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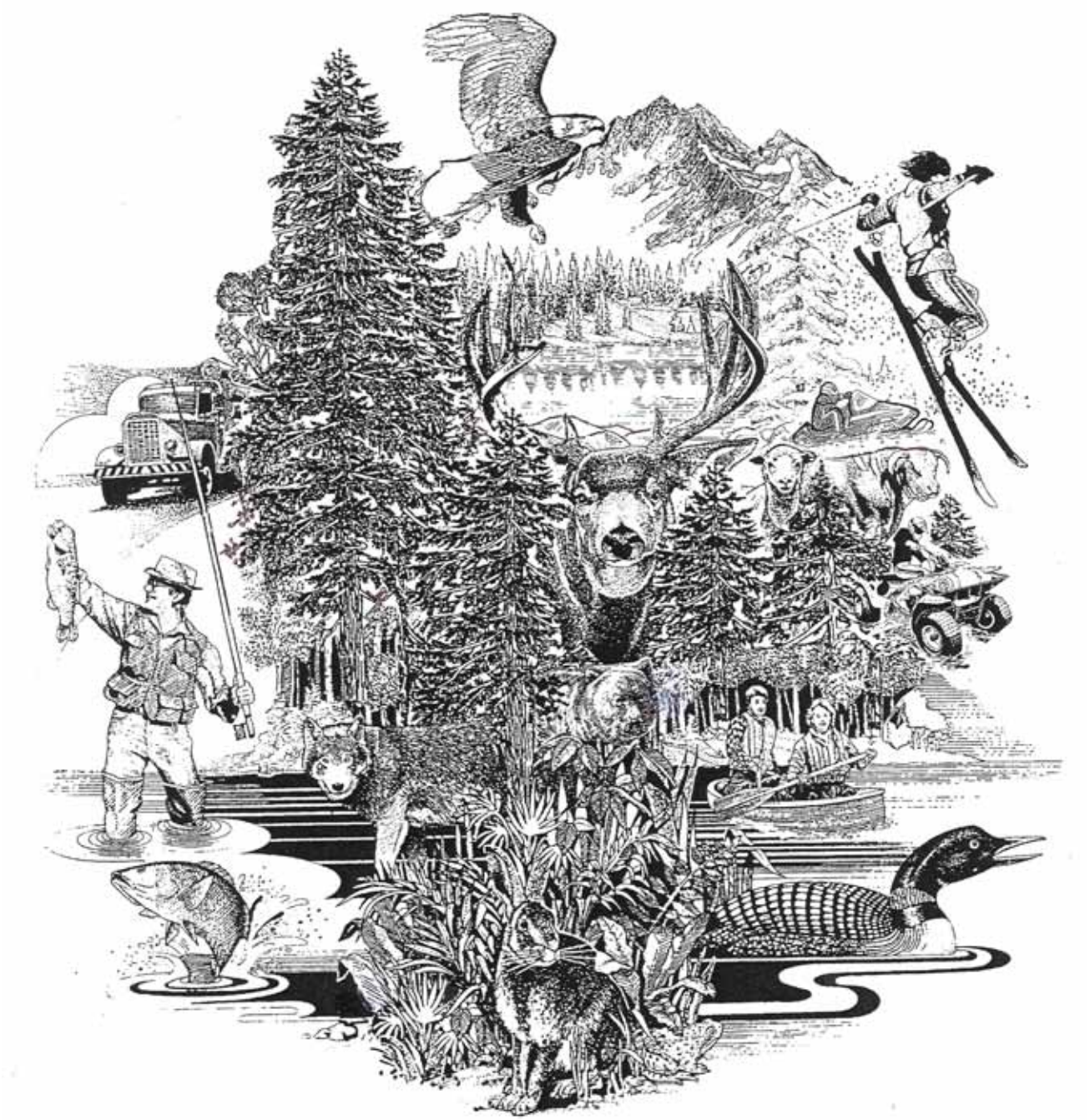
Proposed Land Management Plan

Kootenai National Forest



Proposed Land Management Plan

Kootenai National Forest

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Introduction

Land Management Plan Context and Purpose

The purpose of a Land Management Plan (hereinafter referred to as a "Plan" or "Land Management Plan") is to provide overall strategic guidance for the sustainable management of the Kootenai National Forest (KNF) by guiding relevant resource management programs, practices, uses and projects. This Plan sets the overall context for informed decisionmaking by evaluating and addressing the social, economic, and ecological considerations of the KNF. In particular, this Plan:

- Is strategic in nature. This Plan does not include decisions with on-the-ground effects that can be meaningfully evaluated through a site-specific NEPA process. Those decisions are made later, only after further analysis and further public involvement.
- Was developed through public involvement and collaboration, which started at the earliest stages of Plan development and will continue through Plan completion, project planning, and monitoring.
- Contributes to social, economic, and ecological sustainability. This Plan aspires to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.
- Emphasizes the role of best available science. New knowledge and information can be analyzed and added to this Plan at any time.
- Describes and identifies the five Plan components discussed in the following section.

This Plan emphasizes an adaptive management approach that results in a collaborative process and a dynamic document that can be improved upon at any time. Such an informed and adaptive guide to land stewardship allows the Forest Supervisor to better utilize Forest staff and resources to manage the Forest. The adaptive management cycle includes: Plan development; Plan implementation; Plan monitoring, inventory and assessment; and Plan review and evaluation. The findings of Plan review and evaluation reveal any needs to change the Plan, which begins the adaptive cycle again.

Plan Components and Organization

The Plan is organized into three chapters: Vision, Strategy, and Design Criteria. Each chapter includes one or more of the five Plan components: desired condition, objectives, suitability, special areas, and guidelines.

The following explains the organization of this document and helps the reader understand how to interpret the guidance included in the five Plan components:

Chapter 1. Vision: The vision describes the future conditions for the Kootenai National Forest. It provides strategic direction and describes the roles, contributions, and setting of the Plan area. It sets context for management by describing the desired conditions of both the entire Forest as well as individual, community-based geographic areas. The vision is long term and reflects ecological timeframes and social desires. The vision also contains monitoring questions that will be used to assess progress towards achieving desired conditions.

Desired Conditions describe the social, economic, and ecological attributes that guide management of the land and resources of the KNF. Desired conditions are not commitments or final decisions approving projects and activities. Desired conditions may be achievable only over a long period, may be reached in the short term, or may already exist.

Chapter 2. Strategy: The strategy describes how the Forest intends to move toward the desired conditions. It includes key objectives for anticipated levels of conditions, uses, and activities. Suitable land areas at the Forest and management area level are identified for a variety of land uses compatible with desired conditions. The strategy also includes recommendations for special area designations.

Objectives are concise projections with measurable, time-specific intended outcomes. The objectives for the Plan are the means of measuring progress towards or maintaining desired conditions. Objectives are not commitments or decisions approving projects and activities.

Suitability of Areas are areas that are identified across the Forest or by management area that are generally suitable for various uses and activities. The identification of an area as generally suitable for a use is guidance for project and activity decisionmaking but is not a commitment or decision for a specific project or activity.

Special Areas are areas within the Forest designated for their unique or special characteristics. These special designations are also identified by a management area. Special areas may be designated by statute, by a Plan, Plan amendment, or Plan revision, or by a separate process in accordance with NEPA and other applicable laws (36 CFR 219).

Chapter 3. Design Criteria: Design criteria provide sideboards to guide management activities that help move the Forest toward desired conditions. Guidelines provide specific information and guidance for project decisionmaking. Management direction found in public laws, regulations, existing decisions, and Forest Service manuals and handbooks is generally not repeated in this chapter and is identified as other sources of design criteria.

Guidelines are for project and activity decisionmaking to help achieve desired conditions and objectives. Guidelines are not commitments or decisions approving projects or activities in the Plan area.

Land Management Plan Consistency

This Plan does not make project-level decisions nor does it contain commitments to implement specific projects; those decisions are made after further public involvement and detailed analysis.

During Plan implementation, projects and activities must be consistent with the Land Management Plan (36 CFR 219.8(b)). Consistency with the Plan is achieved by being consistent with the Plan components in the following ways:

Desired Conditions and Objectives (Ch. 1 and 2) - 36 CFR 219.7(a)(2)(i) and (ii): Most projects and activities are developed specifically to achieve or maintain one or more of the desired conditions and objectives of the Plan. It should not be expected that each project or activity will contribute to all desired conditions or objectives in every instance, but only to a selected subset. Furthermore, some projects and activities may not be clearly related to a specific social, economic, or ecological desired condition or objective of the Plan (for example, facility maintenance may be proposed without a corresponding

desired condition or objective for that proposal), so it also should not be expected that in every instance, a project can clearly point to a specific desired condition as the reason the project was proposed.

To be consistent with the Plan, a project or activity can:

- maintain or achieve one or more desired conditions or objectives,
- be neutral to relevant desired conditions or objectives, or
- have negative short-term effects, but beneficial long-term effects to one or more desired conditions or objectives.

To the extent practicable, documentation for projects and activities will identify which desired conditions and objectives are being addressed, and whether these conditions and objectives are being advanced, are not affected, or are temporarily slowed. Project documentation is not required to address all the available opportunities that could meet or work toward achieving desired conditions in a project area, but will instead focus on specific social, economic, or ecological conditions that prompted the need for the proposal.

Suitability of Areas (Ch. 2) - 36 CFR 219.7(a)(2)(iv): The Plan identifies areas that are generally suitable for a variety of multiple uses (36 CFR 219.12(a)). The Plan shows where these uses are compatible or incompatible with the area's desired conditions. The actual suitability for a particular use, even if an area is identified as generally suitable for a use, will not be determined until a project or activity is authorized. Moreover, it is not possible to anticipate every project or activity that could be proposed throughout the Forest and throughout the life of a Plan. An approved project or activity is considered consistent with the Plan if the project or activity is consistent with the general suitability identification and is consistent with other relevant Plan components. If the project or activity is not consistent with this identification, the responsible official should amend the Plan.

Special Area Guidance (Ch. 2) - 36 CFR 219.7(a)(2)(v): Special areas may have different management direction that represents their unique or special characteristics. For example, a botanical area may have desired conditions that differ from the larger landscape surrounding that special area. Project consistency for a special area would be determined in the same manner as consistency with other desired conditions, suitability identifications, and guidelines as discussed previously, but would be specific to that area.

Guidelines (Ch. 3) - 36 CFR 219.7(a)(2)(iii): To be consistent with guidelines, a project or activity will apply relevant guidelines, unless there is a documented reason to adjust the guideline for a specific project or activity. If the adjustment would be neutral with regard to relevant social, economic, or ecological conditions or would be a more appropriate way to achieve or maintain desired conditions and objectives, the responsible official will describe the proposed adjustment and explain the relationship to desired conditions and objectives in the project-level environmental analysis and decision documents. In such cases, a Land Management Plan amendment generally is not required.

Plan Set of Documents

One of the concepts of the 2005 Planning Rule and the associated directives is to create Plans that are flexible, easily updated, and adaptive in nature. One of the ways to achieve this is to

recognize that the Plan consists of a set of documents that collectively describe management direction, reflect monitoring information, include adjustments and changes, and provide supporting rationale and documentation. This Plan Set of Documents includes the following:

The Land Management Plan- This document contains the strategic management direction for the Forest and includes a management area map.

Approval Document - This document will include the decision, the rationale for the decision, and other information.

Evaluation Reports- The evaluation report is the principal document that supports the need to amend or revise a Plan (36 CFR 219.6). There are three types of evaluation reports:

1. Annual evaluations of monitoring information;
2. Evaluations for Plan amendments;
3. Comprehensive evaluation reports (CER) for Plan development or Plan revisions. The CER describes conditions and trends for the sustainability topics found in this Plan.

Monitoring Guide- The monitoring guide includes elements to be monitored, monitoring questions, measures, and frequency of measure. Monitoring may be used to evaluate the various components of the Plan and provide information for future changes. Monitoring will also gauge progress and determine the Forest's success and ability to reach desired conditions.

Environmental Management System (EMS) - The 2005 Planning Rule requires the Forest Service to establish an environmental management system (EMS) for each unit of the National Forest System (NFS). EMS is a standard approach to work that continually improves the environment. The Kootenai National Forest will develop an EMS using an international standard known as ISO 14001. The standard has 17 requirements, including an independent audit to assure the system is working. Documentation within the Plan set of documents includes compliance with ISO 14001 and the Forest's environmental policy.

Other Documentation - The following documents address 2005 Planning Rule requirements and are included in the Plan Set of Documents:

- Role of Science
- Public Involvement and Collaboration
- Retention and Incorporation of Existing Plan-related Decisions
- References and Citations

Relationship to Other Strategic Guidance

The KNF contributes to the accomplishment of national strategic guidance in accordance with its own unique combination of social, economic and ecologic conditions. This Land Management Plan helps define our role in advancing the agency's national strategy and reflects the national goals, which are based on the Government Performance and Results Act (GPRA).

This Land Management Plan is reflective of the mission of the USDA Forest Service, which is "to sustain the health, diversity, and productivity of the nation's forest and grasslands to meet the

needs of present and future generations." The mission statement is captured by the phrase, "Caring for the land and serving people."

Rights and Interests

A land management plan is intended to be adaptable while providing a framework that guides future management decisions and actions. As such, a plan does not create, authorize, or execute any ground-disturbing activity. A plan does not grant, withhold or modify any contract, permit, or other legal instrument, does not subject anyone to civil or criminal liability and creates no legal rights. This Plan does not change existing permits and authorized uses. A land management plan is not an action-forcing document; therefore, it is not a major federal action having a significant effect on the quality of the human environment.

About the Kootenai National Forest

The Kootenai National Forest (KNF) is located in the northwest corner of Montana and includes about 2.2 million acres of public land. The Forest administers the entire proclaimed Kootenai and a portion of the Kaniksu National Forests. The Forest is divided into five ranger districts: Rexford, Fortine, Three Rivers, Libby, and Cabinet. Seven geographic areas are defined within the Plan and discussed in Chapter 1. Two major rivers, the Kootenai and the Clark Fork, along with several smaller rivers and their tributaries, dominate the Forest. The Whitefish Range, Purcell Mountains, Bitterroot Range, Salish Mountains, and Cabinet Mountains are all part of the rugged terrain radiating from the river valleys. In the north-central part of the Forest, the land is more open with gently rolling forested hills lying in the shadows of the Whitefish Range.

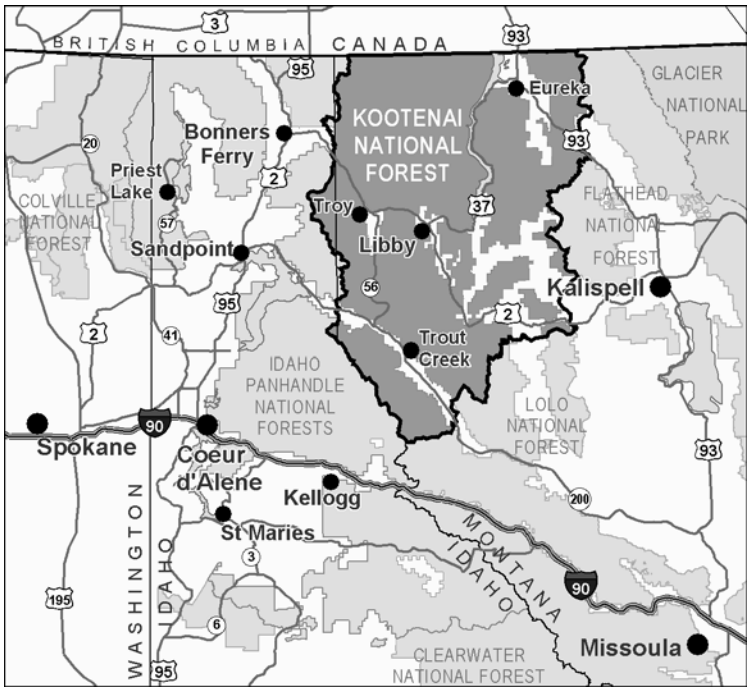


Figure 1. Vicinity map

The Forest contains some of the most diverse and productive forests in the Northern Region of the Forest Service. It is the home of many threatened and endangered plant and animal species, and it provides a diversity of aquatic and terrestrial habitat. Grizzly bear, Canada lynx, gray wolf, bull trout, and water howellia are examples of some of these listed species.

The principal population centers within the KNF are Libby, Troy, Eureka and Trout Creek Montana. Smaller communities that have social, economic, and historic ties to the KNF include Fortine, the Yaak community, Rexford, and Noxon. The nearest large urban area, Spokane, Washington, has a social and economic influence on the local communities. The majority of land administered by the KNF is located in Lincoln and Sanders counties in Montana. Smaller portions of land are also found in Flathead County in Montana and Boundary and Bonner counties in Idaho.

Abundant recreation opportunities exist in the KNF. Visitors come from across the nation, as well as Spokane and local communities, to fish and boat the numerous rivers and lakes. Other popular recreation activities include hiking, biking, sight-seeing, hunting, Off-Highway Vehicle (OHV) use, recreational prospecting, snowmobiling, skiing, and huckleberry picking. This visitation and recreation is important to the local economy and is a major reason people choose to live in this area.

The Kootenai National Forest has productive forest lands that contribute to the local and regional supply of forest products and are an important contributor to the local economy. Managing vegetation and fuels, as well as resources for mining and grazing contribute to people's livelihoods and remains one of the cornerstones of this Forest.

The landownership pattern in and near the Forest provides many opportunities for collaborative planning and partnership opportunities. The Forest is within and/or encompasses portions of the wildland urban interface, private, state, county, or other federal land, as well as rural communities and populations centers. This ownership pattern provides opportunities for people with different interests and values to come together to work toward managing the resources in ways that consider all values and uses of the Forest.

Distinctive Features of the Kootenai National Forests

The KNF considers people to be an integral part of the forest environment. It is committed to balancing the need to conserve and sustain natural resources while providing for people's demands for products and services, now and in the future.

The unique qualities of the Forest characterize the roles and contributions of the area. Understanding these helps set realistic and achievable desired conditions which are the basis for management direction over the next 15 years (the life of the Plan).

In addition to the multitude of resource outputs and ecological, social and economic outcomes, described in Chapters 1 and 2 of this Plan, the KNF has some important and distinctive roles and responsibilities including:

Wildland Urban Interface: Forty percent of the KNF is within the wildland urban interface. This provides the Forest significant opportunities to partner with landowners and other jurisdictions to improve forest health conditions and reduce the risk of wildfire. Recognizing community wildfire protection plans and working in cooperation with counties is an important part of public safety and the Forest's fuels reduction program.

Habitat for Threatened and Endangered Species: The KNF is the home of many threatened and endangered plants and animals. Grizzly bear, Canada lynx, gray wolf, bull trout, white sturgeon, and water howellia, are examples of some of these listed species.

Tribal and Cultural Interests: The Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho are very involved in consultation regarding the management of the KNF, and the Forest enjoys productive working relationships with these Tribes. These Tribes have reserved treaty rights, which entitle them to hunt, fish, gather, and graze livestock in the Forest. In addition, Tribes having aboriginal territory on the Forest (including the Coeur d'Alene, Kalispel, and Spokane Tribes) also have consultation opportunities.

Percentage of NFS land in the Counties: The KNF has a distinctive role with its counties, particularly Lincoln County, because of the preponderance of NFS lands. Over 70 percent of Lincoln County is public land administered by the KNF. Because of this large percentage, there is a distinct relationship between forest management and local communities within Lincoln County. This presents the KNF with a responsibility for management of the resources while addressing effects to local communities.

The Kootenai River is a prominent feature on the KNF. This river basin extends from the north in Canada, through the KNF, and east into Idaho. The construction of Libby Dam created a 90-mile long reservoir, of which 60 miles is on the KNF. The Kootenai River white sturgeon, an endangered species, is found in this river basin, below the dam. There is a community-interest-based watershed group, consisting of individuals from Montana, Idaho, and British Columbia, that has an interest in the management of the Kootenai River Basin. Their mission is to involve stakeholders in the protection and restoration of the chemical, physical, and biological integrity of the Kootenai River Basin waters. With such a large percentage of NFS lands in the Kootenai River Basin, the KNF has an important role in working with this community group.

Chapter 1. Vision

Introduction

The vision provides direction for management of the Kootenai National Forest and is an integration of the Forest Service mission statement, Forest and national goals, trends and conditions affecting the Forest, and the best available scientific information.

Desired Condition

Desired condition statements describe the ecological, economic, and social conditions desired to exist in the future. The desired condition statements are written in present tense; however, the desired condition for some resources may currently exist, or for other resources may take many decades to reach. The Forest may need to make adjustments in the desired conditions if monitoring results indicate they are not achievable in the long term or if there is a disparity in what the Forest is accomplishing. Budget levels are an important factor in moving towards the desired conditions. The objectives in Chapter 2 identify what the Forest believes it can accomplish over the next 15 years (the life of the Plan). Desired conditions are aspirational in nature; they are not final decisions or commitments to action. The vision is expressed through three levels of desired conditions: Forestwide, geographic areas, and management areas.

Forestwide Desired Conditions

Forestwide desired conditions apply across the entire KNF. Each Forestwide desired condition contributes to the achievement of agency and Forestwide goals. The KNF intends to move toward Forestwide desired conditions over the life of the Plan (15 years) even though not all the desired conditions may be achieved for many decades. The “Forestwide Desired Conditions by Sustainability Topic” section provides a description of the desired condition, which will provide context and scale (temporal); and is followed by a list of associated monitoring questions. Monitoring questions present how the Forest intends to measure or track its progress toward the desired condition. A separate monitoring guide will describe each monitoring item in more detail.

Geographic Area (GA) Desired Conditions

While the Forestwide desired conditions describe trends that we would expect to see over the Forest, we recognize that individual places across the KNF have their own distinct characteristics and conditions. These areas, which are referred to as “geographic areas”, have desired conditions that are specific to an area, such as a river basin or valley, define a landscape that people associate with, and reflect community values and local conditions within that area. They do not substitute for or repeat Forestwide desired conditions. Identifying these areas gives us the opportunity to fine-tune our Forestwide management to better respond to local conditions and situations.

The KNF is divided into seven geographic areas (see map of the geographic areas in the KNF on page 1-36). This section includes maps, descriptions, and desired conditions.

Management Area (MA) Desired Conditions

Management area desired conditions are specific to areas across the Forest that have similar management needs and desired conditions. They contain suitability determinations, indicating the general suitability of management activities and uses to achieve their desired conditions. These desired conditions are found in Chapter 2, starting on page 2-7.

Forestwide Desired Conditions by Sustainability Topics

Access and Recreation Desired Condition

The KNF's diverse landscape offers a variety of settings for a broad range of recreational opportunities. These landscapes include primitive settings where there are opportunities for solitude and personal challenge. Less primitive, more modified settings provide opportunities for social interaction and greater comfort. Local communities, partnerships, and volunteers continue to be involved and benefit from their roles in providing recreational opportunities. Recreational activities continue to contribute to sustainability of the social and economic systems of local communities.

Recreation sites and use areas provide a quality recreation experience. A variety of safe, efficient, and environmentally responsible developed recreation experiences and opportunities are available. Developed recreation facilities are maintained. They are upgraded as necessary and as funds become available. Dispersed camping opportunities are available for a wide variety of users. However, dispersed camping may be less available in some areas because of resource concerns, activity conflicts, or over-use.

The scenic resources of the KNF complement the recreation settings and experiences while reflecting healthy and sustainable ecosystem conditions. The desired condition for scenery is reflected in the Scenic Integrity Objective maps.

Opportunities such as hunting, fishing, wildlife viewing, and bird watching are available for a wide variety of users. The Forest provides habitat for desired big game populations, fish, birds, and non-game species.

A variety of motorized and nonmotorized winter and summer recreation opportunities are provided. Organized motorized recreation events are planned and managed and, where appropriate, existing trails are redesigned to accommodate OHV use. Adequate parking, turnaround areas, and trailheads are available and maintained. Trail maintenance is performed to provide adequate corridors for the given users (saddle stock, snowmobiles, OHV users, hikers, etc.). Opportunities for seasonal activities such as berry picking and firewood gathering are available.

Solitude and nonmotorized experiences are available in wilderness and backcountry settings. Backcountry nonmotorized areas are of sufficient size and configuration to minimize disturbance from other uses. Nonmotorized use is available in more developed areas, but provides less opportunity for solitude and challenge than in the backcountry. A nonmotorized trail network is maintained, accessing locations of interest for a variety of users.

Backcountry motorized experiences during both winter and summer seasons are available. The more developed areas also provide motorized winter and summer experiences that are somewhat less challenging. The motorized trail and road network is maintained.

A minimum transportation system is in place and provides safe and efficient public and agency access to the Forest. It is efficiently maintained, environmentally compatible, and responsive to public needs and desires. Impacts from authorized roads and trails are reduced, and the development of unauthorized roads and trails is curtailed. The system provides a mix of road and trail access for recreation, special uses, other forest resource management, and fire protection

activities. User experience, safety, and resource protection is addressed in travel management planning, design, and operation.

Travel management planning is complete and a system of open roads, trails, and areas are designated for motorized use by vehicle class and season of use. Accurate signing is in place and motorized vehicle use maps are available. User conflicts are reduced. Loop systems are developed (both road and trail) where appropriate. Community involvement is promoted and user awareness programs (educational and informational) enhance the recreational experience. Partnerships and user group participation in evaluation, planning, and maintenance programs are sought. There is access for people with disabilities. Easements are obtained to help provide access to NFS lands.

The transportation system is interconnected to state, county, local public, and other federal roads and trails through collaborative travel management planning. The transportation system provides reasonable access to facilities, private inholdings, and infrastructure (i.e., buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).

Access and Recreation Monitoring Questions

1. Have appropriate management actions been taken on recreation sites where use is at or near capacity or where there are resource concerns?
2. To what level have Forest roads been maintained to provide access?
3. What motorized and nonmotorized winter recreation opportunities have been provided?
4. What motorized and nonmotorized summer recreation opportunities have been provided?

Inventoried Roadless Areas Desired Condition

Inventoried Roadless Areas (IRAs) were evaluated to identify key issues and attributes for future management. The evaluation considered wilderness characteristics, resource needs, social factors, and other ecological values. These attributes were considered in the management area allocation for all IRAs. The evaluations and the IRA maps that were used are found in Appendix K of the Comprehensive Evaluation Report (CER).

Upon plan approval, management of IRAs is determined by the Land Management Plan. The management area (MA), and associated desired conditions and uses, will be what identifies future conditions and possible activities. Approximately 63 percent of the acreage in IRAs is allocated to backcountry (MA5). An additional 19 percent of IRAs is allocated to wildlands (MA1d). The rest of the IRAs are allocated to a variety of MAs, most of which emphasize wilderness and undeveloped values such as wilderness study areas (MA1c), wild and scenic rivers (MA2b), and special interest areas (MA3). Less than 5 percent of IRAs are allocated to general forest (MA6). The specific desired condition for each of these management areas is found in Chapter 2. The allocation of each IRA to specific MAs is found in Appendix K of the CER.

Desired Condition

IRA management is in accordance with the desired conditions of the management area (MA) to which the IRA was allocated. See Chapter 2 for descriptions of each of these management areas including desired conditions.

Vegetation Desired Condition

This section is the desired condition for vegetation, both forestwide and by biophysical setting, rare plant species, and noxious weeds.

Because of the large acreage of the KNF, and the relatively small proportion of the area that is subject to annual management, progress towards vegetation desired condition is meaningfully measured at the scale of multiple decades. By trending towards these conditions, the capacity to support a balanced, integrated, and adaptive biological system is increased and ecological diversity, productive potential, and ecological integrity are sustained.

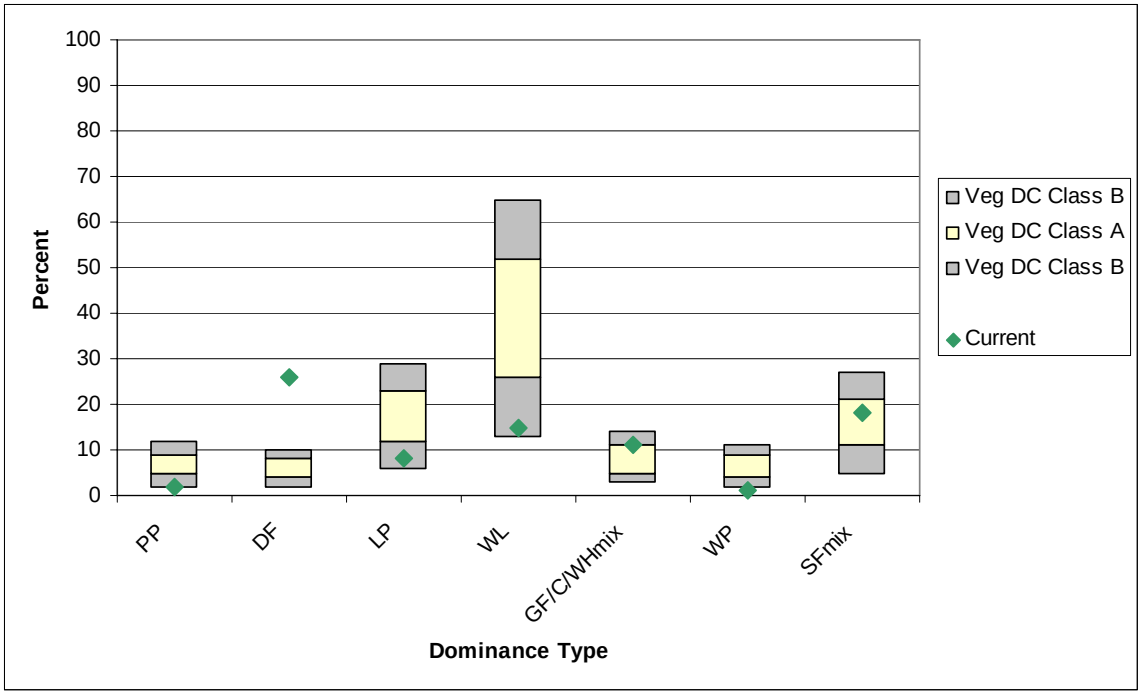
Ecosystem characteristics vary at the Forest level and by biophysical setting. Forest level descriptions provide understanding and context at a larger scale while biophysical settings provide descriptions based on influences at a smaller scale. Both levels are presented in this desired condition.

Forestwide Vegetation Desired Condition

The range of variation under historical disturbance regimes is estimated for species dominance types and size classes. These two characteristics were selected because they describe forest composition and structure, and reflect the processes important to the variation in ecosystem diversity in the Forest. The range of variation is defined using three classes: Class A, Class B, and Class C (see the glossary). Class A is defined as +/- 33 percent, Class B as +/- 34-67 percent, and Class C as +/- greater than 67 percent of the mean historic condition. Figure 2 and Figure 3 (below) display the range of variation and current vegetation composition for dominance type and size class Forestwide. Class C is not labeled on the Figures, but is represented by any percentages above or below the Class B bars.

The desired condition for these species dominance types and size classes is to trend toward Class A of these ranges. In summary, the following describes the forestwide vegetation desired conditions (reference Figures 2, 3 and 4):

- Increase the amount of forests dominated by shade-intolerant, fire-adapted, relatively drought-tolerant, potentially long-lived tree species (western white pine, ponderosa pine, western larch, and whitebark pine) (Figure 2);
- Decrease the amount of forests dominated by shade-tolerant, fire-intolerant, and drought-intolerant tree species (grand fir, western hemlock, western redcedar); and also decrease the amount of forests dominated by shorter-lived shade intolerant tree species (primarily Douglas-fir) (Figure 2);
- Increase the amount of forests within the seedling/sapling, large size class, and also old growth forests (Green and others 1992, corrected 02/2005) (Figure 4);
- Decrease the amount of forests within the small and medium size classes (Figure 3);
- Increase patch size in the large size class and also old growth forests, decreasing the fragmentation of these forests;
- Increase patch size in the seedling/sapling size class, except for areas where recent wildfires created large patches of this type;



PP = ponderosa pine; DF = Douglas-fir; LP = lodgepole pine; WL = western larch; GF/C/WHmix = grand fir/cedar/ western hemlock mix; WP = white pine; and SFmix = subalpine fir mix.

Figure 2. Vegetation desired condition and current vegetation for dominance type Forestwide

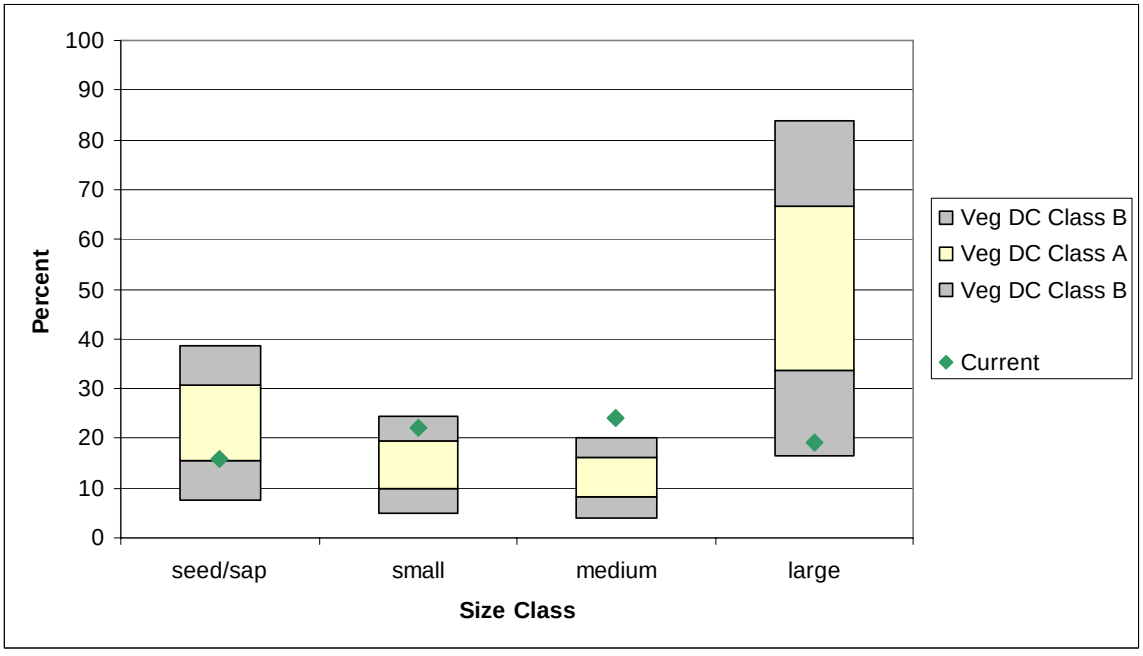


Figure 3. Vegetation desired condition and current vegetation for size class Forestwide.

- The range of patch sizes is increased for the forest in the seedling/sapling, large size class and also old growth forests;
- Decrease patch size, thereby decreasing the homogeneity of forests in the medium size classes;
- Decrease the contrast between different forest size classes patches (hard edges), especially adjacent to forests that are dominated by medium and large size trees, and old growth forests (Green and others 1992, corrected 02/2005).

The desired conditions for other forest characteristics are based upon the knowledge inferred from historical disturbance regimes and our understanding on what would be produced. The desired conditions are designed to sustain the productivity and diversity of the ecosystem. This includes desired conditions for such characteristics as dead wood, soil productivity, amount and distribution of canopy layers, landscape characteristics such as patch size, and tree densities during various successional structural stages.

Disturbance Forestwide Desired Condition

The frequency of insect outbreaks decreases. Bark beetles trend toward levels consistent with Class A of the desired vegetation condition. Outbreaks of certain insects, such as Douglas-fir bark beetle and fir engraver are decreased from current levels. Bark beetles associated with pine species increase to endemic levels as medium to large western white pine, ponderosa pine, and whitebark pine abundance increases, with beetle populations limited by low to moderate stand densities. Mountain pine beetle outbreaks occur in lodgepole pine forests, but the outbreaks are spatially smaller, more widely distributed over time, and less intense than those that occurred in the late 20th and early 21st centuries.

Occurrence of forest diseases shifts as the forest vegetation trends toward Class A. The impacts of most root diseases are reduced as stands are thinned of susceptible trees. Defoliators (i.e., western spruce budworm) associated with shade-tolerant species decrease. Dwarf mistletoe is part of ecosystems, providing habitat and a food source for wildlife. A combination of landscape patterns, tree species diversity and within stand structural conditions limits spread, intensity, and population levels of these parasitic plants. Blister-rust-induced mortality is reduced as the abundance of resistant western white pine and whitebark pine increases.

Fire (including wildland fire use and prescribed fire for resource benefits) contributes to the Forestwide desired vegetation conditions for size class and dominance types, snags, and coarse woody debris. Prescribed fire effects assist in developing desired conditions for forest floor depths of duff and mineral soil exposure.

Fire regime condition class (FRCC) is improved from condition classes 3 and 2 (high and moderate departure from conditions associated with the historical fire regime) to condition class 1 (low or no departure).

Old Growth Forestwide Desired Condition

During most of the 1900s, old growth forests were viewed as an important contributor of high quality wood products. Over time, national forest management changed to recognize that old growth forests are an important component of ecosystem diversity and represent a distinct successional structural stage. Beginning in the early 1990s, definitions and protocols were developed to inventory and monitor old growth forests, and measures were put in place to conserve this important resource.

Old growth forests provide habitat for a portion of the life histories of many wildlife species. Additionally, some plant species are more likely to be found in old growth and late-seral forests than in other successional stages.

Old growth trends toward Class A (Figure 4). Trending toward both the vegetation desired conditions (Figure 2 and Figure 3) and old growth desired conditions (Figure 4) provide for the full range of ecosystem diversity, including habitats for those species associated with late-seral structures, climax community types, and old growth forests. Wildlife richness and species richness for other life forms is high, particularly for arboreal lichens, saprophytes, and various forms of fungus and rots.

Figure 4 (see below) displays the range of variation and current levels of old growth by biophysical setting and Forestwide. Class C is not labeled on the graphs, but is represented by percentages above or below the Class B bars.

Over the life of the Plan, there is an increase in old growth by approximately 1 percent (considering forested lands) on the Forest managed for old growth in each of the biophysical settings. This increase is moving the Forest towards providing habitat conditions (ecosystem diversity) for the majority of the species that are associated with old growth. Maintaining or restoring the key elements (Green and others, corrected 02/2005) that make up old growth, (snags, down wood, decadence, etc.) provides habitat conditions to meet the specific species diversity needs of many federally listed threatened and endangered species, species of concern, and species of interest that are associated with old growth (also see Wildlife Desired Condition "Old Growth Desired Condition" section on page 1-23).

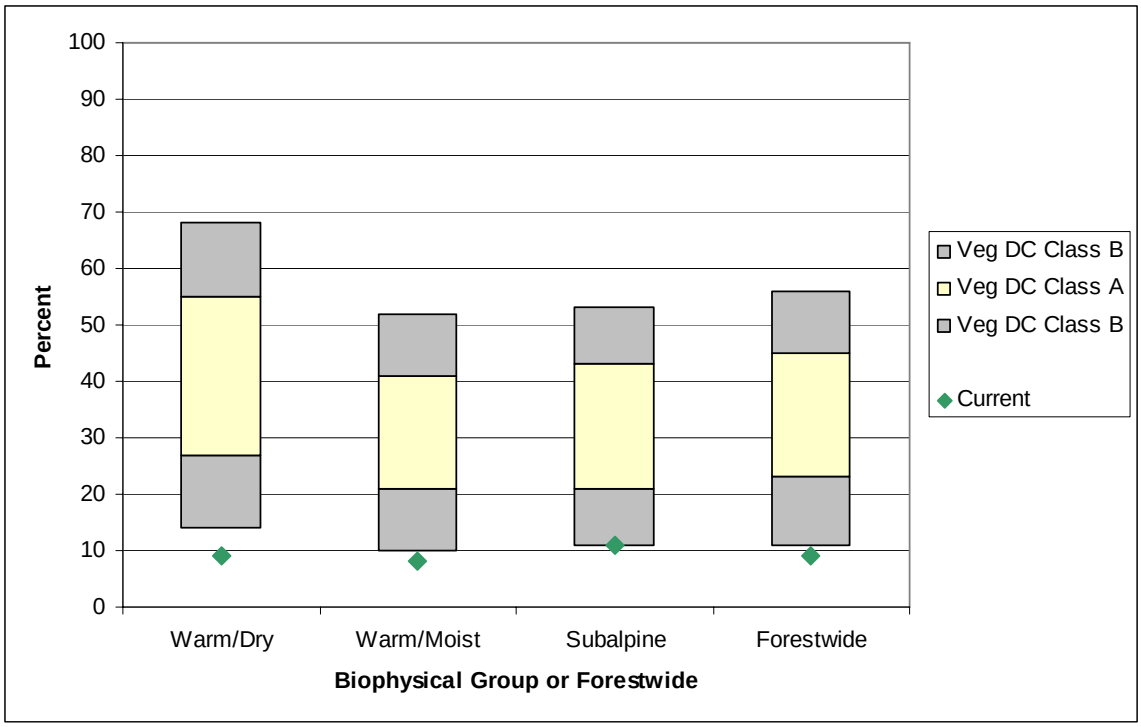


Figure 4. Old growth desired condition and current old growth by biophysical group and Forestwide

Old growth is well distributed. Connectivity increases and provides for dispersal and genetic exchange. Larger stands of old growth (up to several hundred acres or more) provide for a greater diversity of plant and animal habitats and species. The size of many existing old growth patches (especially those less than 50 acres) is increased, reducing the impacts of edge effect, increasing interior habitat, and increasing the amount of suitable habitat for associated species.

