travel management plan)</p> <p>Recreation Opportunity Spectrum</p> <p>ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p>	<p>Trails and Travel Management (TTM)</p> <p>Goal TTM 1. Manage access to balance public use and protect public land resources,</p> <p>Goal TTM 2. Promote safety for all public land users, and</p> <p>Goal TTM 3. Minimize conflicts among off-highway vehicle users and other uses of public lands.</p> <p>Goal TTM 4. Goals and objectives will accomplish this by using partnerships with other land managing agencies, local governments, communities, and</p>

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	<p>interest groups through a balanced approach, to protect public lands by minimizing impacts and resources while providing opportunities for the safe use and enjoyment of off-highway vehicles.</p> <p>Goal TTM 5. The Billings Field Office will use a systematic process that considers the unique resource issues and social environments within each individual TMA and integrate concepts of habitat connectivity into off-highway vehicle planning to minimize habitat fragmentation.</p> <p>Goal TTM 6. Establish a long-term, sustainable, multi-modal transportation system of areas, roads, trails, and primitive roads which addresses public and administrative access needs to and across Bureau of Land Management-managed lands and related waters.</p> <p>Goal TTM 7. Manage travel and transportation on public lands and related waters in accordance with law, EO, proclamation, regulation, and policy.</p>
<p>Recreation, General</p> <p>DC-1. Recreation activities contribute to jobs and income in the local economy, community stability or growth, and the quality of lifestyles in the area.</p> <p>DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources.</p> <p>Goal-2. The Forest Service encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p> <p>Developed Recreation Sites</p> <p>DC-2. Quality, well-maintained recreation facilities at key locations accommodate concentrations of use, enhance the visitor’s experience, provide for a range of opportunities in various settings, public health and safety, and protect the natural resources of the area. Developed recreation sites accommodate current and appropriate new levels of recreation use and integrate accessibility for users who have disabilities.</p>	<p>Recreation and Visitor Services (REC)</p> <p>Goal REC 1. Public lands managed by the Billings Field Office provide a diverse array of benefits to the public, including economic, environmental, personal, and social ones.</p> <p>Goal REC 1. The Bureau of Land Management policy is to develop and maintain cooperative relationships with national, state, and local recreation providers, tourism entities, and local recreational groups.</p> <p>Goal REC 1. Bureau of Land Management’s goal is to develop and maintain appropriate recreational facilities, balancing public demand, protection of public land resources, and fiscal responsibility.</p> <p>Goal REC 1. The management direction is to emphasize and support collaborative public outreach, awareness events, and programs that promote public service and stewardship, and to encourage sustainable travel and tourism development with local communities and provide community-based conservation support for visitor service. The emphasis is placed on providing interpretive and informational signs and materials for public lands visitors, maintaining facilities to a high standard consistent with the recreational setting, and limiting development of additional facilities to those areas where public recreational use of surrounding public lands requires them.</p>
<p>Scenery</p> <p>DC-1. The forest’s scenery provides for public enjoyment of the forest’s varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p> <p>DC-2. The forest’s scenery, as directed by the scenic integrity objectives (table 20), contributes positively to visitors’ experiences as well as the quality of life in neighboring communities while reflecting a range of allowable management activities that balance social and economic values, ecological integrity, landscape dynamics and sustainability.</p>	<p>Visual Resources (VISUAL)</p> <p>Goal VISUAL 1. Manage public lands for their scenic values while providing for the overall multiple-use and quality of experience to visitors of public lands.</p> <p>Goal VISUAL 2. Establish visual management objectives to minimize adverse impacts on the visual resources on the landscape.</p> <p>Goal VISUAL 3. Maintain the overall integrity of visual resources management classes, while allowing for modifications to landscapes in those classes, consistent with the established management objectives.</p>

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<p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p> <p>DC-2. Consolidated surface and mineral ownership meets resource and communities needs and facilitates efficient land management.</p> <p>DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p> <p>Land Uses</p> <p>DC-1. Opportunities are available for a variety of land special uses that include energy transmission rights-of-way, communication uses, access roads, research activities, and other public services, on lands that are suitable for these activities.</p>	<p>Realty, Cadastral Survey, and Lands. Land Tenure Adjustment and Access (R/LT)</p> <p>Goal R/LT 1. Manage the acquisition, disposal, withdrawal, and use of public lands to meet the access needs of internal and external customers and to preserve important resource values.</p> <p>Goal R/LT 2. Acquire or retain access to public lands to improve management efficiency, to facilitate multiple uses and public enjoyment of Bureau of Land Management public lands in coordination with private landownership, local, state or federal entities.</p> <p>Goal R/LT 3. Maintain and/or acquire access across state/private lands to public lands for recreational opportunities and management of public land resources.</p> <p>Goal R/LT 4. Public access will be maintained or improved through all land ownership adjustment transactions.</p> <p>Realty, Cadastral Survey, and Lands. Rights-of-Way, Leases, and Permits (R/RLP)</p> <p>Goal R/RLP 1. Manage public lands to meet transportation and rights-of-way (ROW) needs while protecting resources.</p> <p>Goal R/RLP 2. Address the needs of industry, utilities, the public, or government entities for land use authorizations while minimizing impacts on other resource values.</p> <p>Goal R/RLP 3. Maintain availability of public lands to meet the habitation, cultivation, trade, mineral development, recreation, and manufacturing needs of external customers and the general public.</p> <p>Goal R/RLP 4. Indirect effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.</p> <p>Realty, Cadastral Survey, and Lands. Withdrawals (R/WD)</p> <p>Goal R/WD 1. Protect significant resources or significant government investments.</p> <p>Goal R/WD 2. Use withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the required purposes of the withdrawal.</p>
<p>See:</p> <p>Pryor Mountain Wild Horse Territory Wildlife Cultural and historical resources, At-Risk plant species Energy, Minerals and Geological Areas of Interest</p>	<p>3.2.3 Special Designations</p> <p>East Pryor ACEC (EP/ACEC)</p> <p>Goal EP/ACEC 1. The East Pryor ACEC will be managed to protect wild horse and wildlife habitat, historical/cultural resources, special status plant species, and paleontological values. In addition, the values for which the Crooked Creek Natural Area and the Crooked Creek National Natural Landmark were designated will be maintained.</p>

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<p>Eligible Wild and Scenic Rivers DC-1. Eligible wild, scenic, or recreational rivers retain their free-flowing condition, preliminary classification, and the outstandingly remarkable values which provide the basis for their inclusion in the system.</p>	<p>Wild and Scenic Rivers (WSR) Goal WSR 1. The Billings Field Office management strategy is to manage eligible river to protect and enhance the free flowing character, water quality, and outstandingly remarkable values until suitability can be determined through the land use planning process, determine the suitability or non-suitability of eligible rivers for potential inclusion within the NWSR through the land use planning process, manage suitable rivers to protect and enhance the free-flowing character, water quality, and identified outstandingly remarkable values until congress designates the river as a component of the NWSRS or releases the river for other uses.</p>
<p>Pryor Mountain Wild Horse Territory DC-1. Pryor Mountain Wild Horse Territory maintains a thriving ecological balance with other resources and activities. Goal-1. The Custer Gallatin National Forest coordinates and cooperates with Bureau of Land Management as the lead agency to achieve efficient and successful management of the entire Pryor Mountain wild horse range Goal-2. The Custer Gallatin National Forest coordinates with the Bureau of Land Management, and other Federal and State agencies to maintain or enhance wild horse habitat and appropriate management level in a manner, which is compatible with wildlife habitat and population numbers.</p>	<p>Wild Horses (WH) Goal WH 1. Maintain, protect, manage, and control a healthy wild horse herd inside the horse management area within the appropriate management level (AML) to ensure a thriving natural ecological balance, while preserving multiple use relationships with other uses and resources, and making progress towards Standards for Rangeland Health (Standards 1 and 5). Goal WH 2. Maintain a wild horse herd that exhibits a diverse age structure, genetic diversity, and any characteristics unique to the Pryor horses. Goal WH 3. Manage wild horses within a balanced program which considers all values without impairment to the productivity of the land. Pryor Mountain Wild Horse Range (PMWHR) Goal PMWHR 1. Management activities for other resources and programs within the Pryor Mountain Wild Horse Range will be designed in a manner to minimize impacts on wild horses and their habitat. During the summer and fall seasons the Pryor Mountain Wild Horse Range attracts many members of the public who enjoy viewing the wild horses and other recreational opportunities (for example camping, hiking, all-terrain vehicle riding, hunting, naturalizing, etc.). Goal PMWHR 2. Management of the administrative designation area will be to enhance wild horse protection and habitat from congested recreational use, providing for public health, and safety of public land users.</p>
<p>Recommended Wilderness Areas DC-1. Recommended wilderness areas maintain their existing wilderness characteristics, to preserve opportunities for inclusion in the National Wilderness Preservation System. DC-2. Recommended wilderness areas provide outstanding opportunities for solitude or primitive and unconfined recreation. Impacts from visitor use do not detract from the natural setting. DC-3. Recommended wilderness areas are characterized by a natural environment where ecological processes such as natural succession, wildfire,</p>	<p>Wilderness Study Areas (WSA) Goal WSA 1. Manage Wilderness Study Areas (WSAs) following Bureau of Land Management Manual 6330 – Management of Bureau of Land Management Wilderness Study Areas - until such time as Congress acts upon the recommendations. Goal WSA 2. The Bureau of Land Management is statutorily (FLPMA Section 603(c)) required to manage these areas to protect their suitability for Congressional designation into the National Wilderness Preservation System unless and until Congress either designates an area as wilderness or releases it from further consideration.</p>

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<p>avalanches, insects and disease function as the primary forces affecting the environment.</p>	<p>Lands With Wilderness Characteristics (LWC) Goal LWC 1. Protect, preserve, and maintain wilderness characteristics in areas inventoried and found to possess them. Goal LWC 2. LWCs will be managed to maintain.</p> <ul style="list-style-type: none"> • A high degree of naturalness (where lands and resources are affected primarily by the forces of nature and where the imprint of human activity is substantially unnoticeable); • Outstanding opportunities for solitude (when the sights, sounds, and evidence of other people are rare or infrequent and where visitors can be isolated, alone or secluded from others), and • Outstanding opportunities for primitive and unconfined recreation, where the use of the area will be through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.
<p>Watershed and Aquatics DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p> <p>Forested Vegetation DC-3. The forest supports a diversity of successional stages that is ecologically resilient and sustainable. Table 5 represents the desired condition of successional stages (estimated by size classes) across the forest. The location and abundance of size classes fluctuate over time as forests develop, are influenced by disturbances, and may be limited by site productivity and species composition. The range of desired conditions allows for variations in the mix of structural stages to respond to potential changes in climate. Desired condition ranges for each broad potential vegetation type apply at both the forestwide and geographic area scales.</p> <p>DC-4. The forest supports a range of forest densities that is resilient and sustainable. Table 6 displays the desired condition ranges for the percent of each broad potential vegetation type in each density class. The range of desired conditions allows for variations in the mix of density classes across the landscape to respond to potential changes in climate. Desired condition ranges for each broad potential vegetation type apply at both the forestwide and geographic area scales.</p> <p>Carbon DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p>	<p>Climate Change (CC) Goal CC-1. For oil and gas activities, reduce greenhouse gas emissions on a unit-production basis. Goal CC-2. Evaluate the observed and anticipated long-term dynamic of climate change and reduce greenhouse gas emissions from projects when feasible. Goal CC-3. Provide for diverse, healthy ecosystems that are resilient to stressors, such as climate change. Goal CC-4. Provide for flexible, adaptable management that allows for timely responses to changing climatic conditions. Goal CC-5. Maintain or improve the ability of the Bureau of Land Management lands to reduce (sequester) atmosphere greenhouse gases.</p>

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<p>Developed Recreation Sites DC-09. 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.</p>	
<p>Not applicable</p>	<p>Not applicable: Special designations that do not occur near National Forest System lands</p>

Miles City Field Office, Montana

The Miles City Field Office manages lands adjacent to the Custer Gallatin National Forest near the Ashland Ranger District and Montana units of the Sioux Ranger District.

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<p>Air Quality</p> <p>DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p> <p>Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p> <p>Carbon DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p>	<p>Air Resources (see end of this table for Climate)</p> <p>Goal 1. Maintain or enhance air quality and air quality related values in the planning area and at sensitive areas (for example, Class I areas) in and near the planning area.</p> <p>Goal 4. Provide for flexible, adaptable management that allows for timely responses to changing climatic conditions.</p> <p>Goal 5. Maintain or improve the ability of Bureau of Land Management-administered lands to reduce (sequester) atmospheric greenhouse gases.</p>
<p>Soils</p> <p>DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits.</p> <p>DC-2. Organic substrates (vegetative litter, coarse woody debris, and soil organic matter) are present in sufficient amounts to support soil fertility and ecological functions.</p> <p>DC-3. Coarse woody debris (downed woody material greater than or equal to 3 inches diameter) is present across forested vegetation communities in quantities consistent with the natural range of variation, as shown in Table 1, providing forest structural diversity, soil ecological function and wildlife habitat. Individual stands may have little or no coarse woody debris, or a higher amount depending on site productivity, disturbance history and management objectives. Amounts below the desired average are found on hot dry sites, in developed recreation areas, and where the concern for fire impacts to values at risk is elevated. Higher amounts may be found on moist sites and riparian areas, areas with low direct human influence, areas that have burned, and those with insect/disease infestations.</p>	<p>Soils</p> <p>Goal 1. Maintain or improve the chemical, physical, and biotic properties of soil.</p>

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Revised Plan Components	Miles City Field Office 2015 Resource Management Plan Components
<p>Watershed and Aquatics Multiple Desired Conditions, including:</p> <p>DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p> <p>DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p> <p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p>	<p>Water Resources Goal 1. Maintain or enhance the beneficial uses of surface water and groundwater.</p> <p>Riparian and Wetland Areas Goal 1. Manage riparian and wetland systems to be healthy, diverse, and functional.</p> <p>Fish, Aquatic and Wildlife Habitat, Including Special Status Species Goal 1. Provide habitats for well-distributed and diverse fish and wildlife. Goal 2. Maintain, enhance, or restore habitats for special status fish and wildlife species to ensure Bureau of Land Management actions do not contribute to the need to list these species.</p>
<p>Vegetation Multiple Desired Conditions for forested and other vegetation types.</p> <p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p> <p>Greater Sage-Grouse DC-1. Greater sage-grouse habitat contains contiguous areas of native vegetation, including a variety of sagebrush-community compositions, little or no invasive species present, and variation in species composition, shrub cover, herbaceous cover and stand structure, to meet seasonal requirements for feeding, sheltering, breeding, nesting, brood rearing and habitat connectivity. Flight paths are unimpeded by man-made structures.</p>	<p>Vegetation Goal 1. Manage vegetation communities to restore, maintain, or enhance vegetation community health, connectivity, resiliency, and diversity.</p>

