Helena and Lewis & Clark National Forests

Forest Plan Assessment

Key Findings

2015

Table of Contents

Key Findings

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 (known as a forest plan) and to 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 planning regulations often referred to as the planning rule. The current rule is the 2012 National Forest System (NFS) land management planning rule.

The HLC NFs are beginning the first phase of a 4-year combined planning process to revise their forest plans. In 2010 the Regional Forester decided to combine the programs of the Helena and Lewis & Clark National Forests (HLC NFs); part of implementing this decision includes a combined revision effort.

As stated in the 2012 planning rule, planning for a national forest is an iterative process that includes three phrases which are complementary and may overlap. The intent of the planning framework is to create a responsive 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 phases:

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.

This document provides a summary of the key findings for phase 1 – the assessment. The assessment has been developed in accordance with the 2012 National Forest System land management planning rule adopted by the U.S. Department of Agriculture. Assessments are not decision making documents but provide current information on select topics relevant to the plan area. The responsible official has identified and rapidly evaluated available information relevant to the plan area for 15 topic areas.

Structure of the Assessment

This assessment document is comprised of 13 chapters, five appendices, and 48 maps.

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, and public participation.

Chapters 2 through 12 detail the findings for the following resource areas:

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

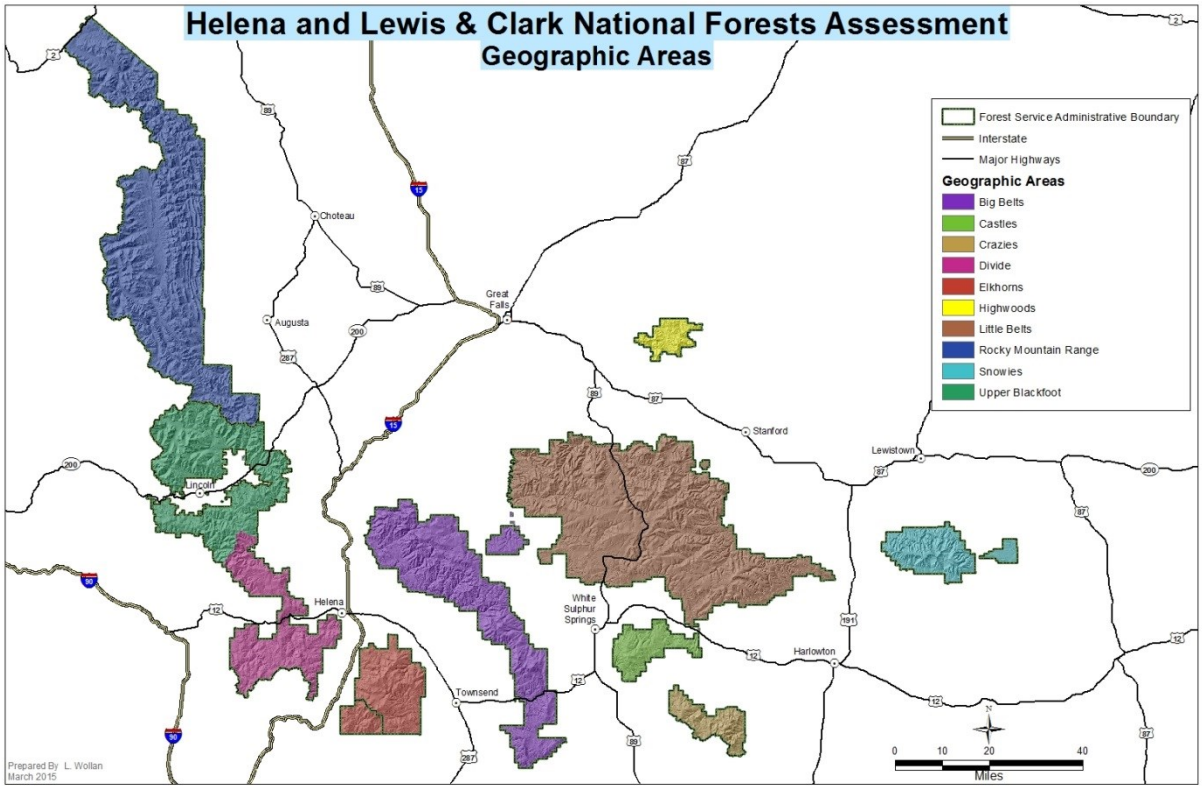
- Chapter 4 – Climate Change and Baseline Assessment of Carbon Stocks
- Chapter 5 – Social, Cultural, and Economic Conditions
- Chapter 6 – Multiple Uses and Ecosystem Services
- Chapter 7 – Recreation Settings, Opportunities, Access, and Scenic Character
- Chapter 8 – Existing Designated Areas
- Chapter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

Chapter 13 includes the list of preparers, a complete list of acronyms/abbreviations, and a glossary.

Resource Findings

To facilitate a manageable analysis over a large area, the FPR team created ten Geographic Areas (GA) represented on the map below (Figure 1: Geographic Areas). The majority of the resources covered in the assessment use the GAs as a basis for analysis.

Figure 1: Geographic Areas



Chapter 2: Terrestrial Ecosystems

Vegetation

The Terrestrial Ecosystems - Vegetation section covers topics which contribute to an understanding of terrestrial vegetation and provide a basis for wildlife habitat discussions. Key ecosystem characteristics are identified based on the dominant ecological characteristics that describe the four elements of ecosystems (structure, composition, function and connectivity).

Key findings

Vegetation Drivers

- Climate strongly influences vegetation and ecosystem processes. Continued and/or increasing drought may limit the carrying capacity of sites, resulting in altered composition, structure, or lifeform. Drought may exacerbate drivers such as fire, insects, disease, and invasive species.
- Multiple information sources indicate that wildfire area burned has diminished relative to the historical condition, although more large fires have been occurring in recent decades. Fire suppression and grazing influence fire regimes, as do natural factors such as climate.
- Tree mortality caused by a recent mountain pine beetle outbreak may influence ecosystems for decades to come. Based on the current warm/dry period and anticipated climate, the future extent and damage of many insects and pathogens may increase.
- Roughly twenty percent of the HLC NFs is in the wildland urban interface, where wildlands and human development meet. Residences, commercial properties, and infrastructure may be situated within, around, or adjacent to burnable vegetation and may themselves be burnable.
- Vegetation management activities such as harvest and prescribed fire have occurred on approximately eight percent of the HLC NFs administrative area since 1940.
- Invasive plants (weeds) have been inventoried on approximately five percent of the HLC NFs; most infestations occur within ½ mile of major transportation routes.

Potential Vegetation Types and Vegetation Composition

- The HLC NFs is dominated by Douglas-fir and lodgepole pine forests, which cover about sixty percent of the area. Spruce-fir forest and non-forested communities (grass or shrublands) are also common. Other tree species that occur include ponderosa pine, whitebark pine, limber pine, western larch, aspen, cottonwood, and Rocky mountain juniper.
- Riparian and wetland areas are present on roughly three percent of the HLC NFs.
- The proportions of vegetation types have shifted from the historical condition. Generally shade tolerant species have increased while shade intolerant species have decreased. This is most evident in types where high frequency, low severity fires would have been common historically.

