Draft
Land Management Plan

Shoshone National Forest

United States
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Forest
Service

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Region

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Shoshone National Forest

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Preface

Terms used in this document

In this document, “forest” with a lower case “f” refers to areas with trees, while “Forest” or “Forest-wide” with an upper case “F” refers to the Shoshone National Forest.

The term “forest plan” refers to land management plans in general. This document is referred to as the “Plan.”

Purpose of the land management plan

Forest plans are prepared in accordance with the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the 1976 National Forest Management Act, the 1969 National Environmental Policy Act, and other laws and regulations.[1] National Forest Management Act regulations state that a forest plan should ordinarily be revised on a 10-year cycle or at least every 15 years (36 CFR 219.10).

A forest plan provides guidance for all resource management activities on a national forest.

- It establishes forest-wide multiple-use goals and objectives (36 CFR 219.11(b)).
- It establishes forest-wide standards and guidelines to fulfill the requirements of 16 USC 1604 applying to future activities and resource integration requirements in 36 CFR 219.13 through 219.27.
- It establishes management area direction (management area prescriptions) applying to future activities in a management area (resource integration and minimum specific management requirements) (36 CFR 219.11(c)).
- It meets the requirements for additional planning for special areas unless inconsistent with special area authorities (36 CFR 219.2(a)).
- It designates land as suited or not suited for timber production (16 USC 1604(k)) and other resource management activities such as rangeland and recreation management (36 CFR 219.14, 219.15, 219.20, and 219.21).
- It establishes monitoring and evaluation requirements (36 CFR 219.11(d)).
- It recommends the establishment of wilderness, wild and scenic rivers, and other special designations to Congress, as appropriate.

Forest plans estimate future management activities, but the actual amount of activities accomplished is determined by annual budgets and site-specific project decisions. Because budgets rarely provide enough money to fully implement a forest plan, scheduled activities and actions must be adjusted to match available funds and Congressional intent of appropriations acts. While budget changes do not require forest plan amendments, the implications of the changes may require the agency to evaluate the need for amendments.

[1] All references to laws are understood to be “as amended.”

Relationship of the forest plan to other documents

Direction in the Forest Service directive system, including Forest Service Manuals and Forest Service Handbooks, applies to the Shoshone National Forest's projects. Some manual and handbook direction is referenced in this Plan. Additionally, the Forest Service must comply with applicable laws, regulations, and policies.

Forest plan direction is implemented with the most restrictive direction taking precedence.

Coordination with other plans

Management of National Forest System lands within the Shoshone National Forest boundary occurs in the context of other strategic direction, including Forest Service national strategic goals, the Forest Service Chief's emphasis areas, Forest Service Rocky Mountain Region[2] emphasis areas, and Greater Yellowstone Area goals. Local governments and adjacent federal agencies have management plans that provide direction and guidance for lands under their jurisdictions. To varying degrees, management direction in a forest plan is accomplished in conjunction with, coordinated with, and sometimes modified by, other strategic direction.[3]

Tribal government plans

The Wind River Indian Reservation is immediately adjacent to the Shoshone National Forest. The Shoshone and Arapaho tribal governments have jurisdiction over those lands. Tribal government plans for resource management address many of the same resource issues as a forest plan. The adjacency of tribal and National Forest System lands provides opportunities for coordination and collaboration of resource management issues such as management of wildfires. Additional opportunities are being explored.

Local government plans

State and local government resource management and land use plans provide guidance for management of lands in those jurisdictions. Community wildfire protection plans provide well-defined avenues for coordination. County land use plans describe local government goals and objectives for land management and provide opportunities for areas of coordination between the Forest Service and local governments. Wyoming conservation district strategic plans contain goals and objectives aimed at fostering the conservation of each district's natural resources.

Implementation of a forest plan

A forest plan provides the framework to guide the day-to-day land and resource management operations of a national forest. A forest plan's goals, objectives, standards, and guidelines are used to guide the identification and selection of potential projects.

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[2] The Forest Service is organized into nine regions. In this document, references to the Rocky Mountain Region refer to the Forest Service Rocky Mountain Region, with headquarters in Golden, Colorado.

[3] Forest Service national strategic goals (in the USDA Forest Service Strategic Plan) and Chief's emphasis areas are available at http://www.fs.fed.us. Rocky Mountain Region emphasis areas are available upon request. Greater Yellowstone Area goals are available at http://fedgycc.org/.

A forest plan is a strategic, programmatic document; it does not make project level decisions nor does it make irreversible or irretrievable commitments of resources. Those decisions are made after more detailed, site-specific analyses and further public comment as part of the site-specific National Environmental Policy Act process.

The National Forest Management Act requires that resource plans and authorizations, contracts, and other instruments issued for the use and occupancy of National Forest System lands be consistent with the forest plan. The following are some examples of project decisions that require more detailed environmental analyses:

- Timber harvesting activities for forest restoration, fuels treatments, and improving forest health
- Grazing allotment management plans
- Fish or wildlife habitat improvement projects
- Watershed improvement projects
- Developed recreation or trail construction projects
- Decisions for winter sports development, outfitter and guide proposals, and other externally generated projects involving use and occupancy of National Forest System lands
- Aerial spraying for invasive plant treatments

Resource inventories, action plans, and schedules are not binding decisions and do not require additional environmental analysis at the project level.

Public involvement will be a key part of implementing the Plan. Annual monitoring and evaluation reports will be available for public review.

Valid outstanding rights

The Plan was prepared with the understanding that individuals and entities may have established valid rights, unknown to the Forest Service at this time, to occupy and use National Forest System lands under laws and authorities established by Congress. The courts have established that such valid outstanding rights may be subject to some federal regulation.[4] This Plan recognizes that such valid outstanding rights may exist and the Forest Service will honor such valid outstanding rights when it is subsequently determined that the specific facts surrounding any claim to such rights meet the criteria set forth in any respective statute granting such occupancy and use. Upon discovery of such valid outstanding rights, amendment or revision of the Plan may be necessary.

Resource plans and permits, contracts, cooperative agreements, and other instruments issued for the occupancy and use of National Forest System lands must be consistent with the Plan, subject to valid existing rights.

[4]See Sierra Club v. Hodel, 848 F. 2d. 1068 (10th Circuit 1988)

Public involvement and cooperation with other government agencies

Public involvement entails more than merely soliciting public comment on proposed actions through the scoping process. Throughout the forest plan revision process, the Forest Service has been, and will continue to be, committed to an intensive program of public involvement. Ongoing public involvement and cooperation with other government agencies will be a central part of implementing the Plan.

Developing new collaborative efforts will continue, including public review and participation in monitoring and evaluation.

Information about the Shoshone National Forest, including documents related to land and resource management, can be found at http://www.fs.fed.us/r2/shoshone/.

Forest plan amendments and revision

Forest plan amendment

During Plan implementation, evaluation of monitoring results may reveal that the Plan needs to be amended (36 CFR 219.10(f)).

Forest plan revision

The forest supervisor is required to review the conditions of the land at least every five years to determine if a revision is necessary. If monitoring and evaluation indicate that immediate changes in a forest plan are needed and an amendment is not sufficient, forest plan revision becomes necessary. The regional forester is the official responsible for reviewing and approving forest plan revisions.

The Shoshone's setting

The Shoshone National Forest is in the middle Rocky Mountains in northwest Wyoming (Map 1). The Shoshone extends more than 180 miles from the Montana state line to South Pass near Lander. It is bordered by the Custer and Gallatin National Forests on the north and by Yellowstone National Park and the Bridger-Teton National Forest on the west. The Shoshone is set within the Absaroka, Beartooth, and Wind River Mountains.

The Shoshone consists of 2.4 million acres in Fremont, Hot Springs, Park, Sublette, and Teton counties. It is divided into five ranger districts: the Clarks Fork, Greybull, and Wapiti Ranger Districts are administered from Cody, Wyoming; the Washakie Ranger District is administered from Lander, Wyoming; and the Wind River Ranger District is administered from Dubois, Wyoming. The Supervisor's Office is located in Cody, Wyoming.

The Shoshone National Forest is part of the Greater Yellowstone Area. The Greater Yellowstone Area is a vast, important, and largely intact northern temperate zone ecosystem. The Shoshone plays an integral role in this ecosystem, providing habitat for wide-ranging wildlife including grizzly bear, elk, bison, and wolf; providing a huge expanse of natural landscapes; providing a breathtaking backdrop of natural resources; and providing outdoor lifestyles for local communities.

The terrain varies widely from sagebrush flats to rugged mountains because the Shoshone is situated on the western edge of the Great Plains and the eastern side of the continental divide. Elevations on the Shoshone range from 4,600 feet at the mouth of Clarks Fork Canyon to 13,804 feet on Gannett Peak, Wyoming's highest point. The higher mountains are snow clad most of the year with immense areas of exposed rock interspersed with meadows and forests.

Most of the Shoshone is within the upper Missouri River Basin, subdivided by the Wind/Big Horn and Clarks Fork of the Yellowstone River basins. The southern tip of the Shoshone is in the Sweetwater drainage, which flows into the Platte River system. Principal rivers within the Shoshone boundary are the Clarks Fork of the Yellowstone River, North and South Forks of the Shoshone River, and the Greybull, Wind/Big Horn, and Popo Agie Rivers.

The annual precipitation varies with topography and elevation, ranging from 15 to 70 inches. The higher elevations receive from 30 to 40 percent of their annual precipitation during the winter in the form of snow, roughly 40 percent as rain and snow in the spring, and 20 to 30 percent as rain in the summer and fall.

The Shoshone's roles and contributions

Established in 1891 as part of the Yellowstone Timberland Reserve, the Shoshone is America's first national forest. Named for the Shoshoni Indians living in the area, the Shoshone is part of the Greater Yellowstone Ecosystem.

It is a forest with a resounding history—indigenous Americans, such as the Arapaho, Blackfeet, Comanche, Crow, Nez Perce, Northern Cheyenne, Shoshoni, and Sioux, used the Shoshone for traditional cultural practices and subsistence living. Mountain men hunted, trapped, and traded on these lands, using Union Pass to travel through the mountains. Evidence of past uses remains in the Nez Perce National Historic Trail, in tie hack flumes near Dubois, and at Kirwin, a ghost town that was once a thriving mining community. Historical uses of the Shoshone resonate today in the rich culture of the area, including ranching, logging, and professional outfitters and guides. Lodges and resorts provide fishing, hunting, and recreation services to the public.

It is a forest connected to surrounding landscapes—adjacent public and private lands provide vital connections for wildlife habitat and humans.

It is a forest that contributes to local communities—through public water supply, wood products, minerals extraction, commercial livestock grazing, and recreation-related businesses, the Shoshone contributes to the economic, social, and cultural sustainability of the area.

It is a forest of mountain ranges—the rugged peaks and steep cliffs of the Absarokas, the scenic Wind Rivers, and the high alpine plateaus and glacial lakes of the Beartooths. From the Beartooth All-American Road and the Chief Joseph Scenic Byway in the north, the Buffalo Bill Cody Scenic Byway near the center, and the Wyoming Centennial Scenic Byway in the south, visitors enjoy panoramas of pristine lakes, cloud-shrouded peaks, glacier-carved valleys, meadows blanketed with wildflowers, and an abundance and variety of wildlife.

It is a forest of distinct physical features—the largest concentration of glaciers in the lower 48 states; one of two wild and scenic rivers in Wyoming, the Clarks Fork of the Yellowstone; Three Waters Mountain, which funnels water to the Green, Missouri, and Snake Rivers; paleontological specimens, including a petrified forest; and geology ranging from volcanoes to limestone. Over 25 percent of the Shoshone is a landscape above timberline and 13 percent of

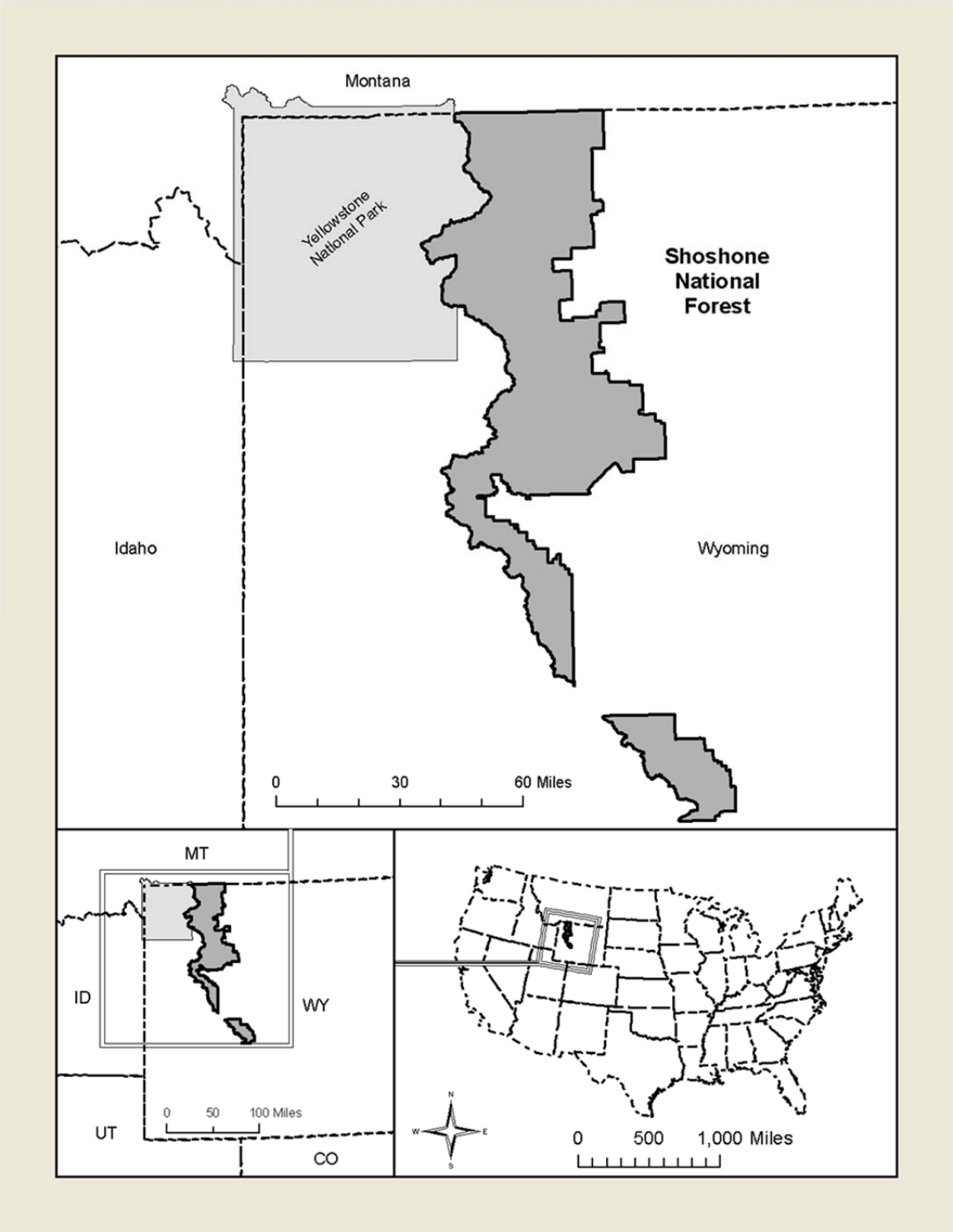
the Shoshone is mapped as rock, barren, or ice, which projects as large expansive peaks and plateaus. The Shoshone's grasslands and forests, mainly lodgepole pine, Engelmann spruce, and Douglas-fir, contribute to healthy watersheds—favorable conditions for water flow.

It is a back country forest—large expanses of primitive wilderness and back country characterize the Shoshone. With five designated wilderness areas totaling about 1.4 million acres and additional acres of non-motorized back country, over three quarters of the Shoshone has seen little or no lasting human development.

It is a forest for recreation—high adventure and solitude in the back country, developed campgrounds along travel corridors, hunting, fishing, ice and rock climbing, mountaineering, whitewater rafting, cross-country skiing, dog sledding, hiking, horseback riding and packing, internationally recognized trails such as the Continental Divide National Scenic Trail, and 262 miles of snowmobile trails. The Shoshone is the eastern gateway to Yellowstone and Grand Teton National Parks, which draw nearly 3 million visitors annually.

It is a forest for wildlife—home to about 335 native wildlife species, the Shoshone provides habitat for grizzly and black bears, gray wolves, deer, elk, moose, pronghorn, bison, Yellowstone cutthroat trout, and a host of smaller animals and birds ranging from pikas, coyotes, and river otters to Clark's nutcrackers, blue grouse, and peregrine falcons. The Shoshone is home to more wild bighorn sheep than any other forest in the National Forest System. A year-round opportunity for wildlife watching is one of the reasons that more than half a million people visit the Shoshone every year.

Map 1. The Shoshone National Forest



Strategic vision

The Forest Service mission is to "sustain the health, diversity, and productivity of America's forests and grasslands to meet the needs of present and future generations."

The mission of the Forest Service is based on the relationship between the American people and their natural resource heritage.

Government Performance and Results Act

In 1993, Congress passed the Government Performance and Results Act that strives to increase the accountability of federal agencies by measuring progress toward and achievement of agency goals and objectives. This legislation, applicable to all federal agencies, requires the preparation of periodic strategic plans and annual performance plans, both of which are focused on outcomes and results.

To implement the Government Performance and Results Act, the Forest Service issues national strategic plans. The most recent plan, the *USDA Forest Service Strategic Plan FY 2007-2012* (USDA Forest Service 2007a), articulates seven goals for management of National Forest System lands.

- Goal 1. Restore, sustain, and enhance the nation's forests and grasslands
- Goal 2. Provide and sustain benefits to the American people
- Goal 3. Conserve open space
- Goal 4. Sustain and enhance outdoor recreation opportunities
- Goal 5. Maintain basic management capabilities of the Forest Service
- Goal 6. Engage urban America with Forest Service programs
- Goal 7. Provide science-based applications and tools for sustainable natural resources management

Complying with and complementing the Forest Service Strategic Plan are the Forest-wide goals, objectives, standards, and guidelines in this Plan. Managers will use the Forest-wide goals and objectives to monitor progress; information from monitoring will be used to determine future management needs.

Vision for the Shoshone

Vision summary

As part of the revision of the 1986 Forest Plan, members of the public, local and State of Wyoming government representatives, and Shoshone National Forest employees were asked to describe their vision for the Shoshone of the future.

This is a vision put into words. It is a description of how people picture the Shoshone's physical, social, and economic resources—like water, air, wildlife, recreation, wilderness, scenery, forest products, and roads. This vision is more than a description of the land and its uses, however; it also describes a management philosophy that Forest Service employees can aspire to, one of openness, collaboration, and sustainability.

This summary is an integration of that input. While not forest plan direction, the principles in this integrated vision were the groundwork for the Plan, developed through the revision process.

Vision

The Shoshone provides clean water to local and regional communities for agriculture, household, and recreation uses and habitat for healthy populations of aquatic species. Clean air and clear skies redouble the Shoshone's splendid scenery and heighten the experience of seeing millions of stars. From panoramic views of mountain ranges to clear alpine lakes and fields of wildflowers, the Shoshone's scenery is extraordinary.

The Shoshone provides contributions of natural resources necessary to sustain and grow components of local economies. Diverse and sustainable goods and services—from wood products and commercial livestock grazing to tourism-related businesses—enhance community resiliency and contribute to livelihoods.

The Shoshone offers a wide range of recreation uses. Expansive wilderness areas are preserved and protected to provide a refuge from everyday life for people to experience solitude and adventure in a natural environment. The undeveloped character and important values of back country areas are maintained. Developed sites in highway corridors and in the front country complement the wilderness as part of the range of recreation opportunities. Trailheads are portals to a diverse non-motorized and motorized trail system. Additional recreation services are delivered through commercial outfitters, guides, lodges, and ranches.

The Shoshone's recreation program is socially, environmentally, and economically sustainable. The Shoshone's setting—the landscape that draws people to the Shoshone—is enhanced by the recreation and public affairs programs' providing high quality information that promotes responsible recreation and a shared-use philosophy. The Shoshone's communication efforts ensure the availability and distribution of high quality conservation education and environmental literacy materials. Increasing environmental literacy through conservation education is a tenet of the Shoshone's communication efforts.

Forested ecosystems are managed to maintain healthy, diverse stands that are resilient to endemic insects, wildfire, and changes in climate, while providing for viable populations of all native and desired non-native vertebrate species. Populations of sensitive species are stable or increasing and threatened and endangered species are progressing toward recovery. New invasive plant species are detected and treated before becoming a significant problem to native plant communities.

Shoshone employees conduct operations in a sustainable manner and adapt management to changes in ecosystems.

An efficient system of safe roads and trails meets the needs of land managers and the public. Facilities and infrastructure—campgrounds, restrooms, offices, roads, and trails—provide opportunities for people of all abilities.

Though human safety takes precedence, every effort will be made to limit impacts to private property, infrastructure, and other high value resources from the effects of wildfire. Where appropriate, fire plays a natural role in ecological processes.

Tribal values and heritage are recognized and supported. Cultural resources are protected and, where appropriate, interpreted for the public.

Forest Service employees provide high quality customer service in a management environment characterized by collaboration, communication, and cooperation. Visitor services, including interpretation and information, promote the natural history and heritage of the area and enhance environmental and outdoor education. The Shoshone is a model for successful collaboration and partnerships—people actively participate in caring for the land and maintaining the long-term sustainability of the Shoshone's resources.

Summary of the *Analysis of the Management Situation*

On September 24, 2010, the Forest Service announced the revision of the Shoshone National Forest under the planning regulations of December 18, 2009 (36 CFR 219.35(b)), which allows the use of the provisions of the 1982 planning rule. The *Analysis of the Management Situation* (USDA Forest Service 2011a) was posted to the Shoshone's website in January 2012.

Based on public input and the *Analysis of the Management Situation* (USDA Forest Service 2011a), six revision topics were identified: recreation uses and opportunities, special areas and designations, vegetation management, wildlife habitat management, minerals, and commercial livestock grazing. The *Analysis of the Management Situation* (USDA Forest Service 2011a) addresses the resource condition and trend, need for change, and the projection of demand and need for each revision topic. These are summarized here.

Recreation uses and opportunities

Resource condition and trend

Population growth, new recreation technology and trends, and community and visitor interest have increased the focus on the management of outdoor recreation settings and opportunities on the Shoshone. The Shoshone has an emphasis on back country, non-motorized recreation, with 1.4 million acres of designated wilderness and 684,800 acres of inventoried roadless areas. Surveys have shown a slow but steady increase of recreation visitors to the Shoshone. Some of the most popular activities are driving to enjoy scenery, picnicking and camping, hiking, horseback riding, fishing, and hunting. There is interest in motorized recreation as well, including snowmobiling and off-highway vehicle riding.

Need for change

The 1986 Forest Plan needs to be updated to address changes in recreation demand, technology, and management practices. Management needs to address impacts from recreation to riparian areas, particularly in wilderness.

Projection of demand and need

Recreation demand is expected to continue slow, steady growth. There is an apparent demand for more day use opportunities including short loop trails, both motorized and non-motorized.

Special areas and designations

Resource condition and trend

The Shoshone currently has one special interest area, the Swamp Lake Botanical Area. Three additional special interest areas were identified to foster the protection and public enjoyment of these special areas. The Shoshone currently has one research natural area, the Line Creek Plateau Research Natural Area. Six additional research natural areas were identified to add to the national network of areas designated for research and education. The High Lakes Wilderness Study Area and Dunoir Special Management Unit are congressionally established special areas with direction for their management and protection.

Need for change

The Sawtooth Peatbeds Geological Area, Kirwin Historical Area, and Little Popo Agie Geological Area are worthy of special interest area designation. Designations and management plans will recognize these areas for their special characteristics. Additional research natural areas will support the national research natural area network research and education strategy. Winter motorized use and mountain bike use in the Dunoir Special Management Unit needs to be consistent with the enabling legislation.

Projection of demand and need

The demand for special interest areas is primarily internally driven by the objective to provide protection for unusual areas and resources. The demand for research natural areas is primarily internally driven by the objective to provide a representative network of ecological and biological systems that can be used as baseline comparisons with managed vegetation types. The High Lakes Wilderness Study Area is a very popular back country and snowmobiling destination. The Dunoir Special Management Unit is very popular with hikers and back country horse riders.

Vegetation management

Resource condition and trend

Forested vegetation on the Shoshone has been affected by widespread insect and disease epidemics over the last 10 years. Some changes in stand structure and stand age are apparent because of fire suppression. Forest cover and species diversity have increased and/or remained similar to historic distribution. Rangeland is largely in good condition. Some riparian communities within the Shoshone are outside their historic ranges of variability due to historic activities.

Need for change

The greatest need for change is to ensure the revised forest plan contains adequate direction for managing forest vegetation, given the large-scale changes resulting from recent insect epidemics and large fires.

Projection of demand and need

The demand for forest products is expected to remain relatively stable. The only large sawmill in the area that remains in production is R-Y Timber in Livingston, Montana. The demand for vegetation with regard to commercial livestock grazing and wildlife is considered under those topics.

Wildlife habitat management

Resource condition and trend

Five federally designated threatened, endangered, proposed, or candidate species were identified in the 1986 Forest Plan. Since implementation of the 1986 Forest Plan, two species have been removed from this list and three species have been added. Species such as the grizzly bear and gray wolf have shown an upward trend in population.

Need for change

The revised plan will address the designation of species by category to meet legal requirements and to eliminate consideration of species in multiple categories where possible. Forest Service Rocky Mountain Region terrestrial and aquatic sensitive species on the Shoshone will be included in the revised plan and addressed with management direction. The 18 management indicator species listed in the 1986 Forest Plan were redundant with other species categories. Reducing the number of management indicator species to four would be important indicators of four ecosystems of concern.

Projection of demand and need

Species of local concern will be addressed in the revised plan (Rocky Mountain elk, mule deer, moose, Yellowstone checkerspot butterfly, Clark's nutcracker, and several plant species) and their population trends will be monitored. Demand remains high for wildlife viewing, fishing, and hunting. Wildlife species play an important role in maintaining healthy ecosystems and diversity within the Greater Yellowstone Area.

Minerals

Resource condition and trend

The Shoshone had considerable activity regarding locatable minerals (gold, silver, copper, etc.) during the 1800s. Commercial mining for these metals, other than small scale panning and dredging for gold, is largely absent from the Shoshone today. For leasable minerals (oil, gas, etc.), limited exploration has occurred on the Forest and there are no producing wells. Mineral materials permits for stone, sand, gravel, cinders, etc., are issued for personal, commercial, and public use.

Need for change

Surface occupancy constraints need to be consistent with management direction for wildlife habitat and special area management.

Projection of demand and need

Significant increases in the price of oil and gas are expected to escalate interest in leasing and subsequent exploratory wells on the Shoshone.

Commercial livestock grazing

Resource condition and trend

Commercial sheep grazing has been in a steady decline on the Shoshone since the early 1900s. This was due to adjustments in stocking levels, a decrease in demand for wool and mutton, and more recently from an increase in predator/livestock conflicts and concern over the potential for disease transmission from domestic sheep to bighorn sheep. In contrast, the levels of permitted cattle grazing have changed very little for many decades.

Need for change

New direction is needed to improve critical wildlife habitat and to prevent negative impacts on riparian areas. New management direction that expands the use of forage reserves and other approaches are needed.

Projection of demand and need

There continues to be a strong demand for livestock grazing use, primarily cattle. This level of demand and need is expected to remain steady or slightly increase in the future.

Management challenges

Recreation opportunities

The Plan strives to provide a balance of recreation opportunities including motorized and non-motorized, primitive to rural, in settings ranging from developed facilities and paved roads to back country and wilderness without roads. Public concerns about recreation opportunities arise from interests of different forest user groups and situations where conflicts exist when different uses appear to be incompatible.

Resolution

Plan direction seeks to resolve concerns by providing a wide array of diverse recreation settings and opportunities.

Recreation goals (1, 2, 3, and 4)

Seek increased tourism that will enhance local economies by providing information and a broad spectrum of high quality outdoor recreation opportunities for visitors. Education opportunities are used to minimize conflicts between user groups. Opportunities for consumptive and non-consumptive wildlife uses are provided. Recreation management is responsive to the needs of forest users, within other management constraints.

Roads and trails goals (4 and 5) and objectives (5)

A variety of summer motorized trail loops are provided for riders of different abilities. Mountain biking opportunities are provided. At least three new, wheeled motorized trail loop opportunities are available.

Management Area 1.1 – Wilderness goal (2)

Preserve and improve the characteristics of wilderness areas.

Management Area 1.6A - High Lakes Wilderness Study Area goals (1 and 2)

Continue to provide motorized winter recreation opportunities. Until released from wilderness study area status, this area will be managed to prevent long-term impairment of wilderness characteristics.

Management Area 3.3A - Back country recreation year-round motorized goals (1 and 2)

Provide year round motorized recreation opportunities. Increase diversity of motorized experiences.

Management Area 3.3B - Back country recreation summer non-motorized with winter motorized goal (1)

Provide quality summer non-motorized and winter motorized recreation opportunities.

Management Area 3.3C - Back country recreation summer motorized with winter non-motorized goal (1)

Provide quality summer motorized and winter non-motorized recreation opportunities.

Management Area 3.5 - Back country recreation and forest restoration goal (1)

Provide year round motorized recreation opportunities.

Management Area 3.7A - Continental Divide National Scenic Trail goal (1)

Provide high quality scenic, primitive hiking and horseback riding opportunities along the Trail corridor.

Management Area 4.2 - Scenic byways, scenic areas, vistas, and travel corridors goals (2 and 3)

Provide highly developed recreation facilities within these corridors. Provide opportunities for the public to learn about their national forest.

Management Area 8.1 - Developed recreation areas goals (2 and 3)

Levels of development and amenities at recreation facilities are sustainable and commensurate with the location, level of use, and public expectations. New or reconstructed facilities and sites provide a range of universally accessible opportunities within the limits of the site characteristics and the Recreation Opportunity Spectrum classification.

Management Area 8.2 - Ski-based resorts goal (1)

Provide safe, quality alpine and Nordic ski experiences.

Forest health

A main component of Plan direction is the emphasis on restoring, retaining, and maintaining the functions and processes that keep the forested environment resilient to natural disturbances, i.e., fire, windthrow, insect/disease infestations, while providing the goods, services, and habitat conditions necessary to meet Plan goals and objectives. Since 2000, widespread bark beetle epidemics have occurred on the Shoshone. Spruce beetle, Douglas-fir beetle, mountain pine beetle, western balsam bark beetle, and spruce budworm have been in epidemic status the last several years. Warming temperatures related to a changing climate may add stress to trees, making them more susceptible to insects and diseases. Dead trees resulting from beetle attacks and/or diseases create public safety concerns because of the threat of falling trees; increased fuel loading from dead and dying trees can lead to higher wildfire intensity.

Public concerns about forest health stem from the debate over how to maintain the health and productivity of the forested environment while still managing for multiple uses.

Resolution

Goals and objectives in the Plan are aimed at restoring, retaining, and maintaining ecological processes. Forest vegetation will be restored through management activities and through allowing natural processes to proceed. Given projected budgets, it is unlikely enough acres can be treated to affect large landscapes, though natural processes such as fire will affect larger areas. The direction in the Plan allows opportunities to be taken if funding levels increase. Additionally, direction and associated management approaches allow treatments to be focused in specific areas and vegetation types in order to make a difference in key areas.

Vegetation goals (1, 2, 3, 4, 5, 7, and 8) and objectives (1, 2, 3, and 4)

Restore and maintain a diverse range of ecosystems. Restore and maintain declining cover types such as aspen and whitebark pine. Manage sagebrush and willow to provide a diversity of conditions. Maintain riparian areas in properly functioning conditions. Manage rangelands to favor native species and resist invasive species.

Invasive species goals (1 and 4) and objectives (1, 2, and 3)

Reduce impacts from invasive plants and aquatic species and prevent the establishment of new populations and the spread of existing populations.

Fire and fuels goals (5 and 6) and objectives (1, 2, and 3)

Reduce the risk to communities and natural resources from fire. Decrease the acres of high and moderate hazardous fuels. Restore vegetation conditions to those that allow fire to function naturally across the landscape.

Insects and diseases goals (1, 2, and 3) and objectives (1)

In managed areas, increase the acres with conditions that are less susceptible to damage from insects and diseases. Increase the acres of whitebark pine and limber pine that are resistant to white pine blister rust. Intensively manage insect and disease outbreaks in developed areas to protect desired conditions.

Forest products goals (1 and 4) and objectives (1)

Provide a reliable supply of forest products consistent with achieving desired conditions. Protect suitable timber lands from loss or damage from wildfires.

Invasive species

The introduction and spread of invasive plants and invasive aquatic species within the Shoshone pose a serious threat to the health and diversity of ecosystems. Invasive species negatively affect forest and rangeland environments, wildlife habitat, and can cause economic losses. The threat to ecological systems from invasive species is acute and expanding. Some of the greatest threats are from Dalmatian toadflax, spotted knapweed, houndstongue, and the continued expansion of cheatgrass. The establishment and spread of aquatic invasive species have become major concerns on the Shoshone. Whirling disease has been found in various locations on and downstream of the Shoshone. Didymo has been found adjacent to and downstream of the Shoshone on the Middle Fork of the Popo Agie River. New Zealand mud snails have been found in the Shoshone River downstream of Cody and in the Big Horn River just upstream of Thermopolis.

Resolution

The invasive species program consists of five components: 1) preventing new invasive species infestations through public education programs, 2) eliminating new infestations before they become established, 3) containing and reducing established infestations, 4)reclaiming native habitats and ecosystems, and 5) enforcing special orders requiring weed-free hay, straw, mulch, and forage.

Invasive species goals (1, 2, 3, and 4) and objectives (1, 2, and 3)

Reduce adverse impacts from invasive plant and aquatic species. Eradicate spotted knapweed on the Shoshone. The distribution of Dalmatian toadflax, leafy spurge, cheatgrass, and oxeye daisy is reduced or eradicated where possible. Prevent new establishments and minimize spread of aquatic invasive species in waters in and around the Shoshone. Reduce invasive plant density, infestation size, and/or occurrence on at least 2,000 acres annually. Aquatic invasive species are not established in any new areas on the Shoshone. Annually, treat at least 50 acres of cheatgrass in sagebrush communities in priority areas.

Vegetation goal (7)

Manage rangeland plant communities to favor the replacement of invasive species with desirable native species.

Management Area 1.1 – Wilderness goal (3) and objective (3)

Control invasive plants within wilderness areas, concentrating on spreading populations that cause, or may cause, serious adverse impacts on wilderness values. Invasive plant density, infestation size, and occurrence are reduced.

Management Area 8.6 – Administrative sites goal (5)

Maintain administrative sites free of invasive plant species.

Grazing

Commercial livestock grazing allotments exist on 43 percent of the Shoshone, including allotments within wilderness. Grizzly bear and gray wolf populations have increased over recent years on the Forest and in the Greater Yellowstone Area. Shoshone grazing permittees have experienced limited livestock predation from wolves and bears and some competition for forage from large wild ungulates.

Resolution

Some permits include forage reserve allotments. These reserve allotments can be utilized when another allotment is unavailable due to predator conflicts and for other resource management issues.

Commercial livestock grazing desired conditions and guideline (1)

Conflicts between livestock and large predators are minimized to the extent possible, while following federal and State of Wyoming laws and regulations. Allotments that become vacant may be analyzed for potential use as forage reserves.

Species of local concern standard (3)

Big game requirements for forage have a priority in the management of crucial winter range used in common by livestock and big game.

Social and economic

The Shoshone contributes to local economies through the provision of tourism, grazing, hunting, logging, water, and mineral extraction. The Shoshone plays a major role in the Greater Yellowstone Ecosystem by contributing to the large, intact ecosystem with outstanding wildlife habitat, scenery, wildland recreation opportunities, clean water, and clean air. Balancing the demand for forest-based goods and services with the need for ecosystem health and protection is a management challenge. The challenge includes determining those management activities and strategies that are in line with the physical and biological capabilities of the land and ensuring the ability of ecosystems to meet the needs of future generations.

Resolution

The Plan includes direction that allows for commercial utilization of resources within the capacity of the Forest's ecosystems.

Commercial livestock grazing goal (1) and objective (1)

Provide a sustainable supply of forage that helps achieve other resource desired conditions on National Forest System lands and supports ranching in local communities. Average annual permitted animal unit months will range between plus or minus 10 percent of 60,000 animal unit months.

Forest products goals (1, 2, 3, and 4) and objective (1)

Provide a reliable supply of forest products over time that, 1) is consistent with achieving desired conditions on National Forest System lands, and 2) helps maintain or create processing capacity in local communities. Suitable timber lands are managed to produce a sustainable

supply of commercial timber products. Other forest product species and resources are available for personal and commercial use and are managed for sustainability and to ensure their ecosystem roles and functions are maintained. Protect suitable timber lands from loss or damage from wildfires, except when values would not be cost effective to protect. Forest products produced from the Shoshone average at least 16,500 Ccf annually.

Special uses goal (1)

Special use authorizations benefit local economies through associated employment opportunities, services, and visitation.

Minerals goal (1 and 2)

Help meet energy resource needs. Provide for mineral resource development.

Recreation goal (1)

Seek increased tourism that will enhance local economies by providing information and a broad spectrum of high quality outdoor recreation opportunities for visitors.

Management Area 5.1 - Managed forests and rangelands goal (1)

On lands suitable for timber production, commercially valuable timber products are produced by maintaining acceptable stocking levels and rates of growth, as well as favoring commercial tree species.

Climate change

The Shoshone is currently experiencing a warming trend that is expected to accelerate in the next century (Rice et al. 2012). Climate change can have many effects on the functioning of the complex ecosystems of a forest. Climate change may be accompanied by rising temperatures, changes in the length of the growing season, changes in amounts and timing of precipitation, increases in water temperature, and other variations. The projected changes in climate will affect the availability, extent, and location of wildlife habitat, and may affect the species dependent on various vegetation types. Impacts to local residents, tourists, and local economies could include longer summer recreation seasons, shorter winter seasons, and changes in water runoff timing for agricultural, municipal, and recreation uses.

Inventoried roadless areas

The inventoried roadless areas on the Shoshone were identified as part of the Roadless Area Review and Evaluation in 1978. In 2001, the Roadless Area Conservation Rule formally designated the areas and established national direction regarding timber harvest, road construction, and road maintenance within these areas. Management of roadless areas is controversial. Some advocate that enough wilderness has been designated and that multiple use management is appropriate in these areas. Others advocate that these areas should remain in a natural and undisturbed state to maintain biodiversity and promote ecosystem management.

Resolution

Plan direction for inventoried roadless areas is consistent with the 2001 Roadless Area Conservation Rule as required by law. Management for inventoried roadless areas is generally guided by the management area to which the roadless area is allocated. Management area direction is sometimes more restrictive than the direction in the Roadless Area Conservation Rule. In other cases, the specific management direction is less restrictive than Roadless Area Conservation Rule direction. In those cases, the Roadless Area Conservation Rule direction is followed. Management Area 3.5 – Back country recreation and forest restoration is responsive to the requirements of the Roadless Area Conservation Rule while emphasizing the use of vegetation management activities to enhance vegetation diversity and to speed vegetation recovery from wildfire and insect epidemics.

Chapter 1 – Forest-wide direction

Introduction

Chapter 1 provides the overall direction for managing the Shoshone National Forest.

Background

The background sections provide information on the Shoshone's resources, specific to the situation on the Shoshone. The background sets the context for Plan direction.

Desired conditions

Desired conditions are the focus of the Plan – management of the Shoshone's resources will be directed toward the achievement of desired conditions.

Goals, objectives, standards, and guidelines tiered to the desired conditions provide the framework for future projects and activities. Movement toward achievement of the desired conditions is a primary reason for proposed management activities.

Some principles of desired conditions are:

- Desired conditions are social, economic, and ecological attributes.
- Desired conditions are neither final decisions nor final commitments.
- Desired conditions may be the same as existing conditions, or they may be achieved during or beyond the time covered by this Plan.

Goals

Goals are broad statements that describe conditions that will contribute to the attainment of desired conditions. Goals are generally timeless. Goals describe the ends to be achieved rather than the means of doing so. Goal statements form the principal basis from which objectives are formed.

Objectives

Objectives are concise, time-specific statements of measurable, planned results that respond to pre-established goals. Objectives form the basis for further planning to define the precise steps to be taken and the resources to be used in achieving the identified goals.

The timeframe for accomplishing objectives, unless otherwise stated, is generally considered the planning period, or the next 10 to 15 years.

Standards

A standard is a course of action that must be followed, or a level of attainment that must be reached, to achieve the goals in the Plan. Deviations from standards must be analyzed and documented in a forest plan amendment.

Guidelines

A guideline is a course of action that should be followed to achieve the goals in the Plan. Exceptions may exist, but they must be justified and documented in a project level National Environmental Policy Act document. A forest plan amendment is not required.

Management approach

The management approach clarifies how Plan direction may be applied. Management approaches are supplemental information; management approaches are not binding. They describe collaboration strategies, program emphases, program guidance, and program priorities. These sections do not cover a program's complete strategy. The lack of detail for some resources does not indicate a lack of emphasis or importance for the program or resource.

Water and soil

Background

Watershed condition is integral to all aspects of resource management and use. Good watershed management maintains the productive capacity of soils, protects water quality and quantity, sustains native species, provides beneficial uses, and reduces the threat of flood damage to Forest Service infrastructure and downstream values.

There are 147 sixth level hydrologic unit code watersheds that are all or partially on the Shoshone, and based on the above classification, most of these (89 percent) are considered Class 1 or functioning properly. Of those watersheds functioning properly, typically those in wilderness provide the best reference conditions or attributes of healthy watersheds. Three percent are considered functioning at risk, and concerns relate mostly to historic uses such as heavy grazing or roads associated with timber harvest and motorized recreation. These watersheds are generally on an improving trend due to ongoing management actions.

There are about 4,063 miles of perennial streams on the Shoshone—about 1,660 miles support some type of fishery. Overall, stream habitat conditions on the Shoshone are improving or remaining stable and meeting or moving toward desired conditions. Historically, all high mountain lakes on the Shoshone were barren of fish because the lakes were formed by uplifting and glacial activity. About 310 lakes comprising about 10,048 acres currently support some type of fishery. Overall, the condition of lake habitats is good to excellent and meeting desired conditions.

Changes in water quantity, timing, and quality are expected to become increasingly important issues with the changing patterns of precipitation projected under a changing climate.

Desired conditions

Watersheds are characterized as having high geomorphic, hydrologic, and biotic integrity relative to natural potential. Vegetation and ground cover maintain good hydrologic function. Soils are maintained or improved to productive conditions. Productive soils and sustainable ecosystems are maintained when soil impacts, such as erosion, displacement, compaction, burning, and nutrient drains, are managed by best management practices.

Watersheds support favorable conditions of water flow to support multiple uses, biological resources, and a range of flows that transport sediment and maintain natural channel dimensions. Base flows support riparian vegetation and instream needs.

Streams are in dynamic equilibrium with their water and sediment supplies. Stream systems retain their ability to transport sediment, they neither aggrade nor degrade, and the floodplain is accessible when stream flows are above bankfull level.

Periodic floods are the primary disturbance factor shaping stream channel structure and riparian vegetation patterns. Flood timing, duration, and magnitude follow expected patterns based on precipitation, season, aspect, elevation, and desired upland vegetation condition, and provide for flood dependent vegetation and channel maintenance. High flows exceed bankfull discharge for a short number of days at least every two years and provide for flood-dependent vegetation and channel maintenance. Floodplains dissipate floods and sustain water tables and the natural timing and variability of water levels in riparian, wetland, and meadow habitats.

Goals for water and soil

	Water and soil
1.	Restore and maintain healthy watersheds, including wetlands, riparian areas, and floodplains.
2.	Disturbed areas resulting from management activities or infrastructure are disconnected from streams, lakes, and wetlands.
3.	All groundwater and surface waters meet State of Wyoming water quality standards to fully support State of Wyoming designated uses and are of sufficient quality to support surrounding communities, municipal water supplies, and natural resources.
4.	Soils are maintained or improved to productive conditions. Maintain or improve long-term levels of organic matter and nutrients.

Standard for water and soil

	Water and soil
1.	Implement appropriate watershed conservation practices to protect soil, aquatic, and riparian systems as contained in Forest Service Handbook 2509.25 Watershed Conservation Practices Handbook.

Guidelines for water and soil

Water and soil	
1.	Areas disturbed by management activities should have 70 percent of background vegetation cover reestablished within three years after project completion.
2.	On-site slope stability examinations should be conducted in areas identified as potentially unstable.
Fire and fuels	
3.	Fire suppression strategies and tactics should minimize impacts to soil productivity and water quality.
Special uses	
4.	Special use authorizations involving water uses or diversions should be consistent with existing water rights.
Minerals	
5.	Surface occupancy should not occur for any mineral activity on soils with high erosion hazard.

Management approach

Watershed improvement/restoration projects include activities focused on water quality, riparian and stream ecosystem function, soil productivity, and maintaining or restoring resilient vegetation conditions. Four examples include 1) implementing best management practices to filter sediment from runoff from roads and trails before it enters water courses and riparian areas, 2) eliminating cheatgrass to restore soil productivity, 3) stabilizing stream banks adjacent to infrastructure, and 4) restoring vegetation conditions impacted by intense wildfire or severe insect epidemics.

Watersheds in fully functioning condition are managed to maintain that condition. Watersheds functioning at risk or impaired condition are managed to improve by recovering naturally, and in some cases, through implementation of improvement/restoration projects.

Prioritization of watershed/restoration projects is commonly guided by the Watershed Condition Framework, a comprehensive approach for proactively implementing integrated restoration on priority watersheds on national forests and grasslands. The Watershed Condition Framework improves the way the Forest Service approaches watershed restoration by targeting the implementation of integrated suites of activities in those watersheds that have been identified as priorities for restoration.

Stream flow regimes are critical to maintaining stream processes and habitat for aquatic life. Managers work to protect stream flow-dependent water uses and improve conditions in perennial streams where stream flow regimes have been altered. Stream flow protection may be a condition of authorizing occupancy and use of National Forest System lands. Cooperation with water users and others is necessary to ensure appropriate resource protection while

meeting the needs of people who have existing water rights. State instream flow programs will be used where possible when they meet National Forest System needs.

All non-stock water uses on the Shoshone have been documented in both electronic and paper formats (coordinated with the Wyoming State Engineer's Office). All adjudicated water uses, points of diversion and use, and transmission lines in between (if appropriate) are digitally mapped. The same will be completed for stock uses as funding and work force allow.

Given the increasing demand for water uses and potential climate change effects, it is likely that water storage proposals, diversions, and changes to water rights will be proposed by local governments and others in the coming years. In response to such proposals, the Forest Service will work with local governments and State of Wyoming agencies to help move forward in ways that best protect existing water rights, community interests, and public land resources.

Adjudicated water rights not necessary for the management of reserved or acquired National Forest System land will be transferred, exchanged, used for augmentation purposes, or disposed.

Management activities are guided by Forest Service Handbook 2509.25 Watershed Conservation Practices Handbook. The management measures and design criteria in the handbook include practices that are important parts of meeting desired conditions for soil, aquatic, and riparian resources.

Activities are also guided by memoranda of understanding with the Wyoming Department of Environmental Quality and the Wyoming State Engineer's Office, and by the Final Phase II Decree covering the United States' Non-Indian Claims in the General Adjudication of All Rights to Use Water in the Big Horn River System and All Other Sources, State of Wyoming.

Soils may be periodically disturbed by management activities, but are restored and reclaimed after activities have been completed. The Shoshone remains part of the National Cooperative Soil Survey; relevant portions of the survey will be reviewed and updated.

Potentially unstable land is described as having a high or very high instability rating or classified as unstable or marginally unstable. Where there is potential for toxic contamination of soil and water, contingency plans to prevent or rehabilitate soil contamination are developed.

Where fire is used to perpetuate an ecosystem, it is done in a way that accomplishes resource objectives without unnecessarily risking or jeopardizing the site's ability to sustain native plant communities and their corresponding soils.

Ecological site descriptions are being developed to help integrate the management of activities with consideration to both soil and vegetation conditions.

Soil capabilities, potentials, and limitations are appropriately considered in designing management activities.

Other guidance

Watershed Condition Framework (USDA Forest Service 2011c)
http://www.fs.fed.us/publications/watershed/Watershed_Condition_Framework.pdf

Air

Background

Federal land managers manage air quality as directed by the Clean Air Act and the Wilderness Act. On the Shoshone, the Fitzpatrick, Washakie, and North Absaroka Wilderness areas are Class I airsheds where no deterioration of air quality is allowed. All other areas on the Shoshone are Class II airsheds where air quality must meet standards set by the Wyoming Department of Environmental Quality.

Air quality on the Shoshone and within wilderness areas is good to excellent. To a large extent, this is due to the absence of highly populated areas near the Shoshone. Air quality issues and concerns may increase due to expected population increases in upwind states (Utah, Arizona, and California), expansion of energy development in southwest Wyoming, more prescribed fires to reduce fuel loadings, and more wildfires because of high fuel loads and insect epidemics.

Desired conditions

Air quality related values, including visibility, support human health, quality of life, economic opportunities, high quality recreation, and wilderness values.

Goals for air

Air	
1.	Air quality meets Clean Air Act and Wilderness Act requirements and Environmental Protection Agency-approved Wyoming air quality standards.
2.	Air quality is stable or improving in Class I airsheds on the Shoshone.

Standard for air

Air	
1.	Meet State of Wyoming and federal air quality standards and comply with local, State of Wyoming, and federal air quality regulations and requirements.

Guidelines for air

Air	
1.	Land management activities should not elevate air pollution concentrations to levels that cause decreasing air quality in Class I airsheds on the Shoshone.
2.	For waterbodies in wilderness where the acid neutralizing capacity is greater than 25 micro-equivalents per liter, the limit of acceptable change from human-caused air pollution should be no more than 10 percent change in acid neutralizing capacity. For those extremely sensitive waterbodies where the acid neutralizing capacity is less than 25 micro-equivalents per liter, the limits of acceptable change should be no greater than one micro-equivalent per liter.

Management approach

Shoshone personnel will continue to monitor air quality and be involved in review of State of Wyoming implementation plans, air quality emission permit applications, and environmental documents being prepared for energy development.