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Revised Plan Components	Miles City Field Office 2015 Resource Management Plan Components
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Invasive Species Goal 1. Manage for healthy native plant communities and aquatic systems by reducing, preventing expansion of, or eliminating the occurrence of invasive species.</p>
<p>Fire and Fuels DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes. DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk. DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p>	<p>Wildland Fire Management and Ecology Fuels Management/Prescribed Fire Goal 1. Provide for firefighter and public safety by reducing hazardous fuel loads (risk) within the wildland-urban interface. Goal 2. Protect or sustain the ecological health and function of fire-adapted ecosystems; reduce the risk of high severity wildfires to watersheds and ecosystems; and benefit, protect, maintain, sustain, and enhance natural and cultural resources. Wildland Fire Management Goal 1. Place public and firefighter safety first in any wildfire management action. Goal 2. Manage wildfire (unplanned ignitions) for the protection of public health, safety, property, and resource values while implementing cost-containment strategies that result in minimum suppression costs. Goal 3. Use a naturally occurring event such as wildfire to enhance vigor, vegetation production, reduce hazardous fuels, and maintain a desired mix of seral stages within the following communities: sagebrush (silver and Wyoming species), forest and grasslands, riparian and wetland areas, and native species communities. Goal 4. Create and maintain landscape-level fuel breaks using fire management, grazing, range improvements, transportation corridors, terrain features, and vegetation communities to provide suppression opportunities. Objective 1. Identify areas where fire as a resource benefit could achieve the resource management goals.</p>
<p>Wildlife DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p>	<p>Fish, Aquatic and Wildlife Habitat, Including Special Status Species Goal 1. Provide habitats for well-distributed and diverse fish and wildlife. Goal 2. Maintain, enhance, or restore habitats for special status fish and wildlife species to ensure Bureau of Land Management actions do not contribute to the need to list these species.</p>

Revised Plan Components	Miles City Field Office 2015 Resource Management Plan Components
<p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p> <p>DC-4. Habitat conditions provide security and refuge for wildlife to escape from stresses and threats, while still meeting basic needs such as feeding, breeding, sheltering and movement.</p> <p>DC-5. Landscape patterns throughout the Custer Gallatin provide habitat connectivity for wildlife, particularly wide-ranging species such as medium to large carnivores and wild ungulates. Resulting habitat connectivity facilitates daily and seasonal movement, as well as long-range dispersal of wildlife to support genetic diversity, allowing animals to adapt to changing conditions over time.</p> <p>DC-6. Habitat conditions within the Custer Gallatin near boundaries provide structural and functional diversity, and are resilient to existing and predictable future stressors, thereby supporting natural movement patterns for a wide variety of species across administrative boundaries.</p> <p>Greater Sage-Grouse</p> <p>DC-1. Greater sage-grouse habitat contains contiguous areas of native vegetation, including a variety of sagebrush-community compositions, little or no invasive species present, and variation in species composition, shrub cover, herbaceous cover and stand structure, to meet seasonal requirements for feeding, sheltering, breeding, nesting, brood rearing and habitat connectivity. Flight paths are unimpeded by man-made structures.</p>	
<p>Social and Economic Sustainability</p> <p>DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p> <p>Goal-1. The Custer Gallatin National Forest engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p> <p>Minerals</p> <p>DC-9. Geologic hazards (for example, naturally occurring erionite or radioactive materials, mass wasting, floods, sinkholes, abandoned mines, etc.) do not pose associated risks to public health and safety, facilities, and infrastructure.</p>	<p>Social and Economic Consideration</p> <p>Goal 1. Provide for a diverse array of stable economic opportunities in an environmentally sound manner.</p> <p>Goal 2. Identify and correct or revise, to the extent possible, disproportionate negative effects on minority or low-income populations in accordance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.</p> <p>Goal 3. Protect humans and the environment from exposure to hazardous materials.</p>

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Revised Plan Components	Miles City Field Office 2015 Resource Management Plan Components
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence.</p> <p>DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Cultural Resources</p> <p>Goal 1. Identify, preserve, and protect significant cultural resources on Bureau of Land Management-administered lands.</p> <p>Goal 2. Ensure cultural resources are available to present and future generations for appropriate uses such as scientific studies, public education and traditional cultural values.</p>
<p>Permitted Livestock Grazing</p> <p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Livestock Grazing</p> <p>Goal 1. Provide forage for livestock grazing consistent with other resources and uses as part of an ecologically healthy system consistent with multiple use and sustained yield.</p> <p>Goal 2. Utilize grazing activities to manage for the biological integrity of terrestrial and aquatic ecosystems to sustain vegetation, fish, and special status species, while providing for multiple uses of Bureau of Land Management-administered lands.</p> <p>Goal 3. Provide opportunities for livestock grazing to support and sustain local communities while providing habitat for native plants, fish, and animals (including special status species) and meeting or exceeding proper functioning condition (PFC) for uplands and riparian areas and Montana's air and water quality standards.</p>
<p>Vegetation</p> <p>Multiple Desired Conditions for forested and other vegetation types.</p> <p>VEGNF DC-1. Native plant communities are self-sustaining relative to site potential, and represent a heterogeneous mix of seral stages, plant species, life forms and age classes to support and maintain plant diversity.</p> <p>Timber</p> <p>DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p> <p>Carbon DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p>	<p>Forestry and Woodland Products</p> <p>Goal 1. Promote healthy, resilient, and vigorous forestland communities. Forestland mosaics are managed for diversity of stand structures and species components that complemented other resource values, including (but not limited to) recreation, wildlife, rangelands, fisheries, and wood production.</p>

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Revised Plan Components	Miles City Field Office 2015 Resource Management Plan Components
<p>Energy, Minerals and Geological Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.DC-7. Opportunities for rock hounding and other types of noncommercial rock and mineral collecting (such as, for recreational, scientific, research, or educational purposes) are available.</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p> <p>DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Minerals</p> <p>Goal 1. Provide opportunities for mineral use in an environmentally responsible manner.</p> <p>Goal 2. Provide opportunities for renewable energy development, especially for wind energy, while avoiding or minimizing adverse impacts on wildlife, cultural, visual, and other resource values.</p> <p>Paleontological Resources</p> <p>Goal 1. Identify, preserve, and protect significant paleontological resources on Bureau of Land Management-administered lands.</p> <p>Goal 2. Ensure that paleontological resources are available to present and future generations for appropriate uses such as scientific studies and public education.</p> <p>Renewable Energy</p> <p>Goal 1. Provide opportunities for the development of renewable energy resources (from sources such as wind and solar) while minimizing adverse impacts on other resource values</p>
<p>Recreation, General</p> <p>DC-5. Recreational uses, and facilities including trails and dispersed sites, and their use have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species.</p> <p>Goal-2. The Custer Gallatin National Forest encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p> <p>Dispersed Recreation</p> <p>DC-1. Dispersed opportunities are available across the Custer Gallatin for a wide variety of users where compatible with environmental resources, cultural resources, recreation settings, and social interactions such as user conflicts and crowding.</p>	<p>Recreation</p> <p>Goal 1. Provide a diverse array of quality resource-based recreation opportunities while protecting and interpreting the resource values, providing educational opportunities, minimizing recreational use conflicts, and promoting public safety.</p> <p>Goal 2. Establish, manage, and maintain quality recreation sites and facilities to balance public demand and protection of public land resources.</p> <p>Goal 3. Manage recreation opportunities and experiences to provide a sustained flow of local economic benefits and protect non-market economic values.</p>
<p>Recreation (the revised plan is not a travel management plan)</p> <p>Recreation Opportunity Spectrum</p> <p>ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p>	<p>Travel Management and Off-Highway Vehicle Use</p> <p>Goal 1. Provide a balanced approach to travel management that offers a sustained flow of local economic benefits and minimizes or mitigates user conflict, safety concerns, and resource impacts while taking into consideration the unique attributes and values of the various travel management planning areas.</p>

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<p>Scenery DC-1. The forest's scenery provides for public enjoyment of the forest's varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>Visual Resources Goal 1. Maintain scenic qualities consistent with the management of resources and uses.</p>
<p>Land Status and Ownership, Access, and Land Uses DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands. DC-2. Consolidated surface and mineral ownership meets resource and communities needs and facilitates efficient land management. DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands. Land Uses DC-2. Energy corridors throughout the planning area improve the delivery of electricity, oil, and gas, and enhance the western electric transmission grid by improving reliability, reducing congestion, and contributing to the national electrical grid. Goal-2. The Custer Gallatin National Forest coordinates with project proponents to co-locate emerging technology, communication sites, energy corridors, and other permitted infrastructure to minimize environmental and visual impacts.</p>	<p>Lands and Realty Goal 1. Provide public lands, interests in land, and authorizations for public and private uses while maintaining and improving resource values. Goal 2. Adjust public land and mineral ownership to acquire significant resources and consolidate surface or mineral estates to improve management efficiency and accessibility, obtain special designation area inholdings, and enhance significant recreational values. Goal 3. Use withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the required purposes of the withdrawal. Goal 4. Strive to increase and diversify the nation's sources of both traditional and alternative energy resources, improve the energy transportation network, and ensure sound environmental management. Goal 5. Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.</p>
<p>Water DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p>	<p>Climate (see beginning of this table for Air Resources) Goal 2. Reduce greenhouse gas (GHG) emissions when feasible. Goal 3. Evaluate the observed and anticipated long-term dynamic of climate change and minimize the impact of GHGs from s to the degree practicable and reasonably foreseeable.</p>

Revised Plan Components	Miles City Field Office 2015 Resource Management Plan Components
<p>Forested Vegetation</p> <p>DC-3. The forest supports a diversity of successional stages that is ecologically resilient and sustainable. Table 5 represents the desired condition of successional stages (estimated by size classes) across the forest. The location and abundance of size classes fluctuate over time as forests develop, are influenced by disturbances, and may be limited by site productivity and species composition. The range of desired conditions allows for variations in the mix of structural stages to respond to potential changes in climate. Desired condition ranges for each broad potential vegetation type apply at both the forestwide and geographic area scales.</p> <p>DC-4. The forest supports a range of forest densities that is resilient and sustainable. Table 6 displays the desired condition ranges for the percent of each broad potential vegetation type in each density class. The range of desired conditions allows for variations in the mix of density classes across the landscape to respond to potential changes in climate. Desired condition ranges for each broad potential vegetation type apply at both the forestwide and geographic area scales.</p> <p>Carbon</p> <p>DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p> <p>Developed Recreation Sites</p> <p>DC-9. 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.</p>	
<p>Not applicable</p>	<p>Not applicable: special designations not near National Forest System lands</p> <ul style="list-style-type: none"> • National Trails (Lewis and Clark Trail) • Special recreation management areas, extensive recreation management areas and public lands not designated • Areas of critical environmental concern • Lands with wilderness characteristics, wilderness study areas

South Dakota Field Office, South Dakota

The South Dakota Field Office manages some scattered parcels adjacent to the Custer Gallatin National Forest in Harding County, South Dakota.

Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
<p>Air Quality DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur. Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Air Quality Goal 1. Ensure Bureau of Land Management authorizations and management activities protect the local quality of life and sustain economic benefits by complying with tribal, local, county, state, and federal air quality regulations, requirements, and implementation plans. Goal 2. Meet Federal and State air quality standards.</p>
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits. DC-2. Organic substrates (vegetative litter, coarse woody debris, and soil organic matter) are present in sufficient amounts to support soil fertility and ecological functions. DC-3. Coarse woody debris (downed woody material greater than or equal to 3 inches diameter) is present across forested vegetation communities in quantities consistent with the natural range of variation, as shown in table 1, providing forest structural diversity, soil ecological function and wildlife habitat. Individual stands may have little or no coarse woody debris, or a higher amount depending on site productivity, disturbance history and management objectives. Amounts below the desired average are found on hot dry sites, in developed recreation areas, and where the concern for fire impacts to values at risk is elevated. Higher amounts may be found on moist sites and riparian areas, areas with low direct human influence, areas that have burned, and those with insect/disease infestations.</p>	<p>Soils Goal 1. Manage uses to minimize soil erosion, sedimentation to water sources, and compaction; and to maintain surface soil water infiltration based on site-specific conditions. Goal 2. Maintain, improve, or restore soil health and productivity while supporting multiple use management. Goal 3. Soils are stable and provide for capture, storage, and release of water, appropriate to soil type, climate, and land form. Goal 4. Soils are productive and support vegetation that provides forage, wildlife habitat, watershed protection, and esthetic characteristic based on soil type.</p>
<p>Watershed and Aquatics Multiple Desired Conditions, including: DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity. DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p>	<p>Water Goal 1. Maintain or improve the chemical, physical, and biological integrity of water resources to protect designated beneficial uses and achieve water quality standards and guidelines. Goal 2. Improve watershed function to minimize erosion and accelerated runoff to streams. Goal 3. Maintain or improve water quality for municipal, industrial, agricultural, biological, recreational and residential purposes.</p>

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<p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p>	<p>Goal 4. Maintain or improve stream channel shape, form, and function within the natural range of variability to allow for hydrological processes that can fully support beneficial uses.</p> <p>Goal 5. Maintain existing or acquire new water rights on Bureau of Land Management lands to ensure water availability for multiple use management while adhering to the State of South Dakota water rights, and other water quality related laws and regulations.</p> <p>Goal 6. Protect ground and surface water quantity and quality.</p> <p>Goal 7. Meet water quality standards without adversely affecting prior existing water rights and uses and protect beneficial uses of water.</p> <p>3.2.11 Fish and Aquatics</p> <p>Goal 1. Ensure that aquatic habitat is of suitable quality to support a diversity of plant and animal communities.</p> <p>Goal 2. Promote public awareness, appreciation, and fisheries conservation, management and ecology.</p>
<p>Vegetation</p> <p>Multiple Desired Conditions for forested and other vegetation types.</p> <p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Vegetation Communities</p> <p>Goal 1. Manage public lands to provide plant communities that support the integrity of the ecological processes (water, energy, and nutrient cycles) and to provide forage, watershed protection, and a variety of wildlife habitat.</p> <p>Goal 2. Public lands meet the Dakotas Standards for Rangeland Health.</p> <p>Goal 3. A variety of habitat is present with a diverse assemblage of native plant communities indicative of the Northern Great Plains.</p> <p>Goal 4. Native plants dominate the planning area and are resistant to invasive plants, noxious weeds, and invasive pests.</p> <p>Goal 5. The abundance of woody vegetation is maintained or improved on those riparian sites that have the potential to support woody vegetation.</p> <p>Goal 6. Stands of oak, aspen, box elder, ash and other hardwoods are maintained and a variety of age classes are present.</p> <p>Goal 7. In Greater sage-grouse priority habitat management areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (Bureau of Land Management Tech Ref 1734-6).</p>

Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
<p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Noxious Weeds and Other Invasive Non-Native Species Goal 1. Minimize infestation of noxious weeds. Goal 2. Reduce existing acres infested by invasive plants and noxious weeds through integrated pest management treatment methods including restoration and elimination of new infestations through early detection and rapid response. Goal 3. New infestations are not common and existing infestations are declining across the landscape Goal 4. Invasive plants and noxious weeds are not leading to a decrease in acres that are meeting standards for rangeland health. Invasive Terrestrial Animals and Insect Species Goal 1. Manage invasive terrestrial animal and insect species, and state and locally declared pests. Reduce acres or density of infestations by invasive species through prevention, early detection and rapid response, and provide education opportunities for public land users. Goal 2. Infestations are not common across the landscape. Invasive Aquatic Species Goal 1. Keep the aquatic environment free from invasive aquatic species. Prevent the introduction of invasive species into the aquatic environment through education of public land users on prevention, early detection, rapid response, control, management, and restoration. Goal 2. All lentic (lakeshore/wetland) and lotic (river/stream) areas remain free from invasive aquatic species.</p>
<p>Fire and Fuels DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes. DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk. DC-3. There are minimal detrimental impacts to values at risk from wildland fire. Goal-1. The Custer Gallatin National Forest works with community leaders, service providers, business owners, homeowners and permittees who are invested in or adjacent to the Custer Gallatin to provide education about wildfire risk and that wildland fire is an essential ecological process.</p>	<p>Fire Management and Ecology Goal 1. Manage wildfire and fuels for the protection of public health, safety, property, and resource values, emphasizing firefighter and public safety as the single overriding priority. Goal 2. Manage hazardous fuels in areas of urban and industrial interface to reduce potential loss due to severe wildfire. Goal 3. Maintain or improve desired mix of seral stages within vegetation communities including forest and woodlands, grasslands, shrublands, and riparian/wetlands. Goal 4. Manage vegetation communities through cooperative efforts by restoring and maintaining natural fire regimes and frequency to the landscape, where appropriate. Goal 5. Maintain and promote partnerships with the public and interagency cooperators to develop and strengthen coordination of all fire management activities across jurisdictional boundaries. Goal 6. Utilize integrated management techniques unless otherwise restricted (defined as prescribed fire, mechanical, chemical, or biological, followed by</p>

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Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
<p>Goal-2. The Custer Gallatin National Forest coordinates fire management actions with State, local, tribal and adjacent Federal agencies. Opportunities to manage fire and fuels are expanded across the planning area through coordination and collaboration.</p>	<p>desired seeding) to reduce fuels and to protect high priority areas or resource values.</p> <p>Goal 7. Burned areas pose minimal threat to public safety, property, cultural resources, and/or ecological function.</p>
<p>Wildlife</p> <p>DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p> <p>DC-4. Habitat conditions provide security and refuge for wildlife to escape from stresses and threats, while still meeting basic needs such as feeding breeding, sheltering and movement.</p> <p>DC-5. Landscape patterns throughout the Custer Gallatin provide habitat connectivity for wildlife, particularly wide-ranging species such as medium to large carnivores and wild ungulates. Resulting habitat connectivity facilitates daily and seasonal movement, as well as long-range dispersal of wildlife to support genetic diversity, allowing animals to adapt to changing conditions over time.</p> <p>DC-6. Habitat conditions within the Custer Gallatin near boundaries provide structural and functional diversity, and are resilient to existing and predictable future stressors, thereby supporting natural movement patterns for a wide variety of species across administrative boundaries.</p>	<p>Wildlife</p> <p>Goal 1. Ensure that native wildlife species are provided habitat of sufficient quality and quantity to enhance biological diversity and sustain their economic, social and ecological values.</p> <p>Goal 2. Provide habitat and forage to support wildlife with consideration of South Dakota Wildlife Action Plan game management goals and the Northern Great Plains Joint Venture Program.</p> <p>Goal 3. Improve the resilience of wildlife habitats to protect wildlife communities from stressors and events such as severe wildfire and climate change</p> <p>Goal 4. Movement of big game species between habitats will be facilitated.</p> <p>Goal 5. Ensure that a full spectrum of biological communities' habitats and their ecological processes are present.</p> <p>Goal 6. Ensure that populations of native plants and animals are well distributed across the landscape.</p> <p>Goal 7. Provide suitable habitat condition to allow for movement between blocks of habitat and seasonal and specialized habitats on a local and landscape scale.</p> <p>Goal 8. Maintain or improve specialized habitats on a local and landscape scale.</p>
<p>Social and Economic Sustainability</p> <p>DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities.</p>	<p>Social and Economic</p> <p>Goal 1. Provide opportunities for economic sustainability at the national, regional and local level.</p> <p>Goal 2. Provide for a diverse array of opportunities that result in social benefits for local residents, businesses, recreationists, visitors, interested citizens and future generations, while minimizing the negative social effects.</p>

Appendix E: Compatibility of the Plan with Relevant Plans of Other Public Agencies

Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
<p>Cultural and Historic Resources DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p>	<p>Cultural Resources Goal 1. Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations. Goal 2. Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration or potential conflict with other resource uses by identifying</p>
<p>Permitted Livestock Grazing DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Livestock Grazing Goal 1. Manage for a sustainable level of livestock grazing while meeting or progressing toward the Dakotas Standards for Rangeland Health recognizing the ecological benefits of moderate levels of large animal grazing in the Great Plains. Goal 2. Manage livestock grazing to provide economic opportunities in the planning area.</p>
<p>Timber DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies. DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure. Carbon DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p>	<p>Forest and Woodland Products Goal 1. Manage public forest and woodlands to provide plant communities that support the integrity of the ecological processes (water cycle, energy cycle, and nutrient cycle) and improve or maintain wildlife habitat considering economically efficient methods. Goal 2. Forests and woodlands support diverse vegetative communities as indicated by wildlife habitat goals. Forests and woodlands will be managed for ecological resiliency, as indicated by fuels and fire management goals. Forest and woodland treatments may result in vegetative products being available for public or other use depending on local market demands Goal 3. Manage forest resources to improve resilience to severe events and maintain and enhance their ability for the long-term sequestration of carbon.</p>
<p>Energy, Minerals and Geologic Areas of Interest DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use. DC-2. Renewable energy resources (geothermal, hydropower, solar and wind energy) is available in consideration of other resource values that may be present. Following renewable energy activity, impacted areas are in a productive capacity in recognition of site conditions, site stability, and prior existing land use. DC-4. Abandoned mines lands and areas impacted by past mining activities reflect a state of site condition comparable to pre-mineral activity and provide comparable form and function based on site potential.</p>	<p>Minerals Goal 1. Manage minerals to provide an opportunity for local economic benefits, while protecting the integrity of other resources. Goal 2. Minerals are developed while wildlife, cultural resources, air and water quality, and other resource values are maintained. Goal 3. As mineral development is completed, surface areas are restored similar to pre-existing conditions. Goal 4. Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of priority habitat management areas and general habitat management areas.</p>

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Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
<p>DC-4. Underground environments in abandoned mines remain unaltered, except where necessary to protect human health and safety.</p> <p>DC-7. Opportunities for rock hounding and other types of noncommercial rock and mineral collecting (such as, for recreational, scientific, research, or educational purposes) are available.</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p> <p>DC-9. Geologic hazards (for example, naturally occurring erionite or radioactive materials, mass wasting, floods, sinkholes, abandoned mines, etc.) do not pose associated risks to public health and safety, facilities, and infrastructure.</p>	<p>3.2.24 Renewable Energy Resources</p> <p>Goal 1. Make lands available for renewable energy development, consistent with goals to manage other resources.</p> <p>Goal 2. Provide opportunities for renewable energy development, especially for wind energy, while avoiding or minimizing adverse impacts on wildlife, cultural, visual, and other resource values.</p> <p>Goal 3. Restore areas to near natural conditions when renewable energy development is decommissioned.</p> <p>Public Safety. Hazardous Materials</p> <p>Goal 1. Mitigate threats and reduce risks to the public and environment from hazardous materials.</p> <p>Goal 2. Healthy public lands.</p> <p>Paleontological Resources</p> <p>Goal 1. Preserve and enhance paleontological resources on public land.</p> <p>Goal 2. Provide opportunities for scientific and recreational uses of paleontological resources within the planning area.</p> <p>Goal 3. Significant paleontological resources will be identified and preserved for their scientific values.</p> <p>Goal 4. Educational and recreational opportunities will be enhanced for the enjoyment of the public.</p> <p>Public Safety; Abandoned Mine Lands (AML)</p> <p>Goal 1. Reclaim abandoned mine lands sites on public land to improve water quality, plant communities, and diverse fish and wildlife habitat.</p> <p>Goal 2. Reduce and/or eliminate risks to human health from hazardous mine openings and other physical and chemical safety hazards.</p> <p>Goal 3. Protect historic resources and wildlife habitat commonly associated with AML sites.</p> <p>Goal 4. Remove the greatest risks, preserve bat habitat, restore the environment, and preserve representative or significant cultural resources.</p>
<p>Infrastructure, Roads and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff,</p>	<p>Travel and Transportation</p> <p>Goal 1. Manage transportation and access to provide for use and enjoyment of the public lands while protecting resource values and providing for user safety.</p> <p>Goal 2. Access is available to larger blocks of Bureau of Land Management-administered surface lands.</p> <p>Goal 3. Manage transportation network to enhance a variety of uses of public lands.</p>

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Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
<p>erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p> <p>DC-2. The transportation system is connected to state, county, local public, and other Federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as, buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).</p>	
<p>Recreation, General</p> <p>DC-5. Recreational uses, and facilities including trails and dispersed sites, and their use have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species.</p> <p>Goal-2. The Custer Gallatin National Forest encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p> <p>Dispersed Recreation</p> <p>DC-1. Dispersed opportunities are available across the Custer Gallatin for a wide variety of users where compatible with environmental resources, cultural resources, recreation settings, and social interactions such as user conflicts and crowding</p>	<p>Recreation</p> <p>Goal 1. Provide for a range of recreational opportunities while minimizing adverse impacts on other resources.</p> <p>Goal 2. Encourage community partnerships with Bureau of Land Management for the purpose of improving the recreational opportunities in response to the needs of visitors and local communities.</p>
<p>Scenery</p> <p>DC-1. The forest's scenery provides for public enjoyment of the forest's varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>Visual Resources Management</p> <p>Goal 1. Public lands provide natural appearing landscapes for recreational opportunities.</p>
<p>Land Stats and Ownership</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p> <p>OBJ-1. Every decade, acquire between one and five new roads or trail rights-of-way that are needed as high-priority access or would fill a gap in existing access to public lands.</p>	<p>Lands and Realty</p> <p>Goal 1. Address needs of industry, utilities, the public, or government entities for land use authorizations (rights-of-way leases and permits) while minimizing adverse impacts on other resource values.</p> <p>Goal 2. Locate new rights-of-way facilities adjacent to existing rights-of-ways to the extent practical.</p> <p>Land Tenure</p> <p>Goal 1. Retain public lands with high resource values in public ownership.</p> <p>Goal 2. Adjust land ownership to improve public land pattern and management efficiency.</p> <p>Goal 3. Acquire lands that enhance public access, high resource values and meets public and community needs.</p> <p>Goal 4. Access is available to larger blocks of the Bureau of Land Management-administered surface lands at locations identified internally or from the public and users.</p>

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Revised Plan Components	South Dakota Field Office 2015 Resource Management Plan Components
	<p>Goal 5. Achieve a more management efficient and consolidated public land pattern.</p> <p>Goal 6. Effects of infrastructure projects, including siting, will be minimized using the using the best available science, updated as monitoring information on current infrastructure projects becomes available.</p>
<p>Water</p> <p>DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p> <p>Forested Vegetation</p> <p>DC-3. The forest supports a diversity of successional stages that is ecologically resilient and sustainable. Table 5 represents the desired condition of successional stages (estimated by size classes) across the forest. The location and abundance of size classes fluctuate over time as forests develop, are influenced by disturbances, and may be limited by site productivity and species composition. The range of desired conditions allows for variations in the mix of structural stages to respond to potential changes in climate. Desired condition ranges for each broad potential vegetation type apply at both the forestwide and geographic area scales.</p> <p>DC-4. The forest supports a range of forest densities that is resilient and sustainable. Table 6 displays the desired condition ranges for the percent of each broad potential vegetation type in each density class. The range of desired conditions allows for variations in the mix of density classes across the landscape to respond to potential changes in climate. Desired condition ranges for each broad potential vegetation type apply at both the forestwide and geographic area scales.</p> <p>Carbon</p> <p>DC-1. Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.</p> <p>Developed Recreation Sites</p> <p>DC-9. 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.</p>	<p>Climate</p> <p>Goal 1. Evaluate the observed and anticipated long-term dynamic of climate change and minimize the impact of greenhouse gases from projects to the degree practicable and reasonably foreseeable.</p> <p>Goal 2. Provide for diverse, healthy ecosystems that are resilient to stresses such as climate change.</p> <p>Goal 3. Provide for flexible, adaptable management that allows for timely responses to changing climatic conditions.</p> <p>Goal 4. Maintain or improve the ability of Bureau of Land Management lands to reduce (sequester) atmospheric greenhouse gases.</p>
Not applicable	Not applicable: Special designations; the designations are not near national forest system lands; recommended withdrawals

National Park Service, Yellowstone National Park

The 2014 Yellowstone National Park Foundation Document provides basic guidance for planning and management decisions. Its core elements include the park’s purpose, significance, fundamental resources and values, interpretive themes, and special mandates and administrative commitments. Of these elements, the fundamental resources and values are most analogous to the elements of a national forest land management plan. Fundamental resources and values are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management processes because they are essential to achieving the purpose of the park and maintaining its significance.