Vegetation Structure and Function (including Connectivity)

- Small or medium tree size classes are the most common on the HLC NFs. These size classes are more abundant than they were historically and large tree size classes have become less abundant.
- A high proportion of forests have moderately high to high tree density, and most are single-storied in structure. The vast majority of forests are between twenty and two hundred years old.
- Spatial heterogeneity (or landscape pattern) is influenced by feedbacks with interrelated ecosystem drivers, and has implications for ecosystem services such as reforestation, timber productivity, wildlife habitat quality, watershed health, and carbon storage (Turner et al 2012).

Threatened, Endangered, Proposed and Candidate Species and Potential Plant Species of Conservation Concern

- Whitebark pine is a candidate species for listing under the Endangered Species Act. Living whitebark are found on roughly twelve percent of the HLC NFs, but are in decline due to factors including fire suppression, climate change, white pine blister rust, and mountain pine beetle.
- A variety of plants have been identified as potential species of conservation concern. These are grouped into the following guilds: grasslands, mesic meadows, moist forests, riparian, rocky habitats, shrub-steppe, wetlands, and xeric ecotones.
- Additional plants and communities have been identified as potential species of public interest. These include grasslands, mesic shrublands, shrub-steppe, xeric ecotones, mountain big sagebrush, camas, mountain mahogany, bitterroot, antelope bitterbrush, willow, chokecherry, thinleaf huckleberry, rocky mountain juniper, limber pine, ponderosa pine, and quaking aspen.

Special Ecosystem Components

- Old growth is a state of forested vegetation important for wildlife habitat and biodiversity. Currently, just over thirteen percent of the HLC NFs is in an old growth condition. The most common old growth types are Douglas-fir, lodgepole pine, and spruce/fir.
- Snags, or standing dead trees, provide structural features and habitat. Smaller diameter snags are abundant in many areas due to the mountain pine beetle outbreak and wildfires. However, larger snags are relatively rare in part due to growing conditions and disturbance regimes. Across the HLC NFs, there are an estimated 7.27 medium snags per acre; 1.44 large snags per acre; and 0.71 very large snags per acre. Homogenous landscapes yield snag pulses when disturbances occur; therefore snags are not always well-distributed spatially or temporally.
- Very large trees provide habitat and future snags. Large fire-resistant trees are important because they can persist for centuries, providing seed and contributing to long-term sustainability. Douglas-fir and ponderosa pine are the common fire-tolerant species on the HLC NFs. There are just over two very large trees per acre on average across the HLC NFs.
- Coarse woody debris is important to fire behavior, site productivity, nutrient cycling, and habitat. Recent large scale mortality events such as the beetle outbreak are expected to create high downed woody debris levels across large areas in the short term.

Ecosystem Diversity

- Key ecosystem components are described for each habitat type group on the HLC NFs.

Wildlife

The Terrestrial Ecosystems Wildlife section evaluates existing information relevant to the plan area for threatened, endangered, proposed, and candidate wildlife species, potential species of conservation concern, and species of public interest. Species evaluations include information regarding occurrence, habitat status, and population status. Each species evaluation also considers drivers, threats, and stressors for that species or its habitat, and where possible, historic condition and expected trends.

Key findings

Habitat is a key driver of the status and trend of many, if not most, wildlife species. Habitat associations are presented to place the habitat needs of each species into context based on the information provided in the Terrestrial Vegetation section.

Threatened, endangered, proposed, or candidate species

- Grizzly bears occur in the Rocky Mountain Range and Upper Blackfoot GAs. These areas are part of the Northern Continental Divide Ecosystem, where the population appears to be expanding. Habitats used by grizzly bears vary widely. Primary stressors include human-caused mortality and habitat fragmentation. The current population trend on HLC NFs is stable to increasing.
- Canada lynx occur as a resident population throughout the Rocky Mountain Range and Upper Blackfoot GAs, and in the northern portion of the Divide GA. The remainder of the plan area is secondary or peripheral habitat. Primary stressors to Canada lynx are disturbances that remove the horizontal cover which provides cover and food for their primary prey, the snowshoe hare. Disturbances may also create habitat by returning forests to early successional stages, or by creating openings that allow multiple canopy layers to develop. Lynx habitat may be impacted by climate change and habitat fragmentation.
- Sprague's pipit is likely present on the HLC NFs as an occasional transient. The plan area is at the southwestern edge of the breeding distribution. Sprague's pipits are strongly tied to native prairie grasslands. Potential habitat can be impacted by fire and grazing.

Potential Terrestrial Wildlife Species of Conservation Concern

- Western (boreal) toads have been documented in all GAs except the Snowies. They require shallow, warm wetlands or ponds with mud or silt bottoms. The plan area occurs at the eastern edge of the species distribution where it is important to maintain populations and prevent overall decline in distribution.
- Flammulated owls have been detected on the Helena National Forest (HNF). They prefer dry, open, mature and old growth forests usually with ponderosa pine. Concerns exist over declines in habitat, and maintaining adequate potential habitat on the HNF portion of the HLC NFs may be important to preventing contraction of the species' range in Montana.
- Lewis's woodpecker has been documented in several GAs, and is associated with open ponderosa pine forests, particularly old growth, and large, old cottonwood in riparian areas. Concerns exist over declines in habitat, and maintaining adequate potential habitat on the HNF portion of the HLC NFs may be important to preventing contraction of the species' range in Montana.
- Harlequin duck has been documented in several GAs. This species uses clear, low gradient, fast moving mountain streams with abundant aquatic insects. The plan area is at the eastern edge of its distribution. Concerns include small populations, restricted distribution, narrow habitat requirements, and vulnerability of large portions of the population to single events.
- Townsend's big-eared bat has been observed on some GAs, and is associated with caves or mines. It forages in a variety of habitat types with the exception of clearcuts or early seral forests. The plan area has numerous closed or abandoned mines, the management of which has potential to impact potential roosting and maternity sites. The species is locally vulnerable.
- Northern bog lemmings have been detected on the Rocky Mountain Range GA. They are found in wet meadows, fens, and bog-like environments in a variety of community types including spruce, subalpine fir, birch, willow, sedge, spikerush, or a combination of those. The plan area is at the extreme southern end of northern bog lemming distribution.

Terrestrial Wildlife Species of Interest

Species of interest are identified based on their values for viewing, regional or local management interest; or hunting/trapping. Several species are not discussed in detail because they are not likely influenced by management of vegetation in the plan area: common loon, golden eagle, peregrine falcon, trumpeter swan, white-tailed ptarmigan, and gray wolf.