Every five years, Shoshone personnel will continue to analyze and report air quality data collected at the South Pass National Atmospheric Deposition Program site, Ross and Saddlebag lakes atmospheric deposition sites, and the Dead Indian Interagency Monitoring for Protected Visual Environment site.

Managers consider impacts to Class I and II airsheds and smoke-sensitive areas when determining the appropriate management response for wildfire and when managing prescribed fire.

Vegetation

Background

Vegetation varies widely across the Shoshone due to variations in elevation, soils, geology, aspect, climatic factors, and past disturbances. Forest cover types in general have less aspen, sagebrush, grasslands, and willow than historically occurred. Future vegetation distributions are likely to change in response to precipitation changes, temperature changes, and disturbance regime changes that are driven by climate change. Vegetation on the Shoshone provides diverse habitat for a variety of native plant and animal species, attractive settings for outdoor recreation, and resources for grazing and timber production. Impacts from insects and wildfire have dramatically changed vegetation conditions since 2000.

Desired conditions

Across the Shoshone, a diversity of vegetation exists with a mosaic of cover types and stand structures forming a healthy, resilient landscape that provides habitat and connective corridors for all naturally occurring and desired species. The dominant cover types on the Shoshone continue to be grasslands, Douglas-fir, spruce/fir, lodgepole pine, and whitebark pine. The

desired Forest-wide mix of cover types is shown in Table 1 and the current mix is shown in Table 2.

Forest vegetation exists in a diversity of age classes across the Shoshone. In areas that receive no or infrequent vegetation management actions (management area categories 1, 2, and 3), natural process such as fire and insects are the predominant disturbances that influence stand structure and landscape patterns. These natural disturbances can lead to large fluctuations in stand conditions. Though on the average in comparison to other areas, stands are older, patch size is variable with many small patches (<10 acres) interspersed among large patches (>100 acres) that dominate the area, and the amount of dead and down material is greater.

In areas that receive more frequent vegetation management actions (management area categories 4, 5, and 8), stand structure and landscape patterns are influenced by prescribed fire, timber harvest, and other silviculture treatments in addition to natural disturbances. Vegetation management tends to reduce the incidence of large fluctuations in stand conditions. All conditions are still present, but on the average in comparison to other areas, stands are younger, patch size is less variable with more mid-size patches (10 to 100 acres), and the amount of dead and down material is lower. These conditions provide more resilient, healthy forested stands than are found in unmanaged areas of the Shoshone.

Table 3 and Table 4 display the current and desired age class distribution areas across the Shoshone.

Snags occur within all tree cover types and commonly occur in patches. Densities are highest in areas where natural disturbance processes dominate (management area categories 1, 2, and 3). In these areas, snag densities range from five snags/acre greater than nine inches in diameter for aspen cover type to 21 snags/acre greater than nine inches for spruce/fir cover type. Areas where vegetation management activities are more frequent (management area categories 4, 5, and 8) have the lowest snag densities, with minimum densities of two to three snags/acre greater than nine inches in diameter.

Occurrence of large woody debris generally mirrors the occurrence of snags, with the greatest densities in those areas where natural processes dominate.

Whitebark pine occurs throughout its range (at high elevations and in mixed conifer stands just below timberline). Cone-bearing stands are healthy and younger stands have been restored to areas where bark beetles, blister rust, and fire have eliminated mature stands in the last decade.

Riparian vegetation is supportive of hydrologic functions and good water quality. Vegetation in riparian areas is composed of a diverse structure of native plant communities that perpetuate the distribution of woody debris, soil cover, bank stability, aquatic habitat, and shading characteristics of resilient riparian ecosystems. In areas where dry meadow and upland plant communities, including Kentucky bluegrass types, have invaded into wetland/riparian areas, management allows for their replacement over time by native plant communities to the extent practicable. Ground cover is typically comprised of organic litter, shrubs, grasses, graminoids, and forbs. Riparian vegetation composition and structure are similar to what would be expected with natural disturbance processes and vary physiographically. Vegetation displays a mosaic of successional stages and age classes that sustain a diversity of riparian communities and the aquatic and terrestrial organisms that use them over time.

Wetland habitats (springs, seeps, ponds, lakes, fens, etc.) remain intact and properly functioning with natural water flow patterns. Fens support the features and functions inherent to these special habitats.

Table 1. Desired cover types on the Shoshone

Cover type	Desired percentage	Desired acreage
Alpine	12	297,300
Grasslands	14 to 19	341,300 to 463,200
Willow	0.6 to 0.75	14,600 to 18,300
Sagebrush	1.5 to 3	36,500 to 73,100
Aspen	2 to 3	48,700 to 73,100
Douglas-fir	13 to 16	317,000 to 390,100
Spruce/fir	12 to 17	292,600 to 414,500
Lodgepole pine	11 to 16	268,200 to 390,100
Whitebark pine	9 to 11	219,400 to 268,200
Limber pine	1.5 to 3	36,600 to 73,100

Table 2. Current cover types on the Shoshone

Cover type	2011 percentage[5]	2011 acreage
Alpine	12.2	297,300
Grasslands	18.8	459,000
Willow	0.6	14,000
Sagebrush	1.6	38,800
Aspen	1.0	23,300
Douglas-fir	14.2	345,300
Spruce/fir	12.7	309,400
Lodgepole pine	15.7	382,900
Whitebark pine	7.8	190,600
Limber pine	1.4	35,300

[5] Percentages do not add to 100 percent, because the 13.9 percent of the Shoshone that is non-vegetated, rock, and ice are not included.

Table 3. Desired age class diversity by cover type for the Shoshone (percentage of cover type acres[6])

	Desired age class distribution management area categories 1, 2, 3 (percentage of age class)			Desired age class distribution management area categories 4, 5, 8 (percentage of age class)		
Forest cover type	**Younger[7]**	**Middle**	**Older[8]**	**Younger**	**Middle**	**Older**
Aspen	5 to 20	50 to 75	20 to 30	15 to 20	65 to 80	5 to 15
Douglas-fir	5 to 10	65 to 80	15 to 25	10 to 15	70 to 85	5 to 15
Spruce/fir	5 to 10	60 to 75	20 to 30	10 to 15	70 to 85	5 to 15
Lodgepole pine	5 to 15	60 to 80	15 to 25	10 to 20	65 to 85	5 to 15
Whitebark pine	5 to 15	60 to 80	15 to 25	10 to 15	70 to 85	5 to 15
Limber pine	5 to 15	60 to 80	15 to 25	10 to 15	70 to 85	5 to 15

Table 4. Current age class diversity by cover type for the Shoshone National Forest (percentage of cover type acres[9])

	2009 age class distribution (percentage of age class)		
Forest cover type	**Younger**	**Middle**	**Older**
Aspen	-[10]	-	-
Douglas-fir	6	78	16
Spruce/fir	6	64	30
Lodgepole pine	15	63	22
Whitebark pine	3	74	23
Limber pine	3	69	28

[6] Percentages reflect Forest-wide numbers and may vary across the Forest.
[7] <20 years old for all forest cover types
[8] >80 years old for aspen cover type, >150 years old for lodgepole pine cover type, and >200 years old for all other forest cover types
[9] Percentages reflect Forest-wide numbers and may vary across the Forest.
[10] Data on current aspen age classes are inconclusive. See the *Analysis of the Management Situation* (USDA Forest Service 2011a) for more information.

Table 5. Average snags per acre by cover type on the Shoshone for areas within management area categories 1, 2, and 3

Cover type	Snags/acre greater than 9 inches diameter	Cover type	Snags/acre greater than 9 inches diameter
Spruce/fir	21	Douglas-fir	9
Lodgepole pine	12	Whitebark pine	11
Limber pine	9	Aspen	5

Goals for vegetation

	Vegetation
1.	Restore and maintain a diverse range of forested and non-forested ecosystems (Table 1).
2.	Manage and restore aspen, willow, and sagebrush cover types to reduce or halt the decline of acres due to succession to conifer.
3.	Protect, maintain, and restore whitebark pine throughout its range. • Protect cone-bearing whitebark pine trees from insects and diseases where possible. • Restore whitebark pine where it has been lost due to insects, diseases, and fire. • Promote genetic resistance to white pine blister rust in whitebark pine. • Manage fire and fuels to protect, maintain, and/or restore whitebark pine.
4.	Protect, maintain, and restore limber pine throughout its range. • Protect cone-bearing limber pine trees from insects and diseases where possible. • Restore limber pine where it has been lost due to insects, diseases, and fire. • Promote genetic resistance to white pine blister rust in limber pine. • Manage fire and fuels to protect, maintain, and/or restore limber pine.
5.	Manage sagebrush and willow habitats to provide a range of age, canopy cover, and size classes that are within natural ranges on a watershed or landscape scale.
6.	Maintain the hydrologic function and integrity of fens, along with the surrounding subwatershed.
7.	Manage rangeland plant communities to favor the replacement of invasive species with desirable native species.
8.	Riparian and other wetland habitats are maintained in a properly functioning condition that maintains water quality and species habitat.

Objectives for vegetation

	Vegetation
1.	Increase willow communities cover type by at least 300 acres.
2.	Eliminate encroaching conifers from at least 300 acres of willow communities.
3.	Increase aspen cover type by at least 10,000 acres, including 2,500 acres accomplished with mechanical treatments.
4.	Restore 750 acres of whitebark pine.

Standard for vegetation

	Vegetation
1.	Use genetically appropriate native plant species for revegetation efforts. When there is a short-term need to provide temporary soil stabilization and ground cover while native perennials are becoming established or re-established following disturbance, use non-persistent non-native species such as non-persistent annuals or sterile perennials.

Guidelines for vegetation

	Vegetation
1.	Whitebark pine planting should utilize genetic strains resistant to blister rust when they are available.
	Fire and fuels
2.	Fire and fuels management activities in and near whitebark pine stands should be consistent with whitebark pine protection and restoration strategies.
	Commercial livestock grazing
3.	Follow the annual allowable use guidelines in Table 6. Allowable annual use is measured at predetermined key representative monitoring sites and applies at the time the livestock leave the unit.
4.	Livestock management should be modified when conditions are not moving toward desired conditions as determined through trend and condition monitoring.

	Vegetation
5.	Livestock should be removed from the unit when monitoring of key riparian areas reflects one or more of these criteria: • Utilization of herbaceous species reaches 40 to 50 percent by weight, which is generally equivalent to an average stubble height of three to four inches on Carex species on spring use units and four to six inches on summer/fall use units • Utilization of woody plants reaches 15 to 20 percent of the current annual growth • Streambank stability is below the moderate level
6.	Impacts from livestock grazing should not occur to fen habitats. Fens are most susceptible during times of below average precipitation or low water levels.
	Forest products
7.	Timber harvest should not reduce the acres of older age class stands (200 years for spruce/fir and Douglas-fir, 150 years for lodgepole pine) within a project area if that reduction would reduce the acres of older age class stands below 10 percent of the forested acres within the watershed (6th level hydrologic unit boundary).
8.	Snags within a project area where timber harvest is conducted should generally be retained in sufficient numbers to maintain an average of two to three snags per acre averaged over 1,000 acres. Snag size classes should be representative of stand size classes, including some snags representing the largest size classes.
9.	For the purpose of sustaining site productivity and providing wildlife habitat in stands where harvest activities occur and where suitable material exists, coarse woody debris should be retained and distributed across the harvest unit in accordance with the ranges shown in Table 7. Larger material (greater than six inches diameter) should be provided in lengths greater than eight feet when possible. In prescribed burn units and in areas near (within 0.25 to 0.5 mile) private property, infrastructure, or other developments, tons per acre ranges may be up to one-third lower.
	Special uses
10.	Outfitter and guide livestock grazing should be held to the same guideline of forage utilization and riparian impact as commercial livestock.
	Minerals
11.	Surface occupancy should not occur for any mineral activity in riparian areas or wetlands. Road crossings consistent with other Plan direction are generally acceptable.

Table 6. Maximum allowable use guidelines (percentage utilization by weight)

	Existing rangeland condition			
Type of livestock management	**Satisfactory**[11]		**Unsatisfactory**	
	No crucial winter range	Crucial winter range	No crucial winter range	Crucial winter range
Growing season-long	30	20	10	0
Deferred	40	30	15	5
Fall and winter	45	35	15	5
Rotation	45	35	35	25
Deferred rotation	50	40	40	35
Rest rotation	50	40	40	35

Table 7. Coarse woody debris guidelines

Cover type	Tons/acre	
Spruce/fir	15 to 20	At least 75 percent of the amount is made up of larger material (>6 inches diameter). It is generally neither desirable nor required that smaller material be left where there is not sufficient large material to meet the desired conditions.
Lodgepole pine	5 to 10	
Douglas-fir	10 to 15	
Limber pine/whitebark pine	3 to 5	
Aspen	3 to 5	

Management approach

Cover types for grassland, sagebrush, willow, and aspen are commonly maintained and restored by limiting future conifer encroachment and eliminating existing conifer encroachment. Wildfire and prescribed fire, as well as mechanical treatments, are used to achieve vegetation maintenance and restoration goals and objectives. In selecting areas for management activity, program managers consider the likely impacts that changes in precipitation and temperature may have on an area's suitability for these cover types.

As understanding of climate change impacts are better understood, there may be opportunities for managers to adapt practices to anticipated changes. In some cases, it may be appropriate to select practices that are more suited to changes in precipitation, temperature, and species ranges.

Management of whitebark pine is guided by the *Whitebark Pine Strategy for the Greater Yellowstone Area* (Greater Yellowstone Coordinating Committee Whitebark Pine Subcommittee

[11] Satisfactory is defined here as meeting or moving toward desired vegetation condition and unsatisfactory is defined as not meeting desired vegetation condition or undetermined.

2011). The strategy identifies strategic objectives for whitebark pine and identifies areas that are high priority for restoration and protection. Areas identified as high priority for protection or restoration will be favored following field verification. Management activities could include preventing mortality from insects, pruning to remove blister rust infection and improve fire resistance, preventing loss of high-value cone-producing trees from fire, collecting cones/seeds, planting rust-resistant trees/seeds, utilizing fire to reestablish landscape ecosystem processes, promoting natural regeneration, or thinning competing conifer species in mixed conifer stands.

Management for limber pine will include many of the same activities used for whitebark pine and will be guided by information from the Central Rockies White Pine Health Working Group.

The majority of existing aspen and the capabilities for future aspen expansion are found within the Washakie, Wind River, and Greybull Ranger Districts. Aspen restoration activities should be balanced against the consideration for maintaining commercial species stocking on suitable timber lands.

Stand inventory is being conducted to gather better data on the age class structure of aspen stands across the Shoshone to provide information to help with aspen management.

Shoshone personnel will work with the Wyoming Game and Fish Department, counties, conservation districts, wildlife conservation organizations, and interested individuals to develop cooperative efforts to increase the acres of aspen cover type and accelerate the achievement of desired conditions.

Riparian habitat management overlaps significantly with the management approaches of water and soil described earlier.

The management focus for riparian areas differs depending on the area. Within wilderness, the primary focus is to identify the few riparian areas where authorized and recreational livestock use has adversely affected riparian habitat. Adaptive management practices will be used to address problem areas. Outside wilderness, the primary management focus is to use resource surveys, monitoring, and best management practices reviews to identify areas and use adaptive management to improve riparian habitat.

Management activities to improve riparian areas will be conducted to meet desired conditions. That work is commonly accomplished with other resource activities and is identified in the process of conducting best management practices reviews.

The management focus for fens is to identify their locations and prevent management impacts that would affect the fens' functionality and prevent expansion of invasive plant and aquatic invasive species into these habitats.

Collecting locally native seeds and having seedlings grown in nurseries will be considered when attempting to restore upland shrub communities. To aid in establishment, seedlings may require protection from wild ungulates and rodents.

Other guidance

Whitebark Pine Strategy for the Greater Yellowstone Area (Greater Yellowstone Coordinating Committee Whitebark Pine Subcommittee 2011)

Threatened, endangered, proposed, and candidate species

Background

Species listed as threatened, endangered, proposed, and candidate that occur on the Shoshone include grizzly bear, Canada lynx, gray wolf, American wolverine, greater sage-grouse, and whitebark pine. The grizzly bear and Canada lynx are threatened species. The gray wolf population in the Greater Yellowstone Area, including the Shoshone, is classified as a non-essential, experimental population. The American wolverine, greater sage-grouse, and whitebark pine are candidate species. Direction for whitebark pine is in the vegetation section.

Desired conditions

Suitable habitats for threatened, endangered, proposed, and candidate species are managed consistently with established and approved recovery plans and conservation strategies. Management actions contribute to, or do not prevent, recovery or delisting of these species and support species diversity and viability. Suitable habitats for proposed and candidate species are managed to help preclude the need for listing under the Endangered Species Act. Desired distribution and abundance of threatened, endangered, proposed, and candidate species are maintained.

Table 8. Threatened, endangered, proposed, and candidate species for the Shoshone National Forest (as of 2011)

Common name	Status	Global/state conservation status rankings	Habitat
Mammal species			
Gray wolf	Experimental, non-essential	G4/S1	Variable Ungulate winter range
Canada lynx	Threatened	G5/S1	Spruce/fir, Douglas-fir, and lodgepole pine Down woody debris Aspen-mix
Grizzly bear	Threatened	G4/S1	Variable Primarily woodland, forest, and alpine Talus slopes
North American wolverine	Candidate	G4/S2	Montane forests Cirque basins
Bird species			
Greater sage-grouse	Candidate	G4/S4	Sagebrush communities
Plant species			
Whitebark pine	Candidate	G4/S3	Subalpine forest

Goals for threatened, endangered, proposed, and candidate species

	Threatened, endangered, proposed, and candidate species
1.	Provide well-distributed habitat capable of contributing to the survival and recovery of species listed under the Endangered Species Act.
2.	Manage human activities and non-native diseases to provide well-distributed habitat that will help keep proposed or candidate species from becoming listed.
3.	Manage grizzly bear habitat within the Primary Conservation Area to sustain the Yellowstone grizzly bear population. Outside the Primary Conservation Area in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, accommodate grizzly bear populations to the extent that accommodation is compatible with the goals and objectives of other uses.
4.	Conserve the Canada lynx and its habitat by maintaining or restoring conditions for foraging and denning habitat.[12]
5.	Habitat for ungulate prey populations is available to support a recovered wolf population.
6.	Increase public awareness and education about the biological importance to grizzly bears of army cutworm moth sites.
7.	Maintain sagebrush in suitable greater sage-grouse habitat.

Objectives for threatened, endangered, proposed, and candidate species

	Threatened, endangered, proposed, and candidate species
1.	Objectives for conservation of Canada lynx are included in appendix 1.

[12] Direction for Canada lynx habitat management is currently found in *Northern Rockies Lynx Management Direction* (USDA Forest Service 2007b) or best available science. The direction referenced throughout this document is included in appendix 1.

Standards for threatened, endangered, proposed, and candidate species

	Threatened, endangered, proposed, and candidate species
1.	Management actions that have adverse effects on threatened, endangered, proposed, or candidate species or their habitats shall not be allowed if the effects of those actions would contribute to the loss of viability of the species.
2.	Design management activities to avoid adverse impacts to proposed, threatened, endangered, and candidate species during breeding, young rearing, or at other times critical to survival.
3.	Standards for conservation of Canada lynx are included in appendix 1.
4.	Inside the Primary Conservation Area, maintain the percent of secure habitat in Bear Management Unit subunits at or above 1998 levels. Projects that change secure habitat must follow the Application Rules.[13]
5.	Coordinate with state wildlife management agencies to apply nuisance bear standards as outlined in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* (*Conservation Strategy)* (Interagency Conservation Strategy Team 2007).
6.	Inside the Primary Conservation Area, minimize grizzly bear/human conflicts using food storage, information and education, and other management tools.
7.	Restrict permitted activities at moth sites, until a comprehensive site management plan is developed.
	Fire and fuels
8.	The fuels treatment standard for conservation of Canada lynx is included in appendix 1.
	Commercial livestock grazing
9.	Inside the Primary Conservation Area, do not create new active commercial livestock grazing allotments and do not allow domestic sheep grazing.
	Forest products
10.	Vegetation treatment standards for conservation of Canada lynx are included in appendix 1.

[13]The Application Rules are outlined in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* (Interagency Conservation Strategy Team 2007).

Special uses	
11.	Inside the Primary Conservation Area, maintain the number and capacity of developed sites[14] at or below 1998 levels, with the following exceptions: any proposed increase, expansion, or change of use of developed sites from the 1998 baseline in the Primary Conservation Area is analyzed and potential detrimental and positive impacts on grizzly bears are documented through a biological evaluation or assessment. Projects that change the number or capacity of developed sites must follow the Application Rules in the *Conservation Strategy*.
Minerals	
12.	Do not allow surface occupancy for oil and gas exploration and development within the Primary Conservation Area.
Recreation	
13.	Inside the Primary Conservation Area, use localized temporary area restrictions to address conflicts with winter use activities, where conflicts occur during denning or after bear emergence in the spring.

Guidelines for threatened, endangered, proposed, and candidate species

Threatened, endangered, proposed, and candidate species	
1.	Management actions should be designed to avoid or minimize adverse effects to listed species and their habitats.
2.	Connectivity guidelines for lynx habitat are included in appendix 1.
3.	Guidelines for lynx prey species are included in appendix 1.
4.	Inside and outside the Primary Conservation Area in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, maintain the productivity, to the extent feasible, of the four key grizzly bear food sources (whitebark pine seeds, army cutworm moths, ungulates, and spawning cutthroat trout) as identified in the *Conservation Strategy*. Emphasize maintaining and restoring whitebark pine stands inside and outside the Primary Conservation Area.

[14] Developed sites are defined in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* (Interagency Conservation Strategy Team 2007): A developed site includes but is not limited to sites on public land developed or improved for human use or resource development such as campgrounds, trailheads, improved parking areas, lodges (permitted resorts), administrative sites, service stations, summer homes (permitted recreation residences), restaurants, visitor centers, and permitted resource development sites such as oil and gas exploratory wells, production wells, plans of operation for mining activities, work camps, etc.

5.	Management activities should avoid areas within one mile of an active gray wolf den site between April 1 and June 30.
6.	Outside the Primary Conservation Area in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, emphasize proper sanitation techniques, including food storage orders, and information and education, while working with local governments and local agencies.
Commercial livestock grazing	
7.	Livestock grazing guidelines for lynx habitat are included in appendix 1.
8.	Inside and outside the Primary Conservation Area, cattle allotments or portions of cattle allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be placed under long-term non-use agreements or retired as opportunities arise with willing permittees.
9.	Various techniques such as the presence of sheep dogs or herders, delaying livestock turn-out dates until after lambing/calving is complete, and the use of electric fencing and fladry at localized sites should be utilized to minimize wolf depredation on livestock.
Forest products	
10.	Vegetation treatment guidelines for lynx habitat are included in appendix 1.
Special uses	
11.	Adverse effects of special use authorizations on threatened, endangered, proposed, and candidate species should be minimized when proposed or existing special use authorizations are issued, reissued, or amended upon expiration.
12.	Special uses (particularly ski area) related guidelines for lynx habitat are included in appendix 1.
Minerals	
13.	Minerals related guidelines for lynx habitat are included in appendix 1.
14.	Adverse effects from locatable mineral operations to threatened, endangered, proposed, and candidate animal species or their habitats should be avoided or minimized.

Recreation	
15.	Recreation related guidelines for lynx habitat are included in appendix 1.
16.	In order to promote human safety in grizzly and black bear country, bear-resistant containers, and/or food storage poles should be provided at recreation sites, where needed.
Roads and trails	
17.	Roads-related guidelines for lynx habitat are included in appendix 1.
18.	Wildlife crossings should be addressed in highway construction projects as needed.
Land adjustments	
19.	Lands related guidelines for lynx habitat are included in appendix 1.
20.	Land exchanges that result in a net loss of quality or quantity of habitat for threatened, endangered, proposed, and candidate species should not be considered unless benefits of the exchange outweigh the benefits to those species in the long term.

Management approach

For threatened, endangered, proposed, and candidate species

The Forest Service is obligated to provide sufficient habitat to contribute to the survival and recovery of all threatened, endangered, proposed, and candidate species with habitat on the Shoshone. This obligation is described in detail in the Endangered Species Act, Magnuson-Stevens Act, Forest Service directive system, and various recovery plans, conservation strategies and agreements, and memoranda of understanding. Section 7 consultation will occur at the project level for all proposed actions that may affect these species or their habitats.

On an annual basis, locations of species occurrence and habitat for threatened, endangered, proposed, and candidate species will continue to be mapped and the information updated into the appropriate Natural Resource Information System database module.

Forest Service wildlife biologists will cooperate with the U S Fish and Wildlife Service as appropriate, by providing information, data, and assistance for the evaluation of species that are petitioned, proposed, or candidates to be listed under the Endangered Species Act, and for evaluation of proposed critical habitat.

Additionally, biologists will coordinate research efforts for threatened, endangered, proposed, and candidate species to determine basic life history requirements and potential effects from management activities. Forest Service efforts and information will be coordinated with the Wyoming Natural Diversity Database, Wyoming Game and Fish Department, universities, Forest Service research stations, etc.

For Forest-wide, watershed, or project-level biological opinions and biological assessments with letters of concurrence, requirements shall continue to apply until their expiration dates unless

these documents are specifically updated during further review with related regulatory agencies.

Biologists will follow emergency consultation procedures when an emergency event, as defined in 50 CFR 402.05, has an effect to a listed species.

Managers will coordinate Animal Damage Management with the Animal and Plant Health Inspection Service, in compliance with USDA Wildlife Services' most current direction for northwest Wyoming.

Canada lynx

Management actions, where appropriate, will conserve and promote the recovery of the Canada lynx by incorporating habitat standards in the *Northern Rockies Lynx Management Direction* (USDA Forest Service 2007b) and best available science.

During any travel planning involving over-the-snow motorized recreation within lynx analysis units, consideration will be given to managing snow play areas to not expand the amount of the area that becomes compacted and contributes to conflicts with lynx by allowing access to the area by other predators.

Grizzly bears

The Shoshone will continue to be a showcase for conservation of grizzly bears and other carnivores, with continued improvement and innovation with the aim of reducing grizzly bear/human conflicts, while managing for other resource goals and objectives.

Grizzly bear habitat will be managed using the *Conservation Strategy* or best available science.

Wildlife biologists and managers will cooperate with other agencies and interested parties to gain knowledge about grizzly bear/human interactions at army cutworm moth sites, the ecology of army cutworm moths, grizzly bear use at moth sites, and other aspects of grizzly bear/moth ecology where information is needed to facilitate management.

A strategy will be established for management of moth sites and conservation of moth populations. This involves determining the accessibility of each moth site or area to humans, as well as visitation rates and types of users. Where necessary, access stipulations will be developed to standardize constraints among various user groups. Opportunities for promoting public understanding of and appreciation for moth sites will be identified.

Gray wolves

Management of wolves on National Forest System lands in Wyoming will continue under the provisions of the 1994 10(j) rule for the non-essential, experimental population, until an approved wolf management plan is in place.

The Forest Service will cooperate with federal and state agencies in implementing approved wolf management and control plans.

Other guidance

Forest Service Manual 2670 Threatened, Endangered, and Sensitive Plants and Animals

Northern Rockies Lynx Management Direction (USDA Forest Service 2007)

Northern Rocky Mountain Wolf Recovery Plan (U S Fish and Wildlife Service 1987)

Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats Version 6.0 (Wyoming Game and Fish Department 2010a)

Wildlife Protection Recommendations for Wind Energy Development in Wyoming (Wyoming Game and Fish Department 2010b)

Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (Interagency Conservation Strategy Team 2007)

Whitebark Pine Strategy for the Greater Yellowstone Area (Greater Yellowstone Coordinating Committee Whitebark Pine Subcommittee 2011)

Sensitive species

Background

Sensitive species are designated by the regional forester, depending on certain habitat criteria and limited distribution (Rocky Mountain Region Supplement 2600-2011-1 to Forest Service Manual 2670 Threatened, Endangered, and Sensitive Plants and Animals). In 2012, 34 terrestrial and three aquatic wildlife species, and 25 plant species shown on the regional forester's sensitive species list occur or have the potential to occur on the Shoshone.

The Forest Service Rocky Mountain Region sensitive species list is evaluated annually to determine if species should be added or removed. The regional forester designates sensitive species if population or habitat is trending downward or if little information is available on population or habitat trends. The primary purpose of the sensitive species program is to conserve or restore habitat conditions to prevent the species from becoming federally listed under the Endangered Species Act.

Desired conditions

The ecosystems and habitats on which the sensitive species depend are sustained. Sensitive species have self-sustaining populations and additional habitat into which they can expand. They are able to disperse freely across the planning area and into adjacent lands (which allows for the interchange between populations and the maintenance of genetic diversity). Sensitive species not currently listed as endangered or threatened are not trending toward federal listing under the Endangered Species Act. The abundance, distribution, and habitat of these species throughout the planning area improve to the point where their recognition as sensitive species is no longer warranted.

The genetic purity of Yellowstone cutthroat trout is stable or improved and populations are stable or expanding. The distribution of Yellowstone cutthroat trout can include previously unoccupied suitable stream habitat within a historically occupied drainage.

Habitat supports populations of bighorn sheep. Within bighorn sheep habitat, vegetation provides productive plant communities with a variety of species for food and cover. Non-forested openings of various sizes and shapes provide forage, access to big game winter range, escape terrain, and access to migration routes. To reduce the risk of disease transmission, domestic sheep and/or goat use does not overlap with bighorn sheep.

In cases where species classification is the result of habitat being restricted to isolated or rare ecological niches, habitat continues to support populations at levels that maintain sensitive species and keep them from being listed under the Endangered Species Act.

Goals for sensitive species

	Sensitive species
1.	Provide habitat capable of contributing to conservation and viability of sensitive species, which will keep sensitive species from being listed under the Endangered Species Act.
2.	Yellowstone cutthroat trout occupy more suitable stream habitat than was occupied when the Plan was approved.
3.	Maintain low risk of disease transmission from domestic sheep and domestic goats to wild bighorn sheep within core bighorn sheep ranges.
4.	Habitat conditions for bighorn sheep, particularly non-forested openings of various sizes and shapes that provide forage, access to winter range, escape terrain, and access to migration routes are improving.
5.	Maintain and enhance bighorn sheep populations.
6.	Conduct Forest-wide inventories of fens with special emphasis placed on unusual fens (such as iron and calcareous fens), and those in especially pristine condition.
7.	Maintain contiguous sagebrush communities by avoiding fragmentation (roads, power lines, infrastructure, etc.) of suitable greater sage-grouse habitat.
8.	Beaver have expanded into suitable stream habitat, providing improved habitat for aquatic sensitive species.

Objectives for sensitive species

	Sensitive species
1.	The Yellowstone cutthroat trout population has expanded to at least four suitable stream reaches within priority watersheds.[15]
2.	Prescribed fire and other vegetation management projects occur on at least 4,000 acres of bighorn sheep foraging areas and connectivity corridors.
3.	Beaver have been restored to five suitable stream segments.

Standards for sensitive species

	Sensitive species
1.	In known goshawk territories that provide potential nesting habitat, identify alternate and replacement nest stands of comparable habitat quality when it is determined that proposed vegetation management activities or disturbances from management activities are likely to impact the suitability of nesting habitat.
2.	Design management actions within known nesting or denning sites of sensitive species to avoid disrupting the reproductive success of those sites during the nesting and denning periods.
3.	Design management actions within known winter roosting sites or hibernacula (bats) of sensitive species to avoid reducing the survival of wintering or roosting populations.
4.	Limit human disturbance at caves and abandoned mines where bat populations are documented. When closing mines or caves for safety or protection reasons, minimize disturbance and effects to microclimate, and provide access for bats.
5.	Domestic sheep and goat allotments will not overlap with core native bighorn sheep ranges.
6.	Do not allow recreational pack goat use in core native bighorn sheep ranges, except for authorized use.
7.	Design management actions in occupied sensitive species habitat to avoid actions that would adversely affect sensitive species.

[15] The list and map of priority drainages for potential expansion of Yellowstone cutthroat trout are maintained in the Supervisor's Office in Cody.

8.	Maintain active goshawk nest stand canopy cover at existing levels, unless the proposed habitat modification is determined not to impact nest stand success.
9.	Human activities are restricted within 250 yards of bald eagle winter roosting areas between November 15 and March 1. Human activities are restricted within 400 yards of an active nest between February 1 and August 15.
10.	Human activities are restricted within 0.5 mile of occupied peregrine falcon areas between March 15 and July 31 for nest sites, or July 1 and September 15 for hack sites. Protection distance may vary, depending on local topography, potential for disturbance, and location of important habitat components.
11.	Retain large diameter snags and roost trees for cavity-nesting birds and bats as described in the vegetation section.

Guidelines for sensitive species

	Sensitive species
1.	Opportunities to restore degraded sensitive species habitat should be identified and addressed when planning other management activities.
2.	Within 0.25 mile of active goshawk nests, management activities should not disturb nesting goshawks between April 1 and August 31.
3.	On bighorn sheep crucial winter range, management activities that disturb bighorn sheep should be conducted outside the season of use (December 1 through April 30) or designed to reduce disturbance to bighorn sheep when the activity is necessary to sustain or improve bighorn sheep crucial winter range conditions.
4.	Highly toxic insecticides (specifically organophosphorous and carbamate) should not be used in suitable greater sage-grouse summer use habitat.
5.	Timing restriction on disturbances near concentrated bighorn sheep lambing areas will be in effect April 1 through June 30 as needed with a minimum distance of one mile from the lambing site. Short-term projects designed to improve bighorn sheep habitat such as prescribed burning are exempt.
	Fire and fuels
6.	Prescribed fire should not be used in sagebrush communities in areas with less than 12 inches of annual precipitation.

Commercial livestock grazing	
7.	Livestock grazing utilization of Hall's fescue should not exceed 40 percent (by weight) of annual production or alternatively, should leave no less than a four-inch stubble height.[16]
8.	Management activities associated with commercial livestock grazing should maintain sagebrush communities.
Forest products	
9.	Timber cutting activities should avoid altering vegetation conditions with a minimum 30-acre buffer of known goshawk nests.
Special uses	
10.	Outfitter and guide authorizations for recreational goat packing in core bighorn sheep ranges should not be issued until effective mitigation measures for minimizing the risk of disease transmission from domestic goats to bighorn sheep are available.
Roads and trails	
11.	Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in bighorn sheep birthing areas and winter range.
12.	Wildlife crossings should be addressed in highway construction projects as needed.
13.	Newly constructed stream crossings should provide aquatic and terrestrial species passage and should not constrict the stream channel.

Management approach

Management activities in sensitive species habitats are guided by Forest Service Manual 2670 Threatened, Endangered and Sensitive Plants and Animals. Design and implement projects within occupied habitats of sensitive species to help conserve the species and prevent them from becoming listed. Use Forest Service-approved portions of conservation strategies, assessments, and agreements, as appropriate, in the management of sensitive species habitat to keep management actions from contributing to a trend toward listing for these species.

During site-specific project analysis, when in suitable habitat, assume sensitive species presence or implement surveys to achieve adequate detection probabilities to have confidence that an absence is a true absence, not a result of inadequate sampling.

Wildlife biologists will continue to map locations of species occurrence and habitat for sensitive species during site/project-scale analyses. Incorporate information into a coordinated database.

[16]Hall's fescue occurs in portions of these allotments: Pearson, Bald Ridge, Logan, Basin, and Trout Peak.

Shoshone personnel collaborate with the Wyoming Game and Fish Department on species population management.

When a sensitive plant is removed from the list, it will become a species of local concern.

Shoshone personnel coordinate with the Wyoming Natural Diversity Database program on plant and wildlife species of concern, including sensitive species and State of Wyoming species of concern, to gather and maintain information on species distribution, importance, and viability.

Aquatic species

The management approach for aquatic habitats is to conserve intact and functioning stream reaches within their natural ranges of variability and restore those that do not meet, or are trending away from, desired stream conditions. Effects from activities that adversely affect stream and riparian ecosystems in the short term may be acceptable when they result in long-term benefits to stream and riparian ecosystem conditions, and provide terrestrial and aquatic organism passage.

A key element in managing for aquatic species is application of the management measures in Forest Service Handbook 2509.25. These measures include practices important to protecting aquatic species habitats. The design criteria in the handbook cover much of the watershed direction needed for Plan implementation

Consider effects on boreal toads, Columbia spotted frogs, and other aquatic species when introducing fish species into habitat where fish species did not previously exist. When considering whether to authorize the use of fish-killing chemicals in connection with management activities to expand Yellowstone cutthroat trout populations, the impacts on other aquatic species will be considered.

Maintaining connectivity corridors in riparian habitat focuses on fish, frogs, and toads, as well as other riparian species. Stream crossing projects in riparian areas are coordinated to mitigate connectivity issues and provide terrestrial and aquatic organism passage.

Though the general desired conditions for habitat connectivity in streams call for limited human-caused barriers, barriers may be created and/or maintained to block the spread of invasive or non-native species to preserve native populations. Additionally, natural barriers may be removed to create connectivity and provide additional habitat for native species.

Forest Service funds and grants are used to accomplish these activities, as are partnerships with numerous agencies and groups, including the Wyoming Game and Fish Department, Trout Unlimited, the U S Fish and Wildlife Service, National Fish and Wildlife Foundation, and local counties, for fisheries projects both on and adjacent to the Shoshone. These partnerships include funding and volunteer labor with various agencies leading and supporting the projects.

Yellowstone cutthroat trout

In managing habitat for Yellowstone cutthroat trout, the Forest Service coordinates management with the Wyoming Game and Fish Department on impacts to genetically pure cutthroat trout from stocking non-natives and to identify stream segments suitable for reintroduction of native Yellowstone cutthroat trout. In cooperation with the Wyoming Game and Fish Department, a list and map of priority drainages for potential expansion of Yellowstone cutthroat trout have been developed. Forest Service and Wyoming Game and Fish Department

managers will consider the possible impact that climate change may have on temperature and precipitation when selecting streams for Yellowstone cutthroat expansion.

Along streams occupied by Yellowstone cutthroat trout, land management focuses on maintaining or improving long-term hydrologic and riparian function, channel stability, and stream habitat. Another emphasis area is expanding the current Yellowstone cutthroat trout conservation populations and maintaining the purity of existing Yellowstone cutthroat trout populations.

With proper administration and compliance, fish toxicants may be used to remove non-native fish species in order to reestablish native Yellowstone cutthroat trout outside wilderness. Inside wilderness, a minimum requirement decision guide and National Environmental Policy Act analysis will be completed to determine if the use of toxicants and fish stocking is appropriate.

The Yellowstone cutthroat trout rangewide strategy and assessment and the Wyoming Game and Fish Department's Yellowstone cutthroat trout management plan provide guidance; best available science will be used to manage Yellowstone cutthroat trout.

Bighorn sheep

Management will utilize the recommendations in the *Final Report and Recommendation from the Wyoming State-wide Bighorn Sheep Interaction Working Group* (Wyoming State-wide Bighorn Sheep/Domestic Sheep Interaction Working Group 2004).

The management focus for prescribed burning for bighorn sheep habitat is to maintain or enhance herbaceous forage production, maintain early to mid seral vegetation communities, and limit horizontal structure, which inhibits bighorn sheep detection of predators.

Use of wildland and prescribed fire for bighorn sheep habitat restoration should focus on areas where the potential for the spread of invasive plant species, particularly cheatgrass and Dalmatian toadflax, is lower. Fire activities may also accomplish objectives for bighorn sheep by restoring appropriate fire regime condition classes.

A program emphasis is to manage the risk of disease transmission from domestic sheep and goats to bighorn sheep. There is concern about the risk of disease transmission from domestic goats used for packing to bighorn sheep. To manage that risk, guidelines are applied for domestic pack goats within the Shoshone; domestic sheep and goat grazing has been removed from core native bighorn sheep ranges. New authorizations for pack goat use in core bighorn sheep ranges will not be issued until effective mitigation is available to minimize the risk of disease transmission. Information and education will be provided to recreational goat packers on the need to avoid contact between domestic pack goats and bighorn sheep.

Emphasis is on early detection and rapid response of invasive plants in order to eliminate early establishment and to control infestations on big game winter range.

Greater sage-grouse

Guidance in the *Programmatic Candidate Conservation Agreement with Assurances for Greater Sage- and Columbian Sharp-tailed Grouse in the West Central Sage-Grouse Planning Area* (West Central Working Group and Northwest Natural Resource Group in review) will be used during project planning. Where suitable habitat has been identified, applicable conservation measures will be applied.

Agency specialists will determine how sagebrush treatments are part of a larger landscape plan. Sagebrush treatments warranted will utilize a mosaic pattern of treatment rather than a large uniform block.

Other guidance

*Conservation Plan and Agreement for the Management and Recovery of the Southern Rocky Mountain Population of the Boreal Toad (*Bufo boreas boreas*)* (Boreal Toad Recovery Team 2001)

Boreal Toad (Bufo boreas boreas): A Technical Conservation Assessment, USDA Forest Service, Rocky Mountain Region (Keinath and McGee 2005)

Guidelines to Manage Sage Grouse Populations and their Habitats (Connelly et al. 2000)

*Conservation Agreement for Yellowstone Cutthroat Trout (*Oncorynchus clarkii bouvieri*) in the States of Idaho, Montana, Nevada, Utah, and Wyoming* (Idaho Department of Fish and Game et al. 2010)

Yellowstone cutthroat trout (Oncorhynchus clarkii bouvieri): *A Technical Conservation Assessment* (USDI Geological Survey 2009)

Status and Management of Yellowstone Cutthroat Trout (Oncorhynchus clarkii bouvieri) Wyoming Game and Fish Department 1999)

Final Report and Recommendations from the Wyoming State-wide Bighorn/Domestic Sheep Interaction Working Group (2004)

Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat (Western Association of Fish and Wildlife Agencies 2007)

Executive Order for Greater Sage-grouse Core Area Protection (Order 2011-5) (State of Wyoming 2011)

Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (Wyoming Game and Fish Department 2010a)

Wildlife Protection Recommendations for Wind Energy Development in Wyoming (Wyoming Game and Fish Department 2010b)

Programmatic Candidate Conservation Agreement with Assurances for Greater Sage- and Columbian Sharp-tailed Grouse in the West Central Sage-Grouse Planning Area (West Central Working Group and Northwest Natural Resource Group in review)

Rocky Mountain Region Supplement 2600-2004-1 to Forest Service Manual 2631 Habitat Management

Wyoming Natural Diversity Database (www.uwyo.edu/wyndd)

Region 2 White-nose Syndrome Response Plan, Cave and Mine Closure Implementation Plan (USDA Forest Service 2011b)

Management indicator species

Background

Management indicator species help indicate habitat suitability for other species with similar habitat needs. Management indicator species are used as planning tools to guide and monitor wildlife diversity on National Forest System lands. Four management indicator species have been identified for the Shoshone: stream trout (aquatic/riparian habitats), ruffed grouse (aspen), red-breasted nuthatch (mature conifer forests with snags), and Brewer's sparrow (sagebrush).

Table 9 shows the management indicator species selected for the Shoshone National Forest. The primary reason management indicator species are selected is because their populations are believed to indicate the effects of management activities. By monitoring and assessing habitat conditions of these species, managers can estimate the effects to other species within similar habitats.

Desired conditions

For management indicator species, management actions maintain habitat conditions that are properly functioning, or restore those conditions that are degraded. Human activities do not prevent populations from maintaining desired distribution and abundance.

Table 9. Management indicator species for the Shoshone National Forest

Common name	Global/state ranking	Habitat
Fish species		
Stream trout (Yellowstone cutthroat, Snake River cutthroat, rainbow-cutthroat hybrids, brook, and brown)	Yellowstone cutthroat trout G4/T2/S2	Streams Riparian habitat
Bird species		
Ruffed grouse	G5/S5	Aspen communities
Brewer's sparrow	G5/S5	Sagebrush communities
Red-breasted nuthatch	G5/S5	Mature conifer forest with snags

Goals for management indicator species

Management indicator species	
1.	Maintain or improve habitat capable of supporting the viability of wildlife management indicator species.
2.	Maintain aquatic and terrestrial species passage at road and trail stream crossings.
3.	Provide well-distributed habitat and connective corridors important to sustaining management indicator species and other wildlife species.
4.	In areas dominated with sagebrush, provide a mosaic of open (5 percent) to moderate (25 percent) shrub canopy cover.
5.	Prevent or minimize the loss of sagebrush habitat to large stand replacement fires.
6.	Disturbance results in 10 to 20 percent of aspen in a seedling/sapling stage (less than 20 years old).

Standards for management indicator species

Management indicator species	
1.	Design management actions within known nesting sites of management indicator species to avoid disrupting reproductive success of those breeding sites during the nesting period. Sites, periods, and mitigation measures shall be determined during project planning.
Fire and fuels	
2.	Design prescribed burns in sagebrush communities to create or maintain a mosaic of patches (three to 40 acres in size) of differing age classes with interspersed grass and forb habitat.
Special uses	
3.	Minimize fish entrapment in water diversion projects.

Guidelines for management indicator species

	Management indicator species
1.	Management activities that affect sagebrush habitat should avoid fragmenting the habitat into monocultures of native and non-native species.
2.	Management activities that affect large woody debris should retain natural and beneficial volumes of large woody debris for fish habitat, stream energy dissipation, and as sources of organic matter for the stream ecosystem.
	Fire and fuels
3.	Prescribed burns should not be conducted in areas where invasive plants are established and fire would exacerbate the spread of invasive plants, particularly cheatgrass.

Management approach

Habitat conditions and trends for each management indicator species will be monitored at the Forest-wide level. Forest-wide estimates of population trends for each management indicator species should be evaluated and reported in context with trends in habitat conditions.

During site-specific project analyses, when in suitable habitat, assume management indicator species presence or implement surveys to achieve adequate detection probabilities to have confidence that an absence is a true absence, not a result of inadequate sampling. In areas within previously identified (known) nesting sites, avoidance of management actions during species reproductive timeframes is preferred. Opportunities for restoring degraded habitat should be identified and prioritized for improvement.

During fine-scale analyses, identify and prioritize opportunities for restoring degraded management indicator species habitat.

Continue to map locations of species occurrence and habitat for management indicator species during site/project-scale analyses. Incorporate information into a coordinated database.

Objectives for management indicator species were not developed because management indicator species were selected for monitoring the effects of management activities on species and their habitats.

Stream trout

A key element in managing for stream trout is application of the management measures in Forest Service Handbook 2509.25. These measures include practices important to protecting stream trout habitat.

Outside wilderness, the Wyoming Game and Fish Department, in conjunction with the Forest Service, has the authority to stock fish. Inside wilderness, Wilderness Act direction provides overall guidance on fish stocking. Minimum tools and National Environmental Policy Act analyses will be completed to determine if the use of toxicants for non-native fish removal and stocking native fish are appropriate.

Other guidance

Status and Management of Yellowstone Cutthroat Trout (Oncorhynchus clarkii bouvieri) Wyoming Game and Fish Department 1999)

Species of local concern

Background

Five species of wildlife have been identified as species of local concern for which species-specific Plan direction is provided. Species include elk, moose, mule deer, Clark's nutcracker, and Yellowstone checkerspot. Five plant groups consisting of 24 species have been identified as species of local concern.

Wildlife species were selected due to their social values, primarily hunting or other commercial values. The Yellowstone checkerspot was selected because of its limited distribution. Plant species were selected due to their rarity and the limited extent of these species' locations on the Shoshone and adjacent lands.

Table 10. Species of local concern for the Shoshone National Forest

Common name	Global/state ranking	Habitat
Mammal species		
Rocky Mountain elk	G5/S5	Sage/grassland Forested Alpine
Mule deer	G5/S5	Sagebrush Shrublands
Moose	G5/S5	Willows Spruce/fir forests
Butterfly species		
Yellowstone checkerspot	G3	Wet sedge meadows Low elevation shrubs
Bird species		
Clark's nutcracker	G5	Whitebark pine Limber pine
Plant species		
Adoxa moschatellina	G5/S2	Subalpine forests
Pink goat chicory	G4/S3	Fens Riparian
Sweet-flowered rock jasmine	G5T4/S1S2	Calcareous rocky slopes and ridges

Common name	Global/state ranking	Habitat
Trianglelobe moonwort	G2G3/S1	Riparian
Least moonwort	G5/S2	Riparian
Carex idahoa	G2G3	Riparian
Enander's sedge	G5T3/S1	Alpine
Bristly stalked sedge	G5/S3	Riparian
Black and purple sedge	G5T3/S2	Fens Riparian
Evert's waterparsnip	G2G3/S2S3	Calcareous rocky slopes and ridges
Wooly fleabane	G3G4/S1	Alpine
Arctic cottongrass	G5/S2	Alpine
Northern fescue	G4G5/SNR	Alpine
Hall's rush	G4G5/S3	Riparian
Siberian bog sedge	G5/S1	Alpine
Island purslane	G4/S1	Alpine
Washington monkey flower	G4/S2	Riparian
Stalkpod locoweed	G4/S2	Alpine
Icegrass	G5/S1	Alpine
Alpine poppy	G5T3T4/S2	Alpine
Smoothstem parrya	G5/S2	Alpine
Potentilla nivea var. pentaphylla	G5/S2	Alpine
Weber's saw-wort	G2G3/S2	Alpine
Alpine meadow rue	G5/S2	Alpine

Desired conditions

Big game crucial winter range and parturition areas provide forage, water, and secure habitat for deer, moose, elk, and bighorn sheep. Crucial winter range is conserved to maintain viable populations of big game species. Forage quality and quantity support wintering populations of big game on National Forest System lands. Densities of roads and trails in big game winter range are generally low (less than one mile per square mile). Forest roads and trails through big game winter range are open to public motorized use to provide access to non-winter range lands when necessary. Motorized access in existing major road corridors, e.g. North and South Forks of the Shoshone River, provides opportunities for wildlife viewing.

Secure habitat for big game[17] will be maintained at existing herd unit secure habitat percentages shown in Table 11. Secure habitat has increased within elk herd units that are near or below the minimum percentage of secure habitat, particularly along migration corridors.

Cone-bearing whitebark pine stands are healthy and provide habitat for Clark's nutcracker.

Roads and fencing do not impede big game seasonal movements. Some secure habitat occurs in elk migration corridors to facilitate big game movement.

