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Assessment of the Helena and Lewis & Clark National Forests

Chapter One, Introduction

Assessment of the Helena and Lewis & Clark National Forests

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Abstract: The Helena and Lewis & Clark National Forests have developed this assessment in accordance with the 2012 National Forest System land management planning rule (planning rule) adopted by the U.S. Department of Agriculture. As stated in the planning rule, an assessment must be completed for the development of a new forest plan or for a forest plan revision. This assessment evaluates existing information about relevant ecological, economic, and social conditions, trends, and sustainability and their relationship to the land management plan within the context of the broader landscape. In this assessment for plan revision, the responsible official has identified and evaluated existing information relevant to the plan area for 15 topic areas.

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Introduction

The National Forest Management Act (NFMA) of 1976 requires every national forest or grassland managed by the Forest Service to develop and maintain an effective land management plan (also known as a forest plan) and amend, or revise, the plan when conditions significantly change. The process for the development and revision of plans, along with the required content of plans, is outlined in the planning regulations, often referred to as the planning rule. Managers of individual forests and grasslands follow the direction of the planning rule to develop a land management plan specific to their unit that sets forth the direction the forest will follow in the future management of lands and resources within its boundaries. The current rule is the 2012 National Forest System (NFS) land management planning rule.

In 2010 the Regional Forester decided to combine the programs of the Helena and Lewis & Clark National Forests (HLC NFs). The combination of the two forests programs was consistent with the Northern Region's "Roadmap" for sharing leadership. Part of implementing this decision includes a combined revision effort.

Forest Plan Revision

NFMA regulations require that each forest plan be revised every 10 to 15 years (36 Code of Federal Regulations (CFR) 219.10). The Helena National Forest Land and Resource Management Plan, dated April 1986, has been amended numerous times. The Lewis & Clark National Forest Land and Resource Management Plan, dated June 1986, has also been amended numerous times. The Forests are beginning the first phase of a 4-year combined planning process to revise their forest plans into one plan. As stated in the 2012 planning rule, planning for a national forest is an iterative process that includes an assessment; developing, amending, or revising a plan; and monitoring. These three phases of the framework are complementary and may overlap. The intent of the planning framework is to create a responsive planning process that informs integrated resources management and allows the Forest Service to adapt to changing conditions, including climate change, and improve management based on new information and monitoring. The HLC NFs planning process consists of the following three steps:

1. Assessment Phase. The evaluation of existing information, such as relevant ecological, economic, and social conditions, trends, and sustainability, and its relationship to the land management plan within the context of the broader landscape.
2. Revision Phase. The updating of information, including identification of the need to change the forest plan based on the assessment, development of a proposed plan and alternatives, consideration of the environmental effects of the proposed plan and alternatives, provision for public review and comment of the proposed plans, provision to object before a proposed plan is chosen, and, finally, approval of the selected plan.
3. Monitoring Phase. The continuous observation and collection of feedback for the planning cycle that is used to test relevant assumptions, track relevant conditions over time, and measure management effectiveness.

Assessment

This document comprises phase 1 – the assessment. The assessment is designed to evaluate and present existing information about relevant ecological, economic, and social conditions; trends and sustainability; and associated relationships to the land management plan. Assessments are not decision making documents but provide current information on select topics relevant to the plan area.

To complete the assessment, the responsible official shall rapidly evaluate readily available information that is relevant. The term "relevant" means the information must pertain to the topics under consideration at spatial and temporal scales appropriate to the plan area and to a land management plan. Relevance in the assessment phase is information that is relevant to the conditions and trends of the following 15 topics:

1. Terrestrial ecosystems, aquatic ecosystems, and watersheds
2. Air, soil, and water resources and quality
3. System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, and climate change; and the ability of terrestrial and aquatic ecosystems on the plan area to adapt to change
4. Baseline assessment of carbon stocks
5. Threatened, endangered, proposed and candidate species; potential species of conservation concern (SCC); and species of public interest present in the plan area
6. Social, cultural, and economic conditions
7. Benefits people obtain from the HLC NFs plan area (ecosystem services)
8. Multiple uses and their contributions to local, regional, and national economies
9. Recreation settings, opportunities and access, and scenic character
10. Renewable and nonrenewable energy and mineral resources
11. Infrastructure, such as recreational facilities and transportation and utility corridors
12. Areas of tribal importance
13. Cultural and historical resources and uses
14. Land status and ownership, use, and access patterns
15. Existing designated areas located in the plan area including wilderness, wild and scenic rivers, and potential need and opportunity for additional designated areas (36 Code of Federal Regulations [CFR] 219.6(b)).

Document Structure

The Forest Service has prepared this assessment in compliance with the NFS land management planning rule (planning rule). This assessment document is comprised of 13 chapters and five appendices.

Chapter 1 is the introduction and includes information on the background of the assessment, the forest plan revision planning process, best available science used in the assessment, the public participation process, and two maps.

Chapters 2 through 13 detail the findings by the above-identified topic areas. Some of the topic areas have been combined (where it was logical to do so) and/or moved. It was felt that this would enhance the flow and readability of the document. The chapters identify and describe important information evaluated in this phase; the nature, extent, and role of existing conditions and reasonably foreseeable future trends within the plan area and in the broader landscape. Trends may imply a range of changes that are reasonably foreseeable in the future. Statistical analysis is not implied or necessary to identify and describe trends in the assessment phase. Trends may be described in broad terms such as increasing, decreasing, or remaining stable; describe the contribution that the plan area makes to ecological, social, or economic sustainability related to the topic; and identify information gaps. Specifically, these chapters are:

- Chapter 2 – Terrestrial Ecosystems (Vegetation and Wildlife)
- Chapter 3 – Watershed, Aquatic, Soil, and Air Resources