Species of Interest for Hunting or Trapping

- Elk occur throughout the HLC NFs. Elk numbers have been increasing throughout the west since the early to mid-1900s. Elk use a wide variety of landscapes and vegetation, but generally require adequate year-round forage, security from disturbance and predation, and in some situations thermal cover. Availability of adequate winter range is a concern in some areas. An additional management concern is related to elk use of private lands.
- Mule deer occur throughout the plan area, which provides both summer and winter range. Populations vary by year and GA, with some areas appearing to maintain a relatively stable population while other estimates indicate declines or increases. Mule deer prefer forested habitats interspersed with a brushy understory that provides hiding cover.
- Bighorn sheep herd units occur on the Elkhorns, Big Belts, and Rocky Mountain Range GAs. The most important stressor is disease-related die-offs. Currently there is minimal potential for contact and disease transmission between bighorn sheep and domestic sheep and goats on the HLC NFs.
- Mountain goats are hunted in a number of areas, including the Crazies, Rocky Mountain Range, Big Belts, and Highwoods GAs. They prefer high, rugged and rocky upper mountains and peaks, and seldom venture far from cliffs and broken terrain that provide escape cover. Mountain goat numbers have remained relatively stable in recent years but because of their low productivity and high natural mortality rates, may be vulnerable to disturbances.
- Moose range occurs on portions of all GAs except the Highwoods, although there have been observations of moose there as well. They are associated with boreal forest habitat types, using areas where elevation, terrain, and vegetative cover mediate high temperatures. The plan area occurs at the southern end of their range. Stressors include vegetation management, fire, climate change, and predation.

Species of Interest for Viewing or Management

- Wolverines have been documented in all GAs except the Highwoods, Snowies, and Castles. Wolverines were nearly extinct in Montana during the early 1900s but have been increasing in numbers and range ever since. In Montana, at the southern periphery of their range, wolverines are restricted to high elevations where deep snow persists.
- Northern goshawks are found throughout the HLC NFs, and appear to be well-distributed where habitat exists. They are foraging generalists, although forest structure used for nesting is important. Local data shows that goshawks are not an old-growth dependent species. Stressors may include vegetation management, fire, climate change, weather, and predation. All GAs appear to have sufficient nesting habitat to support goshawks.

Chapter 3: Watershed, Aquatic, Soil, and Air Resources

This chapter begins an overview of the planning area resources and a description of key ecosystem characteristics. Watersheds are described across the planning area and the Watershed Condition Framework is used to describe conditions in GAs. Water quality, municipal watersheds and groundwater resources are also discussed. Aquatic ecosystems are described by GA, focusing on habitat for bull trout (west of the continental divide), and westslope cutthroat trout. Management effects are described by GA, and system drivers and stressors of water resources and aquatic ecosystems are detailed together. The soil resources section details information and considerations for soils in the planning process. Critical soil functions are also discussed. The final section covers the existing air monitoring activities and data/trends.

Key findings

- **Watershed**: The plan area is located in 296 sub-watersheds. Using the Watershed Condition Framework (WCF) data: 103 were rated as functioning properly, 159 were rated as functioning at risk, and 34 were rated as impaired. The biggest sources of impairment overall was aquatic biota (nonnative species), roads and trail issues, and water quality impairment. There are 6 priority watersheds in the plan area that have planned or ongoing restoration work occurring.
- **Water Quality**: 55 streams on the HLC NFs are on the State 303(d) list for impairment to water quality standards. These listings are most often for grazing, road, or mining impacts. Trend and project level monitoring is occurring for several water quality parameters.
- **Municipal watersheds**: There are four municipal watersheds in the plan area: Tenmile Creek, Belt-Carpenter Creek (O'Brien and Shorty Creeks), North Fork Smith River-Trout Creek (Willow Creek), and McClellan Creek.
- **Aquatic ecosystems**: Existing conditions are discussed by GA based on the WCF data. Bull trout and westslope cutthroat trout are the primary species of concern. The primary stressors to aquatic ecosystems are nonnative fish, localized effects from climate change, livestock grazing, chronic sediment inputs from roads and other infrastructure, and legacy mining.
- **Soil**: Soil surveys and classifications are incomplete but ongoing. Completed data will be used to analyze post-fire erosion hazard, mollic soils, available water, and lithic contacts. Soil maps will be useful to developing management objectives and plan components for fuels management, silvicultural objectives, range management, and identifying the inherent capacity of a site to support desired wildlife habitat. Soil carbon will also be assessed.
- **Air**: The HLC NFs typically have good air quality. The major sources of $PM_{2.5}$ emissions include: 1) fires (including wildfires, prescribed fires, and agricultural field burning); 2) dust (road dust and construction dust); and 3) agriculture (crop and livestock dust). Fires tend to contribute a higher proportion of total $PM_{2.5}$ emissions in the western part of the plan area while agriculture contributes a higher proportion in the eastern part. Air quality impacts from wildfires may intensify in the future if fires occur with greater frequency or the amount of burned area increases.

Chapter 4: Climate Change and Baseline Assessment of Carbon Stocks

This chapter evaluates the influence of changing climate on ecosystems, and provides a baseline assessment of the carbon stocks on the HLC NFs. Potential effects of climate and future vulnerabilities are summarized. The role of the HLC NFs in sequestering and storing carbon is discussed. The ways in which interrelated ecosystem drivers and management activities can influence carbon stocks is also described.

Key findings

Climate Change

- Natural climate cycles have occurred historically and continue to cause changes. Human activities lead to increases in ambient greenhouse gases, which also cause temperatures to increase.
- The HLC NFs are expected to experience warmer conditions in the future. There is potential for summer drought and early snow melt from the west that will affect changes in streamflow.
- Climate change may exacerbate stressors such as invasive species, uncharacteristic wildfires, and elevated insect and disease levels. "Stress complexes" will continue to manifest themselves.
- Climate changes have potential to affect water and soil resources, fisheries and aquatic wildlife, tree species and vegetation types, landscape function, wildlife, recreation, and ecosystem services.

- Future climates will be influenced by natural cycles and human contributions to emissions.

Carbon Stocks

- The primary relationship between forests, management, and climate change is the role forests play in the carbon cycle. Forests generally act as carbon sinks because plants remove carbon dioxide and store it. Carbon removed from the atmosphere by forest growth or stored in harvested wood products can offset a proportion of fuel emissions.
- Total forest ecosystem carbon stored in the Northern Region has steadily increased from 1990 to 2013; however, the stocks on the HLC NFs decreased slightly. Recent disturbances may have weakened local sequestration rates. Sequestration may be reduced in the future if disturbances increase and drought causes decreases in site productivity.
- In many forest areas, reforestation is expected unless repeated disturbances occur. As forests grow, the strength of the carbon sink increases until peaking at an intermediate age and then gradually declining but remaining positive. Overall, the carbon cycle in forested ecosystems is expected to be relatively neutral when considered over a long enough timespan.
- Rates of net carbon sequestration in forests may be enhanced through management strategies that retain and protect forest land from conversion to non-forest uses, restore and maintain resilient forests that are better adapted to a changing climate and other stressors, and reforest lands disturbed by stand-replacing events.
- The ability of forests to sequester carbon depends in part on their resilience to multiple stresses. Management actions that maintain long-term productivity and reduce the likelihood of high severity disturbances may help maintain the capacity of a forest to sequester carbon; however the magnitude and overall impact depends greatly on the scale considered.