Habitat supports populations of plant and butterfly species of local concern.

Table 11 . Desired big game secure habitat for elk herd units

Herd unit	Existing percentage of herd unit providing secure habitat	Minimum percentage of herd unit providing secure habitat
Clarks Fork	38	30
Cody	32	30
Gooseberry	31	30
South Wind River	38	30
Wiggins Fork	38	30

Goals for species of local concern

	Species of local concern
1.	Big game crucial winter range provides habitat to support big game population objectives.
2.	Minimize human disturbance in big game crucial winter range.
3.	Secure habitat for big game is being maintained and/or improved in elk herd units.
4.	Habitat for Yellowstone checkerspot and alpine plant species is being maintained and/or restored.
5.	Whitebark pine stands are protected, maintained, and restored throughout their range.

Objective for species of local concern

	Species of local concern
1.	Secure habitat for big game occurs at or above the minimum desired condition of 30 percent (Table 11).

[17] Secure habitat for big game is defined as habitat blocks at least 250 acres in size and more than 0.5 mile from a forest road or trail open to public motorized travel (Hillis et al. 1991).

Standards for species of local concern

	Species of local concern
1.	Timing restrictions on disturbances near elk parturition areas on the Washakie and Wind River Ranger Districts will be in effect May 15 through June 30 with a minimum distance of 0.5 mile from the calving areas. Short-term projects designed to improve elk habitat, such as prescribed burning, are exempt.
2.	Timing restrictions on disturbances near parturition areas on the Clarks Fork, Greybull, and Wapiti Ranger Districts will be on a case-by-case basis when good data support the action.
	Commercial livestock grazing
3.	Big game requirements for forage have a priority in the management of crucial winter range used in common by livestock and big game.

Guidelines for species of local concern

	Species of local concern
1.	Where alpine plant species of local concern are present, management activities that lead to increased ground disturbance or trampling should be avoided.
2.	Where riparian and fen plant species of local concern are present, management activities are conducted in a manner that maintains riparian and fen habitats in a properly functioning condition.
3.	Management activities should maintain secure habitat above 30 percent for elk (Table 11).
4.	On big game crucial winter range, management activities that disturb big game should be conducted outside the season of use (December 1 through April 30) or designed to reduce disturbance to big game when the activity is necessary to sustain or improve crucial winter range conditions. Exceptions are allowed for identified existing snowmobile routes and play areas.
5.	Area closures for public motorized recreation in big game crucial winter range during the season of use (December 1 through April 30) may be modified to allow public motorized access to assist Wyoming Game and Fish in big game population management.

Fire and fuels	
6.	In suitable habitat at known occurrences of Yellowstone checkerspot, any prescribed burning activities should be conducted after August 15 and should retain some conifer overstory.[18]
Commercial livestock grazing	
7.	Rangeland improvement structures (fences, water developments, etc.) should be designed to manage livestock and accommodate big game passage.
Roads and trails	
8.	Wildlife crossings should be addressed in highway construction projects as needed.
9.	Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in sensitive big game areas, such as birthing areas and winter range.

Management approach

Program planning utilizes Wyoming Game and Fish Department's *State Wildlife Action Plan* (Wyoming Game and Fish Department 2010c), *Strategic Habitat Plan* (Wyoming Game and Fish Department 2009), and mapping of moose, elk, mule deer, and bighorn sheep winter range, parturition areas, and migration corridors.

To address big game vulnerability to mortality, components of habitat security are identified and managed during project planning and implementation. Management requirements or mitigation measures needed to maintain these components are determined during site-specific/project-level planning. Components such as big game wallows and licks, public access, wildlife travel routes, created openings, meadows, forested stringers, and winter/spring ranges are considered.

Habitat is sustained over time to support big game species populations, while meeting other desired conditions. The Wyoming Game and Fish Department is responsible for setting big game population objectives. In collaboration with the Wyoming Game and Fish Department, the Forest Service has the opportunity to review and comment on changes to population objectives and to discuss objectives in the context of meeting desired conditions.

To provide habitat connectivity, management activities on National Forest System lands adjacent to Wyoming Game and Fish Department wildlife habitat management areas should enhance and not detract from the purpose of the Wyoming Game and Fish Department wildlife habitat management area.

Program emphasis for improving big game migration corridors focuses on watersheds with low security habitat (less than 30 percent). Highway projects bisecting big game crossing routes are coordinated with the proponent to reduce or mitigate animal/vehicle collisions and facilitate connectivity between seasonal habitats.

[18]Delayed burning allows the development of eggs and larvae. Conifers are used by adults for roosting and mating.

Emphasis is on maintaining secure habitat within current ranges while trying to improve conditions in areas with low or very low secure habitat. Impacts of low security are sometimes reduced by topographic features and vegetation screening (hiding cover).

Wildlife habitats to be restored at mid or Forest scale will be prioritized using information from sources such as species habitat models and fine-scale analyses. Initiate restoration activities on priority wildlife habitats to move current conditions toward desired conditions.

A focus for big game species is the management of big game crucial winter range, secure habitat, and habitat connectivity. On big game crucial winter range, management is to maintain the quality and quantity of forage to encourage big game to winter on public lands and not move onto private lands. Management emphasizes the retention of an adequate quantity and quality of forage for wintering wildlife on big game crucial winter range following the commercial livestock grazing period.

Maintaining adequate forage for big game on crucial winter range is critical in reducing livestock-elk interactions/conflicts and the transmission of diseases. Big game feed grounds on National Forest System lands will be discouraged.

Shoshone personnel will work with the Wyoming Game and Fish Department to assess shifts in winter range use by big game in response to changes such as temperature, precipitation, and predation. Managers will work with the Wyoming Game and Fish Department to explore changes in management that should be considered to respond to shifts in big game winter range use.

Seasonal closures are used where necessary in winter range and parturition areas to lower open road densities, limit disturbance from motorized use, and provide increased secure habitat during the winter and spring. Seasonal closures and or closure dates may be adjusted to allow access for recreational hunting opportunities. The Wyoming Game and Fish Department provides input on closure modifications. Management activities conducted during seasonal closures consider the need to conduct the management activity during the season of use, the duration of the management activity, the benefit to big game winter range/parturition areas, potential mitigation measures, and presence of big game in that particular year. The Wyoming Game and Fish Department will be consulted before a seasonal closure is changed. Over-snow motorized vehicle use is permitted on roads and trails open to wheeled motorized vehicles within big game winter range consistent with law and regulation.

Except for antler hunting, there is little concern for non-motorized dispersed recreation impacts to wintering wildlife. The Forest Service will educate the public about impacts to wildlife from dispersed recreation and remain vigilant about potential areas of conflict; dispersed use in winter range will not be promoted.

Wildland fire is used to achieve big game habitat management objectives when appropriate. Wildfire receives a suppression response when habitat conditions warrant protection.

Should brucellosis issues between elk and domestic livestock become more of a concern on National Forest System lands, recommendations in the brucellosis management action plans developed by the Wyoming Governor’s Brucellosis Coordination Team will be utilized.

Plant species of local concern are generally addressed by modifying activity location, timing, season, or methods. As part of monitoring, plant species of local concern will be evaluated to determine if species should remain on the list of species of local concern.

During project level analyses, biologists have the option to choose the appropriate planning scale, i.e., hunting unit, watershed, when analyzing elk security habitat.

Other guidance

Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (Wyoming Game and Fish Department 2010a)

Wildlife Protection Recommendations for Wind Energy Development in Wyoming (Wyoming Game and Fish Department 2010b)

State Wildlife Action Plan (Wyoming Game and Fish Department 2010c)

Strategic Habitat Plan (Wyoming Game and Fish Department 2009)

Invasive species

Background

Invasive species infestations can negatively affect forest and rangeland environments and wildlife habitat, prevent managers from meeting objectives, reduce native genetic diversity, disrupt recreation use, reduce resource production, degrade water quality, and cause economic loss. On the Shoshone, documented invasive plant locations are generally along major travel corridors (roads and trails). The establishment and spread of aquatic invasive species have become major concerns for federal land managers in Wyoming. Changing climate may encourage the establishment of invasive species that have a competitive advantage in the changing conditions.

Desired conditions

Existing occurrences of terrestrial invasive species are declining. New outbreaks of terrestrial invasive species are neither established nor spreading to adjacent lands.

Outbreaks of aquatic invasive species are neither established nor spreading to adjacent waters.

Goals for invasive species

Invasive species	
1.	Reduce adverse impacts from invasive plant and aquatic species.
2.	Eradicate spotted knapweed on the Shoshone.
3.	The distribution of Dalmatian toadflax, leafy spurge, cheatgrass, and oxeye daisy is reduced or eradicated where possible.
4.	Prevent new establishments and minimize spread of aquatic invasive species in waters in and around the Shoshone.

Objectives for invasive species

	Invasive species
1.	Reduce invasive plant density, infestation size, and/or occurrence on at least 2,000 acres annually.
2.	Aquatic invasive species are not established in any new areas on the Shoshone.
3.	Annually, treat at least 50 acres of cheatgrass in sagebrush communities in priority areas.

Standards for invasive species

	Invasive species
1.	Prohibit the possession or storage of any hay, hay cubes, straw, grain, or other forage or mulch product without original and current documentation from a state certification process that meets or exceeds the North American Weed Free Forage or comparable certification standard.
2.	Use only certified weed free seeds, mulch, gravels, and straw for revegetation and erosion control projects.
3.	All seed purchased, or otherwise designated or accepted for use on National Forest System lands, will be tested to ensure the seeds are certified weed free.
4.	Contracted and other authorized management activities incorporate measures to prevent the establishment, and minimize the spread, of invasive species.
5.	Domestic goats and sheep will not be used to control invasive plants in native bighorn sheep core range.

Guidelines for invasive species

	Invasive species
1.	In suitable habitat where Absaroka goldenweed and Fremont's bladderpod occur, management activities should avoid burning areas that are infested with cheatgrass or susceptible to cheatgrass infestation.
	Fire and fuels
2.	Where possible, protect from wildfire and avoid using prescribed fire where invasive plants are established and fire would exacerbate the spread of the invasive plants, particularly cheatgrass.

Other guidance

Wyoming Weed and Pest control Act of 1973 and Weed and Pest control Act Rules and Regulations

National Strategy and Implementation Plan for Invasive Species Management (USDA Forest Service 2004)

Rocky Mountain Region Aquatic Invasive Species Action Plan (USDA Forest Service 2009a)

Shoshone National Forest Aquatic Invasive Species Action Plan (USDA Forest Service 2010a)

Shoshone National Forest Invasive Plant Action Plan (USDA Forest Service 2008a)

Wyoming Aquatic Invasive Species Action Plan (Wyoming Game and Fish Department 2010d)

Management approach

The management approach focuses on controlling invasive plant species.

The invasive species program consists of five components: 1) preventing new invasive species infestations through public education programs, 2) eliminating new infestations before they become established, 3) containing and reducing established infestations, 4) reclaiming native habitats and ecosystems, and 5) enforcing special orders requiring weed-free hay, straw, mulch, and forage.

Given the relatively limited occurrence of established populations on the Shoshone, the major focus of the program is on early detection and rapid response to eliminate the establishment of new infestations. An emphasis is placed on controlling infestations on winter ranges, in sagebrush communities, and inventorying for invasive plants before any ground disturbing activity. Key areas include high traffic areas, such as campgrounds, corrals, and trailheads. An important aspect of this effort is cooperation with Wyoming weed and pest districts, Wyoming Game and Fish Department, other agencies, adjacent land owners, and cooperative weed management areas. As well as controlling invasive plants on National Forest System lands, these efforts look to reduce the potential for invasive species to spread onto private land. Currently, fewer resources are spent on the fourth component of reclaiming habitats, because the smaller size of infestations on the Shoshone translate into fewer needs for habitat restoration. The exception is the high cost of the need for restoration of cheatgrass areas.

Application of herbicides using off-highway vehicles, horses, and backpack spray units are used depending on terrain. Aerial application is not allowed at this time.

Roadside weed management may also include control of Cicer's milkvetch, yellow sweet clover, and white clover because they are wildlife attractants and have the potential to spread off rights-of-way and into neighboring grass and shrubland habitat.

Another focus for the invasive plant species program is efforts to share information and educate the public on the risks and management needs associated with invasive species. These efforts are commonly coordinated with cooperative weed management areas, local governments, and State of Wyoming agencies.

Management for aquatic invasive species focuses on information, education, and outreach in order to prevent establishment.

Shoshone personnel work cooperatively with the Wyoming Game and Fish Department, National Park Service, and other management agencies in the Greater Yellowstone Area to help reduce the spread and prevent establishment of aquatic invasive species.

Fire and fuels

Background

In ecosystems where periodic fire has historically played a role in maintaining structure and composition, past fire suppression policies have resulted in vegetation changes and have allowed fuels to develop to higher than natural levels in some areas on the Shoshone. Fire regime condition classes are used to measure ecological integrity and/or departure from reference conditions. A stand is within fire regime condition class 1 when vegetation characteristics, fuel composition, fire frequency, severity, and pattern are maintained within historical bounds for the fire regime that contribute to healthy, resilient ecosystems.

Residential development is increasing on private lands adjacent to National Forest System lands. This development increases the numbers of structures and the values to be protected from wildland fire.

Desired conditions

Wildland fire plays a role in maintaining healthy, resilient ecosystems, as appropriate, for the vegetation type and management objectives. Fire disturbance contributes to vegetation diversity across the landscape. Stand replacement fires reestablish seedling/sapling structural stages. Lower intensity fires contribute to intra-stand diversity by creating or maintaining vegetation patch size and density. Fire disturbances generally range in size from a few hundred to thousands of acres. Fire's natural role is reduced and occurs at smaller scales in areas where existing resource values and infrastructure limit the desirability of large-scale fires.

Hazardous fuel conditions have declined. Within the wildland urban interface, the forest understory is discontinuous and relatively free of ladder fuels (trees and/or brush), trees are generally spaced to create open discontinuous canopies, and deciduous species are present where conditions are favorable. In areas that receive more frequent management actions (management area categories 4, 5, and 8), hazardous fuel conditions are lower and stands are younger and more diverse. In these areas, lower fuel levels and greater stand diversity provide more opportunities for controlling unwanted wildfire. In the remaining areas (management area categories 1, 2, and 3 outside the wildland urban interface), vegetation and hazardous fuel conditions vary across the landscape, providing fewer opportunities for controlling wildfire when desired.

Table 12. Acreage of hazardous fuel conditions on the Shoshone (percentage of National Forest System lands)

Hazard rating	Desired conditions	2009 conditions
None (barren and water)	15	15
Low	17 to 23	14
Moderate	33 to 37	38
High	25 to 31	33

Goals for fire and fuels

	Fire and fuels
1.	Fire management strategies are designed to achieve land management protection or benefit objectives, are cost effective, and meet safety objectives for firefighters and the public.
2.	Suppress wildfires safely, efficiently, and effectively.
3.	Active suppression of fire occurs where necessary to protect life, investments, and valuable resources. Valuable resources include but are not limited to the heritage resources, wildland urban interface, utility corridors and communication sites, public water supply, recreation facilities, administrative sites, range allotments, special management areas, fish and wildlife habitats, other habitats and vegetation community types, and suitable timber lands.
4.	Reduce the risk to adjacent communities and natural resources from wildfire.
5.	Decrease the acres rated high and moderate for hazardous fuels and increase the acres rated as low for hazardous fuels (Table 12).Within the wildland urban interface, around infrastructure, and along private property, fuel hazard ratings are low to moderate.
6.	Vegetation conditions are similar to those that would occur with fire regimes that have been subjected to natural disturbance processes. Areas of fire regime condition class 1 are maintained and other areas characterized by condition classes 2 or 3 are improved to condition class 1 by either natural or management initiated disturbance processes.

Objectives for fire and fuels

	Fire and fuels
1.	Disturbance processes have moved 60,000 to 165,000 acres from fire regime condition classes 2 or 3 to fire regime condition class 1.
2.	Disturbance processes have maintained 86,000 to 176,000 acres in fire regime condition class 1.
3.	Reduce hazardous fuel ratings on 100,000 to 250,000 acres, including 30,000 to 40,000 acres in management area categories 4, 5, and 8.

Standards for fire and fuels

	Fire and fuels
1.	Firefighter and public safety is the number one priority in all fire management activities. Limit firefighter and public injuries and loss of life, and damage to communities from unwanted wildfires, by prioritizing firefighter and public safety above other concerns in fire management activities.
2.	For all unwanted wildfires, the overarching goal of suppression will be applied in every case. The initial suppression action will usually focus on prompt and decisive control of the fire commensurate with firefighter and public safety and cost effectiveness. The initial or subsequent control objective may be modified based on safety concerns, resource availability, values to protect, and cost.
3.	Managing unplanned ignitions to accomplish resource benefits is authorized Forest-wide where compatible with agency policy and other resource management direction and objectives. Wildfire may be used to protect, maintain, and enhance resources and as nearly as possible be allowed to function in its natural role
4.	All human-caused wildland fire will be managed in a manner consistent with agency policies.
5.	Wildfire can be managed through less aggressive tactical approaches when values of resources at risk are low, threats to exceed management capability are low, firefighter exposure and risk are high, and expected costs of aggressive suppression actions are high.
6.	Every wildland fire that is not a prescribed fire will receive a management response. In implementing a management response, the full spectrum of tactical options, from monitoring a fire at a distance to intensive management actions, are available.

Other guidance

Wyoming Air Quality Standards and Regulations Chapter 10, Smoke Management (Wyoming Department of Environmental Quality 2005)

Implementation Guide for Aerial Application of Fire Retardant (USDA Forest Service 2012a)

Management approach

Wildfire receives an appropriate management response based on the ecological, social, economic, and legal consequences of the fire. Wildland fire plays a role within and outside wilderness where appropriate and desirable. Protection of human life (firefighter and public safety) is the most important consideration when managing fire. Once firefighters and support personnel have been assigned to a fire, their safety becomes the highest value to be protected. The primary goal of every fire event is no loss of human life and no serious injury. The second goal is to limit significant damage to or loss of high value resources, developments, facilities, and property. The third goal is to keep wildfire management costs commensurate with potential benefits and values to be protected. The fourth goal is to allow fire to be used to accomplish resource benefits.

The management approach focuses on restoring healthy, resilient vegetation to naturally occurring conditions over large portions of the Shoshone by reestablishing natural fire regimes. One of the long-term purposes of managing fire for resource benefits is to reduce the duration and intensity of future smoke impacts from unwanted fires.

Both unplanned ignitions and prescribed fire are used as tools to achieve and maintain vegetation conditions and desired fuel levels. Fire operates within historical fire regimes appropriate to the vegetation type and management objectives. Prescribed fire plays a role in areas where managing unplanned ignitions for resource benefits is not appropriate because of high values.

Fremont, Park, and Hot Springs counties have completed community wildfire protection plans. These plans identify priority areas for treatment of hazardous fuels to reduce the threats from wildfires to private property and structures. The Forest Service has developed and implemented, and will continue to develop and implement, vegetation treatment projects that mitigate hazardous fuels near the priority areas identified in the community wildfire protection plans.

Fuels management will occur in various vegetation types commensurate with fire regime condition class improvement and other resource objectives. When evaluating areas for treatment to reduce hazardous fuels, focus areas are wildland urban interface; high value developments, facilities, and resources; areas of concentrated public use at risk of unwanted wildfire; and lands in fire regime condition classes 2 and 3.

The Shoshone is a member of the Cody Dispatch Zone Interagency Coordinating Group. Members of the Coordinating Group include Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Wyoming State Forestry Division, and Fremont, Park, and Hot Springs counties. The intent of the Coordinating Group is to foster strong interagency relationships and effective coordination when managing wildfires that involve or threaten multiple jurisdictions. The Coordinating Group meets on a regular basis to develop annual operating plans, address interagency fire management issues, especially those concerning multi-jurisdiction fires, and share resources.

Fire resource advisors are trained in techniques to mitigate, through avoidance or minimization, adverse effects to threatened, endangered, proposed, and candidate species.

Implementation information for wildland fire management activities is described in the fire management plan.

Insects and diseases

Background

Native insects and pathogens are natural components of ecosystems. Since 2000, widespread bark beetle epidemics have occurred on the Shoshone. These epidemics have caused widespread tree mortality and have markedly changed the age class distribution of forested stands. Increases in bark beetle outbreaks and forest diseases may be partially in response to precipitation and temperature changes driven by climate change.

Desired conditions

The disturbance processes from insects and diseases continue to operate across the Shoshone. In management area categories 1, 2, and 3 (including wilderness areas), these processes continue at natural levels and occasionally result in epidemics that affect large areas where watersheds are dominated by vegetation conditions susceptible to epidemics. Forested stands within management area categories 4, 5, and 8 generally have smaller patch sizes, reduced stand density, and a higher portion of stands in younger age classes, all of which reduce the susceptibility to insect epidemics.

Goals for insects and diseases

	Insects and diseases
1.	In management area categories 4, 5, and 8, increase the amount of forested areas restored to or maintained in a condition that is less susceptible to damage from insects and diseases.
2.	Plant whitebark and limber pine stock shown to be resistant to white pine blister rust, when resistant stock is available.
3.	Insect and disease outbreaks are intensively managed in developed recreation areas, Forest Service administrative sites and facilities, around priority heritage assets, and other developed areas where insect and disease outbreaks conflict with desired conditions.

Objective for insects and diseases

	Insects and diseases
1.	From 2013 to 2018, at least 60 percent of the acres treated for timber sales and timber stand improvement will focus on moving forested areas toward conditions less susceptible to insect epidemics.

Management approach

In order to meet desired conditions for providing species habitat, protecting infrastructure, providing recreation experiences, and providing goods and services, management focuses on controlling insects and diseases on some or all of the Shoshone. The greatest emphasis is on those areas where large epidemics are not the desired condition.

The following outlines the management approach for insects and diseases on the Shoshone.

- When feasible, preventive vegetation management practices are used in lieu of suppression and restoration to meet objectives for restricting insect and disease outbreaks. Priority is given to conditions and cover types identified as high to moderate risk.
- Management activities are planned with consideration for potential insect or disease outbreaks.
- Vegetation is managed in high use recreation areas and in administrative sites to provide for public safety, improve forest or rangeland condition, manage invasive species, and maintain or improve the desired recreation setting(s).
- Integrated pest management techniques are used to eradicate or slow the spread of invasive insect and disease species and to manage native insect and disease pests where desired. Silvicultural and rangeland treatments to address pest concerns are developed to meet management area objectives.
- Where objectives are to reduce or eliminate dwarf mistletoe infections, management activities include clearcuts up to 40 acres, and removal of infected leave trees and seed trees within 10 years in shelterwood cuts.
- When desirable to restrict mountain pine beetle activity, stands may be maintained to an average basal area at 70 square feet or less. Management generally creates greater stand age class diversity across the landscape.
- Where stands with high risk for bark beetles (such as old growth) are not being managed, adjacent stands are commonly managed for a basal area of 70 square feet or less.

Management of whitebark pine in relationship to blister rust is guided by the *Whitebark Pine Strategy for the Greater Yellowstone Area* (Greater Yellowstone Coordination Committee Whitebark Pine Subcommittee 2011). Further discussion is included in the vegetation section of this Plan. Limber pine is managed similarly to whitebark pine.

Commercial livestock grazing

Background

Several changes in commercial livestock grazing activities have occurred on the Shoshone over the past 70 years and have accelerated in the past 10.

Since a high point in the early 1900s, commercial sheep grazing has been in a steady decline on the Shoshone. The initial decline in sheep numbers was primarily due to adjustments to stocking rates that reflected a more sustained use of the range resource. The decline in sheep animal unit months continued through the 1970s and continued to decline in subsequent decades, though at a slower rate, reflecting declining demand and increased importation of wool and

mutton from overseas. The last 10 years have seen the removal of all but one commercial sheep-grazing permit due to an increase in predator/livestock conflicts and concern over the potential for disease transmission from domestic sheep to bighorn sheep.

In contrast to commercial sheep use, the levels of permitted cattle grazing and demand for allotments have changed little for many decades. Improved livestock management, consolidation of vacant sheep allotments with cattle allotments, where appropriate, and construction of fences and off-site water sources have led to improved livestock management and distribution.

An animal unit month is the unit of measure used to report and compare the amount of commercial livestock grazing that takes place on a national forest. An animal unit month is the equivalent to the amount of dry forage consumed by a 1,000-pound non-lactating cow in one month (approximately 780 pounds, or 26 pounds per day). Recreation visitor livestock and permitted outfitter and guide pack and saddle stock are not included in this category.

In 2010, 62,200 animal unit months of commercial livestock grazing were permitted on the Shoshone. The total economic impact estimates for Shoshone livestock grazing range from 66 to 201 jobs and $2.1 to $6.5 million in labor earnings (Taylor et al. 2012). Which of these values is the most relevant depends on a number of factors, including the individual ranch's level of dependency on Forest Service grazing, the magnitude of the change in grazing, the financial solvency of the ranch, the availability of alternative sources of forage, and the desire of the rancher to remain in ranching. For small changes in permitted grazing, the lower numbers may be the most appropriate. For larger changes where the economic viability of the ranching operation is uncertain, the larger number may be the most appropriate.

Desired conditions

The Shoshone provides forage for commercial livestock operations. Forage availability for local ranches helps support ranch operations and contributes to local economies. Additionally, economically viable ranch operations help maintain open space and wildlife habitat near the Shoshone, which is integral to meeting desired conditions and maintaining the economic and social sustainability of local communities. Conflicts between livestock and large predators are minimized to the extent possible, while following federal and State of Wyoming laws and regulations.

Goals for commercial livestock grazing

	Commercial livestock grazing
1.	Provide a sustainable supply of forage that helps achieve other resource desired conditions on National Forest System lands and supports ranching in local communities.
2.	Rangeland conditions are maintained or improved over time.

Objective for commercial livestock grazing

Commercial livestock grazing	
1.	Average annual permitted animal unit months will range between plus or minus 10 percent of 60,000 animal unit months.

Guidelines for commercial livestock grazing

Commercial livestock grazing	
1.	Allotments that become vacant may be analyzed for potential use as forage reserves.
Heritage resources	
2.	Heritage resources should be considered when managing commercial livestock grazing.
3.	When making restocking decisions in wildland fire areas where vegetation conditions have not fully recovered to pre-fire conditions, impacts to unprotected heritage resources should be evaluated before restocking.

Management approach

The management approach for the commercial livestock grazing program focuses on providing livestock forage to local dependent ranch operations, supporting the maintenance of open space, and moving toward or meeting desired conditions for vegetation and habitat. The Shoshone supports permittee participation through a cooperative rangeland monitoring program. Maintenance of animal unit months for local operations may fluctuate to achieve desired conditions for other resources.

On big game winter ranges, livestock grazing can be utilized as a tool to improve forage conditions and maintain big game use on winter ranges. During periods of prolonged drought, management of forage on winter range and parturition areas will be discussed with permittees and the Wyoming Game and Fish Department to identify cooperative means to maintain forage quantity and quality for livestock and wildlife.

In some situations, allotments are placed into a status that allows grazing, but may not be under a term grazing permit. These allotments are referred to as forage reserves. Forage reserves are grazed on an as needed basis to help address resource issues or vegetation management projects on other allotments, conflicts with large predators, or reduced forage production due to fire or drought.

Heritage personnel are consulted before improvements or changes to historic grazing-related structures, e.g., cow camp structures, cabins, etc., are made.

In order to minimize the impact to an affected permit holder, all reasonable alternatives will be examined before requiring the removal of livestock in response to resource issues or conflicts. Potential alternatives may include, but are not limited to, the use of available forage reserves,

stocking of vacant allotments, stocking allotments in non use, combining use, changing rotation schedules, and altering the season of use.

Forest Service rangeland managers will cooperate with permittees and other agencies to reduce large predator impacts to commercial livestock grazing.

Forest products

Background

The 1986 Forest Plan set an average annual allowable sale quantity volume of 11.2 million board feet. The Forest Plan set this amount as the maximum allowable harvest of timber from the suitable timber land base of approximately 86,000 acres. In the early 1990s, monitoring indicated that timber data and assumptions used in the analysis had overestimated the amount of timber the Shoshone could produce. This, combined with the 1988 fires that burned over 9,000 acres of suitable timber land, resulted in the need to amend the Forest Plan. The Forest Plan was amended in August 1994 with a recalculated allowable sale quantity (USDA Forest Service 1994). The amendment changed the annual average volume to 4.5 million board feet (4.3 million board feet of sawtimber and 0.2 million board feet of products other than logs). Additionally, one million board feet of timber would be cut from non-suited timber lands for other vegetation management purposes. Other reasons include wildlife habitat improvement, enhancement of scenic views, hazard tree removal, or other ecosystem management reasons. The amendment directed that all salvage volumes offered for sale would count toward allowable sale quantity. The amendment also anticipated an additional 2.0 million board feet of timber cut for personal use firewood, including 1.0 million board feet from suitable lands and 1.0 million board feet from unsuited lands.

Limited quantities of other forest products, such as Christmas trees, mushrooms, pine cones, etc. are collected on the Shoshone.

The lumber and wood products industry in the three-county area has declined. After peaking in 1978, labor earnings from lumber and wood products declined steadily from $14.3 million to $2.0 million in 2000. Most of the decline in labor earnings for the lumber and wood products sector in the three-county region occurred in Fremont County when a major sawmill closed in Dubois. In Fremont County, labor earnings from the lumber and wood products sector peaked at $13.4 million in 1978 and had declined to less than $1 million in 2000. As of 2001, county-level information specifically for lumber and the wood products industry was no longer available. With the closure of the sawmill in Cody, labor earnings from the lumber and wood products sector in the region may have declined even further since 2000. An IMPLAN (input/output) model completed in 2011 estimated the economic impacts of harvesting 4.5 MMBF of timber in the three-county region. The IMPLAN model estimated labor earnings of $1.9 million (2009 dollars) for harvesting 4.5 MMBF of timber and 2.5 MMBF of wood products other than lumber (University of Montana, Bureau of Business and Economic Research 2008 and Taylor et al. 2012).

Because there is no major timber processor in the three-county region, the majority of sawtimber harvest on the Shoshone is exported outside the area for processing. As a result, the major economic impact to the region's economy from the harvest of sawtimber on the Shoshone is logging. For the three-county region, the economic impact of the combined timber harvest is estimated (per IMPLAN model) at 83 jobs and $1.9 million in labor earnings, including

direct logging jobs and additional jobs generated as a result of the direct jobs (Taylor et al. 2012).

Desired conditions

The removal of timber products (sawtimber, small diameter roundwood, chips, pulp, firewood, etc.) and other forest products (mushrooms, Christmas trees, pine cones, plants, greenery, etc.) contributes to ecological, social, and/or economic sustainability (including local communities) and associated desired conditions. A sustainable mix of timber products responsive to market demand, including that of local industry, is provided.

Goals for forest products

	Forest products
1.	Provide a reliable supply of forest products over time that 1) is consistent with achieving desired conditions on National Forest System lands, and 2) helps maintain or create processing capacity and infrastructure in local communities.
2.	Suitable timber lands are managed to produce a sustainable supply of commercial timber products.
3.	Other forest product species and resources are available for personal and commercial use and are managed for sustainability and to ensure their ecosystem roles and functions are maintained.
4.	Protect suitable timber lands from loss or damage from wildfires, except when values would not be cost effective to protect.

Objective for forest products

	Forest products
1.	Forest products produced from the Shoshone average at least 16,500 Ccf annually. Table 13 provides an estimated distribution between sawtimber, products other than logs, and fuelwood from suitable timber lands.

Table 13. Annual timber sale program quantity (Ccf) estimated distribution

	Suitable timber lands	Other timber lands
Sawtimber	12,700	3,100
Products other than logs	600	100
Total	13,300	3,200

Standards for forest products

	Forest products
1.	The maximum size limit of openings created by even-aged management will be 40 acres, regardless of forest type, with the following exceptions: • Proposals for larger openings approved by the regional forester after a 60-day public review • Where larger openings are the result of natural catastrophic conditions of fire, insects, diseases, windstorm • Where the area that is cut does not meet the definition of created openings[19]
2.	Use the scientifically defined reproduction methods shown, by cover type (Table 14), which meet the management objectives for the landscape or individual stands of trees within a landscape setting. Use and apply both even-aged and uneven-aged management systems at scales ranging from a few acres to many hundreds of acres. These reproduction methods are to be applied in a manner that will encourage natural regeneration where artificial regeneration is not necessary for other resource objectives. Tree stand vegetation management treatments are to be approved by certified silviculturists.
3.	No minimum seedling height requirements are specified. Seedlings must have survived a minimum of one year and be expected (based on research and experience) to be able to produce the desired future stand condition specified for this area in the Plan. The number of seedlings in Table 15 represents the minimum number of seedlings required, considering natural mortality, to produce a merchantable timber stand at rotation age without intermediate treatments.
4.	Follow utilization standards in Table 16 on suitable timber lands.

[19] Created openings will no longer be considered an opening when trees average six feet in height and have reached a density listed in Table 17.

Table 14. Acceptable reproduction methods, by forest cover type

Forest cover type	Even-aged	Two-aged	Uneven-aged
Douglas-fir	Shelterwood Clearcut[20] Seed tree	Clearcut Seed tree Shelterwood with reserves or group or strip shelterwood	Group selection Single-tree selection
Lodgepole pine	Shelterwood Clearcut Seed tree	Clearcut Seed tree Shelterwood with reserves or group or strip shelterwood	Group selection
Engelmann spruce Subalpine fir	Shelterwood Clearcut	Clearcut Shelterwood with reserves or group or strip shelterwood	Group selection Single-tree selection
Limber pine	Seed tree Shelterwood	Seed tree Shelterwood with reserves or group or strip shelterwood	Group and individual tree selection Group selection with reserves
Whitebark pine	Clearcut Seed tree Shelterwood	Clearcuts with reserves Seed tree Shelterwood with reserves	Group and individual tree selection Group selection with reserves
Aspen	Coppice	Coppice with standards	Group selection[21]

[20] Clearcutting is acceptable, but not a standard practice in spruce/fir and Douglas-fir.
[21] Use of group selection as an acceptable silviculture system in aspen is currently under study to determine regeneration success. It is authorized on a test basis.

Table 15. Standard for the required minimum numbers of seedlings for adequate restocking of a regeneration site

Growing stock						All live trees	
Species	**Spruce/fir**	**Douglas-fir**	**Lodgepole pine**	**Mixed conifer**	**Aspen**	**Other softwoods**	**Other hardwoods**
Trees per acre	150	150	150	190	300	150	300

Table 16. Timber utilization standards

Type of product	Minimum diameter at breast height (inches)	Top diameter (inches)	Minimum length (feet)	Merchantability factor
Lodgepole pine sawtimber (dead or alive)	7.0	6.0	8.0	10.67
Other conifer sawtimber (dead or alive)	8.0	6.0	8.0	10.67
Aspen sawtimber (dead or alive)	5.0	5.0	8.0	10.67
Products other than sawtimber All species (alive)	5.0	4.0	6.5	variable

Guidelines for forest products

Forest products	
1.	Timber harvest activities should be reviewed by an interdisciplinary team, including the potential environmental, biological, aesthetic, engineering, and economic impacts and the activities consistent with desired conditions and objectives.
2.	Table 17 displays the desired restocking levels for each forest cover type. This table is provided as a guide that can be used along with professional judgment to determine stocking level adequacy after even-aged harvest.

3.	When trees are to be harvested on lands not identified as suitable timber lands, exceptions to the five-year restocking standard are appropriate as documented in project decisions when the harvest meets one of the following criteria: • For permanent openings that serve specific management direction • Where provided for in specific management practices and prescriptions • Where it is desirable to delay the onset of regeneration and crown closure to meet specific desired conditions and management objectives
4.	At the time of regeneration harvest of even-aged stands on lands suited for timber production, the stand should generally have achieved at least 95 percent of the cubic foot volume that it would reach at culmination. Exceptions may be made where resource management objectives or special resource considerations require earlier harvest, such as: • Stands in imminent danger from insect or disease attack • Wildlife habitat improvement • Scenery resource enhancement or rehabilitation • Ecosystem restoration
5.	Clearcutting should be used only where it is the optimum method for meeting desired conditions and objectives.
6.	Even-aged prescriptions other than clearcutting (seed tree, shelterwood, etc.) should be used only when appropriate to meet desired conditions and objectives.
7.	Harvesting prescriptions should be selected based on their ability to meet desired conditions and not strictly on their ability to provide the greatest dollar return.
8.	Harvest activities for the purposes of timber production should be used only when there is reasonable assurance the harvested lands can be restocked within five years after final regeneration harvest.

9.	Plant collecting may be allowed for the following purposes (does not apply to the harvest of trees for timber or products other than logs): • Scientific or educational – permits may be issued to collect sensitive plants or plant parts for scientific or educational purposes but not for commercial or personal use. Such collection must not jeopardize the continued vigor or existence of a plant population. Collection of plants or plant parts in designated wilderness areas, research natural areas, and special interest areas shall not be allowed except by permit issued for scientific or educational purposes. • Commercial – collecting of plants or plant parts for any commercial purpose requires a permit. When evaluating applications for commercial collecting permits, consideration should be given to the impacts on all resources, including biological diversity. • General botanical collections – botanical collection permits may be issued to authorize collection. • Personal – collecting of plants or plant parts for personal use (including transplants) is allowed, consistent with Forest policy. Consideration should be given to the impacts on all resources, including biological diversity.
Fire and fuels	
10.	The management response for a wildfire threatening suitable timber lands would generally consist of actions to protect the lands from burning where that is necessary to maintain timber values and investments except when values would not be cost effective to protect.

Table 17. Stocking guidance by forest cover type and site productivity class

Forest cover type	Site productivity (cubic feet per acre per year)	Planting density (trees per acre)	Seedling stocking per acre	
			Minimum	Desired
Spruce/fir	85+ 50 to 84 20 to 49	360 to 680 306 to 540 300	200 200 150	340 280 155
Mixed conifer	85+ 50 to 84 20 to 49	435 to 680 435 to 550 300 to 360	205 205 190	310 255 240
Lodgepole pine	85+ 50-84 20-49	435 to 680 360 to 540 300	245 200 150	340 280 250
Whitebark and limber pine	All	NA	150	200
Aspen	All	NA	300	600

Management approach

Vegetation management activities take advantage of opportunities to provide wood products while meeting other desired conditions. On suitable timber lands, management activities emphasize the production of wood products in association with meeting other desired conditions.

Annual sale volumes fluctuate from year to year. The management approach, when possible, is to manage fluctuations to maintain a stable supply of timber products. Stability helps local industries contribute to local economies.

The mix of wood products takes into consideration the product needs and capacity of local industry. Managers support partnership opportunities that enhance achievement of vegetation desired conditions and contribute toward local economies. Managers also support establishment of local processors, which benefits the Shoshone and local communities. Changes in markets from new products and uses will be considered.

During the next 15 years, in response to the ongoing insect epidemics, management on lands available for timber production will emphasize the salvage of timber products and restoration stand treatments to reduce stand susceptibility to insect epidemics in addition to the achievement of desired conditions.

In addition to traditional timber contracts, stewardship contracts are used where they are more effective at achieving project objectives.

At a minimum, to ensure adequate restocking of openings created because of completion of final harvest, stocking surveys are conducted at the end of the first and third growing seasons following reforestation treatment.

Table 15 and Table 17 provide Plan direction on restocking timber stands. Table 15 identifies the minimum standards required to classify that a stand has been restocked per National Forest Management Act direction. Table 17 provides stocking guidance for levels that are most appropriate for managing a fully stocked stand for efficiently producing timber products. Deviations from stocking guidance in order to achieve specific desired conditions other than timber production are proposed and analyzed during project level planning.

Suitable timber lands are considered high value assets and under most circumstances would be protected from fire unless it was determined there would be beneficial effects or no effects. An example would be stands of timber that have been severely impacted by insects or diseases and the trees have lost their value as forest products. Burning the stands could be the preferred treatment for treating the fuels or preparing the site for natural regeneration or planting.

Authorizations for commercial use of other forest products are issued consistent with management area direction and resource protection. Such authorizations help support local communities.

Special uses

Background

The Forest Service issues special use authorizations (permits, easements, and leases) to allow private or government entities to occupy, traverse, or use National Forest System lands. Special use authorizations are granted for specified periods, generally not exceeding 20 years, but often with provisions for renewal (for example, for facilities with substantial financial investment such as resorts). Shorter-term and one-time authorizations are also issued (for example, for scientific studies and recreation events that are anticipated to occur within a limited and clearly defined timeframe).

Special use authorizations fall into two broad categories – recreation special uses and non-recreation special uses.

Recreation special uses

Recreation special uses include both commercial and non-commercial activities. Commercial activities are those that provide a service to the public for a fee. These include developed campgrounds, ski areas, lodges, organization camps, and outfitting and guiding. Non-commercial activities are essentially private in nature and are principally represented by the recreation residence program. Certain group events, competitive events, and recreation events can be either commercial or non-commercial, depending on how they are conducted. Except outfitting and guiding, recreation special uses are conducted outside wilderness. Outfitting and guiding occur both inside and outside wilderness and include trail rides, rafting, fishing, big game hunting, pack trips, snowmobiling, and sled dog tours.

Certain categories of recreation special use authorizations have remained relatively constant (e.g., recreation residences, resorts, organization camps, skiing), whereas others have fluctuated

over time (e.g., outfitting and guiding). Of those that have remained constant, some are limited as a matter of public policy, for example, recreation residence authorizations have remained at pre-1986 levels because Forest Service policy precludes issuance of authorizations for new residences. Others remain constant for a variety of reasons – for example, resorts, organization camps, and skiing tend to remain constant due to limited capacity and/or public need for additional facilities. Where such constraints do not occur, permit numbers have generally increased.

In 2010, there were 232 special use authorizations for recreation-related activities: 110 outfitters and guides, 17 resorts, three organization camps, two ski areas, and 100 recreation residences. Of the 110 outfitter and guide authorizations active in 2010, gross revenue was $8.7 million; gross revenue from the 17 resorts was $7.1 million (Taylor et al. 2012). The estimated economic impact of this visitor spending supports more than 353 jobs and $7.5 million in labor earnings (Taylor et al. 2012).

Non-recreation special uses

Non-recreation special uses include such uses as roads, ditches, pipelines, communication sites, and utility lines.

Non-recreation authorizations have generally increased over time. Authorizations for new proposed uses are generally granted if the proposed use is found to be consistent with Forest Service policy, this Plan, and if potential environmental impacts can be mitigated successfully.

Desired conditions

Special use authorizations provide economic contributions to local economies while staying within capacities.

Special use authorizations authorize occupancy and use of National Forest System lands for appropriate activities when consistent with the desired conditions for the specific area.

Recreation special use authorizations provide appropriate activities meeting demonstrated public needs when consistent with the desired conditions for the specific area. Special use authorizations provide opportunities for those needing outfitting and guiding services to participate in the recreation opportunities provided on the Shoshone.

Outfitter and guide authorizations are available based on a suitable mix of guided and non-guided public capacity. This mix may vary by type of activity and/or season of use. Capacity calculations are made on an area-specific basis.

Goals for special uses

	Special uses
1.	Special use authorizations benefit local economies through associated employment opportunities, services, and visitation.
2.	Recreation special use authorizations provide a variety of high-quality recreation opportunities.
3.	Recreation special use permittees are integral to the Shoshone's information and education effort.
4.	Utility and energy transmission facilities are consolidated as economically feasible opportunities arise.

Standards for special uses

	Special uses
1.	Do not approve new uses where the primary activity is storage or disposal of hazardous materials, including landfills.
2.	Do not approve land use authorizations on National Forest System lands identified for disposal if that occupancy may affect disposal action.

Guidelines for special uses

	Special uses
1.	Communication infrastructure should be in designated communication sites, except for single uses involving minor development, such as personal receive-only antennas, resource monitoring equipment, and temporary uses.
2.	Electrical utility lines of 33 KV or less and telephone lines should be buried, except when burial is not feasible due to geologic hazards or unfavorable geologic conditions, greater long-term site disturbance would result, or it is not technically feasible.
3.	Outfitter and guide operations should include appropriate wilderness practices and incorporate awareness of wilderness values in their interactions with clients and others.
4.	Special use authorizations may be denied for uses not based on public need or that cannot be met on private and federal lands.

Management approach

Special use authorizations are reissued where requested and within capacity. Factors to consider during allocation of outfitter and guide use include the amount of current authorized use,

percentage utilization of authorized use, amount of non-outfitted use, ease of access, and season of use.

Within utility corridors and the adjacent National Forest System lands, vegetation and land uses are managed to ensure facilities stay operational and reduce the risks of human-caused damage, wildfire ignition hazards, damage from wildfire, and falling trees.

Other guidance

Forest Service Handbook 2709.11 40 Special Use Administration (Recreation Residence) Supplement 2709.11-2008-2 Shoshone National Forest

Management Standards for Recreation Residence Permits, Shoshone National Forest (USDA Forest Service 2005)

Minerals

Background

Locatable minerals are generally hardrock materials mined or processed for the recovery of metals and nonmetallic minerals and uncommon varieties such as distinctive deposits of limestone and silica.

Leasable minerals include coal, oil, gas, oil shale, sodium, phosphate, potassium, and geothermal resources. There are no active wells on the Shoshone at this time. Of the 34 wells drilled in the past, 31 have not produced and three have been capped due to low production.

Mineral materials are the other resources managed under the minerals/geology program. Most rock material removal is incidental in amount and disturbance and is provided to the public under free use permits.

Desired conditions

Mineral resources provide commodities for current and future generations commensurate with the need to protect other resources. Mineral materials are available to support resource management, e.g. road surfacing; personal use, e.g. landscape rock; and some commercial uses.

Goals for minerals

Minerals	
1.	Help meet energy resource needs.
2.	Provide for mineral resource development.
3.	Lands where past mineral development has occurred are returned to natural conditions to the extent possible and contribute to supporting other resource objectives.

Standard for minerals

Minerals	
1.	Restrict capital investments on lands with nonfederal mineral estate ownership in areas of moderate to high mineral development potential if the purpose of the capital investment would conflict with mineral development.

Guideline for minerals

Minerals	
1.	Free use permits may be issued to individuals to collect limited quantities of petrified wood for personal use only. Limited quantities is defined as up to 25 pounds in weight plus one piece per day, provided the amount removed by the person in one calendar year does not exceed 250 pounds.

Management approach

Mineral resources are provided where suitable, considering surface resources, land suitability, and public interest and demand. Reclamation of mineral removal sites and abandoned mines occurs where human health and safety risks exist or where significant environmental damage has occurred. Areas determined to be not appropriate for locatable mineral entry during future analyses may be nominated for withdrawal.

Locatable mineral activities that reach a level of significant surface resource disturbance require a Plan of Operation, which is used to determine adverse impacts to the environment and surface resources.[22]

Lands available for oil and gas leasing under 36 CFR 228.102(d) were identified in the *Oil and Gas Leasing Record of Decision* (USDA Forest Service 1995a). The direction on lands available to lease and applicable lease stipulations is retained in this Plan until the direction is changed by a new leasing decision. That direction includes stipulations that leases will be consistent with the Plan.

For other leasable minerals, appropriate lease stipulations will be added to protect resources and meet standards and guidelines.

In March 2006, the Governor of Wyoming, Under Secretary of Agriculture, and the regional foresters from the Rocky Mountain and Intermountain Regions signed the *Memorandum of Understanding between USDA Forest Service and State of Wyoming regarding Roadless Areas on the Bridger-Teton and Shoshone National Forests* (USDA Forest Service and State of Wyoming 2006). The parties agreed that new parcels for oil and gas leases would not be offered in inventoried roadless areas until new leasing availability decisions are completed.

Where the authority to issue special use authorizations and agreements was not retained, i.e., Federal Energy Regulatory Commission mineral leases, Shoshone personnel will work with

[22] 36 CFR 228.4.

permit holders to negotiate changes to meet threatened, endangered, proposed, and candidate species desired habitat conditions.

As areas that may not be appropriate for mineral extraction are identified (such as campgrounds, administrative sites, and special areas), the area may be considered for withdrawal.

The Forest Service will work with other government agencies to develop gravel material sources.

An inventory of existing and potential gravel pit locations on the Shoshone will be developed to aid in future management.

Free use permits for mineral materials (common materials such as stone, sand, gravel, clay, cinders, and decorative rock) may be issued to individuals for personal use. Guidance on the amounts given free is found in the Rocky Mountain Region Supplement 2800-2000-1 to Forest Service Manual 2850 Mineral Materials.

Other guidance

Rocky Mountain Region Supplement 2800-2000-1 to Forest Service Manual 2850 Mineral Materials

Process guidance on issuing oil and gas leases is found in the *Oil and Gas Leasing Record of Decision* (USDA Forest Service 1995a)

Memorandum of Understanding between USDA Forest Service and State of Wyoming regarding Roadless Areas on the Bridger-Teton and Shoshone National Forests (USDA Forest Service and State of Wyoming 2006)

Paleontological resources

Background

Paleontological resources include those with any evidence of fossilized remains of multicellular invertebrate and vertebrate animals and multicellular plants, including imprints.

Desired conditions

Paleontological resources on the Shoshone provide for preservation and use of these resources. Resources are available for public and scientific uses as governed by existing regulations.

Goals for paleontological resources

	Paleontological resources
1.	Paleontological resources are managed to provide for preservation and use of these resources for current and future generations.[23]
2.	Protect vertebrate and ichnofossil resources from human activities, wildfire, and other natural disturbances to conserve scientific, educational, interpretive, and legacy values.

Standard for paleontological resources

	Paleontological resources
1.	Allow collection of significant paleontological resources with authorization (permit or area designation) for educational and scientific purposes. Prohibit the commercial collection of fossils.

Guideline for paleontological resources

	Paleontological resources
1.	Allow recreational collection of non-vertebrate fossil materials.

Management approach

Knowledge of the paleontological makeup of National Forest System lands is being continually refined. As this occurs, management of ground-disturbing activities will continue to focus on protecting paleontological resources and the scientific values they contain. Avoidance of sites is the preferred mitigation for impacts to paleontological resources. Areas of high potential paleontological resources are identified and mapped.

Other guidance

Training guide for management of paleontological resources (USDA Forest Service in review) http://www.wilderness.net/index.cfm?fuse=toolboxes&sec=paleo.