- Chapter 4 – Climate Change and Baseline Assessment of Carbon Stocks
- Chapter 5 – Social, Cultural, and Economic Conditions (also includes Areas of Tribal Importance)
- Chapter 6 – Multiple Uses and Ecosystem Services
- Chapter 7 – Recreation Settings, Opportunities, Access, and Scenic Character
- Chapter 8 – Existing Designated Areas
- Chapter 9 – Renewable and Nonrenewable Energy, Mineral Resources, and Geology
- Chapter 10 – Infrastructure
- Chapter 11 – Cultural and Historic Resources and Uses
- Chapter 12 – Land Status and Ownership, Land Uses, and Access Patterns
- Chapter 13 – Preparers, Acronyms and Abbreviations, and Glossary

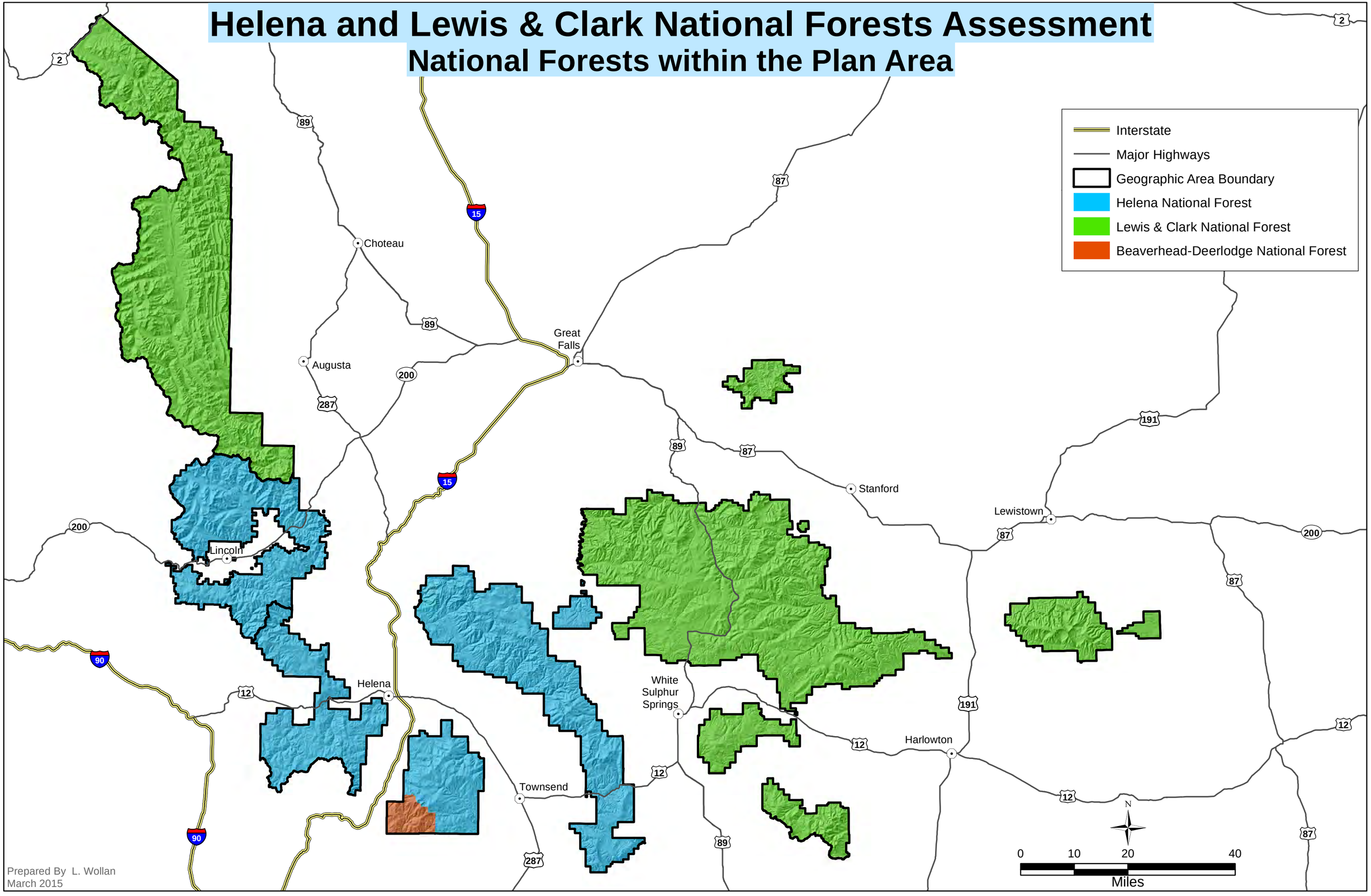
There are also five appendices. Appendix A includes 46 maps. Appendix B describes the vegetation information and methodologies that were used. Appendix C describes the scenic character and integrity of the geographic areas. Appendix D provides detailed tables about infrastructure. Appendix E provides detailed tables of cultural resources information.

Location

The HLC NFs, located in central Montana in the Rocky Mountains, include approximately 2,846,606 acres of public National Forest System (NFS) land within their administrative boundaries. In addition, the plan area includes approximately 30,973 acres of NFS land on the Beaverhead-Deerlodge National Forest that is administered by the Helena National Forest; and about 2,308 acres of NFS inholdings that are located outside of the administrative boundaries. Therefore, the NFS lands considered in this planning effort total 2,879,887 acres. Inholdings of other ownerships occur within the HLC NFs administrative boundaries; these lands are not included in the acreages. The forests include portions of 17 counties. They encompass eight ranger districts: Lincoln, Helena, Townsend, Belt Creek, Judith, Musselshell, Rocky Mountain, and White Sulphur Springs. The Forest Supervisor's offices are located in Helena and Great Falls, Montana. Please see attached map.