Chapter 5: Social, Cultural, and Economic Conditions

This chapter presents the social, cultural, and economic contexts within which the HLC NFs operate. Due to the large number in the plan area (20), counties were divided into 2 groups. The primary, in-depth analysis group consisted of 13 counties and the secondary analysis area contains 7 counties. To describe the social and cultural context, information on social characteristics, local government, county health, population dynamics, and land ownership patterns is presented. The economic context is described by employment/industry characteristics, income, and unemployment rates. In addition, information is provided on issues especially pertinent to natural resource management, including:

- Land use and development in the wildland-urban interface
- Federal land payments
- Montana's forest products industry
- Natural resource amenity counties (counties where natural amenities such as scenic vistas, clean air, varied topography, and proximity to surface water make the area an attractive place to live) and amenity-driven development.
- Data on Forest Service programs, salary and non-salary expenditures, and employment
- The contribution of the HLC NFs programs and expenditures to jobs and labor income.

A section addressing Environmental Justice (Executive Order 12898) is also included.

Key findings

- Given the historic settlement of Montana, with transportation afforded by the Missouri River, the gold fields, and the Homestead Acts, most land in the 13-county area is in private ownership. This differs from more mountainous areas in the state where much of the land is federally owned.
- Due to less publicly owned land and lower population, the extent of the wildland urban interface is less on the HLC NFs than for the state as a whole. However, there are more second homes (1 in 3 compared to 1 in 5). Meagher County has the highest percentage of second homes.
- Most counties are experiencing little, or negative population growth. The exception to this is the 4-county area called "West" (Broadwater, Jefferson, Lewis and Clark, and Powell counties).
- Although many of the counties ranked fairly high (4 or 5 out of a 7 point scale) in natural amenities (such as temperate summers, low summer humidity, and topographic variation), amenity-based migration is forecast to be low or negative. Many counties are losing population due to people choosing to live elsewhere, most likely due to lack of employment opportunities.
- Per capita income is high compared to the rest of the state with the central and western sections of the analysis area having the highest per capita income. However, many areas have low average earnings, particularly the eastern counties. This discrepancy between per capita income and earnings seem to be explained by the high level of non-labor income in these counties.
- There is much variation within the 13-county analysis area, and even more so in the 7-county secondary analysis area. One important reflection of this is county health; the highest ranked (healthiest) counties in the state are included in the area, as well as the lowest ranked areas.
- The 13 county analysis area has cultural, ethnic and racial diversity, more so than much of the rest of the state. There are four American Indian Tribes -- Blackfeet, Chippewa-Cree of Rocky Boy's, Metis, Little Shell -- in the primary plan area, and Gros Ventre, Crow and Confederated Salish and Kootenai are nearby. Approximately 33 Hutterite Colonies and two Amish communities are within the plan area. The Hmong people have a sizeable population in the secondary county of Missoula.
- Much of the lifestyle and social organization in the 13-county area is based around agriculture. The "Golden Triangle" in the more northern counties is known for its wheat and grain, with cattle ranching to the south and east. In the eastern part of the analysis area, most of this is associated with cattle while oilseed and grain farming is predominant in the other areas.
- There were half as many wood product facilities in 2009 as in 1998 in the analysis area. The two counties in the primary analysis area that had a substantial amount of timber-related employment in 2012 were Broadwater County, where timber-related employment accounted for 22.5 percent of private employment and Powell County, where it accounted for 23.7 percent.
- Although the area has a rich mining heritage, mining is currently a small part of the economy. Jefferson and Glacier Counties have the largest amount of mining employment in 2012, at 4.9 percent and 9.9 percent respectively. These operations do not occur on HLC NF land.
- Travel and tourism-related industries make up 15 to 20 percent of employment, on average, for all counties. An exception is Meagher County where it accounts for nearly 38 percent of employment.
- There was a large drop in wildland dependency (percentage of county labor income derived from natural resource-based industries) between 2000 and 2010. In 2000, 10 of the 13 counties derived at least 15 percent of their income from grazing, timber, mining, recreation, or land management agency employment. By 2010, only six counties still met the 15 percent criteria.
- Powell County (5th in the state in terms of average payments) had the highest average Secure Rural School Act (SRSA) payments of the 13 counties from 2001 to 2012, at just under $1 million. Lewis and Clark County ranked 9th in the state, having an average SRSA payment of $716 thousand. Several counties would be substantially affected by the loss of SRSA payments if they

had to go back to 25 percent fund payments because they derive 8 to 15 percent of their revenue from these payments. As of the time of this report, the SRSA had not been reauthorized.

- Management of the HLC NFs contributes an estimated 1,833 jobs and $63 million in labor income to the 13-county analysis area – constituting 1.3 percent of employment. The majority of these contributions are associated with Forest Service expenditures and recreation.

Chapter 6: Multiple Uses and Ecosystem Services

This chapter describes the multiple uses and ecosystem services provided in the plan area. Per the Multiple Use Sustained Yield Act, *multiple uses* include outdoor recreation, range, timber, watershed, and wildlife and fish. *Ecosystem services*, or the benefits people obtain from ecosystems, extends the concept of multiple use to encompass a broader array of services or values.

Key findings

Multiple Uses

- Biodiversity plays many roles in contributing to human well-being; an assessment of biodiversity is provided in the ecological sections of the assessment.

Outdoor Recreation and Scenery

- Outdoor recreation on the HLC NFs is characterized by vast, wild, and remote forest landscapes that support nature based (water, snow, fisheries, and wildlife) recreation opportunities.
- Recreation opportunities provide people with a variety of benefits: relaxation/recreation; physical, mental, and/or spiritual health; experiencing nature, landscapes, and/or their own or other people's cultures; environmental/outdoor education; eco/adventure/nature-based tourism; opportunities to socialize; and challenge and competition.
- The incredible scenery of the HLC NFs contributes to community identity and sense of place, quality of life, the tourism industry, and increased real estate values.

Range

- There are 170 active livestock grazing allotments on the HLC NFs, covering approximately 893,000 acres on the Lewis & Clark NF and 543,000 acres on the Helena NF.
- Cattle are the primary livestock type permitted for grazing on the HLC NFs, although some horse and sheep permits are also administered.
- Key ecosystem characteristics of rangeland health include soil and site stability, hydrologic function and biotic integrity.
- Livestock grazing is estimated to have had an effect on the ecological status of 45 percent of NFS lands on the HLC NFs; this includes all vegetation types that are capable of supporting grazing.
- The composition of rangelands has changed from the historical condition due to agricultural development, livestock, exotic plants, elevated carbon dioxide levels, altered fire regimes and hydrologic cycles, recreation, mining, and climate change. Conifer encroachment into meadows, shrublands, and grasslands has reduced usable forage in many areas.
- The counties in the plan area rely on forage produced on NFS lands for approximately 4 to 6 percent of their total forage base.
- The extent of available forage could be affected by future management actions. The intensity, duration, and timing of livestock grazing could affect resource conditions, including plant health and sustainability, riparian condition and function, and soil productivity and stability.