Recreation

Background

Visitors to the Shoshone participate in a range of recreational activities, including hiking, backpacking, hunting, fishing, horseback riding and packing, snowshoeing, off-highway vehicle riding, snowmobiling, camping and picnicking, viewing scenery and wildlife, dog sledding,

[23] Petrified wood is classified as a mineral material and is covered in the minerals section.

mountain biking, cross country skiing, mountaineering, whitewater rafting, and ice and rock climbing.

In 2009, it is estimated that about 646,000 people visited the Shoshone (Taylor et al. 2012). Total spending from all visitors to the Shoshone in 2009 was estimated to be $28 million (Taylor et al. 2012).

Large expanses of wilderness and back country characterize the Shoshone and provide opportunities for backpacking, hunting, fishing, and horseback riding and packing. Popular driving corridors provide infrastructure for sightseeing or for visitors traveling though the Shoshone on their way to other destinations. Within these corridors, visitors find opportunities for driving for pleasure, viewing scenery and wildlife, camping, picnicking, and hiking. The lands between the back country and travel corridors are transition areas where common opportunities include motorized access, off-highway vehicle riding, snowmobiling, mountain biking, hiking, dispersed recreation, hunting, fishing, horseback riding and packing, and opportunities for gathering forest products.

The Buffalo Bill Cody Scenic Byway, Chief Joseph Scenic Byway, Beartooth All-American Road, Wyoming Centennial Scenic Byway, Continental Divide National Scenic Trail, and Nez Perce National Historic Trail traverse the Shoshone.

Developed facilities on the Shoshone include 32 campgrounds, 11 picnic grounds, 18 resorts/lodges, one downhill ski area, and 28 trailheads.

Through recreation special use authorizations, commercial and non-commercial partners provide a variety of opportunities for the public.

Desired conditions

A diversity of year round recreation opportunities attracts increasing numbers of visitors to the Shoshone, thereby providing economic and social benefits to local communities.

The Shoshone is rugged, remote, and wild. It plays a key role in providing locals and travelers an opportunity to connect with nature and experience wildlife. The rich western heritage provides a trail-based infrastructure into and through the back country and continues to instill a sense of adventure and freedom. The Shoshone provides minimally developed facilities for overnight use and back country activities, with the exception of facilities along travel corridors and/or near destination water sites.

Front country areas provide opportunities for motorized use in a natural setting.

Partnerships are a significant tool to help provide public use and year round recreation opportunities.

Recreation opportunities

Established recreation opportunities are maintained where not in conflict with other resources. New opportunities consistent with recreation settings respond to public demand while still meeting desired conditions for other resources. Non-motorized management areas offer opportunities for solitude and recreation in a natural setting.

Developed recreation

See Management Area 8.1 – Developed recreation in chapter 2.

Dispersed recreation

Dispersed recreation areas are characterized by a predominantly natural appearing environment. To protect resources, developed facilities, such as toilets, designated camping sites, etc. are present only after all other options are ruled out. Access is commonly provided by National Forest System roads and motorized trails.

Trails

See the roads and trails section in this chapter.

Wilderness

See Management Area 1.1 – Wilderness in chapter 2.

Goals for recreation

Recreation	
1.	Seek increased tourism that will enhance local economies by providing information and a broad spectrum of high quality outdoor recreation opportunities for visitors.
2.	Education opportunities are used to minimize conflicts between user groups.
3.	Opportunities for consumptive and non-consumptive wildlife uses are provided.
4.	Recreation management is responsive to the needs of forest users, within other management constraints.

Standard for recreation

Recreation	
1.	Manage recreation use to stay within the capacity allowed for the prescribed Recreation Opportunity Spectrum objectives (Table 18).

Table 18. Recreation Opportunity Spectrum recreation use capacity

Primitive	Semi-primitive non-motorized	Semi-primitive motorized	Roaded natural	Rural	Urban
Usually less than six parties per day encountered on trails and fewer than three parties visible at campsites	Usually six to 15 parties per day encountered on trails and six or fewer visible at campsites	Usually 10 to 20 parties per day encountered on trails and eight or fewer visible at campsites	Frequency of contact is moderate to high on roads, low to moderate on trails and away from roads	Frequency of contact is moderate to high in developed sites, on roads and trails and on water surfaces, moderate away from developed sites	Large numbers of users on site and in nearby areas

Guidelines for recreation

	Dispersed recreation
1.	Group size limits should be established where needed to meet management goals.
2.	Campsites should be at least 200 feet from trails, lakes, or wet meadows, and 100 feet from streams or creeks.
3.	Motorized use on cross-country ski trails may be restricted.

Management approach

Forest recreation management focuses on community and visitor interests, new as well as traditional recreational activities, and year round enjoyment of outdoor recreation on the Shoshone.

Where recreation demand exceeds capacity or significantly changes the recreation experience, alternative management strategies are evaluated and management adjusted as appropriate. In general, take the following management actions, in order of priority, if use degrades the desired recreation experience as identified in the given Recreation Opportunity Spectrum class:

- Educate the public on the issue
- Control access through design
- Regulate season of use
- Restrict the number of users
- Restore or rehabilitate the site
- Close the area or site

Utilizing a cooperative management strategy, conflicts between user groups in the development of new or expanded recreation opportunities are minimized.

Data collection, analyses, and management plans are completed to accommodate specialized recreation uses or mitigate heavy use in an area. Examples include ice climbing management plans; rock climbing management plans for priority heavy use climbing areas; efforts to inventory, survey, and map dispersed recreation sites to provide resource data for dispersed site management; and vegetation management plans in high use campgrounds.

Improvements/hardening of dispersed recreation sites are undertaken only as a last resort to protect the resource.

Information that serves the needs of the public and promotes responsible recreation and a shared-use philosophy is provided. Education and information programs such as Tread Lightly, Leave No Trace, portal bulletin boards, etc., promote responsible outdoor recreation. Coordinating these programs with other groups, local communities, and agencies focuses messages, improves efficiency, and improves visitor information about recreational opportunities and responsibilities.

Other guidance

The Built Environment Image Guide for the National Forests and Grasslands (USDA Forest Service 2001)

Scenery

Background

Landscapes are a part of our shared heritage. Scenery on the Shoshone is primarily in a very high scenic integrity condition. The majority of the Shoshone's scenery has little or no evidence of human-caused alteration (1.4 million acres of designated wilderness out of 2.4 million acres total land area of the Shoshone). A small portion has a mix of low to high alteration evidence. The majority of the Shoshone's scenery is unaltered or appears unaltered. A minority portion is a mix of slightly altered and moderately altered. The Shoshone has transitioned from visual quality objectives to Scenic Integrity Objectives. This transition does not affect on-the-ground scenery, but provides a new nomenclature for classifying scenery.

The visual landscape across a large portion of the Shoshone is changing due to an increase in tree mortality, drought, and insect and disease infestations exacerbated by a changing climate. Proposed management activities aiming to increase ecosystem resiliency and forest health will lower existing visual condition in the short term (10 to 25 years), depending on the setting. Portions of the Shoshone's scenery will appear slightly to moderately altered from these activities. Some smaller areas may appear heavily altered. There will be varied public opinion about changes in the visual landscape due to vegetation management, especially along scenic highways and trails. Over the next 30 to 50 years, long-term visual enhancement resulting from these activities is expected.

Desired conditions

High-quality scenery that benefits tourism, the local economy, the community image, and overall recreation opportunities is maintained. Valued viewsheds, vistas, tribal traditional places, and natural landscape elements are protected, restored, and enhanced. Activities that protect, restore, enhance, and/or perpetuate long-term valued scenic elements may be visible to visitors

in the short term. These activities may include, but are not limited to, timber harvest, fuel reduction, vista creation, wildfire, and insect and disease prevention and suppression. Scenic resources reflect ecosystem diversity, enhance the recreation settings, and contribute to the quality of life of local residents and communities.

Goals for scenery

	Scenery
1.	Restore, maintain, or enhance the scenic quality of landscapes to meet adopted Scenic Integrity Objectives.
2.	Scenic values are protected in areas of high public use.

Standards for scenery

	Scenery
1.	Projects in foreground areas of scenic byways, national scenic trails, or wild and scenic rivers will be designed to meet the Scenic Integrity Objective of at least high.
2.	Management actions that would result in a scenic integrity level of unacceptably low are prohibited in all land management areas.

Guidelines for scenery

	Scenery
1.	Resorts, organizational camps, and recreation residences should blend with natural settings.
2.	Management activities that manipulate vegetation should do so in a scale that retains the color and texture of the landscape character, borrowing directional emphasis of form and line from natural features.
3.	When constructing, reconstructing, or maintaining facilities and structures, the design, color of materials, location, and orientation should meet the Scenery Integrity Objective and landscape character goals for the area. (Refer to the Built Environment Image Guide.)
4.	Large facilities, such as power lines, should not be noticeable features within travel corridors.
5.	Scenic Integrity Objectives for management areas apply only to the area within the management area boundary.

6.	Management activities may exceed Scenic Integrity Objectives for a management area in order to meet Plan goals and objectives under the following conditions: • Minor adjustments that exceed a drop of one Scenic Integrity Objective should have deciding officer approval. • Temporary drops of more than one Scenic Integrity Objective may be made during and following project implementation with deciding officer approval provided the original Scenic Integrity Objective is met within three years of project completion.

Management approach

Planning for scenic resources on the Shoshone involves management strategies that protect scenic resources, as well as those that increase opportunities for viewing those scenic resources. Adopted Scenic Integrity Objectives are defined for each management area and direction is implemented at that level.

The Scenery Management System will be applied to all National Forest System lands. Travel routes, use areas, and water bodies determined to be of primary importance have appropriate Scenic Integrity Objectives and are established according to the Scenery Management System.

Protection of aesthetic values will be integrated with all resource planning.

Other guidance

Agriculture Handbook Number 701 Landscape Aesthetics: A Handbook for Scenery Management (USDA Forest Service 1995b)

Heritage resources

Background

Heritage resources are non-renewable resources that include tribal traditional places, prehistoric and historic artifacts, features, structures, sites, historic districts, photographs, landscapes, and archival materials.

The Shoshone National Forest has a rich cultural history. Archaeological and ethnographic investigations indicate that people have lived in the area known as the Shoshone National Forest for at least 10,000 years. Indigenous Americans such as the Shoshoni, Arapaho, Blackfeet, Comanche, Crow, Nez Perce, Northern Cheyenne, and Sioux used the landscape encompassed by the Shoshone National Forest for traditional cultural practices and subsistence living. Mountain men hunted, trapped, and traded in these lands, using Union Pass to travel through the mountains. Evidence of past uses remain, for example, in abundant and widely scattered prehistoric sites and historic structures, in the Nez Perce National Historic Trail, in tie hack flumes and camps near Dubois, and at Kirwin, a ghost town that was a thriving mining community in the 1800s.

A significant heritage asset on the Shoshone is the Double D Ranch. The ranch was established in 1931 by Carl Dunrud and functioned as a dude ranch from 1931 to 1945. The ranch is situated in a meadow within a minor valley along the confluence of the Wood River and Jojo Creek. The

Double D consists of a large lodge, multiple outbuildings, guest cabins, and associated features. The historic property is roughly 1,200 feet by 600 feet.

The heritage resources found within the Shoshone face numerous impacts from natural and human disturbances. Population and visitation growth and development impact non-renewable heritage resources both directly and indirectly. Direct impacts include disturbance from construction, vandalism, and excessive or inappropriate visitor use. Indirect impacts include accelerated erosion and visual impacts to cultural landscapes.

Desired conditions

Heritage resources are preserved and enhanced for the benefit of present and future generations. Archaeological and historic resources are intact, stable, and, when appropriate, made accessible to the public. Resources are identified, evaluated, and nominated to the National Register of Historic Places. Select resources are utilized for interpretation, education, research, traditional use, and stewardship opportunities. Eligible heritage resources, for example the Nez Perce National Historic Trail and the Wapiti Ranger Station, are protected and interpreted for the public, where appropriate.

Goals for heritage resources

	Heritage resources
1.	Protect heritage resources from human activities, wildfire, and other natural disturbances.
2.	Opportunities for education, research, traditional use, and stewardship are provided.
3.	Heritage resources are identified, evaluated for the National Register of Historic Places, and managed for appropriate use.
4.	The Nez Perce National Historic Trail and associated resources are identified, documented, and interpreted for the public where appropriate.
5.	Identify and protect heritage resources susceptible to post-fire effects, including vandalism, by surveying areas of high archaeological potential burned by wildland fire.
6.	Artifacts removed from National Forest System lands will be curated at professional facilities with official curation agreements in place.

Objectives for heritage resources

	Heritage resources
1.	Conduct condition assessments on priority resources on a five-year cycle. Assess 20 percent of priority heritage assets annually until all priority assets have condition assessments on file dated no greater than five years in age.
2.	Avoid, minimize, or mitigate negative effects from natural or human-caused impacts to at least one priority heritage asset annually.
3.	At least 200 acres will be inventoried annually under section 110 of the National Historic Preservation Act.
4.	Historic property plans are completed for at least three National Register eligible or listed properties or property types.
5.	At least 5 percent of land burned by wildfires greater than 50 acres will be inventoried within one year of being burned.

Standards for heritage resources

	Heritage resources
1.	Report to law enforcement officers and investigate all Archaeological Resources Protection Act violations.
2.	Adverse effects to heritage resources from agency or agency-authorized undertakings are avoided or mitigated.
	Special uses
3.	Outfitter and guide camp assigned sites will not be authorized within the boundaries of National Register of Historic Places eligible or listed historic properties.
4.	Modifications to historic structures authorized under special use authorizations do not result in adverse effects to historic properties.
	Recreation
5.	Historic characteristics are retained when structures eligible for or listed in the National Register of Historic Places are converted for adaptive reuse.
	Scenery
6.	Visual impacts to historic properties are avoided or mitigated.
	Roads and trails
7.	Adverse effects to historic properties from trail or road maintenance or construction are avoided or mitigated.

Guidelines for heritage resources

Heritage resources	
1.	When appropriate, heritage plan components or protocols should be incorporated into the *Programmatic Agreement among the USDA Forest Service, Wyoming Forests, Wyoming State Historic Preservation Officer, and Advisory Council on Historic Preservation, Regarding Compliance with the National Historic Preservation Act on the National Forests and Grasslands of Wyoming* (Region 2 Agreement #09-MU-11020000-03) (USDA Forest Service et al. 2008) or into a memorandum of understanding.
2.	Signs should be posted at developed recreation locations, e.g., trailheads and other areas, to deter Archaeological Resources Protection Act violations.
3.	Visual, auditory, and atmospheric effects to National Register eligible heritage resources should be evaluated during project development.
Fire and fuels	
4.	Wildfire management activities should protect heritage resources, when feasible, with priority given to sites listed in or eligible for listing in the National Register of Historic Places and to known sites where eligibility has not been determined, i.e., sites not evaluated.
Insects and diseases	
5.	Manage insects and diseases outbreaks around eligible heritage resources in danger of destruction of falling trees (i.e., sheeptraps, wickiups, pole lodges, historic cabins, etc.).
Commercial livestock grazing	
6.	As allotment management plans are updated, conflicts with salting stations or other areas of livestock congregation and National Register of Historic Places eligible or listed sites should be addressed.
7.	Permit holders are made aware of Archaeological Resources Protection Act regulations and violation repercussions by incorporating the Act's language into permits and/or annual operating instructions.
Special uses	
8.	Outfitter and guide camps assigned within the boundaries of known unevaluated sites should be evaluated for eligibility for listing in the National Register of Historic Places.

Minerals	
9.	Surface occupancy for oil and gas exploration and development should not occur within 0.25 mile of heritage resources eligible for or listed in the National Register of Historic Places, including national historic trails and landmarks.
10.	Oil and gas development within the viewshed of a significant historic property should be evaluated and mitigated.

Management approach

The Shoshone National Forest is obligated by the National Historic Preservation Act to consider effects on historic properties from agency undertakings and to establish a preservation program.

A proactive program of heritage resource management, consistent with federal guidelines for the specific implementation of the National Historic Preservation Act, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act, is achieved in part by creating a heritage program plan. Close coordination with Tribal Historic Preservation Offices, the State Historic Preservation Office, and other interested parties during the development of the heritage program plan results in a plan that guides the protection and enhancement of heritage resources on the Shoshone. The heritage program plan is kept up to date as needed.

The heritage program plan includes Shoshone-specific protocols for (including, but not limited to):

- Inadvertent discovery of heritage resources, including human remains and associated objects
- Prevention of and response to Archaeological Resources Protection Act violations
- Prevention of the effects from wildland fire and post-fire looting
- Identification of areas of high, moderate, and low probability for the presence of heritage resources
- Monitoring to assess site conditions and measure the success of mitigation measures
- Reviewing categorically excluded National Environmental Policy Act projects to determine if National Historic Preservation Act review is required

Partnerships with those interested in the Shoshone's heritage resources are an integral part of the program. Memoranda of understanding and programmatic agreements are used to streamline consultation and improve the management of heritage resources. Archaeological Resources Protection Act permits will be issued to facilitate research opportunities by qualified individuals associated with reputable institutions. Cooperative agreements are developed with other federal agencies, the State of Wyoming, universities, and local communities to promote and protect the Shoshone's heritage resources. Forest Service collections are curated at professional facilities where official loan and/or curation agreements are in place, and these facilities will make them available to qualified researchers.

Heritage information is maintained, improved, and shared with appropriate cooperators while following confidentiality regulations. Heritage resource location models are created for specific projects, geographic areas, and/or resource types. Heritage site location and condition data are maintained in the agency's corporate database and in a spatial database with restricted access. Legacy data are entered as time and resources allow. Results of field inventories will be shared with the State Historic Preservation Office and Tribal Historic Preservation Offices.

Public awareness, involvement, and appreciation of heritage resources will be increased over time using tools such as site stewardship and the Windows on the Past program. Shoshone personnel will continue to work with permit holders to inform and educate them on Archaeological Resources Protection Act regulations and violation repercussions and incorporate Archaeological Resources Protection Act language into authorizations and/or annual operating instructions. The heritage specialist will be involved from the beginning in special use authorizations that involve interpreting or visiting cultural resource sites.

A list of Priority Heritage Assets will be updated annually.

Priority Heritage Assets are inventoried and deferred maintenance condition surveys are completed at least every five years. Priority Heritage Assets are heritage assets of distinct public value that are, or should be, actively maintained and meet one or more of the following criteria:

- The significance and management priority of the property is recognized through an official designation, for example, listing in the National Register of Historic Places, State Register, etc.
- The significance and management priority of the property is recognized through prior investment in preservation, interpretation, and use.
- The significance and management priority of the property is recognized in an agency-approved management plan.

The designation of a Priority Heritage Asset is a local management decision; the list of Priority Heritage Assets on any given unit is dynamic. A list of Priority Heritage Assets will be kept and updated annually. Priority Heritage Assets include some areas with significant heritage value, but are either small or do not rise to the level of having a specific management area designated to them. The Double D Ranch is an example; management is focused primarily on stabilization and protection of the structures with site interpretation in the future.

Standard inventory strategies are used to identify high potential locations for historic properties in association with specific projects, geographic areas, and/or resource types.

Other guidance

Forest Service Manual 2360 Heritage Program Management

Forest Service Handbook 2309

National Historic Preservation Act of 1966

Archaeological Resources Protection Act of 1979

American Indian Religious Freedom Act of 1979

Native American Graves Protection and Repatriation Act of 1990

National Trails System Act of 1968

Programmatic Agreement among the USDA Forest Service, Wyoming Forests, Wyoming State Historic Preservation Officer, and Advisory Council on Historic Preservation, Regarding Compliance with the National Historic Preservation Act on the National Forests and Grasslands of Wyoming (Region 2 Agreement #09-MU-11020000-03) (USDA Forest Service et al. 2008)

Nez Perce National Historic Trail Comprehensive Management Plan (USDA Forest Service et al. 1990)

Eligible wild and scenic rivers

Background

The Shoshone has identified 13 river segments as eligible for recommendation as part of the National Wild and Scenic Rivers System through a wild and scenic river eligibility evaluation completed in 2012 (USDA Forest Service 2012b). The Shoshone is required to provide for the protection of river segments identified as eligible until a decision is made through a suitability study on the future use of the river and adjacent lands.

Desired conditions

River segments and their corridors[24] identified as eligible for recommendation as part of the National Wild and Scenic Rivers System retain free-flowing status, water quality, outstandingly remarkable values, and their classifications.

[24] Interim corridors for eligible streams include the bed, bank, and 0.25 mile on either side of the ordinary high-water mark.

Table 19. Eligible rivers on the Shoshone National Forest, their classifications, and outstandingly remarkable values

River	Segment	Classification	Outstandingly remarkable values
Clarks Fork of the Yellowstone River	Shoshone boundary to Crandall Creek	Recreational	Wildlife Scenery
Dinwoody Creek	Headwaters to Shoshone boundary	Wild	Scenery
Greybull River	Headwaters to ~0.5 mile past wilderness boundary	Wild	Recreation Fish
Middle Popo Agie River	Wilderness boundary to trailhead	Scenic	Scenery Recreation
North Fork Shoshone River	Wilderness boundary to Shoshone boundary	Recreational	Recreation Wildlife History
South Fork Shoshone River	Headwaters to wilderness boundary	Wild	Recreation Fish
Sunlight Creek	Wilderness boundary to Spring Creek gate	Scenic	Wildlife
Sunlight Creek	Sunlight Bridge to Clarks Fork of the Yellowstone River	Wild	Scenery Geology
Warm Spring Creek	Headwaters to Warm Spring Canyon	Recreational	History
Warm Spring Creek	Warm Spring Canyon	Scenic	Scenery History
West Fork Dunoir Creek	Headwaters to ~1.5 miles from Shoshone boundary	Wild	Wildlife History

River	Segment	Classification	Outstandingly remarkable values
Wiggins Fork	Trailhead to Shoshone boundary	Scenic	Scenery Geology
Wood River	Kirwin to Shoshone boundary	Recreational	Recreation History Fish

Management approach

Eligible rivers are managed to protect their eligibility for future designation.

Any projects that have the potential to affect a river's free-flowing character will be evaluated as a water resource project (Forest Service Handbook 1909.12, 82.51(8) Wild and Scenic River Evaluation-Wildlife and Fish Projects). Projects that affect the free-flowing characteristic of an eligible river would have to make a wild and scenic river eligibility determination before the project could proceed.

The active management of Yellowstone cutthroat trout on eligible river corridors is appropriate.

Applications for new water impoundments or diversions within an eligible wild and scenic river section will assess any potential change to the river's classification or free-flowing characteristics. An eligible river does not prevent consideration of an application, though the application needs to consider the river's suitability for wild and scenic designation.

Guidelines outlined in Forest Service Handbook 1909.12, 82.51 may be modified or discontinued for identified rivers upon a finding of ineligibility or non-suitability.

Other guidance

Forest Service Handbook 1909.12, 82.51 Management Guidelines for Eligible or Suitable Rivers

Wild and Scenic River Eligibility Evaluation, Shoshone National Forest, Version 2.0 (USDA Forest Service 2012b)

Inventoried roadless areas

Background

There are 684,800 acres identified as inventoried roadless on the Shoshone. The areas were identified as part of the 1978 Roadless Area Review and Evaluation. In 2001, the Roadless Area Conservation Rule formally designated these areas as inventoried roadless areas and established national direction for timber harvest, road construction, and road reconstruction within these areas.

The direction in this section applies to inventoried roadless areas as defined by the Roadless Area Conservation Rule. Where inventoried roadless area direction conflicts with other direction in the Plan, the more restrictive direction applies.

Desired conditions

Desired conditions for inventoried roadless areas are guided by the desired conditions for the underlying management area.

2001 Roadless Area Conservation Rule direction

	Vegetation
1.	Cutting, sale, and removal of timber in inventoried roadless areas is prohibited, except • For the cutting, sale, or removal of generally small diameter trees which maintains or improves roadless characteristics • To improve habitat for threatened, endangered, proposed, or sensitive species • To maintain or restore ecosystem composition and structure, such as reducing the risk of uncharacteristic wildfire effects • When incidental to the accomplishment of a management activity not otherwise prohibited by this rule • For personal or administrative use • Where roadless characteristics have been substantially altered in a portion of an inventoried roadless area due to the construction of a classified road and subsequent timber harvest occurring after the area was designated an inventoried roadless area and prior to the publication date of the Roadless Area Conservation Rule
	Roads and trails
2.	New road construction and reconstruction in inventoried roadless areas on National Forest System lands is prohibited, except • To protect health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property • To conduct environmental cleanup required by federal law • To allow for reserved or outstanding rights provided by statue or treaty • To prevent irreparable resource damage by an existing road • To rectify existing hazardous road conditions • Where a road is part of a Federal Aid Highway project • Where a road is needed in conjunction with the continuation, extension, or renewal of a mineral lease on lands that are under lease, or for new leases issued immediately upon expiration of an existing lease

Management approach

The management approach for inventoried roadless area is generally guided by the management area to which the individual roadless area is allocated. Management direction is sometimes more restrictive than the direction in the Roadless Area Conservation Rule. In other cases, the specific management direction is less restrictive. In those cases, Roadless Area Conservation Rule direction is followed.

Future changes in national direction for managing inventoried roadless areas may require a forest plan amendment. Plan direction was developed so that management area direction is independent of the overlying roadless direction, to the extent possible. It is hoped this will make it easier to adapt implementation of the Plan if changes in national direction occur.

Other guidance

2001 Roadless Area Conservation Rule

Roads and trails

Background

The transportation system within the Shoshone consists of roads and trails that provide access to public lands and to private inholdings. Virtually every activity that takes place on the Shoshone uses the transportation system (including outdoor recreation, wildfire management, commercial livestock grazing, vegetation and wildlife management, natural resources development, electronic and communication site and utility corridor maintenance, as well as the management and administration of public lands).

Roads

There are over 1,127 miles of National Forest System (System) roads on the Shoshone.[25]

The miles of System roads have declined by about 10 percent since 1989. Beginning in the late 1990s, unauthorized, or non-System, routes have been partially inventoried. These may be user-created routes or old temporary roads receiving motorized use. Recommendations for disposition of these routes are included in project-level planning. Annual adjustments to the Shoshone's road system occur due to the gathering of data that are more accurate, additions from new construction, and reductions due to decommissioning.

New construction, which averaged about four miles per year in the first decade following the 1986 Forest Plan, dropped to less than one mile per year in subsequent decades. New construction generally results from the need for vegetation management projects. The amount of new construction varies from year to year, depending on the areas needing access.

Decommissioning, averaging about six miles per year between 1990 and 2010, occurred on both System roads and non-System routes.

The availability and popularity of four-wheel drive and off-highway vehicles have resulted in an increased demand for motorized opportunities on the Shoshone. They make it easier to traverse the land. The demand for this type of motorized recreation results in the continued presence, and sometimes creation, of unauthorized routes on the ground.

Public use of some roads may be allowed seasonally, or permitted year-round. Some roads are reserved for administrative purposes.

[25] A forest road is one that is wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

Trails

System trails on the Shoshone include 1,389 miles of hiking and equestrian trails, 306 miles of snowmobile trails, and 48 miles of cross-country ski trails. A wide range of recreation opportunities is available relative to the trail system, ranging from challenging foot travel to motorized uses.

Trails generally fall into one of two general classes: non-motorized or motorized. Non-motorized trails are designed for a variety of uses, including mechanized (mountain bicycles) and non-mechanized (foot, pack and saddle stock, etc.). In most cases, non-mechanized and mechanized travel occurs on the same trails.

Since 1986, very few new trails have been constructed. Reconstruction of existing trails has been accomplished to mitigate public health and safety issues and reduce resource damage. The increase in popularity of off-highway vehicles has led to resource damage on some primitive trail segments not designed for motorized use.

Desired conditions

Roads

System roads provide basic motor vehicle access to the Shoshone. They are safe and well maintained; diverse in grade, alignment, features, and driving experiences; have limited impacts on other resources; are compatible with desired conditions and objectives; and reflect suitable uses.

System roads provide legal and reasonable access for recreation opportunities, resource management, and administration. Resource impacts from roads are balanced with the benefits of having the road available for use. Some roads are closed except to administrative and authorized use or for short-term resource management activities. Many roads are open to motorized use, including off-road vehicles, as identified on the motor vehicle use map. Temporary roads provide short-term access to areas of the Shoshone for meeting desired conditions and objectives for resource management.

The Beartooth All-American Road, Wyoming Centennial Scenic Byway, Chief Joseph Scenic Byway, and Buffalo Bill Cody Scenic Byway provide outstanding scenic, recreational, and educational opportunities.

Unauthorized routes are rehabilitated and returned to natural land settings.

Trails

System trails are the primary access to the Shoshone’s back country settings.

Trails across the Shoshone provide a variety of recreation opportunities across diverse terrains and recreation settings. High-quality loop trails exist for both motorized and non-motorized recreation.

Non-motorized trails are provided by using a mixture of traditional multiple-day loop trails accessing back country areas and wilderness areas and by developing short day-hiking loops off scenic byways and near main access trails. Non-motorized opportunities for cross-country skiers and snowshoers are provided on both groomed and ungroomed trails. Designated cross-country ski areas provide access to non-motorized trails near open and plowed roads.

Motorized trail loop opportunities are provided using lower standard System roads with motorized trails constructed as connectors where needed. Snowmobiling opportunities are provided on groomed trails and in areas open to off-trail snow play. Wheeled motorized vehicle use occurs on System roads and trails unless otherwise authorized. The level of motorized opportunities has not been reduced since the Plan was approved.

The Continental Divide National Scenic Trail and the Nez Perce National Historic Trail provide outstanding scenic, recreational, and educational opportunities.

Goals for roads and trails

	Roads and trails
1.	National Forest System roads and trails needed for long-term objectives and to meet desired conditions are constructed and maintained in a manner that provides for user safety and minimizes impacts to natural resources.
2.	Roads and trails not needed for long-term objectives are decommissioned, stabilized, and restored to a more natural state.
3.	All System roads and trails open to wheeled motorized vehicles are shown on a motor vehicle use map that is available at no charge to the public.
4.	A variety of summer motorized trail loops are provided for riders of different abilities.
5.	Mountain biking opportunities are provided.
6.	Objectives for management of roads and trails guide operation and maintenance activities.
7.	Replace undersized culverts and bridges.
8.	The road and motorized trail systems are established using the travel management planning process.
9.	Resource impacts from use of unauthorized motorized routes are eliminated, along with the unauthorized route.

Objectives for roads and trails

	Roads and trails
1.	Maintenance occurs on at least 60 percent of maintenance levels 3, 4, and 5 miles and at least 5 percent of maintenance level 2 miles of System roads annually.
2.	Maintenance occurs on at least 15 percent of System trail miles annually.
3.	Deferred maintenance needs have declined on at least 10 miles of System trails.

4.	There are fewer than 1,400 miles of System roads on the Shoshone.
5.	At least three new, wheeled motorized trail loop opportunities are available.

Standard for roads and trails

Roads and trails	
1.	Maintain roads at the minimum maintenance level that meets the management objectives for the area.

Guidelines for roads and trails

Roads and trails	
1.	Management activities that impact existing trails should allow for existing recreation use to continue when possible.
2.	Management activities that impact existing trails should restore trail conditions following the conclusion of the activity.
3.	Gates installed on System roads should be a minimum of 14 feet in length in order to facilitate passage of equipment, such as snow groomers, yarders, heavy equipment, etc.
4.	New unauthorized routes should be closed and rehabilitated as soon as practicable.
Minerals	
5.	Any new road constructed for mineral activity should be obliterated unless the road is needed for future management or access.

Management approach

National Forest System roads and trails use these criteria:

- Use conforms to identified management objectives for roads and trails.
- Roads and trails serve an existing or identified use or public need.
- Close or decommission routes if:
  - The travelway cannot be maintained due to natural events or human causes
  - Unacceptable damage occurs to soil, wildlife, flora, cultural, aquatic, or other resources
  - Financing or partnerships are not available to perform critical maintenance
  - Route is not needed for access, or multiple routes exist

Changes to roads and trails are supported by transportation and environmental analyses. Emphasis for maintaining long-term access is to provide primary recreation routes, to maintain access to timber production areas, and to maintain access for fire suppression in the wildland urban interface.

Travel management planning following Plan implementation will result in the designation of a system of roads, trails, and areas for motorized use by vehicle class and season of use. The principal goals of travel management planning are to

- Reduce the development of unauthorized roads and trails and the associated impacts to water resources and aquatic ecosystems, wildlife, and user conflicts
- Identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands

The travel management planning process will aim to provide a variety of road and trail access opportunities for recreation, special uses, other forest resource management, and fire protection activities.

Planning, design, and operation will seek to maximize user experience while addressing safety and resource protection needs. Routes not included in the transportation system will be prioritized for decommissioning.

Roads

Opportunities for moving toward a sustainable transportation system will be addressed in project level planning and during Forest-wide travel management planning. Emphasis on National Forest System roads is to reduce deferred maintenance, generally focusing on safety issues and prism integrity for passenger cars on maintenance levels 3, 4, and 5 roads and on safety issues and reducing resource impacts on maintenance levels 1 and 2 roads. Eliminating safety issues and protecting resources will receive the highest priority for funding. Coordination and cooperation, including cost sharing, with local jurisdictions and partners, are important in the maintenance of roads.

Funding priorities for road maintenance will be identified in annual road maintenance plans.

Temporary roads are used when new long-term road access conflicts with desired conditions for the area or when the need is of limited duration. Temporary roads are designed and constructed to result in minimal ground disturbance and minimal cost to the authorized party. Public use is not consistent with the purpose of a temporary road.

Instream structure design will consider and incorporate aquatic organism passage and natural channel dimensions.

Road construction, reconstruction, maintenance, and management will incorporate proper design of all drainage devices, including instream crossings and structures, in response to anticipated increases in the intensity of thunderstorm events that may occur as the climate changes.

Trails

The overall trail strategy addresses annual maintenance and construction/reconstruction priority, following a trail's established designed use.

A focus for accomplishing trail maintenance is to work with interest groups and permittees to maintain trails. Trail maintenance is focused on highly developed main access trails to high use areas. Secondary objectives are on well-developed trails providing access to areas of moderate use and minimally developed trails providing access to lightly used areas.

New motorized trail opportunities focus on linking existing trails into loop opportunities. New non-motorized trail opportunities focus on providing experiences that are under-represented, such as mountain biking. Proposals for increasing miles of non-motorized trails are balanced with the costs of future maintenance needs on the existing trail system and recreation program capability. Where resource concerns or high maintenance costs are a concern, trail rerouting, and/or reconstruction in place, is the first solution considered.

Congressionally-designated national historic and scenic and regional forester-designated recreation trails receive higher priority than other trails for reconstruction, operation, and maintenance. The program of work for reducing deferred maintenance on trails emphasizes highly developed main access trails and reconstruction to mitigate safety and watershed issues.

Only in rare cases will single use trail systems be provided. An exception where single use may be provided might be in some local areas, where motorized and non-motorized uses may be separated to provide a safe experience and meet desired conditions. For example, in designated cross-country ski areas that are managed for non-motorized use only, restrictions for motorized over-snow vehicle use may be needed.

Other guidance

Forest Service Manual 7730 Transportation System-Operation and Maintenance

Forest Service Handbook 7709.56 Road Preconstruction Handbook

Forest Service Handbook 7709.56b Transportation Structures Handbook

Forest Service Handbook 7709.58 Transportation System Maintenance Handbook

Forest Service Handbook 7709.59 Transportation System Operations Handbook

Nez Perce National Historic Trail Comprehensive Management Plan (USDA Forest Service et al. 1990)

36 CFR 212.5 Travel Management

Land adjustments

Background

The land ownership pattern on the Shoshone is highly consolidated, with few in-holdings of private land. Management of land ownership and the Shoshone's boundaries are important to protect the public's interest in this national forest. Surveying and posting the national forest boundary, maintaining property lines, and defending public lands from trespass are activities that maintain the integrity of the Shoshone.

Desired conditions

The land ownership pattern of the Shoshone provides for efficient and effective resource management within the boundaries of the Shoshone. Rights-of-way and easements provide access to National Forest System lands.

Goals for land adjustments

	Land adjustments
1.	Secure legal entry to National Forest System lands and waters.
2.	Ownership boundaries are surveyed and clearly posted.
3.	Occupancy trespass is eliminated.
4.	Clear titles to National Forest System lands are retained.

Standards for land adjustments

	Land adjustments
1.	Retain existing access rights where they contribute to implementation of Plan direction.
2.	Recognize pre-existing rights, such as mineral rights and private property access.

Guideline for land adjustments

	Heritage resources
1.	Do not retain facilities that are ineligible for listing in the National Register of Historic Places through land donation, exchange, or purchase, unless the facilities serve a definite future purpose and funding is available for maintenance.

Management approach

Land acquisitions, transfers, and exchanges are used to consolidate or improve National Forest System boundaries, acquire inholdings, or provide for management that is more efficient.

The following will be evaluated when considering opportunities to acquire non-federal lands by purchase or exchange where lands are valuable for National Forest System purposes:

- Lands in designated wilderness areas and other congressionally classified areas
- Lands with important heritage resources, important paleontological or geologic sites, outstanding scenic values, or critical ecosystems when these resources are threatened by change of use, or when management may be enhanced by public ownership
- Lakes, streams, floodplains, wetlands, and riparian ecosystems
- Lands with important botanical, wildlife and fishery management areas, including lands that provide habitat for threatened, endangered, or sensitive animals or plants, and rare plant communities
- Lands needed to protect resource values by eliminating or reducing fire risks or soil erosion

- Lands needed to consolidate existing National Forest System lands
- Avoidance of land acquisition where it is likely that the lands will go to patent under the 1872 Mining Law unless the minerals will be donated to the United States
- Lands that will add significantly to available national forest goods and services
- Lands in a municipal supply watershed when:
  - The community does not have the capability to acquire the essential tract
  - National forest ownership will provide the best insurance against existing or potential uses that are incompatible with effective watershed management
  - The lands are suitable, and will be used for other national forest programs in addition to watershed protection
- Lands with improvements suitable for national forest purposes
- Lands with cave resources
- Lands with important outdoor recreation values

An area of emphasis is to work with willing parties to pursue acquiring important wildlife habitat or inholdings within designated wilderness.

Land adjustments are used to reduce conflicts with private land owners, eliminate trespass activities, and reduce administrative costs associated with surveys, private access easements, or title claims.

When evaluating proposed land adjustments (including land exchange, purchase, disposal, donation)

- Consider assigning a higher priority to proposals that will result in the conservation of wildlife habitat, fisheries habitat, riparian areas, wetlands, heritage resources, recreation opportunities, scenic values, watershed protection, timber resources, rangelands, or public access.
- Consider the effect of land adjustments on sensitive species habitat. Avoid land adjustments that could result in a trend toward federal listing, or loss of population viability, for any sensitive species. Sensitive species habitat can be conveyed if conveyance would not result in a trend toward federal listing or adversely impact the population viability of the species, or if effects could be mitigated.
- Assign priority to adjustment proposals that will result in acquisition of lands containing habitat identified by the U S Fish and Wildlife Service as necessary for recovery of federally listed threatened and endangered species.

In land adjustment activities (including land exchange, purchase, disposal, donation), consider the following:

- Reduction of Forest Service administrative costs and improvement of management efficiency. This includes reducing miles of landline boundaries and number of corners, eliminating potential encroachments, special uses, title claims, rights-of-way grants and easements, numbers of allotments and intermingled ownership livestock pastures, and other factors which decrease administrative costs and improve management efficiency.
- Reduction of conflicts between Forest Service and private land owner objectives, especially when conflicts are adversely impacting National Forest System management.

Evaluate the following when considering opportunities to dispose of lands:

- Lands in developed areas that have lost or are losing their national forest character
- To states, counties, cities, or other federal agencies when disposal will serve a greater public interest, than retention in federal ownership
- Lands suitable for development by the private sector, when development (such as residential, agricultural, industrial, or recreational) will not adversely affect management of adjoining National Forest System lands
- Lands isolated from other National Forest System lands
- Reserved or acquired road rights-of-way parcels that are substantially surrounded by private lands and are no longer needed
- In parcels intermingled with mineral or homestead patents
- Lands encumbered by special use authorizations and occupied by substantial structural improvements that no longer serve a greater public need
- Lands encumbered with occupancy trespass cases and encroachments involving substantial structural improvements

Boundaries are surveyed and clearly posted. Where a boundary is in question, the boundary is surveyed prior to conducting management activities when possible.

Rights-of-way are acquired to provide access to National Forest System lands. Preference is shown for acquiring perpetual easements available for use by the public. However, temporary and/or non-public rights-of-way may be acquired where perpetual public-use easements are unnecessary or infeasible.

Managers keep local governments informed of land and rights-of-way acquisition proposals so that road maintenance considerations and other local community issues are considered during the acquisition process.

Tribal rights and interests

Background

The Forest Service and federally recognized American Indian tribes have a special government-to-government relationship based on treaties, statutes, and court decisions. Lands of the Shoshone National Forest include historic homelands for several American Indian tribes. Some tribes consider certain prehistoric sites to be the homes of their ancestors. Other tribes recognize some sites and places to be of historical, cultural, and religious significance.

Desired conditions

Tribes continue to have interest in and reliance on ecosystems even as their cultures change, employing both traditional and contemporary ways of relating to their homelands and interest areas (lands where they traditionally ranged to sustain their ways of life). Lands within the Shoshone help sustain American Indians' way of life, cultural integrity, social cohesion, and economic well-being.

The Shoshone takes a proactive role on the tribes' behalf, especially in areas of treaty interest, rights, traditional and cultural resources, and ecosystem integrity. The Shoshone provides opportunities for traditional American Indian land uses and resources. The presence of

sustainable habitats is fundamental to the achievement of both useable and harvestable levels of resources significant to American Indians' traditional cultural practices, as well as to ecosystem integrity.

Goals for tribal rights and interests

	Tribal rights and interests
1.	Enhance relationships with American Indian tribes in order to better understand and incorporate tribal cultural resources, values, needs, interests, and expectations in management and allow cooperative activities where there are shared goals.
2.	Facilitate the exercise of tribal rights to meet federal trust responsibilities.

Standard for tribal rights and interests

	Tribal rights and interests
1.	Notify tribes of land tenure adjustment opportunities within their ceded lands/territories.

Guidelines for tribal rights and interests

	Tribal rights and interests
1.	When planning management activities or considering proposals for development, areas and resources important to American Indian tribal cultures should be considered and adverse effects to those sites should be mitigated.
2.	Tribes with interests should be consulted prior to or during initial scoping of site-specific project proposals in order to identify tribal interests.

Management approach

Shoshone personnel will establish an effective approach for government-to-government consultation that provides for tribal participation and facilitates the integration of tribal interests and concerns into the planning process. Line officers will meet annually with designated tribal representatives to coordinate tribal uses on National Forest System lands as provided through existing tribal rights with the United States Government.

Affected tribes will be consulted on land ownership adjustments (exchange, consolidation, or disposal) of Forest Service administered lands. During project planning, affected tribes will be consulted regarding opportunities for restoration, enhancement, and maintenance of native plant communities that are of interest to tribes when proposed activities may affect those plant communities.

The Forest Service will work with designated tribal representatives during project planning to develop protection or mitigation measures for resources important to tribes. Coordination with

tribes will occur to identify traditional cultural properties and recommend for establishment of cultural special interest areas. Traditional cultural properties and cultural special interest areas may include areas of important cultural and spiritual use, reservoirs of cultural plants or resources, or important cultural features.

Chapter 2 Management area direction

Introduction

Management areas are subdivisions of a national forest; certain emphasis directs management activities on that piece of land. Management areas are not contiguous and may occur throughout the Shoshone. Refer to the accompanying management area map for specific locations. Each management area contains a management prescription consisting of the desired conditions and accompanying standards and guidelines.

Standards and guidelines in this chapter are used in conjunction with Forest-wide standards guidelines described in chapter 1. When management area standards and guidelines conflict with Forest-wide standards and guidelines, those that are more stringent or restrictive are applied.

Management area categories

Management areas are grouped into management area categories that range from areas where natural processes dominate and shape the landscape to areas that are intensely managed. These categories are used in forest plans in the Rocky Mountain Region. The categories provide a level of consistency between management designations. This Plan uses six of the eight possible management area categories.

Management Area Category 1 – Wilderness and non-motorized back country

In category 1, ecological processes such as fire, insects, and diseases are allowed to operate relatively freely from the influences of humans. A predominantly diverse, native vegetation results from natural succession and disturbance processes, while non-native vegetation is rare. People who use category 1 areas must be self-reliant and should expect little contact with others. Few, if any, human-made facilities and structural improvements are present. Travel is non-mechanized with few exceptions. Typical types of category 1 areas are designated as wilderness and back country lands.

This category contains the following prescriptions:

1.1 Wilderness

1.1A Glacier Addition to the Fitzpatrick Wilderness

1.3 Back country recreation – year-round non-motorized

1.5A Clarks Fork of the Yellowstone River

1.6A High Lakes Wilderness Study Area

1.6B Dunoir Special Management Unit

Management Area Category 2 – Research and minimal use areas

These areas provide for conservation of representative or particularly rare and narrowly distributed ecological settings or components. They help ensure conservation of ecosystems or ecosystem components that may provide important functions, ensuring the overall sustainability of larger landscapes.

Human influences on the ecological processes are limited to the degree possible, but are sometimes evident. Types of human uses vary, but generally are not intensive. Travel is generally non-motorized. Few, if any, human-made facilities and structural improvements are present. These areas are often formally designated.

This category contains the following prescriptions:

2.2A Line Creek Plateau Research Natural Area

2.3 Proposed research natural areas

Management Area Category 3 – Natural processes predominate

Ecological values are in balance with human occupancy and consideration is given to both. Resource management activities may occur, but natural ecological processes and resulting patterns will normally predominate. Ecosystems are allowed to function naturally while resource use may change over time to accommodate the ecological factors. Although these areas are characterized by predominantly natural-appearing landscapes, an array of management tools maybe used to restore or maintain relatively natural patterns of ecological processes. This will result in some evidence of human activities. Users expect to experience some isolation from the sights and sounds of people in a setting that offers some challenge and risk. Restrictions on motorized travel may vary from area to area and from season to season. Few, if any, human-made facilities and structural improvements are present.

This category contains the following prescriptions:

3.1A Swamp Lake Botanical Area

3.1B Proposed Little Popo Agie Geological Area

3.1C Proposed Sawtooth Peatbed Geological Area

3.3A Back country recreation – year-round motorized

3.3B Back country recreation – summer non-motorized with winter motorized

3.3C Back country recreation – summer motorized with winter non-motorized

3.5 Back country recreation and forest restoration

3.6A Continental Divide National Scenic Trail

3.6B Nez Perce National Historic Trail

Management Area Category 4 – Recreation use

Ecological values are managed to provide recreational use, but are maintained well within the levels necessary to sustain overall ecological systems. Resource use for other values is not emphasized and has little impact on ecological structure, function, or composition. Human use is recreation oriented. Sights and sounds of people on the site are expected and may even be desired. Motorized transportation is common. Human-made facilities and structures are present.

This category contains the following prescriptions:

4.2 Scenic byways, scenic areas, vistas, and travel corridors

4.3 Back country access corridor

4.5A Proposed Kirwin Historical Area

Management Area Category 5 – Forested and grassland ecosystems with a variety of uses

These areas are managed to meet a variety of ecological and human needs. They are often characterized by a substantially modified natural environment. A wide variety of structure and composition is present, some showing the effects of past management activities, and others affected by predominantly natural forces such as fire, insects, and diseases.

Ecological conditions are maintained while emphasizing selected biological structures and compositions considering the range of natural variability. These lands often display high levels of investment, use, and activity; density of facilities; and evidence of vegetation manipulation. Users expect to see other people and evidence of human activities. Facilities supporting the various resource uses are common. Motorized transportation is common. Human-made facilities and structures are present.

In some ecosystems, intensive management is necessary to restore the systems to their ranges of natural variability. This management is usually a combination of prescribed fire and timber harvest treatments. These lands appear similar to natural landscapes if left to function under natural disturbance processes.

This category contains the following prescriptions:

5.1 Managed forests and rangelands

5.2 Public water supply – water quality emphasis

5.4 Managed big game crucial winter range

Management Area Category 8 – Developed areas

Ecological conditions and processes are likely to be permanently altered beyond the level needed to maintain natural-appearing landscapes. These areas are generally small.

Ecological values are protected where they affect the health and welfare of human occupancy. Human activities are generally commercial in nature and directly or indirectly provide jobs and income. Motorized transportation is common. Human-made structures and facilities are common.

This category contains the following prescriptions:

8.1 Developed recreation areas

8.2 Ski-based resorts

8.6 Administrative sites

Management area acres

Table 20 displays the acres for management areas.[26]

For some special areas, the management acres do not equal the total acres of the designated special area. This occurs when special area designations overlap with other special area designations. In those situations, the acres are shown as occurring in the most restrictive management area. The research natural areas are a prime example of this situation. The majority of the research natural area acres fall within designated wilderness areas. In areas that overlap, the acres are shown in the wilderness management area.

Table 20. Management area acres

Management area	Acres
1.1 Wilderness	1,358,592
1.1A Glacier Addition to the Fitzpatrick Wilderness	6,563
1.3 Back country recreation – year-round non-motorized	358,127
1.5A Clarks Fork of the Yellowstone Wild River	6,924
1.6A High Lakes Wilderness Study Area	15,224
1.6B Dunoir Special Management Unit	28,879
2.2A Line Creek Research Natural Area	1,278
2.3 Proposed research natural areas	12,127
3.1A Swamp Lake Botanical Area	581
3.1B Proposed Little Popo Agie Geological Area	1,714
3.1C Proposed Sawtooth Peatbed Geological Area	648
3.3A Back country recreation year-round motorized	64,243
3.3B Back country recreation summer non-motorized with winter motorized	86,413
3.3C Back country recreation summer motorized with winter non-motorized	72,735
3.5 Back country recreation and forest restoration	66,427
4.2 Scenic byways, scenic areas, vistas, and travel corridors	100,883

[26] Management Areas 3.6A, 3.6B, 8.1, and 8.6 are not mapped and are not included in the total acreage.