Revised Plan Components	Foundation Document – Fundamental Resources and Values
<p>Distinctive Roles and Contributions</p> <p>The Montane Ecosystem, except the Pryor Mountains, also encompasses the Custer Gallatin’s portion of the Greater Yellowstone Area, the largest nearly intact ecosystem in the lower 48 States. Native animals, including grizzly bears, gray wolves, and bison, roam the Madison, Henrys Lake, Gallatin, Absaroka, and Beartooth Mountains. Whitebark pine, a candidate species for Federal listing under the Endangered Species Act, is found at higher elevations. Whitebark pine in the Greater Yellowstone Area exhibits lower blister rust infection than other ecosystems, such as the Northern Continental Divide. The Custer Gallatin National Forest cooperates with other agencies in the Greater Yellowstone Coordinating Committee to coordinate land management on over 15 million acres of federal land in the Greater Yellowstone Area.</p> <p>Vision for the Custer Gallatin National Forest</p> <p>The Custer Gallatin National Forest is a widely diverse landscape that sustains abundant native plants and animals, clean air and water, and productive soils, enhancing the quality of life for those who use and depend on the forest for life-enriching activities and livelihoods. Ecological services and multiple use products derived from this landscape are outcomes of management practices that are sustainable, enhance resiliency and adapt to societal and technological changes.</p>	<p>One of the largest, mostly intact temperate ecosystems in the world.</p> <p>The park is the core of the Greater Yellowstone Ecosystem, which is one of the largest mostly intact temperate ecosystems in the world. The park preserves environmental integrity, which allows natural processes to shape ecosystem functions, resulting in outstanding wilderness character. Bears, wolves, bison, trumpeter swans, cutthroat trout, and elk are some of the many wildlife species that inhabit Yellowstone’s vast landscape.</p>
<p>Water</p> <p>Multiple Desired Conditions, including:</p> <p>DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p> <p>DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p>	<p>Hydrologic systems. Yellowstone’s rivers, lakes, and underground waters are fundamental to the ecosystem and sustaining its wildlife, as well as the geothermal system. The park contains the headwaters of the Snake River and is home to one of the largest high elevation lakes in North America.</p>

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Revised Plan Components	Foundation Document – Fundamental Resources and Values
<p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p>	
<p>Cultural and Historic Resources</p> <p>DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p> <p>DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence.</p>	<p>Enduring connection to Yellowstone. Yellowstone’s cultural resources, protected since 1872, represent one of the West’s most pristine material records, spanning 11,000 years, including ongoing connections to the park’s 26 traditionally associated tribes. The park’s museum, library, and archive collections; archeological sites; and historic buildings, landscapes, and structures represent and convey Yellowstone’s lasting cultural and natural history heritage.</p>
<p>Energy, Minerals and Geologic Areas of Interest</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p>	<p>Dynamic geologic processes and features. Yellowstone’s dramatic landscapes, including the Grand Canyon of the Yellowstone, Overhanging Cliff, and Obsidian Cliff, were shaped by volcanism, glaciations, erosion, and seismic activity. These processes have resulted in exposed and hidden geology and produce a varied landscape that provides unique habitat for many species.</p>
<p>Recreation, General</p> <p>DC-2. Recreation opportunities promote long-term physical and mental health of the public by encouraging opportunities to connect with nature while pursuing adventure and by instilling a culture of stewardship and appreciation.</p> <p>Visitor Education and Interpretation</p> <p>DC-1. Interpretation and education products enhance visitors’ understanding and appreciation for the rich natural and cultural resources of the Custer Gallatin, and builds support for public lands.</p> <p>DC-2. Visitor information is readily available for pre-visit information gathering in a variety of forums and kept up to date so that the public may be informed and educated through modern technology about current Forest Service related policies, activities, services, and issues.</p>	<p>A park for the people. Park staff, artists, educational media, visitor centers, trails, boardwalks, and viewing areas provide park and virtual visitors with a wide variety of opportunities to enjoy the park, inspire people’s quest for knowledge, build a deeper understanding of Yellowstone’s global significance, and motivate preservation and stewardship of the park.</p>
<p>Scenery</p> <p>DC-1. The forest’s scenery provides for public enjoyment of the forest’s varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>A “wild” experience. Yellowstone’s vast western landscape is unlike any other. Visitors have opportunities to experience natural wonders, unspoiled scenery, the smell of geothermal features, natural sounds such as the howling of wolves and the thundering of the Lower Falls, solitude, unpolluted air, dark night skies, and Yellowstone’s wildness.</p>

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Revised Plan Components	Foundation Document – Fundamental Resources and Values
<p>Designated Wilderness</p> <p>DC-1. The untrammled quality of wilderness is essentially unhindered and free from modern human control or manipulation.</p> <p>DC-2. Natural ecological processes and disturbances (such as succession, wildfire, avalanches, insects, and disease) are the primary forces affecting the composition, structure, and pattern of vegetation. Wilderness areas provide opportunities for visitors to experience natural ecological processes and disturbances with a limited amount of human influence</p> <p>DC-3. Wilderness exhibits an undeveloped quality and is without nonconforming or unnecessary facilities, installations or human-caused surface disturbances.</p> <p>DC-4. Outstanding opportunities for solitude or primitive and unconfined recreation are available, where impacts to wilderness character are not degraded.</p>	
<p>No comparable plan language</p>	<p>Geothermal wonders. Yellowstone contains an unparalleled collection of over 10,000 thermal features, including geysers, hot springs, mud pots, and fumaroles, which are fed by underground geothermal and hydrothermal systems. They provide habitats for microorganisms and other wildlife, and unique opportunities for research.</p>

U.S. Forest Service

The purpose of the Forest Service land and resource management plans (forest plans) is to provide guidance for resource management activities on a national forest. The review includes the Beaverhead-Deerlodge (2009), Caribou-Targhee (1997), and Shoshone (2015) forest plans. The forest plan goals or desired conditions, depending on the plan, are most closely aligned with the revised plan desired conditions and goals. A compatibility review is not provided for the Helena-Lewis and Clark National Forest because their plan is undergoing revision.

Beaverhead-Deerlodge National Forest, Montana

The Beaverhead-Deerlodge National Forest manages lands adjacent to the Custer Gallatin National Forest on the western border of the forest.

Revised Plan Components	Beaverhead-Deerlodge National Forest 2009 Forest Plan Components
<p>Air Quality DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur. Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Air Quality Air Quality Goal. Air quality is maintained within the standards set by Federal and State agencies and by the Montana Airshed Group’s Memorandum of Agreement and State Implementation Plan. Smoke Management Goal: A variety of management tools, (including prescribed fire and appropriate management response) are used to help manage vegetation to reduce potential smoke.</p>
<p>Soils DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits.</p>	<p>Soils Soil Productivity Goal: Soil productivity is maintained or restored.</p>
<p>Watershed and Aquatics DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity. DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species. DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation. DC-6. In-stream flows create and maintain riparian, aquatic, and wetland habitats; to retain patterns of sediment, nutrient, and wood routing and transport while maintaining reference dimensions (such as, bankfull width, depth, entrenchment ratio, slope, and sinuosity); to ensure floodplain inundation occurs within the natural range of variation allowing floodplain development;</p>	<p>Aquatic Resources Watersheds: Watersheds are maintained to ensure water quality, timing of runoff, and water yields necessary for functioning riparian, aquatic ecosystems, wetlands, and to support native aquatic species reproduction and survival. Watershed restoration projects promote long-term ecological integrity of ecosystems, conserve genetic integrity of native species, and contribute to attainment of desired stream function and support beneficial uses (IN 1). Fish Key Watershed: Populations of bull trout and westslope cutthroat trout exhibit numbers, life histories, age classes, recruitment levels, and reproductive characteristics representative of historical conditions. Restoration Key Watershed: Fish habitat, riparian habitat, and water quality are recovered to desired conditions developed through watershed assessments.</p>

Revised Plan Components	Beaverhead-Deerlodge National Forest 2009 Forest Plan Components
<p>and to ensure the timing, magnitude, duration, and spatial distribution of peak, high, and low flows are retained, within the range of conditions of the reference watersheds, as defined by agency monitoring.</p> <p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p> <p>DC-8. Municipal watersheds provide clean drinking water for those downstream communities that derive their principal water from them.</p> <p>DC-10. Riparian vegetation provides breeding, feeding and sheltering opportunities, as well as habitat connectivity and movement corridors for a wide range of terrestrial, semi-aquatic and avian wildlife species.</p> <p>DC-11. Instream and riparian habitat conditions in managed watersheds move towards conditions similar to those in reference watersheds (conditions such as, large woody debris recruitment, pool frequency and residual depth, width-to-depth ratios, stream shading and temperature, bank stability, etc.).</p> <p>DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p> <p>Riparian Management Zones</p> <p>DC-1. Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities. Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p> <p>DC-2. Riparian management zones are, at a minimum, in a properly functioning condition to provide energy dissipation, in-stream thermal buffering, sediment capture and routing, groundwater recharge, and have an intact normative flow regime.</p> <p>Invasive Species</p> <p>Goal-1. The Custer Gallatin National Forest coordinates and cooperates with federal, state and county agencies, Tribes, non-government organizations,</p>	<p>Watershed Restoration Projects: Projects are designed and implemented to promote long-term ecological integrity of ecosystems, conserve the genetic integrity of native species, and contribute to attainment of desired stream function (WR-1).</p> <p>Municipal Watersheds: Site-specific criteria for managing municipal watersheds are developed, and degraded waters are restored to meet goals of the Clean Water Act and Safe Drinking Water Act.</p> <p>Total Maximum Daily Loads: Management actions are consistent with total maximum daily loads.</p> <p>Where waters are listed as impaired and total maximum daily loads and Water Quality Restoration Plans are not yet established, management actions do not further degrade waters. Water quality restoration supports beneficial uses.</p> <p>Stream Channels: Stream channel attributes and processes are maintained and restored to sustain natural desired riparian, wetland, and aquatic habitats and keep sediment regimes as close as possible to those with which riparian and aquatic ecosystems developed (IN 2).</p> <p>Instream Flows: Instream flows are secured to support functioning riparian and aquatic habitats, stable and effective stream function, and ability to route flood discharges (IN 3).</p> <p>Floodplains: The condition of floodplains, channels and water tables are maintained and restored to dissipate floods and sustain the natural timing and variability of water levels in riparian, wetland, meadow and aquatic habitats (IN 4).</p> <p>Riparian Areas: Riparian habitat, species composition, and structural diversity of native and desired non-native riparian plant communities are maintained or restored to (IN 5-6):</p> <ul style="list-style-type: none"> • Provide an amount and distribution of woody debris characteristic of functioning aquatic and riparian ecosystems; • Provide adequate summer and winter thermal regulation for streams to support beneficial uses; • Provide bank stability to maintain rates of surface erosion, bank erosion, and channel migration which are characteristic of functioning aquatic and riparian ecosystems; • Effectively trap and store sediment, build stream banks and floodplains, and promote recovery after watershed disturbance. <p>Riparian Habitat: Habitat to support viable, well distributed populations of native and desired non-native plant, invertebrate, and vertebrate aquatic- and riparian-dependent species are maintained or restored. Movement corridors within and between watersheds, where desired, are maintained or restored to provide aquatic-dependent species' habitat needs and maintenance of metapopulations (IN 8).</p>

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Revised Plan Components	Beaverhead-Deerlodge National Forest 2009 Forest Plan Components
<p>permittees, and adjacent landowners to support integrated pest management including invasive species prevention, early detection and rapid response, control and containment, restoration and rehabilitation, and inventory and monitoring activities.</p> <p>Aspects of the Beaverhead-Deerlodge forest plan goals are addressed in Custer Gallatin revised plan standards and guidelines.</p>	<p>Riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within the specific geo-climatic region are maintained or restored (IN 7).</p> <p>Channel Integrity: Stream channel function and water quality are maintained or restored to support designated beneficial uses on all reaches through management decisions, restoration projects or Best Management Practices as outlined in the Soil & Water Conservation Practices Handbook.</p> <p>Aquatic Nuisance Species: Introductions of aquatic nuisance species in riparian and aquatic habitats are prevented. Forest biologists work cooperatively with appropriate State and Federal agencies, or other stakeholders to reduce or eliminate impacts, where aquatic nuisance species are adversely affecting the viability of desired aquatic species.</p> <p>Snow Courses, Telemetry Sites: Established snow courses, snow pack telemetry sites, and precipitation gauges are protected.</p> <p>Sensitive Aquatic Species: Viable populations of sensitive aquatics species are maintained (R1 Sensitive Species list) by managing habitat.</p> <p>Ungulate Impacts: Wild ungulate impacts that prevent attainment of the desired stream function or adversely affect native fish and sensitive aquatic species are identified and addressed through cooperation with federal, tribal, and state wildlife management agencies (FW 3).</p> <p>Agency Cooperation: Adverse effects on native fish or sensitive aquatic species associated with habitat manipulation, fish stocking, fish harvest, and poaching are identified and addressed through cooperation with federal, tribal, and state fish management agencies (FW 4).</p> <p>Leases, Rights-of-way, Easements: Leases, permits, rights-of-way, and easements are issued to avoid effects that would prevent attainment of the desired stream function and avoid adverse effects on threatened and endangered aquatic species and adverse impacts to sensitive aquatic species. Where the authority to do so was retained, existing leases, permits, rights-of – ways, and easements are adjusted to eliminate effects that would retard or prevent attainment of the desired stream function or adversely effect on threatened and endangered aquatic species and adverse impacts to sensitive aquatic species. Where adjustments are not effective, the activity is eliminated.</p> <p>Where the authority to adjust was not retained, existing leases, permits, right-of-way, and easements are negotiated with the lead agency to make changes to eliminate effects that would prevent attainment of the desired stream function, adversely affect threatened and endangered aquatic species, or adversely impact sensitive aquatic species. Priority for modifying existing leases, permits, right-of-way and easements would be based on the current</p>

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	<p>and potential adverse effects on native fish and sensitive aquatic species, and the ecological value of the riparian resources affected (LH 3).</p> <p>Acquisitions and Exchanges: Land acquisition, exchange, and conservation easements are used to meet desired stream function and facilitate restoration of fish stocks and other species at risk of extinction (LH 4).</p> <p>Livestock Grazing: Grazing practices are designed to attain, or maintain, desired stream function (GM 1).</p> <p>Mineral Operations: Mineral operations minimize adverse effects to threatened and endangered fish species or adverse impacts to sensitive aquatic species (MM 1).</p> <p>Mining Facilities: Structures, support facilities, and roads are located outside RCAs (MM 2).</p> <p>Roads: Roads are designed, constructed, and maintained to meet desired stream function and avoid adverse effects to native fish and sensitive aquatic species (RF 2).</p> <p>Transportation Atlas: The Transportation Atlas addresses the following items (RF 2c):</p> <ol style="list-style-type: none"> 1. Road design criteria, elements, and standards that govern construction and reconstruction. 2. Road management objectives for each road which include criteria for operation, maintenance, and management. 3. Season of use and type of vehicle. 4. Road condition surveys to identify annual and deferred maintenance needs <p>Stream Crossings: Culverts, bridges, and other stream crossings can accommodate a 100-year flood, including associated bedload and debris (RF 4).</p> <p>Recreation Sites: Developed sites, dispersed sites, and trails are designed, constructed, and maintained in a manner which achieves desired stream function (RM 1).</p> <p>Water Drafting Sites: Water drafting sites are located in a manner that does not retard or prevent the attainment of desired minimum stream flows and stream function or have adverse effects, on threatened and endangered aquatic species or adverse impacts to sensitive aquatic species (RA 5).</p>

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<p>Vegetation Multiple Desired Conditions for forested, grassland, shrubland, woodland, riparian, alpine and sparse vegetation.</p> <p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p> <p>Invasive Species DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Vegetation Biodiversity: A variety of disturbance processes are managed or allowed to occur that produce resilient vegetation communities able to sustain diversity in the face of uncertain future climate-influenced disturbances. Resilient vegetation communities will have a mosaic of species and age classes of trees, shrubs, grasses, and forbs for animal forage and cover, and perpetuate the diversity of plants and the microbial and insect communities upon which they are dependent. Old growth is managed on a forest wide basis and is well distributed.</p> <p>Unique Habitats: The trend toward an older forest is altered by increasing the younger age classes providing greater forest diversity in age classes. Stable or upward trends are achieved for declining or unique habitats.</p> <p>Sensitive Plants: Sensitive plant populations and their habitat are maintained or restored. Large core populations or fringe-of-range populations of sensitive plants are conserved in research natural areas, botanical special interest areas, or protected as populations in conservation strategies, or project design specifications (Scale - Populations).</p> <p>Non-native Species: The influx of persistent non-native species is minimized by using native plants, seed, and vegetative propagules for restoration work.</p> <p>Pest Management: Diagnosed pest problems are addressed with an integrated pest management approach, which allows monitoring, prevention,</p>
<p>Fire and Fuels DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes.</p> <p>DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk.</p> <p>DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p>	<p>Fire Management Goals Safety: Fire fighter and public safety is always recognized as the first priority for fire suppression.</p> <p>Wildland Fire Response: The full range of responses to wildland fire is available to meet social needs and to achieve ecosystem sustainability.</p> <p>Fuels Management: A full range of fuels management activities is available to achieve ecosystem sustainability, including, economic, and social components.</p> <p>Wildfire Hazard Reduction: Effects of unplanned and unwanted wildfire are reduced by moving areas of condition class 2 and 3 to a condition class 1 for all fire regimes and by maintaining areas in condition class 1.</p>
<p>Wildlife DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life</p>	<p>Wildlife Habitat Goals Habitat: Cover and forage for animals is provided by a mosaic of species and age classes of native trees, shrubs, grasses, and forbs. See Vegetation Goals for details.</p> <p>Grizzly Bear Conflicts: Conflicts between grizzly bears and humans or human activities in occupied grizzly bear habitat, are managed such that the removal of a bear is not necessary.</p> <p>Connectivity: Forest management contributes to wildlife linkages between landscapes, unless landscape isolation is determined to be beneficial. Linkage</p>