Development of rotation grazing systems can have positive effects on establishment of desired native vegetation.

- Permitted livestock numbers may decline slightly over the next 10 to 20 years due to more stringent management constraints and due to loss of forage brought about by conifer canopy closure, invasive weed spread, and encroachment of conifers into grassland communities.

Timber products

- The primary species sold for timber products on the HLC NFs is lodgepole pine. In addition to timber products, fuelwood and Christmas trees are also sold.
- Under the current Forest Plans, roughly 19 percent of NFS lands on the HLC NFs are considered to be tentatively suitable for timber production.
- Timber harvest was accomplished on the highest amount of acres during the 1960s and 1990s, during which over 30,000 acres were harvested respectively. Harvest acres have declined since 2000, and have been largely associated with fire or insect disturbances. Stand improvement, reforestation, and fuel treatments are activities often associated with harvest.
- Timber productivity is related to forest resilience and sustainability; this is influenced by many factors including climate, natural disturbances, and human interventions.
- On the HLC NFs, site productivity is estimated to be between 20 and 84 cubic feet of tree growth per acre per year on suitable lands with average rotation ages ranging from 95 to 150 years.
- Since 1986, the largest timber volume sold occurred in 1992 when over 30 million board feet was sold on the HLC NFs. From 1980 to 2013, average volume sold has declined by over 30 percent.
- Since 1986, an average of 12.2 million board feet per year of timber products has been sold, plus an average 4.5 million board feet per year of fuelwood.
- In 1998, there were 32 active primary wood products facilities in the 13-county plan area. By 2009, this number dropped to 16. The timber industry may still process substantially more timber when markets improve, provided adequate timber supply is available.
- Federal land payments make up approximately 4.4 percent of total county revenue in the 13-county plan area. About 11 percent of jobs directly related to the timber industry are associated with the timber program on the HLC NFs.
- The amount of timber offered by the HLC NFs is influenced by many factors, including site-specific environmental analyses, public involvement, harvest methods, administrative appeals and litigation, budget, and workforce capacity. Funding and workforce capacity is not expected to increase in the immediate future.
- Due to tree mortality that occurred in the recent mountain pine beetle outbreak, in the near term the amount of merchantable lodgepole pine available for harvest will be low in many areas.
- Homogeneous forests result in “pulse” periods of timber availability. Over time, promoting a more diverse mosaic of vegetation may increase resiliency and lead to a more stable timber output.
- Future timber volume outputs may be different than what is specified in current forest plans, in part due to changing regulation such as Inventoried Roadless Areas. Future timber productivity and suitability can be difficult to predict given the influences of climate and disturbances.

Watershed

- Forests and other mature ecosystems generally improve water quality in a watershed.
- Several watersheds are identified as municipal watersheds on the HLC NFs. There are fifty-five stream segments within the plan area that do not meet water quality standards.

- The Forests to Faucets project identified sub-watersheds across the US that are important to surface drinking water sources. The 3 sub-watersheds with the highest index scores (importance to surface drinking water) in the planning area were Upper Tenderfoot Creek in the Little Belts GA, Upper Tenmile Creek in the Divide GA, and Upper Deep Creek in the Little Belts GA.

Fish and Wildlife

- Several high-use and world renowned trout fisheries are adjacent to and between NFS lands on the HLC NFs. These include sections of the Missouri River, Smith River, Sun River, Belt Creek, Blackfoot River, and Little Blackfoot River. These waters account for over 335,000 days of salmonid based, angler-use per year.
- Hunting and trapping are important to Montanans and others in many ways: as traditional activities going back generations, as an important cultural activity for the tribes, as a means of subsistence, as income through sale of pelts or through outfitting and guiding, and as a connection to nature, to name a few. Hunting brings people to Montana, providing income in many communities.
- Wildlife viewing is considered a non-consumptive recreational activity. People hold a variety of non-use values for wildlife.
- Hunted species in the plan area include: elk, mule deer, antelope, deer, bighorn sheep, mountain goats, moose, black bears, and mountain lions. Furbearers used for trapping (such as beaver, badger, bobcat, martin, mink, raccoon, fox, weasel, coyote, muskrat, otter, and skunk) as well as game birds and wolves are also important.
- Approximately 136 jobs and $3.9 million dollars of labor income are associated with non-local fish and wildlife-related visits to the forest.

Ecosystem Services

- Energy and minerals, wood for fuel, clean air, aesthetics, and carbon/climate are discussed in other sections.
- Cultural services include cultural and heritage values. The four direct cultural and heritage values on the HLC NFs are heritage tourism, interpretation, education, and public partnership programs.
- Inspiration and non-use values are also cultural services provided by the HLC NFs. These include solitude and spiritual experiences. Components related to solitude are remoteness, naturalness, and removal of human intrusions; these values can be found in the wilderness areas on the HLC NFs, which are ranked as primitive in the Recreation Opportunity Spectrum and make up about 20 percent of the plan area. In addition, semi-primitive non-motorized areas provide a high probability of solitude and represent about 36% of the plan area in the summer and 28% in the winter. Opportunities for spiritual experiences and renewal are offered on the HLC NFs because of its many different recreational opportunities and settings.
- Research and education values are also prevalent. The plan area hosts several prominent conservation education, interpretation, and community outreach programs. These include: Montana Discovery Foundation, Youth Forest Monitoring Program, Forest for every classroom, outdoor explorers mentoring program, Veterans' programs, Lewis and Clark National Historic Trail Interpretive Center, school programs, Malmstrom air force base programs, and other events.
- Flood protection is a regulating service provided through the maintenance of properly functioning watersheds characterized by effective ground cover and healthy, permeable soils with well-developed root systems to maximize infiltration and regulate streamflow.
- Erosion control is also an important regulating service. Past activities have caused impacts to soils. The Forest Service has substantially decreased these impacts through the use of current management practices. This, coupled with soil restoration activities, is expected to increase the capacity of the soils to provide multiple uses and ecosystem services in perpetuity.

Chapter 7: Recreation Settings, Opportunities, Access, and Scenic Character

This chapter provides information on many aspects of recreation and focuses on those specifically referenced in the 2012 Planning Rule.

Key Findings

Sustainable Recreation

Sustainable recreation is the set of recreation settings and opportunities on NFS lands that is ecologically, economically, and socially sustainable for present and future generations.

- Ecological Considerations: There are obvious linkages between the types of recreation pursued and the presence and condition of natural resources.
- Social Considerations: 60 percent of visitation to the plan area comes from within 75 miles, 81 percent of visitors are very satisfied with their visit.
- Economic Consideration: Recreation contributes to the economic sustainability of central Montana. Forest Service budgets for recreation have declined 27 percent in the past eight years.