Old growth forests have a reduced risk from overcrowding, insect and disease infestations or other conditions beyond those normally associated with the historic disturbance regime (e.g., Douglas-fir encroachment in historically open ponderosa pine stands) and are restored to more natural conditions (e.g., reduced stand density). Restoration activities (including prescribed burning, thinning, and timber harvest) protect key elements (including snags, down wood, decadence, and overstory components) of old growth while improving forest health. Old growth-associated species are protected during management activities. The quality and integrity of existing old growth stands is maintained or improved, and ecosystem and species diversity is maintained or improved over the long term. Vegetation management activities (timber harvest and fuel reduction activities) adjacent to old growth are designed to minimize edge effects, including windthrow risk and edge mortality that would cause loss to adjacent old growth patches. This may include a combination of retaining medium to large trees in sufficient numbers, and modifying the timing and intensity of management activities such as prescribed burning, and the juxtaposition of adjacent activity areas to old growth patches.

The impacts of roads on old growth are minimized (such as fragmenting habitats, loss of snags and down wood) to maintain important habitat components. Accelerating the development of old growth characteristics on the Forest that are not currently considered old growth, ensures the maintenance of old growth forests.

Down Wood (Coarse Woody Debris) Forestwide Desired Condition

Dead trees (standing and down) and other down woody materials are critical components of all vegetation communities and a fundamental feature of healthy forests that have developed with historical disturbance regimes. Coarse woody debris is generally considered those pieces greater than three inches in diameter and more than sic feet in length, but includes a variety of sizes, species, lengths, and decay classes. Coarse woody debris in various stages of decay serves many important ecological functions, including nutrient cycling, erosion control, maintenance of soil productivity, and wildlife habitats. Larger size pieces (tree boles) are considered to be very important as they tend to be more stable, persist longer in the environment, and provide specific habitat needs for several species of wildlife (see Wildlife Desired Condition "Snags and Down Wood Desired Condition" section on page 1-22). Dead trees also provide firewood for the high demand that occurs in the Forest.

Maintaining coarse woody debris in the amounts (tons per acre) displayed in Table 1 ensures that enough organic matter is left to maintain long-term forest productivity (including soil productivity) when timber harvest, site preparation, and fuels treatments have been completed. The amount of down wood retained is averaged over the treatment area. Leaving a wide range of down wood including large logs where they occur encourages a diversity of wildlife species while also providing for soil productivity. Large logs left on site are considered part of the total contribution of the desired tons/acres of down wood (also see Wildlife Desired Condition "Snags and Down Wood Desired Condition" section on page 1-22).

Table 1. Recommended amount of coarse woody debris to leave after timber harvesting and fuel treatments to maintain forest productivity, meet wildlife needs, and provide an acceptable level of fire risk (Graham et al. 1994, Brown et al. 2003)

Biophysical Setting	Tons/acre (TA) >3" in diameter	Log numbers and sizes to include (where they occur). Leave the largest size material available on site.		
		Number of pieces/acre (PA)	Minimum diameter	Average length (feet)
Warm/Dry (VRUs 1-3)	For drier sites (VRUs 1 & 2) Douglas-fir/ninebark 5-9 TA; (VRU 2) Douglas-fir/ pinegrass 12-25 TA; (VRU 3) 10-20 TA	6-14 PA	12" - with at least 2 pieces >20"	20 feet- with minimum 12 feet
Warm/Moist (VRUs 4-6)	15-30 TA	20-30 PA	15"- with at least 10 pieces >20"	35 feet - with minimum 12 feet
Subalpine (VRUs 7-11)	VRUs 7 & 8: 12-25 TA VRUs 9-11: 7-15 TA, except Subalpine fir/beargrass 11-23 TA	VRU 7: 20-30 PA VRU 8-11: 15-20 PA	VRU 7: 15" – with at least 10 pieces >20" VRU 8-11: 10"	VRU 7: 35 feet -with minimum 12 feet. VRUs 8-11: 30 feet- with minimum 12 feet.

Coarse woody debris amounts vary by vegetation response unit (VRU) within biophysical settings. These amounts are not evenly distributed on every acre but vary across the treatment unit with topographical features, slope, aspect, habitat type, and successional structural stage. These amounts meet soil productivity, wildlife, watershed, and fire risk concerns over most areas. To meet safety concerns and reduce the risk of extreme wildfire, the amount of down wood after vegetation management activities in developed recreation sites, in areas adjacent to the community protection zone, and in other areas of safety concern (such as roads that provide escape routes) is reduced and may not meet historic or desired conditions for soils or wildlife.

Higher amounts of coarse woody debris are acceptable where larger piece sizes predominate. Retaining live and standing dead trees after vegetation management activities provide for future recruitment of coarse woody debris.

Other down woody materials, such as tops and limbs, are important to the cycling of several nutrients, including potassium. Retaining tops and limbs for one winter season between timber harvest and site preparation and/or fuel management activities maximizes leaching of nutrients into the soil, particularly on those soils deficient in potassium. On NFS lands within the community protection zones (see "Fire Desired Condition" on page 1-19), fire risks are balanced with soil nutrition mitigations.

Landscape Pattern Forestwide Desired Condition

The combination of management actions, natural disturbances, and plant succession contributes to the desired overall landscape pattern. Average patch size, the variance in different size patches, and interior forest conditions are increased for both seedling/sapling and large size classes.

Vegetation Desired Condition by Biophysical Setting

Vegetation response to disturbance and existing and historic conditions vary by ecological or biophysical setting. Each biophysical setting has distinctive potential natural communities: soils,

hydrologic function, landform and topography, climate, air quality, and natural processes (nutrient and biomass cycling, succession, productivity, and fire regimes). Each setting also includes moisture and temperature gradients, resulting in growing conditions that are more similar within, rather than between each setting. These characteristics have been mapped and identified as vegetation response units (VRUs) in the Forest. The VRUs range from VRU 1, which is a very warm and dry setting to VRU 11, which is cold. For the Land Management Plan, these 11 classes have been grouped into three broad biophysical settings:

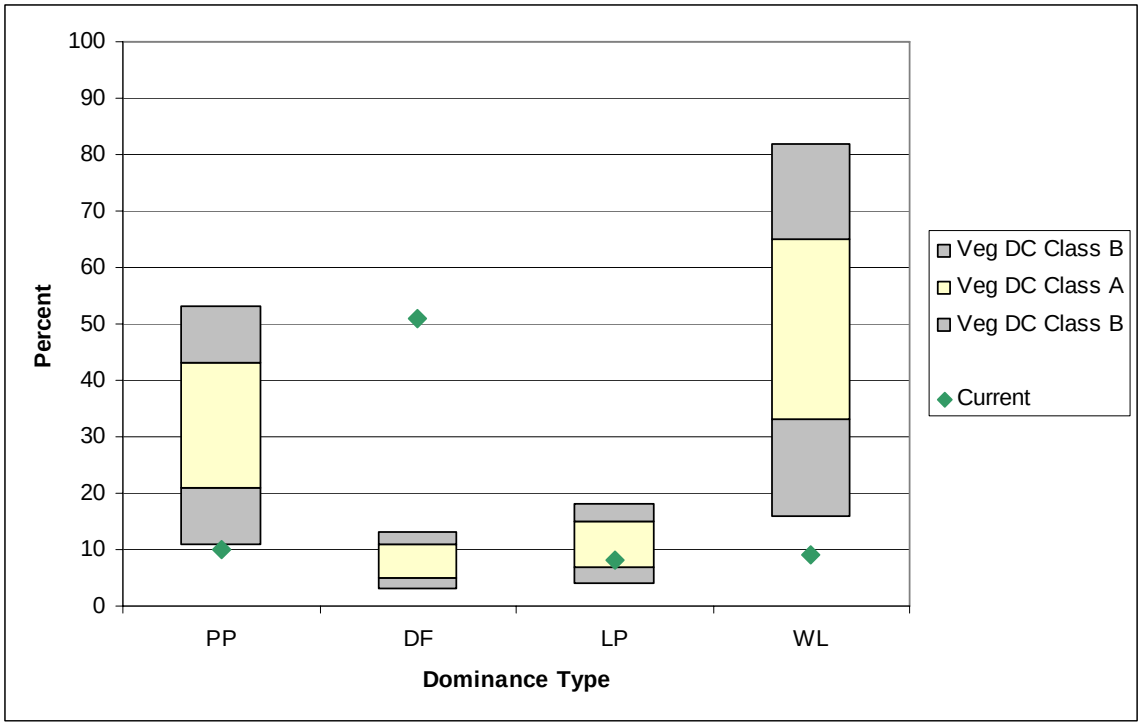
- **Warm/Dry** – This setting includes the warmest and driest forest sites that support forest vegetation, usually at low elevations or mid-elevations on southerly aspects. This setting is defined by VRUs 1-3. This biophysical setting is 22 percent of the NFS forested lands.
- **Warm/Moist** – This setting includes moist forest sites, usually low to mid-elevation sites, and includes stream bottoms and adjacent benches and toe-slopes. This setting is the most productive, with favorable soil moisture and temperature regimes that favor abundant plant growth. This setting is defined by VRUs 4-6. This biophysical setting is 37 percent of the NFS forested lands.
- **Subalpine** – This setting includes the moist, lower subalpine forest to the cool or cold, dry sites between forest and alpine tundra. The moist end of this setting is common on northwest to east-facing slopes, riparian, and poorly drained subalpine sites. The cool to cold dry sites occur at higher elevations and typically have a short growing season. This setting is defined by VRUs 7-11. This biophysical setting is 41 percent of the NFS forested lands.

A map of these three biophysical settings can be found in the Comprehensive Evaluation Report (CER). Because of variability in ecological composition, the desired condition for vegetation varies by biophysical setting. Following is a description of the desired condition for vegetation by biophysical settings:

Vegetation Desired Condition for Warm/Dry Setting (VRUs 1-3)

The desired condition for forest dominance type and size class for the warm/dry biophysical setting is displayed in Figures 5 and 6, respectively.

Desired Attributes: On the driest sites (e.g., steep, southerly/westerly aspects, VRU 1), characteristics resemble frequent, low-severity, fire/disturbance intervals, less than 50 years. Open-grown, park-like stands that contain an abundance of ponderosa pine, with lesser amounts of Douglas-fir are maintained. Bark beetle outbreaks are uncommon in these open stands, and root disease mortality is low. These stands are usually multi-aged, low density, with canopy cover usually less than 30 percent and rarely reaching 50 percent. (Multi-aged, low-density stands contain a sparse number of tree seedlings, usually no more than 50-100 established tree seedlings; with 30-40 large mature trees per acre, irregular spaced including groups and gaps in the Forest.) Low amounts of down wood and snags are present.



PP = ponderosa pine; DF = Douglas-fir; LP = lodgepole pine; and WL = western larch

Figure 5. Vegetation desired condition and current vegetation for dominance type for the warm/dry biophysical setting

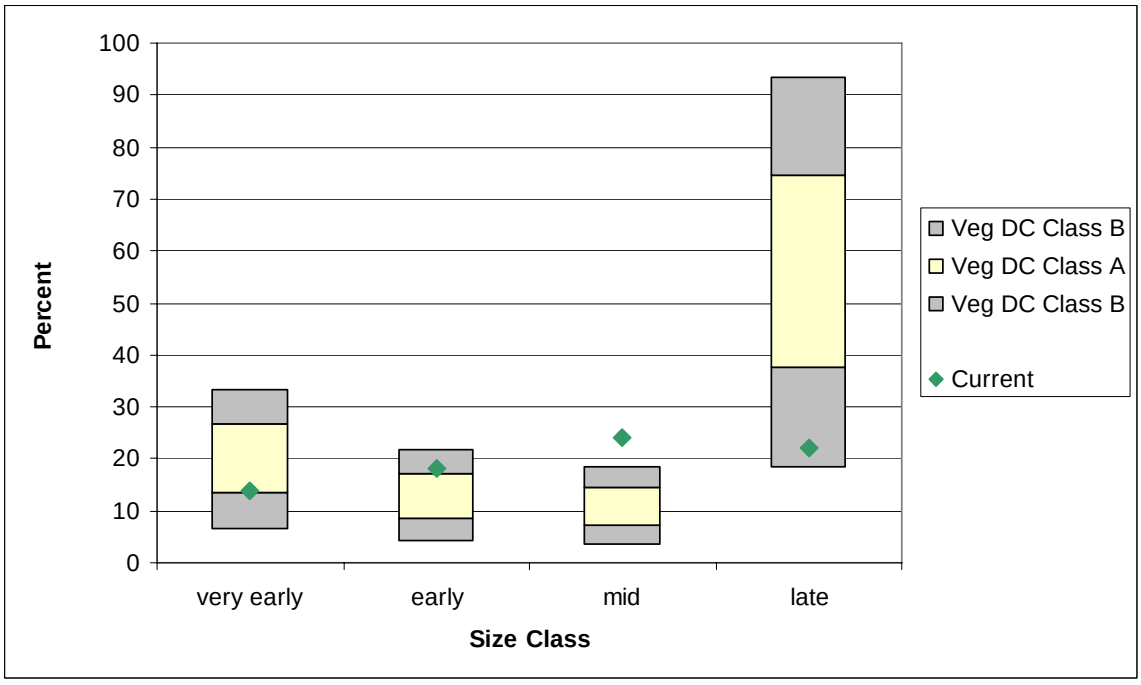


Figure 6. Vegetation desired condition and current vegetation for size class for the warm/dry biophysical setting

Where soil moisture is more plentiful, fire frequencies and severities typically become more variable and include low and mixed-severity and some occasional stand-replacing fires. At least 100-150 seedlings per acre are established after a regeneration event. At maturity, frequently 40-80 trees per acre exist, with canopy coverage often exceeding 50 percent. Species dominance varies due to soil moisture/solar radiation relationships, with Douglas-fir/western larch and ponderosa pine stands more prevalent on the moist end, and ponderosa pine and Douglas-fir stands occurring on drier, southerly aspects.

There is a variety of forest age-class structures including: 1) multi-aged, which are similar age classes usually occurring in small one to three acre patches, or intermingled age classes throughout an area; 2) two-aged, and less common, which seldom exceed 10 percent; and 3) single-age forests, which usually correlate with the most moist sites, at the upper elevation and/or northerly aspects of this biophysical setting, VRU 3. These relatively moist sites have more abundant regeneration after disturbance (usually 150-200 trees per acre) and have higher densities of trees at maturity, sometimes exceeding 100 trees per acre.

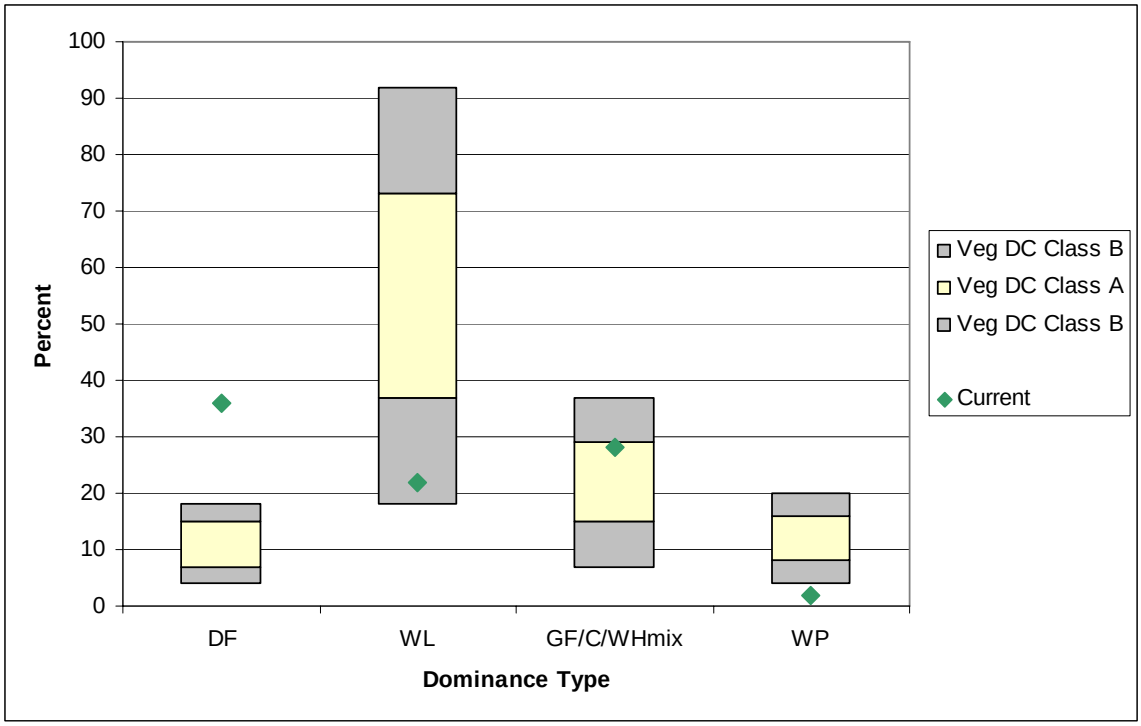
Landscape Pattern: The pattern for these landscapes is a mosaic, with small patches that have either sparse or more numerous seedlings and saplings, and small or medium-size trees (depending on the moisture availability of the site and the age of the patch) inter-mixed within larger patches containing mostly medium to large-size trees.

Vegetation Desired Condition for Warm/Moist Setting (VRUs 4-6)

The desired condition for forest dominance type and size class for the warm/moist biophysical setting is displayed in Figures 7 and 8, respectively.

Desired Attributes: This setting has characteristics that resemble infrequent, mixed-severity and stand-replacing fire/disturbance intervals (mean fire interval of 200 years or more), although low-severity ground fires may also occur, especially in the drier environments. Because of the relatively long intervals between major disturbances and the high productivity of these sites, numerous successional pathways exist that include a wide variety of tree species and densities, vertical canopy arrangements, and snag and down wood conditions. The wettest sites have forest conditions that are produced by extremely long intervals between stand-replacing events.

On drier aspects at mid-elevations (grand fir habitat types, VRU 4), fire frequency is shorter, with an average range of 50-100 years when considering all types of fire severities. Early-seral tree species, such as western larch and western white pine, and in some cases Douglas-fir (where root disease risk is low), dominate throughout all successional structural stages. Other tree species occur in smaller quantities, including grand fir, and in colder locations, Engelmann spruce and lodgepole pine. On the extreme dry end on warm exposures, ponderosa pine is a seral component. Due to slower initial growth rates, grand fir, and Douglas-fir (Engelmann spruce on cold sites) often form a subordinate canopy layer during early stages of succession. Differentiation of canopy strata may occur during forest development, creating multi-storied stands, even within a single age-class of trees.



DF = Douglas-fir; WL = western larch; GF/C/WHmix = grand fir/cedar/western hemlock mix; WP = white pine

Figure 7. Vegetation desired condition and current vegetation for dominance type for the warm/moist biophysical setting

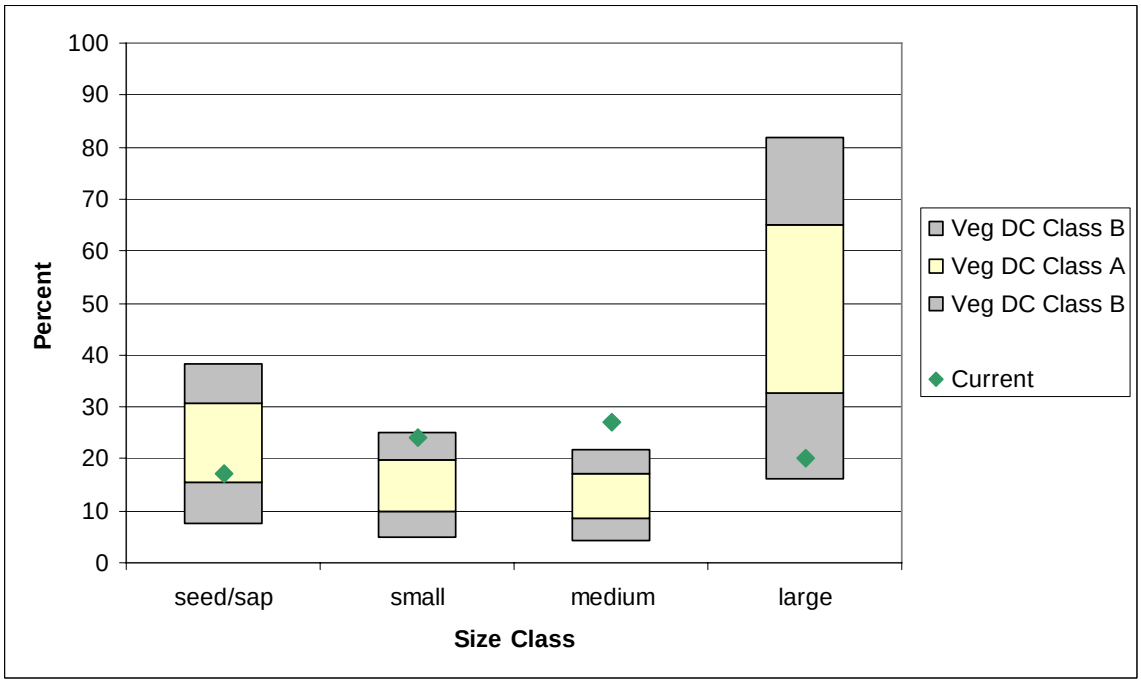


Figure 8. Vegetation desired condition and current vegetation for size class for the warm/moist biophysical setting

Two-age class stands are also desirable, resembling mixed-severity fire conditions, usually with fire-tolerant western larch and Douglas-fir in the overstory. Multi-age classes are desired when small groups of early-seral tree species are desired (usually two-five acres in size), or during later stages of succession when more shade-tolerant trees regenerate in the understory. Desired tree numbers usually include at least 250 trees per acre of established seedlings during the early developmental stage, with 100 or more trees at maturity. The desired canopy coverage at maturity is usually greater than 60 percent.

In the moderately cool and moist uplands, forests include a mixture dominated by early-seral shade intolerants (western larch, western white pine, Douglas-fir), with seral shade tolerant species (grand fir, Engelmann spruce) and climax species forming a smaller proportion of the forest. Ponderosa pine can be desirable on western redcedar habitat types (queen cup beadlily and ginger phases) on warm exposures. Single and two-age class forests are desirable during early, middle, and late-successional structural stages. Multi-storied forests increase in desirability when forests reach maturity. Desired tree numbers usually include at least 300 trees per acre of established seedlings during the early successional structural stage, with 100-150 or more medium to large sized trees at maturity. The desired canopy coverage at maturity is usually greater than 60 percent.

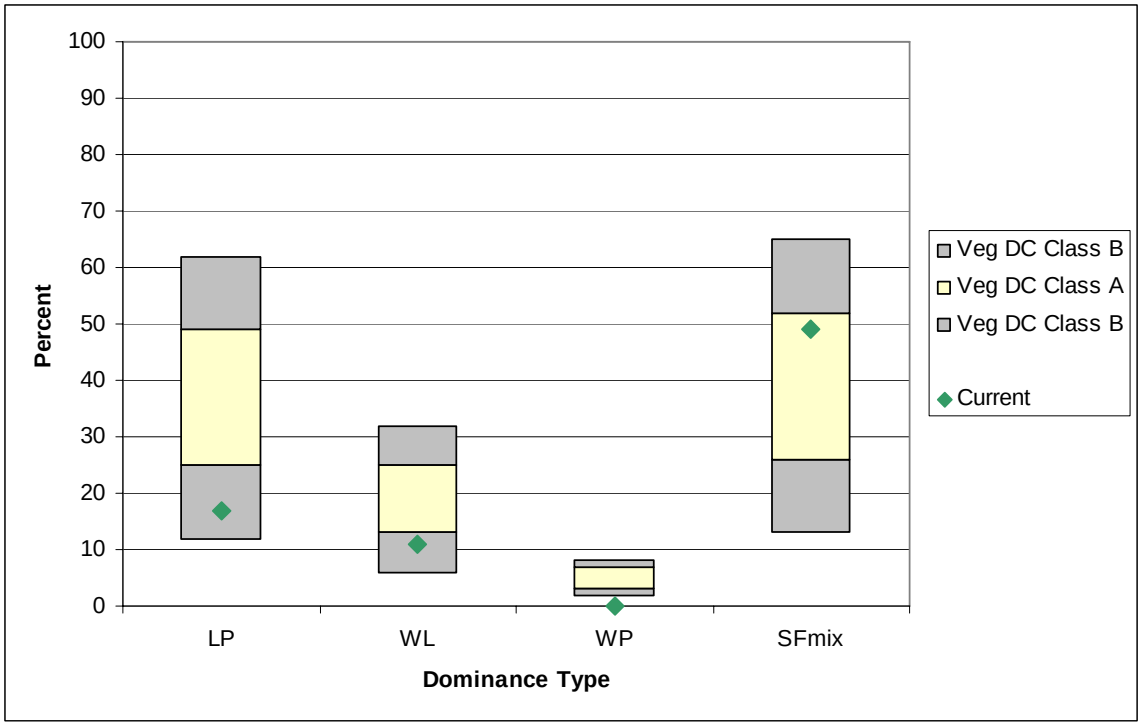
On wet sites, an abundance of large, old, mature forests occur and are often dominated by the climax western hemlock and western redcedar. These sites occur on bottomland terraces, toe-slopes and lower slope positions. Other trees that occur on these sites include both seral shade-intolerant and shade-tolerant trees; however, they are generally in less abundance than the climax species. High tree densities and canopy coverage of 70 percent or more exist through most successional structural stages. Mature stands support very large trees (often 30-50 inches in diameter), are open-grown and occasionally park-like in appearance, and are generally two- or multi-storied.

Landscape Pattern: The resulting pattern for these landscapes includes a coarse pattern, including large, distinguishable patches, with residual structural diversity and heterogeneity both within and between patches.

Vegetation Desired Condition for Subalpine Setting (VRUs 7-11)

The desired condition for forest dominance type and size class for the subalpine biophysical setting is displayed in Figure 9 and Figure 10, respectively.

Desired Attributes: On cool/moist sites, characteristics resemble fire-free intervals of 120-150 years or more, usually of mixed-severity. Western larch, western white pine, Engelmann spruce and Douglas-fir are seral dominants, while lodgepole pine dominates areas less often in colder locations. Grand fir occurs on the warmer sites. Climax species, subalpine fir and mountain hemlock, also occur on colder sites where fire-free intervals exceed the life span of lodgepole pine. Forests consist of two-aged forests (usually western larch/Douglas-fir in the overstory), and single-aged forests (seral mixed conifers, lodgepole or spruce-dominated stands). Multi-aged stands are less common, but do exist with discrete age groups (one to three acres in size), and in older forests where several canopy layers exist. Seedling stage includes at least 250 trees per acre and 80-120 trees per acre at maturity. Canopy coverage is 60 percent or more.



LP = lodgepole pine; WL = western larch; WP = white pine; SF mix = subalpine fir mix

Figure 9. Vegetation desired condition and current vegetation for dominance type for the subalpine biophysical setting

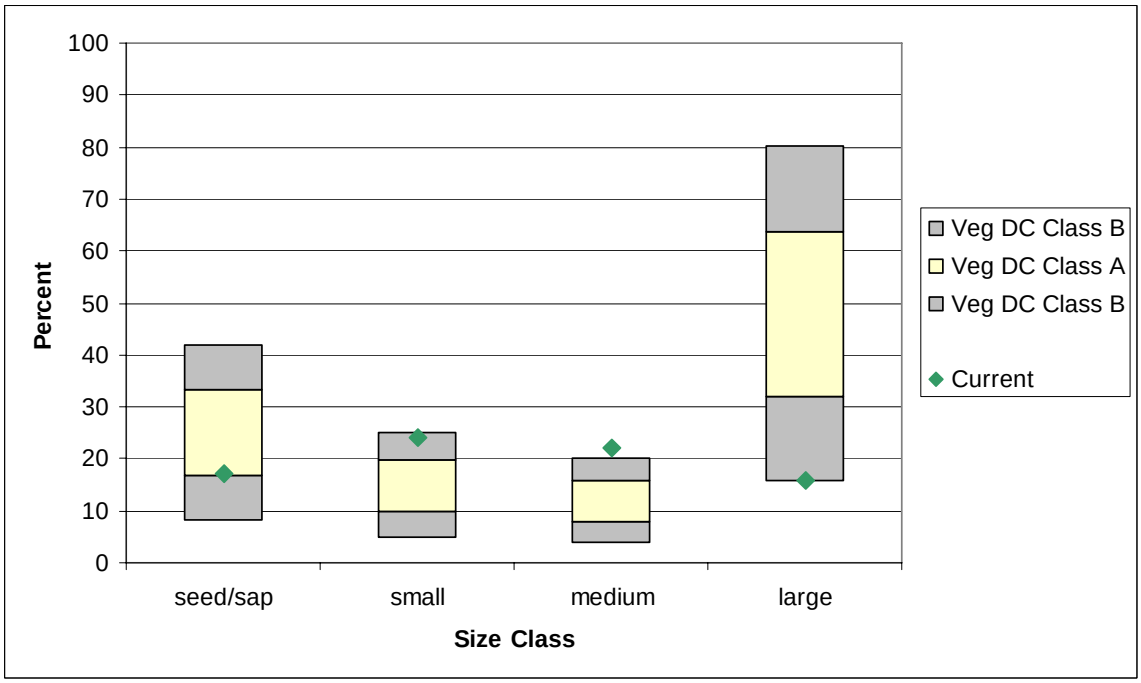


Figure 10. Vegetation desired condition and current vegetation for size class for the subalpine biophysical group

On wet sites, seasonally saturated soils occur on toe-slope positions and as riparian stringers. Engelmann spruce and subalpine fir dominate. Western larch, western white pine, and lodgepole pine are desirable at lower elevations.

On dry sites, characteristics resemble fire-free intervals of 50-130 years, consisting of both low to mixed severity. Desirable species are western larch, lodgepole pine and Douglas-fir in early successional structural stages, succeeding to subalpine fir and Engelmann spruce as forests age.

On high-elevation sites, whitebark pine is a dominant tree in the coldest and driest environments. Forests are low to moderate in density, and have conditions that would have been supported by mixed-severity fires. Other desirable trees include lodgepole pine, mountain hemlock, subalpine fir, and Engelmann spruce. Canopy coverage is generally less than 80 percent at maturity, much less at timberline sites. Forest conditions include numerous small openings (one-half to three acres in size) that are available for whitebark pine regeneration. Multi-aged stands are desirable, predominately occurring in discrete age-class groups. At the seedling stage, the desirable numbers include at least 100 trees per acre of whitebark pine that have some blister rust resistance, with 30-80 trees per acre at maturity. At the extreme timberline sites, trees grow in clusters.

Landscape Pattern: The resulting pattern for these landscapes includes a variety of patch sizes, with residual structural diversity and heterogeneity both within and between patches.

Rare Plant Species Desired Condition

Habitat for plant species listed under the Endangered Species Act (ESA) improves on NFS lands, which helps trend toward species recovery or delisting. Habitats are managed in a manner consistent with established and approved recovery plans, management plans, biological opinions, conservation strategies, conservation assessments, and other appropriate (e.g., scientifically credible, peer reviewed) direction. Habitat conditions are provided so that species listed as threatened or endangered under the ESA trend toward recovery or are delisted.

Threatened Plant Species

Water Howellia Desired Condition - Small vernal (appearing in the spring), freshwater glacial ponds and oxbow sloughs remain unimpaired.

Spalding's Campion (a.k.a Spalding's Catchfly) Desired Condition – Open grasslands with rough fescue or bluebunch wheatgrass associations on deep soils in valleys and foothills are maintained and free from conifer and noxious weed encroachment.

Species of Concern and Species of Interest Desired Condition

Habitat is available to sustain populations of species of concern and species of interest. A greater understanding of these plants, including their habitat requirements and effects from human activities is acquired. Populations of plant species of concern and species of interest are not isolated by management activities and populations persist and expand.

Noxious Weeds and Invasive Plant Species Desired Condition

New invasive plant species and noxious weeds are not introduced and existing populations are contained. Integrated pest management approaches are used, including best management practices

that limit introduction, intensification and spread due to management activities. Areas requiring revegetation use locally adapted, native plant species where appropriate. Agreements with cooperative weed management areas assist in noxious weed and invasive plants control across jurisdictional boundaries.

Vegetation Monitoring Questions

1. Have management activities increased the abundance of early seral, shade-intolerant dominance types as projected by the Plan?
2. Have management activities met Plan objectives and trended towards desired conditions for old growth?
3. Have management activities trended towards Plan desired conditions for threatened plant species?
4. Have management activities trended towards Plan desired conditions and preclude listing of plant species of concern and species of interest?
5. Have management activities met Plan objectives and trended towards desired conditions for management of noxious weeds?
6. Have management activities met Plan objectives to improve forest health?
7. Have management activities met Plan objectives to improve condition class?

Timber Desired Condition

As a result of trending towards the desired conditions for vegetation, timber production from NFS lands is sustainable over the life of the Plan and into the future, providing timber products for current and future generations. Timber harvest is used as a tool to achieve many objectives beyond the production of wood products. This includes the maintenance or improvement of forest health; reduced fire risk; improved wildlife habitat; and improved watershed conditions. Timber harvest is also used to restore vegetation conditions such as increases in ponderosa pine, western white pine and western larch forests, with similar number of canopy layers, patch sizes, and tree densities that are consistent with historical disturbance regimes. Extended rotation lengths (150-200 years or more) are used to create late seral structures and old growth forests to meet the desired conditions for old growth.

Production of timber from NFS lands is also one of the contributors to an economically viable forest products industry. A sustainable supply of forest products is offered, providing wood products for the nation and employment opportunities to local communities. This sustainable supply of wood products is a result of management that moves the Forest towards the desired condition for vegetation. Where consistent with other resource desired conditions, salvage of dead and dying trees captures as much of the economic value of the wood as possible, while meeting resource protection requirements. An integrated approach to forest management achieves the vegetation objectives through a mixture of timber sale contract methods and product sizes.

Lands classified as suitable for timber production have a regularly scheduled timber harvest program. Silvicultural prescriptions use the knowledge from disturbance regimes to develop a variety of harvest methods (including thinnings, other partial cuts and regeneration harvests), cutting cycles and rotation lengths to produce wood products while sustaining the productivity and diversity of the ecosystem. These lands are restocked as indicated in Table 2. Numbers in this table are an estimate of trees per acre and stocking percentage required to meet an average level of timber yield. Tree numbers and stocking percentages are displayed after five years for a final

regeneration harvest. Final regeneration harvest is defined in FSH 1909.12, 60.5, as "timber harvest designed to regenerate a timber stand or release a regenerated stand. This includes clearcut, removal cut of a shelterwood or seed tree system, and selection cut." These numbers may be adjusted by a certified silviculturist who prepares a site-specific silviculture prescription for an area at the project scale to address fine-scale, site-specific desired conditions.

Table 2. Restocking by biophysical setting for lands generally suitable for timber production

Biophysical Setting	Trees Per Acre; 70% of Area Stocked
Warm/Dry	150-200
Warm/Moist	250-300
Subalpine	200-250

Lands classified as not suitable for timber production but where harvest could occur for other multiple-use purpose ("other lands") have an irregular, unscheduled timber harvest program. Restocking of these lands varies, based on the purpose and reason for the timber sale, and is determined at the project level.

Harvest flows off the national forest are sustainable. To ensure sustainability, a long term sustained yield capacity (LTSYC) has been calculated for the Forest, based on management activities to achieve desired conditions. The timber sale program quantity (TSPQ) does not exceed the LTSYC. The LTSYC for the Forest is 13.9 MMCF from all lands suitable for timber harvest, with 12.5 MMCF on lands generally suitable for timber production and 1.4 MMCF on other lands. The TSPQ from other lands exceeds LTSYC for a period of time because of the need for fuel treatments and other harvests to approach desired condition for vegetation and other resources. The TSPQ for all lands suitable for timber harvest does not exceed the LTSYC.

The amount of timber sold on the KNF has averaged 64 MMBF over the past decade and 47.3 MMBF over the last five years. The average annual TSPQ for the first decade of this Plan is at similar levels as the past decade (see "Timber Objectives" in Chapter 2, page 2-3). The TSPQ is comprised of a mixture of products that are harvested using a variety of contract methods. The majority of the TSPQ is sawtimber, but a sustainable program for non-sawlog, wood fiber exists. In response to markets, smaller diameter trees (averaging 5-10 inch diameters) are harvested to improve forest health and provide a product. This TSPQ is in response to activities designed to meet desired ecological, social, and economic conditions and to move towards the desired condition for vegetation and other resources. The estimated TSPQ may change due to project-level data, unforeseen events, or modified conditions. The ability to produce this TSPQ is dependent on budgets, project-level decisions, project appeals, and litigation.

Timber Monitoring Questions

1. How much timber has the KNF sold, by suitability class, and is it consistent with projections?
2. How much non-sawlog timber has the KNF sold?
3. What percentage of lands generally suitable for timber production has been adequately restocked within five years after final regeneration harvest?

Fire Desired Condition

Wildland fire is the primary disturbance event in the Northern Rockies that has shaped the composition, structure, and function of our landscapes and ecosystems. The full range of appropriate management responses to wildfires (including wildland fire use) is consistent with management objectives, and provides for firefighter and public safety, protection of high-value resources or resource benefits, and opportunities to reduce large fire-suppression costs.

Wildland fire is used to manage vegetation, where appropriate. Restoring fire to fire-dependent ecosystems, including prescribed burning, contributes to long-term resiliency, integrity, and sustainability of productive forest ecosystems. Social concerns, such as proximity to structures, smoke management requirements, public health, and safety, limit the scale of managed fire short of historic levels. Prescribed fire and the application of wildland fire use (based on wildland fire use plans) are essential to maintaining and/or restoring high value watersheds and maintaining and /or improving wildlife habitats. Road access is maintained for fire suppression and evacuation needs as determined by travel management planning.

Hazardous fuels are reduced. National Forest System lands within the wildland urban interface (WUI) are the highest priority for fuel treatment activities to reduce the threat of extreme fire behavior and to provide fuel conditions that allow for safe and effective initial attach, especially within the community protection zone as defined and characterized in county community wildfire protection plans and the KNF fire management plan. Wildfires within the WUI are suppressed unless other appropriate management responses, including wildland fire use for resource benefit, better mitigate threats to firefighter and public safety, property, and other resource values. There may be occasions to depart from vegetation desired conditions in order to reduce threats from wildland fire to communities, especially within the community protection zone. Risk reduction and maintenance activities are focused around communities to be better prepared to withstand wildland fire.

Hazardous fuels outside the WUI, and at times outside the community protection zone within the WUI, are treated to meet vegetation desired conditions. This includes providing landscape conditions suitable for wildland fire use and prescribed burning for resource benefits. Fire regime condition class is improved or maintained in fire regimes 1, 2, and 3. Fuel loads are restored to meet vegetation desired conditions, when doing so does not create a hazardous fuel situation.

Fire Monitoring Questions

1. Have management activities met Plan objectives and trended towards desired conditions to reduce fire regime condition classes inside and outside of the WUI?
2. Has wildland fire use for resource benefit and prescribed fire been utilized to promote the long-term resiliency, integrity, and sustainability of forest ecosystems?