Helena and Lewis & Clark National Forests Assessment

National Forests within the Plan Area



Geographic Areas

The HLC NFs straddle the Continental Divide and are typified by a series of island mountain ranges. Because of its diversity and extent, the plan area is divided into ten geographic areas (GAs). GAs provide a means for describing conditions and trends at a more local scale if appropriate. GAs are ecological areas that are synonymous with basin and watershed. Table 1.1 displays the acres of the HLC NFs by GA. Please see attached map.

Table 1.1 Acres within the ten GAs on the HLC NFs, within the administrative boundary

Geographic Area	Total Acres (All Ownerships)	NFS acres within GA	% of GA in NFS Lands
Big Belts	452,292	312,983	69
Castles	79,862	69,610	87
Crazies	70,036	57,618	82
Divide	232,890	202,577	87
Elkhorns	175,259	160,599	92
Highwoods	44,495	42,315	95
Little Belts	900,961	802,711	89
Rocky Mountain Range	782,986	777,963	99
Snowies	121,897	117,989	98
Upper Blackfoot	348,185	333,215	96

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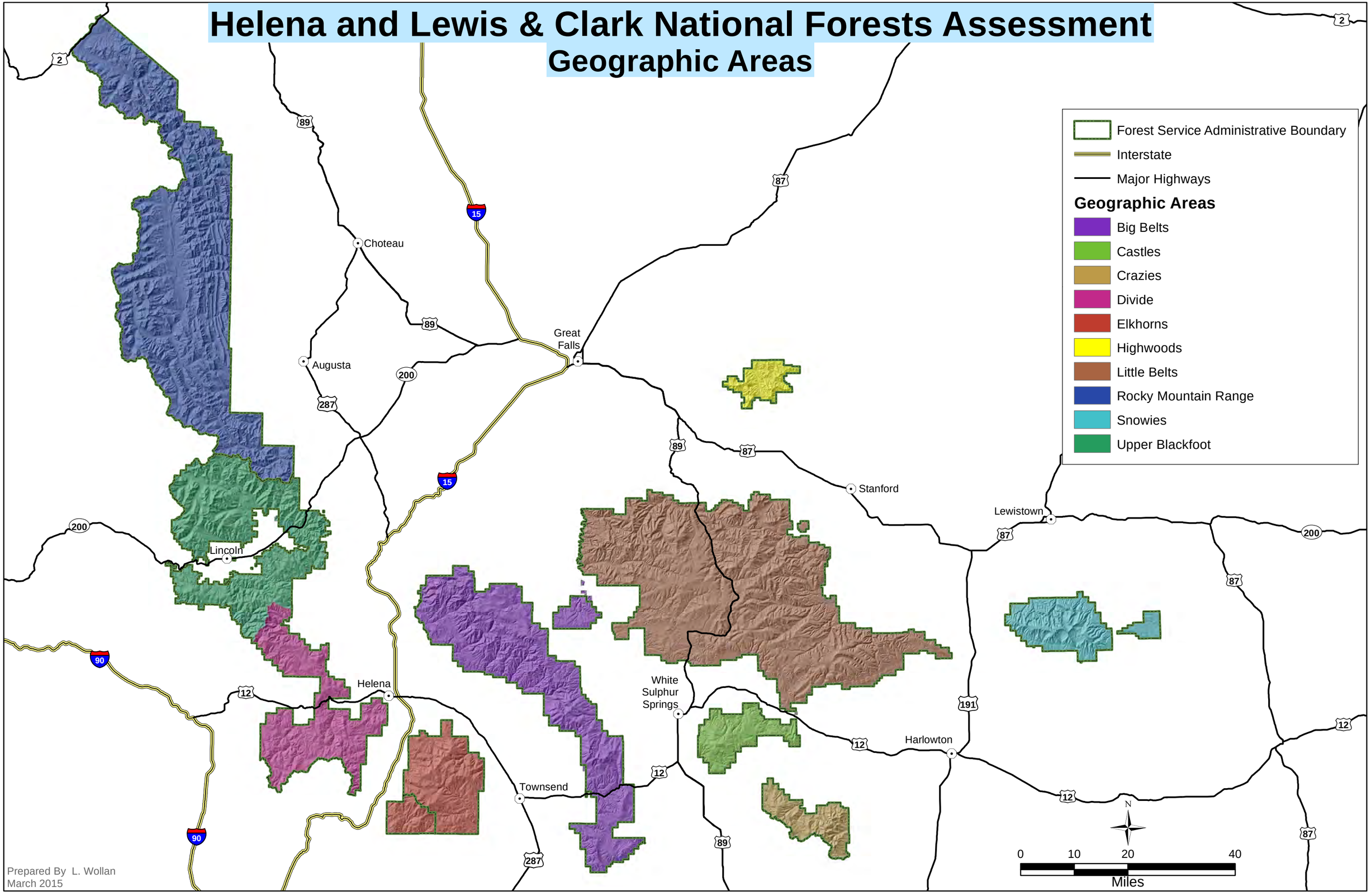
Geographic Areas



Distinctive Features of the Geographic Areas (GAs)

Big Belts

The Big Belt Mountains are an island range primarily in Broadwater, Lewis and Clark, and Meagher counties with small portions in Gallatin and Cascade counties. The geographic area includes the Gates of the Mountains Wilderness, the outlying Dry Range, and the small communities of York and Nelson. The nearest population center is Helena.