Recreation Settings

Recreation settings are the social, managerial, and physical attributes of a place that, when combined, provide a distinct set of recreation opportunities.

- The Forest Service uses the Recreation Opportunity Spectrum (ROS) system to define recreation settings using six categories.
- Scenic Character helps to define settings by providing a frame of reference from which to determine scenic attractiveness and to measure scenic integrity.
- The Helena National Forest has four recreation niche settings that provide a contiguous backdrop for particular opportunities and activities. These include: reachable and remote, connections, wild, and passages.
- The Lewis and Clark National Forest has three recreation niche settings that provide the settings for recreation opportunities on the Forest. These include: portals, the front, and island ranges.

Recreation Opportunities

- Developed Recreation: There are approximately 215 developed recreation sites in the plan area. These include campgrounds, picnic areas, cabin rentals, interpretive sites and trailheads. Primary concerns are the maintenance costs, aging of the sites, and meeting of accessibility standards.
- Dispersed Recreation: Dispersed recreation use comprises the largest percentage of the visitors in the plan area at over 57 percent. Resource damage appears to be concentrated in certain drainages and at certain times of the year, such as during hunting season or during Memorial Day, 4th of July, and Labor Day weekends.
- Motorized and Non-motorized Recreation: Travel planning provides guidance for motorized and non-motorized recreation opportunities. 87 percent of the planning area is under a completed travel plan. Travel planning for the rest of the plan area is anticipated to be complete by the end of 2017.
- Aviation Recreation: Opportunities to provide aviator access were considered in some travel planning efforts within the plan area. There is interest in additional future developments.

Recreation Access

Recreation access is characterized by the systems of roads and trails on which people travel to access certain recreation settings and opportunities. These include trails, groomed trails and over-snow motorized areas, and roads.

- 812 miles of motorized trail
- 1,224 miles of non-motorized trail outside of wilderness
- 594 miles of trail within wilderness
- 534 miles of groomed snowmobile trails
- 892,310 acers open for over-snow use in winter
- 1,690 miles open year round
- 855 miles open seasonally
- 1,105 miles closed year round

Recreation Special Uses and Outfitter/Guides

Recreation opportunities are provided via permit by private individuals and businesses.

- Recreation Residence Permits: There are a total of 171 recreation residences in the plan area. All are under a 20 year special use permit.
- Organizational Camps: There are two organizational camps under special use permit within the planning area: Camp Rotary and Lions Sunshine Camp.
- Commercial Resorts: There are four commercial resorts in the plan area. All of these are located on the Rocky Mountain District and all are associated with outfitter and guide special use permits.
- Commercial Ski Areas: There are two commercial ski areas operating under special use permits in the planning area.
- Outfitter and Guide Permits: There are 62 outfitter and guide permits in the plan area. The majority of these are for big game hunting and for floating on the Smith River.

Chapter 8: Existing Designated Areas

This chapter includes information on these special designated areas and the potential need and opportunity for additional designated areas. Specially designated areas include congressionally designated wildernesses; Montana wilderness study act areas; wild and scenic rivers; national recreation, scenic and historic trails; and the only nationally designated wildlife management unit in the National Forest system. The plan area also encompasses recommended wilderness and inventoried roadless areas, research natural areas, nationally significant caves, national forest scenic byways, and the Lewis and Clark National Historic Trail Interpretive Center.

Key findings

Wilderness

- Wilderness comprises approximately 20 percent of the plan area for a total of 565,158 acres. These figures include the recent additions to the Bob Marshall and Scapegoat Wilderness areas as a result of the enactment of the National Defense Authorization Act of 2015.

- There are three designated wilderness areas in the planning area: portions of the Bob Marshall and the Scapegoat Wildernesses and the entire Gates of the Mountains Wilderness.
- A wilderness evaluation will be completed for the revised Forest Plan.

Recommended Wilderness Areas

- There are four recommended wilderness areas in the plan area, totaling about 34,265 acres. Additional recommended wilderness areas may be identified in the wilderness evaluation process.

Wilderness Study Act Areas

- There are two Wilderness Study Act areas: Middle Fork Judith and Big Snowies, totaling 247,441 acres. Both Wilderness Study Act areas were studied in 1982 and a designation of "non-wilderness" was incorporated into the 1986 Forest Plan. Regardless of the non-wilderness findings, both areas continue to be managed for their wilderness character and values.
- These areas will be looked at again in the wilderness evaluation process.

Inventoried Roadless Areas

- Inventoried roadless areas include approximately 50 percent of the plan area, about 1,447,892 acres. Inventoried roadless areas will be included in the wilderness evaluation completed for the revised Forest Plan.

Elkhorns Wildlife Management Unit

- The Elkhorns Wildlife Management Unit is the only one of its kind in the nation and includes a total of 160,000 acres managed by the Forest Service.
- The entire Elkhorns mountain range is managed with an emphasis on fish and wildlife values by the Bureau of Land Management, Montana Fish, Wildlife, and Parks, the Forest Service, the Natural Resource Conservation Service and other interested private land owners.
- Management of the wildlife management unit is done cooperatively with the Elkhorn Working Group and the Elkhorn Restoration Committee.

Wild and Scenic Rivers

- There are currently 14 eligible wild and scenic river stretches in the plan area for a total of 133 miles. Suitability was not done on these rivers and there are no designated stretches. An eligible wild and scenic rivers inventory and evaluation will be completed for the revised Forest Plan.

National Designated Trails

- National recreation trails: 28 miles
- National scenic trail (includes the Continental Divide National Scenic Trail): 285 miles
- National historic trail (Lewis and Clark National Historic Trail): 13 miles
- Eight national recreation trails were removed from designation on the Rocky Mountain District in 2011. The Continental Divide National Scenic Trail and the Lewis and Clark National Historic Trail receive special additional funding for their maintenance and management.

Lewis and Clark National Historic Trail Interpretive Center

- The interpretative center is comprised of 25,000 sq. ft., with 158-seat theater, and a 6,000 sq. ft. exhibit hall. It is situated on 27 acres of FS land next to the Missouri River in Great Falls, MT.
- The center serves approximately 45,000 visitors and 4000 children annually. About 20 percent of visitors are from foreign countries, primarily Canada. There is strong community and partner interest and involvement.

National Historic Landmarks

- Camp Disappointment NHL was designated in part due to the scenic quality of the Rocky Mountain Range near Browning, MT.
- Great Fall Portage NHL touches the Sulphur Springs site, a location which is interpreted and managed by the Forest Service through agreement with Montana Fish Wildlife, and Parks.

Nationally Significant Caves

- There are ten nationally significant caves in the plan area.
- Recreation use and resource damage is challenging in some of these caves, primarily Lick Creek and Ophir caves. Wildlife issues (white nose syndrome in bats) are not significant at this time but are being closely monitored.

Research Natural Areas

- There are twelve existing Research Natural Areas in the plan area, totaling 16,955 acres.
- There are a number of plant communities that have been identified as unrepresented and could be considered for future research natural area designation.