Wildlife Desired Condition

The diverse physical environment found in the Forest creates a zone of biological diversity where the flora and fauna of three climatic regions are able to overlap. Central Rocky Mountain plants, animals, flora, and fauna from the moist coastal forests, and boreal flora and fauna all contribute to the Forest composition. As a result, the forest ecosystems are unusually diverse. The Forest has some of the most productive and biologically diverse forest land in the Interior Columbia River Basin.

Management of the Forest for wildlife is based on 1) the ecosystem diversity (coarse filter) premise--by managing vegetation communities within or towards a desired vegetation condition, the Forest is providing habitat for the majority of the more than 350 wildlife species known to occur in the forest; and 2) the species diversity (fine filter) premise--eliminating or minimizing risks and threats to individual species where management of habitats alone is not adequate to fully provide for a particular species or group of species, especially threatened and endangered species, species of concern and species of interest. Managing for both ecosystem and species diversity helps provide appropriate ecological conditions for federally listed species, species of concern, and species of interest. Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations that are well distributed and interactive, within the bounds of the life history, distribution, and natural population fluctuations of the species; within the capability of the landscape; and consistent with multiple use objectives.

Terrestrial Habitat Desired Condition

The wildlife habitat desired condition is similar to the vegetation desired condition, both Forestwide and for each of the biophysical settings. See the section below titled "Wildlife Desired Condition by Biophysical Settings" on page 1-21 for specific information about vegetation desired condition and its relationship to wildlife habitat. Also see Vegetation Desired Condition "Down Wood (Coarse Woody Debris) Forestwide Desired Condition" section on page 1-8 and "Old Growth Forestwide Desired Condition" section on page 1-6.

Forestwide Desired Condition

The amount, distribution, and characteristics of vegetation (live and dead) representing a full range of ages, structures, and types are present at levels necessary to maintain and/or contribute to both ecosystem and species diversity; in particular, species identified as threatened and endangered, species of concern, and species of interest. Plant community attributes for species composition, size classes, canopy closures, structure, snags, and down woody material managed within or towards Class A of the desired vegetation condition provides habitats for the majority of the wildlife species known to occur in the Forest.

Terrestrial wildlife habitats are diverse with native plant communities dominating the landscape. A variety of seral stages distributed across the landscape provide interior habitat, patch connectivity, and resiliency in the long-term (many decades). Habitats are well distributed both spatially and over time in patch sizes similar to those that occurred historically as a result of natural disturbance regimes such as fires, insects, and diseases. Large, contiguous habitat blocks provide for decreased fragmentation and increased connectivity, especially those with interior habitat conditions.

The shrub/seedling/sapling stages are maintained within Class A of the desired vegetation condition, providing habitat for species such as large ungulates and a variety of bird species. Dense and immature stands susceptible to drought and damage or destruction from insects, pathogens, and wildfire are reduced while providing habitat for a wide range of wildlife species. Late seral/old forest structures are increased, including large residual trees throughout all biophysical settings providing wildlife habitat for species such as fisher, pygmy nuthatch, pileated woodpecker, and boreal owl.

Forestwide Desired Condition Summary: As a result of changes in vegetation composition and structure, habitat conditions are improved for species associated with:

- interior habitat in patches of large trees or old growth;
- woody structures within successional patches;
- single storied and/or more open stand structures dominated by large trees;
- large patches of early and late-seral habitat; and
- riparian habitat dominated by large conifers or large deciduous trees.

Wildlife Desired Condition by Biophysical Setting

Wildlife Desired Condition for Warm/Dry Setting – Forest structure and composition (e.g., tree density, down wood composition and tree species) is restored to a more natural condition, increasing the suitability of habitats for species that use this setting. Open stand structures dominated by large trees (such as those found in vegetation response unit 1 (VRU) and south and west aspects of VRU 2; see "Vegetation Desired Condition for Warm/Dry Setting (VRUs 1-3)" on page 1-10), increase, providing habitat for species such as flammulated owls and white-headed woodpecker. The reduction in stand density increases the foraging capability for species such as Lewis's woodpecker, which is an aerial insectivore.

The majority of this setting (low elevation north and east aspects of VRU 2 and 3) has canopy coverage that often exceeds 50 percent, providing thermal or snow-intercept cover for most big game species that use the area during the winter season. The number of large diameter (greater than 20 inch DBH) ponderosa pine, western larch trees, and snags increase, providing nesting and/or foraging habitat for species such as white breasted nuthatch, pygmy nuthatch, and Lewis's woodpecker. Cottonwood snags are found along river and stream channels, which provide habitat for species such as Lewis's woodpecker.

Stand-replacing wildfires that occur on lands managed with a natural process emphasis (e.g., congressionally designated wilderness) provide habitat for species such as black-backed and Lewis's woodpecker. The occurrence of noxious weeds is reduced and wildlife forage quality and quantity is maintained or improved, especially on big game winter range.

Wildlife Desired Condition for Warm/Moist Setting - Canopy coverage at maturity is greater than 60 percent, providing hiding and thermal cover in big game summer range and habitat for wide-ranging carnivores such as grizzly bear and Canada lynx.

Remnant stands from stand replacing events and insect-infested stands occur, providing high concentrations of prey (wood-boring beetles) for species such as the three-toed and black-backed woodpeckers. Large contiguous areas of forested habitat are present providing habitat for martens and fishers at the home range scale.

Western white pine (rust resistant) and western larch are increased and restored where they occurred historically, increasing habitat for species associated with these forest types.

Multi-storied, multi-aged stands (comprised of species such as western larch, Douglas-fir and western white pine) with dense canopy cover and snags provide nesting and/or foraging habitat for wildlife species such as marten, fisher, flammulated owl, northern goshawk, boreal owl, northern flying squirrel, and black-backed woodpecker. Large numbers of trees, greater than 30 inches DBH with a high incidence of defect (such as

heart rot or broken topped trees), are present, providing nesting habitat for species such as pileated woodpecker.

Wildlife Desired Condition for Subalpine Setting - Vegetation treatments increase the potential for whitebark pine regeneration, which along with grouse whortleberry, beargrass, and elk sedge, are found in the upper elevations providing forage for species such as grizzly bear, hoary marmot, and blue grouse.

Large amounts of large down wood are present providing nesting and denning sites for Canada lynx and habitat for species such as the pygmy shrew. Special habitat features (talus, cliffs, and cirque basins) occur throughout the setting, providing denning habitat for wolverines and winter habitat for mountain goats. Shrub and herb riparian vegetation occurs, providing forage during the summer for grizzly bears. Large areas with low road density and minimal human disturbance provide habitat for species such as grizzly bear, wolverine, mountain goats (especially during the winter period), and habitat for Canada lynx den sites.

Snags and Down Wood Desired Condition

Snags are retained throughout the Forest. Vegetation treatment areas are patterned after historic conditions for vegetation communities and consider wildlife species needs, soil productivity, and current conditions. Snags are well distributed throughout the landscape and left in patches where possible. To meet safety concerns and provide for firewood, snags and down wood retained for wildlife are generally situated away from roads and clumped in groups. Green trees throughout the Forest, including vegetation treatment areas, provide for future snags and down wood. Resource and safety concerns are considered when identifying the amount of snags and down wood to retain in areas such as community protection zones and campgrounds.

Large snags are retained to provide habitat for a number of species such as pileated and white-headed woodpeckers. In areas with a great number of large diameter snags (such as Douglas-fir beetle infested areas), snags may be removed, consistent with historic density and composition-but retaining at least four large snags per acre, while providing for wildlife and soils needs.

The number of snags (those between 10 and 20 inches DBH and larger than 20 inches DBH) in planning subunits without desired snag levels is increased (as displayed in Table 3) providing for well-distributed habitat across the landscape. The loss of existing snags is minimized in areas where snag densities are low. In these areas, snag densities are increased to provide for populations of species that utilize snags for roosting, nesting, and foraging. Retain early seral tree species (ponderosa pine, larch, white pine, and whitebark pine) to produce large woody structures and snags.

Snags are retained within areas of vegetation management, (at least minimum numbers of snags as displayed in Table 3) providing habitat for wildlife species, nutrient recycling, and soil needs. Snags patterns and densities, in the KNF and/or planning subunit; vary by factors such as topography, slope, aspect, habitat type, successional stage, or management practices. Snag numbers are averaged over the Forest for each biophysical setting within a planning subunit.

Table 3. Snag levels to retain after vegetation treatment activities

VRU Group	Retention density (average number of snags per acre between 10 and 20 inches DBH)
Warm/Dry (VRU 1-3)	2-6 lower end for drier sites (VRU 1 & 2), upper end for moister sites (VRU 3)
Warm/Moist (VRU 4-6)	6
Subalpine (VRU 7-11)	6

Snags and green trees remaining after management activities emphasize species such as ponderosa pine, western larch, and cottonwood in sizes greater than 10 inch DBH and minimum height of 10 feet that best meet wildlife needs. Smaller sizes, heights, and species are retained if the desired height, size snags and species are not available. Where desired snag numbers are not achievable (e.g. inside the community protection zone) green trees that are three to six for each snag below desired numbers, are left on site for future snags and down wood (coarse woody debris).

Large and small logs, and other woody debris (coarse woody debris), such as stumps, root wads, bark, and piles of limbs, are retained in areas of vegetation management (see minimum amounts in Vegetation Desired Condition "Down Wood (Coarse Woody Debris) Forestwide Desired Condition" section on page 1-8) providing a diversity of habitats for wildlife such as small mammals, amphibians, and reptiles. Logs are present in or near streams, ponds, or lakes providing structure for amphibians, birds, and small mammals (i.e., beaver, mink, and otter). Retain some slash piles after harvest providing habitat for rodents, hares, and rabbits. Large down wood such as western larch, subalpine fir, Douglas-fir, and whitebark pine are present, providing denning habitat for Canada lynx.

Old Growth Desired Condition

Over the long term (many decades), there is an increase in the amount of old growth habitats in the Forest in each of the biophysical settings. In the short term (over the life of the Plan), there is an increase in the amount lands managed for old growth conditions in each of the biophysical settings that move the Forest toward providing habitat conditions (ecosystem diversity) for the majority of the species associated with old growth. Maintaining or restoring a variety of characteristics associated with old growth (as defined in Green and others 1992, corrected 02/2005), such as the key elements that make up old growth (large trees, snags, down wood, decadence etc.), contributes to habitat conditions that meet the specific needs of many species that utilize and/or are associated with old growth. See the Vegetation Desired Condition "Old Growth Forestwide Desired Condition" section on page 1-6; the "Vegetation Objectives" in Chapter 2 on page 2-2; and the "Old Growth Guidelines" in Chapter 3 on page 3-3 for further clarification.

Connectivity/Corridors/Linkages/Approach Areas Desired Condition

Movement/travel corridors, with adequate cover and minimal human disturbance, provide population connectivity and genetic exchange between large blocks of habitat (i.e., between large blocks of core). The Forest cooperates with Montana and Idaho State departments of transportation (MDOT or ITD) and private landowners to allow movement of wildlife across valley bottoms (approach areas) between large blocks of habitats on the Forest, while considering public safety (i.e., reduce automobile/wildlife associated accidents).

Security Desired Condition

Yearlong or seasonal road restrictions, area closures for key summer and/or winter range, and elk security areas provide security in small and large blocks of land for wide ranging carnivores (e.g., grizzly bear, wolverine, and Canada lynx) and many big game species (e.g., mountain goats).

Activities avoid or minimize disturbance to wildlife during critical life stages such as nesting, rearing, and wintering. The potential for reproductive success is increased, potential impacts to adults and young of the year are reduced, potential for negative outcomes resulting from human/wildlife interactions is reduced, and the potential of abandonment and possible mortality of young are reduced. Overall, the potential for species being listed as threatened or endangered is reduced.

Terrestrial Species Desired Condition

The Forest continues to provide habitat for more than 350 wildlife species (amphibians, reptiles, large and small mammals, birds, invertebrates, etc.), similar to the number of species thought to have occurred historically on the Forest. The Forest continues to have diverse and sustainable wildlife populations that persist over time. Managing for desired vegetation conditions contributes to meeting the habitat needs of threatened and endangered species, species of concern, and species of interest, and helps conserve species diversity and sustainability on the Forest. See Appendix A of this Plan for more information on species of concern and species of interest.

The Forest cooperates and/or coordinates with Canada, various states, and federal, county, local, and private entities in the management of wildlife, providing opportunities for funding sources that are otherwise not provided in National Forest budgets.

Threatened, Endangered, or Proposed Species Desired Condition

Recovery plans, management plans, biological opinions, and other appropriate (e.g., scientifically credible, peer reviewed) direction provide the details necessary for management of threatened and endangered species habitats such as habitat for the federally listed bald eagle, gray wolf, grizzly bear, and Canada lynx. Species listed under the Endangered Species Act (ESA) trend toward recovery or are delisted. Suitable habitat conditions are provided in a balanced manner benefiting many listed threatened and endangered species.

Bald Eagle Desired Condition – Large diameter trees are present adjacent to large lakes and major rivers (generally within one mile) providing for the maintenance and expansion of bald eagle populations. Activities reduce the potential for disruption of nesting, nest abandonment, and possible mortality of eaglets in occupied nest sites.

Gray Wolf Desired Condition - Vegetation communities are managed within or trend toward Class A of the desired vegetation condition, generally providing suitable habitat conditions for big game, the main prey base for wolves. When wolves are present, activities on NFS lands near den and rendezvous sites reduce the potential for displacement, abandonment of pups, and possible mortality.

Canada Lynx Desired Condition - The seedling/sapling successional stage, in those dominance types such as subalpine fir mix, is maintained within Class A of the desired vegetation condition, providing suitable habitat conditions for snowshoe hare, the principal prey of Canada lynx. Large amounts of large down wood provide denning habitat for Canada lynx in the subalpine biophysical setting. Disturbance associated with snowmobile use occurs in areas that avoid or minimize impacts to Canada lynx, by not

increasing the amount of groomed trails or play areas. The Forest provides connectivity between Canada lynx habitats in lynx analysis units allowing for dispersal of juveniles and genetic exchange. The Lynx Conservation Assessment and Strategy (LCAS) provides direction for managing adequate levels of habitat components for the Canada lynx. Dialogue with US Fish and Wildlife Service continues; to discuss ways of incorporating the science for Canada lynx into Forest Service management.

Grizzly Bear Desired Condition - Large blocks (more than 2,500 acres) of undisturbed habitat (core areas) are present providing secure areas required by bears during the active bear year (April 1 to November 30). Where den sites of females with cubs occur, activities during spring emergence (generally after April 1), reduce the potential for abandonment and possible mortality of cubs, human/bear conflicts, and displacement of animals from suitable habitat. Forage quality and quantity (grasses and forbs used during spring and huckleberry production in the fall) are increased throughout the recovery areas, improving conditions for bears as they enter hibernation.

Parameters established in the Grizzly Bear Access Amendment for core areas and total and open-motorized-route density (which include motorized use of roads and trails and high levels of nonmotorized use of trails), are met in all BMUs. Parameters for linear open and total road densities are maintained in areas established for occupancy. Guidance for food storage and grazing activities are established and implemented, and wildlife-resistant containers are placed in major activity areas (such as campgrounds), reducing the potential for mortality of grizzly bears.

Terrestrial Species of Concern (SOC) and Species of Interest (SOI) Desired Condition

See Appendix A of this Plan for lists of species of concern and species of interest. In general, vegetation communities are managed within or trend toward Class A of the desired vegetation conditions, providing habitat conditions that support both ecosystem and species diversity. Risks and threats (such as human-caused disturbance) are reduced or eliminated, especially during critical life stages such as denning (e.g., wolverine), nesting or rearing, and winter use by mountain goats. Reduce the potential for negative impacts to habitats or populations and the potential for these species to become listed as threatened or endangered.

Species of Concern

Terrestrial Invertebrates (Mollusks) Desired Condition - The Forest cooperates with other state, federal, and private agencies, increasing the potential for funding to identify habitat needs, risks, and threats where little is currently known or available. Documented locations and high probability habitats are protected, minimizing the potential for mortality.

Peregrine Falcon Desired Condition – Active nest sites are protected from activities on NFS lands, reducing the potential for nest abandonment and mortality of young.

Species of Interest

Aquatic and Riparian-associated Species Desired Condition – Aquatic and riparian areas provide habitat for numerous wildlife species from invertebrates to large carnivores, including amphibians, waterfowl, and many other bird species. These areas include small to large streams, ponds, wetlands, bogs, fens, lakes, and wallows.

"Aquatic Species Desired Condition" on page 1-30; "Watershed and Aquatic Species Objectives" on page 2-4 of Chapter 2; and "Aquatic Species Guidelines" on page 3-10 of Chapter 3 provide habitat conditions that meet most associated wildlife needs and reduce potential impacts such as direct mortality (amphibians), abandonment of young (fisher, harlequin duck, common loon, black swift), or displacement. Important habitat features such as bogs, wallows, seeps, and licks are protected by project design criteria (e.g., snowmobile use is restricted on northern bog lemming habitat).

Snag-associated/dependent Species Desired Condition - Desired conditions, objectives, and guidelines for snags provide habitat conditions for snag associated/dependent wildlife species.

Old Growth-associated Species Desired Condition - Desired conditions, objectives, and guidelines for old growth provide habitat conditions for old growth associated wildlife species.

Bats Desired Condition – Large and small snags are available, providing habitat for bats. Activities near caves or mines occupied by bats for roosting or hibernacula, reduce the potential for displacement from habitat, abandonment of young, and possible mortality (e.g., restricting entrance using bat gates).

Burned Forest-associated Species Desired Condition – Some burned forest habitats resulting from both natural and human caused fires, occur throughout the Forest providing habitat for fire-dependent species, generally for up to three years after the fire occurs.

Big Game Species Desired Condition - Management of big game habitats is coordinated with State wildlife agencies. Meetings (one or more per year) between the two agencies occur providing opportunities to discuss management issues related to state population objectives, population monitoring, management of big game, and management activities that may impact big game populations.

Vegetation communities are managed within or trend towards Class A of the desired vegetation condition providing forage, cover (hiding, thermal and snow intercept), and security to meet the needs of big game species on summer and winter ranges. Design criteria for forage, cover and security varies by species is identified at the project level.

On big game winter range, as well as the warm/dry biophysical setting, canopy cover maintains favorable snow depths and conditions for animal movement, reduces wind velocity, and helps to reduce impacts from human-caused disturbance. Canopy cover ranges from less than 30 percent on the driest sites to more than 50 percent where soil moisture is more plentiful.

Densities of open roads and motorized trails on winter range are generally low, often less than one mile per square mile. Travel routes through winter range provide access to higher elevations. Winter range provides security for big game during the winter and spring seasons through the reduction of motorized use. Management activities are generally avoided during the winter season; however if they occur, activities are concentrated, minimizing impacts to big game in the project area. Openings resulting from management activities minimize the loss or reduction of suitable habitat for big game and reduce the distance animals need to reach hiding and thermal cover.

Mountain Goat Desired Condition - Winter range habitat with minimal human disturbance during the winter season reduces the potential for displacement from winter range habitats and reduces potential mortality.

Wolverine Desired Condition - High elevation cirque basins with minimal human disturbance provide wolverine den sites and reduce the potential for displacement and abandonment of young.

Migratory and Neotropical Birds (terrestrial and aquatic) Desired Condition - Managing vegetation within or toward Class A of the vegetation desired conditions, provides habitat for migratory and neotropical bird species. Conservation strategies (such as Montana Partners in Flight) and conservation plans (such as the North American Landbird Plan) are used to manage habitats and to avoid or reduce risks and/or threats to these species.

Wildlife Monitoring Questions

1. Have management activities met Plan objectives and trended towards desired conditions for connectivity and linkages?
2. Have management activities met Plan objectives and trended towards desired conditions for threatened and endangered wildlife species?
3. Have management activities met Plan objectives and trended towards desired conditions for wildlife species of concern and species of interest?
4. Have management activities met Plan desired objectives and trended towards desired conditions for big game?
5. Have management activities met Plan objectives and trended towards wildlife desired conditions for snags and down wood?

Watersheds (Water, Soil, and Riparian) and Aquatic Species Desired Condition

Watersheds Desired Condition

Watersheds (streams and lakes, wetlands, and riparian areas) have characteristics, processes and features consistent with their natural potential condition. Management actions in KNF watersheds have no sustained adverse effects on water quality, stream channel stability, or aquatic habitats.

Favorable conditions of water flow occur in watersheds, streams, lakes, springs, wetlands, and groundwater aquifers to fully support beneficial uses of the water, as well as native aquatic species and their habitats. Water quality meets or exceeds applicable State standards.

Management actions include activities to establish recovery trends in Class II and III watersheds, and for 303(d) listed segments and waterbodies. For all 303(d)-listed streams and waterbodies with approved TMDLs, apply elements and controls associated with completed restoration or implementation plans. For all 303(d)-listed streams and waterbodies without approved TMDLs, management actions lead to an improvement in parameters that resulted in the listing.

Stream channels access their floodplains regularly. These seasonal flows recharge riparian aquifers and provide late season stream flows and cold water temperatures. Channels transport

water, sediment, and woody material over time, while maintaining their dimensions (bankfull width, depth, and entrenchment ratios; slope and sinuosity). Stream channels and floodplains are dynamic, but they are resilient to disturbances. The water and sediment balance between streams and their watersheds allow for a natural frequency and magnitude of base and flood flows, and stream conditions.

National Forest water rights for consumptive and non-consumptive use are sufficient to support instream flows that provide for channel maintenance, water quality, aquatic habitats, and riparian vegetation.

Well-managed, healthy watersheds producing clean water supporting beneficial uses, including public water supply are maintained. Best Management Practices (BMPs), including Forest Service Soil and Water Conservation Practices are the primary method of protecting water quality and stream conditions during all land-disturbing activities.

Soil Desired Condition

Soil organic matter, soil physical conditions, and coarse woody material are at levels that maintain soil productivity and hydrologic functions in soil. Physical, biological, and chemical properties of soil provide desired vegetative growth and nutrient cycling.

Management actions in KNF watersheds have no sustained adverse effects on soil productivity or soil-hydrologic function. Coarse woody debris, as well as tops and limbs, remain on site after timber harvest, site preparation, and fuel reduction activities in sufficient quantities to maintain soil productivity. Desired levels of coarse woody debris are displayed in the Vegetation Desired Condition "Down Wood (Coarse Woody Debris) Forestwide Desired Condition" section on page 1-8. Management actions avoid or fully consider the limitations associated with the sensitive and highly erosive soils and the landtypes that are prone to mass failure on the Forest.

Riparian Habitat Desired Condition

Lands where riparian and aquatic resources receive primary emphasis are known as Riparian Conservation Areas (RCAs; see glossary for categories). RCAs have healthy, functioning riparian systems and associated habitats that support well-distributed native and desired non-native plant, vertebrate, and invertebrate communities.

Riparian and aquatic ecosystems, including stream channel integrity, channel processes, and sediment regimes, function characteristically under the conditions in which they evolved. In turn, stream channels provide the structure for desired stream habitat features such as pool frequency, residual pool depth, large woody material, bank stability, lower bank angle, and width-to-depth ratios (see Aquatic Habitat Desired Condition "Desired Stream Habitat Features" section below on page 1-29).

Water quality provides stable and productive riparian and aquatic ecosystems. Stream water temperatures are within the requirements for salmonid spawning and cold water biota (see Aquatic Habitat Desired Condition "Desired Stream Habitat Features" section below on page 1-29). Streams and lakes are free of chemical contaminants and do not contain excess nutrients. Sediment levels are within natural condition, supporting salmonid spawning and rearing, and cold water biota requirements (see Aquatic Habitat Desired Condition "Desired Stream Habitat Features" section below on page 1-29).

Vegetation in RCAs provides:

- amounts and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems.
- adequate summer and winter thermal regulation.
- soil cover and bank stability to help achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which aquatic and riparian ecosystems developed.
- vertical structure and habitat for riparian-associated bird, mammal, amphibian, fish, and invertebrate species.

Vegetation in RCAs also effectively traps and stores sediment, builds stream banks, and promotes recovery after watershed disturbances.

Riparian vegetation is mainly composed of moist cedar/western hemlock habitat types with a well established diverse herbaceous/shrub layer under an old overstory of moist-site conifer species. Undergrowth can include devil's club, lady fern, starry Solomon-plume, oak-fern, queen's cup beadlily, sweetscented beadstraw, pathfinder, and Pacific yew. Most stands are composed of climax species such as western hemlock, western redcedar, subalpine fir, and Engelmann spruce, although seral species such as western white pine, Douglas-fir, or western larch occur in openings. Hardwood species such as black cottonwood, paper birch, and quaking aspen are found in the flood plains of rivers and streams.

Aquatic Habitat Desired Condition

Waterbodies, riparian vegetation, and adjacent uplands provide habitats that support self-sustaining native and desired nonnative aquatic communities, which include fish, amphibians, invertebrates, plants, and other aquatic-associated species. Aquatic habitats are diverse, with channel characteristics and water quality reflective of the climate, geology, and natural vegetation of the area. Streams, lakes, and rivers provide habitats that contribute toward recovery of threatened and endangered fish species and address the habitat needs of all native aquatic species. Connectivity between waterbodies provides for life history functions (e.g., migration to spawning areas) and for processes such as recolonization of historic habitats.

Desired Stream Habitat Features

Habitat features are influenced by stream gradient, channel and floodplain width, elevation, geology, and other factors. Therefore, while the following criteria generally describe desired habitat conditions, these values are not achievable in all channels.

Stream water temperatures are within the requirements for salmonid spawning and cold water biota and bull trout (see Comprehensive Evaluation Report). Surface fines (6mm or less) in salmonid spawning substrates are 20 percent or less, and fines by depth are less than 30 percent. Adequate sources of large woody debris are available for both long and short-term recruitment, and 20 or more pieces of large woody debris per mile are found in forest streams. Large (greater than 1 meter deep) pools for adult holding, juvenile rearing, and overwintering are common (in streams greater than 3 meters wetted width). The average wetted width to maximum depth ratio in pools is 10 or less in appropriate channel types. Seventy-five percent of banks are undercut in meandering non-forested channels. Streambanks are at least 90 percent stable in 80 percent of any stream reach.

Aquatic Species Desired Condition

Over the long-term, habitat is provided that contributes to the support of well-distributed self-sustaining populations of native and desired non-native aquatic species (fish, amphibians, invertebrates, plants and other aquatic-associated species). In the short-term, stronghold populations of native fish continue to thrive and expand into neighboring unoccupied habitats, and depressed populations increase in numbers. Available habitat supports genetic integrity and life history strategies of native fish populations. Cooperation and coordination with state agencies, federal agencies, tribes, and other groups ensures the upward trend of native and desired non-native aquatic species (e.g., federally listed species, species of concern/species of interest, species of greatest conservation need) and contributes to the State's population goals for native and desired non-native fishes. A greater understanding of many non-game species (e.g., amphibians, invertebrates, and fishes) and plants, including their habitat requirements and effects from human activities, is desired to aid in this upward trend.

Threatened, Endangered, or Proposed Species Desired Condition

Bull trout - Recovery and delisting of bull trout is the long-term desired condition. Spawning, rearing, and migratory habitat (see "Aquatic Habitat Desired Condition" on page 1-29) is widely available and fully inhabited. Bull trout have access to historic habitat and appropriate life history strategies (e.g., resident, fluvial, and adfluvial) are supported. Bull trout recovery plan tasks under Forest Service jurisdiction are accomplished. Bull trout populations trend toward recovery through cooperation and coordination with USFWS, state agencies, other federal agencies, and interested groups.

Over the life of the Plan, habitat conditions improve in occupied bull trout streams and connected historically occupied streams. Stronghold population numbers increase. Bull trout habitat and populations continue to be protected through design criteria (see "Aquatic Species Guidelines" on page 3-10 in Chapter 3) and strategies (see "Watershed and Aquatic Species Objectives" on page 2-4, in Chapter 2).

Kootenai River white sturgeon - Kootenai River white sturgeon are found within the Forest boundaries; however, the major risks and threats to this species are associated with the Libby Dam and are outside Forest Service jurisdiction. The recovery of Kootenai River white sturgeon is the long-term desired condition.

Aquatic Species of Concern (SOC) and Species of Interest (SOI) Desired Condition

Aquatic species of concern and species of interest have been identified for the Forest and can be found in Appendix A of this Plan. The desired condition for these amphibian and fish species is described above in Aquatic Habitat Desired Condition and Aquatic Species Desired Condition.

Watersheds (Water, Soil, and Riparian) and Aquatic Species Monitoring Questions

1. Have management activities met Plan objectives and trended towards desired watershed conditions?
2. Have management activities been implemented to rehabilitate or restore 303d watersheds?
3. Have management activities met Plan objectives and trended towards desired conditions for soil quality and productivity?

4. Have management activities met Plan objectives and trended towards desired conditions for riparian areas?
5. Have management activities met Plan objectives and trended towards desired conditions for fisheries habitat (structure, composition, function, and connectivity)?
6. Have management activities met Plan objectives and trended towards desired conditions for aquatic and riparian-associated plant and animal species habitat?

Other Topics

American Indian Rights and Interests Desired Condition

The Forest maintains the special and unique legal and political relationship with the Confederated Salish-Kootenai Tribes and Kootenai Tribe of Idaho as defined by history, treaties, statutes, court decisions, and the U.S. Constitution. The rights and privileges associated with treaties and other agreements pertaining to the Forest are fulfilled. The Forest is managed to provide resources significant to treaty tribes.

The Forest recognizes American Indian culture and political integrity and the Forest's responsibility for government-to-government relationships with all federally recognized tribes having aboriginal territory within the boundaries of the KNF. Traditional and cultural use information, as provided by tribes, is integrated into natural resource management projects. American Indian values are fully considered in planning proposed actions on the Forest. The Forest provides sustainable natural resources that contribute to the American Indians' way of life, cultural integrity, social cohesion, and economic well-being.

Tribal Treaty Rights - The Forest recognizes and maintains culturally significant species and the habitat necessary to support healthy, sustainable, and harvestable plant and animal populations to ensure that rights reserved by Tribes in the Hellgate Treaty of 1855 are not significantly impacted or diminished.

Tribal Treaty Rights and Cultural Uses - The Forest recognizes, ensures, and accommodates tribal member access to the Forest for the exercise of treaty rights and cultural uses consistent with laws, policies, and regulations.

Tribal Traditional Cultural Areas - The Forest recognizes and protects traditional cultural areas (special interest areas) as associated with the traditional beliefs of a Tribe about its cultural history.

American Indian Rights and Interests Monitoring Questions

1. Has a consultation protocol been developed for each Tribe?
2. Has a policy for access and acquisition of forest products for traditional cultural uses been established in consultation with Tribes?
3. How many management plans has the Forest developed for traditional cultural areas (tribal special interest areas) and traditional use areas?

Cooperation and Community Involvement Desired Condition

Cooperative programs, such as agreements, activities, grants, volunteers, and partnerships, are developed with federal, state, and county agencies; other nongovernmental organizations; and

individuals to help achieve Forest goals and improve overall resource management. Information, interpretation, and education programs are provided that communicates Forest resource conditions and opportunities.

Cooperation and Community Involvement Monitoring Question

1. To what extent has the KNF cooperatively worked with federal, state, and county agencies, other nongovernmental organizations, and individuals?

Grazing Desired Condition

Over the life of the Plan and into the future, grazing is sustainable and provides grazing opportunities for current and future generations. Grazing use levels over the past five years have averaged 4,400 head months per year. Over the life of the Plan, grazing continues at or near this level. Allotments that have been vacant or become vacant are closed if there is no demand for the livestock forage or if other resource conditions cannot be met.

Suitable rangelands are limited on the KNF. Most of the forage produced is transitory forage, following timber harvest activities or fire. Grazing occurs where soil and vegetation conditions are not degraded and at a level that is sustainable.

Heritage Resources Desired Condition

Cultural sites are inventoried, protected if eligible, and appropriate sites are nominated to the National Register of Historic Places. Until evaluated, historic properties are treated as eligible to the National Register. Historic properties that have been evaluated as eligible to the National Register are preserved in place, when possible. Interpretation of heritage resources continues to enhance public understanding and awareness of these resources and the history of the area in and around the KNF. Knowledge and information about the past is available for public interpretation and natural resource management. Artifacts and records are curated and available for academic research. Looting of sites is reduced through increased public awareness and education about cultural resources.

Heritage Resources Monitoring Questions

1. How many historic properties have been identified, evaluated, and nominated for listing on the National Register of Historic Places?
2. How many historic properties have been protected?

Lands Desired Condition

Land ownership is adjusted (acquired or conveyed) to provide reasonable access or improve efficiency of NFS land management. Boundaries are surveyed and clearly posted and occupancy trespass is eliminated. Rights-of-way and strategic easements are acquired to provide reasonable public and administrative access. Clear titles to NFS lands are retained. Special use authorizations meet Forest management and public needs.

Minerals Desired Condition

Mineral materials are provided at appropriate use levels and in response to demand. Locatable and leasable mineral exploration and development is compatible with ecosystem capabilities and

other resource values. Reclamation of abandoned mine sites occurs where human health risks exist. Areas that are not appropriate for locatable mineral entry are withdrawn.

Minerals Monitoring Question

1. Have management activities met Plan objectives and trended towards desired conditions for reclaimed mine sites?

Other Forest Products Desired Condition

Over the life of the Plan and into the future, other forest products are sustainable and provide products for current and future generations. Gathering of other forest products (e.g., huckleberries, firewood, and mushrooms) occurs within sustainable Forest capabilities. The firewood program augments timber harvest and fuel reduction projects to capitalize on opportunities for providing firewood.

Social and Economic Systems Desired Condition

The Forest provides a variety of uses, values, benefits, products, services, and visitor opportunities (termed “outputs and values”). These outputs and values are described in the desired conditions for all resources in this Chapter. Over the life of the Plan and into the future, they are provided in a sustainable-manner for current and future generations.

Some outputs and values are a result of the natural environment, such as opportunities for solitude, and spiritual and scenic values. Other outputs and values are commodity products, achieved through forest management, permits, and contracts. The KNF contributes to the local economy through the generation of jobs and income while creating products for use, both nationally and locally.

The outputs and values provided by the KNF contribute to the quality of lifestyles in the Plan area and stable communities. The KNF is perceived as providing a range of benefits to local communities, including the following:

- Recreational opportunities are an important perceived benefit of the Forest. Individuals and groups with diverse recreational interest value the available opportunities to pursue outdoor activities close to their residence and place of work.
- Open space is a significant value for residents who see the Forest as integral to the qualities of community and place of this region. Open space contributes to the rural character of communities.
- Economic value exists in the resources that can be extracted from NFS lands (e.g., minerals, timber, and other plant material) and in the scenic, amenity, and recreational resources that attract visitors.
- Fiscal benefits accrue to counties from Payments in Lieu of Taxes, funds from the Secure Rural Schools and Self-Determination Act of 2000, timber tax, and other federal payments related to NFS lands.
- Existence benefits are associated with special places (e.g., wilderness and roadless areas) and resources (e.g., grizzly bear) as well as within the Forest as a whole. For example, providing habitat for diverse plants and wildlife and ecological conditions that contribute to water quality.

- The Forest also contributes leadership, organizational skills, facilities, and other resources to communities. Agency personnel also participate as community members in clubs, organizations, volunteer efforts, and other elements of community life. There is also some economic contribution when purchases can be made locally.
- Wildfire risk is associated with living within or near the Forest. To the extent possible, the Forest contributes to the protection of communities and individuals from wildfire within the limits of firefighter safety and budgets.

Social and Economic Systems Monitoring Questions

1. How many jobs and how much income in the planning area results from KNF management?
2. What is the percentage of jobs and income from KNF management compared to the area's total employment and income?
3. How have social indicators (persons in poverty by age grouping, physician per thousand persons, educational attainment, school enrollments, and population dependency ratios) changed?

Wild and Scenic Rivers (Eligible) Desired Condition

See Management Area 2b on page 2-14 in Chapter 2.

Wild and Scenic Rivers Monitoring Question

1. Has each eligible river segment met Plan desired conditions?

Wilderness, Wilderness Study Areas, and Wild Lands Desired Condition

See Management Area 1a for wilderness on page 2-11; Management Area 1c for the wilderness study areas on page 2-12; and Management Area 1d for wild lands on page 2-13 in Chapter 2.

Wilderness, Wilderness Study Areas, and Wild Lands Monitoring Question

1. Have management activities met Plan objectives and trended towards management area desired conditions for existing wilderness, wilderness study areas, and wild lands while maintaining appropriate recreation opportunities?

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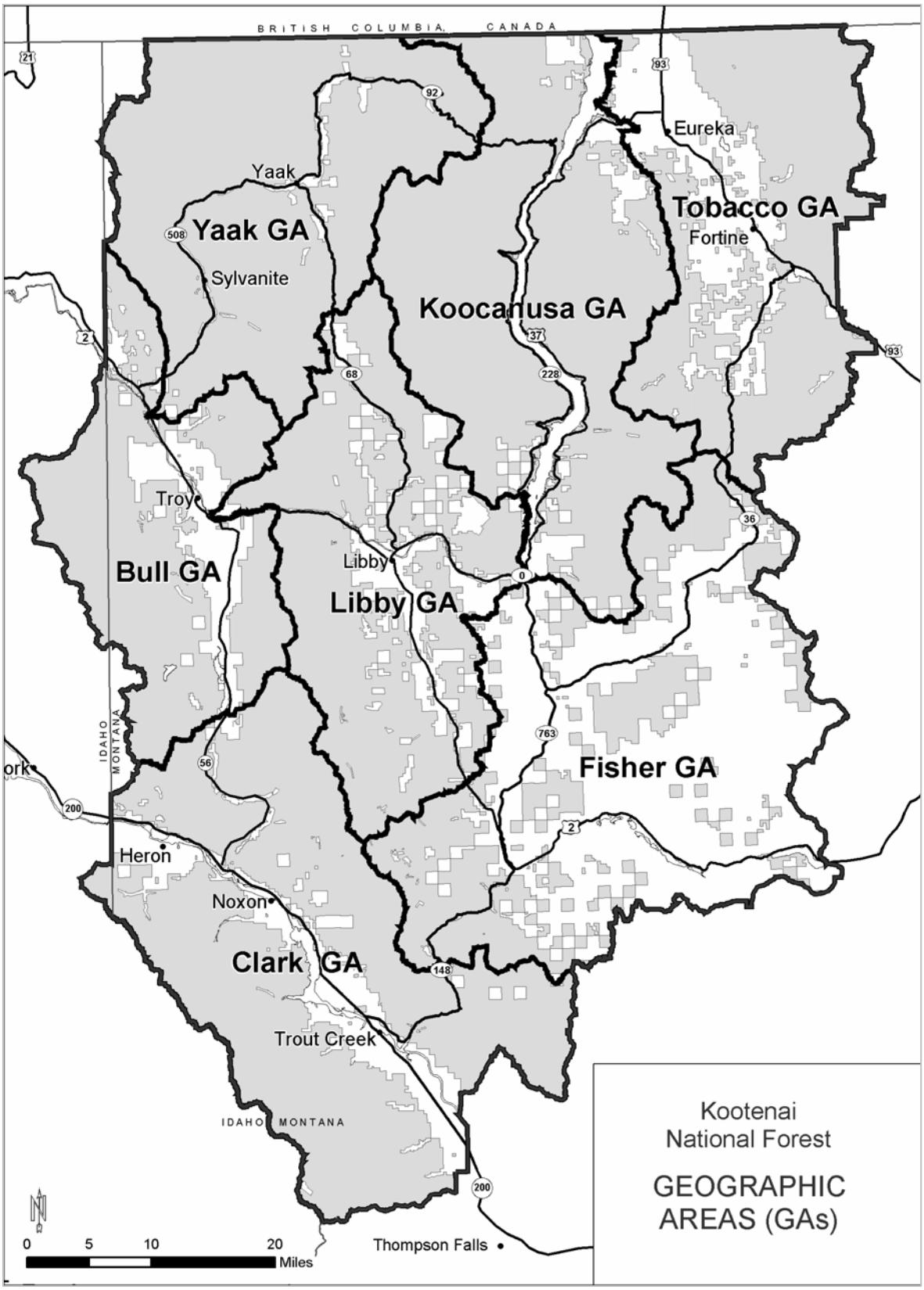

Figure 11. Geographic areas in the Kootenai National Forest

Geographic Areas Desired Conditions

Introduction

While the Forestwide desired conditions describe trends that we would expect to see across the Forest, we recognize that individual places across the KNF have their own distinct characteristics and conditions. These places are referred to as “geographic areas” (GA), such as a river basin or valley and the GA desired conditions reflect community values and local conditions for that area. However, they do not substitute for or repeat Forestwide desired conditions. The KNF has been divided into the following seven geographic areas (see Figure 11 on preceding page):

- Bull
- Clark
- Fisher
- Koocanusa
- Libby
- Tobacco
- Yaak

Geographic Areas

Each geographic area section on the following pages provides:

- Geographic area map displaying special areas, locator features, campgrounds, and major roads and streams.
- General location and description providing a brief characterization of the area.
- Resource specific desired conditions, describing a “place-based” picture of the forestwide desired condition for applicable resources.
- Management area composition table for each geographic area.