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<p>cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p> <p>DC-4. Habitat conditions provide security and refuge for wildlife to escape from stresses and threats, while still meeting basic needs such as feeding breeding, sheltering and movement.</p> <p>DC-5. Landscape patterns throughout the Custer Gallatin provide habitat connectivity for wildlife, particularly wide-ranging species such as medium to large carnivores and wild ungulates. Resulting habitat connectivity facilitates daily and seasonal movement, as well as long-range dispersal of wildlife to support genetic diversity, allowing animals to adapt to changing conditions over time.</p> <p>DC-8. Habitat conditions within the Custer Gallatin near boundaries provide structural and functional diversity, and are resilient to existing and predictable future stressors, thereby supporting natural movement patterns for a wide variety of species across administrative boundaries.</p> <p>DC-8. Human-related foods and attractants are unavailable to wildlife. Natural wildlife foraging patterns are the norm, while food conditioning and habituation of animals, and associated wildlife conflicts with humans do not occur.</p> <p>Greater Sage-Grouse</p> <p>DC-1. Greater sage-grouse habitat contains contiguous areas of native vegetation, including a variety of sagebrush-community compositions, little or no invasive species present, and variation in species composition, shrub cover, herbaceous cover and stand structure, to meet seasonal requirements for feeding, sheltering, breeding, nesting, brood rearing and habitat connectivity. Flight paths are unimpeded by man-made structures.</p> <p>Aspects of the Beaverhead-Deerlodge forest plan goals are addressed in Custer Gallatin revised plan standards and guidelines.</p>	<p>areas are those areas identified for large carnivores and ungulates through multi-agency coordination. Options may include, but are not limited to:</p> <ul style="list-style-type: none"> • Maintaining Forest Service ownership at highway and road crossings, • Consolidating ownership at approach areas to highway and road crossings • substantiated by empirical data as necessary to facilitate wildlife movement, and • Providing secure habitat at the landscape scale to facilitate large animal movement. <p>Sage Grouse: Sagebrush habitat supports sage grouse and pygmy rabbit populations by providing suitable sage grouse brood-rearing habitat on at least 40% of the sagebrush habitat within 18 kilometers of documented active or inactive sage grouse leks and the area mapped as potential pygmy rabbit habitat.</p> <p>Wildlife Secure Areas and Connectivity: Secure areas and connectivity for ungulates and large carnivores are provided, while recognizing the variety of recreational opportunities.</p> <p>Grizzly Bear Security: The Gravelly Landscape is maintained to achieve 60% or greater secure areas (Scale-Gravelly Landscape).</p> <p>Wildlife Security: Manage density of open motorized roads and trails by landscape year-round, except fall rifle big game season, to achieve levels at or below the following (Scale-Landscapes):</p> <p>Elk Security: Elk security is managed to provide quality elk habitat, provide a variety of recreational hunting opportunities, and provide support for Montana’s fair chase emphasis. Manage open motorized road and trail density by Montana Fish Wildlife and Parks hunting units as of 2006 – on national forest lands during the fall rifle big game season, to achieve levels at or below the following: (Scale – Hunting Unit).</p>

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<p>Social and Economic Sustainability DC-2. Sustainable levels of forest provided goods and services (such as, wilderness, fish and wildlife, livestock grazing, recreation opportunities and access, timber, minerals, energy resources, infrastructure, etc.) are available and contribute to the social, cultural, and economic sustainability of local communities. The flow of these goods and services align with existing and emerging industries, growing and vulnerable populations, and overall economic conditions of forest communities. Goal-1. The Custer Gallatin National Forest engages with local agencies, partner organizations and the public in ecosystem goods and services related planning, particularly in environmental justice communities where residents are more vulnerable to shifts in social and economic conditions.</p>	<p>Economics and Social Values Goals Economy Contribution: Contribute to the social and economic well-being of local communities by promoting sustainable use of renewable natural resources. Provide timber for commercial harvest, forage for livestock grazing, exploration and development opportunities for mineral resources, and recreation settings consistent with other resource goals. Coordination: Increase coordination with Federal, State, county and Tribal governments and strive for coordination and dialogue with a broad range of stakeholders. Economic Efficiency: The best available methods are used to contribute products to local communities while maximizing the ability to achieve forest targets.</p>
<p>Areas of Tribal Importance Goal-1. Tribal cultural landscapes, sacred sites, sacred places, traditional cultural properties and other culturally significant areas identified by Tribes are maintained and managed through government to government consultation and coordination with the appropriate Tribes.</p>	<p>American Indian Rights and Interests Tribal Governments: Forest officials respect that tribal governments are sovereign nations with a strong interest in National Forest System land management.</p>
<p>Cultural and Historic Resources DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices. DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence.DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p>	<p>Heritage Resources Heritage Resources Goal: There is no loss of significant heritage resources. Significant means listed in the National Register of Historic Places, eligible for listing, or awaiting formal evaluation for National Register eligibility. Heritage Program Goal: A heritage program is developed and maintained that includes legal compliance, preservation, interpretation, public education, scientific research, partnerships, and tribal consultation.</p>
<p>Permitted Livestock Grazing DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Livestock Grazing Grazing Opportunities Goal: Sustainable grazing opportunities are provided for domestic livestock from lands suitable for forage production. Forage Use Goal: Use of forage by domestic livestock will maintain or enhance the desired structure and diversity of plant communities on grasslands, shrub lands, and forests. Use will be managed to maintain or restore riparian function as defined in the allotment management plan.</p>

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<p>Timber</p> <p>DC-1. Lands identified as suitable for timber production support a regularly scheduled timber harvest program that provides for jobs and income while also sustaining ecological integrity</p> <p>DC-2. Lands suitable for timber production are resistant to natural disturbances, thereby minimizing the economic loss of the timber resource compared to lands designated as unsuitable for timber production.</p> <p>DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p> <p>DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure.</p> <p>Special Forest Products</p> <p>DC-1. A variety of special forest products are available for commercial, personal, tribal, educational, and scientific uses.</p>	<p>Timber Management Goals</p> <p>Lands Suitable for Timber Production: Manage lands suitable for timber production for the growth and yield of sawtimber, crop trees, pulpwood, and other forest products, including salvage harvest.</p> <p>Lands Not Suitable for Timber Production but Timber Harvest is Permitted to Meet Other Resource Objectives: Manage lands where timber harvest is allowed to protect other resource values. Resource objectives may include, but are not limited to, protection of wildland-urban interface, protection of improvements, aquatic system restoration, fuel reduction, wildlife habitat enhancement, fisheries habitat enhancement, range improvement, and grass and shrub land maintenance. Salvage activities are allowed on these lands. The type, size, and extent of harvest will be determined through site specific analysis. Multiple products would be provided from these lands, including but not limited to, sawlogs, pulpwood, post, poles, and fuel wood through appropriate silvicultural practices.</p> <p>Lands Where Timber Harvest is Not Allowed: Manage lands where timber harvest is not allowed, where no exception for timber harvest has been identified to protect resource values.</p> <p>Product Utilization: Forest products would be used to provide economic benefits where project objectives, forest plan objectives, and forest plan standards can be met.</p>
<p>Energy, Minerals and Geological Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Minerals, Oil and Gas Goals</p> <p>Hardrock and Saleable Minerals: Mineral commodities are explored and developed in accordance with national direction.</p> <p>Locatable Minerals: Locatable minerals are developed on all parts of the forest not withdrawn from locatable mineral entry in accordance with the 1972 Mining Law, regulations, and national direction.</p> <p>Oil and Gas Leasing: Offer oil and gas leasing opportunities under stipulations which protect resource values.</p>

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<p>Recreation, General</p> <p>DC-5. Recreational uses, and facilities including trails and dispersed sites, and their use have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species.</p> <p>Recreation Opportunity Spectrum</p> <p>ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p> <p>Developed Recreation Sites</p> <p>DC-2. Quality, well-maintained recreation facilities at key locations accommodate concentrations of use, enhance the visitor’s experience, provide for a range of opportunities in various settings, public health and safety, and protect the natural resources of the area. Developed recreation sites accommodate current and appropriate new levels of recreation use and integrate accessibility for users who have disabilities.</p> <p>Dispersed Recreation</p> <p>DC-1. Dispersed opportunities are available across the Custer Gallatin for a wide variety of users where compatible with environmental resources, cultural resources, recreation settings, and social interactions such as user conflicts and crowding</p> <p>Recreation Outfitter Guides</p> <p>DC-1. Outfitters and guides offer services that the agency and public need, in order to offer opportunities that otherwise would not be obtainable therefore increasing the diversity of recreation opportunities available.</p> <p>DC-2. Outfitter and guide services promote the roles, contributions, and sense of the place, and are appropriate for the recreation opportunity spectrum class.</p>	<p>Recreation and Travel Management Goals</p> <p>Recreation Settings: Offer a choice of recreation settings ranging from remote backcountry to more developed front country areas.</p> <p>Recreation Opportunities: High quality diverse outdoor recreation opportunities are provided, including but not limited to:</p> <ul style="list-style-type: none"> • Day use activities within a 30 minute drive of communities for motorized and nonmotorized trails, picnicking and interpretive sites, • Winter use areas near communities for ski touring, snowshoeing and snowmobiling, • Trails and routes for autos, four-wheel-drive vehicles, ATVs, motorcycles, mountain bikes, horses, and hikers to high mountain lakes and other features, and • Developed and dispersed camping. <p>Road and Trail Use: A system of routes and areas designated for non-motorized and motorized use are identified and available for public use. Resources are protected and user conflicts are minimized by allowing motorized wheeled travel only on designated routes and areas. Established routes to dispersed campsites are recognized as part of the forest transportation system. A system of trails designated for nonmotorized uses are also identified and available for public use.</p> <p>Developed Sites: High quality developed recreation facilities are strategically located to concentrate use, provide access to backcountry settings, and protect natural resources. Sites are clean, well maintained, and designed for universal accessibility.</p> <p>Commercial Recreation: Permitted guiding, outfitting, and resort operations enhance visitor access and enjoyment, help achieve forest management objectives and contribute to regional and local economies.</p>
<p>Infrastructure; Roads and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p>	<p>Infrastructure</p> <p>Transportation System: The minimum transportation system necessary is identified and managed. Roads and trails are identified in the transportation atlas maintained at the Forest Supervisor’s Office. Roads and trails are constructed, managed, and maintained to meet land and resource objectives.</p> <p>Facilities: Administrative and/or recreation facilities are constructed, managed, and maintained to meet land and resource objectives and address recreation demand.</p>

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<p>Infrastructure; Facilities DC-3. Administrative facilities provide for the safety, health, and intruder security of the occupants.</p> <p>Developed Recreation Sites DC-2. Quality, well-maintained recreation facilities at key locations accommodate concentrations of use, enhance the visitor’s experience, provide for a range of opportunities in various settings, public health and safety, and protect the natural resources of the area. Developed recreation sites accommodate current and appropriate new levels of recreation use and integrate accessibility for users who have disabilities.</p>	
<p>Scenery DC-1. The forest’s scenery provides for public enjoyment of the forest’s varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>Scenic Resources Scenery Management Goal: Scenic resources reflect ecosystem diversity, enhance the recreation settings, and contribute to the quality of life of local residents and communities.</p>
<p>Land Status and Ownership, Access, and Land Uses DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands. DC-2. Consolidated surface and mineral ownership meets resource and communities needs and facilitates efficient land management. DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p> <p>Land Uses DC-1. Opportunities are available for a variety of land special uses that include energy transmission rights-of-way, communication uses, access roads, research activities, and other public services, on lands that are suitable for these activities. DC-2. Energy corridors throughout the planning area improve the delivery of electricity, oil, and gas, and enhance the western electric transmission grid by improving reliability, reducing congestion, and contributing to the national electrical grid. Goal-2. The Custer Gallatin National Forest coordinates with project proponents to co-locate emerging technology, communication sites, energy corridors, and other permitted infrastructure to minimize environmental and visual impacts.</p>	<p>Lands Goals Conservation Easements: Conservation easements are acquired where appropriate to protect important habitat or viewsheds. Land Adjustments: Land ownership adjustments are pursued as opportunities arise, to improve national forest management through purchase, exchange, or other authority. Property Lines: National Forest System property lines adjacent to private lands and boundaries of special areas such as the National Wilderness Preservation System are clearly marked where encroachment is likely. Right-of-way: Existing public access to National Forest System lands would be maintained and additional access would be provided by acquisition of new road or trail rights-of-ways. Rights-of-ways are acquired to national trails or historic routes, special recreation areas, or other tracts of the National Forest System lands where public access does not exist. Utility Corridors and Communication Sites – A network of designated utility corridors and communication sites is provided to minimize the proliferation of rights-of-way, facilities, and corridors across the landscape.</p>

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<p>Designated Wilderness Areas</p> <p>DC-1. The untrammeled quality of wilderness is essentially unhindered and free from modern human control or manipulation.</p> <p>DC-2. Natural ecological processes and disturbances (such as succession, wildfire, avalanches, insects, and disease) are the primary forces affecting the composition, structure, and pattern of vegetation. Wilderness areas provide opportunities for visitors to experience natural ecological processes and disturbances with a limited amount of human influence</p> <p>DC-3. Wilderness exhibits an undeveloped quality and is without nonconforming or unnecessary facilities, installations or human-caused surface disturbances.</p> <p>DC-4. Outstanding opportunities for solitude or primitive and unconfined recreation are available, where impacts to wilderness character are not degraded.</p>	<p>Designated Wilderness</p> <p>Lee Metcalf Wilderness Goal: This area is managed to protect Wilderness character as defined in the Wilderness Act as outlined in the Lee Metcalf Wilderness Management Plan.</p>
<p>Recommended Wilderness Areas</p> <p>DC-1. Recommended wilderness areas maintain their existing wilderness characteristics, to preserve opportunities for inclusion in the National Wilderness Preservation System.</p> <p>DC-2. Recommended wilderness areas provide outstanding opportunities for solitude or primitive and unconfined recreation. Impacts from visitor use do not detract from the natural setting.</p>	<p>Recommended Wilderness</p> <p>This area is managed to protect wilderness characteristics and values and to provide nonmotorized recreation opportunities with high levels of challenge and solitude.</p>
<p>Continental Divide National Scenic Trail</p> <p>DC-1. The Continental Divide National Scenic Trail is a well-defined trail that provides for high-quality, primitive hiking and horseback riding opportunities, and other compatible trail activities, in a highly scenic setting along the Continental Divide. The significant scenic, natural, historic, and cultural resources along the trail's corridor are present. Where possible, the trail provides visitors with expansive views of a naturally appearing landscape along the divide.</p>	<p>Continental Divide National Scenic Trail</p> <p>The Continental Divide National Scenic Trail (CDNST) is managed according to the National Trails Act, the CDNST Study Reports and final environmental impact statement, and CDNST Comprehensive Plan (as amended) for the purpose of providing:</p> <ul style="list-style-type: none"> • “A continuous, appealing trail route, designed for the hiker and horseman, but compatible with other land uses.” • Access for hikers and stock into the diverse country along the Continental Divide in a manner which will assure a high quality recreation experience while maintaining a constant respect for the natural environment. • Exception for motorized use is outlined in the National Trails Act.
<p>Nez Perce (Nee-Me-Poo) National Historic Trail</p> <p>DC-1. Interpretive materials and identification signage are available for the Nez Perce (Nee-Me-Poo) National Historic Trail.</p>	<p>Nez Perce National Historic Trail managed according to the Nez Perce National Historic Trail Comprehensive Plan.</p>

Caribou-Targhee National Forest, Idaho

The Caribou-Targhee National Forest manages lands adjacent to the Custer Gallatin National Forest on the Montana and Idaho border along the southwestern part of the forest.