Special Areas

- There are four Special Areas that have been identified but have not received formal designation.
- An inventory of potential additional special areas will be completed for the revised Forest Plan.

Tenderfoot Creek Experimental Forest

- The Tenderfoot Creek Experimental Forest is 9,125 acres in size and located at the head of Tenderfoot Creek within the Little Belt Mountains GA. The primary research within this experimental forest focus' on the productivity and biodiversity of lodgepole pine forests.

Kings Hill Scenic Byway

- This 71 mile-long National Forest Scenic By-way is located on Highway 89 through the Little Belt Mountains GA.

Chapter 9: Renewable and Nonrenewable Energy, Mineral Resources, and Geology

This chapter describes the geology of the HLC NFs and summarizes the areas of geologic and scenic interest. The chapter discusses mineral and energy resources including: locatable mineral resources, saleable mineral resources, and leasable mineral and energy resources, both renewable and non-renewable. Since the geologic history is the reason for the occurrence and development history of the mineral resources, the occurrence of precious and base metal minerals is the backdrop for much of the cultural and management history, particularly the Helena National Forest portion. Other energy resources have been explored across the plan area since the late 1950's but are less of a factor in development in and around the plan area because substantial resources have not been discovered and/or tapped. Mineral resources include sand, gravel, building or dimension stone, riprap or general pit run for construction and industrial purposes. The geology of the plan area lends itself to a variety and abundance of general construction use materials and decorative stone applications.

Key findings

Geology

- The plan area is mostly in the Rocky Mountain physiographic region. Complex and diverse geology characterizes these areas.
- As a result of the geologic events and processes occurring in the plan area, a variety of noteworthy scenic and/or geologically interesting, and geologically hazardous areas occur within the forest lands plan area of this assessment.

Mineral and Energy Resources

Locatable Mineral Resources

- Locatable minerals are those valuable mineral deposits subject to exploration and development under the General Mining Law of 1872 as amended.
- Approximately 86 percent, or 850,000 acres, of the Helena National Forest (HNF) and approximately 58 percent, or 1 million acres, of the Lewis and Clark National Forest (LCNF) is open to the location of mining claims. The HNF has had substantially more mining claims and activity than the LCNF areas owing to the inherent geology and occurrence of mineral resources.
- Placer mining includes the removal and washing of primarily valley bottom alluvial gravels or nearby terraces and benches where free milling gold has been liberated from bedrock through erosion and weathering. The primary geographic areas that have had historic placer mining include the Big Belts, Divide and Blackfoot River areas. Historic placer mining has resulted in significant disturbance of many stream corridors on NFS lands. Current placer mining areas are located in the Elkhorns, Big Belts, Divide and Blackfoot River areas and the eastern Little Belts. Annually the forests administer 25-40 small-scale placer projects which range from hand scale work to small scale equipment work.
- Over the past 20-25 years, located mining claims across the forests have ranged from a high of tens of thousands of claims annually in the early to mid-1980's, to the current level of 500-1,000 claims. Hundreds of prospect-level to developed mine sites, as well as public safety hazards and environmental impacts, have been inventoried on NFS lands. The rich hard rock mining history of the plan area has resulted in impacts to other natural resources. Water quality impairment is probably the single biggest issue resulting from historic mining. Many of the inventoried mines have been reclaimed in whole or in part by the Forest Service, State of Montana, Environmental Protection Agency (EPA) or jointly by the agencies. Reclamation of Forest Service sites with hazardous substances has been done under the agencies' CERCLA authority.

Saleable Mineral Resources:

- Saleable mineral resources include common varieties of sand, gravel, decorative and landscaping stone, cinders, clay, etc. that are not available for location under the Mining Law of 1872 but rather the Materials Act of 1947. Saleable mineral uses and developed pits are very common on the Jefferson Division on the LCNF portion of the plan area. They are largely pits related to road development and maintenance. The HNF portion of the plan area has recurring salable minerals uses but at a much lower level and with very few developed pits.
- The plan area has several desirable landscaping stone varieties, including rounded boulders in the Helena area, red slabby quartzite of the Flathead Sandstone in the Little Belts, and in the south Big Belts. These sources have not been extensively developed.

Leasable Mineral and Energy Resources

- Leasable mineral and energy resources include oil, gas, coal, geothermal, oil shale, and other solid minerals. In 1990, new Forest Service Regulations for oil and gas resources were promulgated which set forth the rules and procedures for the issuance leases. The regulations directed Forest Supervisors, in coordination with BLM, to develop a schedule for analyzing lands that had not been already analyzed for leasing. The agencies initiated oil and gas leasing analyses. The LCNF finalized the oil and gas leasing FEIS and issued a Record of Decision in 1997. The HNF finalized a oil and gas leasing FEIS, Final Supplemental EIS, and ROD for oil and gas leasing in 1999.

Chapter 10: Infrastructure

Infrastructure is the built property created to support the management and utilization of NFS lands. The categories of infrastructure include roads, road and trail bridges, dams, administrative facilities, and recreation facilities, such as recreation buildings, cabin rentals, water systems and sewage disposal. Trails are discussed in Chapter 7. Other facilities under special use permit, such as utility corridors, pipelines, water ditches and gates, communication sites, range improvement, and SNOTEL sites are covered in Chapter 12.

Key Findings

National Forest System Roads

- In the HLC plan area, there are approximately 2,569 miles of road open for public use either seasonally or year round. Roughly 1,593 miles of these roads are open for high clearance vehicles and 976 miles are open for passenger cars. Additionally, there are 1,082 miles of NFS roads that are currently in custodial care (closed to public motorized use).
- Funding for repairs and maintenance are expected to continue to decrease while national requirements and efforts for planning and maintenance continue to increase. During the past two decades, appropriated funding for road construction and maintenance has decreased while the forest is spending more funding to meet safety standards, implement resource protection measures, and complete agency-required planning efforts.

Road Bridges

- There are approximately 138 road bridges under the jurisdiction of the Forest Service on the HLC NFs. The condition of these structures varies from good condition to extreme disrepair.
- The HLC NFs has an active bridge replacement program. This program aims to replace under-sized culverts and bridges with structures that allow for aquatic organism passage. In many instances, safe design practices that also meet best management practices, dictate that the only suitable replacement structure is a bridge. The result is an increasing inventory of bridges in need of maintenance.

Trail Bridges and Structures

- A trail bridge is a trail structure, including supports, erected over a depression or obstruction such as water, roadway, trail or railway that provides a continuous pathway and has a deck for carrying traffic or other loads. There are currently 49 trail bridges in the plan area.
- Trail bridges and structures in the plan area are in various conditions ranging from relatively new construction to those needing significant repairs.