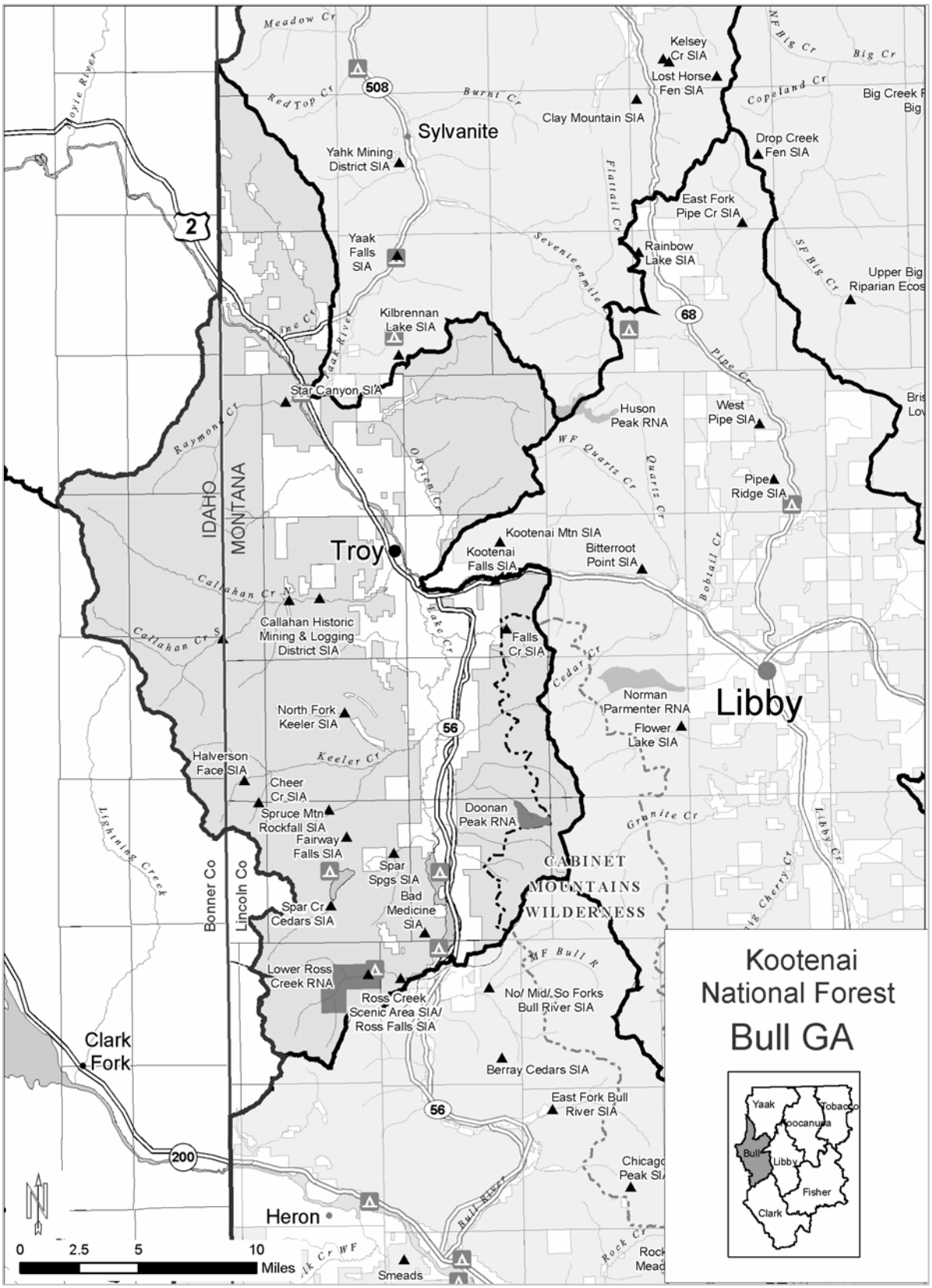

Figure 12. Bull GA

Bull Geographic Area

General Location and Description

The Bull Geographic Area (GA) lies predominantly in Lincoln County, Montana, with portions in Bonner and Boundary Counties in Idaho. National Forest System lands amount to 234,000 acres of the total 294,600 acres, or 79% of this GA. Communities include Troy and residential areas around several lakes. The Kootenai River flows northwesterly through the area and the lowest point in the state of Montana is where the river enters Idaho near Troy at just over 1,800 feet elevation. This GA is experiencing rapid development of lands that were formerly corporate timberlands, creating new subdivisions and increasing the size of the wildland urban interface. Mining and logging have been important industries in this area since the 1800s. The Troy mine is an active silver mine in this GA.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Improvements are made to maintain or increase recreational opportunities including the establishment of winter nonmotorized trails in lower elevations and warming huts, and improvement of the Spar Lake recreation area. Private funding and volunteer partnerships are pursued whenever feasible to accomplish these improvements.

Vegetation

Whitebark pine structure, composition, and function will trend toward the desired vegetation condition within high elevation areas of the Cabinet Mountains.

The south-facing slopes adjacent to the Kootenai River will provide habitat for concentrations of Geyer’s Biscuitroot that have adapted to low-intensity, frequent fire disturbance.

Fire

Threats of wildfire for the town of Troy, Highways 2 and 56, and outlying communities and structures are reduced.

Wildlife

The Forest, with minimal human-caused disturbance and development, provides for movement of wide ranging carnivores, including the grizzly bear between the Cabinet Wilderness and Selkirk Mountains (through an area south of Bull Lake, that passes through Scotchman Peaks and the McArthur Lake wildlife management area).

Snowmobile use in the West Cabinet Mountains occurs in areas that minimize or avoid impacts to mountain goats, wolverine dens, and grizzly bear sows with cubs as they emerge from den sites. Areas open to snowmobile use are delineated and easily identifiable (signed on the ground).

Human-caused disturbance (both motorized and nonmotorized) is minimized in areas of active peregrine falcon nests.

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Native aquatic species, particularly bull and interior redband trout populations, will expand into additional areas and respond to restoration activities in the O'Brien, Callahan, and Keeler Creek watersheds.

Management Area Composition

Table 4 displays the acres identified within each management area for the Bull GA.

Table 4. Bull GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres7%
1a	Congressionally Designated Wilderness	15,200	7%
1d	Wild Lands	14,000	6%
2b	Eligible Wild and Scenic Rivers	2,800	1%
3	Special Interest Area	4,300	2%
4a	Established or Proposed Research Natural Area	2,400	1%
5a	Backcountry - Nonmotorized summer and winter	52,400	22%
5b	Backcountry - Motorized summer and winter	500	<1%
5c	Backcountry - Nonmotorized summer, motorized winter	21,100	9%
6	General Forest	120,700	52%
	Total NFS Lands	**233,400**	

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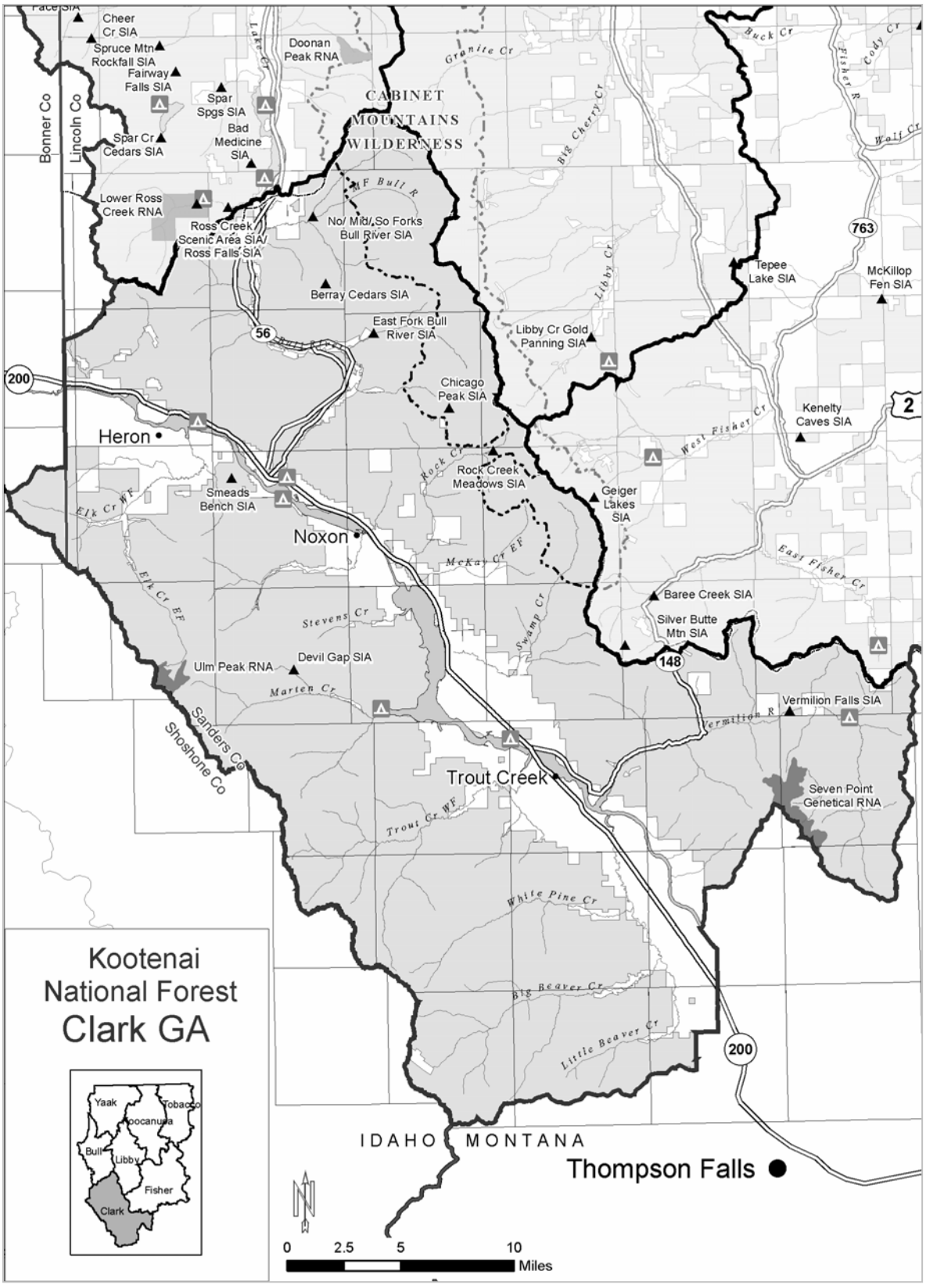

Figure 13. Clark GA

Clark Geographic Area

General Location and Description

The Clark Geographic Area (GA) lies primarily within Sanders County, with small portions in Bonner County, Idaho. National Forest System lands amount to about 432,000 of the total 528,000 acres, or 82% of this GA. Communities include Trout Creek, Noxon, and Heron. The Clark Fork River Valley has been used as a travel corridor since prehistoric times. Northern Pacific Railroad built the nation's second transcontinental railway through this area and the first road built into northwest Montana was constructed near present-day Highway 200. The Cabinet Gorge and Noxon Reservoir lie within this GA.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Additional lookout structures are restored and available in the rental program including consideration of Berray Mt., Star Peak, and Minton Peak. Partnerships or cooperative agreements are pursued with local schools, Avista Corporation, Montana Fish, Wildlife & Parks, and other potential partners, in development and maintenance of access and recreational sites including the Adopt-a-Trail program.

Trails to Snowshoe Lake, Little Ibex Lake, and Dad Peak will be evaluated for long-term maintenance needs.

Snowmobile use along the ridgeline corridor east of Taylor Saddle and south to Bloom Peak (and the Bloom Peak bowls) is maintained.

Vegetation

An increase in the amount of late-succession and old growth in areas of larges historic fires (1910, 1880s) provides greater diversity and habitat for numerous plant and animal species. Vegetation trends toward the desired vegetation condition, with an increase in western larch and a decrease in Douglas-fir, as well as an increase in whitebark pine in high elevation areas of the Cabinet Mountains.

Road construction associated with vegetation management in the west side of the East Fork of the Elk Creek (and Miller Creek) area is temporary and designed to retain roadless characteristics.

Fire

Threats of wildfire for the towns of Noxon, Trout Creek, Heron, and outlying communities and structures are reduced.

Wildlife

Berray Mountain provides key winter range for bighorn sheep, elk, and mule deer that migrate out of the Cabinet Mountains. Trout Creek drainage, Government Mountain, Scotchman Peaks,

and other areas provide security and habitat effectiveness for the elk herds in this GA. Cataract Peak, Grouse Mountain, and all of the upper slopes along the west side of the River and Reservoir provide key summer range.

Snowmobile use in the West Cabinet Mountains occurs in areas that minimize or avoid impacts to mountain goats, wolverine dens, and grizzly bear sows with cubs as they emerge from den sites. Areas open to snowmobile use are delineated and easily identifiable (signed on the ground).

National Forest System lands in the East Fork of Elk Creek and Miller Creek continue to provide security for wildlife (especially during the hunting season) as road construction (temporary) and vegetation management activities are conducted.

The Forest, with minimal human-caused disturbance and development, provides for movement of wide ranging carnivores, including the grizzly bear, between the Cabinet Wilderness and Selkirk Mountains (through an area south of Bull Lake, that passes through Scotchman Peaks and the McArthur Lake wildlife management area). The Forest also provides for wildlife movement across the Clark Fork River and Highway 200.

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Restore 303(d)-listed segments according to TMDL (Total Maximum Daily Load) specifications developed in the lower Clark Fork drainage. Support TMDL development in Bull River, Marten Creek, and others segments as reassessment continues. Sediment pollutants are reduced in the 303(d)-listed watersheds projects completed cooperatively with representatives from local watershed councils. Native aquatic species, particularly bull trout and westslope cutthroat trout, populations expand into additional areas. Continue working with other agencies and utilities in facilitating native salmonid passage over Noxon and Cabinet Gorge Dams, and improving habitat conditions in tributaries. Establish stronghold populations of bull trout in Noxon Rapids (Vermilion River) and Cabinet Gorge (Bull River) reaches of the lower Clark Fork River.

Management Area Composition

Table 5 displays the acres identified within each management area for the Clark GA.

Table 5. Clark GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres
1a	Congressionally Designated Wilderness	39,400	9%
1d	Wild Lands	31,800	7%
2b	Eligible Wild and Scenic Rivers	9,300	2%
3	Special Interest Area	1,000	<1%
4a	Established or Proposed Research Natural Area	2,700	1%
5a	Backcountry - Nonmotorized summer and winter	74,400	17%
5b	Backcountry - Motorized summer and winter	69,600	16%
5c	Backcountry - Nonmotorized summer, motorized winter	1,000	<1%
6	General Forest	202,800	47%
	Total NFS Lands	**432,000**	

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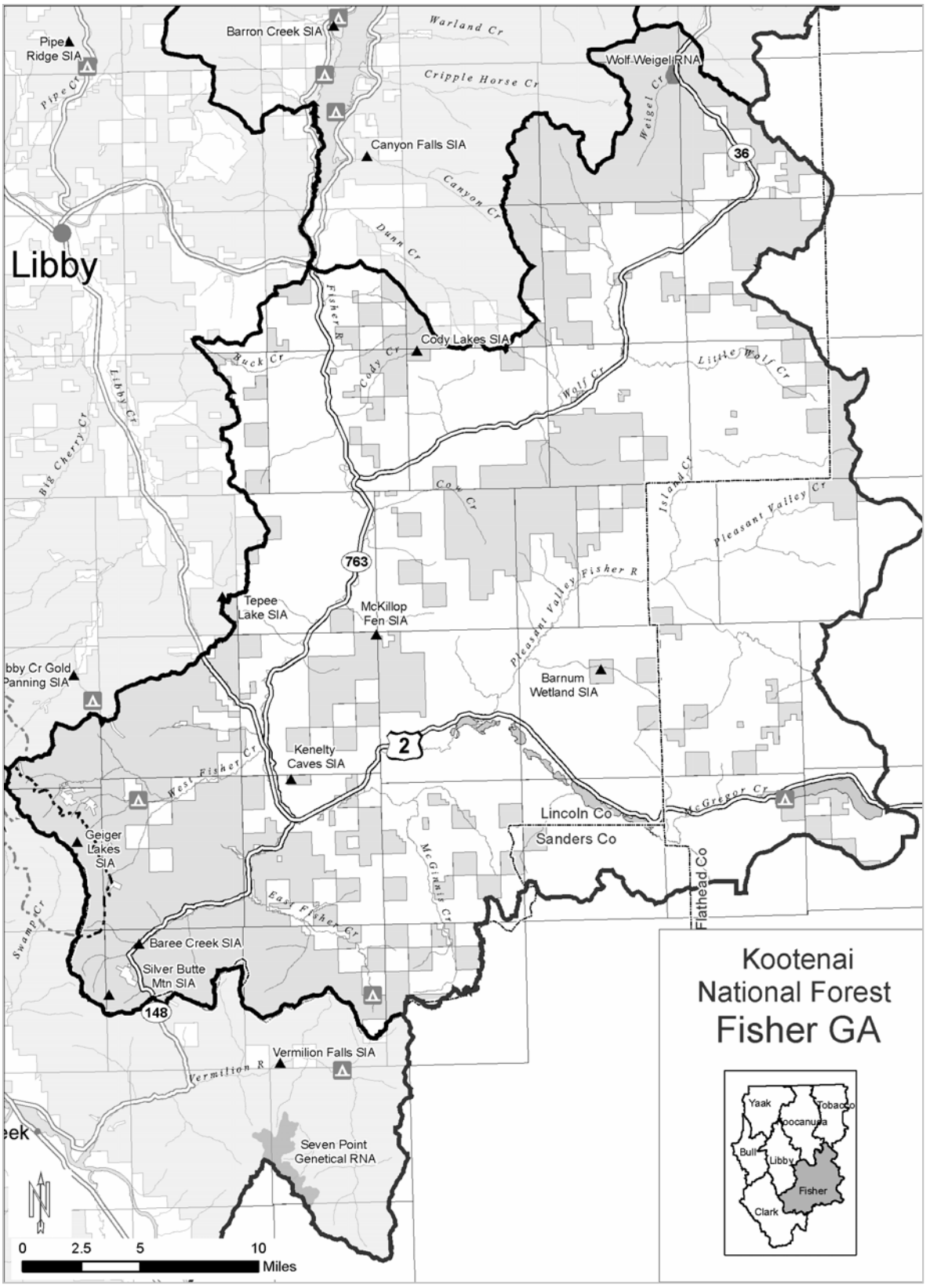

Figure 14. Fisher GA

Fisher Geographic Area

General Location and Description

The Fisher Geographic Area (GA) lies predominantly in Lincoln County, Montana, with portions in Flathead and Sanders Counties. National Forest System lands amount to about 206,000 acres of the total 579,000 acres, or 36% of this GA. Over half of the land in this GA is corporate timberlands, some of which are in a "checkerboard" pattern with NFS land. Small communities in this GA include Happy's Inn, Pleasant Valley and Silver Butte.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Outfitter and guide agreements and partnership with Plum Creek are maintained.

Vegetation

Noxious weed infestations are reduced and habitat conditions for native grasses, forbs and shrubs in areas of large scale natural disturbance such as Houghton Creek, Wolf Mountain, Little Wolf and Elk Mountain are improved.

Increase the amount of late succession/old growth and interior habitat providing greater diversity and quality habitat for plant species of concern and species of interest.

Fire

Threats of wildfire for dwellings, buildings, and structures within the Fisher River drainage and major tributaries are reduced.

Wildlife

The Forest, with minimal human-caused disturbance and development, provides for movement of wide ranging carnivores, including the grizzly bear between the Cabinet/Yaak and Northern Continental Divide grizzly bear recovery zones (including the Schreiber/Teepee area between the Cabinet Wilderness and Ten Lakes).

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Activities identified under the Fisher River TMDL process reduce the sediment concerns. Native aquatic species populations expand into additional areas and are secure from hybridization by non-natives. Habitat in the mainstem Fisher River is improved to support greater numbers of native fish.

Management Area Composition

Table 6 displays the acres identified within each management area for the Fisher GA.

Table 6. Fisher GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres
1a	Congressionally Designated Wilderness	5,600	3%
3	Special Interest Area	600	<1%
4a	Established or Proposed Research Natural Area	200	<1%
5b	Backcountry - Motorized summer and winter	43,900	21%
6	General Forest	156,100	76%
	Total NFS Lands	**206,400**	

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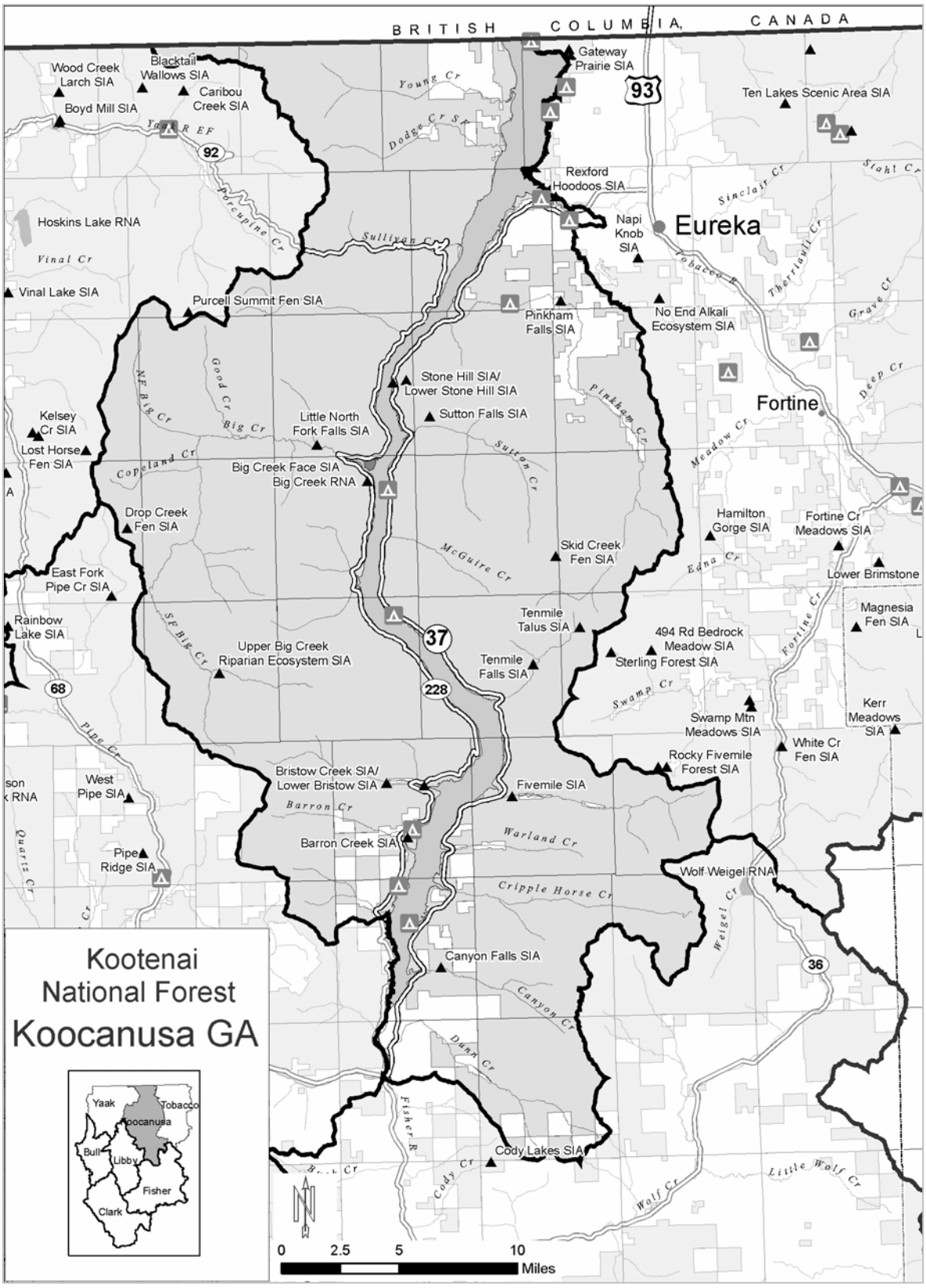

Figure 15. Koocanusa GA

Koocanusa Geographic Area

General Location and Description

The Koocanusa Geographic Area (GA) is located entirely within Lincoln County and is adjacent to British Columbia. National Forest System lands amount to about 411,000 acres of the total 475,000 acres, or 86% of this GA. Communities include Rexford and West Kootenai, on either side of Lake Koocanusa, in the northern portion of the GA. This GA is culturally significant as human use dates back 8,000 years and travel routes, including ferries and railroad lines, were developed in the 1800s along the Kootenai River.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Summer and winter motorized and nonmotorized opportunities are maintained and expanded where feasible. Recreation opportunities are maintained or improve in areas adjacent to Lake Koocanusa. A recreation plan for Lake Koocanusa is developed. Additional recreation opportunities for equestrians, mountain bikers, and OHV users are provided.

Vegetation

Noxious weed infestations are reduced and habitat conditions for native grasses, forbs and shrubs in areas of large scale natural disturbance such as Dodge and Pinkham drainages are improved.

Restoration of vegetation structure, composition, and function trends toward the desired vegetation condition in the Pinkham, Dodge, Boulder, and McSutten drainages.

Fire

Threats of wildfire for the towns of Rexford, West Kootenai, the Pinkham area, and outlying communities and structures are reduced.

Wildlife

Lands adjacent to Lake Koocanusa are currently managed in conjunction with the BPA Wildlife Mitigation program and provide habitat for mule deer, bighorn sheep (Ural Tweed herd), and other big game that use the area.. Human caused disturbance and development on NFS lands along the ridgeline from Roderick Mountain north to the Canadian border is minimal and provides for movement of wide ranging carnivores, including the grizzly bear within the Yaak portion of the Cabinet/Yaak grizzly bear recovery zone. The Big Creek drainage (especially in the subalpine biophysical setting) provides large amounts of large down wood and habitat for snowshoe hare for the high density of Canada lynx that occur in the area.

Noxious weed infestations are reduced and forage quality and quantity on big game winter ranges, including areas impacted by the large fires of 1994 and 2000, are improved. Increase the amount of lands managed for old growth characteristics in Barron, Jackson, Dunn, Cripple Horse,

and other drainages adjacent to the reservoir. Continue providing security for big game in the McGuire Mountain, Ten Mile, Gold Hill and Webb Mountain areas.

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Sediment pollutants are reduced in 303(d)-listed watersheds. Watershed condition is improved following specifications developed in the Yaak TMDL. Watersheds continue to support populations of migratory native and desirable nonnative fishes in great enough numbers to maintain popular existing recreational fisheries. Eliminating passage barriers restores connectivity for fish populations dependent on streams tributary to the reservoir.

Management Area Composition

Table 7 displays the acres identified within each management area for the Koocanusa GA.

Table 7. Koocanusa GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres
2b	Eligible Wild and Scenic Rivers	9,600	2%
3	Special Interest Area	5,700	1%
4a	Established or Proposed Research Natural Area	200	<1%
5a	Backcountry - Nonmotorized summer and winter	6,100	1%
5c	Backcountry - Nonmotorized summer, motorized winter	14,000	3%
6	General Forest	365,500	89%
7	Primary Recreation Area	9,600	2%
	Total NFS Lands	**410,700**	

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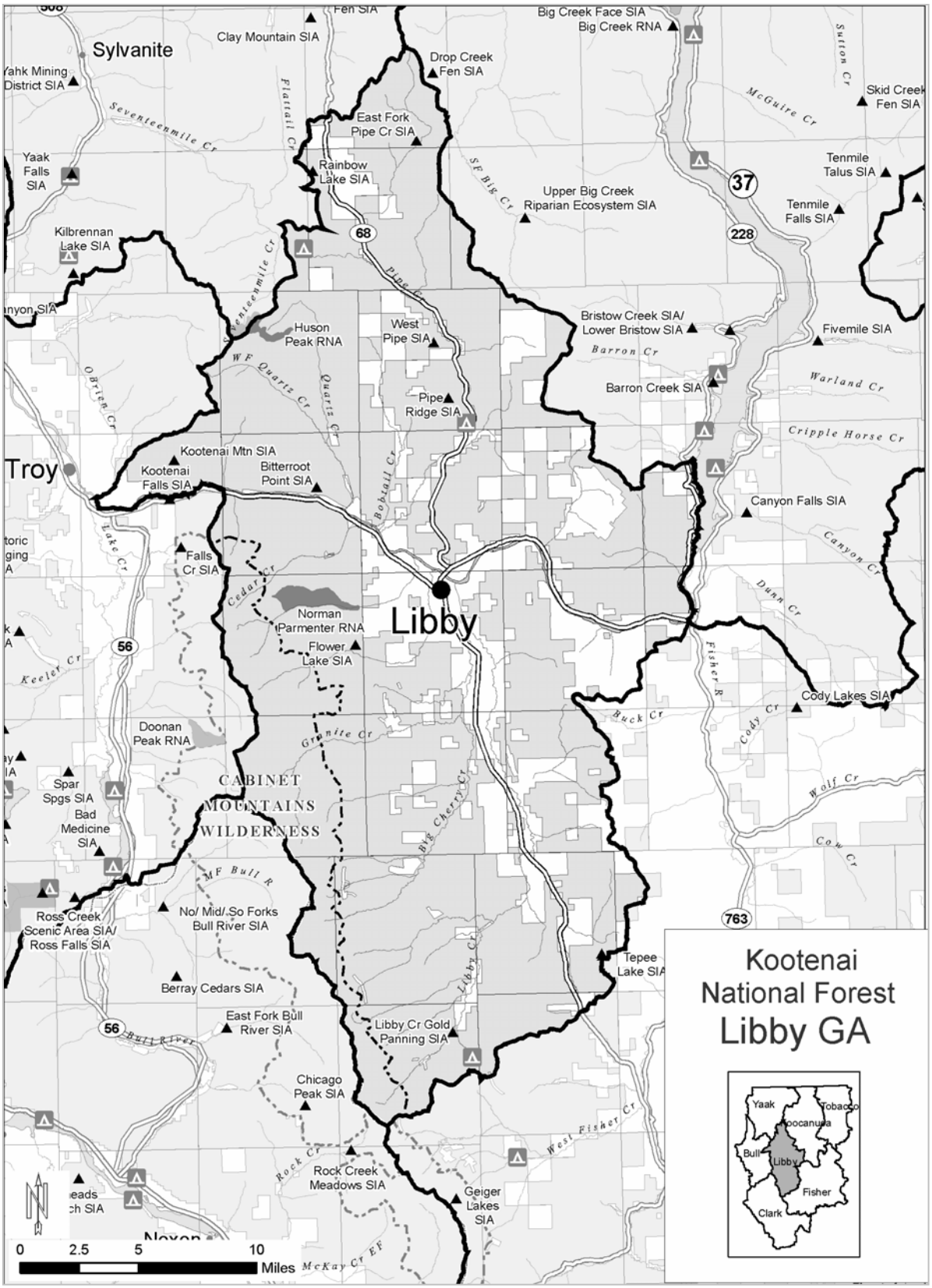

Figure 16. Libby GA

Libby Geographic Area

General Location and Description

The Libby Geographic Area (GA) lies entirely within Lincoln County. National Forest System lands amount to about 287,000 acres of the total 367,000 acres, or 78% of this GA. Approximately 10,000 people live in the city of Libby and the residential areas nearby, roughly half the population in the county. The county seat and the administrative center for the Kootenai National Forest are located in Libby. This area has been continuously inhabited for 5,500 years, and has provided major travel routes, including David Thompson's exploration in the early 1800s, Pierre deSmet in 1845, and gold miners in the 1860's. Mining and logging have historically provided the economic base. The area is known for its mineral deposits and there is currently interest in developing a mine south of Libby.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Opportunities to utilize partnerships and user groups to evaluate, plan, and improve trail systems and other recreational developments are pursued and maintained (e.g., Lincoln County Snowkats, Cabinet Backcountry Horsemen, Kootenai Ridgeriders ATV Club, etc.).

Opportunities for winter motorized access are maintained or considered in areas such as Pipe Creek, East Face of the Cabinets, and Bear Creek. Opportunities for changing snowmobile routes are considered as vegetation or other conditions change over time.

An opportunity is provided for the assessment of a multiple-use trail (motorized and nonmotorized) between Libby and Troy as well as a possible ski area on Treasure Mountain.

Vegetation

The south-facing slopes adjacent to the Kootenai River provide habitat for concentrations of Geyer's Biscuitroot that have adapted to low-intensity, frequent fire disturbance.

Whitebark pine structure, composition, and function trend toward the desired vegetation condition within high elevation areas of the Cabinet Mountains.

Noxious weed treatment in the Alexander Creek area, with emphasis on cheatgrass and knapweed, improves habitat conditions for native grasses, forbs, and shrubs.

Fire

Threats of wildfire for the city of Libby and outlying communities and structures are reduced.

Wildlife

Human-caused disturbance and development in the Flagstaff Mountain area is minimal and provides for movement of wide ranging carnivores, including the grizzly bear between the Cabinet and Yaak portions of the Cabinet/Yaak grizzly bear recovery zone. The Forest provides for movement of deer and elk between summer range in the Hemlock/Turner Mountain area and winter range in the Alexander Creek (Horse Range) area

Continue providing key big game winter range in the Swede McMillan area. Human caused disturbance from motorized use (including OHV use in the spring) is minimized or avoided in areas such as Swede McMillan.

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Sediment pollutants are reduced in 303(d)-listed watersheds such as Quartz, Bobtail, Big Cherry and Snowshoe. Watershed condition is improved following specifications developed in the Bobtail TMDL. Bull trout populations increase and expand with strongholds in Quartz, Pipe, Big Cherry and upper Libby Creeks. Populations of bull trout in adjoining drainages stabilize and begin to contribute to the middle Kootenai recovery population. Populations of interior redband and westslope cutthroat are secure from hybridization by nonnative fishes and expand their distribution.

Management Area Composition

Table 8 displays the acres identified within each management area for the Libby GA.

Table 8. Libby GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres
1a	Congressionally Designated Wilderness	33,300	12%
1d	Wild Lands	16,300	6%
2b	Eligible Wild and Scenic Rivers	7,500	3%
3	Special Interest Area	1,900	1%
4a	Established or Proposed Research Natural Area	1,700	1%
5a	Backcountry - Nonmotorized summer and winter	11,800	4%
5b	Backcountry - Motorized summer and winter	23,500	8%
5c	Backcountry - Nonmotorized summer, motorized winter	14,600	5%
6	General Forest	175,200	61%
7	Primary Recreation Area	1,300	<1%
	Total NFS Lands	**287,100**	

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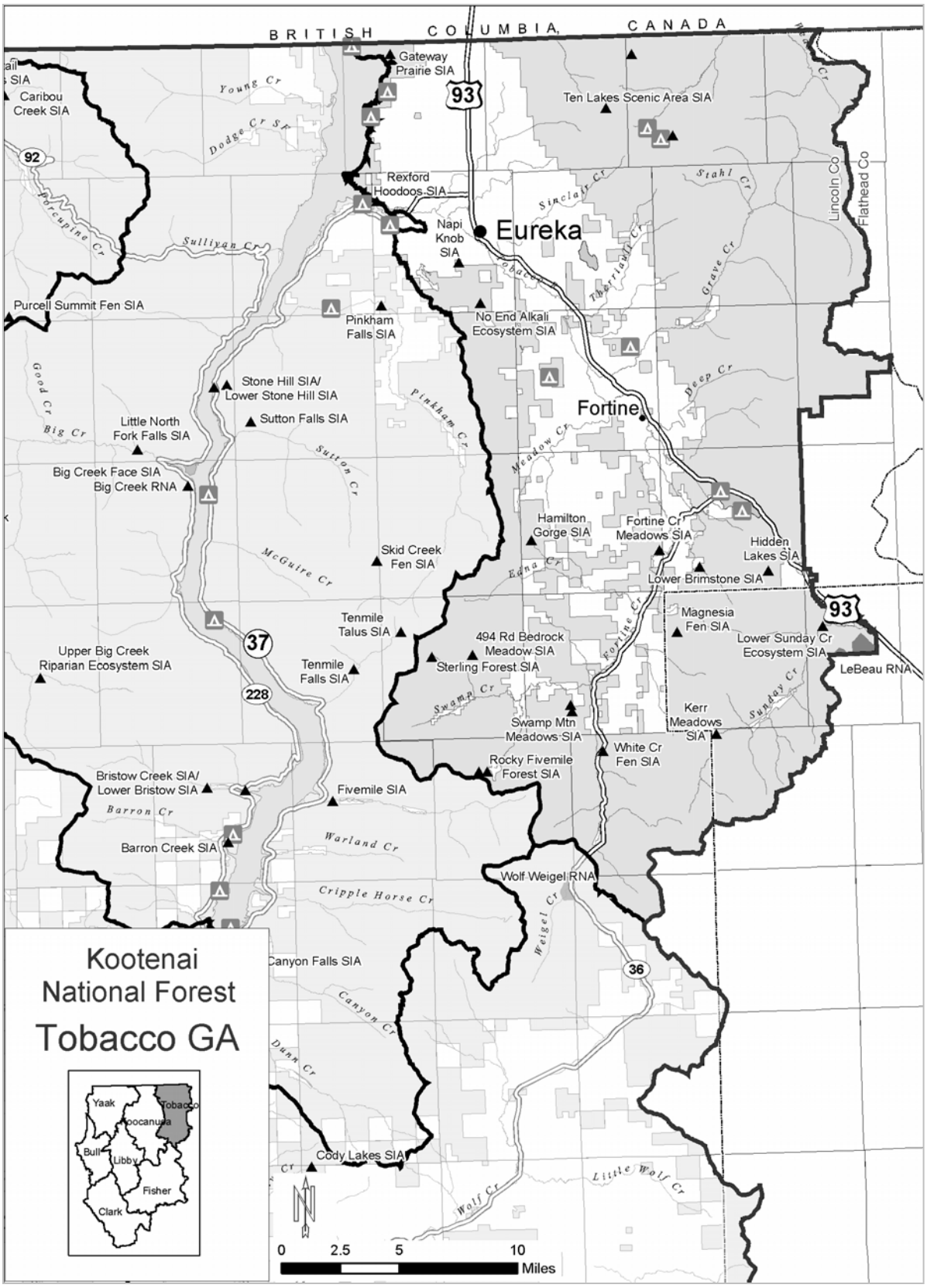

Figure 17. Tobacco GA

Tobacco Geographic Area

General Location and Description

The Tobacco Geographic Area (GA) lies predominantly in Lincoln County, Montana, with a portion in Flathead County and is adjacent to British Columbia. National Forest System lands amount to about 264,000 acres of the total 370,000 acres, or 71% of this GA. Communities include Eureka, Fortine, Trego, and Stryker. This area contains the largest amount of grazing and ranching lands in the Forest. This area is culturally significant, with human use dating back at least 8,000 years.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Summer and winter motorized and nonmotorized opportunities are maintained and expanded where feasible. Recreation opportunities are maintained or improved in the Ten Lakes area. An updated study for the Ten Lakes WSA is completed including the identification of specific areas and routes to provide a variety of winter and summer motorized and nonmotorized recreation opportunities. Monitoring of use is an integral part of the recreation program for the Ten Lakes area.

High-use recreation routes, such as Grave Creek Road, are maintained through dust abatement and grading.

Vegetation

Whitebark pine structure, composition, and function trend toward the desired vegetation condition within high-elevation areas of Ten Lakes and Thompson Seton.

Noxious weed treatment occurs with cooperation from the State and County to improve habitat conditions for native grasses, forbs, and shrubs.