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<p>Soils DC-2. Organic substrates (vegetative litter, coarse woody debris, and soil organic matter) are present in sufficient amounts to support soil fertility and ecological functions.</p>	<p>Soils Goal 1. Long-term soil productivity is sustained by retaining fine organic matter and woody residue on activity areas</p>
<p>Watershed and Aquatics. DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity. DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species. DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation. DC-6. In-stream flows create and maintain riparian, aquatic, and wetland habitats; to retain patterns of sediment, nutrient, and wood routing and transport while maintaining reference dimensions (such as, bankfull width, depth, entrenchment ratio, slope, and sinuosity); to ensure floodplain inundation occurs within the natural range of variation allowing floodplain development; and to ensure the timing, magnitude, duration, and spatial distribution of peak, high, and low flows are retained, within the range of conditions of the reference watersheds, as defined by agency monitoring. DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists. DC-11. Instream and riparian habitat conditions in managed watersheds move towards conditions similar to those in reference watersheds (conditions such as, large woody debris recruitment, pool frequency and residual depth, width-to-depth ratios, stream shading and temperature, bank stability, etc.). DC-12. Water quality, including groundwater, meets or exceeds applicable state water quality standards, fully supports designated beneficial uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources. The forest has no documented lands or areas that are delivering water, sediment, nutrients, or chemical pollutants that would</p>	<p>Fisheries, Water, and Riparian Resources Goal 1. Maintain or improve water quality to meet water quality standards for the States of Idaho and Wyoming Goal 2. Water quality will improve on stream segments on the forest identified by the States of Idaho and Wyoming as having water quality concerns and they are removed from the Water Quality Limited list Goal 3. Maintain or restore water quality, to a degree that provides for stable and productive riparian and aquatic ecosystems Goal 4. Maintain or restore stream channel integrity, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems naturally developed Goal 5. Maintain or restore instream flows to support healthy riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route discharges Goal 6. Maintain or restore the natural timing and variability of the water table elevation in meadows and wetlands Goal 7. Maintain or restore the diversity and productivity of native and desirable nonnative plant communities in riparian zones. Goal 8. Maintain or restore riparian vegetation to A. Provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems, B. Provide adequate summer and winter thermal regulation within the riparian and aquatic zones, C. Help achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which the communities developed naturally Goal 9. Maintain or restore aquatic habitats necessary to support overall biodiversity, including unique genetic fish stocks such as native cutthroat trout that evolved within the specific geo-climatic regions</p>

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<p>result in conditions that violate the Montana and South Dakota states' water quality standards (such as, total maximum daily loads) or is permanently above natural or background levels.</p> <p>Riparian Management Zones</p> <p>DC-1. Riparian management zones have native, and/or desirable non-native, assemblages of flora and fauna; well distributed physical including large woody debris, chemical, and biological conditions resilient to disturbance regimes; and species composition and structural diversity of native plant communities. Riparian management zones provide adequate summer and winter thermal regulation, and provide bank stability moderating the rate of surface erosion, bank erosion, and channel avulsion. Riparian management zones maintain and contribute to water quality and nutrient cycling processes, organic matter processing, and ecosystem metabolism.</p> <p>DC-2. Riparian management zones are, at a minimum, in a properly functioning condition to provide energy dissipation, in-stream thermal buffering, sediment capture and routing, groundwater recharge, and have an intact normative flow regime.</p>	<p>Goal 10. Maintain or restore habitat to support populations of well-distributed native and desired nonnative plant, vertebrate, and invertebrate populations that contribute to the viability of riparian-dependent communities</p> <p>Goal 11. Wherever possible, secure water rights for maintenance of riparian and aquatic habitat, under State appropriate law, State reserved rights (in Wyoming), and Federal reserved rights</p> <p>Goal 12. Focus maintenance and restoration efforts, where needed, within inventoried hydrologically disturbed watersheds</p> <p>Goal 13. Participate in cooperative river basin planning efforts Coordinate management activities to be consistent with the results of these efforts including the Henry's Fork Basin Plan and the South Fork Snake Basin Plan</p>
<p>Vegetation</p> <p>Multiple Desired Conditions for forested, grassland, shrubland, woodland, riparian, alpine and sparse vegetation.</p> <p>At-Risk Plant Species</p> <p>DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Ecological Processes and Patterns; Properly Functioning Condition</p> <p>Goal 1. Ecosystems and their components are maintained in properly functioning condition dynamic and resilient to disturbances to structure, composition, and processes at appropriate landscape scales Ecosystems are not at risk for disturbances that have the potential to degrade them beyond the point of resiliency and sustainability</p> <p>Goal 2. Ecological systems at risk are identified and prioritized for management action</p> <p>Goal 3. In assessing properly functioning condition, the biological and physical, social, and economic components of ecosystems are considered</p> <p>Goal 4. Management strategies are used to maintain or restore ecological integrity, productivity and sustainability over time</p> <p>Goal 5. Biodiversity is maintained or enhanced by managing as much as possible for a diverse array of habitats tied to natural occurrence and distribution of plant communities</p> <p>Goal 6. Adaptive management strategies are used to gain understanding during project implementation and make adjustments to maintain and restore properly functioning condition</p> <p>Insects and Disease</p> <p>Goal. Insects and disease are allowed to play their natural role in ecosystem dynamics to the extent compatible with other resource objectives.</p> <p>Vegetation</p>

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	<p>Goal 1. Maintain and restore healthy, diverse forested and non-forested ecosystems through time, including appropriate components of dead and down woody material</p> <p>Goal 2. Use vegetation management to achieve a broad array of multiple-use and ecosystem management objectives, including maintenance, improvement, and restoration of: forest health; scenic viewsheds and corridors; wildlife habitat effectiveness and quality; hazardous fuels reduction; biological diversity of plant and animal communities; riparian and watershed health and function; vegetation structure, composition, and distribution in larger landscapes</p> <p>Plant Species Diversity</p> <p>Goal 1. Preserve unique formations within a landscape (such as cliffs, bogs, seeps, talus slopes, warm or alkaline springs, pot holes, and rock outcroppings) that provide habitat to plant species not common to the overall landscape and contribute to the species diversity within the landscape</p> <p>Goal 2. Provide necessary protection and management to conserve listed threatened, endangered and sensitive plant species.</p>
<p>Fire and Fuels</p> <p>DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes.</p> <p>DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk.</p> <p>DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p>	<p>Fire</p> <p>Goal 1. Identify the historical role of fire and restore fire as an ecological process, where appropriate to achieve multiple-use and ecosystem management objectives</p> <p>Goal 2. Prescribed fire and managed natural fire is used to achieve desirable soil and habitat characteristics, improve forest health, and create or maintain diversity in vegetative structure, composition, and patterns as described in PFC analysis</p> <p>Goal 3. Suppress fire in a safe, cost effective manner where necessary to protect human life and safety, developments, structures, and sensitive resource values</p> <p>Goal 4. Fuel accumulations are reduced and managed within their historical range</p>
<p>Wildlife</p> <p>DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p>	<p>Wildlife</p> <p>Goal 1. Wildlife biodiversity is maintained or enhanced by managing for a diverse array of habitats and distribution of plant communities</p> <p>Goal 2. Provide habitat to support the wildlife and hunting goals of the States of Idaho and Wyoming</p>

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<p>Permitted Livestock Grazing DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions. Vegetation Multiple Desired Conditions for upland, riparian and other vegetation types.</p>	<p>Range Goal 1. Upland and riparian plant communities meet Desired Vegetation Conditions for site-specific areas Goal 2. Domestic livestock grazing is managed to promote the desired conditions of various resources including maintenance of adequate plant and litter ground cover, nutrient recycling, forage for wildlife species, seed production, and the restoration and maintenance of riparian communities</p>
<p>Timber DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.</p>	<p>Timber Management <u>General</u> Goal: Silvicultural techniques will be used as a tool to manage or manipulate vegetation for the purpose of achieving forest plan resource objectives Emphasis will be placed on restoration of ecological function, structure and composition <u>Slash Treatment</u> Goal: Fuel loading on activity areas meets site productivity objectives for wildlife and fire <u>Fuelwood</u> Goal 1. A sustainable level of fuelwood is made available Goal 2. Conduct inventory for better determining the sustainable level of fuelwood <u>Precommercial Thinning</u> Goal 1. Thinning results in restoration of ecological structure, function and composition Goal 2. Mimic tree densities and patch sizes occurring under natural conditions over a landscape Goal 3 .Provide for a variety of future resource products</p>
<p>Special Forest Products DC-1. A variety of special forest products are available for commercial, personal, tribal, educational, and scientific uses. Areas of Tribal Importance DC-2. Tribal members have access to sacred sites, sacred places and tribal cultural landscapes within the Custer Gallatin for the exercise of reserved treaty rights and traditional cultural practices.</p>	<p>Special Forest Products Goal 1. Establish guidelines for commercial harvesting of special forest product species Goal 2. Provide for the historical, cultural, and recreational uses, as well as rights and privileges afforded Native Americans under treaties and agreements, before commercial uses of special forest products are allowed</p>

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<p>Energy, Minerals and Geological Areas of Interest DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Minerals Goal. Implement leasing decisions including identification of lands available for leasing made in the Forest Oil and Gas Leasing EIS and its associated Record of Decision</p>
<p>Infrastructure; Roads, and Trails DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p>	<p>Access Goal 1. The forest road and trail system is cost effective and integrates human needs with those of other resource values, particularly grizzly bear, elk, and native cutthroat trout Goal 2. Elk vulnerability is decreased and grizzly bear security is increased Goal 3. Native cutthroat trout habitat is restored through effective road closures, obliterations, reclamations, redesign, and improved maintenance practices</p>
<p>Recreation Recreation Opportunity Spectrum ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings. Developed Recreation Sites DC-4. Additional recreational development is provided within the context of opportunities and facilities provided by off-forest private and public recreation providers. Visitor Education and Interpretation DC-5. Education, in a variety of mediums about forest stewardship and responsible use leads to better visitor compliance with regulations.</p>	<p>Recreation Winter Recreation Goal 1. Provide a quality winter recreation experience while minimizing conflicts between motorized and nonmotorized use and wintering big game Goal 2. Establish a linear capacity for two-way snow machine trails for purposes of safety and quality of the recreation experience Goal 3. Provide networks of marked, designated, and groomed snow machine, cross-country ski, and other winter travel routes and trailhead facilities Goal 4. Provide winter recreation user information to educate users of wildlife needs and promote backcountry safety Goal 5. Promote opportunities for backcountry winter recreation off-highway vehicle Goal. Provide a network of off-highway vehicle trails while minimizing the effects of off-highway vehicle use on soils, wildlife and other users Developed Facilities Goal. Maintain or slightly increase the forest's developed site capacity in accordance with the CIP (Capital Improvement Projects) Implementation Schedule</p>

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	<p>Trails</p> <p>Goal 1. Trails for motorized/mechanized use would be sufficient to sustain use over long periods of time and minimize requirements for maintenance or reconstruction These conditions would be achieved within subsections in the following sequence Big Hole Mountains, Caribou Range Mountains, Lemhi-Medicine Lodge, Centennial Mountains, Madison-Pitchstone Plateaus, Island Park, and Teton Range</p> <p>Goal 2. Trails for nonmotorized/mechanized use would be sufficient to sustain use over long periods of time with minimal requirements for maintenance or reconstruction These conditions would be achieved within subsections in the following sequence Teton Range, Big Hole Mountains, Centennial Mountains, and Caribou Range Mountains</p>
<p>Scenery</p> <p>DC-2. The forest's scenery, as directed by the scenic integrity objectives (table 20), contributes positively to visitors' experiences as well as the quality of life in neighboring communities while reflecting a range of allowable management activities that balance social and economic values, ecological integrity, landscape dynamics and sustainability.</p>	<p>Visual Quality</p> <p>Goal: Manage the visual landscape in accordance with the planned visual quality objective, as mapped in the Geographic Information System</p>
<p>Land Uses</p> <p>DC-2. Energy corridors throughout the planning area improve the delivery of electricity, oil, and gas, and enhance the western electric transmission grid by improving reliability, reducing congestion, and contributing to the national electrical grid.</p> <p>Goal-2. The Custer Gallatin National Forest coordinates with project proponents to co-locate emerging technology, communication sites, energy corridors, and other permitted infrastructure to minimize environmental and visual impacts.</p>	<p>Lands</p> <p>Goal 1. A well planned system of reliable and technically feasible energy corridors are provided to serve existing and future regional and local energy needs, compatible with other resource needs and objectives These corridors may be either designated (prescription 8 1) or non-designated (other prescriptions)</p> <p>Goal 2. The National Forest System lands set aside for utility corridors are minimized to reduce fragmentation and minimize acres allocated for that use</p>
<p>Recommended Wilderness Areas</p> <p>DC-1. Recommended wilderness areas maintain their existing wilderness characteristics, to preserve opportunities for inclusion in the National Wilderness Preservation System.</p> <p>DC-2. Recommended wilderness areas provide outstanding opportunities for solitude or primitive and unconfined recreation. Impacts from visitor use do not detract from the natural setting.</p> <p>DC-3. Recommended wilderness areas are characterized by a natural environment where ecological processes such as natural succession, wildfire, avalanches, insects and disease function as the primary forces affecting the environment.</p>	<p>Recommended Wilderness</p> <p>Goal 1. Protect and perpetuate wilderness character</p> <p>Goal 2. In the Lionhead area and Winegar Hole Addition, maintain grizzly bear core area attributes as defined in the IGBC Task Force Report, July 1994</p>
<p>Not applicable</p>	<p>Not applicable: Forest specific management areas that are not analogous to a Custer Gallatin land allocation.</p>

Shoshone National Forest, Wyoming

The Shoshone National Forest manages lands adjacent to the Custer Gallatin National Forest south of the Absaroka Beartooth Mountains Geographic Area east of Yellowstone National Park.