The mountain range is located between the predominantly treeless Smith and Missouri river valleys and makes a long arc, approximately 75 miles long, on a northwest to southeast axis. The Missouri River clips the northwest boundary. This section of the river was named the Gates of the Mountains by the Lewis and Clark expedition because the river is constricted through tall, picturesque limestone cliffs. An area of canyons adjacent to this stretch of river shares similar geology and has been designated as wilderness. The tallest mountains are found in the south central part of the range, Mount Baldy and Mount Edith Slopes are typically steep and rugged. Some of the highest elevations have evidence of localized glaciation, such as the cirque on Mount Edith. The mountains are characterized by many steep sided gulches and canyons that drain the mountains to the west. Another prominent local landform feature is the bar, which is a deposition of material by a stream body over time. Many have been productive sources for valuable minerals for placer miners.

The Dry Range is a distinct geologic unit to the east of the Big Belt Mountains and is included in the Big Belt Geographic Area because of its close proximity. This landform can be described as foothills to low mountains with elevations ranging between 4500-6500 feet. Ellis Canyon is a prominent, branching drainage network that runs south to north through the range. Most of the Dry Range and area of the Big Belts along the Missouri River can be characterized as partially forested foothills with large grassland openings.

The geology of this GA is predominantly sedimentary limestone. There are some pockets of rock from metamorphic and volcanic activity that are rich with minerals. Both the Big Belts and the Dry Range lack much water and are characteristically dry. They are in the rain shadow of the continental divide to the west. The underlying geology is porous, and many of the streams are intermittent. High elevation lakes are in basins east of Mount Baldy and Boulder Baldy. Gipsy Lake, a manmade reservoir, is also on the east side.

The Big Belts Geographic Area has a rich history of occupation beginning with prehistoric peoples. Many cliff faces and rock shelters bear their signature in the form of pictographs and petroglyphs. Artifacts such as projectile points and associated flakes are commonly encountered. The Flathead Trail, a historic travel corridor, traverses the southern Big Belt Mountains. The presence of valuable minerals has endowed the Big Belts with a robust mining history. Relics of historic mining infrastructure and tools are frequent. Many small communities have come and gone such as Whites City, Diamond City, Watson, Vista, Manger, Duck Creek, Blackwell, Cement Gulch City, and Trout Creek to name a few. Thompson Guard Station and Meriwether Guard Station stand as reminders of the US Forest Service history.

A large range program is active in the geographic area. Roads have been constructed for resource extraction and now fragment the geographic area. The road network now serves as the primary platform from which visitors experience the area. Past cutting of timber is evident. Communication towers have been constructed on high points. Utilities and transmission corridors transect the geographic area.

The Mann Gulch Smokejumper Memorial commemorates the tragedy of the Mann Gulch Fire, a sacred landscape for wildland firefighters. Many make pilgrimages here to pay their respects, strengthen internal

relationships, and revisit lessons learned. Numerous trailheads and developed recreation sites are located within the Big Belts GA. Some of these sites support motorized use while others support more passive, nonmotorized use. As mentioned before, the Gates of the Mountains Wilderness is located within this GA. Access points along the Missouri River also provide unique recreation opportunities.

Castles

The Castles Geographic Area is an island mountain range east of White Sulphur Springs in Meagher County. The Castle's treed higher elevations are surrounded by lower elevations that are predominantly treeless, instilling an island appearance.

The Castle Mountains have their own geologic story- unique from the other island ranges. The range is a combination of landforms that appear as one. Western slopes culminate in a gentle rising, flat-topped dome of volcanic origin that is comprised of a group of mountains punctuated by castle-like outcrops of granite. The eastern section is characterized by plateaus of sedimentary origin. Vantages throughout the geographic area provide impressive views of the Little Belts to the north, the Crazies to the south, the Big Belts to the west, the Bridgers to the southwest, and a vast expanse of prairie to the east.

North and northwestern aspects are cloaked with a dense canopy of conifers. At higher elevations and on sun exposed aspects, forest intergrades with grassland meadows, or *parks*. Aspen stands grow in moist areas. On the drier, eastern sections, plant communities are dominated by grassy parks interspersed with patches of conifers. The entire geographic area is surrounded by sagebrush grasslands. Historically, fire was the primary shaper of plant communities.

The Castles Geographic Area is surrounded in the lower grassland elevations by the North and South Forks of the Smith River on the west and the North and South Forks of the Musselshell River on the east. Many spring fed streams drain from the mountains into these forks, some cutting deep gorges and some sinking underground. Willow Creek is the municipal water source for White Sulphur Springs. The western slopes are wetter than the porous eastern limestone slopes. There is also a small lake known as Castle Lake located within this GA.

This geographic area has a long history of occupation. Its mineral deposits were used as quarries for first people's needs, such as projectile points and scrapers. They left behind cultural artifacts, many of which lay undisturbed. Euro-American settlement began with the discovery of some of the same mineral deposits, causing it to be one of the first areas in Montana to be settled. The small towns of Lennep and Checkerboard are remnants of this era, as are the ghost towns of Castletown and Blackhawk. Some remnants of their structures can still be found.

Recreation opportunities in the castles include activities for both motorized and nonmotorized users. There are two small developed campgrounds that provide overnight opportunities and unique geologic formations in the area provide interesting hiking and exploring.

Crazies

The Crazies Geographic Area encompasses the northern portion of the Crazy Mountains that are administered by the Lewis and Clark National Forest. The southern portion is administered by the Gallatin National Forest. The geographic area is at the junction of Meagher, Wheatland, Sweet Grass, and Park counties. White Sulphur Springs is the nearest population center.

The Crazy Mountains make up an island range that abruptly rises from the surrounding Shield, Musselshell, and Yellowstone River valleys. The rugged and awe inspiring range has captivated people over time. The Mountain Crow visited its tall peaks and special areas for vision quests. Euro-American

settlement has lightly affected the area with only a few signs of habitation. Forest Lake Guard Station still stands as a sentry for Forest Service administration. Today people still seek spiritual experiences through various recreational and other means.