Management of vegetation towards the desired vegetation condition improves or possibly increases habitat for Spalding’s catchfly. Calcareous soils and wetlands provide habitat for species of concern and species of interest, including lady’s slippers and cottongrass.

Fire

Threats of wildfire for the towns of Eureka, Fortine, Trego and Stryker and outlying communities and structures are reduced.

Wildlife

Activities avoid or minimize disturbance to wildlife in the Ten Lakes, Thompson Seton, and Marston Face areas; providing habitat for grizzly bear and wolverine denning and rearing during the winter and spring seasons; and secure areas for elk and other big game. The Gateway area

provides big game winter range habitat, including snow intercept cover, and minimal disturbance from motorized use during the winter period (including OHV use in the spring).

The Dickey Lake/Murphy Lake area provides for wildlife movement (with minimal human-caused disturbance and development) between the Northern Continental Divide and Cabinet/Yaak grizzly bear recovery zone (in the area between Marston Face and NFS lands to the south).

Snag habitat is increased in the Trego, Swamp, Meadow, Murphy, Fortine, and Ksanka drainages. Activities avoid or minimize disturbance to loon nesting areas during the nesting season. Activities (such as snowmobile use that may compact vegetation) avoid or minimize disturbance to northern bog lemming habitat in fens and bogs such as Sunday Creek.

Interior habitat conditions in the Meadow, Murphy, Trego, Pinkham, Swamp, and Fortine subunits are increased and fragmentation of habitats is reduced. National Forest System lands, with minimal disturbance and development, provide for wildlife movement between the Wigwam, Grave, and Cripple Horse drainages.

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Improve 303(d)-listed segments according to specifications developed in the Tobacco River TMDL. Native aquatic species, particularly bull trout, populations expand into additional areas and respond to restoration activities in the Grave Creek watershed. Westslope cutthroat are secure from hybridization by nonnative fish.

Management Area Composition

Table 9 displays the acres identified within each management area for the Tobacco GA.

Table 9. Tobacco GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres
1c	Congressionally Designated Wilderness Study Area	34,100	13%
1d	Wild Lands	38,900	15%
2b	Eligible Wild and Scenic Rivers	1,300	<1%
3	Special Interest Area	30,400	12%
4a	Established or Proposed Research Natural Area	400	<1%
5b	Backcountry - Motorized summer and winter	1,700	1%
6	General Forest	155,300	59%
7	Primary Recreation Area	1,400	1%
	Total NFS Lands	**263,500**	

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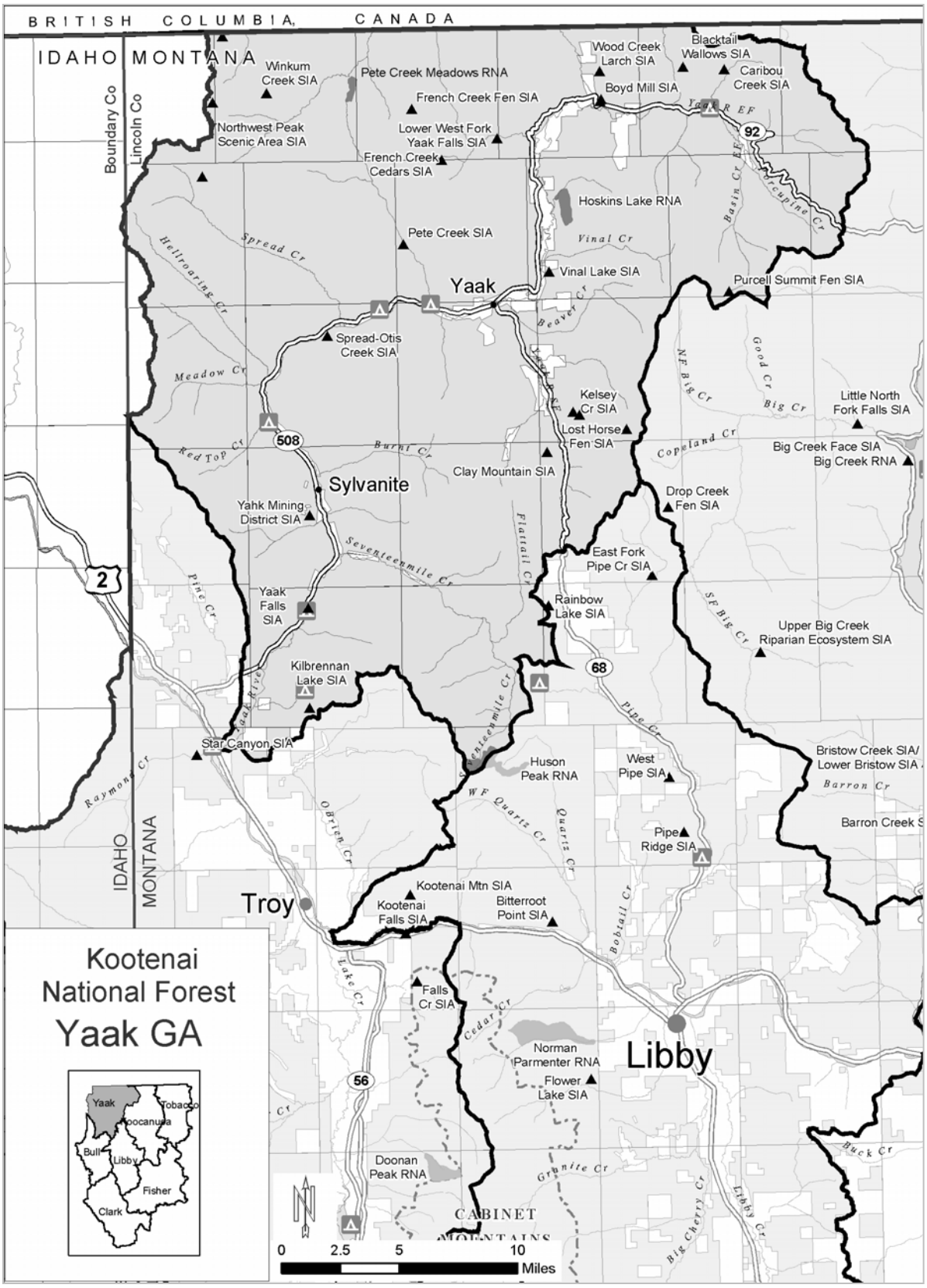

Figure 18. Yaak GA

Yaak Geographic Area

General Location and Description

The Yaak Geographic Area (GA) lies predominantly in Lincoln County, Montana, with a portion in Boundary County, Idaho, and borders British Columbia. National Forest System lands amount to about 385,000 acres of the total 398,000 acres, or 97% of this GA. Communities include Yaak and Sylvanite, although residents are generally secluded and dispersed throughout the area. The area has been used for thousands of years and contains some of the oldest prehistoric sites on the KNF. A mining boom centered near Sylvanite ended when the area was burned out in the fire of 1910. Logging has been important here since the early 1900s.

Geographic Area Desired Condition

The following desired condition discussion is specific to this GA. The desired condition for this GA does not substitute for or repeat Forestwide desired conditions found earlier in this chapter that are applicable to all geographic and management areas.

Access and Recreation

Improvements are made to maintain or increase recreational opportunities, such as the Spread Creek snowmobile trailhead. Historic structures are considered for restoration and addition into the rental program, where feasible. Where feasible, private funding and volunteer partnerships are pursued to accomplish these improvements.

An opportunity is provided for the assessment of a snowmobile loop trail from 17 Mile to the community of Yaak and a 20-mile long OHV route near the community of Yaak.

Vegetation

Management of vegetation toward the desired vegetation condition provides habitat for moonworts and northern beechfern and increases in late succession and/or old growth vegetation.

Fire

Threats of wildfire for the communities of Yaak, Sylvanite and outlying communities and structures are reduced.

Wildlife

Activities avoid or minimize disturbance to wolverine denning and grizzly bear sows with cubs during spring bear emergence (after April 1). Lands with minimal human caused disturbance and development provide for wildlife (including grizzly bear and wide ranging carnivores) movement between the Yaak and Cabinet portions of the recovery area and also provide for movement throughout each of the recovery zones. The forest also provides for wildlife movement between Northwest Peaks and the Cabinets, along the ridges of Buckhorn Ridge, Grizzly Peak, Roderick Mountain and Flagstaff Mountain. The Northwest Peaks area provides Canada lynx habitat, including large amounts of large down wood and habitat for snowshoe hare.

Watersheds (Water, Soil, and Riparian) and Aquatic Species

Watersheds trend toward Class I watershed condition while trending the native aquatic species toward self-sustaining populations. Sediment pollutants are reduced in 303(d)-listed watersheds such as North, East, South and West Forks of the Yaak River; Seventeenmile, Lap, Spread and Pete Creeks, according to specifications developed in the Yaak TMDL. Populations of native interior redband and westslope cutthroat trout are secure from hybridization by nonnative species and expanding in distribution.

Management Area Composition

Table 10 displays the acres identified within each management area for the Yaak GA.

Table 10. Yaak GA management area acres

Management Area	Management Area Name	Acres	Percentage of GA Acres
1d	Wild Lands	23,400	6%
2b	Eligible Wild and Scenic Rivers	13,400	3%
3	Special Interest Area	15,400	4%
4a	Established or Proposed Research Natural Area	900	<1%
5a	Backcountry - Nonmotorized summer and winter	59,700	16%
5b	Backcountry - Motorized summer and winter	1,800	<1%
5c	Backcountry - Nonmotorized summer, motorized winter	22,700	6%
6	General Forest	247,200	64%
	Total NFS Lands	**384,500**	

Chapter 2. Strategy

Introduction

The strategy describes how the KNF intends to follow its vision and move toward realizing the desired conditions established in Chapter 1. This strategy consists of three Plan components: objectives, suitability of areas, and special areas. Management areas help further refine suitability of areas and special areas.

- **Objectives** are measurable and time-specific.
- **Suitability of areas** describes general land use suitability for various uses and activities- Forestwide and by management area.
- **Special areas** include areas with unique physical, biological, or social conditions resulting in management direction that represents their special characteristics. These areas are identified by a specific management area.

Objectives

Objectives are projections of Forest activities and program outcomes, which are measurable and time-specific. The life of the Plan is approximately 15 years. Objectives are stepping stones that maintain or move the Forest toward the desired conditions. Objectives also may anticipate levels of conditions, uses, or activities and are linked to the monitoring and evaluation strategy to determine trends and the need to amend or revise the Plan. A single project and/or activity may contribute to multiple objectives.

Like desired conditions, objectives are not commitments or final decisions approving projects and activities. Objectives are based on budgets and other assumptions that are realistic expectations for the Plan period. However, the ability to achieve objectives is based on several factors including annual budgets, Forest priorities, and in some cases, natural events and weather patterns.

The following objectives are designed to help achieve or move the Forest towards the desired conditions described in Chapter 1:

Access and Recreation Objectives

1. Dispersed Recreation Sites

- Annually, maintain 25 percent of concentrated use areas.
- Over the life of the Plan, 10 percent of the concentrated use areas are improved or closed or the appropriate actions taken to reduce deferred maintenance.

2. Developed Recreation Sites

- Annually, operate and maintain at least 95 percent of the developed recreation sites.
- Over the life of the Plan, appropriate actions are taken to modify 15 to 20 percent of the developed recreation sites that improve facilities, expand capacity, or enhance the resource setting.

3. **Road Maintenance -** Annually, perform maintenance activities on:

    - 20 to 30 percent of Objective Maintenance Level 3, 4, and 5 roads (generally drivable by passenger vehicles).
    - 10 to 20 percent of Objective Maintenance Level 2 roads (generally drivable by high clearance vehicles).

4. **Winter Trails -** Annually, provide access for both motorized and nonmotorized winter trail activities on:

    - 125 to 200 miles of motorized trails.
    - 25 to 45 miles of nonmotorized trails.

5. **Summer Trails -** Annually, maintain both motorized and nonmotorized summer trail activities on:

    - 10 to 20 miles of motorized trails.
    - 250 to 750 miles of nonmotorized trails.

Vegetation Objectives

1. **Vegetation Restoration -** Over the life of the Plan, increase the representation of early seral, shade-intolerant, drought and fire tolerant, insect/disease resistant species dominance types (e.g., ponderosa pine, white pine, western larch, and whitebark pine) on approximately 120,000 to 150,000 acres.
2. **Old Growth -** Forestwide, increase the amount of old growth above existing and/or increase the amount of NFS lands managed for old growth in each of the following biophysical settings (Ranges displayed are annual increases but may be averaged over the life of the Plan):

    - Warm/dry biophysical setting: 400 to 600 acres.
    - Warm/moist biophysical setting: 1,100 to 1,500 acres.
    - Subalpine biophysical setting: 200 to 500 acres.

3. **Noxious Weeds and Invasive Plant Species -** Over the life of the Plan:

    - Upon discovery of new invaders (Category 3) and new invasive plant species, contain 100 percent of these occurrences within the discovered site.
    - Treat approximately 75,000 to 94,000 acres to reduce noxious weeds and invasive plant density, infestation size, and/or occurrence.

4. **Forest Health -** Over the life of the Plan, treat approximately 250,000 acres to maintain and/or improve forest health and to reduce impacts of non-native insects and diseases. Treatment includes timber harvest, prescribed burning/mechanical fuel treatments, wildland fire use, tree stand improvement, blister rust pruning, noxious weed treatments, and other integrated pest management activities including all forest health protection suppression and prevention activities.

    - Over the life of the Plan, approximately 80 - 90 percent of the forest health acres improve fire regime condition class. This includes timber harvest, prescribed

burning/mechanical fuel treatments, wildland fire use, tree stand improvement, blister rust pruning, noxious weed control and/or native re-vegetation projects that re-establish natural fire regimes.

Timber Objectives

1. **Wood Fiber -** Annually over the first decade of the Plan, offer timber for sale at the estimated timber sale program quantity (TSPQ) level of 10.2 to 12.2 MMCF (55.7 – 65.7 MMBF) consisting of the following elements:
    - Approximately 8.6 – 10.1 MMCF (46.7 – 54.8 MMBF) from regularly scheduled timber harvests on lands suitable for timber production. This includes the potential for approximately 0.6 – 1.7 MMCF (3.5 – 10.0 MMBF) from the five to ten inch diameter class.
    - Approximately 1.6 – 2.1 MMCF (9.0 – 10.9 MMBF) from lands not suitable for timber production, but where timber harvests may occur for other multiple-use purposes. This includes the potential for approximately 0.1 – 0.4 MMCF (0.7 – 2.0 MMBF) from the five to ten inch diameter class.

    As described in FSH 1909.12 63.4, the above harvest volumes are estimates and describe the output levels associated with activities designed to meet desired ecological, social, and economic conditions. The estimated volumes may change due to project-level data, unforeseen events, or modified conditions. Such conditions do not require a Plan amendment; however, changes will be noted in the Plan set of documents (e.g., the Comprehensive Evaluation Report).

2. **Restocking of Stands after Regeneration Harvest:** Within five years, all stands on lands suitable for timber production are adequately restocked after final regeneration harvest.

Fire Objectives

1. Fire Management
    - Annually, conduct fuels treatment on approximately 5,000 – 15,000 acres on NFS lands.
    - Over the life of the Plan, a minimum of 60 percent of all fuel treatment activities occur in the WUI.
    - Over the life of the Plan, a minimum of 75 percent of all fuel treatment activities outside of the WUI will be designed to improve condition class 2 and 3 or maintain condition class 1 in fire regimes 1, 2, and 3.

Wildlife Objectives

1. **Habitat -** Annually, conduct wildlife habitat maintenance or restoration improvement projects on 1,000 to 5,000 acres of NFS lands.
2. **Threatened and Endangered Animal Species**
    - **Grizzly Bear -** BMUs within the Cabinet/Yaak and the Kootenai portion of the Northern Continental Divide grizzly bear recovery zones that do not meet standards for core, total motorized route density and open motorized route density are brought into compliance within five years after the Land Management Plan has been approved.

Within five years after the Plan has been approved, implement a Forestwide mandatory food storage order.

- **Bald Eagle** - By 2010, complete nest management plans for all currently active (2005) nest sites on NFS lands. Within three years of new nesting establishment on NFS lands, complete nest management plans.

3. **Snags** - Annually, increase the number of snags in the Forest (in those planning subunits that do not meet minimum snag numbers displayed in the desired condition, averaged for each biophysical setting in the planning subunit), by treating 50 acres or 100 trees on the Forest.

Watersheds (Soil, Water, and Riparian Areas) and Aquatic Species Objectives

1. **Watersheds Condition -** Trend watersheds with reduced watershed condition towards higher watershed condition:
   - Within 5 years, for Class II and III watersheds, remove or mitigate degradation factors for ten to fifteen 6th-code HUCs.
   - Annually, treat approximately 100 acres in high priority restoration watersheds to improve watershed condition.
2. **303(d)-listed Waterbodies -** Annually, rehabilitate or restore 20 to 50 acres in 303(d)-listed waterbodies, emphasizing waterbodies with approved TMDLs.
3. **Fisheries Habitat -** Annually, enhance or restore 5 to 15 miles of habitat to maintain or restore structure, composition and function of physical habitat for fisheries.
4. **Habitat Connectivity -** Annually, connect one to three miles of fragmented habitat where appropriate to provide for aquatic and riparian-associated species' migratory needs and maintenance of metapopulations.

Other Topics

American Indian Rights and Interests Objectives

1. **Tribal Treaty Rights -** Over the life of the Plan, develop 6 to 25 management plans for traditional use areas, as they relate to the special interest areas, for habitat management in consultation with Tribes.
2. **Treaty and Nontreaty Uses -** Over the life of the Plan, establish one Forest policy per Tribe for access and acquisition of forest products for traditional cultural uses by tribal members in consultation with Tribes.
3. **Traditional Cultural Areas -** Over the life of the Plan, develop 6 to 25 management plans for traditional cultural areas in consultation with Tribes.
4. **Consultation -** Over the life of the Plan, develop one consultation protocol per Tribe for ongoing consultation with each Tribe.

Grazing Objectives

1. **Grazing -** Annually, provide 4,000 – 5,000 head months (HM).

Heritage Resource Objectives

1. **Identification, Evaluation, and Nomination -** Identify, evaluate, and nominate historic properties for listing on the National Register of Historic Places:
    - Annually inventory up to 100 acres
    - Annually identify up to 5 properties
    - Annually evaluate up to 5 properties
    - Over the life of the Plan, nominate up to five properties
2. **Protection -** Over the life of the Plan, protect and/or preserve 15 eligible historic properties.
3. **Overview -** Over the life of the Plan, complete a comprehensive prehistoric and historic overview.

Research Natural Areas (RNAs) Objectives

1. **RNA Establishment -** Over the life of the Plan, establish Doonan Peak, Huson Peak, and Seven Point Genetical RNAs in cooperation with the Rocky Mountain Research Station.

Social and Economic Systems Objectives

See the objectives listed above for output levels associated with management activities in the Forest, which provide uses, values, benefits, products, services, and visitor opportunities.

1. **Jobs/Income -** Based on achievement of projected outputs shown above, annually contribute to local economies by supporting 2,825 – 3,050 local jobs and $80,600,000 - $86,700,000 in local income.

Wilderness (Congressionally Designated) Objectives

1. **Wild Character -** Over the life of the Plan, maintain or improve the wilderness character by restoring 2 to 4 existing impacted sites while providing appropriate wilderness recreation opportunities for visitors.

Suitability of Areas

Introduction

National Forest System lands are generally suitable for a variety of multiple uses, such as outdoor recreation, range, timber, watershed, and enjoyment of wildlife and fish habitat. Identification of areas generally suitable for various uses and activities is an important part of the Plan strategy involving social, economic, and ecological considerations. Suitability identification is guidance for project and activity decisionmaking.

Management areas are used in this Plan to identify the general suitability of lands for different uses and management activities. Suitability for some uses and activities is also identified for the

entire Forest, rather than a particular management area. While both Forestwide and management area descriptions are used to identify areas that are generally suitable for different types of management and use, they do not determine what uses and management activities will actually take place at any given time or location. Those decisions will be made later through site-specific analysis of proposed projects and activities.

Lands are generally suitable for uses and activities unless one of the following conditions applies:

- Use is prohibited by law, regulation, executive order, or agency resource management directives.
- Use results in substantial and permanent impairment of the productivity of the land or renewable resource.
- Use is incompatible with the desired conditions for the relevant portion of the Plan area.

The following sections present suitability across the Forest and by management area. Special areas are also reflected in management areas.

Forestwide Suitability

Topics discussed in this section do not apply to specifically mapped management areas in the Forest; they apply across the Forest, anywhere respective suitability criteria are met. In the following section, Forestwide suitability of areas is presented for timber, livestock grazing, riparian conservation areas, motorized recreation, utility corridors, communication sites, and minerals.

Timber

Lands where timber harvest could occur are designated as:

1. **Lands generally suitable for timber production.** These are lands where timber production is compatible with desired condition and objectives. Harvest will occur on a regulated, scheduled basis with rotation ages.
2. **Other lands where timber harvest is an appropriate tool to achieve desired conditions.** These lands are not suitable for timber production. Harvest may occur, but is not scheduled or regulated, with no rotation age. Harvest is compatible with desired condition and may occur for purposes other than timber production.

Table 11 summarizes suitability acres. The timber suitability map (Appendix B of this Plan, Figure B-1) displays areas where timber harvest could occur.

Table 11. Timber suitability acres

Suitability	Acres
Suitable for timber production	817,200
Other lands where responsible official determines harvest is appropriate as a tool to achieve desired condition	777,500

The Forest has 1,594,700 acres where timber harvest could be used as a tool to achieve desired conditions. This represents approximately 72 percent of the KNF. Of those lands, approximately 817,200 acres are generally suitable for timber production. This represents 37 percent of the KNF. The biological aspects of timber suitability will be reviewed at a smaller, site-specific scale during project implementation.

Livestock Grazing

The Forest has 147,900 acres that are considered suitable for livestock grazing, representing approximately seven percent of the KNF. Range suitability will be reviewed at a smaller, site-specific scale during project implementation. The range suitability map (Appendix B of this Plan, Figure B-2) displays areas that are considered suitable for livestock grazing in the Forest.

Riparian Conservation Areas

Riparian conservation areas (see glossary for categories) are generally suitable for activities that improve, restore, or maintain aquatic and riparian ecosystems desired conditions (see "Riparian Area Guidelines" on page 3-9 in Chapter 3).

Motorized Recreation

Motorized recreation is generally suitable on designated routes and in designated areas. Current designated routes and areas are identified on district travel access maps and the Kootenai Snow Trails map.

Utility Corridors

Utility development is generally suitable in designated utility corridors. A listing and map of designated utility corridors can be found in Appendix B of this Plan (Table B-1 and Figure B-3).

Communication Sites

Communication site development is generally suitable at designated communication sites. A listing and map of designated communication sites can be found in Appendix B of this Plan (Table B-2 and Figure B-3).

Minerals

Areas not withdrawn from mineral entry are generally suitable for locatable mineral exploration and development (locatables are subject to rights of entry as defined by the Mining Law of 1872, 30 U.S.C. 22 et seq. (as amended)). A listing of withdrawn areas can be found in Appendix B of this Plan (Table B-3).

Management Area Suitability and Special Areas

Management Areas

Management areas (MAs) define the suitability of various places for different uses and management activities. Activities and uses in management areas are reflective of forestwide desired conditions found in Chapter 1 and management area desired conditions in this Chapter. Management area uses or activities may be limited by Forestwide desired conditions and design criteria found in Chapters 1 and 3. Unless otherwise indicated, the more restrictive conditions apply.

The activities and uses in the Suitability Tables, for each management area, are described below:

Wildland fire use: Although suitable in most MAs, this use is further defined by a Wildland Fire Use Plan and the annual Fire Management Plan. These plans define the criteria as to

where and when wildland fire use would be permitted. The application of wildland fire use is dependent on site-specific conditions such as weather patterns and location.

Prescribed burning: This refers to managed active burning that is set and monitored to burn at certain intensities over a defined area.

Timber harvest as a tool: Timber harvest, which is the commercial removal of wood fiber for utilization, is a tool for managing towards desired conditions. If a MA is suitable for timber harvest as a tool but not suitable for timber production, timber harvest would only occur to move towards desired condition and/or achieve objectives such as fuels reduction or wildlife habitat improvements.

Timber production: This includes timber harvest that is scheduled and regulated, and harvested on a rotation basis. Timber harvest occurs to move timber and other resources towards desired conditions.

Special forest products and firewood - Commercial and personal use: This refers to special forest products, which include but is not limited to: gathering of huckleberries, collection of bows, and transplanting of trees. Commercial use is through a permit and is the gathering of products for sale for revenue production. Personal use may or may not require a permit and gathering of products is for personal or family use and not for sale.

Grazing: This includes livestock grazing through permitted use.

Motorized (summer): This refers to use of motorized vehicles, such as four-wheel drives and OHVs during summer months (May 1 through November 30 every year). Although the desired condition for this use is defined for each MA, this use will follow current travel management maps and decisions until travel management planning is completed.

Motorized (winter): This refers to use of snowmobiles and other motorized winter vehicles during the winter months (December 1 through April 30 every year). Although the desired condition for this use is defined for each MA, this use will follow current travel management maps and decisions until travel management planning is completed.

Nonmotorized (summer and winter): This refers to use by hiking, running, walking, horseback riding, or other means of nonmotorized recreation. This does not include mountain biking, which is described under “mechanized.” Nonmotorized use is generally suitable in all MAs.

Motorized Tools: This refers to hand-held tools, such as the use of chainsaws for trail clearing. For some MAs, this use is specified for administrative use, meaning personal or commercial use would generally not be suitable.

Mechanized: This refers to any wheeled vehicle, such as mountain bikes, nonmotorized carts, wheelbarrows, and other wheeled, non-motorized vehicle. For some MAs, this use is specified as limited to designated routes.

Road construction (permanent or temporary): This refers to building of roads for a specified use or uses, either permanent or temporary.

Minerals – Leasable and Mineral Materials: This refers to leasable minerals such as oil and gas. This use would be permitted through site-specific analysis. Mineral materials include gravel and decorative rock, which is permitted for commercial or personal use.

Each MA is characterized by a description and desired conditions. General suitability for each management area is depicted in each suitability table. In addition, management areas are displayed in the Plan map that accompanies this Plan.

Special Areas

Special areas are areas within the National Forest system designated for their unique or special characteristics. Management guidance for the special areas is found in Forestwide and management area desired conditions and design criteria. For example, MA1a in this chapter includes guidance for congressionally designated wilderness and design criteria identified in Chapter 3 provides direction found in applicable Forest Service manuals pertaining to the management of congressionally designated wilderness.

These special areas, which are discussed in the rest of this chapter, are identified by a management area and are displayed in the Plan map that accompanies this document. These areas are also listed in the following table and are designated, or proposed to be designated, by statute or administrative action.

Table 12 (next page) displays a list of KNF management areas and acreages.

Table 12. KNF management areas and acreages

Management Area	Management Area Name	Acres	Percent
1a	Congressionally Designated Wilderness	93,500	4%
1c	Congressionally Designated Wilderness Study Areas	34,100	2%
1d	Wild Lands	124,400	6%
2b	Eligible Wild and Scenic Rivers	43,900	2%
3	Special Interest Areas (Aquatic, Botanical, Ecological, Geological, Heritage Resource, Pioneer, Recreational, Scenic, Traditional/Cultural. Zoological)	59,300	3%
4a	Established and Proposed Research Natural Areas	8,400	0%
5a	Backcountry – Nonmotorized summer and winter	204,400	9%
5b	Backcountry – Motorized summer and winter	140,900	6%
5c	Backcountry – Nonmotorized summer, motorized winter	73,500	3%
6	General Forest	1,422,900	64%
7	Primary Recreation Areas	12,300	1%
	Total NFS lands	**2,217,600**	

Because some of the management areas overlap, a hierarchy was developed for the management areas for map display and acre calculations. The management area hierarchy is as follows, listed in order of highest to lowest priority, for acre summaries and mapping:

1. 1a Congressionally Designated Wilderness
2. 4a Established and Proposed Research Natural Areas
3. 1c Congressionally Designated Wilderness Study Areas
4. 1d Wild Lands
5. 2b Eligible Wild and Scenic Rivers
6. 3 SIAs
7. 7 Primary Recreation Areas

Because of overlapping management areas, the acre figures reported in Table 2 may not match those listed in the special area section below, where total acre figures by special area are shown.

MA1a – Congressionally Designated Wilderness

Description

The KNF manages one congressionally designated wilderness area – the Cabinet Mountains Wilderness. The Cabinet Mountains Wilderness totals 93,500 as part of the National Wilderness Preservation System. If, over the life of this Plan, Congress designates any additional wilderness areas on the KNF, those areas would be allocated to this MA.

Desired Condition

The Cabinet Mountains Wilderness provides opportunities for exploration, solitude, risk, challenge, and primitive recreation. Opportunities for solitude are moderate to high on the existing trail system with few human encounters expected. Opportunities for solitude are high when traveling cross-country with almost no human encounters expected. Campsites may be visible at popular destinations and at major trail junctions. These sites accommodate moderate use. Directional and regulatory signs are primarily found at trailheads outside of this MA but some signs may be present within these areas. Designated wilderness areas are managed according to approved plans, which emphasize maintenance and enhancement of wilderness characteristics and primitive qualities. Buildings are rare within this MA, however, preservation of historical features is accomplished when compatible with designated wilderness. Ecosystems are influenced by natural processes with little or no human intervention. Ecological processes such as fire, insects, and disease are the primary factors affecting landscapes patterns within this MA. Non-native plants are rare and not likely to occur. Forage for wildlife and livestock is available in meadows and natural openings, although availability may be limited due to topography, growing season, and disturbance. Suitable activities and uses within this MA are displayed in Table 13.

Table 13. Generally suitable activities and uses for MA1a (Congressionally Designated Wilderness)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Commercial Use of Special Forest Products and Firewood	No
Personal Use of Special Forest Products and Firewood	Yes
Grazing	No
Motorized (Summer)	No
Motorized (Winter)	No
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools	No
Mechanized (e.g., Mountain Bikes)	No
Road Construction (permanent or temporary)	No
Minerals	
Leasable	No
Mineral Materials (Salable)	No

MA1c – Congressionally Designated Wilderness Study Areas

Description

The KNF manages one congressionally designated wilderness study area (WSA) – the Ten Lakes WSA. Ten Lakes (34,100 acres) was congressionally designated as a WSA in the Montana Wilderness Study Act of 1977 (Public Law 95-150). It is administered to maintain the existing wilderness character and potential for inclusion in the National Wilderness Preservation System. Uses established and allowed prior to the Act of 1977 are allowed to continue until the wilderness study is complete and Congressional action is taken. Activities, practices, and management actions that do not protect wilderness characteristics may be limited or prohibited.

Desired Condition

The existing wilderness character and potential for inclusion in the National Wilderness Preservation System is maintained for the Ten Lakes WSA. Uses established and allowed prior to the legislation requiring the wilderness study are allowed to continue until congressional action is taken. Ecosystems are primarily influenced by natural processes with little human intervention. These areas primarily offer opportunities for primitive recreation. Buildings are rare within this MA, however, preservation of historical features complimentary of the WSA continues. Management actions sustain the natural ecosystem. Suitable activities and uses within this MA are displayed in Table 14.

Table 14. Generally suitable activities and uses for MA1c (Congressionally Designated Wilderness Study Areas)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Commercial Use of Special Forest Products and Firewood	No
Personal Use of Special Forest Products and Firewood	Yes
Grazing	No
Motorized (Summer)	No
Motorized (Winter)	Yes
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools for Administrative Work	Yes
Mechanized (e.g., Mountain Bikes)	Yes
Road Construction (permanent or temporary)	No
Minerals	
Leasable	No
Mineral Materials (Salable)	No

MA1d – Wild Lands

Description

This MA applies to the four areas listed in Table 15. These areas have wilderness characteristics but are not proposed as additions to the National Wilderness Preservation System at this time. They are managed to protect those wilderness characteristics that allow for future consideration of these lands as wilderness. These areas provide opportunities for solitude and primitive recreation opportunities.

Table 15. Areas not recommended as additions to the National Wilderness Preservation System

Wild Lands	Proposed Acres
Cabinet Mountains Addition	29,900
Roderick	23,500
Scotchman Peaks	34,700
Whitefish Divide	38,900

Desired Condition

The wilderness characteristics of these areas are protected to allow for future consideration of these lands as wilderness by Congress. Ecosystems are influenced by natural processes with little human intervention. Ecological processes such as fire, insects, and disease are the primary factors affecting landscape patterns within this MA. Non-native plants are rare and not likely to occur. These areas provide opportunities for exploration, solitude, risk, challenge, and primitive recreation. Opportunities for solitude are moderate to high on the existing trail system with few human encounters expected. Opportunities for solitude are high when traveling cross-country with almost no human encounters expected. Campsites may be visible at popular destinations and at major trail junctions. These sites accommodate moderate use. Forage for wildlife and livestock is available in meadows and natural openings, although availability may be limited due to topography, growing season, and disturbance patterns. Buildings are rare within this MA, however, preservation of historical features complimentary of this MA continues. Suitable activities and uses within this MA are displayed in Table 16.

Table 16. Generally suitable activities and uses for MA1d (Wild Lands)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Commercial Use of Special Forest Products and Firewood	No
Personal Use of Special Forest Products and Firewood	Yes
Grazing	No
Motorized (Summer)	No
Motorized (Winter)	No
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools for Administrative Work	Yes
Mechanized (e.g., Mountain Bikes)	No
Road Construction (permanent or temporary)	No
Minerals	
Leasable	No
Mineral Materials (Salable)	No

MA2b – Eligible Wild and Scenic Rivers

Description

This MA applies to river segments that have been identified as eligible or suitable for inclusion as part of the Wild and Scenic Rivers System (W&SR) under the authority granted by the Wild and Scenic Rivers Act of 1968, as amended. Eligible or suitable rivers and adjacent areas are managed to protect the free-flowing, and outstandingly remarkable scenic, recreational, geologic, fish, wildlife, historic, cultural, or other similar values for the benefit and enjoyment of present and future generations.

Eligible rivers are classified as:

- **Wild Rivers**: Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic Rivers**: Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational Rivers**: Those rivers or sections of rivers readily accessible by road or railroad that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

A total of 249 miles have been identified as eligible in this Plan. Table 17 displays these recommended river segments and classifications.

Table 17. River classifications

River	GA Name	District	Status	Recommended Classification	Miles	Acres*
Kootenai River						
Seg. 1	F/K/L	Libby	Eligible	Recreational	8.9	737
Seg. 2	Libby	Libby	Eligible	Recreational	10.1	362
Seg. 3	B/L	3 River/ Libby	Eligible	Recreational	8.8	2,299
Seg. 4	B/L	3 River	Eligible	Recreational	10.3	235
Seg. 5	B/Y	3 River	Eligible	Recreational	8.7	2,309
Yaak River						
Seg. 1	Y	3 River	Eligible	Recreational	19.1	1,842
Seg.2	Y	3 River	Eligible	Recreational	9.8	2,734
Seg. 3	Y	3 River	Eligible	Recreational	11.4	2,069
Seg. 4	B/Y	3 River	Eligible	Wild	9.3	2,586
West Fork Yaak River						
Seg. 1	Y	3 River	Eligible	Wild	4.3	1,329
Seg. 2	Y	3 River	Eligible	Recreational	5.6	1,428
Vinal Creek System						
Vinal Creek/Seg. 1	Y	3 River	Eligible	Scenic	4.1	1,074
Turner Creek/Seg. 2	Y	3 River	Eligible	Scenic	1.0	386
Vermilion River	C	Cabinet	Eligible	Recreational	13.2	3,599

MA2b – Eligible Wild and Scenic Rivers (continued)

Table 17. River classifications (continued)

River	GA Name	District	Status	Recommended Classification	Miles	Acres*
Bull River System						
Bull River/Seg. 1	C	Cabinet	Eligible	Recreational	11.3	1,911
Bull River/Seg. 2	C	Cabinet	Eligible	Recreational	9.1	1,622
North Fork and Middle Fork Bull River/Seg.3	C	Cabinet	Eligible	Wild	17.4	4,135
East Fork Bull River/Seg. 4	C	Cabinet	Eligible	Recreational	4.5	1,118
East Fork Bull River/Seg. 5	C	Cabinet	Eligible	Wild	3.0	997
North Fork of the East Fork Bull River/Seg. 6	C	Cabinet	Eligible	Recreational	2.2	616
North Fork of the East Fork Bull River/Seg. 7	C/L	Cabinet	Eligible	Wild	1.4	497
Big Creek System						
Big Creek/Seg.1	K	Rexford	Eligible	Recreational	7.6	2,261
South Fork Big Creek/Seg. 2	K	Rexford	Eligible	Recreational	6.7	2,103
Little North Fork Big Creek/Seg. 3	K	Rexford	Eligible	Wild	1.6	452
Good Creek/Seg. 4	K	Rexford	Eligible	Wild	2.4	717
North Fork Big Creek/Seg. 5	K	Rexford	Eligible	Wild	5.6	1,797
Copeland Creek/Seg. 6	K	Rexford	Eligible	Wild	1.8	564
Lookout Creek/Seg. 7	K	Rexford	Eligible	Wild	2.4	725
East Fork Lookout Creek/Seg. 7	K	Rexford	Eligible	Wild	1.4	443
Unnamed Tributary to Lookout Creek/Seg. 7	K	Rexford	Eligible	Wild	1.7	515
Grave Creek System						
Grave Creek / Seg. 1	T	Fortine	Eligible	Recreational	13.0	3,699
Stahl Creek / Seg. 2	T	Fortine	Eligible	Recreational	4.3	1,244
Clarence Creek / Seg. 3	T	Fortine	Eligible	Recreational	5.2	1,654
Big Sky Creek / Seg. 4	T	Fortine	Eligible	Recreational	6.3	2,002
Quartz Creek System						
Quartz Creek / Seg. 1	L	Libby	Eligible	Recreational	9.5	2,572
West Fork Quartz Creek / Seg.2	L	Libby	Eligible	Wild	2.8	892
West Fork Quartz Creek /Seg. 3	L	Libby	Eligible	Recreational	3.1	904

* National Forest System lands only

MA2b – Eligible Wild and Scenic Rivers (continued)

Desired Condition

Eligible W&SRs and their adjacent areas are managed to retain their free-flowing status, classification, and outstandingly remarkable values. Buildings within this MA are maintained if they compliment the recommended classification of the individual river segment. Suitable activities and uses within this MA are displayed in Table 18.

Table 18. Generally suitable activities and uses for MA2b (Eligible Wild and Scenic Rivers)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	Wild – No Scenic – Yes Rec – Yes
Timber Production (scheduled on a rotation basis)	No
Commercial Use of Special Forest Products and Firewood	No
Personal Use of Special Forest Products and Firewood	Yes
Grazing	Yes
Motorized (Summer)	Wild – No Scenic – Yes Rec – Yes
Motorized (Winter)	Wild – No Scenic – Yes Rec – Yes
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools (for Scenic and Recreational Rivers)	Yes
Motorized Tools for Administrative Use (Wild Rivers only)	Yes
Mechanized (e.g., Mountain Bikes)	Yes
Road Construction (permanent or temporary)	Wild – No Scenic – Yes Rec – Yes
Minerals Leasable Mineral Materials (Salable)	 No No

MA3 – Special Interest Areas (Aquatic, Botanical, Ecological, Geological, Heritage Resource, Pioneer, Recreational, Scenic, Traditional Cultural, Zoological)

Description

This MA applies to the areas listed in Table 19. These are special places across the Forest that have unique, unusual, or important flora, fauna, geological, historical, paleontological, scenic, or recreational attributes. These areas are managed to protect and enhance the values for which they were identified. Each area is identified by a special interest type (SIA) type and are managed in a similar manner. SIA types include: botanical, ecological, aquatic, zoological, geological, traditional cultural, recreational, cultural, and scenic area. Where there are dual SIA allocations, the most restrictive guidance applies. Established SIAs currently exist in the Forest; whereas, SIAs identified as proposed are being brought forward as part of this Plan.