Management area	Acres
4.3 Back country access corridor	13,982
4.5A Proposed Kirwin Historical Area	481
5.1 Managed forests and rangelands	173,116
5.2 Public water supply – water quality emphasis	12,868
5.4 Big game crucial winter range	55,079
8.2 Ski-based resorts	1,145

Suitable uses

National Forest System lands are generally suitable for a variety of multiple uses, such as outdoor recreation, commercial livestock grazing, timber management, municipal and agricultural watersheds, and wildlife habitat. Identification of suitability for various uses and activities is an important component of a forest plan and involves social, economic, and ecological considerations. Suitability identification is guidance for projects and activities.

Uses not identified are generally suitable within management areas when that use is compatible with the management area prescriptions and the capability of the land. Final suitability determinations will be made and verified in project and activity decisions.

Water impoundments and diversions

Water impoundments and diversions include structures developed to hold water or divert water so it can be used for a particular purpose. They include everything from small dugouts for livestock watering to large dams that provide water for municipal uses.

Water impoundments and diversion suitable uses

Water impoundments and diversions are generally suitable except new, permanent water impoundments and diversions are generally not suitable in the following management areas:

1.1 Wilderness

1.1A Glacier Addition to the Fitzpatrick Wilderness

1.5A Clarks Fork of the Yellowstone River

1.6A High Lakes Wilderness Study Area

1.6B Dunoir Special Management Unit

2.2A Line Creek Plateau Research Natural Area

2.3 Proposed research natural areas

3.1A Swamp Lake Botanical Area

3.1B Proposed Little Popo Agie Geological Area

3.1C Proposed Sawtooth Peatbed Geological Area

4.5A Proposed Kirwin Historical Area

Eligible wild and scenic river segments are not suitable.

Livestock grazing

Livestock grazing includes both grazing for commercial purposes under permits and stock grazing associated with recreation use. Recreation use is commonly associated with horse use by the public in back country areas and in association with outfitter and guide operations.

Table 21 displays acres capable and suitable for commercial livestock grazing. Acres not capable include areas where forage is insufficient to provide sustainable production and areas of steep slopes not utilized by livestock.

Acres not suitable include two categories. The first category includes areas that are forested cover types that provide only transition range. The second category includes areas not included in allotments. This category includes areas where wilderness designations prohibit the expansion of grazing into areas where grazing was not occurring when the wilderness was first designated. It also includes areas where livestock grazing is not compatible with the desired conditions of the area or there is not enough capable grazing land in the area to manage for commercial livestock grazing. And finally, it includes areas within allotments where a particular management area designation is not compatible with livestock grazing. In these areas, grazing is precluded by managing livestock with fencing or other methods to restrict grazing activities. These are generally small areas associated with special area designations.

Once the acres that are neither capable nor suitable are accounted for, the remaining acres are generally suitable for commercial livestock grazing.

Commercial livestock grazing suitable uses

Recreational livestock grazing and permitted livestock grazing associated with outfitter and guide operations are generally suitable across the Shoshone.

Table 21. Lands generally capable and available for livestock grazing on the Shoshone National Forest, in acres

Total National Forest System lands 2,438,000	
Lands generally not capable for livestock grazing	
Non-forested (water, barren, rock)	339,500
Steep slopes	795,100
Total lands generally not capable for livestock grazing	1,134,600
Lands generally not suitable for livestock grazing	
Forest cover types (transition range)	631,700
Lands not included in allotments	297,000
Total lands generally not suitable for livestock grazing	928,700
Lands generally suitable for livestock grazing 374,700	

Forest products

Forest products include both commercial timber and other products such as mushrooms or Christmas trees. Table 22 displays acres available for timber harvest and timber production. Acres not available for timber harvest are based on National Forest Management Act requirements. Acres are not available if Congress, the Secretary of Agriculture, or the Chief of the Forest Service withdraw them. On the Shoshone, that includes congressionally withdrawn areas: designated wilderness, the High Lakes Wilderness Study area, and the Dunoir Special Management Unit. Other reasons areas are not available include the area cannot grow trees (rocky), harvesting could lead to irreversible soil/water damage (steep slopes), and areas cannot be restocked (harsh sites at high elevation and low elevation). Once these areas are subtracted, the remainder of the acres is generally suitable for timber harvest. These are acres where timber may be cut to meet Plan desired conditions.

The acres that are suitable for timber production are a subset of the area that is generally suitable for timber harvest. This includes the area where desired conditions include the goal of producing commercial forest products. These are areas where desired conditions are conducive to regularly scheduled harvest that results in managed stands. Areas not suitable for timber production fall into two categories. The first category includes environmentally related factors that preclude commercial timber production, for example, stands of non-commercial tree species, or other cover types such as grasslands or shrublands. The second category includes management areas where the desired conditions are not compatible with timber production. Once these acres are subtracted, the remaining acres are generally suitable for timber production. These acres contribute to the allowable sale quantity.

Forest products suitable uses

The commercial removal of other forest products (mushrooms, Christmas trees, pine cones, etc.) is generally suitable, except removal is generally not suitable in wilderness, research natural areas, wild rivers, and special areas.

Table 22. Summary of suitability of areas for timber harvest and production on the Shoshone National Forest, in acres

Total National Forest System lands 2,438,000	
Lands generally not suitable for timber harvest	
Withdrawn by Congress, Secretary of Agriculture, or Chief of the Forest Service	1,429,600
Non-forested lands (water, barren, rock)	50,700
Potential for irreversible soil/water damage	274,500
Restocking in five years not assured	13,900
Total lands generally not suitable for timber harvest	1,768,700
Lands generally suitable for timber harvest 669,300	
Lands generally not suitable for timber production	
Moraine soil type (highly rocky soils not compatible with timber production)	7,100
Non-commercial timber species	66,300
Grasslands and shrub lands	248,000
Management area direction	220,900
Total lands generally not suitable for timber production	542,300
Lands generally suitable for timber production 127,000	

Minerals

Minerals includes locatable minerals (gold, lead, etc.), mineral materials (gravel, stone, etc.), and leasable minerals (coal, oil, gas, etc.).

Minerals suitable uses

Mineral development is generally suitable on the Shoshone outside areas that have been withdrawn from minerals development, special areas, and proposed special areas.[27]

[27] As established in various laws, areas previously withdrawn from minerals development include designated wilderness, the designated wild segment of the Clarks Fork of the Yellowstone River, Dunoir Special Management Unit, and High Lakes Wilderness Study Area. The Kirwin property is also effectively withdrawn as all hard rock minerals are leasable, not locatable, on all lands acquired as the Kirwin property, and hard rock minerals are administratively unavailable to leasing on the Kirwin property (USDA Forest Service 1995c).

Recreation opportunities, roads, and trails

This section displays the suitable uses for recreation and roads and trails related activities. These uses are presented together because of the high degree of integration in providing these opportunities.

Table 23 displays motorized, mechanized, and road suitability for each management area. The occurrence of these opportunities is a key element in the development and allocation of management areas.

Recreation opportunity suitable uses

Non-motorized dispersed recreation is generally suitable throughout the Shoshone.

New recreation facility development is generally suitable within management area categories 4, 5, and 8.

Table 23 displays what areas are generally suitable or generally not suitable for wheeled vehicle recreation.

Recreation residences[28] are generally suitable uses within existing, occupied recreation residence permit lots or tracts and are generally not suitable in other areas. These areas are included in Management Area 8.1.

Resort operations are generally suitable within designated permit areas and are generally not suitable in other areas. These areas are included in Management Area 8.1.

Downhill skiing operations are generally suitable within designated permit areas and are generally not suitable in other areas. These areas are included in Management Area 8.2 and within the Red Lodge Race Camp permitted area.

Roads and trails suitable uses

Road management is generally suitable on existing National Forest System roads, including maintenance and reconstruction.

Motorized trail management is generally suitable on existing motorized trails, including maintenance and reconstruction.

Non-motorized trail management is generally suitable on the Shoshone, including maintenance, reconstruction, and construction.

Motorized travel route management including maintenance, reconstruction, and construction is generally suitable in the areas shown suitable for motorized trail and road construction (Table 23).

[28] Recreation residences are a valid use of National Forest System lands (Forest Service Manual 2347.1 Privately Provided Recreation Opportunities-Noncommercial Recreation Use).

Table 23. General suitability for wheeled vehicular recreation and motorized travel route construction

Management area	Non-motorized bicycles	Wheeled motorized on designated routes	Over-snow motorized	National Forest System road construction[29,30]	Temporary road construction[31]	Motorized trail construction
1.1 Wilderness	No	No	No	No	No	No
1.1A Glacier Addition to Fitzpatrick Wilderness[32]	No	No	No	No	No	No
1.3 Back country year-round non-motorized	Yes	No	No	No	Yes	No
1.5A Clarks Fork of the Yellowstone Wild River	Yes	Yes	Yes	No	No	No
1.6A High Lakes Wilderness Study Area	Yes on National Forest System roads and trails	No	Limited[33]	No	No	No
1.6B Dunoir Special Management Unit	No	No	No	No	No	No

[29]Unless needed to honor existing rights.
[30] Suitability direction applies, except when 2001Roadless Area Conservation Rule direction is more restrictive.
[31] Suitability direction applies, except when 2001Roadless Area Conservation Rule direction is more restrictive.
[32]To manage bighorn sheep populations and habitat, the Glacier Addition to the Fitzpatrick Wilderness is generally suitable for occasional motorized activity, timber harvest, other vegetation treatments, and related activities.
[33] Snowmobiling is authorized to the same manner and degree as was occurring prior to the Wyoming Wilderness Act of 1984.

Management area	Non-motorized bicycles	Wheeled motorized on designated routes	Over-snow motorized	National Forest System road construction[29,30]	Temporary road construction[31]	Motorized trail construction
2.2A Line Creek Plateau Research Natural Area	Yes on National Forest System roads and trails	No	Limited[34]	No	No	No
2.3 Proposed research natural areas	Yes on National Forest System roads and trails	No	Yes	No	No	No
3.1A Swamp Lake Botanical Area	Yes on National Forest System roads and trails	Yes	No	No	No	No
3.1B Proposed Little Popo Agie Geological Area	Yes on National Forest System roads and trails	Yes	Yes	Yes	Yes	Yes
3.1C Proposed Sawtooth Peatbed Geological Area	Yes on National Forest System roads and trails	Yes	Yes	No	No	No
3.3A Back country year-round motorized	Yes	Yes	Yes	No	Yes	Yes

[34] Over-snow recreation is generally suitable within the Twin Lakes Basin and within the U S Highway 212 250-foot centerline easement. Motorized over-snow recreation is not suitable elsewhere within the Line Creek Plateau Research Natural Area.

Management area	Non-motorized bicycles	Wheeled motorized on designated routes	Over-snow motorized	National Forest System road construction[29,30]	Temporary road construction[31]	Motorized trail construction
3.3B Back country summer non-motorized, winter motorized	Yes	No	Yes	No	Yes	No
3.3C Back country summer motorized, winter non-motorized	Yes	Yes	No	No	Yes	Yes
3.5 Back country recreation and forest restoration	Yes	Yes	Yes, may be restricted in big game crucial winter range	No	No	Yes
3.6A Continental Divide National Scenic Trail	Yes, outside wilderness where it does not interfere with the nature and purposes of the Trail	Yes, outside wilderness	Yes, outside wilderness and may be restricted in big game crucial winter range	No	Yes	No
3.6B Nez Perce National Historic Trail	Yes, outside wilderness where it does not interfere with the nature and purposes of the Trail	Yes, outside wilderness	Yes, outside wilderness and may be restricted in big game crucial winter range	No	Yes	No
4.2 Scenic byways, scenic areas, vistas, and travel corridors	Yes	Yes	Yes	Yes	Yes	Yes

Management area	Non-motorized bicycles	Wheeled motorized on designated routes	Over-snow motorized	National Forest System road construction[29,30]	Temporary road construction[31]	Motorized trail construction
4.3 Back country access corridor	Yes	Yes	Yes	Yes	Yes	Yes
4.5A Proposed Kirwin Historical Area	Yes	Yes	Yes	Yes	Yes	Yes
5.1 Managed forests and rangelands	Yes	Yes	Yes	Yes	Yes	Yes
5.2 Public water supply – water quality emphasis	Yes	Yes	Yes	Yes	Yes	Yes
5.4 Big game crucial winter range	Yes	Yes	No, exceptions allowed for existing snowmobile routes and play areas	Yes	Yes	Yes
8.1 Developed recreation areas	Yes	Yes	Yes	Yes	Yes	No
8.2 Ski-based resorts	Yes	Yes	No	Yes	Yes	Yes
8.6 Administrative sites	Yes	Yes	Yes	Yes	Yes	Yes

Management Area 1.1– Wilderness

Theme

Wilderness areas are established by an act of Congress that creates the areas and provides direction for management. The primary management mandate in the 1964 Wilderness Act is to preserve wilderness character and to perpetuate the areas' natural conditions "while allowing for the use and enjoyment of wilderness in such a manner as will leave them unimpaired for future use and enjoyment as wilderness."

Setting

The Shoshone National Forest contains approximately 1.4 million acres of designated wilderness, which accounts for about 55 percent of the Shoshone.

The Absaroka-Beartooth Wilderness, designated in 1978, covers 943,626 acres in Montana and Wyoming (23,673 acres on the Shoshone). The area is dominated by high granite plateaus of the Beartooth Mountains cut by deep canyons and large expanses of tundra habitats, rare in the lower 48 states.

The Fitzpatrick Wilderness was designated in 1976.The 198,897-acre area holds 44 active glaciers and many rugged mountain peaks in the northern half of the Wind River Mountains, including Wyoming's highest point, Gannett Peak.

The North Absaroka Wilderness was designated in 1964. Rugged volcanic mountains dissected by numerous creeks forming huge drainages are typical scenes in the 346,170-acre North Absaroka Wilderness.

Designated in 1984, the Popo Agie Wilderness – 102,587 acres – contains many high granite peaks and alpine and subalpine lakes in the southern portion of the Wind River Mountains.

At 693,828 acres, the Washakie Wilderness, designated in 1964, is Wyoming's largest wilderness area. The area is characterized by broad, flat-topped mountains and plateaus separated by narrow valleys and unusual geological formations.

Wilderness lands are categorized into three recreation settings—pristine, primitive, and semi-primitive— describing the relative naturalness and level of remoteness of the area.

Desired conditions

Wilderness areas preserve and protect the wilderness character of the area and provide outstanding opportunities for solitude and primitive recreation. Wilderness areas are affected primarily by the forces of nature. Wilderness area ecological systems are substantially free from the effects of modern civilization. Ecological processes such as fire, insects, and diseases operate relatively freely from the influences of humans. Fires play, as nearly as possible, their natural ecological role within wilderness. Wilderness areas are free of invasive species.

Wilderness retains its primitive character and influence and is essentially without permanent improvements. Facilities and improvements within wilderness are the minimum needed to protect the resources for which the wilderness was designated.

Forest management strategies support recreational and educational activities when in alignment with the preservation of wilderness character.

The wilderness management area consists of three settings that provide differing levels of solitude and isolation: pristine, primitive, and semi-primitive.

The pristine settings provide natural biophysical conditions and a high degree of solitude for both wildlife and humans with no perceptible evidence of human use. Pristine wilderness provides outstanding opportunities for solitude and isolation. Opportunities for unconfined recreation are maximized. Evidence of human use is not noticeable and does not impact natural biological processes. Encounters with small groups or individuals are infrequent. All travel is cross country.

The primitive settings provide substantially natural biophysical conditions. Primitive wilderness provides opportunities for solitude. On-site regulation of recreation use is minimal. Campsites are dispersed; usually one will neither hear nor see visitors at adjacent campsites. Encounters with small groups and individuals are limited. Trails are available for travel. Travel is cross country or by use of a low density constructed trail system. Human influences on biophysical conditions and natural biological processes are minimal. Human uses and activities may be evident in the areas of highest visitor use.

Semi-primitive settings provide essentially natural biophysical conditions. In semi-primitive wilderness, trails concentrate use and provide access to popular destinations and travel routes. Encounters with other users can be frequent. Campsites are either dispersed or clustered around destinations and show evidence of repeated but acceptable levels of use. Management actions to mitigate visitor use impacts may be noticeable. Human uses and activities are evident in the areas of highest visitor use. Human activities may influence biophysical conditions and natural biological processes.

Goals for Management Area 1.1

Management Area 1.1	
1.	Each wilderness is as wild as at the time of designation.
2.	Preserve and improve the characteristics of wilderness areas.
3.	Control invasive plants within wilderness areas, concentrating on spreading populations that cause, or may cause, serious adverse impacts on wilderness values.
4.	Permit fire to play, as nearly as possible, its natural ecological role within wilderness.
5.	Fire, as an ecological process, operates relatively freely from the influences of humans.
6.	Carcass and food storage structures are provided and maintained at high priority sites, such as outfitter and guide assigned sites and high use areas.

7.	Historic structures, including eligible or listed National Register of Historic Places sites, are managed to maintain their historic values and the area's wilderness characteristics.

Objective for Management Area 1.1

Management Area 1.1	
1.	Wilderness character will improve by 10 percent, split proportionally by setting.

Standards for Management Area 1.1

Vegetation	
1.	Implement revegetation for rehabilitation of areas where natural revegetation possibilities are poor, and only where degradation was due to human activities. Where readily available, use genetically appropriate native species for revegetation.
Invasive species	
2.	If invasive plants pose a substantial threat to wilderness values and hand treatment is not effective, chemical or biological controls may be used.
Fire and fuels	
3.	Minimum impact suppression techniques will be used on all wilderness fires.
Insects and diseases	
4.	Control natural insect and disease outbreaks only when they threaten resource values outside the wilderness boundary.
Commercial livestock grazing	
5.	Range improvements are limited to those necessary to maintain existing permitted livestock use and achieve desired conditions.
Recreation	
6.	Recreation use shall comply with the standards in Table 24.
7.	Pets in the wilderness must be under control (either by voice or by physical constraint, such as a leash).
8.	Implement a limited quota permit system (for either day use or overnight use), mandatory registration, or other measures (such as area closures) as necessary to meet desired conditions for recreation use.
9.	Physical geocaches (a cache where objects are left) are prohibited.

10.	Do not authorize competitive events, including competition involving physical endurance of a person or animal, foot races, canoe or boat races, competitive trail rides, survival exercises (including military), or other activities of this nature.
11.	Permit only those uses authorized by wilderness legislation that cannot be reasonably met on non-wilderness lands.
12.	The use of power drills for installation of fixed protection, including webbing, bolts, or pitons, and practices such as chipping, glue, and epoxy for hand and footholds, or use of other fixatives for climbing, are prohibited.
Roads and trails	
13.	Obliterate decommissioned trails, as opportunities exist.
14.	Construct trail bridges only where no safe opportunity exists for crossing a stream or gorge during normal flows.
Lands adjustments	
15.	Wilderness boundary lines shall be surveyed, marked, and posted to applicable Forest Service standards when a management activity occurs immediately adjacent to wilderness.

Table 24. Recreation standards for Management Area 1.1

Category	Pristine	Primitive	Semi-primitive
Encounters – number of parties on trails or cross country routes per eight-hour day (season average)	2	6	10
Campsite – spacing	No other occupied campsites visible or audible from any other campsite	At least 500 feet between occupied campsites	At least 300 feet between occupied campsites
Campsite – condition (impact rating)	Rapid assessment rating of 1 or less[35]	Rapid assessment rating of 2 of less	Rapid assessment rating of 6 or less
Campsite – condition (disturbance to groundcover)	Rapid assessment rating of 1 or less	Rapid assessment rating of 2 or less	Rapid assessment rating of 3 or less
Campsite – condition (tree damage)	Rapid assessment rating of 0	Rapid assessment rating of 0	Rapid assessment rating of 1 or less

[35] Rapid assessment ratings for Forest Service Rocky Mountain Region wilderness areas are described at http://www.wilderness.net/index.cfm?fuse=toolboxes&sec=recsitemonitor.

Guidelines for Management Area 1.1

Fire and fuels	
1.	Helispots and spike camps should be located outside wilderness areas whenever feasible.
Commercial livestock grazing	
2.	Existing livestock grazing may continue at existing use levels.
3.	New fences/improvements can be authorized if consistent with the allotment management plan, wilderness setting, and necessary for the protection of the range.
Special uses	
4.	New outfitter and guide permits should not be issued if they exceed established limits of acceptable threshold values.
5.	Outfitter and guide permit renewals should be reevaluated when unacceptable resource damage is documented.
6.	Outfitter and guide livestock use should follow the same utilization standards as general livestock grazing.
7.	Outfitters and guides should be instructed to practice and teach Leave No Trace principles.
Recreation	
8.	Leave No Trace camping guidelines should be visible at trailheads and other highly used entry points.
9.	Fixed anchors are appropriate and allowed where necessary to enable a rappel when no other safe means of descent are available, in areas impassable by the use of removable anchors, and in areas where resource conflicts do not exist.
Scenery	
10.	Manage for a Scenic Integrity Objective of very high.

Roads and trails	
11.	Only the minimum signing necessary should be provided. Examples include signing for resource protection, directional signs at trail junctions, and wilderness boundary signing on mainline trails.
12.	When selecting and falling possible hazard trees, techniques should be used to reduce, as much as possible, the impacts to wilderness characteristics and the area's natural conditions.
Land adjustments	
13.	Wilderness boundary posting should be maintained at recurring wilderness trespass locations and along motorized routes immediately adjacent to wilderness.

Standards for the pristine wilderness setting

Special uses	
1.	Do not authorize outfitter and guide assigned sites. Commercial use shall be primarily pass-through use.
Recreation	
2.	There shall be no System trails within this setting. User travel should be cross country and be managed so that travel routes are not readily apparent.
3.	There shall be no food or carcass storage structures within this setting.

Management approach

Management emphasis for designated wilderness on the Shoshone includes:

- Food/carcass storage infrastructure—Identify minimum food/carcass storage infrastructure needed to reduce bear/human conflicts and be consistent with wilderness values.
- Invasive species management—Limit threats from invasive plants, aquatic invasives, and white pine blister rust. Management of invasive species will employ methods determined to have the least impact on wilderness values in the long run. Use of herbicides will require regional forester approval, via submittal of Pesticide Use Proposals and a Minimum Requirements Decision Guide. Requests for herbicide use will involve full coordination at the local level including wilderness, range, botany, wildlife, recreation, and other disciplines.
- Reintroduction of Yellowstone cutthroat trout—Coordinate the need to reestablish Yellowstone cutthroat trout and be consistent with wilderness values. Follow the direction contained in *Policies and Guidance for Fish and Wildlife Management in National Forest Service and Bureau of Land Management Wilderness* (Association of Fish

and Wildlife Agencies et al. 2006). Fish and wildlife management activities should emphasize the sustainability of natural processes and locally native species.

- Hazard trees – When selecting and falling hazard trees, the impacts on wilderness character and the increased assumption of personal risk in wilderness should also be considered. Once a determination to fall hazard trees has been made, techniques such as feathering the edges of cut areas; flush cutting, scoring, and camouflaging stumps; use of prima-cord to fall trees; multi-direction falling, etc., should be used to reduce the impacts on the wilderness characteristics and natural appearance.
- Funding—Multi-finance wilderness management.

Education and indirect management techniques are the primary tools for protecting wilderness resources. Public education and interpretation programs foster wilderness values and help maintain environmental qualities and primitive recreation experiences. Existing programs will be reviewed to ensure efficiencies are optimized and take advantage of practical venues for wilderness education.

Natural fires will be allowed to play, as nearly as possible, their natural ecological role within wilderness. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives. A wilderness resource advisor should be designated for all wilderness fires. Prescribed fire is one tool that managers may use to enhance conditions to safely allow fire to play a natural role in wilderness. Under an approved prescribed burn plan, prescribed fire may be used to reduce the risk and consequences of wildfire escaping from wilderness.

Human impacts in wilderness will be minimized by considering:

- Limiting the number of outfitter and guide camps
- Encouraging the use of self-contained stoves and discouraging the use of wood-fueled fires
- Use of a permit system
- Further limitations on party size and pack animals
- A required self-registration system to collect use data and educate visitors to wilderness regulations and Leave No Trace practices when biological, physical, or social conditions dictate the need for additional information about use levels and patterns and the need to disseminate wilderness regulations and information to visitors

Climbing, including the use and placement of fixed anchors where necessary to ensure climber safety, is an appropriate activity in wilderness. Climbing that does not rely on the use and placement of fixed anchors and is consistent with Leave No Trace ethics and skills should be the norm in wilderness. If fixed anchors are used and deemed necessary for the protection of the wilderness, an authorization may be required to replace or remove an existing fixed anchor, or to place a new fixed anchor.

Wilderness character baseline monitoring data should be completed within five years of Plan approval and updated every five years as needed.

Trail maintenance should emphasize public health and safety and resource protection.

Other referenced guidance

Shoshone National Forest Guidelines for Commercial Filming (USDA Forest Service 2010b)

Management Area 1.1A – Glacier Addition to the Fitzpatrick Wilderness

The management area direction for Management Area 1.1 also applies to Management Area 1.1A – Glacier Addition to the Fitzpatrick Wilderness.

Theme

This area was established in the Wyoming Wilderness Act of 1984, which specifically addresses bighorn sheep and recognizes them as an integral part and resource highlight of this wilderness area. The Act states, "Occasional motorized access for administrative purposes and related activities as determined by the Secretary for habitat management, trapping, transporting, and proper management of the area's bighorn sheep population may be allowed."

Setting

The Glacier Addition to the Fitzpatrick Wilderness was designated in 1984.The area is characterized by splendid alpine meadows, rocky plateaus, and stands of virgin timber. The area is home to the Whiskey Mountain bighorn sheep herd, one of the largest wintering Rocky Mountain bighorn sheep herds in North America.

Desired conditions

Natural biophysical conditions are provided to maintain or enhance bighorn sheep and their habitat while protecting wilderness values. There is generally only limited and site-specific evidence of human use. There may be occasional motorized access for administrative purposes and related activities for habitat management, trapping and transporting, and other appropriate management of the bighorn sheep herd.

Standard for Management Area 1.1A (standards for Management Area 1.1 also apply to this area)

Species of local concern	
1.	Motorized equipment use is limited to the minimum necessary to trap, transport, manage habitat, and administratively manage bighorn sheep.

Guideline for Management Area 1.1A (guidelines for Management Area 1.1 also apply to this area)

Species of local concern	
1.	Utilize the *Whiskey Mountain Bighorn Sheep Habitat Management Plan* (Bighorn Sheep Technical Committee 2006) when proposing management activities benefiting bighorn sheep.

Management approach

Area management will be responsive to priorities and goals expressed in the *Whiskey Mountain Bighorn Sheep Habitat Management Plan* (Bighorn Sheep Technical Committee 2006), using the Wyoming Wilderness Act of 1984 and the Wilderness Act of 1964 as legislative direction.

Natural fires will be allowed to play, as nearly as possible, their natural ecological role within wilderness. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives. Prescribed fire is one tool that managers may use to enhance conditions to safely allow fire to play a natural role in wilderness. Under an approved prescribed burn plan, prescribed fire may be used to reduce the risks and consequences of wildfire escaping from wilderness.

Management Area 1.3 – Back country recreation year-round non-motorized

Theme

Back country, non-motorized recreation areas are managed to provide recreation opportunities in a natural-appearing landscape.

Setting

These areas are unroaded or have little evidence of past road construction. They have a natural appearance with little or no signs of human disturbance. They are important for providing non-motorized recreation near the primitive end of the Recreation Opportunity Spectrum.

Desired conditions

These areas are characterized by a predominantly natural-appearing environment with some slight alteration. A variety of non-motorized recreation opportunities is provided. Access is provided by non-motorized trails. Concentrations of users are low and recreationists experience a high degree of solitude. Evidence of past human uses, such as dispersed campsites, exists. Though not common, evidence of current and past resource management activities, such as timber harvest and prescribed fire, exists. Commercial livestock and evidence of their use and management (e.g., salting areas, fences, and water developments) may be present. Ecological processes such as fire, insects, and diseases become more prevalent as one moves further into the back country.

Standards for Management Area 1.3

Minerals	
1.	Mineral leases will include a stipulation for no surface occupancy.
Roads and trails	
2.	Prohibit new National Forest System road construction or reconstruction unless necessary to honor valid existing rights.

Guidelines for Management Area 1.3

Vegetation	
1.	Allow the cutting or removal of trees under circumstances such as reducing fuel loads and fire risk, especially adjacent to private land; curtailing an imminent threat of insect attack; salvaging dead trees to enhance a scenic view from a prominent overlook; or maintaining wildlife habitat diversity or maintenance of existing facilities.
Recreation	
2.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive non-motorized.
Scenery	
3.	Manage for a Scenic Integrity Objective of moderate to high.
Roads and trails	
4.	Limit all motorized use, including snowmobile use, to authorized administrative, law enforcement, search and rescue, fire suppression, and emergency purposes. (Administrative purposes include motorized use authorized by special use authorization.)
5.	Temporary roads should be one mile or less in length and should be revegetated and physically blocked after use.

Management approach

Cutting small diameter trees may occur to maintain or improve one or more of the back country area's characteristics and to improve habitat for listed species. Vegetation projects may occur to maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire or insect and disease effects.

Timber harvest may be pursued if incidental to implementing a management activity that is not otherwise prohibited.

Roads constructed in these areas in conjunction with management activities will be for temporary use and will be closed and obliterated when the project is completed.

Recreation management in these areas may include maintenance of non-motorized trails and construction and education/interpretation projects. Authorizations may be issued for outfitting and guiding in these areas.

Management Area 1.5A – Clarks Fork of the Yellowstone Wild River

Theme

In 1990, the Clarks Fork Wild and Scenic River Designation Act designated a 20.5-mile segment of the Clarks Fork of the Yellowstone River to be included in the National Wild and Scenic Rivers System. The legislation designated the river corridor (0.25 mile on each side of the river's ordinary high water mark) as a wild river.

Wild rivers are those rivers or sections of rivers that are free of impoundments, protect the outstandingly remarkable values and water quality of the rivers, and have essentially primitive shorelines.

Setting

There are three outstandingly remarkable values identified for the Clarks Fork of the Yellowstone River:

Scenic—deep chasms, soaring cliffs, and whitewater provide outstanding scenery in the canyon. The overall setting has stunning vistas of mountain scenery, magnificent geology and landforms, and outstanding opportunities for wildlife viewing.

Recreational—the canyon provides high potential for challenging and superb whitewater kayaking. Recreation based on natural beauty, relative solitude, and the opportunity to view natural settings and wildlife abound in the river corridor.

Historical—Chief Joseph and the Nez Perce are said to have escaped through the mouth of the lower canyon as they eluded the U.S. cavalry in 1877. The Clarks Fork is named for William Clark of the Lewis and Clark Expedition.

Desired conditions

The designated wild segment of the Clarks Fork of the Yellowstone River and its corridor retain free-flowing status, water quality, outstandingly remarkable values, and its wild classification.

Management of the corridor is in the context of providing opportunities for dispersed, primitive, river-oriented recreation as well as semi-primitive, non-motorized, and motorized recreation on the designated routes that existed when the river was designated.

The corridor is naturally appearing with a primitive, undeveloped character and a high scenic integrity. The corridor is generally inaccessible to motorized access except on a small number of designated routes. Visitors to the wild river corridor find opportunities for solitude and primitive recreation, especially in portions of the corridor accessible only by foot, bicycle, kayak, or pack and saddle stock.

A variety of recreation opportunities is provided including hiking, fishing, horseback riding, primitive camping, kayaking, bicycling, scenic viewing, driving motorized vehicles on designated routes, and other recreational pursuits. User densities are low and encounters with other users are limited, especially away from access points.

Motorized routes provide access to private property and access for recreational pursuits, including kayaking.

Educational and interpretive materials present the outstandingly remarkable values of the Clarks Fork wild river to the public and encourage Leave No Trace principles. Water quality is high and meets State of Wyoming water quality standards to fully support State of Wyoming designated beneficial uses.

Commercial opportunities are limited. No use allocations or special use authorizations are or will be authorized for commercial boating or kayaking in the designated river corridor. No new commercial permits will be issued, but existing permits will be reissued when they come up for renewal and may be transferred to new owners. Outfitters are required to report and break out wild and scenic corridor days from their larger authorized area. This information will then be used to cap service days within the corridor at the level being used within the canyon and will not be increased.

Existing occurrences of invasive plant species are declining and new outbreaks of invasive plant and aquatic species are eliminated or prevented.

Commercial livestock grazing aids in maintaining vegetation conditions and supporting local communities and economies while protecting the outstandingly remarkable values for which the corridor was designated.

New or upgraded utility transmission lines do not substantially detract from the high scenic integrity of the corridor.

Management direction and actions include consideration for increasing enforcement and fines. In the event that monitoring indicates a lack of compliance with motorized use restrictions, management direction is to pursue options with local authorities to implement special orders and increase the fines for unauthorized use. Long-term motorized access on Forest Road 119 would be subject to regulation or closure if monitoring indicates adverse impacts to the outstandingly remarkable values of the river corridor are occurring.

Standards for Management Area 1.5A

Water and soil	
1.	Dams and other water developments that restrict the free-flowing condition of the river are precluded.
2.	Manage stream flow according to State of Wyoming Permit No. W.S.1.
3.	Installation of measuring devices deemed necessary for the administration of instream flow and ordered by the State Engineer under W.S. 41-3-1003(a) is allowed.
Special uses	
4.	Special or competitive events are not permitted.
5.	New commercial outfitting permits that include the designated river corridor will not be issued.
6.	Authorized service days within the designated river corridor will not be increased for commercial outfitting permits.

Minerals	
7.	Mineral entry or leasing is prohibited. A mineral withdrawal exists 0.25 mile wide on each side of the river.
8.	Casual collecting (i.e., panning for gold by hand) is not allowed in the designated river corridor.
Recreation	
9.	Public or recreational use of motorized aircraft, including but not limited to, helicopters, motorized hang gliders, planes, etc. are prohibited from landing in the designated river corridor or streambed.
10.	Motorized watercraft are prohibited.
11.	New roads, campgrounds, picnic areas, and trailheads are not allowed.
12.	Memorial or dedication sites are prohibited except that a single memorial site that recognizes the dedication of the river is permitted. Any such memorial would be constructed of native materials and consist of a low profile stone monument, or something similar, with an appropriate plaque.
13.	Camping is prohibited in the lower corridor except in tents. Camping in recreational vehicles, camping trailers, or other motorized dispersed camping is not allowed beginning at the western edge of Township 56 North, Range 104 West, Section 34 downstream to the end of the designated river corridor.
Roads and trails	
14.	Wheeled motorized vehicles are restricted to Forest Roads 110, 119, 165, 174, 178. 1A, and 178.1B. In the lower corridor, motorized traffic is not permitted off designated routes for the purpose of dispersed camping or any other generally permitted activity. This excludes snowmobiles traveling over snow.
Land adjustments	
15.	Do not dispose of National Forest System lands.

Guidelines for Management Area 1.5A

Water and soil	
1.	Standards for Class 1 streams as prescribed in Wyoming Water Quality Rules and Regulations, chapter 1, should be adhered to.
Management indicator species	
2.	Fish habitat improvement projects and structures that do not adversely affect the free-flowing condition of the river would be allowed.

Invasive species	
3.	Use of motorized vehicles to control invasive plants is allowed, with use of motorized vehicles restricted to designated routes. Control efforts in other areas are conducted on foot or horseback.
4.	Activities should be conducted in a manner that prevents the introduction of aquatic nuisance species in riparian and aquatic habitats.
Fire and fuels	
5.	Prescribed burning that is consistent with the wild river values and maintenance/enhancement of vegetation diversity is allowed
Insects and diseases	
6.	Control natural insect and disease outbreaks only when they threaten resource values outside the wild and scenic river corridor.
Commercial livestock grazing	
7.	Fences should be constructed to be visually unobtrusive.
8.	Commercial livestock grazing is permitted and administered under long-term and annual operating plans that include measures necessary to protect river values.
9.	New range improvement structures should not be authorized unless they provide additional protection of river values.
Forest products	
10.	Timber harvest, including commercial timber harvest, vegetation removal or treatment, and forest product removal is generally not allowed except for the removal of hazard trees.
Special uses	
11.	Replacement of existing power lines is allowed; new power lines within the designated corridor should be discouraged.

Recreation	
12.	Special orders will be established as needed to protect resources, reduce conflicts, or manage use within the designated river corridor. The orders will be established under the authority provided by 36CFR 261.58(z) that covers special orders within wild and scenic river corridors.
13.	Helicopter use, including landings, for administrative access by the Forest Service, Wyoming Game and Fish Department, county sheriff, or other agency or entity with a legitimate need for research and management activities, animal capture or wildlife surveys, emergencies, search and rescue, wildfires, etc. could continue with prior notification of the Forest Service of planned activities.
14.	Low-intensity development (such as interpretive signs) of cultural resource properties compatible with river designation is allowed.
15.	Campsites, campfires, and human waste disposal should be at least 100 feet from the river shoreline to protect water quality
16.	Non-commercial groups should be limited to 15 persons and 15 head of saddle and/or pack animals.
17.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive.
Scenery	
18.	Manage for a Scenic Integrity Objective of very high.
Roads and trails	
19.	The designated motorized routes within the river corridor should be maintained as primitive routes for off-highway vehicles or high clearance vehicles.
Land adjustments	
20.	Reasonable access to private land is allowed. Any access to private land in or proximate to the corridor should be on private land where possible.

Management approach

Management of the corridor is in the context of providing opportunities for dispersed, primitive, river-oriented recreation as well as semi-primitive, non-motorized, and motorized recreation on the designated routes that existed when the river was designated.

Management actions include consideration for increasing enforcement and fines. In the event that monitoring indicates a lack of compliance with motorized use restrictions, management direction is to pursue options with local authorities to implement special orders and increase the fines for unauthorized use. Long-term motorized access on Forest Road 119 is subject to

regulation or closure if monitoring indicates that adverse impacts to the outstandingly remarkable values of the river corridor are occurring.

The Forest Service will:

- Pursue opportunities to acquire scenic easements or lands from willing seller(s) within the corridor as a means to ensure long-term protection of the corridor's scenic values
- As appropriate, work with State of Wyoming and Park County authorities to maintain zoning of private land in a manner compatible with protecting outstandingly remarkable values and river management goals
- Cooperate and coordinate with State of Wyoming, local, other federal agencies, and stakeholders to establish partnerships to protect the wild river characteristics and outstandingly remarkable values of the river

Natural and prescribed fires play a role in maintaining vegetation conditions and diversity. Active suppression occurs where necessary to protect life, investments, and the outstandingly remarkable values for which this river was designated. Suppression activities are conducted in a manner to reduce the visual impacts from the river corridor.

Management Area 1.6A – High Lakes Wilderness Study Area

Theme

Wilderness study areas are established by an act of Congress that creates the areas and provides direction for their management. The High Lakes Wilderness Study Area was designated in the Wyoming Wilderness Act of 1984.

The Act states,

> Subject to valid existing rights and reasonable access to exercise such rights, until Congress determines otherwise, the . . . High Lakes Wilderness Study Area shall be administered by the Secretary of Agriculture so as to maintain [its] presently existing wilderness character . . . . [W]ithin the . . . High Lakes . . . Wilderness Study Area, snowmobiling shall continue to be allowed in the same manner and degree as was occurring prior to the date of the enactment of this Act.

Setting

The 15,224-acre High Lakes Wilderness Study Area is located south of the Montana border and consists of spectacular alpine and subalpine scenery and numerous lakes.

Desired conditions

The High Lakes Wilderness Study area provides opportunities for solitude and primitive recreation, especially in the summer. The area is affected primarily by the forces of nature. Ecological processes such as fire, insects, and diseases operate relatively freely from the influences of humans. The area is free of invasive species. The area remains unroaded and provides a non-motorized recreation opportunity in the summer and motorized and non-motorized recreation opportunities in the winter. Encounters with small groups and individuals

are low to moderate. Trails are available for travel. Human influences on vegetation are minimal.

Goals for Management Area 1.6A

Management Area 1.6A	
1.	Continue to provide motorized winter recreation opportunities.
2.	Until released from wilderness study area status, this area will be managed to prevent long-term impairment of wilderness characteristics.

Standards for Management Area 1.6A

Special uses	
1.	Do not authorize competitive events, including competition involving physical endurance of a person or animal, foot races, canoe or boat races, competitive trail rides, survival exercises (including military), or other activities of this nature.

Guidelines for Management Area 1.6A

Management indicator species	
1.	Fish stocking is allowed in waters previously stocked by the Wyoming Game and Fish Department. Follow the direction contained in *Policies and Guidelines for Fish and Wildlife Management in National Forest Service and Bureau of Land Management Wilderness* (Association of Fish and Wildlife Agencies et al. 2006).
Insects and diseases	
2.	Control natural insect and disease outbreaks only when they threaten resource values outside the wilderness study area boundary.
Recreation	
3.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive non-motorized in the summer and semi-primitive motorized in the winter.
Scenery	
4.	Manage for a Scenic Integrity Objective of very high.

Management approach

The management approach is to protect the wilderness character of the area while providing the recreation opportunities allowed under the Wyoming Wilderness Act.

Natural fires will be allowed to play, as nearly as possible, their natural ecological role within the wilderness study area. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives. Prescribed fire is one tool that managers may use to enhance conditions to safely allow fire to play a natural role within the wilderness study area.

Management Area 1.6B - Dunoir Special Management Unit

Theme

Management of the Dunoir Special Management Unit is described in section 5 (a) of the Act of October 9, 1972 (Public Law 92-476), designating the Washakie Wilderness.

The following direction in the Act applies to the unit:

> Within the area depicted as the Special Management Unit [DuNoir] [sic] on the map referred to in sections 1 of this Act, the Secretary of Agriculture shall not permit harvesting of timber or public or private vehicular use of any existing road and shall not construct or permit the construction or expansion of any road in said Special Management Unit. The Secretary shall administer said unit in accordance with the laws, rules, and regulations relating to the national forest especially to provide non-vehicular access recreation and may construct such facilities and take such measures as are necessary for the health and safety of visitors and to protect the resources of said unit. Provided, however, that this section shall not affect such vehicular use and maintenance of existing roads as may be necessary for the administration of said unit by the Secretary of Agriculture.

Setting

The 28,879-acre Dunoir Special Management Unit is located along the continental divide south of the Washakie Wilderness.

Desired conditions

The Dunoir Special Management Unit offers opportunities for solitude and primitive recreation. The unit is affected primarily be the forces of nature. Ecological processes such as fire, insects, and diseases operate relatively freely from the influences of humans. The unit is free of terrestrial and aquatic invasive species. The area remains unroaded and provides a non-motorized recreation opportunity. Encounters with small groups and individuals are low. Trails are available for travel. Human influences on vegetation are minimal.

Goal for Management Area 1.6B

Management Area 1.6B	
1.	Until released from special management unit status, this area will be managed to prevent long-term impairment of wilderness characteristics.

Standards for Management Area 1.6B

	Special uses
1.	Do not authorize competitive events, including competition involving physical endurance of a person or animal, foot races, canoe or boat races, competitive trail rides, survival exercises (including military), or other activities of this nature.

Guidelines for Management Area 1.6B

	Management indicator species
1.	Fish stocking is allowed in waters previously stocked by the Wyoming Game and Fish Department. Follow the direction contained in *Policies and Guidelines for Fish and Wildlife Management in National Forest Service and Bureau of Land Management Wilderness* (Association of Fish and Wildlife Agencies et al. 2006).
	Insects and diseases
2.	Control natural insect and disease outbreaks only when they threaten resource values outside of the special management unit boundary.
	Recreation
3.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive non-motorized.
	Scenery
4.	Manage for a Scenic Integrity Objective of very high.

Management approach

The management approach is to manage the area according to Public Law 92-476.

Natural fires will be allowed to play, as nearly as possible, their natural ecological role within the Dunoir Special Management Unit. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives. Prescribed fire is one tool that managers may use to enhance conditions to safely allow fire to play a natural role in within the Dunoir Special Management Unit.

Management Area 2.2A – Line Creek Plateau Research Natural Area

Theme

The Line Creek Plateau Research Natural Area was established in 2000 to protect an example of Rocky Mountain alpine tundra vegetation types and associated features (USDA Forest Service 2000).

Research natural areas provide an opportunity for research, study, observation, monitoring, and those educational activities that maintain the natural conditions for which the research natural area was established.

Setting

The Line Creek Plateau Research Natural Area comprises 3,053 acres on the Shoshone National Forest and 19,369 acres on the adjacent Custer National Forest (1,222 acres allocated to Management Area 1.6A and 1,831 acres allocated to Management Area 2.2A). The Shoshone portion exhibits a Rocky Mountain alpine tundra vegetation type with examples of alpine turf, alpine wetland, alpine snowbed, krummholz, whitebark pine forest, and subalpine fir forest.

Desired conditions

The research natural area provides an opportunity for research, study, observation, monitoring, and educational activities that maintain the natural conditions for which the area was established. The research natural area provides opportunities for solitude and primitive recreation, especially in the summer. The area is affected primarily by the forces of nature. Ecological processes such as fire, insects, and diseases operate relatively freely from the influences of humans. The area is free of terrestrial and aquatic invasive species. The area remains unroaded and provides a non-motorized recreation opportunity in the summer and motorized and non-motorized recreation opportunities in the winter. Encounters with small groups and individuals are low to moderate. Human influences on vegetation are minimal.

Goal for Management Area 2.2A

Management Area 2.2A	
1.	The ecological integrity of the research natural area, including processes, composition, and structure, are maintained.

Standards for Management Area 2.2A

Commercial livestock grazing	
1.	Commercial livestock grazing is not permitted. Incidental recreational livestock use is allowed as long as it neither threatens nor interferes with the objectives or purposes for which the research natural area was established.
Special uses	
2.	Authorized recreation special uses only when they do not conflict with the values for which the research natural area was established.
3.	Do not authorize new outfitter and guide assigned sites, except spike, drop, or progressive camps may be authorized if they are short term (one to two days) in duration and have no constructed facilities.

	Minerals
4.	Mineral leases will include stipulations for no surface occupancy.
5.	Permits for the removal of mineral materials will not be issued.
6.	Geophysical operations will be required to use minimal impact techniques. If unacceptable surface disturbance is expected, the activity will be prohibited.
7.	When application is made to lease, or existing leases expire or terminate, a no surface occupancy stipulation will be applied to the new lease on lands that are administratively available for lease.
8.	Where applicable or deemed necessary, the area will be withdrawn from mineral entry under the General Mining Law of 1872.
	Recreation
9.	Prohibit construction of developed recreation sites.
10.	Mountain biking is allowed only on System trails.
11.	Recreation use is not prohibited, but will not be encouraged. However, recreation use can be prohibited or restricted by special orders if such use threatens or interferes with the objectives or purposes for which the research natural area was established.
	Roads and trails
12.	Trails will not be constructed within these areas. Existing System trails may be maintained. Reconstruction will be allowed for public safety and/or protection of soil and water resources.
13.	Roads and other facilities will not be constructed in these areas, except within 250 feet of the centerline of U S Highway 212.[36]
14.	Existing public roads may be retained (U S Highway 212, which bisects the Line Creek Plateau Research Natural Area). Reconstruction will be allowed for public safety and protection of soil and water resources. Staging areas for materials stockpiles and equipment will continue to occur within the easement limits for future highway maintenance projects within both Montana and Wyoming.
15.	Energy/utility corridors will be avoided.

[36] Executive Order 5949 (November 1932) established a state easement on U S Highway 212 that extends 250 feet from either side of the centerline and is excluded from the research natural area.

16.	Do not permit new roads, trails, fences, structures, or signs unless they contribute to the desired conditions or to the protection of the research natural area, except within the highway easement.

Guidelines for Management Area 2.2A

	Vegetation
1.	Timber harvest and other vegetation manipulation should be conducted only to maintain or reestablish ecological processes within the research natural area as outlined in the research natural area management plan or establishment record.
2.	No actions against endemic insects or diseases will be allowed unless such action is deemed necessary to protect the features for which the research natural area was established or to protect adjacent resources.
3.	Management practices may be authorized for invasive plant species control or to manage or restore the vegetation for which the research natural area was created. Where management activities are prescribed, they shall be as specific as possible against target organisms and induce minimal impact to other components of the ecosystem.
	Wildlife and fish
4.	Wildlife habitat manipulation should occur only as part of approved research activities.
5.	Wildlife habitat improvement projects will not be permitted in this area, except to meet the needs of approved research projects associated with the management of the research natural area. Fish stocking will be allowed to continue in lakes stocked before research natural area designation.
6.	No actions against endemic animals will be allowed unless such action is deemed necessary to protect the features for which the research natural area was established or to protect adjacent resources.
	Fire and fuels
7.	Fires should be suppressed when they threaten the values for which the research natural area was established or threaten other values outside the research natural area. For unwanted wildfires that threaten to burn into research natural areas, the appropriate management response should consist of strategies and tactics that keep fires from burning into research natural areas.
8.	Minimum impact suppression techniques should be used when suppressing fires within research natural area.

Special uses	
9.	New constructed features or assigned sites associated with recreation special uses should not be authorized.
Minerals	
10.	Where applicable or deemed necessary, the area will be withdrawn from mineral entry.
Recreation	
11.	Hitching, tethering, or picketing horses or other livestock within 200 feet of a stream or other free flowing water should be prohibited.
12.	Low impact camping (including building a fire, other than fires confined to liquid fuel stoves) should be prohibited within 200 feet of any lakeshore or 100 feet of any live stream or free flowing water.
13.	Incidental recreational livestock use should not threaten or interfere with the objectives or purposes for which the area was established.
14.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive non-motorized.
Scenery	
15.	Manage for a Scenic Integrity Objective of very high.

Management approach

The portion of the research natural area allocated to the High Lakes Wilderness Study Area, (Management Area 1.6A) will continue to be managed for maintenance of its wilderness eligibility characteristics. The direction for Management Area 2.2A also applies in the portion that falls within the research natural area.

The prime consideration in managing the area is maintenance of natural conditions and processes.

Activities in the Line Creek Plateau Research Natural Area will usually be limited to approved research, observation, and study.

Management encourages the permitted use of the research natural area by responsible scientists and educators. Authorized use does not cause unacceptable impacts on the values for which the area was established. All proposals for research are approved by the appropriate research station director. All research, monitoring, or administrative studies authorized and approved by the district ranger conform to conditions specified in approved study plans and/or cooperative agreements.