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<p>Air Quality</p> <p>DC-1. The overall quality of the air contributes positively to human and ecosystem health, visibility, and recreation, multiple-uses and wilderness values acknowledging that short-term smoke impacts from local, regional, or national wildland fire may occur.</p> <p>Goal-1. The Custer Gallatin National Forest cooperates with Federal, State, and tribal agencies to meet air quality regulations as necessary. Prescribed burns are coordinated with appropriate partners (for example, the Montana and Idaho Airshed Group) to minimize smoke impacts.</p>	<p>Air Desired Condition</p> <ul style="list-style-type: none"> • Air quality related values, including visibility, support human health, quality of life, economic opportunities, high quality recreation, and wilderness values.
<p>Soils</p> <p>DC-1. The inherent productivity of soil resources sustains native plant communities and wildlife populations while maintaining hydrologic function and providing for social and economic benefits.</p> <p>Watershed and Aquatics.</p> <p>DC-1. Watershed features, including natural disturbance regimes and aquatic or riparian habitats, are well distributed, diverse, and complex. Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.</p> <p>DC-3. Habitat and ecological conditions support the persistence of native aquatic and riparian associated plant and animal species.</p> <p>DC-4. Aquatic systems and riparian habitats express physical integrity, including physical integrity of shorelines, banks, and substrata, within their aquatic natural range of variation.</p> <p>DC-6. In-stream flows create and maintain riparian, aquatic, and wetland habitats; to retain patterns of sediment, nutrient, and wood routing and transport while maintaining reference dimensions (such as, bankfull width, depth, entrenchment ratio, slope, and sinuosity); to ensure floodplain inundation occurs within the natural range of variation allowing floodplain development; and to ensure the timing, magnitude, duration, and spatial distribution of peak, high, and low flows are retained, within the range of conditions of the reference watersheds, as defined by agency monitoring.</p>	<p>Water and Soil Desired Conditions</p> <ul style="list-style-type: none"> • Watersheds are characterized as having high geomorphic, hydrologic, and biotic integrity relative to natural potential. Vegetation and ground cover maintain good hydrologic function. Soils are maintained or improved to productive conditions. Productive soils and sustainable ecosystems are maintained when soil impacts, such as erosion, displacement, compaction, burning, and nutrient drains, are managed by best management practices. • Watersheds support favorable conditions of water flow to support multiple uses, biological resources, and a range of flows that transport sediment and maintain natural channel dimensions. Base flows support riparian vegetation and instream needs. Water quality is protected, and where needed, improved for physical, chemical, biological, and aesthetic qualities to attain both National Forest and National water quality goals. • Aquifers maintain natural patterns of recharge and discharge, especially where they are important to surface features dependent upon groundwater for their existence (such as springs, wetlands, fens, and stream flows). Aquifers possessing groundwater that provide multiple-use benefits maintain water quality at natural conditions. • Streams are in dynamic equilibrium with their water and sediment supplies. Stream systems retain their ability to transport sediment, they neither aggrade nor degrade, and the floodplain is accessible when stream flows are above bankfull level.

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<p>DC-7. Groundwater-dependent ecosystems, including wetlands, seeps, springs, fens, riparian areas, groundwater-fed streams and lakes, and groundwater aquifers, persist in size and exhibit water table elevations and function within their natural range of variation. The function of surface and subsurface aquatic ecosystems persists.</p>	<ul style="list-style-type: none"> • Periodic floods are the primary disturbance factor shaping stream channel structure and riparian vegetation patterns. Flood timing, duration, and magnitude follow expected patterns based on precipitation, season, aspect, elevation, and desired upland vegetation condition, and provide for flood dependent vegetation and channel maintenance. High flows exceed bankfull discharge for a short number of days at least every 2 years and provide for flood-dependent vegetation and channel maintenance. Floodplains dissipate floods and sustain water tables and the natural timing and variability of water levels in riparian, wetland, and meadow habitats.
<p>Vegetation Multiple Desired Conditions for at-risk plants, forested, grassland, shrubland, woodland, riparian/wetlands, alpine and sparse vegetation.</p>	<p>Vegetation Desired Conditions</p> <ul style="list-style-type: none"> • Across the Shoshone, a diversity of vegetation exists with a mosaic of cover types and stand structures forming a healthy, resilient landscape that provides habitat and connective corridors for all naturally occurring and desired species. Corridors and habitat connectivity exist to allow species to shift to new habitats. Healthy, resilient vegetation contribute to the forests ability to store carbon and function as a carbon sink. The dominant cover types on the Shoshone continue to be grasslands, Douglas-fir, spruce/fir, lodgepole pine, and whitebark pine. The desired forestwide mix of cover types is shown in table 1 and the current mix is shown in table 2. Forest vegetation exists in a diversity of age classes across the Shoshone. In areas that receive no or infrequent vegetation management actions (management area categories 1, 2, and 3), natural process such as fire and insects are the predominant disturbances that influence stand structure and landscape patterns. These natural disturbances can lead to large fluctuations in stand conditions. Though on the average in comparison to other areas, stands are older, patch size is variable with many small patches (less than 10 acres) interspersed among large patches (greater than 100 acres) that dominate the area, and the amount of dead and down material is greater. • In areas that receive more frequent vegetation management actions (management area categories 4, 5, and 8), stand structure and landscape patterns are influenced by prescribed fire, timber harvest, and other silviculture treatments in addition to natural disturbances. Vegetation management tends to reduce the incidence of large fluctuations in stand conditions. All conditions are still present, but on the average in comparison to other areas, stands are younger, patch size is less variable with more mid-size patches (10 to 100 acres), and the amount of dead and down material is lower. These conditions provide more resilient, healthy forested stands than are found in unmanaged areas of the Shoshone. • Snags occur within all tree cover types and commonly occur in patches. Densities are highest in areas where natural disturbance processes

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	<p>dominate (management area categories 1, 2, and 3). In these areas, snag densities range from five snags/acre greater than 9 inches in diameter for aspen cover type to 21 snags/acre greater than 9 inches for spruce/fir cover type (table 5). Areas where vegetation management activities are more frequent (management area categories 4, 5, and 8) have the lowest snag densities, with minimum densities of two to three snags/acre greater than 9 inches in diameter.</p> <ul style="list-style-type: none"> • Occurrence of large woody debris generally mirrors the occurrence of snags, with the greatest densities in those areas where natural processes dominate. • Whitebark pine occurs throughout its range (at high elevations and in mixed conifer stands just below timberline). Cone-bearing stands are healthy and younger stands have been restored to areas where bark beetles, blister rust, and fire have eliminated mature stands in the last decade. • Riparian vegetation is supportive of hydrologic functions and good water quality. Vegetation in riparian areas is composed of a diverse structure of native plant communities that perpetuate the distribution of woody debris, soil cover, bank stability, aquatic habitat, and shading characteristics of resilient riparian ecosystems. In areas where dry meadow and upland plant communities, including Kentucky bluegrass types, have invaded into wetland/riparian areas, management allows for their replacement over time by native plant communities to the extent practicable. Ground cover is typically comprised of organic litter, shrubs, grasses, graminoids, and forbs. Riparian vegetation composition and structure are similar to what would be expected with natural disturbance processes and vary physiographically. Vegetation displays a mosaic of successional stages and age classes that sustain a diversity of riparian communities and the aquatic and terrestrial organisms that use them over time. • Wetland habitats (springs, seeps, ponds, lakes, fens, etc.) remain intact and properly functioning with natural water flow patterns. Fens support the features and functions inherent to these special habitats. <p>Insects and Disease Desired Conditions</p> <p>The disturbance processes from insects and diseases continue to operate across the Shoshone. In management area categories 1, 2, and 3 (including wilderness areas), these processes continue at natural levels and occasionally result in epidemics that affect large areas where watersheds are dominated by vegetation conditions susceptible to epidemics. Forested stands within management area categories 4, 5, and 8 generally have smaller patch sizes, reduced stand density, and a higher portion of stands in younger age classes, all of which reduce the susceptibility to insect epidemics.</p>

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<p>Fire and Fuels</p> <p>DC-1. The amount and severity of wildland fire is within the natural range of variation to maintain resilient ecological conditions. Table 14 displays the desired condition ranges for each fire regime group. Please refer to the glossary for the definition of fire regimes.</p> <p>DC-2. Vegetation conditions (composition, structure and function) support natural fire regimes except in the wildland-urban interface and adjacent to infrastructure where vegetation conditions support low-intensity fire where necessary in order to reduce negative impacts to values at risk.</p> <p>DC-3. There are minimal detrimental impacts to values at risk from wildland fire.</p>	<p>Fire and Fuels Desired Conditions</p> <ul style="list-style-type: none"> • Wildland fire plays a role in maintaining healthy, resilient ecosystems, as appropriate, for the vegetation type and management objectives. Fire disturbance contributes to vegetation diversity across the landscape. Stand replacement fires reestablish seedling/sapling structural stages. Lower intensity fires contribute to intra-stand diversity by creating or maintaining vegetation patch size and density. Fire disturbances generally range in size from a few hundred to thousands of acres. Fire’s natural role is reduced and occurs at smaller scales in areas where existing resource values and infrastructure limit the desirability of large-scale fires. • Hazardous fuel conditions have declined. Within the wildland-urban interface, the forest understory is discontinuous and relatively free of ladder fuels (trees and/or brush), trees are generally spaced to create open discontinuous canopies, and deciduous species are present where conditions are favorable. In areas that receive more frequent management actions (management area categories 4, 5, and 8), hazardous fuel conditions are lower and stands are younger and more diverse. In these areas, lower fuel levels and greater stand diversity provide more opportunities for controlling unwanted wildfire. In the remaining areas (management area categories 1, 2, and 3 outside the wildland-urban interface), vegetation and hazardous fuel conditions vary across the landscape, providing fewer opportunities for controlling wildfire when desired.
<p>Invasive Species</p> <p>DC-1. Non-infested areas remain free of invasive species. Where invasive species occur, their range is reduced where possible, or at a minimum, they do not expand. Desired nonnative species occur where they do not conflict with native species, and are supported by healthy, functioning ecosystems.</p>	<p>Invasive Species Desired Conditions</p> <ul style="list-style-type: none"> • Existing occurrences of terrestrial invasive species are declining. New outbreaks of terrestrial invasive species are neither established nor spreading to adjacent lands. • Outbreaks of aquatic invasive species are neither established nor spreading to adjacent waters.

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<p>Wildlife DC-2. Habitat conditions contribute to species recovery needs such that population trends of listed species are stable or increasing across their range. Lands within critical habitats designated by the U.S. Fish and Wildlife Service provide the physical and biological features identified as essential to the conservation and recovery of listed species.</p> <p>At-Risk Plant Species DC-1. Habitat conditions support the recovery and persistence of plant species that are recognized as at-risk species. Ecological conditions and processes that sustain the habitats currently or potentially occupied by these species are present.</p>	<p>Threatened, Endangered, Proposed, and Candidate Species Desired Conditions Suitable habitats for threatened, endangered, proposed, and candidate species are managed consistently with established and approved recovery plans and conservation strategies. Management actions contribute to, or do not prevent, recovery or delisting of these species and support species diversity and viability. Suitable habitats for proposed and candidate species are managed to help preclude the need for listing under the Endangered Species Act. Desired distribution and abundance of threatened, endangered, proposed, and candidate species are maintained.</p>
<p>Wildlife DC-1. A complete suite of native species is present, with sufficient numbers and distribution to be adaptable to changing conditions for long-term persistence. Desired non-native species are present where biologically suitable and socially acceptable. Wildlife diversity contributes to ecological processes such as predator-prey relationships, nutrient cycling, hydrologic function, vegetation composition and structure.</p> <p>DC-3. Vegetation conditions are generally within the natural range of variation as described for vegetation, thereby providing wildlife habitat for a variety of life cycle needs, including year-round and seasonal use by a diverse suite of native and desired non-native species.</p>	<p>Wildlife Desired Conditions Because the Shoshone forest plan uses different species categories than the Custer Gallatin forest plan, the Shoshone forest plan desired conditions are not listed for these species categories.</p>
<p>Areas of Tribal Importance DC-1. In recognition of Federal trust responsibilities, healthy and sustainable plant and animal habitats support the availability of reserved treaty rights resources for traditional cultural practices.</p> <p>DC-2. Tribal members have access to sacred sites, sacred places and tribal cultural landscapes within the Custer Gallatin for the exercise of reserved treaty rights and traditional cultural practices.</p> <p>Goal-1. Tribal cultural landscapes, sacred sites, sacred places, traditional cultural properties and other culturally significant areas identified by Tribes are maintained and managed through government to government consultation and coordination with the appropriate Tribes.</p>	<p>Tribal Rights and Interests Desired Conditions</p> <ul style="list-style-type: none"> • Tribes continue to have interest in and reliance on ecosystems even as their cultures change, employing both traditional and contemporary ways of relating to their homelands and interest areas (lands where they traditionally ranged to sustain their ways of life). Lands within the Shoshone help sustain American Indians' way of life, cultural integrity, social cohesion, and economic well-being. • The Shoshone takes a proactive role on the tribes' behalf, especially in areas of treaty interest, rights, traditional and cultural resources, and ecosystem integrity. The Shoshone provides opportunities for traditional American Indian land uses and resources. The presence of sustainable habitats is fundamental to the achievement of both useable and harvestable levels of resources significant to American Indians' traditional cultural practices, as well as to ecosystem integrity.
<p>Cultural and Historic Resources DC-1. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.</p>	<p>Heritage Resources Desired Conditions Heritage resources are preserved and enhanced for the benefit of present and future generations. Archaeological and historic resources are intact, stable, and, when appropriate, made accessible to the public. Resources are identified, evaluated, and nominated to the National Register of Historic</p>