Table 19. Special Interest Areas (SIAs)

SIA Name	GA Name	District	Established Acres	Proposed Acres	SIA Type
Barnum Wetland	Fisher	Libby	199		Botanical/Aquatic
Berray Cedars	Clark	Cabinet	47		Botanical
Bitterroot Point	Libby	Libby	126		Botanical/ Traditional, Cultural
Boyd Mill	Yaak	3 Rivers	125		Ecological
Clay Mountain	Yaak	3 Rivers	21		Botanical
Devil Gap	Clark	Cabinet	831		Geological
Fortine Creek Meadows	Tobacco	Fortine	37		Botanical/ Ecological
French Creek Fen	Yaak	3 Rivers	37		Botanical
Hamilton Gorge	Tobacco	Fortine	144		Geological
Hidden Lake	Tobacco	Fortine	607		Botanical/Aquatic
Kelsey Creek	Yaak	3 Rivers	17	36	Botanical
Kerr Meadows	Tobacco	Fortine	58		Aquatic/Botanical
Kilbrennan Lake	Yaak	3 Rivers	56		Botanical
Kootenai Falls	Bull/Libby	3 Rivers/ Libby	420		Traditional, Cultural/Heritage
Lower Brimstone	Tobacco	Fortine	39		Botanical
Lower Sunday Creek Ecosystem	Tobacco	Fortine	150		Ecological/ Traditional, Cultural
Lower West Fork Yaak Falls	Yaak	3 Rivers	274		Traditional, Cultural/Geological
Magnesia Fen	Tobacco	Fortine	12		Aquatic/Botanical
Napi Knob	Tobacco	Fortine	18		Botanical
North End Alkali Ecosystem	Tobacco	Fortine	23		Ecological
Northwest Peaks Scenic Area	Yaak	3 Rivers	4,714	8,533	Scenic
Pete Creek	Yaak	3 Rivers	320		Botanical
Rexford Hoodoos	Tobacco	Rexford	73		Geological
Rocky Fivemile Forest	Tobacco	Fortine	160		Ecological

MA3 – Special Interest Areas (continued)

Table 19. Special Interest Areas (SIAs) (continued)

SIA Name	GA Name	District	Established Acres	Proposed Acres	SIA Type
Ross Creek Scenic Area	Bull	3 Rivers	101		Scenic/Traditional, Cultural
Spread Otis Creeks	Yaak	3 Rivers	381		Botanical
Star Canyon	Bull	3 Rivers	81		Geological
Sterling Forest	Tobacco	Fortine	127		Ecological/ Botanical
Swamp Mountain Meadows	Tobacco	Fortine	34		Botanical
Ten Lakes Scenic Area	Tobacco	Fortine	6,542	54,279	Scenic
Tenmile Talus	Koocanusa	Rexford	390		Geological
Upper Big Creek Riparian Ecosystem	Koocanusa/ Libby	Rexford/ Libby	2,966		Ecological
White Creek Fen	Tobacco	Fortine	14		Botanical
Wood Creek Larch	Yaak	3 Rivers	115		Scenic
Yahk Mining District	Yaak	3 Rivers	456		Heritage
494 Road Bedrock Meadow	Tobacco	Fortine		35	Botanical
Bad Medicine	Bull	3 Rivers		1,937	Zoological/ Traditional, Cultural
Baree Creek	Fisher	Libby		57	Traditional, Cultural
Barron Creek	Koocanusa	Rexford		326	Traditional, Cultural
Big Creek Face	Koocanusa	Rexford		327	Traditional, Cultural
Blacktail Wallows	Yaak	3 Rivers		144	Aquatic/Botanical
Bristow Creek	Koocanusa	Libby		18	Botanical
Callahan Historic Mining & Logging District	Bull	3 Rivers		1,689	Heritage
Canyon Falls	Bull	Libby		33	Geological
Caribou Creek	Yaak	3 Rivers		107	Botanical
Cheer Creek	Bull	3 Rivers		67	Botanical
Chicago Peak	Clark	Cabinet		278	Traditional, Cultural
Cody Lakes	Fisher	Libby		41	Aquatic/Zoological
Drop Creek Fen	Koocanusa	Rexford		25	Aquatic/Botanical
East Fork Bull River	Clark	Cabinet		109	Botanical
East Fork Pipe Creek	Libby	Libby		1,118	Geological
Fairway Falls	Bull	3 Rivers		40	Aquatic/Geological
Falls Creek	Bull	3 Rivers		42	Scenic
Fivemile	Koocanusa	Libby		80	Traditional, Cultural
Flower Lake	Libby	Libby		13	Aquatic/Botanical
French Creek Cedars	Yaak	3 Rivers		131	Botanical
Gateway Prairie	Tobacco	Rexford		2,137	Ecological
Geiger Lakes	Fisher	Libby		577	Traditional, Cultural
Halverson Face	Bull	3 Rivers		47	Botanical
Kenelty Caves	Fisher	Libby		87	Geological
Kootenai Mountain	Libby	3 Rivers		217	Traditional, Cultural

MA3 – Special Interest Areas (continued)

Table 19. Special Interest Areas (SIAs) (continued)

SIA Name	GA Name	District	Established Acres	Proposed Acres	SIA Type
Libby Creek Gold Panning	Libby	Libby		156	Recreational
Little North Fork Falls	Koocanusa	Rexford		6	Recreational/ Traditional, Cultural
Lost Horse Fen	Yaak	3 Rivers		308	Aquatic/Botanical
Lower Bristow	Koocanusa	Libby		371	Traditional, Cultural
Lower Stone Hill	Koocanusa	Rexford		81	Traditional, Cultural
McKillop Fen	Fisher	Libby		28	Aquatic
North Fork Keeler	Bull	3 Rivers		95	Aquatic/Botanical
North/Middle/South Forks Bull River	Clark	Cabinet		215	Botanical
Pinkham Falls	Koocanusa	Rexford		21	Traditional, Cultural/Geological
Pipe Ridge	Libby	Libby		30	Botanical
Purcell Summit Fen	Yaak	3 Rivers		76	Aquatic
Rainbow Lake	Libby	Libby		167	Aquatic
Rock Creek Meadows	Clark	Cabinet		186	Aquatic
Ross Falls	Bull	3 Rivers		44	Traditional, Cultural/Geological
Silver Butte Mountain	Fisher	Libby		170	Traditional, Cultural
Skid Creek Fen	Koocanusa	Rexford		79	Aquatic/Botanical
Smeads Bench	Clark	Cabinet		68	Aquatic
Spar Creek Cedars	Bull	3 Rivers		74	Botanical
Spar Springs	Bull	3 Rivers		196	Aquatic
Spruce Mountain Rockfall	Bull	3 Rivers		49	Geological
Stone Hill	Koocanusa	Rexford		760	Recreational/ Geological
Sutton Falls	Koocanusa	Rexford		113	Traditional, Cultural/Geological
Tenmile Falls	Koocanusa	Rexford		187	Traditional, Cultural/Geological
Tepee Lake	Libby	Libby		46	Aquatic/Botanical
Vermilion Falls	Clark	Cabinet		99	Recreational/ Traditional, Cultural
Vinal Lake	Yaak	3 Rivers		83	Traditional, Cultural/Aquatic
West Pipe	Libby	Libby		17	Botanical
Winkum Creek	Yaak	3 Rivers		80	Botanical
Yaak Falls	Yaak	3 Rivers		44	Traditional, Cultural/ Recreational
Total SIA Acres			**19,715**	**76,379**	

MA3 – Special Interest Areas (continued)

Desired Condition

Special interest areas (SIAs) protect or enhance, and where appropriate, foster public use and enjoyment of areas with special values. These values apply to aquatic, botanical, ecological, geological, heritage resource, recreational, scenic, traditional cultural, zoological, or other valuable and unique resources. These areas are usually small (less than 1,000 acres) except for the scenic SIAs that are usually several thousand acres. Where appropriate, interpretation of resources for public education or recreation is provided. Buildings are present within this MA (some SIAs) and are usually designed and maintained for the national forest visitor. Vegetation, terrestrial and aquatic habitat, soil productivity, and water quality appears natural in most areas. Management activities vary within these areas depending upon the specific type of SIA.

Suitable uses and activities for Aquatic, Botanical, Ecological, and Zoological SIAs are displayed in Table 20. Suitable uses and activities for Cultural Resource and Tribal Traditional Cultural SIAs are displayed in Table 21. Suitable uses and activities for Geologic, Recreational, and Scenic SIAs are displayed in Table 22.

Table 20. Generally suitable activities and uses for MA3 (SIAs - Aquatic, Botanical, Ecological, and Zoological)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Special Forest Products and Firewood (commercial or personal use)	No
Grazing	No
Motorized (Summer)	No
Motorized (Winter)	No
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools for Administrative Work	Yes
Mechanized (e.g., Mountain Bikes) on designated routes	Yes
Road Construction (permanent or temporary)	No
Minerals	
Leasable	No
Mineral Materials (Salable)	No

NOTE: Where a management plan has been developed for an SIA, suitability may differ from that listed in the table. The suitability in the specific SIA management plan would be followed.

MA3 – Special Interest Areas (continued)

Table 21. Generally suitable activities and uses for MA3 (SIAs - Cultural Resource and Tribal Traditional Cultural)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Special Forest Products and Firewood (commercial or personal use)	No
Grazing	No
Motorized (Summer)	No
Motorized (Winter)	No
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools for Administrative Work	Yes
Mechanized (e.g., Mountain Bikes) on designated routes	Yes
Road Construction (permanent or temporary)	No
Minerals Leasable Mineral Materials (Salable)	 No No

NOTE: Where a management plan has been developed for an SIA, suitability may differ from that listed in the table. The suitability in the specific SIA management plan would be followed.

Table 22. Generally suitable activities and uses for MA3 (SIAs - Geologic, Recreational, and Scenic)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Commercial Use of Special Forest Products and Firewood	No
Personal Use of Special Forest Products and Firewood	Yes
Grazing	No
Motorized (Summer) on Designated Routes	Yes
Motorized (Winter)	Yes
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools	Yes
Mechanized (e.g., Mountain Bikes) on Designated Trails	Yes
Road Construction (permanent or temporary)	Yes – G, R No - S
Minerals Leasable Mineral Materials (Salable)	 No No

G = Geologic Areas; R = Recreational Areas; S = Scenic Areas

NOTE: Where a management plan has been developed for an SIA, suitability may differ from that listed in the table. The suitability in the specific SIA management plan would be followed.

MA4a – Established and Proposed Research Natural Areas

Description

This MA applies to established and proposed research natural areas (RNAs). The KNF has eight established RNAs and three proposed RNAs. Established RNAs currently exist in the Forest; whereas, RNAs identified as proposed are being brought forward as part of this Plan. RNAs form a long-term network of ecological reserves identified for non-manipulative research, education, and the maintenance of biodiversity. Most of these areas protect late-seral or climax vegetative conditions. They are established or proposed to be established, to provide study and protection of a full range of habitat types. RNA information is displayed in Table 23.

Table 23. Research Natural Areas (RNAs)

RNA Name	GA Name	District	Established Acres	Proposed Acres
Big Creek	Koocanusa	Rexford	178	
Doonan Peak	Bull	Three Rivers		504
Hoskins Lake	Yaak	Three Rivers	376	
Huson Peak	Yaak / Libby	Libby		731
LeBeau	Tobacco	Fortine	411	
Lower Ross Creek	Bull	Three Rivers	1,874	
Norman Parmenter	Libby	Libby	1,289	
Pete Creek Meadows	Yaak	Three Rivers	153	
Seven Point Genetical	Clark	Cabinet		1,991
Ulm Peak	Clark	Cabinet	689	
Wolf Weigel	Fisher	Libby	240	
Total RNA Acres			**5,210**	**3,226**

Desired Condition

These areas maintain natural, relatively pristine conditions by allowing ecological processes to prevail with minimal human intervention. Most management activities are discouraged. Under special circumstances, deliberate manipulation may be used to maintain or reestablish ecological processes within a RNA, if approved in the RNA management plan or Establishment Record. Nonmanipulative research activities and projects are conducted with nonmotorized equipment. Buildings are not present within these areas. Existing trails have minimal, nonmotorized use. Alternatives for existing recreational uses may be examined and implemented. Suitable uses and activities within this MA are displayed in Table 24 (next page).

MA4a – Established and Proposed Research Natural Areas (continued)

Table 24. Generally suitable activities and uses for MA4a (established/proposed RNAs)

Management Activities & Uses	Suitable
Wildland Fire Use	No
Prescribed Burning	No
Timber Harvest as a Tool	No
Timber Production (scheduled on a rotation basis)	No
Special Forest Products and Firewood (commercial or personal use)	No
Grazing	No
Motorized (Summer)	No
Motorized (Winter)	No
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools for Administrative or Research Work	Yes
Mechanized (e.g., Mountain Bikes) on Designated Trails	Yes
Road Construction (permanent or temporary)	No
Minerals	
Leasable	No
Mineral Materials (Salable)	No

NOTE: Where a management plan has been developed for an RNA, suitability may differ from that listed in the table. The suitability in the specific RNA management plan would be followed.

MA5a, 5b and 5c – Backcountry

Description

Most of these MAs consist of relatively large areas without roads. These MAs provide a variety of recreation opportunities, both motorized and nonmotorized. MA5a provides nonmotorized recreation year-round; MA5b provides motorized and nonmotorized recreation year-round; and MA5c provides motorized recreation in the winter and nonmotorized recreation year-round. Motorized opportunities are generally on trails, as these areas are primarily without roads. The density of motorized routes in all of the MA5s is much lower than the density of motorized routes in MA6 (General Forest). Constructed improvements in this MA generally consist of trails constructed and maintained for recreation users with associated signs and directional markers. In some areas, lookouts, cabins, or other structures are present. Current travel management opportunities continue within this MA until site-specific travel management planning is completed.

The MA5s contain diverse vegetation composition and structure that provides habitat security and connective corridors for certain species. Some evidence of past management activities are present. Watershed and vegetation restoration is accomplished through natural, ecological processes and limited active management activities.

Desired Condition

The range of recreational opportunities is maintained while emphasizing nonmotorized and motorized trail opportunities during the summer and winter periods. The density of motorized routes remains significantly less than in MA6 (General Forest). Existing recreation facilities are maintained. New construction of facilities is rare, with the possible exception of trails.

Ecological conditions are restored or improved. Natural processes create most of the ecological change with allowances for active management restoration activities under certain situations. Watershed and vegetative restoration is achieved predominantly through natural ecological processes and to a much lesser degree through restoration activities. The desired condition recognizes that there are several reasons for possible entry into these areas for restoration management activities. Following are circumstances when timber harvest or road construction may occur:

Timber harvest may occur under the following circumstances:

- To improve wildlife habitat.
- To maintain or restore the desirable characteristics or ecosystem composition and structure.
- If incidental to the implementation of a management activity or administrative use.

Limited road construction, which would generally be temporary, may occur under the following circumstances:

- A road is needed to protect public health and safety in cases of a threat of flood, fire, or other catastrophic event, that without intervention would cause the loss of life or property.
- A road is needed to help facilitate fuels reduction in the wildland urban interface.

- A road is needed for critical resource restoration and protection activities.
- A road is needed to conduct a response action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to conduct a natural restoration action under CERCLA, section 311 of the Clean Water Act, or Oil Pollution Act.
- A road is needed in conjunction with any mineral lease, license, permit, or approval issued for mineral leasing operations.
- Road access is needed pursuant to reserved or valid existing rights or as provided by statute or treaty.
- Road realignment is needed to prevent resource damage by an existing road that is deemed essential for public or private access, management, or public health or safety, and where such damage cannot be corrected by maintenance.

Suitable uses and activities within this MA are displayed in Table 25.

Table 25. Generally suitable activities and uses for MA5a, 5b, and 5c (Backcountry)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	Yes - See Desired Condition
Timber Production (scheduled on a rotation basis)	No
Special Forest Products and Firewood	Yes
Grazing	Yes
Motorized (Summer)	5a – No 5b – Yes 5c – No
Motorized (Winter)	5a – No 5b – Yes 5c – Yes
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools	Yes
Mechanized (e.g., Mountain Bikes)	Yes
Road Construction (permanent or temporary)	Yes - See Desired Condition
Minerals Leasable Mineral Materials (Saleable)	 Yes No

MA6 – General Forest

Description

Most of this MA consists of relatively large areas with roads, trails, structures, and signs of forest management activities. This MA provides a variety of recreation opportunities, both motorized and nonmotorized. Motorized opportunities are on both roads and trails. The density of motorized routes in MA6 is much higher than the density of motorized routes in the MA5's (Backcountry). Nonmotorized opportunities are on trails, rivers, developed facilities and other sites. Constructed improvements in this MA generally consist of campgrounds, picnic or day use areas, trails, lookouts, cabins, or other structures. Current travel management opportunities will continue within this MA until site-specific travel management planning is completed.

MA6 contains diverse vegetation composition and structure. MA6 provides a variety of wildlife habitats, habitat security, and contributes to connective corridors for certain species. Watershed and vegetation restoration is accomplished predominantly through management that emulates natural processes but also through natural ecological processes. Management activities and use levels vary, depending on location, accessibility, terrain, economics, and resource conditions. Evidence of past management activities varies across the landscape from infrequent to very common.

Desired Condition

The range of recreational opportunities is maintained while site or route conditions are maintained or improved as opportunities allow. The density of motorized routes remains significantly more than in the MA5's (Backcountry). Existing recreation facilities are maintained or improved.

Ecological conditions are restored or improved. Management creates most of the ecological change. Watershed and vegetative restoration is achieved predominantly through restoration activities and through natural ecological processes. Restoration activities in MA6 are designed to: improve watershed and aquatic resource conditions, improve vegetation conditions, reduce fuels, improve wildlife habitat, or for other resource benefits. This MA contributes to regulated timber harvest estimates and timber sales occur for the primary purpose of timber production. Suitable uses and activities within this MA are displayed in Table 26.

Table 26. Generally suitable activities and uses for MA6 (General Forest)

Management Activities & Uses	Suitable
Wildland Fire Use	Yes
Prescribed Burning	Yes
Timber Harvest as a Tool	Yes
Timber Production (scheduled on a rotation basis)	Yes
Special Forest Products and Firewood	Yes
Grazing	Yes
Motorized (Summer)	Yes
Motorized (Winter)	Yes
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools	Yes
Mechanized (e.g., Mountain Bikes)	Yes
Road Construction (permanent or temporary)	Yes
Minerals	
Leasable	Yes
Mineral Materials (Saleable)	Yes

MA7 – Primary Recreation Areas

Description

This MA applies to two areas on the KNF. This MA contains a variety of recreation sites and areas that provide an array of recreational opportunities and experiences in a forested environment. These areas may include a heavy investment in recreational infrastructure designed, built, and managed for the national forest visitor. Table 27 displays the MA7 management areas in the KNF.

Table 27. Primary recreation areas

Primary Recreation Areas	District	Acres
Lake Koocanusa	Libby, Rexford	14,809
Turner Mountain Ski Area	Libby	852

Desired Condition

Major site modifications and facility installations are present. These installations and improvements appear singly or in a combination within recreational complexes. They may include both private and public facilities located on NFS lands. Trails are usually well developed and maintained to a high standard.

These areas may be characterized by substantially modified natural environments. Recreation use in these areas is high. The sounds of people using the area are evident and interaction between visitors is common. A considerable number of facilities designed for use by a large number of people may be present. Facilities are often provided for special activities and are designed to be fully accessible. These facilities are architecturally designed to blend with the forest surroundings while providing the necessary services for forest visitors.

Vegetative manipulation provides for safety and accommodates both existing and new facilities. Vegetative manipulation within ski areas maintains and creates ski runs. Roads, trails, and sometimes highways are often clearly evident. The frequency of human contact is moderate to high. Traffic control devices (signs and barriers) are obvious and numerous, although they are designed to blend in with the human-made environment. Regulatory and informational signs are common. Picnic tables, fire grates, toilet buildings, and camping sites are visible. Interpretive information is provided where needed. Ecosystems are managed and natural processes may or may not, operate freely. Suitable uses and activities within this MA are displayed in Table 28 (next page).

MA7 – Primary Recreation Areas (continued)

Table 28. Generally suitable activities and uses for MA7 (Primary Recreation Areas)

Management Activities & Uses	Suitable
Wildland Fire Use	No
Prescribed Burning	Yes
Timber Harvest as a Tool	Yes
Timber Production (scheduled on a rotation basis)	No
Special Forest Products and Firewood	Yes
Grazing	No
Motorized (Summer)	Yes
Motorized (Winter)	Yes
Nonmotorized (Summer)	Yes
Nonmotorized (Winter)	Yes
Motorized Tools	Yes
Mechanized (e.g., Mountain Bikes)	Yes
Road Construction (permanent or temporary)	Yes
Minerals in all areas except the Koocanusa Primary Recreation Area	
Leasable	No
Mineral Materials (Salable)	No
Minerals in the Koocanusa Primary Recreation Area	
Leasable	No
Mineral Materials (Salable)	Yes

Chapter 3. Design Criteria

Introduction

Design criteria are used in combination with desired conditions, objectives, and suitable uses to guide the management of the KNF. Design criteria include guidelines and other sources of design criteria.

Guidelines

Guidelines provide technical specifications and guidance for project and activity decisionmaking to help achieve desired conditions and objectives. Guidelines are not commitments or final decisions approving projects and activities.

Laws, regulations, policies and other Forest Service specific policy and directives are not repeated in these guidelines. For example, threatened and endangered species have very specific direction in law, regulation, policy, Forest Service directives, and other sources such as recovery plans; therefore, limited guidelines are found in this Plan for threatened and endangered species. If a particular resource is not addressed in these guidelines, it does not mean the resource is not managed or that the Forest Service considers a particular resource less important than those listed.

The following guidelines are applicable across the entire Forest and are organized by sustainability topic.

Other Sources of Design Criteria

This section identifies guidance from other sources that helps achieve desired conditions and ensures consistency with law, regulation and policy that governs resource management of NFS lands. This direction is not included in the Plan but is listed below and is incorporated by reference or can be found in the planning record.

This direction includes but is not limited to: laws, regulations, or policies; Memorandum of Understandings; conservation strategies, assessments, or plans; Forest Service directives (manuals and handbooks); or existing decisions and their biological opinions.

These sources of design criteria are listed with the guidelines by sustainability topic.

Access and Recreation

Access and Travel Management

Sources of Design Criteria: 36 CFR 212-Travel Management; 36 CFR 251-Land Uses; 36 CFR 261-Prohibitions; FSM 7700-Travel Management; FSH 7709.55-Travel Analysis Handbook; Off-Highway Vehicle Record of Decision and Plan Amendment for Montana, North Dakota, and portions of South Dakota (Jan. 2001); and Access and Travel Management - Northern Region Guide. R-1 Supplement No. 7709.59-2004-1.

Recreation

Guidelines:

1. In Management Area 1a (congressionally designated wilderness), party size should not exceed eight people and eight head of stock (maximum of 1.5 head per person).
2. In Management Area 1d (Wild Lands), only hand-held motorized equipment should be used for trail and building maintenance, reconstruction, and construction.

Other Sources of Design Criteria: 36 CFR 212-Travel Management; 36 CFR 219-Planning; 36 CFR 251-Land Uses; 36 CFR 261-Prohibitions; 36 CFR 290-Cave Resources Management; 36 CFR 291-Occupancy and Use of Developed Sites and Areas of Concentrated Public Use; 36 CFR 293-Wilderness-Primitive Areas; 36 CFR 294-Special Areas; 36 CFR 297-Wild and Scenic Rivers; FSM 1950-Environmental Policy and Procedures; FSM 2300-Recreation, Wilderness, and Related Resource Management; FSM 2710-Special-Use Authorizations; FSM 2720-Special Uses Administration; FSM 7300-Buildings and Other Structures; FSM 7400-Public Health and Pollution Control Facilities; FSH 1909.15-Environmental Policy and Procedures Handbook; FSH 2309.18-Trails Management Handbook; FSH 2709.11-Special Uses Handbook; FSH 7309.1-Buildings and Related Facilities Handbook; FSH 7409.11-Sanitary Engineering and Public Health Handbook; Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines; and National Quality Standards for Trails, Recreation Sites, Interpretive Services, Special Use Permits, and Heritage Resources.

Roads

Sources of Design Criteria: 36 CFR 212-Travel Management; 36 CFR 251-Land Uses; 36 CFR 261-Prohibitions; FSM 5460-Right-of-Way Acquisition; FSM 7100-Engineering Operations; FSM 7700-Travel Management; FSH 2709.12-Road Rights-of-Way Grants Handbook; FSH 5409.17-Rights-of-Way Acquisition Handbook; FSH 7709.55-Travel Analysis Handbook; FSH 7709.56-Road Pre-construction Handbook; FSH 7709.56b-Transportation Structures Handbook; FSH 7709.57-Road Construction Handbook; FSH 7709.58-Transportation System Maintenance Handbook; FSH 7709.59-Transportation System Operations Handbook; R1 Supplement 46; R1 Supplement 59; R1 Supplement 73; R1 Supplement 7100-91-1; and Miscellaneous Report FS-643 Roads Analysis: Informing Decisions about Managing the National Forest Transportation System.

Scenery

Guideline:

1. Management activities should be designed and implemented to be consistent with the established Scenic Integrity Objectives.

Other Sources of Design Criteria: FSM 2380-Landscape Management; and Agriculture Handbook Number 701 - Landscapes Aesthetics, A Handbook for Scenery Management.

Inventoried Roadless Areas

Sources of Design Criteria: CFR 294 – Special Areas (Subpart B)

Vegetation

Sources of Design Criteria: FSM 2000-National Forest Resource Management; FSM 2080-Noxious Weed Management (Interim Directive [ID]); FSM 2470-Silvicultural Practices; FSM 2600-Wildlife, Fish, and Sensitive Plant Habitat Management; FSM 2620-Habitat Planning and Evaluation; FSM 2621-Management Indicators; FSM 2622-Biological Diversity Requirements; FSM 3400 – Forest Pest Management; USDA Regulations 9500-4 and 5; Executive Order (EO) 11990-Protection of Wetlands; Healthy Forest Restoration Act, 2003; EO 13112 Invasive Species; and USDA, Idaho Department of Lands, and Montana DNRC – Forest Insect and Disease Identification and Management.

Threatened, Endangered, and Proposed Plant Species

Sources of Design Criteria: FSM 2670-Threatened, Endangered and Sensitive Plants and Animals; Sikes Act as amended (74 Stat. 1052; 88 Stat. 1369) 16 U.S.C. 670g); 36 CFR 219. Conservation Strategy for *Howellia aquatilis*, 1994; and recovery plans for management direction of listed and candidate threatened plant species.

Plant Species of Concern and Species of Interest

Guideline:

1. Activities should protect documented populations of species of concern and species of interest).

Other Sources of Design Criteria: FSM 2600-Wildlife, Fish, and Sensitive Plant Habitat Management; FSH 2609.13-Wildlife and Fisheries Program Management Handbook; Status Report on Sensitive Lady's Slipper Orchids, 1996; Element Stewardship Abstract for *Betula Pumila*, 1985; Status Review of *Clarkia Rhomboidea* in Montana, 1997; Conservation Assessment and Status Report of sensitive moonwarts on the KNF, 1996-1997; Management Recommendations for Clustered Lady Slipper Orchid, 1998; Peatlands on National Forests of the Northern Rocky Mountains: Ecology and Conservation, 1996; A classification of aquatic plant communities within the northern rocky mountains, 2002; *Cypripedium fasciculatum* Conservation assessment, 1997; Conservation strategy *Theylypteris phegopteris*, 1993; Significant peatlands of western Montana, 1994; Assessment of KNF Vegetation Types with Potential for Silene spaldingii in the Tobacco Plains, Rexford Bench and Salish Range Foothills, 2003; Moonwarts of Western Montana, 1995; *Cypripedium* Management Guidelines, 1984; and Conservation Strategy for Clustered Lady's-Slipper Orchid (*Cypripedium Fasciculatum*) in U.S. Forest Service Region 1.

Old Growth

Guidelines:

1. Management activities should not reduce the amount (acres) of existing old growth.
2. Eliminate or minimize road-related impacts within or adjacent to lands being managed for old growth. Snags and down wood in old growth stands should not be impacted as a result of firewood cutting.
3. Minimize new or temporary road construction or other developments in lands being managed for old growth.

Other Sources of Design Criteria: Green and others 1992, corrected 02/2005.

Down Wood

Guideline:

1. Vegetation management activities should retain at least the minimum amounts of Coarse Woody Debris displayed in Table 1 of the Vegetation Desired Condition, “Down Wood Forestwide Desired Condition” on page 1-9 in Chapter 1.

Other Sources of Design Criteria: FSM 2550-Soil Management and FSM 5150-Fuel Management.

Insects and Disease

Sources of Design Criteria: FSM 3400-Forest Pest Management; and USDA, Idaho Department of Lands, and Montana DNRC-Forest Insect and Disease Identification and Management.

Noxious Weeds and Invasive Plant Species

Sources of Design Criteria: FSM 2080-Noxious Weed Management; FSM 2150 - Pesticide Use; FSH 2709.11-Special Use Permits; FSH 2200 Range Management; KNF Forest Weed EIS; Federal Noxious Weed Act, 1975; State Weed Management Plans for Montana and Idaho; Policy of Noxious Weed Management 1990; and R-1 Noxious Weed BMPs; National Strategy and Implementation Plan for Invasive Species Management.

Timber

Sources of Design Criteria: 36 CFR 221-Timber Management Planning; 36 CFR 223-Sale and Disposal of National Forest System Timber; FSM 1920-Land Management Planning; FSM 2400-Timber Management; FSH 1900 - Planning; FSH 2400-Timber Management; and Timber sale contract provisions and procurement contracts.

Fire

Sources of Design Criteria: FSM 5100-Fire Management; FSM 5100-Zero Code; FSM 511-Wildfire Prevention; FSM 5120-Presuppression Management; FSM 5130-Fire Suppression; FSM 5140-Prescribed Fire; FSM 5150-Fuel Management; FSM 5160-Fire Management Equipment and Supplies; FSM 5170-Fire Management Cooperation; FSM 5180-Fire Reports; FSM 5190-Management; FSH 5109.14-Individual Fire Report Handbook; FSH 5109.17-Wildland Fire Qualifications Handbook; FSH 5109.18-Wildfire Prevention Handbook; FSH 5109.19-Fire Management Analysis and Planning Handbook; FSH 5109.31-Wildfire Cause Determination Handbook (NWCG Handbook 1); FSH 5109.32a-Fireline Handbook (NWCG Handbook 3); FSH 5109.34-Interagency Fire Business Management Handbook (NWCG Handbook 2); 1998 Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide; 2001 Review and Update of the 1995 Federal Wildland Fire Management Policy; 2001 A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy; 2002 A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan; 2005 Wildland Fire Use Implementation Procedures Reference Guide; 2005 Interagency Standards for Fire and Fire Aviation Operations (Red Book) updated annually; 2005 Lincoln County Community Wildfire Protection Plan; 2005 Sanders County Community Wildfire Protection Plan; and KNF Annual Fire Management Plan.

Wildlife

Guidelines:

1. All activities on NFS lands should comply with the Forest food storage order.
2. Special use permits and operating plans (outfitter and guide, grazing) should specify sanitation measures to reduce wildlife conflicts and minimize bear mortality.

Other Sources of Design Criteria: FSM 2600-Wildlife, Fish and Sensitive Plant Habitat Management; FSH 2609.13-Wildlife and Fisheries Program Management; FSM 2550-Soil Management; FSM 5150-Fuel Management; FSH 2509.18-Soil Management; and the Endangered Species Act (1973).

Connectivity

Sources of Design Criteria: Identifying and Managing Wildlife Linkage Approach Areas on Public Lands (2004); Identification and Management of Linkage zones for Wildlife Between the Large Blocks of Public Land in the Northern Rocky Mountains (2003); and Lynx Linkages Areas (2003).

Threatened and Endangered Wildlife Species

Grizzly Bear

Guideline:

1. Within the Selkirk and Cabinet/Yaak grizzly bear recovery zones; for those BMUs that do not currently (2003) meet standards for core, TMRD and OMRD, those standards should be met in the following timeframes: by 2007 – 35 percent of those BMUs; by 2009 – 70 percent; and by 2011 - all BMUs will meet standards. (See the Forest Plan amendment and biological opinion for Motorized Access Management within the Selkirk and Cabinet/Yaak grizzly bear recovery zones for the Kootenai, Idaho Panhandle, and Lolo National Forests).

Other Sources of Design Criteria: Grizzly bear recovery plan (1993); Interagency Grizzly Bear Committee Guidelines (1986); Forest Plan Amendment for Motorized Access Management within the Selkirk and Cabinet/Yaak grizzly bear recovery zones (2002; and Biological Opinion (2002).

Bald Eagle

Guideline:

1. Avoid or minimize disturbance within one-half mile of active (occupied) nest sites from February 1 to June 15, unless site-specific nest management plans determine other timeframes or distances are more appropriate.

Other Sources of Design Criteria: Pacific States Bald Eagle Recovery Plan (1986); Montana Bald Eagle Management Plan (1994); and Bald and Golden Eagle Protection Act (1940).

Gray Wolf

Guideline:

1. Avoid or minimize disturbance within one mile of active den sites between February 1 and May 30, unless site-specific planning determines other distances and timeframes are more appropriate.

Other Sources of Design Criteria: Northern Rocky Mountain Wolf recovery plan (1987); Montana Gray Wolf Conservation and Management plan (2003); and Idaho Wolf Conservation and Management Plan (2002).

Canada Lynx

Sources of Design Criteria: The Lynx Conservation Assessment and Strategy (LCAS) is being followed. Dialogue with US Fish and Wildlife Service continues; to discuss ways of incorporating the science for Canada lynx into Forest Service management. Ecology and Conservation of Lynx in the United States (1999) and Lynx Conservation Assessment and Strategy (LCAS) (2000).

Wildlife Species of Concern and Species of Interest

Guidelines:

1. Management actions should avoid or minimize disturbance to species of concern and species of interest and their habitats on NFS lands during critical life stages, as identified in Table 1. These timeframes should be used unless project level analysis determines others may be used and still protect the species. Where nests of raptors or additional species of concern or species of interest are identified, other than those listed in the table below, appropriate distances and timing of activities should be determined and implemented to minimize impacts to raptors and other resources.

Table 29. Wildlife species of concern and species of interest activities schedule

Species	Timing of Activities
Common loon nesting	April 15 – July 1
Northern goshawk nesting	April 1 – July 15
Wolverine dens	December 1 – April 30
Flammulated owl	May 1 – July 31
Harlequin duck nesting and rearing	April 15 – July 15
Peregrine falcon	March 1 – August 31

2. For those terrestrial mollusks identified as species of concern, protect documented locations and high probability habitat that may be impacted by project activities.

3. Management actions should consider species conservation assessments and strategies when conducting activities that may impact habitat.

4. Eliminate or minimize effects to rare or unique communities associated with management activities and recreational use (i.e., avoid winter motorized use across fens or bogs with known bog lemming use).

Other Sources of Design Criteria: FSH 1909.12, Chapter 40 – Land Management Planning Handbook, Science and Sustainability; Status assessment and conservation plan for the common loon (*Gavia immer*) in North America; Montana Common Loon Management Plan (1998); The common loon in the northern Region: Biology and Management Recommendations (1994); The harlequin duck conservation assessment and strategy (Cassirer et al. 1996); Flammulated, boreal, and great gray owls in the United States: A technical conservation assessment (1994); Fisher Biology and Management: A literature review and adaptive management strategy (1994); Conservation Assessment for Fisher in Idaho (1995); Forest Carnivores in Idaho: habitat conservation assessments and conservation strategies (1995); Conservation Assessment for wolverine in Idaho (1995a); Wolverine, Canada lynx, and Fisher Habitat and Distribution Maps, Draft Hierarchical Approach and Draft Conservation Strategies (1994); Montana Comprehensive Fish and Wildlife Conservation Strategy (2005); Idaho Comprehensive Wildlife Conservation Strategy (2005); Washington Comprehensive Wildlife Conservation Strategy (2005); Status and Conservation Management of Terrestrial Mollusks of Special Concern in Montana (2003); and A Conservation Assessment of the Northern Goshawk Black-backed Woodpecker, Flammulated Owl, and Pileated Woodpecker in the Northern Region (2006).

Snag-associated Species

Guidelines

1. In addition to the snag numbers described in Table 3 of the Wildlife Desired Condition "Snags and Down Wood Desired Condition" section on page 1-23 in Chapter 1, vegetation management activities should retain all existing (no less than four per acre) large diameter snags (greater than 20 inch DBH), where they exist, except for specifically identified instances for safety. Retained snags and snag recruits are designated as wildlife trees and should be left on site if felled or blown over. Snag numbers are averaged by biophysical setting over the planning subunit. In areas where these numbers are not attainable, provide amounts as close as possible to those listed, substitute other species where possible to meet numbers listed, and document why conditions cannot be met.
2. Vegetation management activities should retain six to eight live trees per acre for future snags. Where it is determined not feasible to retain snags within a project area, additional live trees (at least three for each snag not retained) should be left on site.
3. Within each planning subunit, retain minimum snag numbers on at least 40 percent of the NFS lands that make up each biophysical setting.

Bats

Guideline:

1. Avoid or minimize disturbance of occupied caves and mines from May 1 to December 15 for maternity roosts and from October to April for hibernacula. Caves or abandoned mines with known bat use should be evaluated for gate installation.

Other Sources of Design Criteria: Habitat conservation assessment and conservation strategy for the Townsend's big-eared bat (1995).

Migratory Birds

Sources of Design Criteria: Migratory Bird Treaty Act (1918); the Migratory Bird Conservation Act (1929); the Neotropical Migratory Bird Conservation Act; Executive Order (EO) 13186 (2001); and Montana Partners in Flight Bird Conservation Plan (2000).

Big Game

Guidelines:

1. Management activities should maintain a minimum of 30 percent thermal cover on big game winter range within each planning subunit.
2. Snowmobile use should avoid or minimize disturbance to mountain goats in winter ranges, during the winter and spring seasons (December 1 to June 30).
3. Management activities should avoid or minimize disturbance to big game on winter range between December 1 and April 30, with the exception of through routes. Management activities that occur on winter range during the winter period should concentrate activities to reduce impacts to big game.
4. Management activities should maintain a minimum of 30 percent security Forestwide.

Other Sources of Design Criteria: FSM 2600-Wildlife, Fish, and Sensitive Plant Habitat Management; FSH 2609.13-Wildlife and Fisheries Program Management Handbook; Guidelines for Evaluating and Managing Summer Elk Habitat in Northern Idaho (1984); Coordinating Elk and Timber Management/The Montana Cooperative Elk Logging Study (1985); Montana Elk Management Plan (2005); Mountain Goat Habitat Management Plan for the Cabinet Mountains, Montana (1980); Defining Elk Security; and the Hillis Paradigm (1991).

Watersheds (Soil, Water, and Riparian Areas) and Aquatic Species

Watersheds

Guidelines:

1. New and renewed special use permits related to water uses should ensure that water quality and beneficial uses are fully protected.
2. Ground-disturbing activities in impaired watersheds (listed by the State under CWA section 303(d)) with or without an adopted TMDL, should not cause a decline in water quality or further impair beneficial uses of the water. A short-term or incidental water quality departure may occur where there is no threat or impairment to the beneficial uses of the water, where the State concurs.
3. Roads and trails that are decommissioned or put into intermittent stored service should be treated to avoid negative impacts to watershed functions, water quality, or beneficial uses.
4. Ground-disturbing activities in the Flower Creek municipal watershed should prevent or reduce risks to water quality and beneficial uses.

Other Sources of Design Criteria: 36 CFR 251.9-Land Uses; FSM 2500-Watershed and Air Management; FSH 2509.22-Soil and Water Conservation Handbook; Executive Order (EO) 11988 of May 24, 1977 (Management of Flood Plains); EO 11990 of May 24, 1977 (Protection of Wetlands); and EO 12088 of October 13, 1978 (Pollution prevention).

Soils

Guidelines:

1. Where needed for nutrient retention, tops and limbs should be retained on site for a minimum of one winter season.
2. Long tractor skids should not occur on slopes greater than 35 to 40 percent without additional soil protection measures.
3. See recommended levels of residual coarse woody debris for soils in Table 1 of the Vegetation Desired Condition "Down Wood Forestwide Desired Condition" section on page 1-9 in Chapter 1.

Other Sources of Design Criteria: FSM 2550-Soil Management (R1 Supplement 2500-99-1) and FSH 2509.22 Soil and Water Conservation Handbook (to include any future supplements).