Administrative Facilities

- There are two supervisor offices which serve the plan area; one in Helena, Montana and the other one in Great Falls, Montana. Both are leased facilities.
- There are eight ranger district offices dispersed throughout the forests as well as the Lewis and Clark Interpretive Center and the Augusta Information Station.
- District offices that are leased facilities include the Helena Ranger District (co-located with the Supervisor's Office); the Townsend Ranger District Office and Warehouse; the Judith Ranger Station; the Musselshell Ranger District; and the Rocky Mountain Ranger District and Augusta Information Station.
- The Lincoln Ranger District, Belt Creek Ranger District, White Sulfur Spring Ranger District and the Lewis and Clark Interpretive Center are Forest Service owned facilities.
- The building inventory as of January 2014 shows that there are 245 Forest Service-owned Fire Administrative & Operations (FA&O) buildings. The focus of the forests is the rehabilitation or replacement of existing forest facilities that do not meet current operational standards, and the disposal of those facilities that are considered surplus to the forest FA&O operational needs. Deferred maintenance needs for these buildings are in excess of $11 million. Current funding falls short of the maintenance needs.

Recreation Facilities

- There are 215 developed recreation sites in the planning area. These sites range in size and category from developed campgrounds and picnic areas, to small interpretive sites. These sites may contain features such as signs, tables, fire rings, and parking barriers.
- Larger infrastructure elements such as toilet buildings, picnic shelters, cabins, lookouts, and water and wastewater systems are also located in developed recreation sites. There are 238 buildings that are classified as recreation facilities across the plan area. There are 18 cabin rentals, 189 toilet buildings, and 31 other buildings such as picnic shelters, barns, and pump houses.
- The HLC NFS also maintains 58 water systems and 20 waste water systems.

Facilities, Dams

- There are six dams in the HLC planning area.

Aviation:

- There are three landing strips located within the planning area.

Chapter 11: Cultural and Historical Resources and Uses

The cultural and historic context of the HLC NFs is summarized and cultural resources are identified. Existing information derived from forest cultural resource overviews, heritage program and historic property plans, numerous project analyses and site investigations is used to assess the condition of resources, including historic resources identified as eligible or listed in the National Register of Historic Places and designated traditional cultural properties. Trends that affect these resources are also described.

Key Findings

Cultural Resources of the Plan Area

- The human story of the plan area is rich and reflects a convergence of Old and New World cultures, lifeways, technologies, and values.

- Approximately 1,851 cultural resource sites are identified on the HLC NFs.
- Eight historic properties are listed on the National Register of Historic Places (NRHP).
- One Traditional Cultural Property District (TCP) related to tribal cultural values is identified as well as two National Historic Trails.
- 944 heritage properties have been formally determined to be eligible for listing in the NRHP by the Forest Service and Montana State Historic Preservation Officer, but are not yet formally nominated. 1,507 cultural sites are not yet evaluated and therefore are considered to be significant and NRHP-eligible, and require management consideration. To date, 334 sites have been determined to be historically insignificant and may fall outside of management concern.
- 120 sites have been identified as Priority Heritage Assets (PHAs).
- The entire HLC NFs have not been fully inventoried for cultural resources. However, approximately 293,167 acres (~10%) have received varying levels of survey effort. The condition of hundreds of cultural resources across the plan area varies by resource class, location and age.

Contributions to Ecological, Social, or Economic Sustainability

- The investigation of cultural resources contributes to our society by expanding knowledge and understanding of the ancient and recent history and cultures of Montana.
- Cultural resources offer personal, inspiring, and even spiritual experiences. They are important in connecting people to places and our collective heritage. They are an important component of the HLC NFs trust responsibility to Tribal peoples.
- Cultural resources contribute to the educational, cultural and economic vitality of local communities by preserving local history and by creating socioeconomic opportunities for heritage tourism and recreation.

Continued Uses of Cultural Resources

- The HLC NFs have put significant effort into the maintenance, stabilization and restoration of many historic structures for continued administrative use, adaptive use as rental facilities, and public interpretation.

Research and Education

- Over the last several decades, the HLC NFs have produced a variety of brochures and reports, conducted innumerable public presentations and tours, interpreted several sites, and have several historic cabins available on the rental program for the public appreciation and awareness.
- Several research projects have been conducted under the supervision of forest archaeologists.
- Passport in Time (Windows on the Past) volunteer projects are conducted on the HLC NFs and are increasing in popularity with the public.

Culturally Important Plants and Fungi Species

- Several culturally important plant and fungi species are present on the HLC NFs. Culturally important species include those that have been used historically and/or are presently used for ceremonies, rituals, nutrition, or medicinally, such as camas and beargrass.

The Differing Perspectives of Tribal Inclusion in Cultural Resource Management

- Cultural resource law and practice is primarily based in the perspective and tradition of western science where cultural sites and their material cultural can be studied and classified to gain knowledge about the human activities that occurred at those places in the near or distant past.

- Tribal people do not readily distinguish between the past and present or the living and the dead and cultural sites embody the physical and spiritual world and knowledge about them is derived from traditional practices, place names, and oral tradition.
- These different systems of knowledge and belief are increasingly being accommodated in agency practices in accordance with federal treaties, laws, executive order, policies, and procedures. Traditional cultural knowledge, Traditional Cultural Properties (TCPs), Sacred Sites and other places of tribal importance are now part of agency Government-to-Government and NHPA dialogue and interaction with tribes.

Chapter 12: Land Status and Ownership, Land Uses, and Access Patterns

This chapter identifies and evaluates existing information relevant to the plan area for land status, ownership, use, and access patterns. Land ownership is the basic pattern of public and private ownership of both surface and subsurface estates. Land use is the current use of the land, such as residential, commercial, industrial, or agriculture use. Access is transportation access to or through the plan area, including pedestrian access; the agency usually refers to it as reasonable access.

Key Findings

Land Status and Ownership

- Within the boundaries of the plan area, 2,879,887 acres are NFS lands and 328,921are owned by other individuals or entities.
- Since 1986, NFS ownership has increased by 20,906 acres on the Lewis and Clark National Forest portion and increased by 5,257 acres on the Helena National Forest portion of the HLC NFs.
- One of the greatest trends affecting the management of land ownership status and land uses and access patterns is escalating housing development on private rural lands along forest boundaries.

Land uses

- At the time of this assessment there are 607 special use authorizations issued in the plan area. Of these, 326 are lands uses and 281 are recreation uses. The majority of the land use authorizations are for transportation-related uses and the majority of recreation uses are for recreation residences.
- The request for communication sites on NFS lands has increased as these services expand to more remote locations.

Access Patterns

- The Center for Western Priorities (2013) reports the state of Montana as having 1,955,145 acres of land managed by the Forest Service and BLM that do not have public access. Of the western states reviewed in this report, Montana has the most inaccessible acres. Of the nearly 2 million acres, 37 percent are inaccessible because the public cannot cross corners, while 63 percent are fully landlocked by private lands.

Summary

This assessment represents the first phase of the Forest Plan Revision process. The evaluation of existing information, including relevant ecological, economic, and social conditions, trends, and sustainability, and its relationship to the land management plan within the context of the broader landscape provides the basis for the Revision process. The assessment was developed using the best available science (BASI) and considered input provided by the public. Please refer to the full assessment text for additional information.