This island range is a discrete geologic unit, unique from the adjacent ranges. The form of the Crazies is bold and craggy. They are of volcanic origin and enriched with granitic geology. Talus, scree, and boulder areas dot steep and moderate slopes. Broad valleys and long finger ridges radiate outward from its center. Many ridge tops and summits lack vegetation residing in the alpine. Glaciation has imparted many of these landforms with sharp, scoured edges. All of the geographic area's streams drain into the Musselshell River on their way to the Gulf of Mexico via the Missouri River. Riparian forests of aspen, willow, dogwood, and cottonwood grow along their courses. Grasslands occupy much of the lower elevations and intergrade with coniferous forest at higher elevations. Small patches of deciduous trees punctuate the dense canopy of evergreen trees. At the highest elevations, conifer forests give way to alpine habitats. Historically, fire would have been a major influence on plant communities.

Recreation use in the Crazies is primarily of a dispersed nature, including both dispersed trail use as well as camping use. The area is very popular during the primary hunting season.

Divide

This geographic area is the scenic backdrop and primary recreational resource for Montana's capital city, Helena. It also includes the smaller communities of Austin, Rimini, and Unionville. Portions of the geographic area are in the political geographies of Lewis and Clark, Powell, and Jefferson counties. The spine of the divide is higher, cooler, wetter, and more exposed, imbuing it with a unique microclimate. The Continental Divide National Scenic Trail follows the crest of the divide.

While the geographic area has a rich history of prehistoric occupation, its signature on the landscape is not obvious. A legacy of mining has left behind a suite of structures, such as cabins and kilns, and over 139 named mines. Many former mining communities were settled and have since vacated, leaving behind interesting clues of their heyday. Some riparian benches have been converted to pasture on private property, adding a rural setting in areas. A major west/ east railroad passes over the divide at Mullan Pass. Historically, fire was the primary disturbance throughout the geographic area and would determine composition and patterns of vegetation. Much of the area is covered with conifer forest. Parks are distributed throughout, such as Bullion Parks, Blackfoot Meadows, and, Thompson Flats. Patches of past harvest are evident on the landscape.

The Divide landscape hosts a wide variety of recreation opportunities including but not limited to, hiking and mountain biking trails, cross country skiing trails, developed campgrounds and day use sites, dispersed camping areas, trailheads, and opportunities for motorized users. Park Lake is one of the most popular campgrounds due to its proximity to Helena. The Divide landscape also contains the Tenmile watershed, which is a source of municipal water for the city of Helena.

Elkhorns

The Elkhorns Geographic Area encompasses the Elkhorn Mountains in Broadwater and Jefferson counties and includes the small mining town of Elkhorn. The nearest population center is Helena, Montana. Many smaller communities also have intimate relationships with the geographic area: Montana City, Clancy, Alhambra, Jefferson City, Boulder, Radersburg, Townsend, Winston, and East Helena. The Elkhorns are surrounded by the Divide Mountains and Boulder Batholith on the west, and the Missouri and Boulder River valleys on the north, east, and, south. The form of the Elkhorn Mountains is rounded and furrowed from extensive weathering. High points are prominent from background northwest, west, and southwest perspectives but cryptic from other vantages. Drainages have carved steep gulches and canyons. The

Elkhorns GA can be divided into west and east sections by the predominant underlying geology. The majority of the Elkhorns (north, west, southwest) is a part of a batholith. This geologic history has left the area rich in minerals. Evidence of glaciation is localized as boulder strewn areas of granitic rocks. The remaining approximate quarter (southwest) of the geographic area is underlain by sedimentary rock that lacks the same mineralization as the batholith but is rich in calcareous rock. The landforms are rugged, low mountains with hogback ridges and dry valleys.

The plant communities on the batholith portion are mostly forested with conifers. Aspen stands and water-loving plants take advantage of riparian areas and wet seeps. Parks, rich with grasses and forbs, are frequent at lower elevations and break up the forest in montane elevations. A large expanse of this GA burned in 1988. The sedimentary geologic area in the east is a gradient of foothill prairie and partially forested low mountains. Grassland is a major component. Limber pine and juniper woodland ebb and flow with the prairie relative to disturbances.

The western side of the geographic area is generally wetter than the eastern side. The entire landmass is drained by many perennial and intermittent creeks. All flow to the Missouri River, some via the Boulder and Jefferson Rivers. The basins around Elkhorn and Crow Peaks harbor high elevation lakes such as Hidden Lake, Tizer Lakes, Leslie Lake, and Glenwood Lake. Crow Creek plummets over an impressive falls. Springs are important water features in the more arid eastern sections.

The Elkhorn Geographic Area has been occupied by human inhabitants for thousands of years. However, prehistoric occupation is less evident than the more recent Euro-American settlement. After the discovery of valuable mineral deposits, mines and associated settlements sprang up in portions of the geographic area. The ghost town of Elkhorn is a good example of this era. Other communities have all but disappeared, such as Queen, Eagle City, Gold Dust, and Sourdough. Remnant tools and infrastructure of the mining era are found throughout the geographic area. Eagle and Tizer Guard stations are living reminders of Forest Service administration. Fire has historically has been a major influence to plant communities.

Due to the rich wildlife habitats throughout the mountain range, the Elkhorns were designated a Wildlife Management Unit in 1986, the first of its kind in the nation. Collaborative groups composed of federal, state, and private land holders work toward habitat restoration and interpretation of the area’s history.

There are numerous trailheads and dispersed recreation opportunities throughout the Elkhorns, including dispersed nonmotorized trails and dispersed camping areas, and the area is used extensively by hunters in the big game rifle season.