Riparian Areas

Riparian guidelines apply to all Riparian Conservation Areas (RCAs) and to projects and activities in areas outside the RCAs that may potentially degrade RCAs.

Guidelines:

1. When RCAs are intact and functioning at desired condition, then management activities should maintain or improve that condition.
2. When RCAs are not intact and functioning at desired condition, then management activities should include restoration components that exceed full compensation for project effects to promote a trend toward desired conditions.
3. Management activities in RCAs should not result in long-term degradation to aquatic conditions. Limited short-term effects from activities in the RCAs may be acceptable when they support long-term benefits to the RCAs and aquatic resources.
4. Soil and snow should not be sidecast into surface water.
5. New, replacement, and reconstructed crossing sites (culverts, bridges and other stream crossings) should be designed to:
    - Accommodate 100-year floods including associated bedloads and debris.
    - Prevent diversion of stream flow out of the channels.
    - Provide and maintain fish passage up to bankfull discharge.
6. Crossing locations on roads being put into long-term storage should provide fish passage.
7. Grazing management should prevent trampling of native fish redds by livestock.
8. Minimum impact suppression tactics should be used within RCAs.
9. Trees felled in RCAs for safety concerns should be left on site.
10. When drafting water from streams, pumps should be screened to prevent entrainment of fish and aquatic organisms.

Other Sources of Design Criteria: FSH 2509.22-Soil and Water Conservation Handbook (to include any future supplements); Executive Order (EO) 11988 of May 24, 1977 (Management of Flood Plains); and Montana Code 26.6 (Montana's Stream Management Zone Law).

Aquatic Species

Guidelines:

1. Activities that may harass native fish or directly deliver sediment to occupied native fish streams should be limited to the times outside of spawning and incubation seasons:
    - For streams with spring spawners, activities should not occur prior to July 15.
    - For streams with fall spawners, activities should not occur between September 1 and March 15.
    - Dates can be modified when stream-specific information on staging and spawning of native fishes supports changes.
2. Documented amphibian breeding sites should be buffered from management activities that have the potential to disturb such sites.

Other Sources of Design Criteria: FSM 2600-Wildlife, Fish and Sensitive Plant Habitat Management and FSH 2609.13 – Wildlife and Fisheries Program Management Handbook.

Other Topics

Air Quality

Guideline:

1. The Forest should cooperate with the State in meeting the requirements of the State Implementation Plans (SIPs) and the Smoke Management Plans (SMPs).

Other Sources of Design Criteria: FSM 2580-Air Resource Management; FSM 5100-Fire Management; FSH 5109.19-Fire Management Analysis and Planning Handbook; Clean Air Act, as amended (42 U.S.C. 7401 et seq.); Columbia River Basin Air Quality Assessment (11/95); Regional Pollution Potential (4/98); Air Quality Climate of Columbia River Basin (8/98); Region 1 Air Resource Management Plan (4/97); Cabinet Mountains Wilderness AQRV Plan (6/93); Lake Chemistry data from USFS NRIS Air web site; NADP data from NREL Web Site; EPA AIRS data base web site for emission sources; Screening Procedure to Evaluate Effects of Air Pollution in Region 1 Wilderness Areas (draft, 1997); Region 1 Air Quality Guidance for Oil and Gas Leasing (5/94); AQRV lichen and lake monitoring reports; Visibility Summary for Region 1 (4/91); Montana Air Quality Summary for 1995; and Desk Reference for NEPA Air Quality Analysis (1995).

Buildings and Other Structures

Sources of Design Criteria: 36 CFR 1190-Minimum Guidelines and Requirements for Accessible Design; 36 CFR 1191-Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; FSM 7300-Buildings and Other Structures; FSM 7400-Public Health and Pollution Control Facilities; FSM 7500-Water Storage and Transmission; FSM 7600-Electrical Engineering; FSH 7309.11-Buildings and Related Facilities Handbook; 7409.11-Sanitary

Engineering and Public Health Handbook; FSH 7509.11-Dams Management Handbook; R1 Supplement 7300-90-4; Built Environment Image Guide FS-710; International Building Code Handbook; and Americans with Disabilities Act Accessibility Guidelines and Architectural Barriers Act Guidelines.

Grazing

Guideline:

1. Permits for grazing on allotments without a current environmental analysis and decision should include the following utilization guidelines:
    - 35 percent maximum allowable utilization on palatable and available plant species on big game winter range sites.
    - 50 percent maximum allowable utilization on palatable and available plant species on all other sites.
    - Invasive plants that are not palatable should be excluded from utilization measures.

Other Sources of Design Criteria: 36 CFR 222-Range Management; FSM 2200-Range Management; FSH 2209.13-Grazing Permit Administration Handbook; FSH 2209.21-Rangeland Ecosystem Analysis and Management Handbook; and 1978 Public Rangelands Improvement Act.

Heritage Resources

Guidelines:

1. Include historic property protection provisions in applicable contracts and special use permits.
2. Metal detectors should not be used to locate archaeological or historical artifacts except for scientific research as permitted by the Forest.
3. Geocaching should not occur on historic properties.
4. Leave historic human remains undisturbed unless there is an urgent reason (e.g., human health and safety, natural event, etc.) for their disinterment.

Other Sources of Design Criteria: 36 CFR 800-Protection of Historic Properties; 36 CFR 296-Protection of Archaeological Resources: Uniform Regulations; 36 CFR 60-National Register of Historic Places; FSM 2360-Special Interest Areas; Executive Order (EO) 11593-Protection and Enhancement of the Cultural Environment; EO 13287-Preserve America; Section 106 Programmatic Agreement between Region 5, California State Historic Preservation Officer, and the Advisory Council on Historic Preservation; Programmatic Agreement between the Montana State Historic Preservation Office and the KNF; and the National Heritage Strategy.

Lands and Special Uses – Utility Corridors and Communication Sites

Guideline:

1. New electrical distribution (33 kv or less) and telephone lines should be buried unless one or more of the following applies:
    - Burial is not feasible due to geologic hazard or unfavorable geologic conditions.
    - Greater long-term site disturbance would result.

Other Sources of Design Criteria: 36 CFR 212-Travel Management; 36 CFR 251-Land Uses; 36 CFR 254-Landownership Adjustments; FSM 1920-Land and Resource Management Planning; FSM 2700-Special Uses Management; FSM 5400-Landownership; FSM 5500-Landownership Title Management; FSM 7150-Surveying; FSM-7700 Travel Management; FSH 2709.11-Special Uses Handbook; FSH 2709.12-Road Rights-of-Way Grants Handbook; FSH 2709.15-Hydroelectric Handbook; FSH 5409.13-Land Acquisition Handbook; FSH 5409.17-Rights-of-Way Acquisition Handbook; FSH 5509.11-Title Claims, Sales, and Grants Handbook; R1 Supplement 114; R1 Supplement 2700-2003-1; R1 Supplement 2700-2004-1; R1 Supplement 2700-2004-2; R1 Supplement 2700-2004-3; R1 Supplement 2700-2004-4; R1 Supplement 2700-2005-1; KNF Supplement 2700-2300-1; Residential Access Policy; 1992 Western Regional Corridor Study; and Energy Policy Act of 2005.

Minerals

Sources of Design Criteria: 36 CFR 228-Minerals (Subpart A – Locatable Minerals, Subpart B – Leasable Minerals, Subpart C – Disposal of Mineral Materials, Subpart D – Miscellaneous Minerals Provisions, Subpart E – Oil and Gas Resources); 36 CFR 251 -Land Uses; 43 CFR 2300-Land Withdrawals; FSM 2760-Withdrawals; FSM 2800-Minerals and Geology; R1 Supplement 28; R1 Supplement 2800-94-1; R1 Supplement 2800-2003-1; R1 Supplement 2004-2; and R1 Supplement 2800-2004-3.

Other Forest Products

Sources of Design Criteria: National Strategy for Special Forest Products, 2001.

Research Natural Areas (RNAs)

Sources of Design Criteria: 36 CFR 251.23-Experimental Areas and Research Natural Areas; FSM 4063-Research Natural Areas; and RNA Designation Reports and Management Plans.

Special Interest Areas (SIAs)

Sources of Design Criteria: 36 CFR 219-Planning; 36 CFR 261-Prohibitions; 36 CFR 294-Special Areas; 36 CFR 296-Protection of Archaeological Resources: Uniform Regulations; FSM 2360-Special Interest Areas; and FSM 2370-Special Recreation Designations.

Tribal Consultation

Guidelines:

1. Consult with Tribes when management activities may impact treaty rights and/or cultural sites and cultural use, according to the Consultation Protocol.
2. Geocaching should not occur in traditional cultural use and special interest areas.

Other Sources of Design Criteria: Executive Order (EO) 13084-Consultation with Indian Tribal Governments; EO 13175-Consultation with Indian Tribal Governments; and Forest Service National Resource Book on American Indian and Alaska Native Relations.

Wild and Scenic Rivers (W&SRs)

Sources of Design Criteria: 36 CFR 297-Wild and Scenic Rivers; FSM 1924-Wild and Scenic River Evaluation, FSM 2354-River Recreation Management; and FSH 1909.12-Land and Resource Management Planning Handbook: Chapter 80 – Wild and Scenic River Evaluation.

Acronyms

AMS	Analysis of the Management Situation
ANILCA	Alaska National Interest Land Conservation Act
BMP	Best Management Practices
BMU	Bear Management Unit
BORZ	Bears Outside of Recovery Zone
CER	Comprehensive Evaluation Report
CFR	Code of Federal Regulations
DBH	Diameter Breast Height
EMS	Environmental Management System
ESA	Endangered Species Act
FRCC	Fire Regime Condition Class
FSH	Forest Service Handbook
FSM	Forest Service Manual
GA	Geographic Area
HUC	Hydrologic Unit Code
ICBEMP	Interior Columbia Basin Ecosystem Management Project
IPNF	Idaho Panhandle National Forests
IRA	Inventoried Roadless Area
KIPZ	Kootenai Idaho Panhandle Plan Revision Zone
KNF	Kootenai National Forest
LAU	Lynx Analysis Unit
LMP	Land Management Plan
LTSYC	Long-Term Sustained Yield Capacity
MA	Management Area
MMBF	Million Board Feet
MMCF	Million Cubic Feet
NF	National Forest
NFS	National Forest System
OHV	Off-highway Vehicle
OMRD	Open Motorized Road Density
RCAs	Riparian Conservation Areas
RNA	Research Natural Area
SIA	Special Interest Area
SOC	Species of Concern
SOI	Species of Interest
T&E	Threatened and Endangered
TMDL	Total Maximum Daily Load
TMRD	Total Motorized Road Density
TSPQ	Timber Sale Program Quantity
VRU	Vegetation Response Unit
USFWS	U.S. Fish and Wildlife Service
W&SRs	Wild and Scenic Rivers
WFSA	Wildland Fire Situation Analysis
WSA	Wilderness Study Area
WUI	Wildland Urban Interface

Glossary

Term	Definition
Activity Area	A land area affected by a management activity to which soil quality standards are applied. Activity areas include harvest units within timber sale areas, prescribed burn areas, recreation areas, and grazing areas or pastures within range allotments.
Adaptive Management	An approach to natural resource management where actions are designed and executed and effects are monitored for the purpose of learning and adjusting future management actions, which improves the efficiency and responsiveness of management.
Approach Areas	Areas on public lands, adjacent to fracture zones, that will be managed to facilitate animal movements.
Aquatic Ecosystem	Waters of the united States that serve as habitat for interrelated and interacting communities and populations of plants and animals. The stream channel, lake or estuary bed, water, biotic communities and the habitat features that occur therein.
Bear Year	The active bear year is from April 1 to November 15. Spring (April 1 to June 15), summer (June 16 to September 15), fall (September 16 to November 15), winter (November 16 to March 30).
Bears Outside of Recovery Zone (BORZ/occupied territory)	An area where one would reasonably expect to find grizzly bear use occurring during most years.
Bear Management Unit (BMU)	Areas established for use in grizzly bear analysis. BMUs generally a) approximate female home range size; and b) include representations of all available habitat components.
Beneficial Uses	Any of the various uses which may be made of the water, including, but not limited to, domestic water supplies, fisheries and other aquatic life, industrial water supplies, agricultural water supplies, navigation, recreation in and on the water, wildlife habitat, and aesthetics.
Best Management Practices (BMPs)	Practice or set of practices that enable a planned activity to occur while still protecting the resource managed, normally implemented and applied during the activity rather than after the activity.
Big Game	Those species of large mammals normally managed as a sport hunting resource. Generally includes; elk, moose, white-tailed deer, mule deer, mountain goat, bighorn sheep, black bear and mountain lion.
Biophysical Setting	An aggregation of vegetation response units, grouped by broad, climatic modifiers including temperature and moisture gradients.

Term	Definition
Cavity	The hollow excavated in a tree that is used by birds or mammals for roosting and/or reproduction.
Coarse Woody Debris	Provides living spaces for a host of organisms and serves as long-term storage sites for moisture, nutrients, and energy. Coarse wood debris consists of any woody material >3 inches in diameter and is derived from tree limbs, boles, roots, and large (>12 inches in diameter) wood fragments and fallen trees in various stages of decay.
Community (Ecological)	A group of organisms living together; any group of interacting organisms.
Community Protection Zone	An area of reduced fuels immediately adjacent to a community that can provide options for firefighters to control fire in this space, and that can provide a safety zone and area where firefighters are "free from danger, risk, or injury".
Community Wildfire Protection Plan	A plan for an at risk community that: • Is developed within the context of the collaborative agreements and the guidance established by the Wildland Fire Leadership Council and agreed to by the applicable local government, local fire department, and State agency responsible for forest management, in consultation with interested parties and the Federal land management agencies managing land in the vicinity of the at-risk community; • Identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure; and • Recommends measures to reduce structural ignitability throughout the at-risk community.
Connectivity	The arrangements of habitats that allows organisms and ecological processes to move across the landscape; patches of similar habitats are either close together or linked by corridors of approved vegetation. The opposite of fragmentation.
Cover	Vegetation used by wildlife for protection from predators, or to ameliorate conditions of weather, or in which to reproduce. Hiding cover – vegetation primarily trees, capable of hiding 90 percent of a standing adult animal from the view of a human at a distance of 200 feet or less. Thermal cover – cover used by animals to ameliorate chilling effects of weather, for elk, a stand of coniferous trees 40 feet or taller with an average crown closure of 70 percent or more.
Critical (Key) Habitat	Specific areas within the geographic area occupied by the species on which are found those physical and biological features (1) essential to

Term	Definition
	the conservation of the species, and (2) which may require special management considerations or protection.
Decommission	Demolition, dismantling, removal, obliteration and/or disposal of a deteriorated or otherwise unneeded asset or component, including necessary cleanup work. This action eliminates the deferred maintenance needs for the fixed asset. Portions of an asset or component may remain if they do not cause problems nor require maintenance.
Deferred Maintenance	Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or noncritical at any point in time. Continued deferral of noncritical maintenance will normally result in an increase in critical deferred maintenance. Code compliance (e.g., life safety, ADA, OSHA, environmental, etc.), Forest Plan Direction, Best Management Practices, Biological Evaluations other regulatory or Executive Order compliance requirements, or applicable standards not met on schedule are considered deferred maintenance.
Designated Route	A National Forest System road, a National Forest system trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map.
Disturbance	A discrete event that changes existing plant community composition or structure, and interrupts, changes, or resets the ongoing successional sequence.
Documented Amphibian Breeding Sites	Field-validated locations where amphibians are known to breed, usually found at temporary or permanent water sources such as lakes, ponds, marshes, meadows, streams, reservoirs, and irrigation ditches.
Documented Populations	Wildlife or plant populations with field validated occurrences or locations.
Early Succession	See *Succession*
Ecological Conditions	Components of the biological and physical environment that can affect diversity of plant and animal communities and the productive capacity of ecological systems. These components could include the abundance and distribution of aquatic and terrestrial habitats, roads and other structural developments, human uses, and invasive, exotic species (36 CFR 219.16).

Term	Definition
Ecosystem	A spatially explicit, unit of the earth that includes all the organisms, along with all components of the abiotic environment within its boundaries.
Ecosystem Diversity	The variety and relative extent of ecosystem types, including their composition, structure, and processes within all or a part of an area of analysis.
Ecological Integrity	The capacity to support and maintain a balanced, integrated, and adaptive biological system having the full range of elements and processes expected in a region's natural habitat. "…the ability to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region." That is, an ecosystem is said to have high integrity if its full complement of native species is present in normal distributions and abundances, and if normal dynamic functions are in place and working properly. In systems with integrity, the "…capacity for self-repair when perturbed is preserved, and minimal external support for management is needed."
Endangered Species	A plant or animal species listed under the Endangered Species Act that is in danger of extinction throughout all or a significant portion of its range.
Environmental Management System (EMS)	Part of an organization's (3.16) management system used to develop and implement its environmental policy and manage its environmental aspects. A management system is a set of interrelated elements used to establish policy and objectives and to achieve those objectives. A management system includes organizational structure, planning activities, responsibilities, practices, procedures (3.19), processes, and resources.
Existing Old Growth	NFS lands that have been determined to meet Northern Region old growth definitions as outlined in Green and others, corrected 02/2005.
Final Regeneration Harvest	Timber harvest designed to regenerate a timber stand or release a regenerated stand. This includes clearcut, removal cut of a shelterwood or seed tree system, and election cut.
Fire Management Plan	A plan that identifies and integrates all wildland fire management and related activities within the context of approved land/resource management plans. It defines a program to manage wildland fires (wildfire, prescribed fire, and wildland fire use). The plan is supplemented by operational plans, including but limited to preparedness plans, preplanned dispatch plans, and prevention plans. Fire management plans assure that wildland fire management goals and components are coordinated.

Term	Definition
Fire Regime	A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention but including the influence of aboriginal burning (Agee 1993; Brown 1995). Coarse-scale definitions for natural fire regimes were developed by Hardy and others (2001) and Schmidt and others (2002) and interpreted for fire and fuels management by Hann and Bunnell (2001). The five natural fire regimes are classified based on the average number of years between fires (fire frequency or Mean Fire Interval [MFI]) combined with the severity of the fire (the amount of vegetation replacement) and its effect on the dominant overstory vegetation. These five natural fire regimes are as follows: **I** – 0 to 35-year frequency and low severity (most commonly associated with surface fires) to mixed severity (in which less than 75 percent of the dominant overstory vegetation is replaced) **II** – 0 to 35-year frequency and high severity (stand replacement: greater than 75 percent of the dominant overstory vegetation is replaced) **III** – 35 to 100+ year frequency and mixed severity **IV** – 35 to 200+ year frequency and high severity **V** – 200+ year frequency and high severity
Fire Regime Condition Class (FRCC)	A classification of the degree of departure from the natural fire regime. The FRCC classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure can result in changes (or risks) to one, or more, of the following ecological components: vegetation (species composition, structural stages, stand age, canopy closure, and mosaic pattern across the landscape); fuel composition; fire frequency, severity, and pattern; and other associated disturbances. **Condition Class 1**: Fire regimes are within the natural (historical) range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition, structure, and pattern) are intact and functioning within the natural (historical) range. **Condition Class 2:** Fire regimes have been moderately altered from their natural (historical) range. Risk of losing key ecosystem components is moderate. Fire frequencies have departed from natural frequencies by one or more return intervals (either increased or decreased). This result in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation and fuel attributes have been moderately altered from their natural (historical) range. **Condition Class 3:** Fire regimes have been substantially altered from their natural (historical) range. The risk of losing key ecosystem components is high. Fire frequencies have departed from natural frequencies by multiple return intervals. Dramatic changes

Term	Definition
	occur to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been substantially altered from their natural (historical) range.
Forest Health	The perceived condition of a forest derived from concerns about such factors as its age, structure, composition, function, vigor, presence of unusual levels of insects and disease and resilience to disturbance. Perception and interpretation of forest health are influenced by individual and cultural viewpoints, land management objectives, spatial and temporal scales, the relative health in stands that comprise the forest, and the appearance of the forest at a point in time.
Fracture Zones	Highways, railroads and similar potential barriers to wildlife movement and the adjacent developed private lands, typically in mountain valleys between large tracts of public lands.
Fragmentation	A condition in which a continuous area is reduced and divided into smaller sections. Habitat can be fragmented by natural events or development activities.
Fuel Treatment	Any manipulation or removal of fuels to reduce the likelihood of ignition or to lessen potential damage and resistance to control.
Geocaching	An outdoor activity that most often involves the use of a Global Positioning System ("GPS") receiver or traditional navigational techniques to find a "geocache" (or "cache") placed anywhere in the world. A typical cache is a small, waterproof container containing a logbook and "treasure," usually trinkets of little value. Participants are called geocachers.
Grizzly Bear Core Habitat	An area of secure habitat within a BMU that contains no motorized travel routes or high use nonmotorized trails during the non-denning season and is more than 0.3 miles (500 meters) from a drivable road. Core areas do not include any gated roads but may contain roads that are impassible due to vegetation or constructed barriers. Core areas strive to contain the full range of seasonal habitats that are available in the BMU.
Grizzly Bear Recovery Zone	The area in each grizzly bear ecosystem within which the population and habitat criteria for achievement of recovery will be measured. **Cabinet/Yaak grizzly bear recovery zone:** This zone is approximately 2,600 square miles (6,734 square kilometers). The recovery zone is located in northwestern Montana and northern Idaho and includes portions of the Kootenai, Lolo, and Idaho Panhandle National Forests. **Northern Continental Divide grizzly bear recovery zone:** The Northern Continental Divide grizzly bear recovery zone is approximately 8,933 square miles (5,717,164 acres). The recovery

Term	Definition
	zone is located in northwestern Montana and includes portions of six national forests, including the Kootenai, two Indian Reservations, Glacier National Park, State of Montana, and private lands. There are approximately 115,190 acres of the NCDE on the KNF.
Habitat Connectivity	The arrangements of habitats that allows organisms and ecological processes to move across the landscape; patches of similar habitats are either close together or linked by corridors of approved vegetation. The opposite of fragmentation.
Habitat Guilds	A set of species that share a common habitat (such as old-growth forests), that use the same resources (such as food), or that use resources in the same manner (such as mode of foraging). A group of organisms having similar ecological niches and/or life forms. Competition is expected to be important within guilds. See Appendix A for further discussion on habitat guilds.
Head Month (HM)	One month's use and occupancy of the range by one animal. For grazing fee purposes, it is a month's use and occupancy of range by one weaned or adult cow with or without calf, bull, steer, heifer, horse, burro, or mule, or five sheep or goats.
Hibernacula	Habitat niches where certain animals (e.g., bats) overwinter, such as caves, mines, tree hollows, or loose bark.
Hiding Cover	Vegetation capable of hiding 90 percent of a bull elk or adult deer from the view of a human at a distance equal to or less than 200 feet during all seasons of the year that elk or deer use the area. Generally any vegetation used for security or to escape from danger.
Hydrologic Unit (HU)	A hydrologic unit is a drainage area delineated to nest in a multi-level, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream or similar surface waters. A hydrologic unit can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, non-contributing, and diversions to form a drainage area with single or multiple outlet points. Hydrologic units are only synonymous with classic watersheds when their boundaries include all the source area contributing surface water to a single defined outlet point.
Hydrologic Unit Code (HUC)	The numeric identifier of a specific hydrologic unit consisting of a 2-digit sequence for each specific level within the delineation hierarchy. • **4th code** refers to the 4th pair of an 8-digit code of a subbasin HU that are generally 450,000 acres in size. • **5th code** refers to the 5th pair of a 10-digit code of a watershed HU that generally ranges from 40,000 to 250,000 acres in size.

Term	Definition
	• **6th code** refers to the 6th pair of a 10-digit code of a subwatershed HU that generally ranges from 10,000 to 40,000 acres in size.
Incidental Take	Take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant.
Instream Flows	Streamflow regime required to satisfy a mixture of conjunctive demands being placed on water while it is in the stream.
Integrated Pest Management	A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed.
Intermittent Stored Service	An existing road where future use is expected but not known and is currently closed to vehicle traffic. The road is in a condition that there is little resource risk if maintenance is not performed.
Invasive Plant Species	Invasive plants are plants that have been introduced into an environment in which they did not evolve and thus usually have not natural enemies to limit their reproduction and spread.
Invasive Species	Invasive species are an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Alien species are any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem (with respect to a particular ecosystem).
Inventoried Roadless Area	Areas identified in a set of inventoried roadless area maps, contained in the Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000, and any subsequent update or revision of those maps through the land management planning process.
Landscape Pattern	Number, frequency, size and juxtaposition of landscape elements (stands and patches) that are important to the determination or interpretation of ecological processes.
Large Woody Debris	Large pieces of relatively stable woody material located within the bankfull channel and appearing to influence bankfull flows. There are categorized as singles, aggregates, or rootwads. **Single** – A single piece that has a length equal to or greater than 3 meters or two-thirds of the wetted stream width and 10 cm in diameter one-third of the way from the base. **Aggregate** – Two or more clumped pieces, each of which qualifies as a single piece. **Rootwad** – Rootmass or boles attached to a log less than 3 meters

Term	Definition
	in length.
Late Succession	See *Succession*
Linkage Zones	The area between larger blocks of habitat where animals can live at certain seasons and where they can find the security they need to successfully move between these larger habitat blocks.
Long-term Sustained Yield Timber Capacity (LTSYC)	The highest uniform wood yield that may be sustained under specified management intensities consistent with multiple-use objectives after stands have reached desired conditions.
Lynx Analysis Units (LAU)	An LAU is an area of at least the size used by an individual lynx, from about 25 to 50 square miles. A project analysis unit upon which direct, indirect and cumulative effects analyses are performed.
Mechanized	Wheeled forms of transportation (including nonmotorized carts, wheelbarrows, bicycles and any other nonmotorized, wheeled vehicle.
Mid-succession	See *Succession*
Minerals-Locatable	Those hardrock minerals that are mined and processed for the recovery of metals. They also may include certain nonmetallic minerals and uncommon varieties of mineral materials, such as valuable and distinctive deposits of limestone or silica.
Minerals-Leasable	Coal, oil, gas, phosphate, sodium, potassium, oil shale, sulphur, and geothermal resources.
Minerals- Materials (Salable)	A collective term to describe common varieties of sand, gravel, stone, pumice, pumicite, cinders, clay, and other similar materials. Common varieties do not include deposits of those materials that may be locatable.
Mitigation	Measures implemented to minimize, reduce, rectify, avoid, eliminate, and/or compensate the potential impacts to resources identified in the effects analysis.
Mixed Severity Fire	A fire severity classification where at least 5 percent, but less than 75 percent replacement of the upper layer of vegetation is removed.
Native Species	Animals or plants that have historically occupied a given aquatic or terrestrial area.
Non-Game	Those species of animals that are not managed as a sport hunting resource.

Term	Definition
Noxious Weeds	Plants designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being native or new to or not common to the United States or parts thereof. In Montana, noxious weeds are classified in the following three categories: **Category 1:** Widespread Noxious Weeds – Widespread noxious weeds capable of rapid spread. **Category 2:** Established New Invaders – Weeds that have been recently introduced into Montana and/or are rapidly spreading from current infestations. **Category 3:** Non-Established New Invaders – Weeds that have either not been detected in the state or may be found in small, scattered, localized infestations.
Objective Maintenance Level (roads)	Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same as, or higher or lower than, the operational maintenance level. **Maintenance Level 1:** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resource to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate." Roads receiving level 1 maintenance may be of any type, class or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for nonmotorized uses. **Maintenance Level 2:** Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either (1) discourage or prohibit passenger cars, or (2) accept or discourage high-clearance vehicles. **Maintenance Level 3:** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort

Term	Definition
	and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users. **Maintenance Level 4:** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times. **Maintenance Level 5:** Assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage."
Off-highway Vehicle (OHV)	Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. In the KNF Plan, we exclude over snow and over water vehicles from this definition.
Old Growth	Old growth forest encompasses the late stages of stand development, and are distinguished by old trees and related structural attributes. Old growth stands are typically distinguished from earlier stages by combinations of characteristics such as tree age, tree size, number of large old trees per acre, and stand density (expressed as basal area). Specific values for these attributes vary by local ecological type and forest type. Other characteristics sometimes associated with old growth (canopy layers, snags, down wood, etc) are not part of the old growth definition, because these can vary greatly even in stands that are clearly old growth. The associated characteristics may sometimes be useful is assessing certain specific resource values. The old growth definitions are the USFS Northern Region definitions as documented in: Green, P.; Joy, J.; Sirucek, D.; Hann, W.; Zack, A.; Naumann, B. 1992 (errata corrected 02/2005). Old Growth Forest Types of the Northern Region. If this is revised or replaced by the Northern Region, the IPNF will use the updated version.
Open Motorized Route Density (OMRD)	Calculation made with the moving windows technique that includes open roads, other roads not meeting all restricted or obliterated criteria, and open motorized trails. The percent of the analysis area in relevant route density classes are calculated.

Term	Definition
Openings	Refer to meadows, clearcuts, and other areas of vegetation that do not provide hiding or thermal cover.
Outstandingly Remarkable Value (W&SR)	A river-related value that is a rare, unique, or exemplary feature that is significant at a comparative regional or national scale.
Plan Area	The National Forest System lands covered by a plan.
Population (Ecological)	Organisms of the same species that occur in a particular place at a given time.
Prescribed Fire	Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met, prior to ignition.
Proposed Species	Any species that is proposed by the U.S. Fish and Wildlife Service or National Marine Fisheries Service to be listed as threatened or endangered under the Endangered Species Act.
Range of Variation	Spatial and temporal variation in ecosystem characteristics during a period of time when the influences of European-American settlement were minimal.
Recreation Sites	Specific places in the Forest other than roads and trails that are used for recreational activities. These sites include a wide range of recreational activities and associated development. These sites include highly developed facilities like ski areas, resorts, and campgrounds. It also includes dispersed recreation sites that have few or no improvements but show the affects of repeated recreation use.
Restoration	Restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. It is an intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability.
Riparian Conservation Areas (RCAs)	Portions of watersheds where riparian-dependent resources receive primary emphasis and management activities are subject to specific guidelines. The followings RCA widths are based on the best available science and apply to all aquatic habitats. **Category 1** – Fish-bearing streams: RCAs consist of the stream and the area on either side of the stream extending from the edges of the active channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of the riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet, including both sides of the stream channel), whichever is greatest. **Category 2** – Permanently flowing non-fish bearing streams: RCAs

Term	Definition
	consist of the stream and the area on either side of the stream extending from the edges of the active channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of the riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet, including both sides of the stream channel), whichever is greatest. **Category 3** - Ponds, lakes, reservoirs and wetlands greater than one acre: RCAs consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil,-to the extent of moderately and highly unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond or lake, whichever is greatest. **Category 4** – Seasonally flowing or intermittent streams, wetlands less than one acre: This category includes features with high variability in size and site-specific characteristics. At a minimum, the RCAs must include the area from the edges of the stream channel or wetland, to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest.
Road	A motor vehicle route over 50 inches wide, unless identified and managed as a trail.
Road Maintenance	The ongoing upkeep of a road necessary to retain or restore the road in accordance with its road management objective.
Road Construction	Activity that results in the addition of Forest classified or temporary road miles.
Road Reconstruction	Activity that results in improvement or realignment of an existing classified road defined as follows: **Road improvement** - Activity that results in an increase of an existing road's traffic service level, expansion of its capacity, or a change in its original design function. **Road realignment** - Activity that results in a new location of an existing road or portions of an existing road, and treatment of the old roadway.
Scenic Integrity Objective	An established goal for the management of the scenic resource applied to a specific portion of the forest.

Term	Definition
Security	An area where wildlife (such as elk) retreat to for safety when disturbance in their usual range is intensified – such as by logging activities or during the hunting season. To qualify as a security area for elk there must be 250 contiguous acres that are more than one-half mile from open roads.
Self-sustaining Populations	Populations that are sufficiently abundant, interacting, and well-distributed in the plan area, within the bounds of their life history and distribution of the species and the capability of the landscape, to provide for their long-term persistence, resilience and adaptability over multiple generations.
Sensitive Soils	Forest land areas that have a moderate to very high hazard for soil compaction. Erosion, displacement, mass wasting, or forest floor displacement.
Snag	A standing dead tree usually greater than five feet in height and six inches in diameter at breast height (DBH).
Soil Productivity	The inherent capacity of a soil to support the growth of specified plants, plant communities, and soil biota. It is often expressed by some measure of biomass accumulation.
Special Use Authorization	A permit, term permit, lease, or easement that allows occupancy, use, rights, or privileges of National Forest system land.
Species of Concern	Species for which management actions may be necessary to prevent listing under the Endangered Species Act.
Species of Greatest Conservation Need	Species identified as being "in greatest need of conservation" as part of the State Comprehensive Wildlife Conservation Strategies.
Species of Interest	Species for which management actions may be necessary or desirable to achieve ecological or other multiple use objectives.
Stand Replacement Fire	A fire severity classification where at least 75 percent replacement of the upper layer of vegetation is removed.
Stronghold	Directly associated with strong populations. For native fish, strong populations have numbers that are stable or increasing, and all major life history forms that historically occurred within the watershed are present.
Succession	The sequential replacement over time of one plant community by another, in the absence of major disturbance. The different stages of succession are often referred to as seral stages. Developmental stages are as follows: **Early seral:** Communities that occur early in the successional path

Term	Definition
	and generally have less complex structural developmental than other successional communities. Seedling and sapling size classes are an example of early seral forests. **Mid-seral:** Communities that occur in the middle of the successional path. For forests, this usually corresponds to the pole or medium sawtimber growth stages. **Late-seral:** Communities that occur in the later stage of the successional path with mature, generally larger individuals, such as mature forests.
Suitable Habitat	Habitat that currently has both the fixed and variable stand attributes for a given species habitat requirements. Variable attributes change over time and may include seral stage, cover type and overstory canopy cover.
Suitability	The appropriateness of a particular area of land for applying certain resource management practices to a particular area of land, as determined by an analysis of the existing resource condition and the social, economic, and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.
Summer (Recreation)	May 1 through November 30 every year. This is the period defined for the Suitable Use Tables for summer motorized and nonmotorized activities.
Sustainability	Meeting needs of the present generation without compromising the ability of future generations to meet their needs. Sustainability is composed of desirable social, economic, and ecological, economic conditions or trends interacting at varying spatial and temporal scales embodying the principles of multiple-use and sustained yield.
Take	Regarding species listed under the Endangered Species Act: To harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect or attempt to engage in any such conduct.
Temporary Road or Trail	A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or a forest trail and that is not included in a forest transportation atlas.
Threatened Species	Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which the appropriate Secretary has designated as a threatened species.
Thermal Cover	Cover used by animals to ameliorate effects of weather; for elk, a stand of coniferous trees 40 feet or more tall with an average crown

Term	Definition
	closure of 70 percent or more, for deer, cover may include saplings, shrubs, or trees at least five feet tall with 75 percent crown closure.
303d-listed Waterbodies	A stream or other waterbody that is listed by the State as being "water quality impaired" by a pollutant in their current 303(d) list or 303(d)/305(b) Integrated Report.
Timber Sale Program Quantity (TSPQ)	The estimated average output of timber from the plan area. It includes projected outputs from lands generally suitable for timber harvest.. The projected timber outputs reflect past and projected budget levels and organizational capacity to achieve the desired conditions and objectives in the plan
Timber Harvest	The removal of trees for wood fiber utilization and other multiple-use purposes.
Timber Production	The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. In addition, managing land to provide commercial timber products on a regulated basis with planned, scheduled entries.
Total Maximum Daily Load (TMDL)	An estimate of the total quantity of pollutants (from all sources - point, nonpoint, and natural) that may be allowed into waters without exceeding applicable water quality standards.
Total Motorized Route Density (TMRD)	Calculations made with the moving windows technique that includes open roads, restricted roads, roads not meeting all reclaimed criteria, and open motorized trails. The percent of the analysis area in relevant route density classes is calculated.
Traditional Cultural Areas	Those areas of the forest used by American Indians for traditional activities and often referred to as "religious use areas" or "sacred areas." They may include areas traditionally used for gathering of special forest products.
Trail	A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.
Travel Corridors	An area of vegetation that provides completely or partially suitable habitat for animals to travel from one location to another.
Unauthorized Road or Trail	A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas.
Ungulate	A hoofed mammal such as a deer or elk.

Term	Definition
Utility Corridor	A parcel of land, without fixed limits or boundaries that is being used as the location for one or more transportation or utility rights-of-way.
Vegetation Condition Class	A measure of vegetation conditions (dominance types and size class) around a historic mean. **Class A:** Central historic range, vegetation conditions +/- 33 percent of historic mean **Class B:** Moderate historic range, vegetation conditions +/- 34 - 67 percent of historic mean **Class C:** Uncharacteristic historic range, vegetation conditions +/- >66 percent of historic mean Central historic range contains the variability that would be expected with the common disturbances and successional processes that are typical of the system. Moderate historic range contains the variability that might occasionally occur as a result of a relatively uncommon (but not unknown) sequence of large changes in disturbance processes over a relatively short period of time. Uncharacteristic historic range represents changes that are not characteristic of historic disturbance and successional processes under the last few centuries of climatic conditions, and could result in significant changes in ecosystem components and the way they function.
Vegetation Management	Activities designed primarily to promote the health of forest vegetation in order to achieve desired results. When vegetation is actively managed, it means that it is manipulated or changed on purpose by humans to produce desired results. Where active management of vegetation is required, techniques are based on the latest scientific research and mimic natural processes as closely as possible. Vegetation management is the practice of manipulating the species mix, age, fuel load, and/or distribution of wildland plant communities within a prescribed or designated management area in order to achieve desired results. It includes prescribed burning, grazing, chemical applications, biomass harvesting, and any other economically feasible methods of enhancing, retarding, modifying, transplanting, or removing the aboveground parts of plants.
Vegetation Response Unit (VRU)	Units of land with vegetative communities that have broadly similar disturbance responses and successional pathways, and that produce similar landscape-scale vegetation patterns. VRUs are typically groups of habitat types aggregated by landform and topographic characteristics that regulate disturbance regimes and successional response. Historically lands within a given VRU were subject to broadly similar disturbance regimes.
Watershed	A geographic area of land, water, and biota within the confines of a drainage divide. The total area above a given point of a water body that contributes flow to that point.

Term	Definition
Watershed Condition	The state of a watershed based upon physical and biological characteristics and processes affecting hydrologic and soil functions. **Class I:** Watersheds exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. The drainage network is generally stable. Physical, chemical, and biologic conditions suggest that soil, aquatic, and riparian systems are predominantly functional in terms of supporting beneficial uses. **Class II:** Watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. Portions of the watershed may exhibit an unstable drainage network. Physical, chemical, and biologic conditions suggest that soil, aquatic, and riparian systems are at risk in being able to support beneficial uses. **Class III:** Watersheds exhibit low geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. A majority of the drainage network may be unstable. Physical, chemical, and biologic conditions suggest that soil, riparian, and aquatic systems do not support beneficial uses.
Way-trails	Isolated trail segments with no trailheads, or short trail segments linking existing primary or secondary trails. These trails are rarely maintained or not maintained at all.
Wetlands	Those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.
Wetted Width	The width of the water surface measured at right angles to the direction of flow.
Width-to-Depth Ratio	An index value that indicates the shape of the channel cross-section (ratio of bankfull width/mean bankfull depth).
Wildfire	An unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire-use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.
Wildland Fire Suppression	An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but

Term	Definition
	minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.
Wildland Fire Use	The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in predefined designated areas outlined in fire management plans.
Wildland Urban Interface (WUI)	The area directly adjacent to homes and communities.
Winter (Recreation)	December 1 through April 30 every year. This is the period defined for the suitable-use tables for winter motorized and nonmotorized activities.
Winter Range	The area available to and used by wildlife (big game) during the winter season (Dec 1 to April 30). Generally, lands below 4,000 feet in elevation, on south and west aspects, that provides forage and thermal/snow intercept cover.

Appendix A - Plant and Animal Diversity

Providing for diversity of plant and animal communities in the Plan area is a requirement of the National Forest Management Act (NFMA). Towards this end, Plan components were developed to provide ecological conditions that support species and groups of species. The following discussion briefly describes the process used to provide for plant and animal diversity in the proposed Land Management Plan.

The NFMA requires land management plans to provide for diversity of plant and animal communities based on the suitability and capability of the land area while meeting overall multiple-use objectives. The 2005 Planning Rule and associated Forest Service directives specify how to meet this diversity requirement. A hierarchical approach that assesses both ecosystem diversity and species diversity was used in the KIPZ Plan revision process.