Natural fire plays a role in maintaining the values for which the Line Creek Plateau Research Natural Area was established. Active suppression occurs where necessary to protect the values which the area was designated as well as other values outside the area that warrant protection

from fire. Suppression activities are conducted in a manner to reduce impacts to the Line Creek Plateau Research Natural Area.

Dispersed recreation use occurs, but is not encouraged. Managers may consider prohibiting or restricting dispersed recreation by special orders where such use threatens or interferes with the objectives or purposes for which the area was established.

Fish stocking will continue in lakes and streams stocked prior to designation.

Management practices necessary for the control of invasive plants or to manage or restore the vegetation for which the area was created may occur.

Special use authorizations or cooperative agreements will generally be used to authorize and document scientific activity.

Other guidance

Executive Order 5949 (November 1932)

Management Area 2.3 – Proposed research natural areas

Theme

This Plan makes a preliminary recommendation to the Forest Service Rocky Mountain Region Research Natural Areas Committee to review six research natural areas for designation. Proposed research natural areas are managed in unmodified conditions for future research, study, observations, monitoring, and educational activities.

Setting

The eight proposed research natural areas comprise about 69,900 acres (80 percent, or 56,800 acres, in designated wilderness) on the Shoshone: Lake Creek, Beartooth Butte, Grizzly Creek, Sheep Mesa, Arrow Mountain, and Roaring Fork (

Table 25).

These proposed research natural areas represent the region's rare plant species and representative plant communities. The Shoshone's position in the middle of the continent acts as a connector for many plant and animal species from north to south and east to west, and its elevation differences and varieties of soil types also account for the diversity of species across the Shoshone. The proposed areas were selected for their abilities to provide representative samples of vegetation or biological communities that have not been impacted by management activities.

More information about the eight proposed research natural areas, including descriptions and plant species, is available in *Potential Research Natural Areas Shoshone National Forest* (USDA Forest Service 2008b).

Table 25. Acres of proposed research natural areas

Proposed research natural area	Acres
Beartooth Butte	2,448
Lake Creek	5,861
Grizzly Creek	11,681
Sheep Mesa	15,323
Arrow Mountain	14,452
Roaring Fork	13,483

Desired conditions

Ecological processes prevail, with minimal human intervention, providing natural conditions. The recreation setting for the proposed areas is defined by the setting within which the area falls.

Goal for Management Area 2.3

Management Area 2.3	
1.	The ecological integrity of the proposed research natural area, including processes, composition, and structure, are maintained.

Standards for Management Area 2.3

Commercial livestock grazing	
1.	Do not initiate stocking of those portions of vacated allotments within a proposed research natural area.
Special uses	
2.	Authorized recreation special uses only when they do not conflict with the values for which the research natural area was established.
3.	Do not authorize new outfitter and guide assigned sites, except spike, drop, or progressive camps may be authorized if they are short term (one to two days) in duration and have no constructed facilities.
Minerals	
4.	No surface occupancy stipulations apply to mineral leases.
5.	Permits for the removal of mineral materials will not be issued.

Guidelines for Management Area 2.3

Vegetation	
1.	Vegetation management activities should be conducted only when such action is necessary to protect the features for which the research natural area is being proposed.
Management indicator species	
2.	Fish stocking is allowed in waters previously stocked by the Wyoming Game and Fish Department. Follow the direction contained in *Policies and Guidelines for Fish and Wildlife Management in National Forest Service and Bureau of Land Management Wilderness* (Association of Fish and Wildlife Agencies et al. 2006).
Fire and fuels	
3.	Fires should be suppressed when they threaten the values for which the research natural area was established or threaten other values outside the proposed research natural area. For unwanted wildfires that threaten to burn into proposed research natural areas, the appropriate management response should consist of strategies and tactics that keep fires from burning into proposed research natural areas.
Special uses	
4.	New constructed features or assigned sites associated with recreation special uses should not be authorized.
Recreation	
5.	Recreation trails should be located to avoid impacting the ecological conditions and processes that led to establishment of the research natural area.
6.	Manage for an adopted Recreation Opportunity Class of semi-primitive non-motorized. Over-snow motorized use is allowed in areas currently open to such use.
Scenery	
7.	Manage for a Scenic Integrity Objective of very high.

Management approach

Upon recommendation and subsequent establishment, management of research natural areas will be guided by the establishment plan or any subsequent management plan.

The majority of the research natural areas will not allow commercial livestock grazing once a management plan is established. In most cases, there is no existing grazing or suitable grazing

acres. The establishment plans for each of these areas will allow incidental grazing to continue after establishment.

Management Area 3.1A – Swamp Lake Botanical Area

Theme

Botanical areas are one of the categories of Forest Service special interest areas, which are managed to protect or enhance their special interest values. These areas can be designated to protect and manage threatened, endangered, and sensitive plants and animals and other elements of biological diversity for their ecological significance, scenic values, or public popularity. Where appropriate, management emphasis may include developing and interpreting areas of unusual characteristics for public education and recreation. Currently, there is one designated special interest area on the Shoshone, the Swamp Lake Botanical Area.

Setting

The Swamp Lake Botanical Area contains eight different wetland vegetation types and an unusually high concentration of regionally rare, boreal disjunct plants. The riparian wetland complex comprises an unusual and perhaps unique set of ecological conditions. The extensive marl deposits and scenic qualities make it an area of extraordinary interest. The 581-acre Swamp Lake Botanical Area was established in 1987.

Desired conditions

Natural conditions prevail in the area while providing an opportunity for interpretation, education, and research. Rare plant communities thrive in the Swamp Lake Botanical Area. Wetlands and natural patterns of groundwater flows within the area provide the water quantity and quality needed to support the plant communities.

Goal for Management Area 3.1A

Management Area 3.1A	
1.	Protect the Swamp Lake Botanical Area from wildfires.

Standards for Management Area 3.1A

Minerals	
1.	Allow oil and gas leasing with no surface occupancy.
2.	Permits for the removal of mineral materials will not be issued.
Roads and trails	
3.	Road construction is prohibited. Road maintenance is limited to that needed for safety and resource protection.

Guidelines for Management Area 3.1A

Fire and fuels	
1.	Fires within the botanical area should be suppressed. Use initial attack actions that keep fires as small as possible. For wildfires that threaten to burn into the botanical area, the appropriate management response should consist of strategies and tactics that keep fires from burning into the botanical area.
2.	Minimum impact suppression techniques should be used when suppressing fires within the botanical area. Ground disturbing activities should be avoided on sites where rare or sensitive plants exist.
Commercial livestock grazing	
3.	Livestock stocking and distribution should be managed to protect riparian and wetland ecosystems.
4.	Salt and mineral sites for livestock should be located at least 400 yards from surface water and other wetland boundaries.
5.	Human and livestock disturbance and compaction should be limited in riparian ecosystems.
Minerals	
6.	Where applicable or deemed necessary, the area should be withdrawn from mineral entry.
Recreation	
7.	Overnight dispersed camping should not occur in the area.
8.	Manage for an adopted Recreation Opportunity Spectrum class of roaded natural.
Scenery	
9.	Manage for a Scenic Integrity Objective of moderate to high.
Roads and trails	
10.	New trails construction should be for the purpose of interpretation.

Management approach

Interpretation, education, and research will be emphasized so long as significant features are maintained. Interpretive signing is used to explain major features of the area and explain protection of sensitive ecosystems.

Aquatic habitat and fish population management will continue to ensure the preservation of the rare botanical features of the area and maintenance of existing aquatic resources, which were planted with fish before designation.

One concern is the possible establishment of invasive plant or aquatic nuisance species. A management focus is to maintain awareness for responding to any possible establishment.

Incidental commercial livestock grazing may occur in the Swamp Lake Botanical Area. Where needed, fencing is used to help manage livestock use.

Management Area 3.1B – Proposed Little Popo Agie Geological Area

Theme

Geological areas are a category of Forest Service special interest areas, which are managed to protect or enhance their special interest values.

Setting

The Little Popo Agie piedmont moraine is located north of Louis Lake in the southern Wind River Range. Most, if not all, piedmont moraines in the middle Rocky Mountains were formed as late Wisconsin glaciers flowed onto intermountain basin floors at low elevations. This moraine is rare in the Wind River and middle Rocky Mountains because the ice stalled at about 8,300 feet elevation. As a result, it provides habitat for different groups of species than piedmont moraines found at lower elevations.

The wetlands within this area are a result of the slow rate of glacial recession. Due to this slow recession, the topography exhibits a hummocky characteristic that is now occupied by about 154 kettle ponds in the depression of the three square mile terminus. This represents the largest and most dense collection of kettle ponds in the Wind River Mountains in this type of habitat.

Of particular interest is the large breeding population of ringneck ducks that inhabit the area. This may be the largest breeding population in the middle Rocky Mountains.

The Little Popo Agie Geological Area encompasses 1,714 acres.

Desired conditions

Natural conditions prevail, while providing an opportunity for interpretation, education, and research. A diverse range of wildlife and plant communities thrives in the area. Wetlands and associated kettle ponds provide the water quantity and quality needed to support local communities. There is public access for recreational use.

Standards for Management Area 3.1B

Minerals	
1.	Allow oil and gas leasing with no surface occupancy
Roads and trails	
2.	New road construction is prohibited. Road maintenance is limited to that needed for safety and resource protection.

Guidelines for Management Area 3.1B

Fire and fuels	
1.	Minimum impact suppression techniques should be used when suppressing fires. Ground disturbing activities should be avoided on sites where unique or sensitive plants exist.
2.	Mechanical vegetation treatment may be used when necessary to reduce excessive fuels, maintain or restore natural conditions, or enhance the values for which the area was designated.
Commercial livestock grazing	
3.	Livestock stocking and distribution should be managed to protect riparian and wetland ecosystems.
4.	Salt and mineral sites for livestock should be located at least 400 yards from surface water and other wetland boundaries.
5.	Human and livestock disturbance and compaction should be limited in riparian ecosystems.
6.	Commercial livestock use within the geological area is allowed as incidental use that does not adversely impact the purpose for which the area was established.
Minerals	
7.	Where applicable or necessary, the area should be withdrawn from mineral entry.
Recreation	
8.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive.
Scenery	
9.	Manage for a Scenic Integrity Objective of moderate to high.
Roads and trails	
10.	New trail construction should be for the purpose of interpretation.

Management approach

Interpretation, education, and research will be emphasized, as long as significant features are maintained.

Management Area 3.1C – Proposed Sawtooth Peatbed Geological Area

Theme

Geological areas are one of the categories of Forest Service special interest areas, which are managed to protect or enhance their special interest values.

Setting

The Sawtooth Peatbed is a large, unique fen palsa located in a broad subalpine valley shaped by glacial scouring. It is a large peat deposit with permafrost to 46 cm depth (18 inches). The palsa exhibits polygons caused by frost cracking and thaw depression pools. This geomorphologic feature is the only known palsa in the lower 48 states. The proposed geologic area encompasses 648 acres.

Desired conditions

Ecological processes prevail, with minimal human intervention, providing natural conditions.

Standards for Management Area 3.1C

	Commercial livestock grazing
1.	Commercial livestock grazing is not authorized within the geological area.
	Minerals
2.	Do not allow mineral mining of peat.
3.	Mineral leases will include a stipulation for no surface occupancy.
4.	Permits for the removal of mineral materials will not be issued.

Guidelines for Management Area 3.1C

	Fire and fuels
1.	Fires within the geologic area should be suppressed. Use initial attack actions that keep fires as small as possible. For wildfires that threaten to burn into the geologic area, the appropriate management response should include strategies and tactics that keep fires from burning into the geological area.
2.	Minimum impact suppression techniques should be used when suppressing fires within the geologic area. Avoid ground disturbing activities on sites where unique or sensitive plants exist.

Recreation	
3.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized.
Scenery	
4.	Manage for a Scenic Integrity Objective of moderate to high.

Management approach

Upon recommendation and subsequent establishment, management of the area will be guided by the management plan. Given the rare features of the proposed Sawtooth Peatbed Geological Area, protection from the effects of wildland fire is desired.

Management Area 3.3A– Back country recreation year-round motorized

Theme

Back country motorized recreation areas are managed to provide recreation opportunities on trails in a natural-appearing landscape.

Setting

These back country areas provide motorized and non-motorized recreation opportunities on trails. The landscape has a predominantly natural appearance and is relatively undisturbed by human activity. Vegetation may be altered through timber harvest or fire (prescribed fire or wildfire) to enhance recreation opportunities, to provide vistas for people to view surrounding areas, or to meet objectives for wildlife habitat.

Desired conditions

These areas are characterized by a predominantly natural appearing environment with some alterations. A variety of non-motorized and motorized recreation opportunities are provided. Summer motorized use occurs on motorized trails and snowmobiling opportunities are provided on groomed trails and in areas open to off-trail snow play. Access is provided by non-motorized trails and motorized trails. Concentrations of users are low and recreationists experience a degree of solitude. Evidence of past human uses, such as dispersed campsites, exists. Evidence of current and past resource management activities, such as timber harvest and prescribed fire, exists. Commercial livestock and evidence of their use and management (e.g., salting areas, fences, and water developments) may be present. Ecological processes such as fire, insects, and diseases become more prevalent as one moves further into the back country.

Improvements to enhance recreation opportunities may include parking areas and informational, interpretive, and directional signs, but improvements are minimal.

Goals for Management Area 3.3A

Management Area 3.3A	
1.	Provide year round motorized recreation opportunities.
2.	Increase diversity of motorized experiences.

Standards for Management Area 3.3A

Recreation	
1.	Motorized travel, except for over-snow vehicles, is restricted to designated travelways.
Roads and trails	
2.	Prohibit new System road construction or existing road reconstruction unless needed to honor existing rights.

Guidelines for Management Area 3.3A

Vegetation	
1.	Allow the cutting or removal of trees under circumstances such as reducing fuel loads and fire risk, especially adjacent to private land; curtailing imminent threat of an insect attack; salvaging dead trees to enhance a scenic view from a prominent overlook; maintaining wildlife habitat diversity or maintenance of existing facilities.
Recreation	
2.	Some trails may be restricted to non-motorized use.
3.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized.
Scenery	
4.	Manage for a Scenic Integrity Objective of moderate to high
Roads and trails	
5.	Temporary roads should be one mile or less in length and should be revegetated and physically blocked after use.

Management approach

Management of use within this specific recreation setting focuses on sustainability and providing high-quality motorized experiences. A variety of experiences may be provided, ranging from off-highway vehicle use on existing roads to single-track motorcycle trails. In some local

areas, non-motorized uses may be separated to provide a safe experience and meet desired conditions.

High economic values are generally not prevalent, but when threatened by wildfire, management actions to mitigate the effects or prevent loss are developed and implemented. Resource benefit objectives can often be achieved using wildland fire. Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions and desired fuel levels. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives.

Management Area 3.3B– Back country recreation summer non-motorized with winter motorized

Theme

Back country recreation areas are managed to provide recreation opportunities in a natural appearing landscape. Summer use is non-motorized. Over-the-snow vehicles are allowed during the snow season.

Setting

These back country areas provide non-motorized recreation opportunities in the summer and non-motorized and motorized recreation opportunities in the winter. The landscape has a predominantly natural appearance and is relatively undisturbed by human activity. Vegetation may be altered through timber harvest or fire (prescribed fire or wildfire) to enhance recreation opportunities, to provide vistas for people to view surrounding areas, or to meet objectives for wildlife habitat.

Desired conditions

These areas are characterized by a predominantly natural appearing environment with some alterations. A variety of non-motorized and motorized recreation opportunities are provided. Summer recreation use is non-motorized. Winter recreation use is non-motorized and motorized. Snowmobiling opportunities are provided on groomed trails and in areas open to off-trail snow play. Access is provided by non-motorized trails. Concentrations of users are low and recreationists experience a degree of solitude. Evidence of past human uses, such as dispersed campsites, exists. Evidence of current and past resource management activities, such as timber harvest and prescribed fire, exists. Ecological processes such as fire, insects, and diseases become more prevalent as one moves further into the back country. Commercial livestock and evidence of their use and management (e.g., salting areas, fences, and water developments) may be present.

Improvements such as trailheads, trails, signs, bridges, fences, or shelters that enhance recreation opportunities may be present. Trails provide challenging hiking, horseback riding, or mountain biking opportunities. The potential to view wildlife is high.

Goal for Management Area 3.3B

Management Area 3.3B	
1.	Provide quality summer non-motorized and winter motorized recreation opportunities.

Standards for Management Area 3.3B

Minerals	
1.	Mineral leases will include a stipulation for no surface occupancy.
Roads and trails	
2.	Prohibit new National Forest System road construction or existing road reconstruction unless needed to honor existing rights.

Guidelines for Management Area 3.3B

Vegetation	
1.	Allow the cutting or removal of trees under circumstances such as reducing reduce fuel loads and fire risk, especially adjacent to private land; curtailing the imminent threat of an insect attack; salvaging dead trees to enhance a scenic view from a prominent overlook; maintaining wildlife habitat diversity; or maintenance of existing facilities.
Recreation	
2.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized in the winter and semi-primitive non-motorized in the summer.
Scenery	
3.	Manage for a Scenic Integrity Objective of moderate to high.
Roads and trails	
4.	Temporary roads in back country settings should be one mile or less in length and should be revegetated and physically blocked after use.

Management approach

Management of uses within this specific recreation setting focuses on sustainability and providing high-quality non-motorized summer and motorized winter experiences. In some local areas, motorized and non-motorized uses may be separated to provide a safe experience and meet desired conditions. An example is cross-country ski areas that are managed for non-motorized use only or restrict motorized over-snow vehicle use to designated trails in the area.

High economic values are generally not prevalent, but when threatened by wildfire, management actions to mitigate the effects or prevent loss are developed and implemented. Resource benefit objectives can often be achieved by wildland fire. Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions and desired fuel levels. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives.

Management Area 3.3C– Back country recreation summer motorized with winter non-motorized

Theme

Back country recreation areas are managed to provide back country recreation opportunities in a natural appearing landscape. Motorized use is allowed in summer. Motorized use, including snowmobiles, is not allowed in winter.

Setting

These back country areas provide non-motorized and motorized recreation opportunities in the summer and non-motorized recreation opportunities in the winter. The landscape has a predominantly natural appearance and is relatively undisturbed by human activity. Vegetation may be altered through timber harvest or fire (prescribed fire or wildfire) to enhance recreation opportunities, to provide vistas for people to view surrounding areas, or to meet objectives for wildlife habitat.

Desired conditions

These areas are characterized by a predominantly natural appearing environment with some alterations. A variety of non-motorized and motorized recreation opportunities are provided. Summer recreation use is non-motorized and motorized. Winter recreation use is non-motorized. Access is provided by non-motorized and motorized trails. Concentrations of users are low and recreationists experience a degree of solitude. Evidence of past human uses, such as dispersed campsites, exists. Commercial livestock and evidence of their use and management (e.g., salting areas, fences, and water developments) may be present. Evidence of current and past resource management activities, such as timber harvest and prescribed fire, exists. Ecological processes such as fire, insects, and diseases become more prevalent as one moves further into the back country.

Goal for Management Area 3.3C

Management Area 3.3C	
1.	Provide quality summer motorized and winter non-motorized recreation opportunities.

Standard for Management Area 3.3C

	Roads and trails
1.	Prohibit new road construction or existing road reconstruction unless needed to honor existing rights.

Guidelines for Management Area 3.3C

	Vegetation
1.	Allow the cutting or removal of trees under circumstances such as reducing reduce fuel loads and fire risk, especially adjacent to private land; curtailing the imminent threat of an insect attack; salvaging dead trees to enhance a scenic view from a prominent overlook; maintaining wildlife habitat diversity or maintenance of existing facilities.
	Recreation
2.	Motorized use on some trails may be restricted.
3.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized in the summer and semi-primitive non-motorized in the winter.
	Scenery
4.	Manage for a Scenic Integrity Objective of moderate to high.
	Roads and trails
5.	Temporary roads should be one mile or less in length and should be revegetated and physically blocked after use.

Management approach

Management of uses within this specific recreation setting focuses on sustainability and providing high-quality motorized summer and non-motorized winter experiences. In some local areas, motorized and non-motorized uses may be separated to provide a safe experience and meet desired conditions.

High economic values are generally not prevalent, but when threatened by wildfire, management actions to mitigate the effects or prevent loss are developed and implemented. Resource benefit objectives can often be achieved using wildland fire. Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions and desired fuel levels. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives.

Management Area 3.5– Back country recreation and forest restoration

Theme

Back country recreation and forest restoration areas are managed to provide recreation opportunities on trails in a natural-appearing landscape while emphasizing the use of vegetation management activities to enhance vegetation diversity and speed vegetation recovery from wildfire and insect epidemics.

Setting

These back country areas provide motorized and non-motorized recreation opportunities on trails. The landscape has a predominantly natural appearance. Vegetation is periodically altered through timber harvest or fire (prescribed fire or wildfire) to increase vegetation diversity, reduce fuel accumulations from wildfire and insect epidemics, or enhance wildlife habitat. Vegetation activities are infrequent. These areas a classified as inventoried roadless areas.

Desired conditions

These areas are characterized by a predominantly natural appearing environment with some alterations designed to maintain vegetation diversity. A variety of non-motorized and motorized recreation opportunities are provided.

Summer motorized use occurs on designated routes and snowmobiling opportunities are provided on groomed trails and in areas open to off-trail snow play. Snowmobiling is not allowed in big game winter range areas. Access is provided by motorized and non-motorized trails. Concentrations of users are low and recreationists experience a degree of solitude. Evidence of past human uses, such as dispersed campsites, exists. Evidence of current and past resource management activities, such as timber harvest and prescribed fire, exists but is visually subordinate.

Vegetation diversity limits the extent to which ecological processes such as fire, insects, and diseases impact large portions of the landscape.

Improvements to enhance recreation opportunities may include parking areas and informational, interpretive, and directional signs, but improvements are minimal.

Commercial livestock and evidence of their use and management (e.g., salting areas, fences, and water developments) may be present.

Goals for Management Area 3.5

Management Area 3.5	
1.	Provide year round motorized recreation opportunities.
2.	Following large-scale disturbances from fire or insects, restore forested ecosystems so they are moving toward diversity of age classes and cover types.
3.	Promote restoration of aspen, willow, and grassland cover types that are declining due to conifer encroachment.
4.	Promote restoration of whitebark pine where it has been lost due to insects, diseases, and fire.

Standards for Management Area 3.5

Management Area 3.5	
1.	Timber harvest is not scheduled and does not contribute to the allowable sale quantity. These lands are not part of suitable timber lands.
Species of local concern	
2.	Over-the-snow motorized activity is prohibited in big game crucial winter range areas.
Recreation	
3.	Motorized travel, except for over-the-snow vehicles, is restricted to designated travelways.
Roads and trails	
4.	Prohibit new System road construction or existing road reconstruction unless needed to honor existing rights.

Guidelines for Management Area 3.5

	Vegetation
1.	Vegetation management practices are available, usually to meet specific restoration objectives. Timber harvest may be used to prevent or respond to epidemic insect conditions which could threaten resource objectives within or adjacent to the management area.
	Recreation
2.	Some trails may be restricted to non-motorized use.
3.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized.
	Scenery
4.	Manage for a Scenic Integrity Objective of moderate to high.
5.	Temporary roads should be revegetated and physically blocked after use. There is no length restriction on temporary roads.

Management approach

Management of uses within this specific setting focuses on sustainability and restoration of forests and wildlife habitat and providing high-quality motorized experiences. A variety of experiences may be provided, ranging from off-highway vehicle use on existing motorized trails to single-track motorcycle trails. In some local areas, non-motorized uses may be separated to provide a safe experience and meet desired conditions.

Back country motorized activities are generally allowed on designated routes in both the winter and summer. Over-the-snow winter activities are not permitted in big game winter range areas.

Vegetation management is designed primarily for one of three purposes: 1) to maintain structural and species diversity within the area to limit the extent to which large portions of the landscape are susceptible to wildfire and insect epidemics, 2) reduce hazardous fuel levels, particularly when there is risk to adjacent lands, and 3) enhance or restore wildlife habitat. Salvage timber can be recovered in conjunction with accomplishing one of the three primary purposes. Entry for activities is anticipated to be infrequent and does not occur on a regular schedule. Temporary roads may be used for activities and are obliterated afterwards. They may be redesignated to provide back country motorized trails. No new System roads are allowed.

High economic values are generally not prevalent, but when threatened by wildfire, management actions to mitigate the effects or prevent loss are developed and implemented. Resource benefit objectives can often be achieved using wildland fire. Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions and desired fuel levels. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives.

Management Area 3.6A – Continental Divide National Scenic Trail

Theme

The Continental Divide National Scenic Trail (Trail) is managed to provide recreation opportunities in a natural appearing landscape consistent with the *Continental Divide National Scenic Trail Comprehensive Plan* (USDA Forest Service 2009).

Setting

The Trail was established by Congress through the National Parks and Recreation Act of 1978, which amended the National Trails System Act of 1968.

The Trail generally follows the corridor described in the Bureau of Outdoor Recreation's 1976 Study Report and the 1977 Final Environmental Statement. A 50-mile corridor was identified on either side of the continental divide in which to locate the final route. On the Shoshone, this was accomplished by establishing the route in a 1998 Decision Notice and Finding of No Significant Impact (citation). This decision recognized that the Trail should be managed for pedestrian and horse traffic, but located some segments on existing roads in order to build as little new trails as possible and avoid sensitive wildlife habitat.

Currently, the Trail follows a mixture of non-motorized and motorized primitive roadways. Motorized use is allowed to the extent that occurred in 1998. As the Trail is developed further, it is expected that the entire length of the Trail on the Shoshone will be located off roads. This management area includes the corridor within 0.5 mile of centerline of the Trail location.

The landscape has a predominantly natural appearance that may have subtle modifications that would be noticed, but not draw the attention of someone traveling through the area.

Desired conditions

The Trail provides a high quality scenic, primitive hiking and pack and saddle stock experience. A variety of compatible non-motorized recreation opportunities are provided. Access to the Trail is primarily by foot, horseback, or other non-motorized means. Roads and motorized trails are not present except at designated crossings.

The Trail corridor is characterized by a predominantly natural appearing environment. Improvements such as trailheads, trails, signs, bridges, and fences that enhance the recreation opportunities may be present. Evidence of past and present resource management may exist, but blends with the natural appearance of the landscape. Vegetation alterations may be present to enhance viewing opportunities.

Concentrations of users are low and opportunities for solitude and exercising outdoor skills are present. The Trail provides challenging hiking and horseback riding opportunities.

Ecological processes such as fire, insects, and diseases exist. The potential to view wildlife is high.

Goals for Management Area 3.6A

Management Area 3.6a	
1.	Provide high-quality scenic, primitive hiking, and horseback riding opportunities along the Trail corridor.
2.	Relocate the Trail off motorized routes as time and resources allow.

Standards for Management Area 3.6A

Special uses	
1.	Allow competitive events that do not interfere with the nature and purposes of the Trail.
2.	Allow non-motorized outfitter and guide activities that do not interfere with the nature and purposes of the Trail.
3.	Allow guided over-snow and winter activities that do not interfere with the nature and purposes of the Trail.
Recreation	
4.	Existing snowmobile use is allowed. New sections of the Trail will not be located coincidentally with snowmobile trails.
5.	Where possible, new or relocated sections of the Trail will be located within areas mapped with a Recreation Opportunity Spectrum setting of primitive or semi-primitive non-motorized.
Roads and trails	
6.	The Trail will be moved off existing motorized routes, if the motorized use becomes incompatible with management of the Trail.

Guidelines for Management Area 3.6A

Vegetation	
1.	Cutting or removal of trees under circumstances such as reducing fuel loads and fire risk, especially adjacent to private land; curtailing the imminent threat of an insect attack; salvaging dead trees to enhance a scenic view from a prominent overlook; or maintaining wildlife habitat diversity or maintenance of existing facilities can be allowed.
Recreation	
2.	Manage for the Recreation Opportunity Spectrum class of the management area in which the Trail occurs (Table 26).
3.	Signing and trail marking should follow direction in the *Continental Divide National Scenic Trail Comprehensive Plan* (USDA Forest Service 2009).
Scenery	
4.	Manage for the Scenic Integrity Objective of high to very high in primitive and semi-primitive Recreation Opportunity Spectrum areas and moderate to high in roaded natural areas.

Table 26. Recreation Opportunity Spectrum standards for Management Area 3.6A

Category	Primitive	Semi-primitive non-motorized	Semi-primitive motorized	Roaded natural
Encounters – number of parties on the Trail per eight-hour day (season average)	6	10	30	30+
Roads and trails	No roads or motorized trails may be located in the corridor.	No new permanent roads or motorized trails open to the public may be located in the corridor. Temporary roads for administrative use shall be one mile or less in length and shall be revegetated and physically blocked after use.	New primitive roads or new motorized trails may cross the Trail, but no more frequently than 0.5-mile intervals. No new roads better than a primitive standard may be located in the corridor.	New system roads better than primitive, or new motorized trails, may cross the Trail, but no more frequently than 0.5-mile intervals.

Management approach

Management of uses within this specific recreation setting focuses on sustainability and providing high-quality non-motorized experiences, especially within 0.5 mile of the Trail's travel route.

If existing uses are, or become, incompatible with the nature and purposes of the Trail, management of the Trail will be reexamined. In the case of wheeled motorized conflicts, the management approach will generally be to move the Trail route to a location that is non-motorized. If conflicts occur within sections open to winter motorized use or mountain bicycle use, any approach taken to resolve the conflict will generally favor the Trail in its present location rather than moving the Trail. Motorized use by the public on relocated sections of the Trail will generally be prohibited, with the exception of a special circumstance.

High economic values are generally not prevalent, but when threatened by wildfire, management actions to mitigate the effects or prevent loss are developed and implemented. Resource benefit objectives can often be achieved through using wildland fire. Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions and desired fuel levels. While an initial response to unplanned ignitions in the management area favors consideration of managing fire to accomplish resource benefit objectives, the likelihood of managing a narrow corridor fire is unrealistic. The only opportunity for resource benefits from fire will be when the adjacent management area also allows it.

The management area is broad enough to protect natural, scenic, historic, and cultural features to provide for the nature and purposes of the Trail.

Management Area 3.6B – Nez Perce (Nee-Me-Poo) National Historic Trail

Theme

The Nez Perce National Historic Trail (Trail) is managed to protect is historical values while providing recreation opportunities in a natural appearing landscape consistent with the *Nez Perce National Historic Trail Comprehensive Plan* and any revisions (USDA Forest Service et al. 1990).

Setting

The Trail was established by Congress through Public Law 99-445 in 1986, amending the National Trails Systems Act of 1968 to designate the Trail as a component of the National Trails System. The Trail was designated to commemorate the 1877 flight of the non-treaty Nez Perce from their homelands in eastern Oregon, Idaho, and Washington. Five Nez Perce bands, nearly 800 men, women, and children, struggled across 1,200 miles of rugged country. The course they chose on their epic journey has been memorialized in the Trail. In its entirety, the Trail covers 1,170 miles, of which 319 miles have been designated high potential route segments.

On the Shoshone, high potential route segments have been designated, along with portions of an auto tour route. The Trails follows a mixture of non-motorized and motorized routes and generally follows the corridor described in the Bureau of Outdoor Recreation's Study Report

(1982) and the Final Environmental Statement (1985). Motorized use is allowed where the Trail overlaps an existing road and along the auto tour route. Where the Trail follows National Forest System trails, the Trail is non-motorized. This management area includes the corridor within 0.5 mile of centerline of the Trail's location. Along this alignment, resources on federal lands that can be documented to have a direct association with the event and the route become federally protected components of the Trail.

Highways that roughly parallel the Nez Perce flight have been designated the official Nez Perce National Historic Trail Auto Route. Through the cooperative efforts of the Forest Service and the states of Oregon, Idaho, Washington, Wyoming, and Montana, 1,500 miles of selected roadway now display the Nez Perce National Historic Trail Auto Route signs. The auto tour route across the Shoshone follows the Beartooth All-American Road (U S Highway 212) from Cooke City, Montana, to the Chief Joseph Scenic Byway (State Highway 296) until this road exits the Shoshone.

The landscape has a predominantly natural appearance that may have subtle modifications that would be noticed, but not draw the attention of someone traveling through the area.

Desired conditions

The Trail protects the historic values for which the Trail was designated while providing a high quality scenic, primitive hiking and pack and saddle stock experience. A variety of compatible non-motorized recreation opportunities is provided. Access to the Trail is primarily by foot, horseback, or other non-motorized means. Roads and motorized trails are not present, except at designated crossings.

The Trail corridor is characterized by a predominantly natural appearing environment. Improvements such as trailheads, trails, signs, bridges, and fences that enhance the recreation opportunities may be present. Evidence of past and present resource management may exist, but blends with the natural appearance of the landscape. Vegetation alterations may be present to enhance viewing opportunities.

Goals for Management Area 3.6B

	Description
1.	Provide scenic, primitive hiking and horseback riding opportunities along the Trail corridor while protecting the historic values for which the Trail was designated.
2.	The Trail and associated resources are identified, documented, and interpreted for the public where appropriate.

Objective for Management Area 3.6B

	Description
1.	The alignment of the Trail is as close as possible to the historic route, diverging only as necessary to provide for safety, recreation appeal, economic and political considerations, and to reduce environmental impacts.

Standards for Management Area 3.6B

Management Area 3.6B	
1.	Do not authorize the use of ground disturbing equipment within the Trail corridor.
2.	The Nez Perce National Historic Trail will be managed consistently with the guidance in the *Nez Perce National Historic Trail Comprehensive Management Plan* (USDA Forest Service et al. 1990).
Special uses	
3.	Allow competitive events that do not interfere with the nature and purposes of the Trail.
4.	Allow non-motorized outfitter and guide activities that do not interfere with the nature and purposes of the Trail.
Recreation	
5.	Outside the sections of the Trail that are identified as auto tour routes, manage the Trail as a non-motorized route for primitive hiking and horseback riding.
6.	Campsites, shelters, and other related public use facilities are allowed within the Trail corridor.
7.	Where possible, new or relocated sections of the Trail will be located within areas mapped with a Recreation Opportunity Spectrum setting of primitive or semi-primitive non-motorized.
Roads and trails	
8.	Do not construct roads within non-auto tour sections of the Trail corridor.
Heritage resources	
9.	Protect gathering or grazing areas identified through tribal consultation.
10.	Within the Trail corridor, conduct post fire surveys as soon as possible after fires to identify exposed cultural resources.
Land adjustments	
11.	Private land acquisition shall be limited to willing sellers and only those parcels within the exterior boundaries of the Shoshone National Forest.

Standards for Management Area 3.6B

Vegetation	
1.	Cutting or removal of trees under circumstances such as reducing fuel loads and fire risk, especially adjacent to private land; curtailing the imminent threat of an insect attack; salvaging dead trees to enhance a scenic view from a prominent overlook; or maintaining wildlife habitat diversity or maintenance of existing facilities can be allowed.
Roads and trails	
2.	Signing and trail marking should follow direction in the *Nez Perce National Historic Trail Comprehensive Plan* and any revisions (USDA Forest Service et al. 1990).
Scenery	
3.	Manage for a Scenic Integrity Objective of high to very high.

Management approach

Management of uses with this specific recreation setting focuses on protecting the historic values for which the Trail was designated and providing high quality non-motorized experiences on the sections off existing roads.

If existing uses are, or become, incompatible with the nature and purposes of the Trail, management of the Trail will be reexamined. If conflicts occur, any approach taken to resolve the conflict will generally favor the Trail in its present location rather than moving the Trail. Motorized use by the public on relocated sections will generally be prohibited, except in special circumstances.

High economic values are generally not prevalent, but high value cultural resources may be. When threatened by wildfire, management actions to mitigate the effects or prevent loss are developed and implemented. Resource benefit objectives can often be achieved through wildland fire. Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions and desired fuel levels. While an initial response to unplanned ignitions in the management area favors consideration of managing fire to accomplish resource benefit objectives, the likelihood of managing a narrow corridor fire is unrealistic. The only opportunity for resource benefits from fire will be when the adjacent management also allows it.

The management area is broad enough to protect natural, scenic, historic, and cultural features to provide for the nature and purposes of the Trail.

Management Area 4.2 – Scenic byways, scenic areas, vistas, and travel corridors

Theme

These areas are managed to protect or preserve the scenic values and recreation uses of designated scenic byways, scenic areas, vistas, and other heavily used scenic travel corridors.

Setting

These areas are associated with designated scenic byways and other high use and primary access roads. These areas contain the most highly developed recreation facilities on the Shoshone, including opportunities for camping in developed recreation sites and parking areas at developed trailheads. This management area provides many popular angling opportunities due to roaded access, the stream courses they follow, and access to high mountain lakes.

Eight travel corridors are assigned this management area: four scenic byways and four other high travel corridors without specific designations.

There are all or part of four scenic byways on the Shoshone (Table 27).

Table 27.Scenic byways on the Shoshone National Forest

Scenic byways	Highway number
Buffalo Bill Cody Scenic Byway	U S Highway 14/16/20
Chief Joseph Scenic Byway	State Highway 296
Beartooth All-American Road	U S Highway 212
Wyoming Centennial Scenic Byway	U S Highway 26/287

The **Buffalo Bill Cody Scenic Byway** follows the North Fork of the Shoshone River through the scenic Wapiti Valley to the east entrance of Yellowstone National Park. The route is known for its abundant wildlife, unusual rock formations, and recreational opportunities.

The **Chief Joseph Scenic Byway** offers spectacular views. It is dedicated to the history of the legendary flight of Chief Joseph and his band of Nez Perce. It offers superb wildlife viewing and access to many recreation opportunities.

The **Beartooth All-American Road** traverses the Custer, Gallatin, and Shoshone National Forests. It accesses Yellowstone National Park's northeast entrance and crosses the rugged Beartooth Mountains in Wyoming and Montana. It is the highest elevation highway in the Northern Rockies and provides dramatic views, unlimited recreation opportunities, and unparalleled wildlife watching.

The **Wyoming Centennial Scenic Byway** crosses the continental divide at Togwotee Pass and provides access to the Bridger-Teton and Shoshone National Forests, the National Elk Refuge in Jackson Hole, and Grand Teton and Yellowstone National Parks. The scenery is spectacular. A loop off the Togwotee highway that accesses Brooks Lake is also included in the management area.

Four other travel routes, including the Louis Lake Road, Sunlight Road, Wood River Road, and the South Fork Highway are included in this management area.

The **Louis Lake Road,** constructed by the Civilian Conservation Corps, traverses the glaciated high country on the east side of the continental divide southwest of Lander. Predominant physical features include lakes, streams, glacial potholes, granite outcrops, and sharp, rocky peaks above timberline. The road connects Lander with the South Pass Highway (State Highway 28) and is the primary access route for developed and dispersed recreation opportunities. Motorized use in this area is common.

The **Sunlight Road** parallels Sunlight Creek from the intersection with Chief Joseph Scenic Byway (State Highway 296) to its terminus in the Sunlight Basin. Views range from steep sedimentary outcrops at the outset to spectacular bare granite peaks in the basin. Dispersed recreation opportunities are common.

The **Wood River Road** parallels the Wood River and terminates at Kirwin, a historical mining district southwest of Meeteetse. Rolling terrain gives way to steep, rounded mountain peaks surrounding the valley at the road's terminus. Motorized and non-motorized recreation opportunities are common.

The **South Fork Road** (State Highway 291) parallels the South Fork of the Shoshone River southwest of Cody, Wyoming. It terminates at the confluence of Cabin Creek with the South Fork, near the Washakie Wilderness boundary. The highway provides access to the South Fork Valley, comprised of intermixed public and private lands. Views are dominated by steep, rocky canyon walls with water and ice falls. Non-motorized recreation opportunities dominate off-highway activities, as the wilderness boundary is very close.

Desired conditions

Travel and recreation corridors are associated with scenic byways and other popular roads. Landscapes within the travel and recreation corridors provide naturally appearing, high quality scenery (Scenic Integrity Objective moderate to high).

These areas provide opportunities for dispersed recreation. Concentrations of users can be high and past human uses are evident. Evidence of current and past resource management exists but generally blends with the natural appearance of the landscape.

Both motorized and non-motorized uses are provided. Non-motorized and motorized uses are separated in some local areas.

The intrinsic qualities for which the byways were designated continue to be consistent with corridor management plans.

Vegetation conditions support moderate to high Scenic Integrity Objectives within the foreground of scenic byways. Visual impacts from vegetation treatments, fire, recreation uses, and livestock grazing are visually subordinate and blend with overall landscape character. Signs, kiosks, and other exhibits provide interpretive and education information along the byway and in adjacent recreation facilities. Wildlife viewing and interpretation are provided in appropriate locations. Short loop trails or other facilities along the byway provide opportunities for visitors to stop and spend additional time on the Shoshone.

Vegetation management activities may be seen, but will be visually subordinate to the surrounding landscape. Vegetation alterations may be present to enhance the viewing opportunity, or to maintain long-term vigor of vegetation.

Goals for Management Area 4.2

Management Area 4.2	
1.	Protect the high scenic integrity of designated scenic byways and travel corridors.
2.	Provide highly developed recreation facilities within these corridors.
3.	Provide opportunities for the public to learn about their national forest.

Standard for Management Area 4.2

Minerals	
1.	Mineral leases will include a stipulation for no surface occupancy.

Guidelines for Management Area 4.2

Vegetation	
1.	Vegetation treatments may be used to enhance or maintain viewing opportunities.
Minerals	
2.	These lands will be withdrawn from mineral entry when such action is deemed necessary to meet the objectives of the management area.
3.	Outside of scenic byways, oil and gas exploration and development activities should not be visually evident to the average observer traveling in the travel corridor.
Recreation	
4.	Manage for an adopted Recreation Opportunity Spectrum class of roaded natural.
Scenery	
5.	Manage for a Scenic Integrity Objective of moderate to high.

Management approach

Key values within the management area, when threatened by wildfire, warrant fire management responses that mitigate the effects or prevent losses from fire. Potential values at risk include developed recreation sites, wildland urban interface, utility corridors, resorts, and travel corridors that access national parks. In some situations, resource benefit objectives can be achieved using wildfire or prescribed fire, but are secondary to meeting protection objectives for high values within the management area. Where possible, wildland fire is used to achieve and maintain vegetation conditions and desired fuel levels to reduce the threat to key values

from wildfire. Initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource protection objectives.

High priority items from scenic byway interpretive plans will be implemented. Scenic byway corridor management plans will be reviewed and evaluated every 10 years.

Management Area 4.3 – Back country access corridor

Theme

These areas contain scenic roads that provide primary access to back country areas in management area categories 1 and 3. These areas are managed to protect or preserve the scenic values and recreation uses of the corridors.

Setting

These corridors provide access to back country areas. The management area may include roads, trails, or other transportation systems from which back country areas or vistas are seen.

Desired conditions

Back country access corridors are associated with roads that provide access into and through areas with a back country setting. Landscapes within access corridors provide naturally appearing scenery with some slight alteration (Scenic Integrity Objective moderate to high). Areas generally provide opportunities for dispersed recreation. In access corridors, concentrations of users are moderate. Evidence of current and past resource management exists but generally blends with the natural appearance of the landscape. Both motorized and non-motorized uses are provided.

Opportunities exist to view high-quality scenery that represents the natural character of the region. Forest management and grazing activities may be seen, but will be visually subordinate to the surrounding landscape. Vegetation alterations may be present to enhance the viewing opportunity or to maintain long-term vigor of the vegetation.

Facilities to enhance opportunities for viewing scenery and wildlife may be present, along with opportunities for recreational fishing. Existing facilities, such as power lines, fences, water developments and roads, may be obvious to the casual observer.

Goal for Management Area 4.3

Management Area 4.3	
1.	Provide motorized access to back country management areas.

Standard for Management Area 4.3

Minerals	
1.	Allow oil and gas leasing with no surface occupancy.

Guidelines for Management Area 4.3

Recreation	
1.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized with possible seasonal closures.
Scenery	
2.	Manage for a Scenic Integrity Objective of moderate to high
Roads and trails	
3.	Seasonal or annual road closures are permitted for resource protection and safety.

Management approach

Management of uses within this management area focuses on sustainability and providing high quality motorized experiences.

Information that serves the needs of Shoshone users promotes responsible recreation and a shared-use philosophy. Through education and information programs such as Tread Lightly, Leave No Trace, portal bulletin boards, etc., an informed, educated, and responsible outdoor recreation users can be cultivated. Coordinating these programs with other groups, local communities, and agencies focuses messages, improves efficiency, and improves visitor information about recreational opportunities and responsibilities.

Sustainable recreation opportunities are developed to offer economic opportunities to local communities. Partnerships are supported where they can enhance local economic opportunities while providing for public use and sustainable, year round recreation opportunities.

Management Area 4.5A – Proposed Kirwin Historical Area

Theme

Historical areas are one of the categories of Forest Service special interest areas that are managed to protect or enhance their special interest values.

Setting

This proposed historical area covers 481 acres around the old mining town of Kirwin. Kirwin was formed in the mid-1880s after gold and silver were discovered in the area. By 1902, exploration was well established and by 1904, about 200 miners and their families lived in Kirwin. Although miners found some promising veins, the geology of the area is such that viable quantities of silver or gold were never found. The Kirwin mines produced very little ore, and the railroad, crucial to any mining district, never came to Kirwin. Adding to Kirwin's troubles, a national financial panic in 1907 cut the flow of investment capital to the mines. The town declined steadily after that.

In 1962, the American Metals Climax Mining Company purchased the Kirwin properties and conducted extensive operations in the area, mapping a rich deposit of copper under Spar Mountain. Plans to mine the deposit were dropped after the price of copper fell and startup expenses for the operation became too high.

In 1992, the Richard King Mellon Foundation and Conservation Fund purchased the Kirwin properties and facilitated the donation of 3,488 acres of land in the Upper Wood River Valley to the Shoshone National Forest. The property, known as the Kirwin property, is an eligible National Historic District. Today, visitors can explore the old mining town site and surrounding area, including cabins, mining equipment, and a mineshaft.

Desired conditions

The historical values of the site provide opportunities for education and enjoyment. Heritage resources in the Kirwin Historical Area are fully documented and the district is nominated to the National Register of Historic Places. A management plan guides recreation use, education, and interpretation within the management area.

Goals for Management Area 4.5A

Management Area 4.5A	
1.	This area is managed to maintain and enhance the historical qualities for which it was designated.
2.	The historical district is nominated to the National Register of Historic Places.
3.	Protect the area from human-caused impacts, wildfires, and other natural disturbances.
4.	Stabilize the site for preservation purposes and the elimination of safety hazards.
5.	Complete a historic property plan.

Standards for Management Area 4.5A

Fire and fuels	
1.	Fires within the proposed Kirwin Historical Area are to be suppressed. Use initial attack actions that keep fires as small as possible. The appropriate management response for wildfires that threaten to burn into the area will consist of strategies and tactics to prevent wildfire from doing so.

Minerals	
2.	Coordinate with National Environmental Policy Act planners and consult with the State Historic Preservation Office before implementing stabilization efforts.
3.	Mineral leases will include a stipulation for no surface occupancy.
4.	Permits for the removal of mineral materials will not be issued.
Recreation	
5.	Manage for a Recreation Opportunity Spectrum class of roaded natural.
Scenery	
6.	Manage for a Scenic Integrity Objective of moderate to high.
Heritage resources	
7.	Preservation efforts within the area meet the Secretary of Interior's Standards for the Treatment of Historic Properties.

Management approach

Windows in the Past programs and/or cooperative agreements with partners are utilized to achieve goals and objectives for the proposed Kirwin Historical Area. The area is integrated into a Forest-wide site stewardship program. Partners and volunteers are sought to help document heritage resources in the area and create the National Register of Historic Places nomination. Preservation activities within the area are carried out so that historic characteristics are not compromised. Upon establishment, management will be guided by a management plan.

Archaeological Resources Protection Act information will be posted at kiosks and/or trailheads to deter vandalism.

Vegetation management may be used to reduce excessive fuel loads, maintain or restore natural conditions, or enhance other historical values. Vegetation is also managed to reduce damage from dead and dying trees. Dead and dying trees are removed from around structures.

Management of Yellowstone cutthroat trout within the portion of the Wood River that flows through the area that was previously stocked by the Wyoming Game and Fish Department to help enhance and conserve the population will continue if the historical area is established.

Wildfires burning within the proposed Kirwin Historical Area will be suppressed. Wildfires that threaten the proposed Kirwin Historical Area are managed in a manner that prevents spread into the proposed Kirwin Historical Area. Prescribed fire may be used in areas surrounding the proposed Kirwin Historical Area to reduce hazardous fuels and the threat from wildfires.

Features, buildings, and archaeological deposits within the Kirwin Historical Area are fully documented. Priority historical structures will be preserved through stabilization, restoration, rehabilitation, or reconstruction.

A National Register of Historic Places nomination will be submitted by 2017.

Management Area 5.1 – Managed forests and rangelands

Theme

General forest and intermingled rangeland areas are managed to produce forest products, forage, and wildlife habitat, while providing for visual quality and recreational opportunities and a variety of other goods and services. Vegetation is managed to achieve and maintain the desired vegetation condition for livestock, wildlife, recreation, and wood fiber production.

Setting

These areas are characterized by forest and grassland communities and are managed for a variety of uses. Uses in these areas include, but are not limited to, commercial livestock grazing, wood production, mineral exploration and development, hunting, driving for pleasure, wildlife viewing, and winter sports. Management emphasis is on a balance of resource uses.

These lands are characterized by healthy watersheds, reflected by stable soils and clean water. Visitors to this area can expect to find a full range of improvements. Roads may vary from native surfaced to paved. There may be fences, corrals, water developments, trails, timber harvest operations, rangeland vegetation projects, or evidence of other human activities or improvements. Visitors may also expect dispersed recreation opportunities including both motorized and non-motorized, although they may also find that access is restricted, at times, by seasonal or yearlong road closures.

Desired conditions

The area provides scheduled (contributes to the allowable sale quantity) wood fiber production, such as sawtimber, posts and poles, and firewood. Vegetation is naturally appearing with areas of slight to moderate alteration (Scenic Integrity Objective low to moderate). Disturbed areas are evident across the landscape and vary in size and shape. Recently cut areas show tree stumps, slash, and disturbed soil. Older cut areas have younger stands and appear less disturbed. Age class diversity is greater than unmanaged areas with a more even distribution across all age classes.