Highwoods

The Highwoods Geographic Area is the smallest of the geographic areas within the plan area and encompasses the Highwood Mountains. This isolated island range is located within Cascade, Chouteau, and Judith Basin counties. This geographic area is the closest National Forest System land to Great Falls. The landmass rises up from the confluence of multiple grassland types: foothill grasslands, semi-arid prairie, Missouri Breaks, and unglaciated high plains. All of these types share basic common traits but are slightly different and collectively set the stage for the Highwood’s unique setting.

The Highwoods have a long history of grazing. It provides an abundance of grass and reliable sources of water. Historic Highwood and Shonkin Cow Camps are reminders of this heritage. Highwood Guard Station continues to greet visitors as they enter the forest at the North Fork of Highwood Creek.

The Highwoods mountain range is of volcanic origin and contains geologic formations that are a mix of igneous and sedimentary rocks. The mountains have been weathered over time by natural processes,

rendering them rolling and furrowed in form. The mountains are bisected by Highwood Creek. Slopes are moderately steep. North facing aspects are considerably wetter than less vegetated, rocky, south facing slopes. Here, a characterizing landform is the coulee, which is from the French word meaning “to flow”. Some are predominantly grassy and others harbor woody plants. Some are intermittent and others have perennial flows.

A dense stream network has dissected the mountains, creating numerous folds in the topography. Riparian areas are rich with willow, dogwood, water birch, cottonwood and other water-loving plants.

The land cover of this GA is a mosaic of conifers, deciduous trees, grass, and rock. Large aspen stands intergrade with rich prairie and dense pine forest. Woodland, forest, and prairie ebb and flow into one another. Fire was historically the main determinant of vegetative cover.

Recreation access to the Highwoods is somewhat limited. There is one small developed campground, Thain Creek Campground, and a developed trailhead in North Fork Highwood Creek. These developed sites provide access points for the many single track trails that traverse the Highwoods. These trails are used extensively by motorcycle users as well as by hikers and horseback riders.

Little Belts

Portions of this sprawling mountain range are located in Meagher, Judith Basin, Cascade, and Wheatland counties. It is surrounded by predominantly treeless foothills of prairie and sagebrush steppe. The city of Great Falls is 50 miles to its northwest, Judith Gap to the east, Harlowton to the southeast, and the town of White Sulphur Springs is on its southern edge. The Little Belts Geographic Area is bisected north-south by the Kings Hill scenic byway (US Highway 89) along which the small communities of Niehart and Monarch reside. Most of the Little Belts can be described as remote but accessible by a well distributed transportation network.

This range is the largest of the isolated island ranges in central Montana. It measures approximately 60 miles southeast to northeast and is 30 miles across. The landmass generally has a rolling curvature that lacks much sharpness. Evidence of glaciation is infrequent and patchy. The geology of the Little Belts is rich in limestone with pockets of metamorphic and igneous rock. Bands of limestone bluffs break up uniform expanses of evergreen forest. Stream courses have carved beautiful exposed escarpments and palisades. The many streams of the Little Belts are picturesque and ecologically rich. Drainages typically flow outward, radially from the center of the range. Those in the west drain to the Smith River. Those to the south and southeast drain into the Musselshell River. Those to the east drain to the Judith River. Those to the north drain into the Missouri.

The Little Belt’s vegetation reflects the gradient of moisture and elevation. Grasslands, sagebrush steppe and open woodland circle the outer fringes with trees clinging to drainage bottoms. Thick stands of conifers cloak the interior. Some mountain summits lack vegetation, revealing gentle sloping, broad ridges. The geographic area is also characterized by its many parks that punctuate the forests. They are rich assemblages of predominantly herbaceous plants. Past timber harvest is a visible component of the landscape.

First peoples used the area ever since immigrating into this part of North America. They utilized quarries for tools and weapons, such as projectile points. They created art on rock shelters and overhangs for cultural reasons. They left rings of rock used to secure tepees for shelter. The geographic area was quickly inhabited by Euro-Americans after Missouri river travel was established and rich deposits of minerals were discovered. Mining infrastructure and tools are frequently encountered throughout. Many communities also sprang up quickly and then disappeared. A few former community names are Galena, Summit, Silver Dyke, Carbonate, and Hughesville. Homesteading also occurred. A history of timber cutting is evident and

relics such as splash dams and log chutes can be encountered. Forest Service guard stations and fire lookouts remain in various locations and conditions.

The Little Belts Geographic Area offers diverse recreation opportunities. Some of these include developed campgrounds, developed trailheads, a downhill ski area, a winter recreation area that includes groomed cross-country ski, snowmobile, snow shoe, and dog sled trails, cabin rentals, and interpretive panels. Dispersed recreation activities include motorized and nonmotorized trails, snowmobile trails and snow play areas, caves, and dispersed camping. Also, the Little Belts Geographic Area provides access to and dispersed camping along the Smith River.

Rocky Mountain Range

The Rocky Mountain Range Geographic Area is located in portions of Teton, Pondera, Glacier, and Lewis and Clark counties. The closest communities are Augusta, Choteau, Bynum, Dupuyer, East Glacier, and Heart Butte. Great Falls is the nearest large population center, about an hour drive to the southeast. The geographic area is bordered by U.S. Highway 2 and Glacier National Park to the north. The Blackfeet Nation lands are to the northeast. The east and southeast are bordered by state, private, and BLM lands. The Upper Blackfoot Geographic Area is to the south. The continental divide and Flathead National Forest are to the west.

A large portion of the Rocky Mountain Range Geographic Area is designated wilderness and includes parts of the Scapegoat and Bob Marshall Wilderness areas. These two wilderness areas are components of a greater wilderness complex that totals well over 1.5 million acres, the 5th largest wilderness area in the lower 48 states. With the passing of the National Defense Act of 2015 in December 2014, an additional 67,112 acres were added to these wilderness areas. The geographic area's proximity to this wilderness complex, Glacier National Park, and adjacent wild areas of Canada make it a critical component of the North Continental Divide Ecosystem.