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<p>DC-2. Interpretation and adaptive use of cultural resources provide public benefits and education, and enhance understanding and appreciation of Custer Gallatin National Forest precontact, contact, and indigenous presence.</p> <p>DC-3. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.</p> <p>Nez Perce (Nee-Me-Poo) National Historic Trail</p> <p>DC-1. Interpretive materials and identification signage are available for the Nez Perce (Nee-Me-Poo) National Historic Trail.</p>	<p>Places. Select resources are utilized for interpretation, education, research, traditional use, and stewardship opportunities. Eligible heritage resources, for example the Nez Perce National Historic Trail and the Wapiti Ranger Station, are protected and interpreted for the public, where appropriate.</p>
<p>Permitted Livestock Grazing</p> <p>DC-1. Grazing allotments contribute to a supply of livestock forage that contributes to local ranching operation sustainability and local community economy while maintaining or moving toward ecological desired conditions.</p>	<p>Commercial Livestock Grazing Desired Conditions</p> <p>The Shoshone provides forage for commercial livestock operations. Forage availability for local ranches helps support ranch operations and contributes to local economies. Additionally, economically viable ranch operations help maintain open space and wildlife habitat near the Shoshone, which is integral to meeting desired conditions and maintaining the economic and social sustainability of local communities. Conflicts between livestock and large predators are minimized to the extent possible, while following Federal and State of Wyoming laws and regulations.</p>
<p>Timber</p> <p>DC-1. Lands identified as suitable for timber production support a regularly scheduled timber harvest program that provides for jobs and income while also sustaining ecological integrity</p> <p>DC-3. Timber production and harvest contribute to ecological sustainability and ecological integrity while contributing to economic sustainability, providing jobs, and income to local economies.DC-4. Timber harvest supports maintaining regional timber harvesting and processing infrastructure.</p> <p>Special Forest Products</p> <p>DC-1. A variety of special forest products are available for commercial, personal, tribal, educational, and scientific uses.</p>	<p>Forest Products Desired Conditions</p> <p>The removal of wood products (sawtimber, small diameter roundwood, chips, pulp, firewood, etc.) and other forest products (mushrooms, Christmas trees, pine cones, plants, greenery, etc.) contributes to ecological, social, and/or economic sustainability (including local communities) and associated desired conditions. A sustainable mix of timber products responsive to existing, new, and changing markets, including local industry, is provided. Included in the mix of timber products are some that contribute to carbon sequestration.</p>
<p>Energy, Minerals and Geological Areas of Interest</p> <p>DC-1. Energy and mineral resources are available in consideration of other resources values that may be present. Following mineral activities, lands are in a productive capacity in recognition of site conditions, site stability, and prior existing land use.</p>	<p>Minerals Desired Conditions</p> <p>Mineral resources provide commodities for current and future generations commensurate with the need to protect other resources. Mineral materials are available to support resource management, such as road surfacing; personal use, such as landscape rock; and some commercial uses.</p>
<p>Energy, Minerals and Geological Areas of Interest</p> <p>DC-8. Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits for the public and academia.</p>	<p>Paleontological Resources Desired Conditions</p> <p>Paleontological resources on the Shoshone provide for preservation and use of these resources. Resources are available for public and scientific uses as governed by existing regulations.</p>

Revised Plan Components	Shoshone National Forest 2015 Forest Plan Components
<p>Recreation, General</p> <p>DC-3. Recreation opportunities are adaptable to changing trends of desired recreation opportunities and increasing demands and use of the Custer Gallatin. Additional recreation facilities that accommodate growing demand provide quality recreation experiences and conserve forest resources. Goal-2. The Forest Service encourages private and public partnerships, such as, contractors, concessionaires, private sector and volunteers to provide capacity to help meet current and future recreation demands.</p> <p>Recreation Opportunity Spectrum</p> <p>ROS DC-1. Outdoor recreation opportunities and experiences are provided year-round in a range of settings as described by the desired recreation opportunity spectrum. These settings reflect the integration of other resource values, in a sustainable manner, with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p> <p>Dispersed Recreation</p> <p>DC-1. Dispersed opportunities are available across the Custer Gallatin for a wide variety of users where compatible with environmental resources, cultural resources, recreation settings, and social interactions such as user conflicts and crowding</p>	<p>Recreation Desired Conditions</p> <ul style="list-style-type: none"> • A diversity of year-round recreation opportunities attracts increasing numbers of visitors to the Shoshone, thereby providing economic and social benefits to local communities. • The Shoshone is rugged, remote, and wild. It plays a key role in providing locals and travelers an opportunity to connect with nature and experience wildlife. The rich western heritage provides a trail-based infrastructure into and through the backcountry and continues to instill a sense of adventure and freedom. The Shoshone provides minimally developed facilities for overnight use and backcountry activities, with the exception of facilities along travel corridors and/or near destination water sites. • Front country areas provide a wide range of recreation opportunities for motorized and non-motorized recreation in a natural setting. These areas serve as gateways to the forest’s recreation opportunities. • Partnerships are a significant tool to help provide public use and year round recreation opportunities. <p>Recreation Opportunities</p> <p>Established recreation opportunities are maintained where not in conflict with other resources. New opportunities consistent with recreation settings respond to public demand while still meeting desired conditions for other resources. Non-motorized management areas offer opportunities for solitude and recreation in a natural setting.</p> <p>Dispersed Recreation</p> <p>Dispersed recreation areas are characterized by a predominantly natural appearing environment. To protect resources, developed facilities, such as toilets and designated camping sites, are present only after all other options are ruled out. Access is commonly provided by National Forest System roads and motorized trails.</p>
<p>Land Uses</p> <p>DC-1. Opportunities are available for a variety of land special uses that include energy transmission rights-of-way, communication uses, access roads, research activities, and other public services, on lands that are suitable for these activities.</p> <p>Recreation Special Uses</p> <p>DC-1. Recreation special uses provide unique opportunities, services, and experiences for the recreating public on national forest lands and respond to a demonstrated demand for a specific recreation opportunity.</p> <p>DC-2. Services provided by recreation special uses enhance the recreation experiences of forest visitors, enhance public health and safety, and protect natural resources.</p>	<p>Special Uses Desired Conditions</p> <p>Special use authorizations provide economic contributions to local economies while staying within capacities.</p> <p>Special use authorizations allow occupancy and use of National Forest System lands for appropriate activities when consistent with the desired conditions for the specific area.</p> <p>Recreation special use authorizations provide appropriate activities meeting demonstrated public needs when consistent with the desired conditions for the specific area. Special use authorizations provide opportunities for those needing outfitting and guiding services to participate in the recreation opportunities provided on the Shoshone.</p> <p>Outfitter and guide authorizations are available based on a suitable mix of guided and non-guided public capacity. This mix may vary by type of activity</p>

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Revised Plan Components	Shoshone National Forest 2015 Forest Plan Components
<p>DC-3. Recreation special uses contribute to economic sustainability and are compatible with ecological and social experience thresholds.</p> <p>Recreation Outfitter Guides</p> <p>DC-1. Outfitters and guides offer services that the agency and public need, in order to offer opportunities that otherwise would not be obtainable therefore increasing the diversity of recreation opportunities available.</p> <p>DC-2. Outfitter and guide services promote the roles, contributions, and sense of the place, and are appropriate for the recreation opportunity spectrum class.</p>	<p>and/or season of use. Capacity calculations are made on an area-specific basis.</p>
<p>Infrastructure; Roads and Trails</p> <p>DC-1. The transportation system provides safe and efficient public, private inholding, and administrative access to the Custer Gallatin for recreation, special uses, forest resource management, and fire management activities. The transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms.</p> <p>Beartooth National Forest Scenic Byway</p> <p>DC-1. The intrinsic scenic, natural, historical, cultural, archaeological, and recreational qualities for which the Beartooth National Forest Scenic Byway was designated are present along the Byway.</p> <p>Nez Perce (Nee-Me-Poo) National Historic Trail</p> <p>DC-1. Interpretive materials and identification signage are available for the Nez Perce (Nee-Me-Poo) National Historic Trail.</p> <p>Continental Divide National Scenic Trail</p> <p>DC-1. The Continental Divide National Scenic Trail is a well-defined trail that provides for high-quality, primitive hiking and horseback riding opportunities, and other compatible trail activities, in a highly scenic setting along the Continental Divide. The significant scenic, natural, historic, and cultural resources along the trail's corridor are present. Where possible, the trail provides visitors with expansive views of a naturally appearing landscape along the divide.</p>	<p>Infrastructure; Roads</p> <p>System roads provide basic motor vehicle access to the Shoshone. They are safe and well maintained; diverse in grade, alignment, features, and driving experiences; have limited impacts on other resources; are compatible with desired conditions and objectives; and reflect suitable uses.</p> <p>System roads provide legal and reasonable access for recreation opportunities, resource management, and administration. Resource impacts from roads are balanced with the benefits of having the road available for use. Some roads are closed except to administrative and authorized use or for short-term resource management activities. Many roads are open to motorized use, including off-road vehicles, as identified on the motor vehicle use map. Temporary roads provide short-term access to areas of the Shoshone for meeting desired conditions and objectives for resource management.</p> <p>The Beartooth All-American Road, Wyoming Centennial Scenic Byway, Chief Joseph Scenic Byway, and Buffalo Bill Cody Scenic Byway provide outstanding scenic, recreational, and educational opportunities.</p> <p>Unauthorized routes are rehabilitated and returned to natural land settings.</p> <p>Infrastructure; Trails</p> <p>System trails are the primary access to the Shoshone's backcountry settings. Trails across the Shoshone provide a variety of recreation opportunities across diverse terrains and recreation settings. High-quality loop trails exist for both motorized and non-motorized recreation.</p> <p>Non-motorized trails are provided by using a mixture of traditional multiple-day loop trails accessing backcountry areas and wilderness areas and by developing short day-hiking loops off scenic byways and near main access trails. Non-motorized opportunities for cross-country skiers and snowshoers are provided on both groomed and ungroomed trails. Designated cross-country ski areas provide access to non-motorized trails near open and plowed roads.</p>

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	<p>Motorized trail loop opportunities are provided using lower standard System roads with motorized trails constructed as connectors where needed. Snowmobiling opportunities are provided on groomed trails and in areas open to off-trail snow play. Wheeled motorized vehicle use occurs on System roads and trails unless otherwise authorized. The level of motorized opportunities has not been reduced since the Plan was approved.</p> <p>The Continental Divide National Scenic Trail and the Nez Perce National Historic Trail provide outstanding scenic, recreational, and educational opportunities.</p>
<p>Scenery</p> <p>DC-1. The forest's scenery provides for public enjoyment of the forest's varied geographic regions, relative to the spectrum of viewing contexts and expectations for valued viewsheds.</p>	<p>Scenery Desired Conditions</p> <p>High-quality scenery that benefits tourism, the local economy, the community image, and overall recreation opportunities is maintained. Valued viewsheds, vistas, tribal traditional places, and natural landscape elements are protected, restored, and enhanced. Activities that protect, restore, enhance, and/or perpetuate long-term valued scenic elements may be visible to visitors in the short term. These activities may include, but are not limited to, timber harvest, fuel reduction, vista creation, wildfire, and insect and disease prevention and suppression. Scenic resources reflect ecosystem diversity, enhance the recreation settings, and contribute to the quality of life of local residents and communities.</p>
<p>Land Status and Ownership, Access, and Land Uses</p> <p>DC-1. Consolidated ownership reduces wildlife-human conflicts, provides for connectivity, and improves access to public lands.</p> <p>DC-2. Consolidated surface and mineral ownership meets resource and communities needs and facilitates efficient land management.</p> <p>DC-3. Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands.</p>	<p>Land Adjustments Desired Conditions</p> <p>The land ownership pattern of the Shoshone provides for efficient and effective resource management within the boundaries of the Shoshone. Rights-of-way and easements provide access to National Forest System lands.</p>
<p>Designated Wilderness Areas</p> <p>DC-1. The untrammeled quality of wilderness is essentially unhindered and free from modern human control or manipulation.</p> <p>DC-2. Natural ecological processes and disturbances (for example, succession, wildfire, avalanches, insects, and disease) are the primary forces affecting the composition, structure, and pattern of vegetation. Wilderness areas provide opportunities for visitors to experience natural ecological processes and disturbances with a limited amount of human influence</p> <p>DC-3. Wilderness exhibits an undeveloped quality and is without nonconforming and/or unnecessary facilities, installations or human-caused surface disturbances.</p> <p>DC-4. Outstanding opportunities for solitude or primitive and unconfined recreation are available, where impacts to the wilderness character are not degraded.</p>	<p>Designated Wilderness Desired Conditions</p> <ul style="list-style-type: none"> Wilderness areas preserve and protect the wilderness character of the area and provide outstanding opportunities for solitude and primitive recreation. Wilderness areas are affected primarily by the forces of nature. Wilderness area ecological systems are substantially free from the effects of modern civilization. Ecological processes such as fire, insects, and diseases operate relatively freely from the influences of humans. Fires, as nearly as possible, play their natural ecological role within wilderness. Wilderness areas are free of invasive species. Wilderness retains its primitive character and influence and is essentially without permanent improvements. Facilities and improvements within wilderness are the minimum needed to protect the resources for which the wilderness was designated.

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<p>DC-5. Each wilderness area accommodates levels of recreation use that are ecologically sustainable and provides opportunities for solitude, primitive recreation and wilderness character.</p>	<ul style="list-style-type: none"> • Forest management strategies support recreational and educational activities when in alignment with the preservation of wilderness character. • The wilderness management area consists of three settings that provide differing levels of solitude and isolation: pristine, primitive, and semi-primitive (see map M). • The pristine settings provide natural biophysical conditions and a high degree of solitude for both wildlife and humans with no perceptible evidence of human use. Pristine wilderness provides outstanding opportunities for solitude and isolation. Opportunities for unconfined recreation are maximized. Evidence of human use is not noticeable and does not impact natural biological processes. Encounters with small groups or individuals are infrequent. All travel is cross country. • The primitive settings provide substantially natural biophysical conditions. Primitive wilderness provides opportunities for solitude. On-site regulation of recreation use is minimal. Campsites are dispersed; usually visitors will neither see nor hear each other at adjacent campsites. Encounters with small groups and individuals are limited. Trails are available for travel. Travel is cross country or by use of a low density constructed trail system. Human influences on biophysical conditions and natural biological processes are minimal. Human uses and activities may be evident in the areas of highest visitor use. • Semi-primitive settings provide essentially natural biophysical conditions. In semi-primitive wilderness, trails concentrate use and provide access to popular destinations and travel routes. Encounters with other users can be frequent. Campsites are either dispersed or clustered around destinations and show evidence of repeated but acceptable levels of use. Management actions to mitigate visitor use impacts may be noticeable. Human uses and activities are evident in the areas of highest visitor use. Human activities may influence biophysical conditions and natural biological processes.
<p>Research Natural Areas DC-1. Ecological processes that support the functional and structural patterns of research natural area ecosystems are present and functioning to sustain the species and ecological conditions for which the RNA was established.</p>	<p>Line Creek Research Natural Area Desired Conditions The research natural area provides an opportunity for research, study, observation, monitoring, and educational activities that maintain the natural conditions for which the area was established. The research natural area provides opportunities for solitude and primitive recreation, especially in the summer. The area is affected primarily by the forces of nature. Ecological processes such as fire, insects, and diseases operate relatively freely from the influences of humans. The area is free of terrestrial and aquatic invasive species. The area remains unroaded and provides a non-motorized recreation opportunity in the summer and motorized and non-motorized recreation opportunities in the winter. Encounters with small groups and individuals are low to moderate. Human influences on vegetation are minimal.</p>

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<p>Eligible Wild and Scenic Rivers DC-01. Eligible wild, scenic, or recreational rivers retain their free-flowing condition, preliminary classification, and the outstandingly remarkable values which provide the basis for their inclusion in the system.</p>	<p>Eligible Wild and Scenic Rivers Desired Conditions River segments and their corridors identified as eligible for recommendation as part of the National Wild and Scenic Rivers System retain free-flowing status, water quality, outstandingly remarkable values, and their classifications.</p>
<p>Inventoried Roadless Areas DC-01. Inventoried roadless areas provide semi-primitive non-motorized and motorized settings. A diversity of recreation opportunities are available, including both motorized and nonmotorized trail opportunities.</p>	<p>Inventoried Roadless Areas Desired Conditions Desired conditions for inventoried roadless areas are guided by the desired conditions for the underlying management area.</p>
<p>Not applicable</p>	<p>Not applicable: Forest-specific management areas that are not analogous to a Custer Gallatin land allocation.</p>

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