The area is accessed by a road system that ranges from high clearance roads with native surfacing to gravel roads that accommodate passenger cars. Current and past resource activities are evident. Recreation opportunities are provided for dispersed activities. Concentrations of users can be low to high and are dependent on season of use and area popularity. Both motorized and non-motorized uses are provided. In limited local areas, non-motorized and motorized uses are separated.

Insect and disease populations occur at endemic levels, and damage is evident only in small patches across the landscape.

Open roads and motorized trails provide access and roaded recreational opportunities. Non-motorized uses may be provided on trails and closed roads. The settings depend on proximity to roads and management; settings are natural, natural appearing, or modified.

Existing facilities (buildings, roads, trails, bridges, fences, shelters, signs, or water diversions) blend into the landscape where feasible, or are removed if no longer needed. The area has a well-developed transportation system including roads and trails.

Grassland communities and forested communities with grass and forb understories are sustainable and provide livestock grazing, wildlife forage, and vegetation diversity.

Guidelines for Management Area 5.1

Forest products	
1.	On lands suitable for timber production, commercially valuable timber products are produced by maintaining acceptable stocking levels and rates of growth, as well as favoring commercial tree species.
Recreation	
2.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized to roaded natural.
Scenery	
3.	Manage for a Scenic Integrity Objective of low to moderate.

Management approach

Areas are managed with a strong multiple-use emphasis.

In this management area, a variety of silvicultural techniques and harvest systems are used to restore ecological function, structure, and composition, and provide products and services to the public. Prescribed fire is used in conjunction with silvicultural treatments to achieve desired conditions. Silvicultural treatments and prescribed fire are used to meet multiple resource objectives, as well as to achieve and maintain vegetation conditions and desired fuel levels to reduce the threat to key values from wildfire.

The initial response to unplanned ignitions in the management area generally favors consideration of managing fires to accomplish resource protection objectives, but opportunities to manage fire for resource benefits are possible.

Key values within the management area warrant fire management responses that mitigate the effects or prevent losses from fire. Potential values at risk include suitable timber lands and forage, infrastructure and developments, wildland urban interface, utility corridors, and other investments. In some situations, resource benefit objectives can be achieved using wildfire, but the use of wildfire is secondary to meeting protection objectives for other values within the management area.

Management Area 5.2 – Public water supply – water quality emphasis

Theme

Watersheds used for public water supply are managed for high quality water along with other multiple uses.

Setting

The Shoshone National Forest is the headwaters of many watersheds. All water that originates on the Shoshone could be used for municipal supply at some point downstream.

This management area focuses on the Lander water supply. The city of Lander has its diversion point on the Middle Popo Agie River. The Sawmill Creek drainage, which lies mostly on the Shoshone, is a major tributary of the Middle Popo Agie River and lies immediately upstream of Lander's diversion point. Lander managers are specifically concerned with potential wildfire and road construction effects, i.e., ash and sediment, within the Sawmill Creek drainage portion of their supply.

Desired conditions

Watersheds used for public water supplies are managed for multiple uses with an emphasis on the protection or improvement of water quality such that, when adequately and appropriately treated, the water is suitable for domestic/municipal uses.

Guidelines for Management Area 5.2

Water and soil	
1.	Promptly restore disturbed areas contributing to water quality degradation.
Fire and fuels	
2.	For unwanted fires that start in the Sawmill Creek sub-watershed of the Lander water supply, use aggressive initial attack actions that keep fires as small as possible. For unwanted wildfires that threaten to burn into the sub-watershed, the appropriate management response should include strategies and tactics that keep fires from burning into the watershed. Use the most effective suppression strategies and tactics that have the least impact possible on water quality.
Forest products	
3.	On lands suitable for timber production, commercially valuable timber products are produced by maintaining acceptable stocking levels and rates of growth, as well as favoring commercial tree species.
Recreation	
4.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized to roaded natural.
Scenery	
5.	Manage for a Scenic Integrity Objective of low to moderate.

Management approach

Production of water of high quality in all watersheds used for public water supply will be emphasized. Multiple uses within these watersheds are allowed, as long as activities are mitigated to protect water quality. Unwanted fires within or near the Sawmill Creek sub-watershed of the Lander water supply will be managed to prevent water quality degradation.

Management Area 5.4 – Managed big game crucial winter range

Theme

General forest and intermingled rangeland areas are managed to provide habitat for big game on winter range and spring birthing areas, while also providing forest products, recreational opportunities, and a variety of other goods and services. Vegetation is managed to achieve and maintain the desired vegetation condition of big game ranges while also providing for livestock, other wildlife, recreation, and wood fiber production.

Setting

These areas are characterized by forest and grassland communities that are managed to provide big game habitat, along with other uses. They include lands classified as winter range, transition ranges, birthing areas, and migration routes. These areas are generally lower in elevation and on the fringes of the forest. Many areas are south-facing slopes where snowmelt and green-up occur earlier in the spring, and snow accumulation does not occur until late autumn. Uses in these areas include, but are not limited to, commercial livestock grazing, wood production, mineral exploration and development, hunting, driving for pleasure, wildlife viewing, and hiking.

These lands are characterized by healthy watersheds, reflected by stable soils and clean water. Visitors to this area can expect to find a full range of improvements. Roads may vary from native surface to paved surface. There may be fences, corrals, water developments, trails, timber harvest operations, rangeland vegetation projects, or evidence of other human activities or improvements. Visitors may also expect dispersed recreation opportunities, motorized and non-motorized, although they may also find that access is restricted during the winter and spring to provide solitude for big game.

Desired conditions

Emphasis is on crucial winter range for deer, elk, bighorn sheep, and moose. These areas provide habitat that maintains viable big game species. Motorized travel does not create unacceptable stress on big game animals during the primary big game use season.

The area provides a naturally appearing environment with areas of slight to moderate alteration (scenic integrity levels low to moderate). The area is accessed by a road system that ranges from high clearance roads with native surfacing to gravel roads that accommodate passenger cars. Current and past resource activities are evident. Recreation opportunities are provided for dispersed activities. Concentrations of users can be low to high and are highly dependent on season of use and area popularity. Both motorized and non-motorized uses are provided, though motorized use is commonly restricted in the winter and spring.

Grassland communities and forested communities with grass and forb understories are sustainable to provide quality wildlife forage, while also providing for livestock grazing and vegetation diversity.

Open roads and motorized trails provide access and roaded recreational opportunities. Non-motorized uses may be provided on trails and closed roads. Densities of roads, trails, and areas open to public motorized use in the winter and spring are generally low (less than one mile per square mile). National Forest System roads and trails through winter range are open to public motorized use to provide access to non winter range lands when necessary. Motorized access in existing major road corridors, e.g. South Fork of the Shoshone River, provides opportunities for wildlife viewing. Secure habitat is maintained to reduce disturbance to big game in the winter and spring. There is no winter motorized recreation.

Roads and fencing do not impede big game seasonal movement. Some secure habitat occurs in elk migration corridors to facilitate big game movement.

The area provides scheduled wood fiber production. Vegetation is naturally appearing with areas of slight to moderate alteration (scenic integrity levels low to moderate). Disturbed areas are evident across the landscape and vary in size and shape. Recently cut areas show tree stumps, slash, and disturbed soil. Older cut areas have younger stands and appear less disturbed. Age class diversity is greater than other unmanaged areas with a more even distribution across all age classes.

Insect and disease populations are maintained at endemic levels, and damage is only evident in small patches across the landscape.

Existing facilities (roads, trails, bridges, fences, shelters, signs, or water diversions) blend into the landscape where feasible, or are removed if no longer needed. The area has a well-developed transportation system including roads and trails

Goal for Management Area 5.4

Management Area 5.4	
1.	Big game crucial winter range provides habitat to support big game populations.

Standards for Management Area 5.4

Species of local concern	
1.	Apply seasonal restrictions on motorized use of travelways to reduce disturbance in big game crucial winter range.
Commercial livestock grazing	
2.	Big game requirements for space and forage needed to meet population objectives have a priority in the management of big game crucial winter range used in common by livestock and big game.
Minerals	
3.	Restrict or prohibit geophysical operations on big game crucial winter range during critical periods.

Guidelines for Management Area 5.4

Species of local concern	
1.	Management activities that disturb big game should be conducted outside the season of use or mitigated to reduce disturbance to big game when the activity is necessary to sustain or improve winter range conditions.
Commercial livestock grazing	
2.	Apply allowable use (Table 6) residual vegetation, and other guidelines to livestock and wildlife grazing, especially large wild ungulates.
Forest products	
3.	On lands suitable for timber production, commercially valuable timber products are produced by maintaining acceptable stocking levels and rates of growth, as well as favoring commercial tree species.
Recreation	
4.	Recreation activity may be restricted when needed to mitigate adverse impacts on big game.
5.	Manage for an adopted Recreation Opportunity Spectrum class of semi-primitive motorized to roaded natural.
Scenery	
6.	Manage for a Scenic Integrity Objective of low to moderate.

Management approach

Multiple-use principles are applied to emphasize habitat for big game.

Program planning utilizes Wyoming Game and Fish Department mapping of moose, elk, and bighorn sheep winter range, identified parturition areas, and migration corridors. Implementation of parturition area management will be on a case-by-case basis.

A focus for big game species is the management of crucial winter range, secure habitat, and habitat connectivity. On crucial winter range, management is to maintain the quality and quantity of forage to encourage big game to winter on public lands and not move onto private lands. Management emphasizes the retention of an adequate quantity and quality of forage for wintering wildlife on big game crucial winter range following the commercial livestock grazing period.

Seasonal closures are used where necessary in big game crucial winter range and parturition areas to reduce open road densities, limit disturbance from motorized use, and provide increased secure habitat during the winter and spring. Exceptions will be allowed for identified existing snowmobile routes and play areas. Seasonal closures and/or closure dates may be adjusted to allow access for recreational hunting opportunities. The Wyoming Game and Fish Department provides input on modifications. Non-recurring modifications to big game seasonal closures to conduct management activities consider the need to conduct the management activity during the season of use, the duration of the management activity, the benefit to winter range/parturition areas, potential mitigation measures, and presence of big game in that particular year. The Wyoming Game and Fish Department will be consulted before a seasonal closure is modified.

On a case-by-case basis, commercial livestock use levels in some pastures or allotments may be reduced to ensure adequate forage remains to sustain wintering wildlife at population objectives and to ensure that combined use of livestock and wildlife do not exceed utilization use standards.

Currently, there is little concern for non-motorized dispersed recreation impacts to wintering wildlife. The Forest Service will educate the public about impacts to wildlife from dispersed recreation and remain vigilant about potential areas of conflict; the Forest Service will not promote dispersed use in winter range.

In this management area, a variety of silvicultural techniques and harvest systems are used to restore ecological function, structure, and composition, and provide products and services to the public. Vegetation activities are generally designed to maintain habitat mosaics within the natural range of variability. Prescribed fire is used in conjunction with silvicultural treatments to achieve desired conditions. Mechanical treatments and prescribed fire are used to meet multiple resource objectives, as well as to achieve and maintain vegetation conditions and desired fuel levels to reduce the threat to key values from wildfire.

Both wildfire and prescribed fire are used to achieve and maintain vegetation conditions. The initial response to unplanned ignitions in the management area favors consideration of managing fires to accomplish resource benefit objectives. In some situations, the condition and availability of winter range may warrant protection of the winter range from wildfire with a suppression response.

A focus will be to work with the Wyoming Game and Fish Department to assess shifts in winter range use by big game in response to increased populations of large predators and changes in temperature and precipitation. Managers will work with the Wyoming Game and Fish Department to explore changes in management that should be considered to respond to shifts in winter range use.

Emphasis is on maintaining secure habitat within current ranges while trying to improve conditions in areas with low or very low secure habitat (Table 11). Impacts of low security are sometimes reduced by topographic features and vegetation screening (hiding cover).

The Wyoming Game and Fish Department's *Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitat* will be utilized during site-specific project level proposals.

Forest Service personnel will work with the Wyoming Game and Fish Department to manage big game populations to ensure standards are being met.

If standards are consistently exceeded, work with the Wyoming Game and Fish Department to manage wildlife numbers or distribution to address problem areas.

Management Area 8.1 – Developed recreation areas

Theme

These are recreation areas with at least some investment, site modification, and Forest Service improvements either for the protection of the natural site and/or comfort of the users. They provide an array of recreational opportunities and experiences.

Setting

This management area provides intensive recreation use. Areas such as campgrounds, day-use areas, trailheads, scenic overlooks, interpretive sites, groups of summer homes, and resorts may be present. As such, major site modifications and facility installations are expected.

Developed recreation areas include 1) the area within 150 feet of any improvement at public owned sites (identified in the Forest Service Infra with a development level of 2 or higher), and 2) the permitted area of privately owned facilities authorized under a special use authorization (resorts, organization camps, and recreation residences, etc.)

Desired conditions

Developed recreation sites and infrastructure provide a variety of recreation and interpretation supporting the recreation settings. Sites provide clean, safe facilities and natural appearing views and scenery. Vegetation condition and structure provide a safe environment.

Goals for Management Area 8.1

Management Area 8.1	
1.	Native vegetation in developed sites is diverse (species, size, and age) and complements recreational activities and visual quality.
2.	Levels of development and amenities at recreation facilities are sustainable and commensurate with the location, level of use, and public expectations.
3.	New or reconstructed facilities and sites provide a range of universally accessible opportunities within the limits of the site characteristics and Recreation Opportunity Spectrum classification.
4.	Protect developed recreation sites and infrastructure from loss or damage from wildfires and other natural events.

Objectives for Management Area 8.1

Management Area 8.1	
1.	Reconstruct at least one campground.
2.	By 2020, deferred maintenance needs for the top 50 percent of fee campgrounds are accomplished.

Standards for Management Area 8.1

Management Area 8.1	
1.	Bear-resistant garbage containers shall be provided at developed campgrounds where garbage service occurs.
Commercial livestock grazing	
2.	Grazing is excluded from developed recreation sites using fencing or effective natural barriers.
Minerals	
3.	Prohibit removal of mineral materials.
4.	Mineral leases will include a stipulation for no surface occupancy.

Guidelines for Management Area 8.1

Vegetation	
1.	Vegetation manipulation should not occur during times of high recreational use or result in conflicts with recreational activities.
2.	Vegetation management practices can be used to meet specific resource objectives other than wood production, such as enhancing recreation setting, perpetuating desired vegetation conditions, improving site safety, mitigating hazardous fuels, treating invasive species, etc.
Threatened, endangered, proposed, and candidate species	
3.	Provide bear awareness education information at developed sites.
Minerals	
4.	These areas are withdrawn from mineral entry when necessary to meet the objective of the management area.
Recreation	
5.	At all trailheads, parking and trailhead panels for trail information/interpretation should be provided.
6.	At facilities where water is provided, a water system operation and maintenance plan should be in place.
7.	Manage for an adopted Recreation Opportunity Spectrum class of roaded natural.
Scenery	
8.	Manage for a Scenic Integrity Objective of moderate to high.

Management approach

The Forest Service will provide economically sustainable developed recreation facilities consistent with the needs of the public, changing visitor preferences, the recreation setting, recreation facility analysis (update every five years), and available funding. Partnerships will be established and utilized to provide and maintain developed recreation infrastructure.

Recreational activities are emphasized, and enhanced, by modifying the areas, although vegetation cover and soils are maintained. To balance needs and funding, amenities may be added to some sites, while others may be redesigned with fewer amenities. When campground occupancy is consistently less than 30 percent during the normal operating season, a site-specific analysis will be conducted to determine future management of the site.

Reconstruction and construction of developed sites accommodate some increasing recreation demand. New recreation facilities generally do not compete with services offered by the private sector. A high priority should be placed on making all facilities universally accessible during

reconstruction or construction. In addition, existing accessible features should be maintained as such and periodically checked for continued accessibility.

Vegetation in high use recreation areas will be managed to provide public safety and to improve forest vigor as needed to maintain or improve the desired recreation setting(s). Developed recreation sites with priority vegetation management needs will be identified, and comprehensive vegetation management plans will be developed to address those needs. Pest management activities and methods will focus on enhancing or protecting site vegetation and facilities.

Key values within the management area, when threatened by wildfire, warrant fire management responses that mitigate the effects or prevent losses from fire. Potential values at risk include developed recreation sites, wildland urban interface, utility corridors, resorts, and other forest developments and investments. Opportunities to accomplish resource benefit objectives using wildfire are limited and are secondary to meeting protection objectives for high values within the management area. Mechanical treatments are typically used in combination with prescribed fire to accomplish fuels reduction and vegetation management objectives.

Other guidance

Recreation Site Facility Master Planning: 5-Year Program of Work and Programmatic Effects of Implementation, Shoshone National Forest (USDA Forest Service 2006)

Management Area 8.2 – Ski-based resorts

Theme

This area contains a developed recreation site that provides an array of recreational opportunities and experiences in a forested environment. This management area includes the larger, mapped Sleeping Giant Ski Area and the 89-acre unmapped Red Lodge Race Camp Ski Area.[37] The Red Lodge Race Camp Ski Area overlays portions of Management Areas 1.6A and 4.2.

Setting

This area is characterized by a substantially modified natural environment. The sounds of people using the area are evident, and interaction between visitors is sometimes high. A considerable number of facilities designed for the use of a large number of people may be present. The scenic condition may have management alterations that are easily noticeable to visitors, although the alterations are made in harmony with the natural appearance of the landscape.

Desired conditions

This management area provides intensive winter recreational use and moderate summer use as needed to support the primary purpose of maintaining a viable ski resort. Recreational activities are emphasized, and are often enhanced, by modifying the area, although vegetation cover and soils are maintained.

[37] The 89 acres were not included in the acreage for Management Area 8.2.

Goals for Management Area 8.2

Management Area 8.2	
1.	Provide safe, quality alpine and Nordic ski experiences.
2.	Protect ski-based resorts and infrastructure from loss or damage from wildfires.

Standards for Management Area 8.2

Water and soil	
1.	To minimize the introduction of sediment into waterbodies, large parking area designs shall address the drainage of runoff from parking lots and associated snow removal storage areas.
Threatened, endangered, proposed, and candidate species	
2.	Garbage containers located outdoors shall be bear resistant.
Minerals	
3.	Prohibit removal of locatable minerals, mineral materials, and leasable minerals within the permit boundary.[38]

Guidelines for Management Area 8.2

Management Area 8.2	
1.	Combine structures/facilities where possible to minimize building footprints.
2.	Where possible, locate access roads in previously disturbed areas.
3.	Where stream crossings occur on groomed ski trails, temporary bridges should be utilized and removed prior to spring runoff.
4.	Facilities may dominate, but must harmonize and blend with the adjacent landscape.
Water and soil	
5.	Design criteria for managing stormwater events should be implemented before beginning construction activities.
6.	Snowmaking trench locations should be designed to prevent channelizing water.

[38] Ski permit areas are withdrawn from mineral activity during the full term of the permit (16 USC 497c(j).

7.	Consider water diversion options that do not require permanent in-channel structures or channel modification.
8.	Erosion control structures should be keyed into the ground.
9.	Ski area operating and maintenance plans should include clauses for maintenance and monitoring of runoff and stormwater control measures during snowmelt and summer thundershower events.
Vegetation	
10.	Vegetation manipulation should not occur during times of high recreational use or result in conflicts with recreational activities.
11.	Vegetation management practices can be used to meet specific resource objectives other than wood production, such as enhancing recreation setting, perpetuating desired vegetation conditions, improving site safety, mitigating hazardous fuels, treating invasive species, etc.
Management indicator species	
12.	Snowmaking operations that divert and use water should minimize impacts to fish and other aquatic organisms.
Minerals	
13.	These areas are unavailable for mineral leasing.
14.	These areas are withdrawn from mineral entry when necessary to meet the objective of the management area
Recreation	
15.	Manage for an adopted Recreation Opportunity Spectrum class of rural.
Scenery	
16.	Manage for a Scenic Integrity Objective of low to moderate.
17.	Visual resources should be managed so that the character is one of forested areas interspersed with openings of varying widths and shapes.

Management approach

The Forest Service will provide summer recreation opportunities that help sustain local economies during the shoulder and off seasons.

Stormwater control plans (erosion control and soil stabilization efforts) should be pre-planned and erosion control mechanisms should be included in ski hill design and in place prior to construction. Vegetation management and other methods are used to control insect infestations in and adjacent to the management area.

Wildfires burning within the management area will be suppressed. Wildfires that are a threat to the management area are managed in a manner that prevents damage or loss to structures and developments. Mechanical treatments and prescribed fire may be used in areas surrounding structures and developments to reduce hazardous fuels and accomplish vegetation management objectives.

Management Area 8.6 – Administrative sites

Theme

This prescription emphasizes management of administrative sites. Administrative sites are areas where Forest Service-owned and leased facilities are present and used to facilitate management of the Shoshone. The management area boundary for Forest Service-owned facilities located on National Forest System lands, such as the Wapiti Ranger Station, includes the area within 150 feet of any improvement. The boundary for Forest Service-owned or leased facilities located in a municipality, such as the ranger district offices and the Supervisor's Office, includes the lot on which the office is located.

Setting

This area is characterized by an environment modified to contain facilities necessary for the management of the national forest. Human and livestock presence is common.

Desired conditions

Site features may include office buildings, parking lots, work centers, employee quarters, and storage facilities. Facilities provide adequate maintenance and improvements to protect the health and safety of workers and visitors. Landscape modifications and facilities may be visible, but are reasonably mitigated to blend and harmonize with natural features. Vegetation is managed to provide a pleasing appearance for visitors.

Well-maintained facilities provide a positive image of the Forest Service. New facilities are designed using the *Built Environment Image Guide* and result in facilities that require low maintenance, are cost effective, sustainable, and include universal design concepts. Facilities provide for both current and future needs. Facilities are managed according to the *Recreation Site Facility Master Planning: 5-Year Program of Work and Programmatic Effects of Implementation, Shoshone National Forest* (USDA Forest Service 2006).

Goals for Management Area 8.6

Management Area 8.6	
1.	Dispose of excess administrative facilities.
2.	Reduce energy and water consumption.
3.	Provide well-maintained facilities necessary for administration and management of the Shoshone.
4.	Protect administrative sites and infrastructure from loss or damage from wildfires and other natural events.
5.	Maintain administrative sites free of invasive plant species.
6.	The structures of the Wapiti Ranger Station and the surrounding setting are maintained in good condition and in a manner compatible with the historical and cultural context.

Objective for Management Area 8.6

Management Area 8.6	
1.	Reduce deferred maintenance by 50 percent.

Standards for Management Area 8.6

Minerals	
1.	Prohibit removal of mineral materials.
2.	Mineral leases will include a stipulation for no surface occupancy.
Heritage resources	
3.	Follow the Secretary of the Interior's standards for treatment of historic properties to preserve the National Historic Landmark Wapiti Ranger Station.
Land adjustments	
4.	Do not retain facilities acquired from land donation, exchange, or purchase unless they serve a definite future purpose and funding is available for maintenance.

Guidelines for Management Area 8.6

Management Area 8.6	
1.	New facilities should meet accessibility standards consistent with the purpose and need of the facility. Incorporate sustainable building materials and practices into facility design and construction.
Vegetation	
2.	Vegetation management practices should be used to meet specific resource objectives other than wood production, such as perpetuating desired vegetation conditions, improving site safety, mitigating hazardous fuels, treating invasive species, etc.
Minerals	
3.	These areas are withdrawn from mineral entry when necessary to meet the objective of the management area.
Recreation	
4.	Manage for an adopted Recreation Opportunity Spectrum class of rural.
Scenery	
5.	Manage for a Scenic Integrity Objective of moderate to high

Management approach

Administrative facilities are maintained to standard. Facilities are the minimum number and type necessary for management and administration of the Shoshone.

Facilities are maintained and modified to ensure continued administrative use, or conveyed if no longer needed for administrative use. Before disposal, excess administrative facilities will be evaluated for possible inclusion in the recreation rental program.

Facilities will be managed in accordance with the Shoshone's facility master planning documents. A management plan for each administrative site will be developed and will guide use, operation, and maintenance.

Administrative sites threatened by wildfire warrant fire management responses that mitigate the effects of or prevent losses from fire. Mechanical treatments are typically used in combination with prescribed fire to accomplish fuels reduction and vegetation management objectives.

Other guidance

Recreation Site Facility Master Planning: 5-Year Program of Work and Programmatic Effects of Implementation, Shoshone National Forest (USDA Forest Service 2006).

Chapter 3 – Monitoring

Monitoring strategy

Effective forest plan monitoring and evaluation fosters improved management and more informed planning decisions. It helps identify the need to adjust desired conditions, goals, objectives, standards, and guidelines as conditions change. Monitoring and evaluation help the Forest Service and the public determine how the Plan is being implemented, whether Plan implementation is achieving desired outcomes, and whether assumptions made in the planning process are valid.

The purpose of the monitoring strategy is to provide direction in order to facilitate successful monitoring and evaluation. The focus of the Shoshone's monitoring strategy is:

- Establish monitoring priorities: Criteria from the goals and objectives are used to establish priorities for monitoring within the expected program of work and budget constraints.
- Identify responsible parties and potential cooperators: Resource program managers accept responsibility for ensuring that monitoring is completed and identify ways to gather and evaluate data in conjunction with other agencies or with other interested parties.
- Evaluate the data: Resource managers will evaluate the data collected, with the goal of answering the monitoring questions, and determine if changes are needed in plan direction or outputs.
- Publish and distribute the annual monitoring and evaluation report: Resource program managers will write the annual monitoring report for the forest supervisor's review. After review, it will be distributed to the public. This report will summarize the information collected and the relevant evaluations.

Annual monitoring and evaluation report

The Shoshone will document its monitoring and evaluation process in an annual monitoring report. The monitoring report serves several purposes including:

- Documenting monitoring and evaluation accomplishments
- Providing an assessment of the current state of ecological conditions on the Shoshone and socioeconomic contributions to local communities
- Providing feedback to responsible officials of any needed changes to the Plan, or of any needed adjustments to management actions
- Providing the public with relevant information about the management of the public lands within the planning area

The annual monitoring and evaluation report will contain the following sections:

- The introduction contains an update on monitoring activities on the Shoshone and any regional monitoring efforts.
- The monitoring results describe the results of monitoring the items described in the Plan's monitoring strategy table.

- Evaluation and recommendations evaluate the monitoring results including any results of particular concern. A list of responsive actions may be included and any needed changes to Plan direction or implementation activities may be discussed.

A strategy for involving the public, other agencies, and interest groups in our monitoring activities should be considered each year. This may be accomplished through partnerships with interest groups, volunteer groups, other federal, state, and local agencies, and universities.

Components of the monitoring strategy

Monitoring driver

The monitoring driver relates specifically to goals or objectives identified in the Plan.

Monitoring question

The monitoring questions are developed to address information essential to measuring the effectiveness of plan implementation in moving towards desired conditions described in the Plan.

Monitoring priorities

- High priority: These items have been identified by resource specialists as essential for assessing trends in ecosystem health. Monitoring elements required by law and/or by regulation are also ranked as high priority.
- Medium priority: This indicates that the monitoring element is directed by the Plan, as developed in the goals and objectives section (which may or may not be directly associated with required laws or regulations).
- Low priority: This indicates that the monitoring element involves questions of a more indirect nature, or that it does not fall under one of the above classifications.

Potential monitoring items

A monitoring item may be a quantitative of qualitative parameter that is measured or estimated. One or more monitoring items are selected in order to answer a monitoring question.

Monitoring precision/reliability

The precision and reliability with which a monitoring item is collected is dependent upon the activity and associated issue(s). There are two classes of precision and reliability considered in the monitoring guide:

- Class A: In this case, the methods are generally well accepted for modeling or measuring the resource or condition. They produce repeatable results and are often statistically valid. Reliability, precision, and accuracy are very good. These methods are often quantitative.
- Class B: In this case, the methods are based on project records, communication, on-site visual estimates, and/or less formal measurements. Reliability, accuracy, and precision are good: however, they are less than those for Class A methods. Class B

methods are often qualitative; however, they still provide valuable information on the status of the resource.

Scale

Scale describes the level of analysis with respect to land size. This measure is important in describing impacts dealing with habitat heterogeneity and viability issues, as well as describing cumulative impacts related to, or resulting from, management actions.

Frequency of reporting

Frequency of reporting describes the timing of monitoring and evaluation efforts. Much data are collected annually, while other data are collected less frequently based on the length of time needed to discern a measureable change.

Table 28. Monitoring strategy

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Water and soil						
Soil, water, and aquatic habitat improvement/ restoration projects are implemented annually to improve or maintain watersheds so conditions are trending toward a higher condition	Are projects being implemented to improve and maintain watershed condition? Was accomplishment identified in a priority watershed plan? Were improvements made to watersheds identified as impaired in the watershed condition framework?	High	Items meeting targets Best management practice reviews Watershed improvements	B	Forest-wide	Annually
	Does reference data collected validate watershed condition and trend?	High	Soil disturbance, stream health, aquatic and riparian health	A	Forest-wide	3 to 5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Air						
Air quality meets Clean Air Act and Wilderness Act requirements and Environmental Protection Agency-approved Wyoming air quality standards	Does Forest air quality meet Clean Air Act and Wilderness Act requirements and Environmental Protection Agency approved Wyoming air quality standards?	High	Nitrogen wet deposition trend analysis – South Pass	A	Regional impacts	5 years
			Acid neutralizing capacity – Lower Saddlebag and Ross Lakes	A	Regional impacts	5 years
			Visibility – Dead Indian Pass IMPROVE site	A	Interagency and regional	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Vegetation						
Restore and maintain a diverse range of forested and non-forested ecosystems	How many acres of aspen and willow cover types are on the Shoshone?	Medium	Acres of willow and aspen	B	Forest-wide	5 years
	Is whitebark pine being restored?	Medium	Acres of whitebark pine restoration	B	Forest-wide	10 years
	What is the health of whitebark pine?	High	Blister rust Amount of mountain pine beetle mortality Recruitment of whitebark pine	B	Greater Yellowstone Area (interagency)	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Vegetation						
	What is the rangeland vegetation condition?	Medium	Rangeland vegetation condition	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Threatened, endangered, proposed, and candidate species						
Suitable habitats for threatened, endangered, proposed, and candidate species are managed consistently with established and approved recovery plans and conservation strategies	To what extent is management contributing to the conservation of federally listed species and moving toward goals and objectives for their habitat conditions and population trends?	High	Required monitoring items in appendix 1, Northern Rockies Lynx Management Direction	B	Forest-wide	5 years
	Are habitat standards for conservation of the Yellowstone population of grizzly bears being met?	High	Tracking and reporting annual changes in motorized access, livestock grazing allotments, and developed sites	A	Regional (ecosystem wide)	Annually
	What is the status of key food sources for the Yellowstone population of grizzly bears?	High	Whitebark pine cone production	A	Regional (ecosystem wide)	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Threatened, endangered, proposed, and candidate species						
	What is the status of the Yellowstone population of grizzly bears?	High	Population distribution and trend	A	Regional (ecosystem wide)	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Sensitive species						
The Yellowstone cutthroat trout population has expanded to at least four suitable stream reaches within priority watersheds	Is the Yellowstone cutthroat trout population expanding to other suitable stream reaches?	High	Miles and distribution of streams supporting genetically pure Yellowstone cutthroat trout populations	A	Yellowstone cutthroat trout range-wide	Annually
Prescribed fire and associated disturbances occur on at least 4,000 acres of bighorn sheep winter range and connectivity corridors	How many acres of prescribed fire have occurred on bighorn sheep winter range and connectivity corridors?	High	Acres of prescribed fire on bighorn sheep foraging areas and connectivity corridors	B	Forest-wide	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Sensitive species						
The abundance, distribution, and habitat of sensitive species are improving	What is the status of rare plants on the Shoshone?	Medium	Abundance and spatial distribution	B	Forest-wide Greater Yellowstone Area Region-wide	Annual and biannual assessment of new information

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Management indicator species						
Maintain or improve habitat capable of supporting the viability of wildlife and fish management indicator species	What are the habitat conditions and trends for management indicator species?	High	Habitat condition and trends	B	Forest-wide	5 years
	What are the estimates of population trends for management indicator species?	High	Population trend estimates	B	Forest-wide	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Species of local concern						
Secure habitat for big game occurs at or above the minimum desired condition of 30 percent per herd unit	What is the percentage of secure habitat for big game in each herd unit?	Medium	Acres of secure habitat by herd unit	B	Forest-wide	5 years
Habitat supports populations of plant species of local concern	What is the status of rare plants on the Shoshone?	Medium	Abundance and spatial distribution	B	Forest-wide Greater Yellowstone Area Region-wide	Annual and biannual assessments of new information

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Invasive species						
Reduce invasive plant density, infestation size, and/or occurrence on at least 2,000 acres annually	How many acres of invasive plants were treated this year?	Medium	Acres of invasive plants treated	B	Forest-wide Greater Yellowstone Area	Annually
Treat 25 to 50 acres of cheatgrass in sagebrush communities each year, with particular emphasis on big game winter range	How many acres of cheatgrass in sagebrush communities were treated this year?	Medium	Acres of cheatgrass treated	B	Forest-wide	Annually
Aquatic invasive species are not established in any new areas on the Shoshone	Are aquatic invasive species established in new areas?	Medium	Presence of aquatic invasive species in high-use areas	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Fire and fuels						
Disturbance processes have moved 60,000 to 165,000 acres from fire regime condition classes 2 or 3 to fire regime condition class 1 Disturbance processes have maintained 86,000 to 176,000 acres in fire regime condition class 1	How many acres of each fire regime condition class exist on the Shoshone?	Medium	Acres by fire regime condition class	B	Forest-wide	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Fire and fuels						
Reduce hazardous fuel ratings on 100,000 to 250,000 acres, including 60,000 to 90,000 acres in management area categories 4, 5, and 8	How many acres of hazardous fuels were treated to reduce the rating?	Medium	Acres treated Acres treated in management area categories 4, 5, and 8	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Social and economic sustainability						
Permitted animal unit months range between plus or minus 10 percent of 60,000 annually	How many animal unit months are permitted?	Medium	Total animal unit months	A	Forest-wide	Annually
Forest products produced from the Shoshone average at least 16,500 Ccf annually	How many Ccf were produced?	Medium	Total Ccf	A	Forest-wide	Annually
Special use authorizations benefit local economies through associated employment opportunities, services, and visitation	What type and how many recreation special use authorizations are authorized?	Medium	Number and type of special use authorizations Gross revenues	A	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Social and economic sustainability						
Help meet energy resource needs	How many acres of mineral leases?	Medium	Acres of mineral leases	A	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Recreation						
A diversity of year-round recreation opportunities attract increasing numbers of visitors to the Shoshone	What is the amount of visitors, activities participated in, and level of visitor satisfaction?	Medium	National Visitor Use Monitoring Number of visitors Activities participated in Level of satisfaction People at one time provided	B	Forest-wide	5 years People at one time – annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Heritage						
Conduct condition assessments on priority resources on a five-year cycle Assess 20 percent of priority heritage assets annually until all have condition assessments on file dated no greater than five years in age	Condition assessments were conducted on how many Priority Heritage Assets?	Medium	Number of assessments	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Heritage						
Avoid, minimize, or mitigate negative effects from natural or human-caused impacts to at least one priority heritage asset annually	How many priority heritage assets were protected from impacts?	Medium	Assets protected	A	Forest-wide	Annually
At least 200 acres with high archaeological potential will be inventoried annually under Section 110 of the National Historic Preservation Act	Were 200 acres of National Forest System land with high archaeological potential inventoried?	Medium	Acres inventoried	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Heritage						
A historic property plan is completed for at least three National Register eligible or listed properties or property types	Was a historic property plan completed during the planning period?	Medium	Number of historic property plans completed	A	Forest-wide	5 years
Survey at least 5 percent of land burned by wildfires greater than 50 acres within one year of being burned	What resources were impacted by the fire? How many burned acres were surveyed?	High	Number of historic properties impacted	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Roads and trails						
Maintenance occurs on at least 60 percent of maintenance levels 3, 4, and 5 and at least 5 percent of level 2 miles of System roads annually	How many miles of road maintenance were accomplished on levels 2, 3, 4, and 5 roads?	Medium	Miles of road maintenance by maintenance level	B	Forest-wide	Annually
Maintenance occurs on at least 15 percent of System trails annually	How many miles of trail maintenance were accomplished?	Medium	Miles of System trail maintained to standard	B	Forest-wide	Annually
Deferred maintenance needs have declined on at least 10 miles of System trails	How many miles of deferred trail maintenance were accomplished?	Medium	Miles of deferred trail maintained to standard and miles improved to standard	B	Forest-wide	Annually

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Roads and trails						
There are fewer than 1,400 miles of System roads on the Shoshone	How many miles of System roads are on the Shoshone?	Medium	Miles of System roads	B	Forest-wide	Annually
At least three new wheeled motorized loop trail opportunities are available	How many new motorized loop trails have been provided?	Medium	Number of motorized loop trails	B	Forest-wide	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Wilderness						
Wilderness character will improve 10 percent proportionally by setting	What is the state of wilderness character? How is wilderness character changing over time? How are stewardship actions affecting wilderness character?	Medium		B	Forest-wide	Annually
Invasive plant density, infestation size, and occurrences are reduced	How many acres of wilderness were treated for invasive plants?	Medium	Acres of invasive plant treatments	B	Wilderness areas	5 years
Kirwin Historical Area						
Priority historical structures are preserved through stabilization, rehabilitation, or reconstruction	Is the historic area being maintained? Is adequate progress being made to preserve priority structures?	Medium	Discussion of preservation projects and analysis of structure conditions	B	Kirwin	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Developed recreation areas						
Reconstruct at least one campground	Has at least one campground been reconstructed?	Medium	Yes/no	A	Forest-wide	5 years
By 2020, deferred maintenance needs are accomplished for the top 50 percent of fee campgrounds	Have deferred maintenance needs been accomplished on the top 50 percent of fee campgrounds?	Medium	Yes/no	B	Forest-wide	5 years

Monitoring driver	Monitoring questions	Monitoring priority	Potential monitoring items	Precision and reliability	Scale	Frequency of reporting
Administrative sites						
Reduce deferred maintenance by 50 percent	Has deferred maintenance been reduced by 50 percent?	Medium	Yes/no	B	Forest-wide	5 years

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Glossary

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.
Age class	Age class is one of the intervals, commonly 10 years, into which the age range of trees is divided for classification or use. Age class distribution refers to the location and/or proportionate representation of different age classes in a forest.
Aggradation	The process of building up a surface by deposition; a long-term or geologic trend in sedimentation.
Air quality related values	Air quality related values are resources that may be affected by a change in air quality and generally relate to visibility, odor, flora, fauna, soil, water, climate, geological features, and cultural resources. Values are specific for each wilderness area.
Allowable use	The degree of use of range or pastureland considered desirable and attainable, considering the present nature and condition of the resource, the management objective, and the level of investment.
Allowable sale quantity	The quantity of timber that may be sold from an area of suitable land covered by a forest plan for a time specified by the plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity.
Animal unit month	An animal unit month is the equivalent to the amount of dry forage consumed by a 1,000-pound non-lactating cow in one month (approximately 780 pounds, or 26 pounds per day).
Application Rules	The Application Rules are outlined in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* (Interagency Conservation Strategy Team 2007).
Appropriate management response	An appropriate management response is any action suitable to meet fire management unit objectives. Typically, the appropriate management response ranges across a spectrum of tactical options (from monitoring to intensive management actions). The appropriate management response is developed by using fire management unit strategies and objectives identified in a forest's fire management plan.
Aquatic ecosystem	Waters of the United States that serve as habitat for interrelated and interacting communities and populations of plants and animals. It includes the stream channel, lake or estuary bed, water, biotic communities, and the habitat features that occur.

Bankfull	Bankfull stage is the stage at which a stream first overflows its natural banks.
Bark beetles	Bark beetles are members of the family Scolytidae whose adults and larvae tunnel in the cambium region (bark and sapwood) or living, dying, and recently dead or felled trees and do immense damage to trees all over the world.
Basal area	The area of ground surface occupied by the stem of a plant, as contrasted with the full spread of its foliage, generally measured at 1 inch above soil level.
Beneficial uses	Any of the various uses that 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	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 for sport hunting, generally including antelope, bighorn sheep, deer, elk, moose, and mountain goat.
Biological opinion	Biological opinions document a U S Fish and Wildlife Service opinion as to whether a federal action is likely to jeopardize the continued of an Endangered Species Act-listed species, or result in the destruction or adverse modification of species' critical habitat.
Boreal disjunct plants	Boreal disjunct plants are remnants of the boreal (northern) ecosystem that remain in high elevation places.
Candidate species	Plant and animal species being considered for listing as endangered or threatened under the Endangered Species Act.
Capital investment	A capital investment is expenditure of funds on infrastructure.
Carex	Carex is a genus of plants in the family Cyperaceae, commonly known as sedges.
Channel	An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.
Clearcut	A regeneration or harvest method that removes essentially all trees in a stand. A stand in which essentially all trees have been removed in one operation to produce an even-aged stand.

Coarse woody debris	Provides living spaces for a host of organisms and serves as long-term storage sites for moisture, nutrients, and energy. Coarse woody debris consists of any woody material greater than three inches in diameter and is derived from tree limbs, boles, roots, and large (greater than 12 inches in diameter) wood fragments and fallen trees in various stages of decay.
Collaboration	Working with someone to produce or create something.
Community wildfire protection plan	A community wildfire protection plan is a plan developed in the collaborative framework established by the Wildland Fire Leadership council and agreed to by state, tribal, and local government, local fire department, other stakeholders, and federal land management agencies managing land near the planning area. A community wildfire protection plan 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. A community wildfire protection plan may address issues such as wildfire response, hazard mitigation, community preparedness, or structure protection – or all of the above.
Condition class	Depiction of the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components. These classes categorize and describe vegetation composition and structure conditions that currently exist inside the fire regime groups. Based on the coarse-scale national data, they serve as generalized wildfire rankings. The risk of loss of key ecosystem components from wildfires increases from condition class 1 (lowest risk) to condition class 3 (highest risk).
Connectivity	The arrangements of habitats that allow 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.

Conservation status ranking	Conservation status ranks estimate a species risk of elimination. Status ranks are based on a 1 to 5 scale, 1 denoting a species is critically impaired and 5 denoting a species is secure. Species status is assessed at three geographic scales: global (G), national (N), and state/province (S). The overall status of a species is denoted by its G-rank, while its condition in a particular country is denotes by its N-rank, and its condition in a particular state/province is denoted by its S-rank. State rank is assigned by Wyoming Natural Diversity Database biologists and denotes a species probability of elimination in Wyoming (NatureServe 2012, Wyoming Natural Diversity Database 2012). Subspecies, varieties, or any other designation below the level of a global ranked species, receive a T-rank that denotes their conservation status. A species may receive a B- or N-rank that refers to the conservation status of the breeding (B) or non-breeding (N) population in a particular nation or state/province.
Conservation strategy	A conservation strategy is a management scheme or plan to conserve or sustain particular ecosystem elements such as rare species or habitats. An example of a conservation strategy would be to survey for potential habitats during project planning in order to protect known populations of a rare species through project-specific measures.
Coppice Coppice with standards	Coppice is a vegetation reproduction method with clear felling or clearcutting. Clear felling stimulates sprouting from the residual roots. Standards are selected overstory trees reserved for a longer rotation at the time each crop of coppice material is cut.
Corridors	Avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes or natural disasters, and threatened species can be replenished from other areas.
Cultural properties	The definite location of a past human activity, occupation, or use identifiable through field inventory, historic documentation, or oral evidence. Cultural properties include prehistoric and historic archaeological remains, or architectural sites, structures, objects, or places with important public and scientific uses.
Cultural resources	Cultural resources are the physical remains of human activity (artifacts, ruins, burial mounds, petroglyphs, etc.) and conceptual content or context (as a setting for legendary, historic, or prehistoric events, as a sacred area of native people, etc.) of an area or prehistoric or historic occupation.
Deciduous	A deciduous tree or shrub sheds its leaves annually.

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. Decommissioning roads includes activities that result in the stabilization and restoration of unneeded roads to a more natural state.
Deferred maintenance	Maintenance that was not performed when it should have been or when it was scheduled and which was delayed. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increases costs to repair, and decrease in net value.
Degradation	To wear down by erosion, especially through stream action.
Designated wilderness	Designated wilderness refers to any area of land designated by Congress as part of the National Wilderness Preservation System that was established by the Wilderness Act of 1964.
Developed recreation	Developed recreation is outdoor recreation requiring significant capital investment in facilities to handle a concentration of visitors on a relatively small area. Examples are ski areas, resorts, and campgrounds.
Developed site	Developed recreation sites are relatively small, distinctly defined areas where facilities are provided for concentrated public use, e.g., campgrounds and picnic areas.
Disjunct	Disjunct populations are separated from other populations.
Dispersed recreation	Dispersed recreation is outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.
Disturbance	A disturbance is a discrete event that changes existing plant community composition or structure, and interrupts, changes, or resets the ongoing successional sequence. Human presence, noise, or other activity that causes wildlife to move away from the area or alter behavior are disturbances.
Early detection and rapid response	The long-term goals of the early detection and rapid response system are to detect, report, and identify suspected new invasive plants with free living populations in the United States.
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 species.

Ecological niche	The physical space in a habitat occupied by an organism; its functional role in the community, e.g., its trophic position; and its position in environmental gradients of temperature, moisture, pH, soil, and other conditions of existence.
Ecosystem	An interacting system of living organisms and their environment.
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.
Endangered Species Act	Public Law 93-205, approved in 1973 and since amended, the Endangered Species Act provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend.
Endemic	Endemic denotes an area in which a particular disease is regularly found, that is, the disease is native. Endemic populations of plants or animals are native to a particular area.
Even-aged management	A planned sequence of treatments designed to maintain and regenerate a stand with predominantly one age class. The range of tree ages is usually less than 20 percent of the rotation age planned for the stand.
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 selection cut.
Fire management plan	A fire management plan is developed for all areas with burnable vegetation. The fire management plan is a strategic plan that defines a program to manage wildland and prescribed fires based on the forest plan. The fire management plan will provide for firefighter and public safety.
Fire regime	Description of the patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects as well, in a given area or ecosystem. A fire regime is a generalization based on fire histories at individual sites. Fire regimes can often be described as cycles because some parts of the histories usually are repeated, and the repetitions can be counted and measured, such as fire return interval.
Fire regime condition class	Fire regime condition class is an expression of the departure of the current condition from the historical fire regime. It is derived from the historical fire regime and the current fire severity. It is used as a proxy for the probability of severe fire effects, e.g., the loss of key ecosystem components – soil, vegetation, structure – or alteration of key ecosystem processes – nutrient cycles, hydrologic regimes. The fire regime condition class is an index of ecosystem risks attributable to wildland fire.
Fire suppression	All the work of extinguishing or confining a fire beginning with its discovery.
Fish toxicant	A chemical that kills fish.
Fladry	Fladry is flagging placed on fences.

Forbs	Forbs are herbaceous flowering plants other than grasses.
Forest health	The perceived condition of a forest derived from concerns about such factors such as its age, structure, composition, function, and vigor, presence of unusual levels of insects and diseases, and resilience to disturbance.
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 load	The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available (consumable) fuel or total fuel and is usually dry weight.
Fuel treatment	Any manipulation or removal of fuels to lessen potential damage and resistance to control (includes mechanical and prescribed fire treatments).
Geophysical	Geophysical describes a branch of earth science dealing with the physical processes and phenomena occurring especially in the earth and in its vicinity.
Graminoids	Graminoids are plants with narrow leaves growing from the base. Forbs are broad-leaved herbs other than grasses.
Greater Yellowstone Area	The Greater Yellowstone Area, or Ecosystem, is managed by the Greater Yellowstone Coordinating Committee. The area consists of about 13 million acres of public lands managed by the USDA Forest Service, National Park Service, and U S Fish and Wildlife Service. It includes six national forests (Beaverhead-Deerlodge, Bridger-Teton, Caribou-Targhee, Custer, Gallatin, and Shoshone), three national parks (Grand Teton, Yellowstone, and John D. Rockefeller, Jr. Memorial Parkway), and two national wildlife refuges (National Elk Refuge and Red Rock Lakes).
Ground cover	In soil conservation, grasses or other plants grown to keep soil from being blown or washed away. In horticulture, low growing plants such as vinca and ginger that do not require mowing.
Groundwater	Water in the ground this is in the zone of saturation, from which wells, springs, and groundwater runoff are supplied.
Group selection	A method of regenerating uneven-aged stands in which trees are cut, in small groups, and new age classes are established. The width of groups is commonly approximately twice the height of the mature trees, with small openings providing suitable microclimates for shade-tolerant tree species to regenerate, and the larger openings providing suitable microclimates for more shade-intolerant tree species to regenerate.
Habitat	A geographical area that can provide for the key activities of life.

Hazard fuel rating	Hazard fuel rating based on areas mapped using Standard Fire Behavior Models: Low = Fuel Model 1; Moderate = Fuel Models 2, 4, 5, and 8; and High = Fuel Models 6 and 10.
Hazardous fuel	Hazardous fuel is a complex defined by kind, arrangement, volume, condition, and location that presents a threat of ignition and resistance to control.
Herbaceous	Of, denoting, or relating to herbs.
Hibernacula	Habitat niches where certain animals, e.g., bats, over-winter, such as caves, mines, tree hollows, or loose bark.
Hydrologic unit boundary	A hydrologic unit boundary is a geographic area representing all or part of a surface drainage basin or distinct hydrologic feature. A 6th level hydrologic unit boundary ranges in size from 10,000 to 40,000 acres and is named and coded with 12 digits.
Ichnofossil	An ichnofossil is a trace fossil, such as that of an animal's track or burrow.
Infra	Infra is a collection of web-based data entry forms, reporting tools, and GIS tools that enable the Forest Service to manage and report accurate information about the inventory of constructed features and land units as well as the permits sold to the public and to partners.
Infrastructure	The basic physical and organizational structures and facilities, e.g., buildings, roads, and power supplies, needed for operation.
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.
Interpretation	Explaining the meaning or significance of something.
Invasive species	A species is invasive if it meets two criteria: 1) is non-native to the ecosystem, and 2) its introduction causes or is likely to cause economic or environmental harm or harm to human health.
Krummholz	Krummholz refers to stunted trees near timberline.
Ladder fuel	Ladder fuels are fuels that provide vertical continuity between strata, allowing fire to carry from surface fuels into the crowns of trees with relative ease.