This geographic area is a part of the larger Rocky Mountain front, which is the abrupt geologic uplift of the first range on the eastern edge of the Rocky Mountains. Here, the Canadian Rockies are represented by the Sawtooth and Lewis & Clark Ranges. Large bands of exposed limestone were upthrust into what is known as the Lewis Thrust. Two highlights of this upthrust formation are the Scapegoat Mountain, a large escarpment in the Scapegoat wilderness, and the Chinese Wall, a limestone escarpment that averages 1,000 feet high and extends for approximately 22 miles. The continental divide is located along the top of this long limestone escarpment. The distinct ridges are locally known as reefs.

Water drains from the mountains eastward cutting perpendicular through the parallel ridges. Roads follow stream corridors providing access to interior valleys. Many of the streams and rivers are noted for their ecological and scenic value. Upon exiting the forest boundary, the majority of water is quickly captured in reservoirs for agricultural use. Most precipitation comes in the form of snow. Fierce Chinook winds frequently create extremely windy days. The Northwest Glaciated Plains are characterized by large open expanses of what was historically short grass prairie. It has been predominantly converted to wheat and barley production or ranchland. Kettle ponds seasonally dot the rolling foothills. Vegetation within the forest boundary is influenced by relatively natural processes. Prairie, limber pine woodland, and aspens cover lower foothills. Prairie vegetation extends into the front ridges and gives way to conifer forests. Exposed rock, aspen stands, and open grassland break up the forest.

The geographic area is a destination for Montanans as well as visitors from all over. People are drawn to the area because of its remoteness, stunning landscape, recreational opportunities, and because it is one of the few remaining wild places in the lower 48 states. Many lodges, resorts, camps, cabins, and ranches

have intimate relationships with the area. Guard stations, work centers, and lookouts help the Forest Service steward the vast country.

Recreation use within the geographic area varies radically. Because of the large amount of designated wilderness there is substantial backcountry recreation that relies on traditional skills, solitude, and self-reliance. Backpacking, horseback riding, and outfitter guiding are the primary recreation opportunities presents in this remote reaches. Conversely, in the front country, one can find highly developed campgrounds and trailheads, commercial resorts, cabin rentals, and a downhill ski resort. Portions of the Old North Trail, an ice-free corridor for southward immigration of North America's first peoples, are found here. More recent indigenous cultures revere the area as a sacred landscape with religious importance such as a place for dream quests. The use of its cultural and spiritual resources has initiated the Badger-Two Medicine area to be designated as a Traditional Cultural District. Archeological sites, such as pictographs, dot the entire geographic area.

Snowies

The Snowies is the farthest east geographic area within the HLC NFs plan area. It is primarily in Fergus County with smaller portions in Golden Valley County. Lewistown is the largest nearby population center. The geographic area includes both the Big and Little Snowy Mountain ranges. The Snowies display prominent changes in elevation accentuated by surrounding grassland, high plains, and foothill savanna.

The Little Snowy Mountain range has a rich cultural history, beginning with first peoples then homesteading. Today, large ranches maintain the open character of the area. Pine Grove Cemetery continues to be the final resting place for early Euro-American occupants. The Little Snowies are separated from the Big Snowies by a subtle break in topography. It is characterized by foothills that are partially forested with mostly ponderosa pine. In general, the country is semi-arid and dominated by grassy vegetation. Landform is rolling with slopes that are gentle to flat, except where creeks have dissected them. The area lacks prominent high points. Creeks within the Little Snowies are small and often run dry during the summer months. The major drainages are Willow Creek and the North Fork of Pole Creek, both of which drain south to the Musselshell River.

There are no developed sites within the Little Snowies but the area is used for dispersed recreation opportunities such as hunting, camping, and some wildlife viewing. The area is known for its wild turkey populations.

The Big Snowy Mountains have long been a unique and revered destination. Early first people visited its basins and summits. Their artifacts and art still sporadically adorn the range. Lower slopes and foothills were homesteaded and have become large, iconic ranches. Unique, biophysical phenomena, such as ice caves, continue to attract intrepid visitors. Crystal Lake Guard station still actively facilitates Forest Service stewardship.

The Big Snowies are higher in elevation and larger in size than the Little Snowies range. The spine of the dominant landform runs east-west for approximately 25 miles, and 10 miles north-south. Middle elevations are clad with coniferous trees. At the highest elevations, the forest transitions into a tree-less plateau of alpine that is characterized by rock and tundra. Slopes vary from steep rocky canyons to gentle benches.

Streams flowing out of the north side of the Big Snowies flow into the Judith River. Those flowing out of the south side flow into the Musselshell River. Many streams originate in steep-walled, amphitheater-like basins and emerge out through canyons. The climate and porous limestone imbues a dry character to the range.

Crystal Lake is one of the Big Snowies' crown jewels. It is a shallow lake of natural origin, roughly 15 feet at its deepest and underlain by a bed of limestone. There are a number of developed recreation sites along Crystal Lake including a campground, day use areas, boat launch, trailhead, and cabin rental. Several dispersed trails take off from this location and provide access to interesting interpretive points such as the Ice Caves which are located within the GA. The geographic areas karst topography conceals many caves. Floristically, the Big Snowies are unique with many vegetation types compressed into the same area. Fire was the historic driver of plant communities.