The initial focus of the assessment process was on ecosystem diversity, both in addressing the needs of healthy, diverse, and resilient ecosystems within the Plan area, and in determining the extent to which maintaining ecosystem diversity will also maintain populations of plant and animal species within their ranges in the Plan area. An assumption relative to terrestrial animals is that ecosystem diversity will maintain habitat for the persistence of the vast majority of species. This has often been referred to as the "coarse filter" conservation approach (Hunter et al. 1988, Baydeck et al. 1999, Samson 2002, Samson et al. 2003). For the KIPZ, a coarse filter ecosystem diversity evaluation was used to compare existing vegetation communities to a set of reference conditions in order to evaluate changes in disturbance regimes and ecological communities. See the Comprehensive Evaluation Report (CER) for a complete description of the process used. Based on the results of this evaluation, Plan components were developed to maintain or move vegetation communities towards a desired level or condition.

A complementary approach (species diversity) to the ecosystem diversity analysis was used for those species for which ecological conditions necessary to sustain populations may not be provided by maintaining ecosystem diversity. In these cases, a species-specific approach was used in the analysis and for the establishment of Plan components, where necessary. The assessment of individual species is often referred to as the "fine filter" approach (Holthausen 2002, Samson et al. 2003). Forest Service directives associated with the 2005 Planning Rule provide guidelines for conducting species sustainability assessments. The focus in this analysis is on species that are of regional or local conservation concern as indicated by documented threats to populations or habitats. Native terrestrial vertebrates and invertebrates known to occur on land managed by the Forest Service on the Kootenai National Forests were considered.

Criteria in the Forest Service planning directives were used as the basis for identification of species to include in the species diversity analysis (FSH 1909.12 Chapter 43.2; effective date 1/09/2006).

Specifically species included are:

- **Federally listed species** are species that are listed by the Department of the Interior, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, or National Marine Fisheries Service as threatened or endangered under the Endangered Species Act.
- **Species of concern** are species for which management actions may be necessary to prevent listing under the Endangered Species Act.

- **Species of interest** are species for which management actions may be necessary or desirable to achieve ecological or other multiple-use objectives.

A five-step approach was used in the assessment for species of concern and species of interest:

Identification of species.
Screening species for further consideration in the planning process.
Grouping species where possible and if necessary selecting surrogate species.
Determining plan components for species diversity.
Evaluation of plan components on species diversity.

Step 1 – Identification of species

Based on the criteria in the Forest Service directives (Chapter 43.22 a, b, c), a list of species was developed for use in the analysis process. Species considered for inclusion on the lists are species of global, state, and local concern, Birds of Conservation Concern, species on the regional (Forest Service Northern Region) sensitive species list, species identified as regional species at risk, and species that were previously delineated as management indicator species (MIS) for the Kootenai National Forest.

Step 2 - Screening species for further consideration in the planning process

All species identified in Step 1 were screened to determine whether a species should be considered further in the planning process. Part of the screening process includes the collection of information (including habitat requirements and risks or threats) using criteria in the directives (43.22c and 43.22d). One of the principle factors considered was determining if Plan components for ecosystem diversity was adequate to provide for a particular species needs. If so, no further analysis was considered necessary for those species. The complete screening process, including why or why or not a species was considered further in the planning process, is included in the CER.

Based on the screening process the following list of species was identified for further consideration in the analysis process:

Potential Species of Concern for the Kootenai National Forest

Common Name	Scientific Name	Species Group or Plant Habitat Guild
Birds		
American peregrine falcon	*Falco peregrinus*	Cliffs
Terrestrial Invertebrates (mollusks)		
Magnum mantleslug	*Magnipelta mycophaga*	Terrestrial invertebrates (mollusk)
Pygmy slug	*Kootenaia burkei*	Terrestrial invertebrates (mollusk)
Sheathed slug	*Zacoleus idahoensis*	Terrestrial invertebrates (mollusk)
Smokey taildropper	*Prophysaon humile*	Terrestrial invertebrates (mollusk)
Fish		
Westslope cutthroat trout	*Salmo clarki lewisi*	Aquatic
Burbot (ling)	*Lota lota*	Aquatic
Plants		
Short-beaked Aloe-moss	*Aloina brevirostris*	Grassland
Upswept moonwort	*Botrychium ascendens*	Wet Forest
Dainty moonwort	*Botrychium crenulatum*	Wet Forest

Common Name	Scientific Name	Species Group or Plant Habitat Guild
Plants (species of concern continued)		
Western moonwort	*Botrychium hesperium*	Wet Forest
Western goblin	*Botrychium montanum*	Wet Forest
Pale moonwort	*Botrychium pallidum*	Wet Forest
Peculiar moonwort	*Botrychium paradoxum*	Wet Forest/moist forest
Stalked moonwort	*Botrychium pedunculosum*	Wet forest
Horsehair lichen	*Bryoria subdivergens*	Subalpine
Disc lichen	*Buellia badia*	Subalpine
Icelandmoss	*Cetraria subalpina*	Subalpine
Needle lichen	*Chaenotheca subroscida*	Dry forests
Short-spored jelly lichen	*Collema curtisporum*	Deciduous riparian
Britton's dry rock moss	*Grimmia brittoniae*	Moist forest
Washington monkeyflower	*Mimulus washingtonensis*	Moist forest
Ragged lichen	*Platismatia stenophylla*	Moist forest/wet forest
Cartilage lichen	*Ramalina thrausta*	Moist forest/wet forest
Spribillei's groundsel	*Senecio spribillei*	Subalpine

Potential Species of Interest for the Kootenai National Forest

Common Name	Scientific Name	Species Group or Plant Habitat Guild
Amphibians		
Coeur d'Alene salamander	*Plethodon idahoensis*	Aquatic
Western (boreal) toad	*Bufo boreas*	Aquatic.
Mammals		
Fisher	*Martes pennanti*	Aquatic
Fringed myotis	*Myotis thysanodes*	Bat
North American Wolverine	*Gulo gulo luscus*	Subalpine
Northern bog lemming	*Synaptomys borealis*	Aquatic
Townsend's big-eared bat	*Corynorhinus townsendii*	Bat
Bighorn sheep	*Ovis Canadensis*	Big game
Elk	*Cervus elaphus nelsoni*	Big game
Mountain goat	*Oreamos americanus*	Big game
Birds		
Black swift	*Cypseloides niger*	Aquatic
Black-backed woodpecker	*Picoides arcticus*	Burned forest/snags
Common loon	*Gavia immer*	Aquatic
Flammulated owl	*Otus flammeolus*	Snags
Harlequin duck	*Histrionicus histrionicus*	Aquatic
Lewis's woodpecker	*Melanerpes lewis*	Burned forest/snags
Northern goshawk	*Accipiter gentilis*	Warm forest/moist forest
Olive-sided flycatcher	*Contopus borealis*	Burned forest/snags
Red-naped sapsucker	*Sphyrapicus nuchalis*	Snags
Williamson's sapsucker	*Sphyrapicus thyroideus*	Snags
Fish		
Interior redband trout	*Oncorhynchus mykiss gairdneri*	Aquatic

Common Name	Scientific Name	Species Group or Plant Habitat Guild
Aquatic invertebrates (species of interest continued)		
Western pearlshell mussel	*Margaratifera falcata*	Aquatic
Striate disc	*Discus shimekii*	Aquatic
Terrestrial Invertebrates - mollusks		
Fir pinwheel	*Radiodiscus abietum*	Aquatic
Pale jumping slug	*Hemphillia camelus*	Aquatic
Plants		
Cuddy Mountain onion	*Allium fibrillum*	Dry forest
Thin-leaf alder shrubland	*Alnus incana* shrubland	Moist forest/wet forest
Red alder	*Alnus rubra*	Moist forest/wet forest
Aloina moss	*Aloina brevirostris*	Wet forest
Round-leaved orchis	*Amerorchis rotundifolia*	Wet forest
Blytt's andreaea moss	*Andreaea blyttii*	Wet forest
Greenleaf manzanita	*Arctostaphylos patula*	Dry forests
Water marigold	*Bidens beckii*	Aquatic
Triangle moonwort	*Botrychium lanceolatum*	Moist forest/wet forest
Mingan moonwort	*Botrychium minganense*	Moist forest
Least moonwort	*Botrychium simplex*	Dry forest/moist forest
Brachythecium moss	*Brachythecium reflexum*	Moist forest
Watershield	*Brasenia schreberi*	Aquatic
Sagebrush mariposa lily	*Calochortus macrocarpus*	Dry forest
Small camas	*Camassia quamash*	Moist forest
Big-leaf sedge	*Carex amplifolia*	Moist forest
String-root sedge	*Carex chordorrhiza*	Aquatic
Woollyfruit sedge herbaceous vegetation	*Carex lasiocarpa* herbaceous vegetation	Moist forest
Pale sedge	*Carex livida*	Peatland
Prairie sedge	*Carex prairea*	Peatland
Beaked sedge	*Carex rostrata*	Aquatic
Many-headed sedge	*Carex synchnocephala*	Moist forest
Sheathed sedge	*Carex vaginata*	Deciduous riparian
Clustered thistle	*Cirsium brevistylum*	Dry forest/moist forest
Common Clarkia	*Clarkia rhomboidea*	Dry Forest
Sand springbeauty	*Claytonia arenicola*	Dry forest/moist forest
Pink corydalis	*Corydalis sempervirens*	Dry forest/moist forest
Clustered lady's slipper	*Cypripedium fasciculatum*	Warm forest/moist forest
Yelow Lady’s-slipper	*Cypripedium parviflorum*	Deciduous riparian
Sparrow’s-egg Lady’s-slipper	*Cypripedium passerinum*	Deciduous riparian
English sundew	*Drosera anglica*	Aquatic
Crested shield fern	*Dryopteris cristata*	Aquatic
Slender cottongrass	*Eriophorum gracile*	Peatland
Green-keeled cotton grass	*Eriophorum viridicarinatum*	Peatland
Western pearl flower	*Heterocodon rariflorum*	dry forest
Hygrohypnum moss	*Hygrohypnum cochlearifolium*	Subalpine
Tule pea	*Lathyrus bijigatus*	Dry forest
Douglas' bladderpod	*Lesquerella douglasii*	Dry forest
Leucolepis umbrella moss	*Leucolepis acanthoneuron*	Moist forest
Bitter root	*Lewisia rediviva*	Dry forest

Common Name	Scientific Name	Species Group or Plant Habitat Guild
Plants (species of interest continued)		
Hall's lung wort	*Lobaria hallii*	Moist forest
Geyer's biscuit root	*Lomatium geyeri*	Dry forest
Northern bog clubmoss	*Lycopodiella inundata*	Peatland
Ground pine	*Lycopodium dendroideum*	Moist forest/wet forest
One-cone clubmoss	*Lycopodium lagopus*	Moist forest/wet forest
Opposite-leaved tarweed	*Madia minima*	Dry forest
Cascade barberry	*Mahonia nervosa*	Dry forest
Meesia moss	*Meesia triquetra*	Peatland
Meesia moss	*Meesia uliginosa*	Subalpine
Shortflower monkeyflower	*Mimulus breviflorus*	Moist forest
Nodobryoria subdivergens	*Nodobryoria subdivergens*	Subalpine
Oligotrichum moss	*Oligotrichum aligerum*	Moist forest
Northern adder's tongue	*Ophioglossum pusillum*	Aquatic
Northern beechfern	*Phegopteris connectilis*	Moist forest
Engelmann and white spruce/ field horsetail forest	*Picea (engelmannii x glauca, engelmannii) / equisetum arvense* forest	Moist forests
Engelmann spruce/ bluejoint forest	*Picea engelmannii / calamagrostis canadensis* forest	Moist forests
Platyhypnidium moss	*Platyhypnidium riparioides*	Moist forest/deciduous riparian
Kruckeberg's hollyfern	*Polystichum kruckebergii*	Subalpine
Mountain hollyfern	*Polystichum scopulinum*	Moist forest
Dwarf wooly heads	*Psilocarphus brevissimus*	Aquatic
Pygmy racomitrium moss	*Racomitrium pygmaeum*	Moist forest
Shinyleaf gooseberry	*Ribes cognatum*	Moist forest
Trailing black currant	*Ribes laxiflorum*	Moist forests
Drummond's willow/ bluejoint shrubland	*Salix drummondiana / calamagrostis canadensis shrubland*	Moist forest/deciduous riparian
Drummond's willow/ Northwest Territory sedge shrubland	*Salix drummondiana / carex utriculata shrubland*	Moist forest/deciduous riparian
Yerba buena	*Satureja douglasii*	Moist forest
Pod grass	*Scheuchzeria palustris*	Aquatic
Tufted bulrush	*Scirpus cespitosus*	Peatland
Water clubrush	*Schoenoplectus subterminalis (Scirpus subterminalis)*	Aquatic
Scorpidium moss	*Scorpidium scorpioides*	Peatland
Wulf's sphagnum	*Sphagnum wulfianum*	Moist forest/deciduous riparian
Pyramid Spirea	*Spiraea pyramidata*	Moist forest/ wet forest
Pigflower tellima	*Tellima grandiflora*	Moist forests
Flat-leaved bladderwort	*Utricularia intermedia*	Aquatic
Velvetleaf huckleberry	*Vaccinium myrtilloides*	Moist forest
White violet	*Viola renifolia*	Moist forest/wet forest
Selkirk's violet	*Viola selkirkii*	Moist forest/wet forest

Step 3 - Grouping species where possible and if necessary selecting surrogate species

While managing species habitats and populations using a species-by-species approach has intuitive ecological merit, the sheer number of species often makes such an approach untenable. In many

cases, the ecological understanding and resources needed to manage all species on an individual basis are not available. Tremendous efficiencies can be gained from managing groups of species. For these reasons, the Forest Service planning directives encourage the use of groups and "surrogate species" (FSH 1909.12 Chapter 43.24).

Using a hierarchical approach, species of concern and species of interest on the above lists were grouped, where possible, based on species habitat needs, and identified risks or threats. Species groups were reviewed to determine the need for a surrogate species. No surrogate species were identified for the KNF. The KIPZ vegetation matrix, the Regional Diversity Matrix, and the Interior Columbia Basin (Wisdom et al. 2000) were reviewed during the process of grouping wildlife species. Plant species of concern and species of interest were placed into habitat guilds established for the major habitat types on the forest(s). See above table for species groups and habitat guilds. A complete description of habitat guilds and associated species is included in the Comprehensive Evaluation Report (CER).

Step 4 - Determining Plan components for species diversity

Where necessary, Plan components were developed for each species group or individual species identified as species of concern or species of interest. These components were developed to address specific habitat needs or to reduce risks of other negative outcomes and threats that have not been fully addressed in the provisions for ecosystem diversity. The main components that were developed include: Plan components for snags and down wood; protection of documented locations of known occurrences and habitats where there is a high probability of a species occurring; and reducing human-caused disturbances during critical life stages (e.g., nesting, rearing, denning, winter).

Step 5 - Evaluation of Plan components on species diversity

The combination of plan components for ecosystem diversity and components for species diversity have been developed to provide appropriate ecological conditions for all species that have been identified as federally listed species, species of concern and species of interest.

Appendix B - Forestwide Suitability

Timber

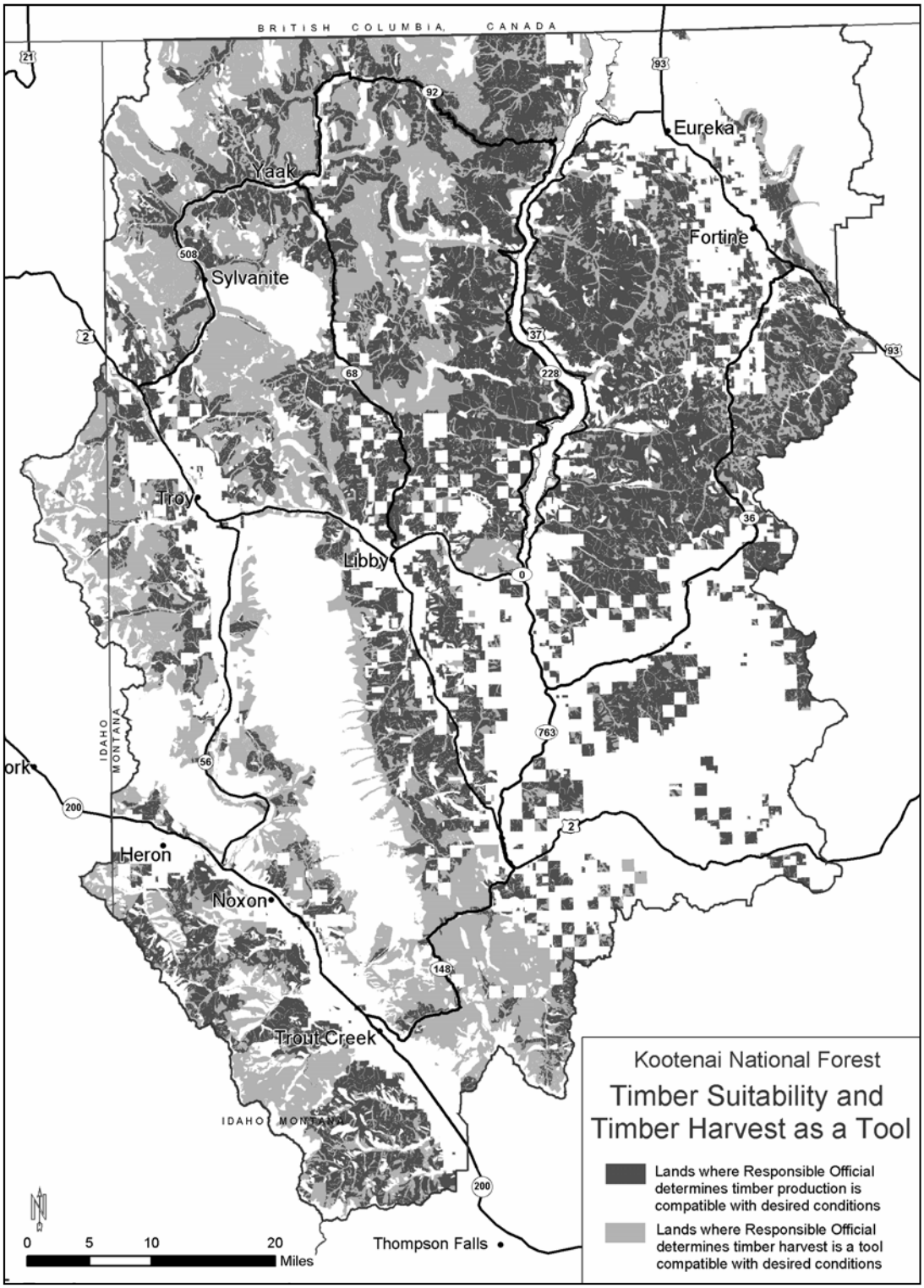

Figure B-1. Areas suitable for timber harvest

Livestock Grazing

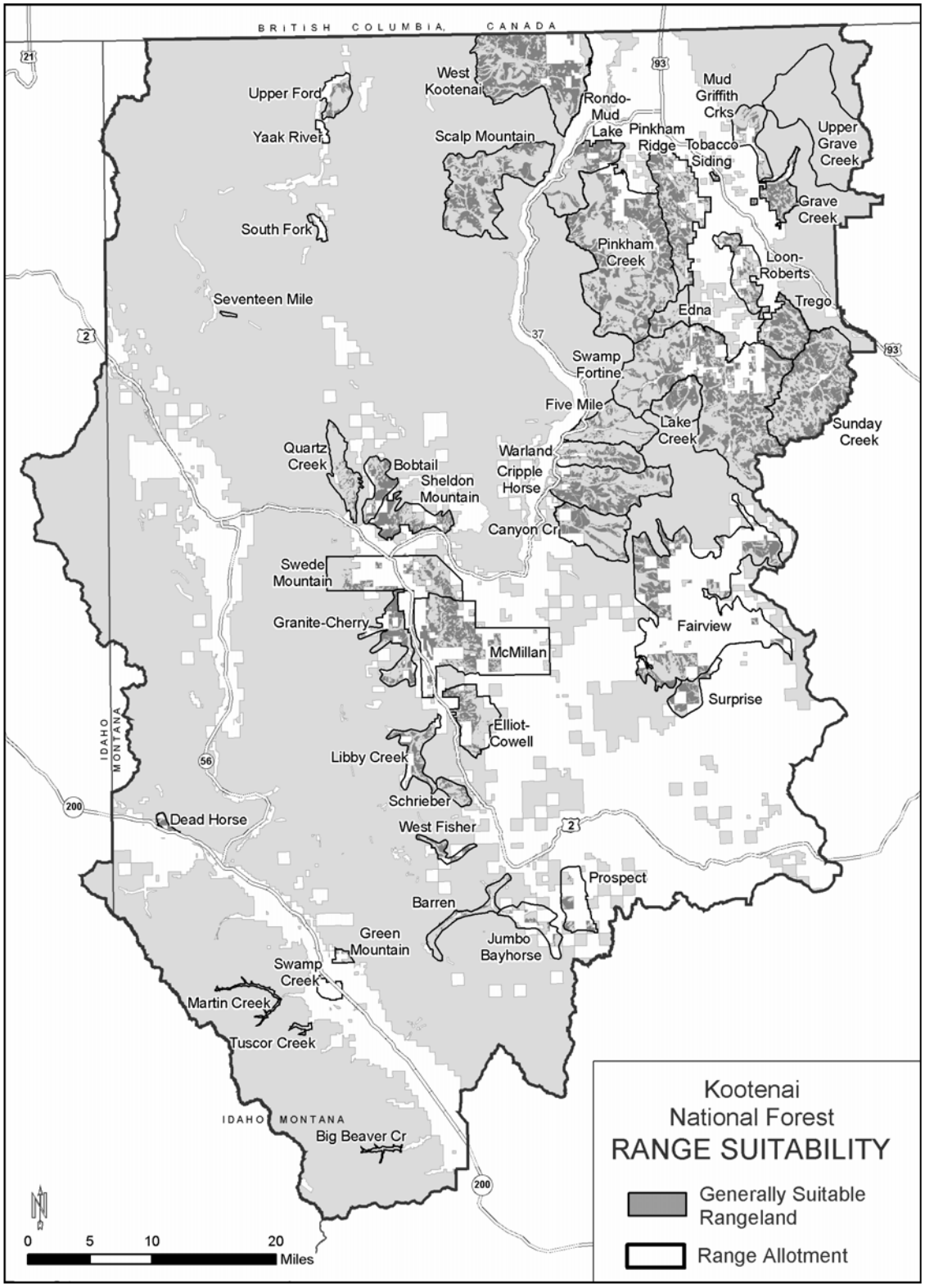

Figure B-2. Areas suitable for livestock grazing

Riparian Conservation Areas

Riparian conservation areas (see glossary for categories) are generally suitable for activities that improve, restore, or maintain aquatic and riparian ecosystems desired conditions (see "Riparian Area Guidelines" on page 3-9 in Chapter 3).

Motorized Recreation

Motorized recreation is generally suitable on designated routes and in designated areas. Current designated routes and areas are identified on district travel access maps and the Kootenai Snow Trails map.

Utility Corridors and Communication Sites

Table B-1 lists designated utility corridors and Table B-2 lists designated communication sites. Figure B-3 displays the designated utility corridors and communication sites.

Table B-1. Designated utility corridors in the KNF

Corridor Name	Authorized User
Cabinet – Noxon	Avista
Cabinet – Rathdrum	Avista
Noxon – Hot Springs	Avista
Noxon – Pine Creek	Avista
Bonners Ferry – Troy No. 1	BPA
Troy – Libby	BPA
Columbia Falls – Trego No. 1	BPA
Lancaster – Noxon No. 1	BPA
Libby – Conkelly No. 1	BPA
Libby – Libby (PP&L) No. 1	BPA
Libby PH – Libby No. 1	BPA
Libby PH – Libby No.2	BPA
Noxon – Hot Springs No. 1	BPA
Noxon – Libby No. 1	BPA
Montanore	*
Rock Creek	*

Note: Includes corridors that only partially cross NFS lands.
* Dependent on final authorization.

Table B-2. Designated communication sites on the KNF

Communication Site Name	Location (District)	Designated For	Restrictions
Allen Pk	Libby	Non-broadcast	Gov't Use Only
Banfield Mtn	Libby	Non-broadcast	
Black Butte	Rexford	Non-broadcast	
Blue Mtn	Libby	Non-broadcast	
Calx Mtn	Libby	Non-broadcast	
Canoe Gulch	Libby	Non-broadcast	Gov't Use Only
Cougar Pk	Plains (Lolo NF)	Non-broadcast	Gov't Use Only
Eighty Pk	Cabinet	Non-broadcast	Gov't Use Only
Eureka	Rexford	Non-broadcast	Gov't Use Only
Flower Point	Libby	Non-broadcast	
Garver Creek	Three Rivers	Non-broadcast	
Gov't Mtn	Cabinet	Non-broadcast	Gov't Use Only
Grave Creek	Fortine	Non-broadcast	
Green Mtn	Cabinet	Broadcast, Non-broadcast	
Hawkins Lake	Three Rivers	Non-broadcast	
Helibase	Libby	Non-broadcast	Gov't Use Only
Indianhead Mtn.	Libby	Broadcast	
King Mtn	Three Rivers	Broadcast, Non-broadcast	
Libby Cache	Libby	Non-broadcast	Gov't Use Only
Meadow Peak	Libby	Non-broadcast	
Mt Baldy	Three Rivers	Non-broadcast	Gov't Use Only
Mt Henry	Three Rivers	Non-broadcast	Gov't Use Only
Mt Marston	Fortine	Non-broadcast	
Murphy Lake	Fortine	Non-broadcast	Gov't Use Only
Pinkham Mtn	Rexford	Non-broacast	
Poorman Creek	Libby	Non-broadcast	
Sheldon Mtn	Libby	Broadcast, Non-broadcast	
Stahl Peak	Fortine	Non-broadcast	
Swede Mtn	Libby	Broadcast	
SO	Libby	Non-broadcast	Gov't Use Only
Tony Pk	Libby	Non-broadcast	
Trout Creek	Cabinet	Non-broadcast	Gov't Use Only
Troy	Three Rivers	Non-broadcast	Gov't Use Only
Troy (Preacher)	Three Rivers	Non-broadcast	
Webb Mtn	Rexford	Non-broadcast	Gov't Use Only

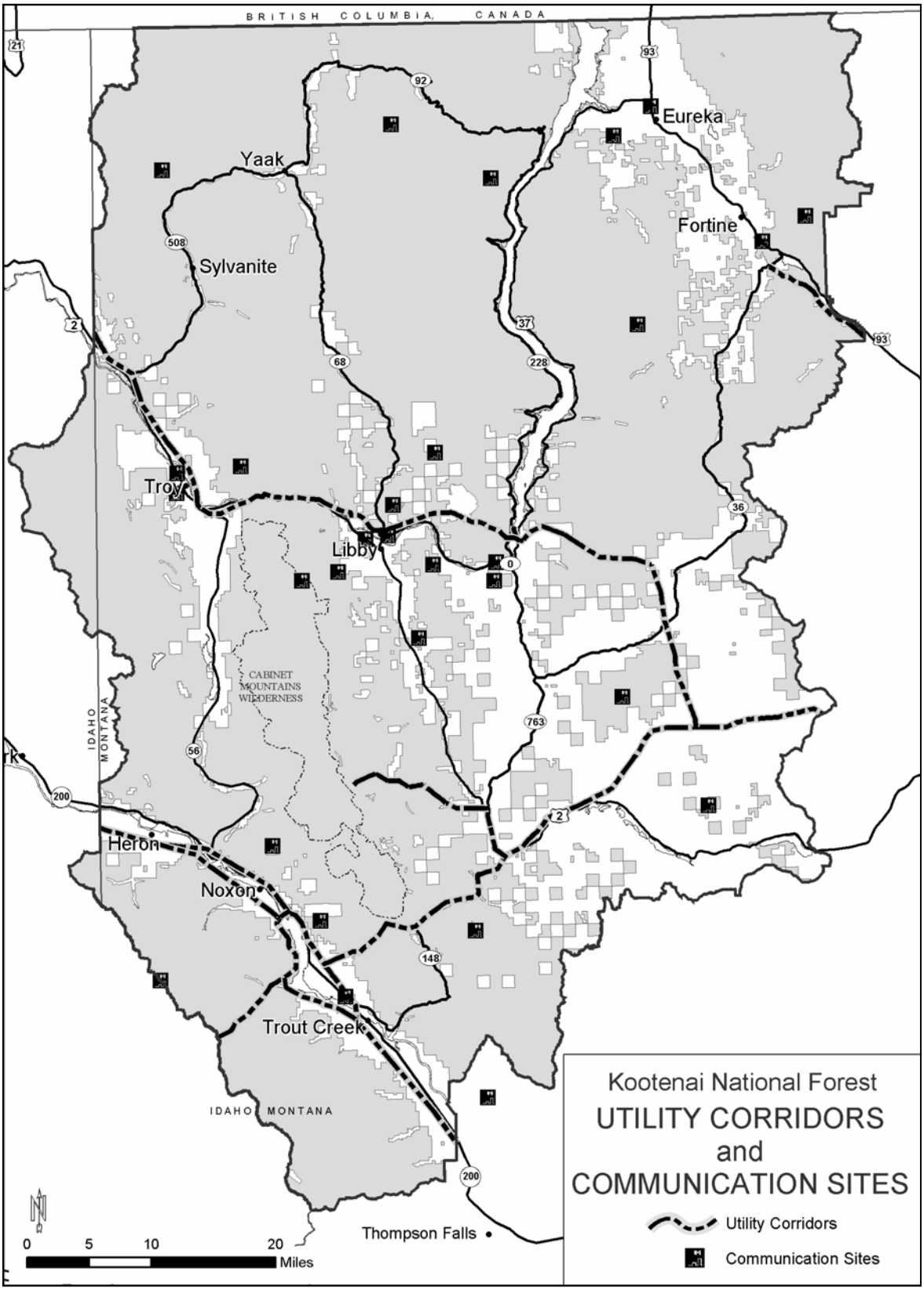

Figure B-3. Utility corridors and communication sites on the KNF

Minerals

Table B-3. Areas withdrawn from mineral entry on the KNF

Name	Township (T), Range (R), Section (Sec.)	Acres
Ant Flat Admin. Site	T34N R25W Sec 7	80
Bad Medicine Rec. Area	T28N R33W Sec 4	37.46
Baldy Mountain Lookout	T35N R33W Sec 6	10
Big Bend Admin. Site	T30N R29W Sec 8	160
Big Creek Rec Area	T34N R29W Sec 2	10
Big Eddy Rec. Area.	T27N R34W Sec 25	16.25
Big Swede Lookout	T30N R30W Sec 17	10
Big Creek Baldy Lookout	T33N R31W Sec 12	10
Black Butte Lookout	T36N R27W Sec 20	10
Blue Mtn Lookout	T32N R30W Sec 32	20
Bull River Bay Rec. Area	T26N R33W Sec 10	32.5
Bull River Ranger Stat	T27N R32W Sec 7	79.28
Bunch Grass Flat Rs	T35N R25W Sec 6	151.76
Cabinet Mtn. Wilderness	T25N R31W Sec 1,2,3; T26N R30W Sec 19,30; T26N R31W Sec 2-18,21-28,33-36; T26N R32W Sec 1,12; T27N R31W Sec 5-8,16-21,28-34; T27N R32W Sec 1-3,10-16,21-27,35-36; T28N R31W Sec 6-7,18-19,30-32; T28N R32W Sec 1-29,35-36; T28N R33W Sec 1; T29N R32W Sec 3-11,14-24,26-35; T29N R33W Sec 1,11-15,22-27,34-36; T30N R32W Sec 5-8,16-22,25-36; T30N R33W Sec 1-2,10-15,23-26,36; T31N R32W Sec 29-32; T31N R33W Sec 25-26,35-36	94,596.76
Cabinet Ranger Station	T31N R34W Sec 2	159.31
Callahan Creek R.S.	T31N R34W Sec 23	160
Calx Mountain Lookout	T28N R28W Sec 10	10
Camp 32 Recreation Area	T36N R28W Sec 35	25
Caribou Creek Rec Area	T37N R30W Sec 21-22,28	12.5
Dorr Skeels	T29N R33W Sec 20	45.9
East Dickey Lake	T34N R25W Sec 14	7.62
Enco Development Corp.	T33N R34W Sec 26,27	240
Eureka Hydroelectric Co	T35N R25W Sec 5,6	191
Fairview Ranger Station	T30N R27W Sec 22	160
Frank Lake Rec. Area	T35N R26W Sec 17	35.31
Garver Mtn Lookout	T37N R32W Sec 32	10
Glacier Silver Led Mn Co	T29N R31W Sec 6,7,12	237.92
Grasshopper R.S.	T26N R33W Sec 3	107.8
Horse Hill Lookout	T28N R30W Sec 30,33	20
Horse Thief Ranger Stat	T27N R33W Sec 4	10
Howard Lake Rec. Area	T27N R31W Sec 13	50
International Boundary	T37N R24W Sec 4; T37N R25W Sec 1,3,4; T37N R26W Sec 1-6; T37N R28W Sec 2-6; T37N R29W Sec 1-5; T37N R30W Sec 3,5; T37N R31W Sec 3-6; T37N R32W Sec 1-6; T37N R33W Sec 1-6; T37N R34W Sec 1; T37N R25W Sec 2,5,6; T37N R26W Sec 3; T37N R29W Sec 6; T37N R30W Sec 1,2,4,6; T37N R31W Sec 1; T37N R31W Sec 2; T37N R24W Sec 6	342.86

Name	Township (T), Range (R), Section (Sec.)	Acres
Jack Pine Flats Rec Area	T22N R32W Sec 12	65
Kenelty Mt Lookout	T27N R29W Sec 22	10
Kilbrennan Adm. Site	T33N R33W Sec 29	22.5
Kootenai Power Const.	T31N R32W Sec 18	184
Kootenai Power Const.	T31N R33W Sec 13	216.3
Lake Creek Campground	T26N R30W Sec 5,8	40
Lastchance Admin. Site	T32N R34W Sec 5,8	194.02
Libby Dam Project	T29N R27W Sec 17; T29N R29W Sec 4,22; T30N R26W Sec 3,4; T30N R27W Sec 22; T30N R29W Sec 4,8,18,34; T31N R26W Sec 5,8,16,20,27,28; T31N R29W Sec 1-4,8,10-12,15,16,22,27,28,32,34; T32N R26W Sec 5-8,17-20,29-32; T32N R28W Sec 5-8,18-19; T32N R29W Sec 1,10-15,22-28,34,35; T33N R25W Sec 1,6; T33N R26W Sec 1,12-14,21,22,27,28,33,34; T33N R28W Sec 7,17-21,27-30,32-34; T33N R29W Sec 2,3,10-13,24; T33N R29W Sec 11; T34N R25W Sec 20-22,25-29,31,32,35; T34N R29W Sec 1-4,10-12,14,15,22,23,26,27,34,35; T35N R28W Sec 4-7,30,31; T35N R29W Sec 1,11-14,23-26,33-36; T36N R28W Sec 2,3,9,10,12,15-17,20-22,28,29,31-33; T37N R27W Sec 30; T37N R28W Sec 12,13,24,25; T37N R28W Sec 26,35	43,423.17
Libby R.S.	T31N R31W Sec 34	80
Liberty Metals Co	T30N R34W Sec 2,10,11,34	215
Loon Lake Rec. Site	T33N R32W Sec 25	10
Lower Big Therriault Lk.	T37N R25W Sec 30	20
Lower Spar Lk. Rec. Area	T29N R34W Sec 22	10
Marston Lookout	T35N R25W Sec 26	10
Mcgregor Lake	T26N R26W Sec 12	94.16
Montana Power Co	T24N R31W Sec 15	85.04
Mount Henry Lookout	T36N R30W Sec 17	20
Mud Lake Lookout	T36N R28W Sec 25	40
Murphy Lake	T34N R25W Sec 5,8	71.88
Murphy Lake Admin. Site	T34N R25W Sec 6	20
North Dickey Lake	T34N R25W Sec 9	18.25
Noxon Admin Site	T26N R33W Sec 24	109.09
Olson Flat Admin. Site	T35N R32W Sec 3	45
Pacific Hydropower Co.	T33N R34W Sec 36	560
Paul Bunyan Rec. Area	T29N R30W Sec 30	45
Pete Creek Rec. Area	T35N R32W Sec 5	20
Pinkham Mountain Lookout	T33N R27W Sec 9	10
Pipecreek R.S.	T31N R31W Sec 2	80
Pleasent Valley Rec Area	T26N R29W Sec 2	10
Psr 359	T25N R32W Sec 4	145.4
Psr No 25	T24N R32W Sec 2,4,10,12,22,34	532.93
Raven Ranger Station	T26N R29W Sec 2	50
Redtop Creek Rec. Area	T35N R33W Sec 31	10
Rexford Ranger Station	T36N R28W Sec 21	40
Rock Lake Rec. Area	T35N R26W Sec 6	78.61
Rock Meadows Rec. Area	T26N R31W Sec 6,31,32	170

Name	Township (T), Range (R), Section (Sec.)	Acres
Rolling Rock Ranger Sta	T27N R34W Sec 24	3.7
Ross Creek	T28N R34W Sec 12	20
Ross Creek Cedar	T28N R34W Sec 12	100
Scenery Mt.Lookout	T31N R32W Sec 29	10
Smith Mtn.Lookout	T59N R3 Sec 32	10
South Dickey Lake	T34N R25W Sec 15	60.03
Stahl Peak Lookout	T37N R25W Sec 33	30
Sunday Mountain Lookout	T33N R25W Sec 29	10
Swamp Creek	T27N R30W Sec 11,12	50
Swamp Creek R.S.	T25N R31W Sec 20	60
Sylvan Lake Rec. Area	T25N R29W Sec 24	86.86
Sylvanite Admin. Site	T34N R33W Sec 9,16	116.8
Timberline	T32N R31W Sec 35	35
Trout Ck. Admin. Site	T24N R31W Sec 6	105.83
Trout Cr. R.S.	T24N R32W Sec 24	160
Troy Ranger Station	T31N R34W Sec 1	67.83
Turner Mt. Rec. Area	T33N R31W Sec 21	20
Turner Mt. Winter Sports	T33N R31W Sec 20	240
Turner Mtn. Ski Area	T33N R31W Sec 19,20,29	844.97
Twin Meadows R.S.	T32N R26W Sec 29	62
U.Ford Adm. Site	T36N R31W Sec 6,7,12	69.13
Upper Big Therriault Lk	T37N R25W Sec 29,32	60
Upper Spar Lk. Rec. Area	T29N R34W Sec 16	20
Warland Ranger Station	T32N R29W Sec 27,34	76.63
Washington Water Power	T24N R31W Sec 15	126.05
Washington Water Power	T24N R32W Sec 2,5,12	191.36
Washington Water Power	T24N R33W Sec 1,11,12,14,15,20-22; T25N R32W Sec 4,9,10,16,22,27,28,31-34; T26N R32W Sec 20,33,34; T26N R33W Sec 5,6,8,10,14-16,23,24; T27N R33W Sec 30-32; T27N R34W Sec 9,21,25,27,28,32-34	2,637.26
Webb Mtn Lookout	T35N R29W Sec 10	10
West Bull Lk. Rec. Area	T28N R33W Sec 4	27.3
White Pine R.S.	T23N R31W Sec 14	92.06
Whitetailcamp Expansion	T35N R32W Sec 6; T35N R33W Sec 1; T36N R32W Sec 31; T36N R33W Sec 36	55.31
Whitetail Cr Rec Area	T35N R33W Sec 1	67.1
Willow Creek	T24N R29W Sec 3,4	20
Wm. Park Mills Pr. Prj	T25N R29W Sec 32	150
Wm. Park Mills Pr. Prj 11-Oct-1920	T24N R30W Sec 1	80
Wolf Creek Ranger Statn	T29N R27W Sec 20	80
Yaak Falls Rec. Area	T33N R33W Sec 9	20
Yaak Mt.Lookout	T32N R34W Sec 2	10
Ziegler Mtn Lookout	T33N R28W Sec 31	10
Data Unavailable	T27N R34W Sec 21,34	34.77
Data Unavailable	T31N R33W Sec 14,15	352.58

Source: Bureau of Land Management