Upper Blackfoot

The Upper Blackfoot Geographic Area spans Lewis & Clark and Powell counties. The towns of Lincoln and Helmville are the nearest communities. The majority of the area is west of the continental divide. The Rocky Mountain Range Geographic Area and Flathead National Forest are directly north and the Divide Geographic Area is to the south. To the east, mountains become grassy foothills with isolated buttes. Montana Highway 200 cuts east-west through the center of the geographic area, crossing over Rogers Pass to follow the Blackfoot River. Missoula is approximately 70 miles to the west and the city of Great Falls is approximately 70 miles to the east. The northwest corner is a part of the Scapegoat Wilderness and the greater Bob Marshall Wilderness complex. This geographic area is a critical component of the Southern Crown of the Continent ecosystem.

The landform west of the divide is characterized by mostly rolling hills and mountains that are underlain by various types of rock. High peaks are topped with volcanic rocks with areas of exposed rock. The effects of glaciation are present. The landforms east of the divide are characterized by rounded mountains that are underlain by volcanic rocks and sedimentary rocks that have changed through geologic processes. Summits lack much exposed rock and the effects of glaciation are absent. Another characterizing landform that helps define the geographic area is the mountain pass. There are a few notable passes, some allowing for easy automotive travel over the continental divide: Roger, Stemple, Windy, and Flesher.

Most of the area is heavily forested with conifers. Aspen stands are intermittent. Grasslands are frequent, especially along valley bottoms and sun exposed aspects. Wetland complexes, fens, and other groundwater dependent ecosystems harbor rich assemblages of plants such as Indian Meadows. Fire is a major driver in the structure and composition of plant communities. The Blackfoot River finds its headwaters here in the geographic area. The highly valued recreational and scenic river clips other portions of the geographic area. The Continental Divide National Scenic Trail transects the geographic area, north to south.

This geographic area has many important headwater streams emanating from the high country's snow melt. All streams west of the divide feed into the Blackfoot River on its way to the Clark Fork of the Columbia River. Major drainages east of the divide flow towards the Missouri RiverMany natural lakes occur throughout.

Evidence of prehistoric settlement is present on the landscape but inconspicuous. Euro-American settlement is more apparent but many elements are also fading to time. Portions of the Lewis & Clark Trail traverse the Blackfoot River and Alice Creek. The trail passes over the Continental Divide at Lewis and Clark Pass. Remnant buildings of former communities are in various states of disrepair if not gone completely, such as the post offices and dwellings of McClellan Gulch, Rochester, Gould, Stemple Pass, and Mike Horse to name a few. Relics of historic mining infrastructure and tools are frequent. Two historic buildings, Webb Lake Guard Station and Granite Butte Lookout, stand testament to the Forest Service's administration. Additionally, there is visible evidence of past timber harvesting visible across the GA in many locations.

Recreation use in the Upper Blackfoot GA varies by location. The northern area includes the south part of the Scapegoat Wilderness, and recreation activities such as backpacking, horseback riding, and outfitter guiding take place across these landscape. There are a few developed recreation sites within the geographic area including a couple of campgrounds and a few larger developed trailheads. Additionally, there is dispersed recreation use with both motorized and nonmotorized trails and dispersed camping in many of the stream bottoms. Snowmobiling and dog sledding are the primary winter activities.

Documentation of Best Available Scientific Information (BASI) in the Assessment Report

The assessment phase identifies and evaluates information relevant to the issues that will be considered later in the development of plan components and other plan content. During the assessment, the responsible official identifies and evaluates the conditions and trends of the assessment topics identified in 36 CFR 219.6(b) and the sustainability of social, economic, and social systems (36 CFR 219.5(a)(1)). This identification and evaluation uses information determined to be BASI and the uncertainties, risks, and assumptions associated with the BASI. In doing so, the responsible official must:

- Describe how the BASI was used to inform the topics of the assessment. This can be done through a brief description and citation of the BASI. Contradictory BASI should also be described.
- Identify the key scientific information determined to be BASI, based on the determination of what is most relevant, accurate, and reliable. This may be done through reference to a list of BASI or other methodology as determined by the responsible official. Explain the basis for this determination.

The responsible official should also identify known uncertainties, assumptions, or risks associated with the BASI relevant to the evaluation of conditions and trends and sustainability in the assessment. When information was unavailable or incomplete, it is noted under as a data gap in the information needs section of each resource chapter.

The HLC NFs used the best available data and science relevant to the plan area and management to inform the evaluation of conditions, trends and risks to sustainability for the 15 topics of the assessment where available. In particular, criteria applied to all data, studies, and reports supporting this assessment included: (1) quality data was used, and (2) the studies and reports used accepted and standardized scientific methodology and are replicable. In compiling this assessment of the conditions and trends of the HLC NF's resources, goods, and services provided to the public, many major sources of information were reviewed and information incorporated. References included in this assessment reflect the most relevant documents, given the scope and scale of the assessment and determined to be BASI.

In addition, Forest Service manuals and handbooks were used when preparing this assessment and are incorporated into all analyses and can be found at: http://www.fs.fed.us/im/directives/. As such, each resource area (chapter) did not include these in their dedicated References section at the end of their respective chapters. Rather, they cited them within the body of their text.

Public Involvement in the Assessment

The HLC NFs plan revision team held 6 open houses in Helena, Great Falls, White Sulphur Springs, Lewistown, Billings, and Lincoln in the summer of 2014 to inform the public of the upcoming revision process and to solicit comments from the public. Information on the open houses can be found on the HLC NFs Plan Revision web page at: http://www.fs.usda.gov/goto/hlc/forestplanrevision. Additionally, the plan revision team contacted local, state, and federal government organizations, federally-recognized Indian Tribes in the plan area, and the agency research station to solicit input on the assessment. Around

40 public comments were received via email or at the open houses. The vast majority of the comments received focused on site-specific travel planning decisions, processes conducted outside of the HLC NFs plan revision process. The plan revision team examined all comments and incorporated them where applicable in the following resource chapters. All public comments received during the assessment phase will also be reviewed and considered later during the development of plan components and other plan content.