Large woody debris	Large pieces of relatively stable woody material located within the bankfull channel and appearing to influence bankfull flows. Single – a single piece that has a length equal to or greater than three meters or two-thirds of the wetted stream width and 10 centimeters 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 three meters in length.
Leave tree	A leave tree is a tree marked to be left standing in an area where it would otherwise be felled.
Long-term sustained yield capacity	The highest uniform wood yield from lands being managed for timber production that may be sustained under specified management intensity consistent with multiple-use objectives.
Lynx analysis unit	A lynx analysis unit is an area of at least the size used by an individual lynx, from about 25 to 50 square miles.
Maintenance level	Maintenance level refers to the level of service provided by, and maintenance required for, a specific road. Maintenance level 1 = roads placed in storage for longer than one year, closed to vehicular traffic; maintenance level 2 = roads open for use by high-clearance vehicles, minor traffic, no warning signs; maintenance level 3 = roads open and maintained for a standard passenger car, low speed travel, warning signs provided; maintenance level 4 = moderate travel speeds, double lane, aggregate surface; maintenance level 5 = high degree of user comfort, double lane, paved or aggregate surfaced.
Management indicator species	Terrestrial and aquatic wildlife species that are used to promote more effective management of diversity and wildlife habitats on National Forest System lands.
Mechanical treatment	Mechanical vegetation treatment is any activity undertaken to modify the existing condition of the vegetation accomplished with mechanical equipment.
Mechanized	Wheeled forms of transportation, including non-motorized carts, wheelbarrows, bicycles, and any other non-motorized, wheeled vehicle.

Minerals	Locatable – hard rock minerals that are mined and processed for the recovery of metals. They may include certain non-metallic minerals and uncommon varieties of mineral materials such as valuable and distinctive deposits of limestone or silica. Leasable – Coal, oil, gas, phosphate, sodium, potassium, oil shale, sulfur, and geothermal resources. Salable – (aka mineral materials) – a collective term to describe common varieties of sand, gravel, stone, pumice, 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.
Monoculture	Of a single species, generally even aged.
Montane	Of or inhabiting mountainous country.
Mosaic	Mosaic refers to the intermingling of plant communities and their successional stages in such a manner as to give the impression of an interwoven design.
Motor vehicle use map	A motor vehicle use map is a map reflecting designated roads, trails, and areas open to motorized public use on an administrative unit or a ranger district of the National Forest System.
National Forest System lands	National Forest System lands are lands reserved or withdrawn from the public domain of the United States, all national forest lands acquired through purchase, exchange, donation, or other means, the national grasslands and land utilization projects administered under title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 USC 1010-1012), and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system. 16 USC 1609(a).
National Register of Historic Places	The National Register of Historic Places is the nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archaeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the U.S. Department of Interior.
Off-highway vehicle	An off-highway vehicle is 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.

Openings	Meadows, clearcuts, and other areas of vegetation that do not provide cover.
Organic matter	In soil, the organic fraction that includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms, and substances synthesized by the soil population; commonly determined as the amount of organic material contained in a soil sample passed through a 2-millimeter sieve.
Overstory	That portion of the trees, in a forest of more than one story, forming the upper or uppermost canopy layer.
Over-the-snow vehicle	Over-snow vehicles are vehicles that are designed for use over snow and that run on a track or tracks and/or a ski or skis, while in use over snow.
Palsa	Palsa are low, often oval frost heaves occurring in polar and sub-polar climates, which contain permanently frozen ice lenses.
Parturition area	Parturition areas are birthing areas.
Perennial stream	A stream that flows continuously.
Plan area	The National Forest System lands covered by a plan.
Prescribed fire	Prescribed fire is a wildland fire originating from a planned ignition to meet specific objectives identified in a written, approved prescribed fire plan for which National Environmental Policy Act requirements (where applicable) have been met prior to ignition.
Primary Conservation Area	The Primary Conservation Area is described in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* (Interagency Conservation Strategy Team 2007). The Primary Conservation Area is the same as the original grizzly bear recovery zone; it is the area where stipulations to protect grizzlies are applied. About 1,230,000 acres of the Shoshone are in the Primary Conservation Area.
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.
Rangeland	Rangeland refers to land on which vegetation is predominantly grasses, forbs, or shrubs suitable for grazing or browsing. Rangeland may include some forest and barren land.
Recreation Opportunity Spectrum	A framework of land delineations that identifies a variety of recreation experience opportunities categorized into classes on a continuum. The Spectrum's continuum has been divided into six major classes for Forest Service use: urban, rural, roaded natural, semi-primitive motorized, semi-primitive non-motorized, and primitive.

Recreational livestock	Recreational livestock use refers to the use of an area by domesticated animals, such as horses, llamas, and mules, which are used primarily in conjunction with recreation activities.
Regeneration	Natural – a group or stand of young trees created from germination of seeds from trees on the site or sprouting from trees on the site. Artificial – a group or stand of young trees created by direct seeding or by planting seedlings or cuttings.
Resilience	The amount of change a system can undergo (its capacity to absorb disturbance) and remain with the same regime – essentially retaining the same function, structure, and feedbacks.
Restore/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	A riparian ecosystem is a transition area between the aquatic ecosystem and the adjacent terrestrial ecosystem, identified by soil characteristics or distinctive vegetation communities that require free or unbound water.
Road	A motor vehicle route over 50 inches wide, unless identified and managed as a trail.
Road construction	Activity that results in the addition of authorized or temporary road miles.
Road decommissioning	Activities that result in the stabilization and restoration of unneeded roads to a more natural state.
Road maintenance level	See maintenance level.
Road reconstruction	Activity that results in improvement or realignment of an authorized road.
Salvage	Salvage refers to removal of trees that are dead or in imminent danger of being killed or damaged by injurious agents other than competition between trees, to recover economic value that would otherwise be lost.
Sawtimber	Sawtimber refers to trees fit to yield saw logs (considered suitable in size and quality for producing sawn timber).

Scenic Integrity Objective	Scenic Integrity Objectives serve as the desired conditions for the scenic resources and represent the degree of intactness of positive landscape attributes. Scenic Integrity Objectives are categorized into five levels. The highest ratings are given to those landscapes where valued landscape attributes will appear complete with little or no visible deviations. Lower ratings are given to those landscapes where modifications will be more evident. Very high – landscape is intact with changes resulting primarily through natural processes and disturbance regimes. High – management activities are unnoticed and the landscape character appears unaltered. Moderate – management activities are noticeable but are subordinate to the landscape character. The landscape appears slightly altered. Low – management activities are evident and sometimes dominate the landscape but are designed to blend with surroundings by repeating line, form, color, and texture of valued landscape character attributes. The landscape appears altered. Very low – human activities of vegetation and landform alterations may dominate the original, natural landscape character but should appear as natural occurrences when viewed at background distances.
Secure habitat	An area where wildlife retreat to for safety when disturbance in their usual range is intensified, such as by logging activities or during hunting seasons.
Sedge	A sedge is a grasslike plant with triangular stems and inconspicuous flowers, growing typically in wet ground.
Seepage	Water escaping through or emerging from the ground along an extensive line or surface as contrasted with a spring where the water emerges from a localized spot. Also, the slow movement of gravitational water through the soil.
Seral	Seral refers to the gradual supplanting of one community of plants by another, the sequence of communities being termed a sere and each stage seral (successional).

Shelterwood	A method of regenerating an even-aged stand in which a new age class develops beneath the moderated microclimate provided by the residual trees on a site. When employed, the treatment sequence includes three distinct types of cuttings: 1) an optional preparatory cut to enhance conditions for seed production, 2) a shelterwood seed cut (or establishment cut) to establish a moderated microclimate, prepare the seed bed, and create a new age class, and 3) a shelterwood removal cut (or overstory removal cut) to release established regeneration from competition with the overstory. Cuttings may be done uniformly throughout the stand, in groups or patches (group shelterwood), or in strips (strip shelterwood). With reserves – A regeneration method in which some or all of the shelter trees are retained to attain goals other than regeneration. This method creates an even-aged stand or a two-aged stand if sufficient trees are removed.
Silviculture	The theory and practice of controlling the establishment, composition, constitution, and growth of forests.
Single-tree selection	An uneven-aged method where individual trees of all size classes are removed more or less uniformly throughout the stand, to promote growth of remaining trees and to provide space for regeneration.
Size class	Size class is based on basal area weighted diameter of the plot or stand.
Slope stability	The resistance of any inclined surface, as the wall of an open pit or cut, to failure by sliding or collapsing.
Smoke-sensitive area	An area in which smoke from outside sources is intolerable, for reasons such as heavy population, existing air pollution, or intensive recreation use.
Snag	A snag is a standing, dead tree.
Special use authorization	A permit, term permit, lease, or easement that allows occupancy, use, rights, or privileges of National Forest System land.
Stand replacement fire	A fire severity classification where at least 75 percent average top-kill of vegetation occurs within a typical fire perimeter.
Stewardship contracts	Stewardship contracting authorities allow agencies to package a diverse array of land stewardship work by combining the disposal of goods, e.g., timber or other forest products, with contracts to perform services, e.g., road decommissioning, watershed restoration, stream restoration, hazardous fuel reduction, etc.
Stocking	The degree to which an area is effectively covered with living trees. Fully stocked stands contain as many trees per acre as can properly use the growing space available.

Structure	The horizontal and vertical physical elements of forests and grasslands and the spatial interrelationships of ecosystems.
Stubble	The basal portion of plants remaining after the top portion has been harvested. Also, the portion of the plants, principally grasses, remaining after grazing is completed.
Succession	The sequential process of long-term plant community change and development that occurs following a disturbance.
Suppression	The work of extinguishing a fire or confining fire spread.
Surface water	Water on the surface of the earth.
Sustainability	Meeting the needs of the present generation without compromising the ability of future generations to meet their needs.
Temporary road	A road necessary for emergency operations or authorized by contract, permit, lease, or other written authorization. Temporary roads are not included in a national forest's transportation atlas.
Thinning	An intermediate treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or to recover potential mortality.
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.
Three-county area	The three-county area, relative to the Shoshone National Forest, includes Fremont, Park, and Hot Springs counties in Wyoming.
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. Managing land to provide commercial timber products on a regulated basis with planned, scheduled entries.
Timber sale program quantity	The estimated output of timber from the plan area. The estimate is displayed as an average annual cubic foot output for a decade. 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 (36 CFR 219.12 and Forest Service Manual 1921.12).
Timber stand improvement	Intermediate cuttings made to improve the composition, constitution, condition, and increment of a timber stand.
Trail	A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.

Uneven-aged management	Regeneration and maintenance of stands with a multi-aged structure by removing some trees from all size classes singly or in groups or in strips.
Ungulate	A hoofed animal.
Values to be protected	Include property, structures, physical improvements, natural and cultural resources, community infrastructure, and economic, environmental, and social values.
Vegetation management	Activities designed primarily to promote the health of forest vegetation in order to achieve desired results. When vegetation is actively managed, it is manipulated or changed 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.
Water right	The legal rights to the use of water.
Wetland	Seasonally flooded basins or flats; the period of inundation is such that the land can usually be used for agricultural purposes. Also, lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water.
Wildfire	Wildfire is an unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped prescribed fires, and all other wildland fires where the objective is to put the fire out.
Wildland fire	Wildland fire is a general term describing any non-structure fire that occurs in the wildland.
Wildland urban interface	Wildland urban interface refers to the line, area, or zone where structures and other human developments meet or intermingle with undeveloped wildland or vegetation fuels.

Appendix 1 – Northern Rockies lynx management direction

In March 2007, the Shoshone's 1986 Forest Plan was amended by the *Northern Rockies Lynx Management Direction Record of Decision* (USDA Forest Service 2007).The amendment to the 1986 Forest Plan is contained in attachment 1 of the lynx amendment Record of Decision and is reproduced here.

The following management direction applies to all National Forest System lands that are known to be occupied by Canada lynx. At the time of this decision, the following national forests in the Northern Rockies lynx planning area were known to be occupied: Bridger-Teton, Clearwater, Custer, Flathead, Idaho Panhandle, Kootenai, Lolo, Shoshone, and Targhee. Portions of the Custer, Gallatin, Helena, and Lewis & Clark are also occupied.

The text of retained direction has not changed. Content from the retained amendment that is not forest plan direction provides background information and other guidance for implementation of the forest plan.

Northern Rockies lynx management direction

Goal: Conserve the Canada lynx.

All management practices and activities (ALL)

The following objectives, standards, and guidelines apply to all management projects in lynx habitat in lynx analysis units (LAUs) in occupied habitat and in linkage areas, subject to valid existing rights. They do not apply to wildfire suppression, or to wildland fire use.

Objective ALL 01

Maintain or restore lynx habitat connectivity in and between LAUs, and in linkage areas.

Standard ALL S1

New or expanded permanent development and vegetation management projects must maintain habitat connectivity in an LAU and/or linkage area.

Guideline ALL G1

Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways or forest highways across federal land. Methods could include fencing, underpasses, or overpasses.

Standard LAU S1

Changes in LAU boundaries shall be based on site-specific habitat information and after review by the Forest Service Regional Office.

Vegetation management activities and practices (VEG)

The following objectives, standards, and guidelines apply to vegetation management projects in lynx habitat within LAUs in occupied habitat. With the exception of Objective VEG 03 that specifically concerns wildland fire use, the objectives, standards, and guidelines do not apply to wildfire suppression, wildland fire use, or removal of vegetation for permanent developments such as mineral operations, ski runs, roads, and the like. None of the objectives, standards, or guidelines apply to linkage areas.

Objective VEG 01

Manage vegetation to mimic or approximate natural succession and disturbance processes while maintaining habitat components necessary for the conservation of lynx.

Objective VEG 02

Provide a mosaic of habitat conditions through time that support dense horizontal cover, and high densities of snowshoe hare. Provide winter snowshoe hare habitat in both the stand initiation structural stage and in mature, multi-story conifer vegetation.

Objective VEG 03

Conduct fire use activities to restore ecological processes and maintain or improve lynx habitat.

Objective VEG 04

Focus vegetation management in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed understories that lack dense horizontal cover.

Standard VEG S1

Where and to what this applies: Standard VEG S1 applies to all vegetation management projects that regenerate forests, except for fuel treatment projects within the wildland interface (WUI) as defined by HFRA [Healthy Forests Restoration Act], subject to the following limitation:

Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 shall occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest). *In addition, fuel treatment projects may not result in more than three adjacent LAUs exceeding the standard.*

For fuel treatment projects within the WUI see guideline VEG G10.

The standard: Unless a broad scale assessment has been completed that substantiates different historic levels of stand initiation structural stages limit disturbance in each LAU as follows:

If more than 30 percent of the lynx habitat in an LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.

Standard VEG S2

Where and to what this applies: Standard VEG S2 applies to all timber management projects that regenerate forests, except for fuel treatment projects within WUI as defined by HFRA, subject to the following limitation:

Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 shall occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit.

For fuel treatment projects within WUI see guideline VEG G10.

The standard: Timber management projects shall not regenerate more than 15 percent of lynx habitat on National Forest System lands within an LAU in a ten-year period.

Standard VEG S5

Where and to what this applies: Standard VEG S5 applies to all precommercial thinning projects, except for fuel treatment projects that use precommercial thinning as a tool within the WUI as defined by HFRA, subject to the following limitation:

Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 shall occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit.

For fuel treatment projects within the WUI see guideline VEG G10.

The standard: Precommercial thinning projects that reduce snowshoe hare habitat may occur from the stand initiation structural stage until the stands no longer provide winter snowshoe hare habitat only:

1. Within 200 feet of administrative sites, dwellings, or outbuildings, or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock, or
3. Based on new information that is peer reviewed and accepted by the regional level of the Forest Service, the state level of FWS [U.S. Fish and Wildlife Service], where a written determination states:
    a. that a project is not likely to adversely affect lynx, or
    b. that a project is likely to have short term adverse effects on lynx or its habitat, but would result in long-term benefits to lynx and its habitat, or
4. For conifer removal in aspen, or daylight thinning around individual aspen trees, where aspen is in decline, or
5. For daylight thinning of planted rust-resistant white pine where 80 percent of the winter snowshoe hare habitat is retained, or
6. To restore whitebark pine.

Exceptions 2 through 6 shall only be utilized in LAUs where Standard VEG S1 is met.

Standard VEG S6

Where and to what this applies: Standard VEG S6 applies to all vegetation management projects except for fuel treatment projects within the WUI as defined by HFRA, subject to the following limitation:

Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 shall occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit.

For fuel treatment projects within WUI see guideline VEG G10.

The standard: Vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional forests may occur only:

1. Within 200 feet of administrative sites, dwellings, outbuildings, recreation sites, and special use permit improvements, including infrastructure within permitted ski area boundaries, or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock, or
3. For incidental removal during salvage harvest (e.g. removal due to location of skid trails).

Exceptions 2 and 3 shall only be utilized in LAUs where Standard VEG S1 is met.

(NOTE: Timber harvest is allowed in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed understories that lack dense horizontal cover [e.g. uneven age management systems could be used to create openings where there is little understory so that new forage can grow]).

Guideline VEG G1

Vegetation management projects should be planned to recruit a high density of conifers, hardwoods, and shrubs where such habitat is scarce or not available. Priority for treatments should be given to stem exclusion, closed canopy structural stage stands to enhance habitat conditions for lynx or their prey (e.g. mesic, monotypic lodgepole stands). Winter snowshoe hare habitat should be near denning habitat.

Guideline VEG G4

Prescribed fire activities should not create permanent travel routes that facilitate snow compaction. Constructing permanent firebreaks on ridges or saddles should be avoided.

Guideline VEG G5

Habitat for alternate prey species, primarily red squirrel, should be provided in each LAU.

Guideline VEG G10

Fuel treatment projects within the WUI as defined by HFRA should be designed considering Standards VEG S1, S2, S5, and S6 to promote lynx conservation.

Guideline VEG G11

Denning habitat should be distributed in each LAU in the form of pockets of large amounts of large woody debris, either down logs or root wads, or large piles of small wind thrown trees (jack-strawed piles). If denning habitat appears to be lacking in the LAU, then projects should be designed to retain some coarse woody debris, piles, or residual trees to provide denning habitat in the future.

Livestock management (GRAZ)

The following objectives and guidelines apply to grazing projects in lynx habitat in LAUs in occupied habitat. They do not apply to linkage areas.

Objective GRAZ 01

Manage livestock grazing to be compatible with improving or maintaining lynx habitat.

Guideline GRAZ G1

In fire- and harvest-created openings, livestock grazing should be managed so impacts do not prevent shrubs and trees from regenerating.

Guidelines GRAZ G2

In aspen stands, livestock grazing should be managed to contribute to the long-term health and sustainability of aspen.

Guideline GRAZ G3

In riparian areas and willow carrs, livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.

Guideline GRAZ G4

In shrub-steppe habitats, livestock grazing should be managed in the elevation ranges of forested lynx habitat in LAUs, to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.

Human use projects (HU)

The following objectives and guidelines apply to human use projects, such as special uses (other than grazing), recreation management, roads, highways, and mineral and energy development, in LAUs in occupied habitat, subject to valid existing rights. They do not apply to vegetation management projects or grazing projects directly. They do not apply to linkage areas.

Objective HU 01

Maintain the lynx's natural competitive advantage over other predators in deep snow, by discouraging the expansion of snow-compacting activities in lynx habitat.

Objective HU 02

Manage recreational activities to maintain lynx habitat and connectivity.

Objective HU 03

Concentrate activities in existing developed areas, rather than developing new areas in lynx habitat.

Objective HU 04

Provide for lynx habitat needs and connectivity when developing new or expanding existing developed recreation sites or ski areas.

Objective HU 05

Manage human activities, such as special uses, mineral and oil and gas exploration and development, and placement of utility transmission corridors, to reduce impacts on lynx and lynx habitat.

Objective HU 06

Reduce adverse highway effects on lynx by working cooperatively with other agencies to provide for lynx movement and habitat connectivity, and to reduce the potential of lynx mortality.

Guideline HU G1

When developing or expanding ski areas, provisions should be made for adequately sized inter-trail islands that include coarse woody debris, so winter snowshoe hare habitat is maintained.

Guideline HU G2

When developing or expanding ski areas, lynx foraging habitat should be provided consistent with the ski area's operational needs, especially where lynx habitat occurs as narrow bands of coniferous forest across mountain slopes.

Guideline HU G3

Recreation developments and operations should be planned in ways that both provide for lynx movement and maintain the effectiveness of lynx habitat.

Guideline HU G4

For mineral and energy development sites and facilities, remote monitoring should be encouraged to reduce snow compaction.

Guideline HU G5

For mineral and energy development sites and facilities that are closed, a reclamation plan that restores lynx habitat should be developed.

Guideline HU G6

Methods to avoid or reduce effects on lynx should be used in lynx habitat when upgrading unpaved roads to maintenance levels 4 or 5, if the result would be increased traffic speeds and volumes, or a foreseeable contribution to increases in human activity or development.

Guideline HU G7

New permanent roads should not be built on ridge tops and saddles, or in areas identified as important for lynx habitat connectivity. New permanent roads and trails should be situated away from forested stringers.

Guideline HU G8

Cutting brush along low-speed, low-volume roads should be done to the minimum level necessary to provide for public safety.

Guideline HU G9

On new roads built for projects, public motorized use should be restricted. Effective closures should be provided in road designs. When the project is over, these roads should be reclaimed or decommissioned, if not needed for other management objectives.

Guideline HU G10

When developing or expanding ski areas and trails, consider locating access roads and lift termini to maintain and provide lynx security habitat, if it has been identified as a need.

Guideline HU G11

Designated over-the-snow routes or designated play areas should not expand outside baseline areas of consistent snow compaction, unless designation serves to consolidate use and improve lynx habitat. This may be calculated on an LAU basis, or on a combination of immediately adjacent LAUs.

This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings, or to access regulated by Guideline HU G12.

Use the same analysis boundaries for all actions subject to this guideline.

Guideline HU G12

Winter access for non-recreation special uses and mineral and energy exploration and development, should be limited to designated routes or designated over-the-snow routes.

Linkage areas (LINK)

The following objective, standard, and guidelines apply to all projects within linkage areas in occupied habitat, subject to valid existing rights.

Objective LINK 01

In areas of intermingled land ownership, work with land owners to pursue conservation easements, habitat conservation plans, land exchanges, or other solutions to reduce the potential of adverse impacts on lynx and lynx habitat.

Standard LINK S1

When highway or forest highway construction or reconstruction is proposed in linkage areas, identify potential highway crossings.

Guideline LINK G1

National Forest System lands should be retained in public ownership.

Guideline LINK G2

Livestock grazing in shrub-steppe habitats should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.

Required monitoring

Map the location and intensity of snow compacting activities and designated and groomed routes that occurred inside LAUs during the period of 1998 to 2000. The mapping is to be completed within one year of this decision, and changes in activities and routes are to be monitored every five years after the decision.

When project designs are signed report the following:

1. Fuel treatments:
    a. Acres of fuel treatments in lynx habitat by forest and LAU, and whether the treatment is within *or outside* the WUI as defined by HFRA
    b. Whether or not the fuel treatment meets the vegetation standards or guidelines. If standard(s) are not met, report which standard(s) are not met, why they were not met, and how many acres were affected.
    c. Whether or not 2 adjacent LAUs exceed standard VEG S1 (30 percent in a stand initiation structural stage that is too short to provide winter snowshoe hare habitat), and what event(s) or action(s) caused the standard to be exceeded.
2. *Application of exception in Standard VEG S5*
    a. For areas where any of the exemptions 1 through 6 listed in Standard VEG S5 were applied: Report the type of activity, the number of acres, and the location (by unit, and LAU) and whether or not Standard VEG S1 was within the allowance.
3. *Application of exceptions in Standard VEG S6*
    a. For areas where any of the exemptions 1 through 3 listed in Standard VEG S6 were applied: Report the type of activity, the number of acres, and the location (by unit, and LAU) and whether or not Standard VEG S1 was within the allowance.

4. *Application of guidelines*
    a. *Document the rationale for deviations to guidelines. Summarize what guideline(s) was not followed and why.*

Directions in italics were terms and conditions that were incorporated from the FWS Biological Opinion (USDI FWS 2007).

Appendix 2 – Possible actions

This appendix describes possible actions that may occur on the Shoshone National Forest at the project or activity level to help maintain existing conditions or move toward desired conditions.

These actions are neither decisions nor commitments; they are included to provide a general idea of the Forest Service's intentions. Possible actions are not forest plan direction.

The possible actions described in this appendix are not all inclusive. All future actions are subject to project level decision-making processes.

Water, soil, and air

Activities to improve watershed condition include disconnecting roads from streams and wetlands by decommissioning unauthorized roads and installing additional drainage (culverts, rolling dips, sediment basins).

Another means to improve watershed health is through public education about proper grazing practices in high mountain meadows to reduce or eliminate stream bank trampling and soil compaction attributed to recreational stock grazing.

Aquatic habitats

Various types of activities can be used to achieve desired conditions for aquatic habitats, including placement of instream rock and log structures and replacing barriers at stream crossings to provide passage for aquatic organisms. Bridges, bottomless arch culverts, buried culverts, and armored fords could be used.

One approach to reestablish beaver habitat or willows is to add water weirs (small dams) to elevate a water table.

Vegetation, fire, insects, and diseases

Vegetation management

Vegetation management activities include mechanical treatments (thinning, for example) and prescribed fire. Combinations of these activities are used for everything from removing forest products, improving stand conditions, managing fuel levels, managing wildlife habitat, removing encroaching conifers, and clearing road corridors.

Mechanical treatments include commercial, pre-commercial, and non-commercial treatments. Following treatments, vegetation may be slashed, piled, burned, or removed. Commercial harvesting prescriptions include intermediate harvests (thinning), even-aged harvests (shelterwood, seed tree, clearcut), and uneven-aged harvests (selection). Table 29 displays an annual estimate of the types of treatments that may be applied during the first decade after this Plan is approved.

Table 29. Annual average treatment acres in the first decade

Treatment	Acres
Timber harvest	110
Timber harvest with pile burning	580
Other mechanical treatment	470
Other mechanical with pile burning	380
Prescribed fire	2,040

Prescribed fire can be used to manage fuel levels, improve forage conditions, clear conifer encroachment, and encourage hardwood regeneration, among other outcomes.

Planting is another vegetation management practice that can be used to reforest harvested stands and areas impacted by wildfires, reestablish willows in suitable habitat, and establish stands of disease-resistant whitebark pine, among others.

Additional practices that may be considered to respond to climate change and associated changes in precipitation, temperature, and species ranges include:

- Reforesting with native species that are tolerant to lower soil moisture and higher temperatures.
- Using a variety of genotypes in nursery stock and moving plant genotypes and species from other seed zones into disturbed areas.
- Managing for a variety of species and genotypes with ranges of tolerance to lower soil moisture and higher temperatures.
- Reforesting an area after a fire or windfall with a type of tree species that is better adjusted to the new or unfolding regional climate. This may be difficult to achieve because the climate that exists during the early years of tree growth may be different from the climate that will persist during the later stages of tree growth, based on available information.
- Large-scale thinning may be implemented to reduce stand densities to minimize the effects of drought, avoid large wildfires in areas where these are not typical, and manage the potential for increased insect and disease outbreaks under a changing climate. Not all forest landscapes and stands are amenable to thinning, nor is it ecologically appropriate in some upper elevation forest types. In these situations, shelterwood cutting that mitigates extreme temperatures at the soil surface can facilitate continued cover by forest tree species while mitigating risks of uncharacteristically sever fire, insects, and diseases.
- Proactively managing early successional stages that follow widespread mortality by deliberately reducing synchrony. Asynchrony can be achieved through a mix of activities that promotes diverse age classes, species mixes, stand diversity, genetic diversity, etc., at landscape scales. Early successional stages are likely the most successful (and practical) opportunities for resetting ecological trajectories that are adaptive to present rather than past climates because this is the best chance for widespread replacement of plants.

- Resistance practices include thinning and fuels abatement treatments at the landscape scale to reduce crown fire potential, maintaining existing fuel breaks, strategically placing area treatments to reduce fuel continuity and drought susceptibility, and creating defensible fuel profile zones around high value areas (for example, wildland urban interface, critical habitat, or public water supplies).

Invasive species

Prevention of invasive species utilizes activities such as weed-free feed requirements, washing equipment before entering the Shoshone, and education and information programs on plant and aquatic invasive species prevention.

Biological, chemical, and mechanical treatments are commonly used to contain and reduce established populations.

Native insects and pathogens

Vegetation management actions that may be used in connection with insect epidemics include salvage sales to remove dead and dying trees. Thinning and other harvest methods may be used to improve the vigor of stands, making them less susceptible to insect attacks. Susceptible trees may be removed from a stand to improve the stand's resistance.

In localized areas, anti-aggregation pheromones or insecticides may be used to protect individual trees.

Some additional practices that may be considered to respond to a changing climate and associated fluctuations in precipitation and temperature include intensive treatments, such as those in high value agricultural situations, resistance breeding, novel pheromone applications (such as sprayable micro-encapsulated methods, and pesticide treatments.

In instances of diseases, trees may be removed using sanitation harvest or clearcutting to reduce disease spread.

Fire and fuels management

An appropriate management action is developed from consideration of firefighter and public health and safety, land and resource management objectives, fire cause, current and predicted weather, current and potential fire behavior, fuel conditions, values to be protected from or benefited by fire, management priorities, availability of firefighting resources, and cost effectiveness.

Long term, fire managers must also weight the possible ecological effects from managing fire, such as rehabilitation needs; smoke event frequency, duration, and intensity; the effects to soils, vegetation, and wildlife; and the overall effects to the land from having fire present or excluded.

Appropriate management action is any specific action suitable to meet fire management unit objectives. Appropriate management action is an authorized action, suitable to meet pre-planned objectives for the area, and under the circumstances of which a fire occurs. In some cases, the appropriate management action is an action that managers *must* take, while in other cases, the appropriate management action may be selected from a range of alternative actions managers *may* take. Appropriate management options may include:

- Monitoring from a distance
- Monitoring on site
- Confinement
- Monitoring with limited contingency actions
- Monitoring with mitigation actions
- Initial attack
- Suppression with multiple strategies
- Control and extinguish
- Any combination of some or all of the above

Prescribed burning activities include techniques such as broadcast burning, spot burning, and slash pile burning.

Recreation opportunities

Recreation management actions include those associated with controlling visitor impacts; construction, operation, and maintenance of facilities and trails; and providing a positive visitor experience. The following types of actions are likely to occur:

- Operation and maintenance of facilities such as campgrounds, parking areas, toilets, trailheads, information kiosks, and fishing and boating access points
- Information to educate users and curb unauthorized uses
- Increased law enforcement to reduce unauthorized uses

Scenery

Scenery management involves primarily actions to mitigate the effects of other activities. Most mitigation measures are associated with vegetation treatments, for example, in highly scenic areas, slash from logging or prescribed burning would be chopped to lie closely to the ground, reducing the visual impact.

Heritage resources

Likely actions in the heritage program include conducting surveys to identify sites and follow-up actions to evaluate, protect, stabilize, or salvage sites. Law enforcement is an important element of cultural resource protection, since such sites are subject to vandalism and the illegal collection of artifacts.

Provision of goods and services

Forest products

Timber sale activities described earlier will yield wood products to the commercial markets in the form of sawtimber and products other than logs. Other wood products may be sold as commercial markets emerge for new products. Table 30 shows the estimated average annual outputs from harvesting.

Table 30. Average annual sale quantity (Ccf) in the first decade

Practice	Timber production lands	Other timber lands	Total
Even-aged harvest	5,400	1,350	6,750
Uneven-aged harvest	6,500	--	6,500
Other harvest	1,350	1,900	3,250
Total	13,250	3,250	16,500

Timber projections

Table 29 and Table 30 show the estimated average annual vegetation treatments and the average annual Timber Sale Program Quantity for the first decade under this Plan. The projected outputs reflect past and project budget levels and the organizational capacity to accomplish timber harvest activities. The Timber Sale Program Quantity is identified as an objective in the Plan.

These acres and volumes are estimates. They are not firm commitments to offer timber sales at these levels. Like other components of the Plan, they describe activities designed to meet social, economic, and ecological desired conditions. The estimated volumes may change due to project-level data, unforeseen events, or modified conditions.

Here are definitions for the two management emphasis categories used in the tables.

Timber production lands is where 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 are conducted. Timber production is managing land to provide commercial timber products on a regulated basis with planned, scheduled entries.

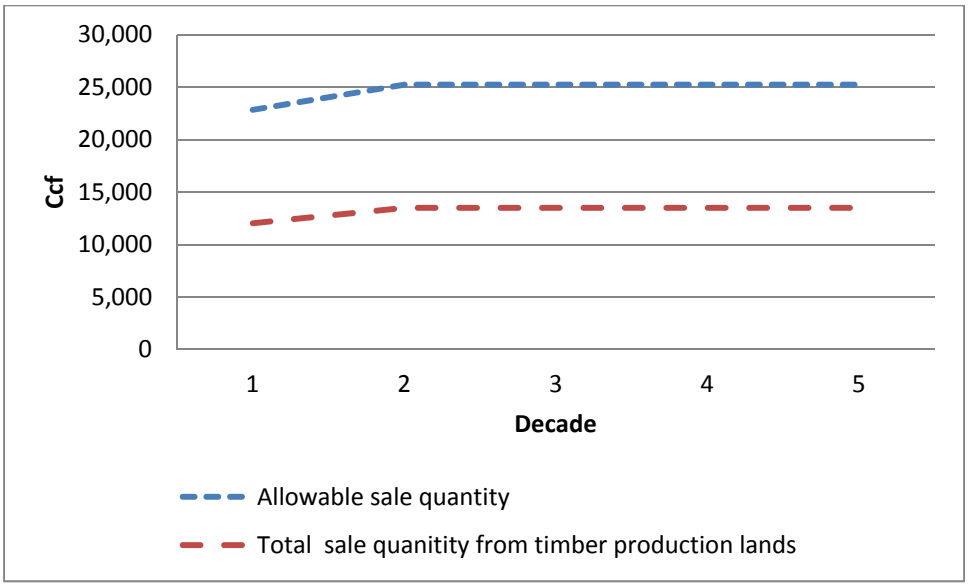
Other timber lands is where purposeful growing, tending, and harvesting of forest vegetation to improve wildlife habitat or restore habitat types, to maintain or improve scenic resources, to maintain or improve the recreational experiences of visitors, to improve the resiliency of forested ecosystems to disturbance events, including management to protect communities from losses associated with disturbance events, and to achieve other management objectives besides timber production are conducted.

Figure 1 displays the allowable sale quantity and timber sale program quantity for timber on timber production lands. For this Plan, the average allowable sale quantity must be less than or equal to the long-term sustained yield capacity. This limit does not prohibit the responsible official from approving salvage or sanitation harvesting from areas substantially damaged by

fire, windthrow, or other catastrophe, or which are in imminent danger from insect or disease attacks. This shall not prohibit capturing, and including in the allowable sale quantity, wood fiber not represented in the utilization standards used in calculating the long-term sustained yield capacity. The majority of the fuelwood project in the allowable sale quantity falls within this category. A large percentage of the fuelwood is non-merchantable material left over after timber sales or other dead material that does not meet utilization standards. The responsible official may either substitute such timber for timber that would otherwise be offered under the forest plan or offer such volume above the planned volume (Forest Service Handbook 1909.12, 63.5).

Timber Sale Program Quantity is less than allowable sale quantity because of funding.

Figure 1. Display of annual allowable sale quantity and annual Timber Sale Program Quantity on lands suitable for timber production (Ccf) for five decades



Livestock grazing

Situations that could lead to reductions in permitted numbers include long-term trend studies that reflect reduced rangeland conditions; significant, chronic, and repeated predation; and resource user conflicts. Generally, management changes would be initiated to help move range conditions toward desired conditions. Possible actions to address the balance of forage availability with permitted livestock numbers, before actually reducing permitted livestock numbers, may include but are not limited to prescribed fire to improve forage quality and quantity, intensive herding, salt/supplement locations, changes in class of livestock, fencing, water development, change in season of use, and conifer encroachment control.

Infrastructure

Road grading, drainage maintenance, application of gravel, and signing are actions associated with roads management. Construction, reconstruction, and relocation are likely to occur to support resource management. Unauthorized roads are likely to be decommissioned.

Decommissioning temporary roads at the conclusion of authorized activities may involve blocking entrances, constructing water bars, removing fills and culverts, and restoring natural drainage, revegetation, and obliteration of the roadway.

Trail construction, reconstruction, maintenance, and relocation may be used to achieve desired conditions.

Appendix 3 – Emphasis species

Selected emphasis species

This appendix displays the emphasis species selected on the Shoshone National Forest. Emphasis species were selected as surrogates for addressing the viability of all species that may inhabit the Shoshone. The use of such categories has been encouraged at the national and regional offices of the Forest Service (Holthausen 2002, Liggett et al. 2003), and is allowed under 36 CFR 219.19 (1982), the implementing regulations for the National Forest Management Act of 1976.

For a description of the process used to select these species and a summary of those considered but not selected, refer to the project record for the Emphasis Species Categories document. Sixty-one threatened, endangered, and sensitive species and 29 species of local concern are listed in Table 31. Four management indicator species are shown in Table 33. These species would be addressed in project analyses and design when the revised forest plan is implemented. Threatened and endangered species designation requires the preparation of a biological assessment/evaluation for projects, while management indicator species require specific analyses at the project level. Species of local concern would likely also be analyzed for projects, though with less rigor than the previous two categories. A short section on rationale for selection of management indicator species precedes Table 33. Monitoring prescribed for emphasis species is addressed in chapter 3 of the revised forest plan.

It is anticipated that changes to threatened and endangered species and species of local concern designations may occur during the life of the revised forest plan as new information becomes available. However, it is not anticipated that changes to these lists would require an amendment or revision to the forest plan, unless habitat management issues are in conflict with plan direction or outputs.

Table 31. Shoshone National Forest emphasis species categories

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Threatened, endangered, proposed, and candidate species						
Mammal species						
Gray wolf	*Canis lupus*	Experimental nonessential	G4/S1	---	Forest Meadows Riparian areas with ungulates	Yes

[39] U S Fish and Wildlife Service. Endangered in danger of extinction. For plants this applies to all of a taxon's range; for animals this may apply to only a portion of a taxon's range (EXPN = Experimental Population, Non-Essential)
Threatened likely to become endangered in the near future. For plants this applies to all of a taxon's range; for animals this may apply to only a portion of a taxon's range (EXPN = Experimental Population, Non-Essential), (not YNP = threatened status excludes the Yellowstone DPS (Distinct Population Segment))
Candidate existing biological information supports a formal proposal to list as endangered or threatened, but developing a listing regulation is precluded by higher priority listing activities.
Delisted from endangered or threatened status
Delisted in WY delisted from endangered or threatened in Wyoming
Delisted candidate delisted from candidate status
Listing denied a formal proposal for listing as endangered or threatened was recently denied
Petitioned to list as endangered or threatened has been received by U S Fish and Wildlife Service, review pending
[40] The conservation status of a species or ecosystem is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = Global), N = National, and S = Subnational). The numbers have the following meanings: 1 = critically imperiled, 2 = imperiled, 3 = vulnerable, 4 = apparently secure, 5 = secure.
For example, G1 would indicate that a species is critically imperiled across its entire range (i.e., globally). In this sense, the species as a whole is regarded as being at very high risk of extinction. A rank of S3 would indicate the species is vulnerable and at moderate risk within a particular state or province, even though it may be more secure elsewhere.
[41] Wyoming State Wildlife Action Plan rankings, shown here.

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
North American wolverine	*Gulo gulo*	Candidate	G4T4/S2	Nss3 (Bb)	Spruce/fir Alpine Remote wilderness	Yes
Canada lynx	*Lynx canadensis*	Threatened	G5/S1	NSS1 (Aa)	Early successional conifers	Yes
Grizzly bear	*Ursus arctos horribilis*	Threatened	G4T3T4/S1	--	Forests Meadows Alpine Riparian areas	Yes
Bird species						
Greater sage-grouse	*Centrocercus urophasianus*	Candidate	G3G4/S4	NSS2 (Ba)	Sagebrush-steppe	Yes
Plant species						
Whitebark pine	*Pinus albicaulis*	Candidate	G3G4/S3	--	Subalpine forest	Yes
Forest Service Rocky Mountain Region sensitive species						
Fish species						
Mountain sucker	*Catostomus platyrhynchus*	Sensitive	G5/S5	--	Cold, clean lakes and streams	Yes
Yellowstone cutthroat trout	*Oncorhynchus clarkia bouveri*	Sensitive Listing denied	G4T2/S2	NSS2 (Ba)	Cold, clean lakes and streams	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Lake chub	*Couesius plumbeus*	Sensitive	G5/S5	--	Cool, slow-moving foothill streams and lakes	Yes
Mammal species						
Townsend's big-eared bat	*Corynorhinus townsendii*	Sensitive	G4/S2	NSS2 (Ba)	Caves Mines Forested areas	Yes
Spotted bat	*Euderma maculatum*	Sensitive	G4/S3	--	Caves Mines Rock outcrops	No
North American wolverine	*Gulo gulo*	Sensitive	G4T4/S2	NSS3 (Bb)	Spruce/fir Alpine Remote wilderness	Yes
Hoary bat	*Lasiurus cinereus*	Sensitive	G5/S4	--	Aspen Conifers Snags	Not confirmed
River otter	*Lontra canadensis*	Sensitive	G5/S3	NSSU (U)	Fish-bearing aquatic habitats	Yes
American marten	*Martes americana*	Sensitive	G5/S3	NSS4 (Cb)	Late successional conifer	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Water vole	*Microtus richardsoni*	Sensitive	G5/S2	NSS3 (Bb)	Riparian areas	Yes
Fringed myotis	*Myotis thysanodes*	Sensitive	G4G5/S2	NSS3 (Bb)	Caves Mines Forested areas	Not confirmed
Rocky Mountain bighorn sheep	*Ovis canadensis*	Sensitive	G4/S3S4	NSS4 (Bc)	Rocks Cliffs Alpine meadows	Yes
Bird species						
Northern goshawk	*Accipiter gentilis*	Sensitive Listing denied	G5/S3	NSSU (U)	Mature conifer Aspen	Yes
Boreal owl	*Aegolius funereus*	Sensitive	G5/S2	NSS3 (Bb)	High elevation mature conifer	Yes
Grasshopper sparrow	*Ammodramus savannarum*	Sensitive	G5/S4	NSS4 (Bc)	Shortgrass prairie Shrub-steppe	Not confirmed
Sage sparrow	*Amphispiza bellii*	Sensitive	G5/S3	NSS4 (Bc)	Sagebrush steppe	Yes
Short-eared owl	*Asio flammeus*	Sensitive	G5/S2	NSS4 (Bc)	Grassland Sagebrush-steppe	Not confirmed
Ferruginous hawk	*Buteo regalis*	Sensitive	G4/S4B/S5N	NSSU (U)	Shrub-steppe Shortgrass prairie	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Greater sage-grouse	*Centrocercus urophasianus*	Sensitive	G3G4/S4	NSS2 (Ba)	Sagebrush-steppe	Yes
Northern harrier	*Circus cyaneus*	Sensitive	G5/S4B/S5N	--	Wetlands Meadows	Yes
Olive-sided flycatcher	*Contopus cooperi*	Sensitive	G4/S4B	--	Mid and high elevation conifer	Yes
Trumpeter swan	*Cygnus buccinator*	Sensitive Listing denied	G4/S2	NSS2 (Ba)	Wetlands	Yes
American peregrine falcon	*Falco peregrines anatum*	Sensitive Delisted	G4T4/S2	NSS3 (Bb)	Canyons Cliffs Riparian	Yes
Bald eagle	*Haliaeetus leucocephalus*	Sensitive Delisted	G5S3B, S5N	NSS2 (Ba)	Fish bearing riparian areas with trees	Yes
Harlequin duck	*Histrionicus histrionicus*	Sensitive	G4/S1B	NSS3 (Bb)	Montane riparian	Yes
Loggerhead shrike	*Lanius ludovicianus*	sensitive	G4/S3	--	Shrub-steppe	Not confirmed
Black-backed woodpecker	*Picoides arcticus*	Sensitive	G5/S1	NSSU (U)	Mid and high elevation conifer	Yes
Brewer's sparrow	*Spizella breweri*	Sensitive	G5/S5	NSS4 (Bc)	Shrub-steppe Mountain foothills shrub	Yes
Amphibian species						

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Boreal toad	*Anaxyrus boreas boreas*	Sensitive	G4T4/S1	NSS1 (Ba)	Forested wetlands	Yes
Columbia spotted frog	*Lithobates luteiventris*	Sensitive	G4/S3	NSS3 (Bb)	Vegetated edges of aquatic habitats	Yes
Northern leopard frog	*Lithobates pipiens*	sensitive	G5/S3	NSSU (U)	Aquatic habitats	Yes
Plant species - nonvascular						
Sphagnum moss	*Sphagnum angustifolium*	Sensitive	G5/S1	--	Fens	Yes
Plant species – ferns and allies						
Trianglelobe moonwort	*Botrychium ascendens*	Sensitive	G2G3/S1	--	Riparian	Yes
Plant species – monocots						
Roundleaf orchid	*Amerorchis rotundifolia*	Sensitive	G5/S1	--	Fens	Yes
Lesser panicled sedge	*Carex diandra*	Sensitive	G5/S2	--	Fens	Yes
Livid sedge	*Carex livida*	Sensitive	G5/S2	--	Fens	Yes
Chamisso's bristlegrass	*Eriophorum chamissonis*	Sensitive	G5/S2	--	Fens	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Slender bristlegrass	*Eriophorum gracile*	Sensitive	G5/S2	--	Fens	Yes
Hall's fescue	*Festuca hallii*	Sensitive	G4/S2	--	Calcareous montane grasslands	Yes
Simple bog sedge	*Kobresia simpliciuscula*	Sensitive	G5/S1	--	Fens	Yes
Wyoming tansymustard	*Descurainia torulosa*	Sensitive	G5/S2	--	Volcanic rocky slopes and shrubland	Yes
English sundew	*Drosera anglica*	sensitive	G5/S2	--	Fens	Yes
Fremont's bladderpod	*Lesquerella fremontii*	sensitive	G2/S2	--	Calcareous rocky slopes and ridges	Yes
Kotzebue's grass of Parnassus	*Parnassia kotzebuei*	sensitive	G5/S2	--	Alpine	Yes
Absaroka Range beardtongue	*Penstemon absarokensis*	Sensitive	G2/S2	--	Volcanic rocky slopes and montane shrubland	Yes
Greenland primrose	*Primula egaliksensis*	Sensitive	G4/S1	--	Fens	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Absaroka goldenweed	*Pyrrocoma carthamoides var. subsquarrosa*	Sensitive	G4G5T2T3/S2	--	Calcareous montane grasslands	Yes
Tranquil goldenweed	*Pyrrocoma clementis var.villosa*	Sensitive	G3G4/T2	--	Granitic montane grasslands	Yes
Entire-leaf goldenweed	*Pyrrocoma integrifolia*	Sensitive	G3?/S1	--	Granitic montane grasslands	Yes
Ice cold buttercup	*Ranunculus gelidus ssp. grayi]*	Sensitive	G5/S1	--	Alpine	Yes
Barratt's willow	*Salix barrattiana*	Sensitive	G5/S1	--	Alpine	Yes
Sageleaf willow	*Salix candida*	Sensitive	G5/S2	--	Fens	Yes
Myrtle leaf willow	*Salix myrtillifolia*	Sensitive	G5/S1	--	Fens	Yes
Shoshone carrot	*Shoshonea pulvinata*	Sensitive	G2G3/S2	--	Calcareous rocky slopes and ridges	Yes
North Fork Easter daisy	*Townsendia condensate var. anomola*	Sensitive	G4T2/S2	--	Volcanic rocky slopes and shrubland	Yes
Lesser bladderwort	*Utricularia minor*	Sensitive	G5/S2	--	Fens	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Plants - gymnosperms						
Whitebark pine	*Pinus albicaulis*	Sensitive Candidate	G3G4/S3	--	Subalpine forests	Yes
Species of local concern						
Mammal species						
Moose	*Alces alces*	--	G5/S5	NSS4 (Bc)	Willow Riparian	Yes
Elk	*Cervus elaphus*	--	G5/S5	--	Forests Meadows	Yes
Mule deer	*Odocoileus hemionus*	--	G5/S5	--	Forests Meadows	Yes
Butterfly species						
Yellowstone checkerspot	*Euphydryas gillettii*	--	G3/SNR	--	Valleys Glades Open wooded areas with twinberry and speedwell	Yes
Bird species						

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Clark's nutcracker	*Nucifraga columbiana*	--	G5/S5B;S5N	--	Mature conifer forests Meadows	Yes
Plant species						
N/A	*Adoxa moschatellina*	--	G5/S2	--	Subalpine forests	Yes
Pink goat chicory	*Agroseris lackschewitzii*	--	G4/S3	--	Fens Riparian	Yes
Sweet-flowered rock jasmine	*Androsace chamaejasme var. carinata*	--	G5T4/S1S2	--	Calcareous rocky slopes and ridges	Yes
Trianglelobe moonwort	*Botrychium ascendens*	--	G2G3/S1	--	Riparian	Yes
Least moonwort	*Botrychium simplex*	--	G5/S2	--	Riparian	Yes
N/A	*Carex idahoa*	--	G2G3	--	Riparian	Yes
Enander's sedge	*Carex lenticularis var. dolia*	--	G5T3/S1	--	Alpine	Yes
Bristly stalked sedge	*Carex leptalea*	--	G5/S3	--	Riparian	Yes
Black and purple sedge	*Carex luzulina var. atropurpurea*	--	G5T3/S2	--	Fens Riparian	Yes

Common name(s)	Scientific name	Federal ranking[39]	WYNDD NatureServe ranking[40]	SWAP ranking[41]	Habitat	Species occurrence on the Shoshone
Evert's waferparsnip	*Cymopterus evertii*	--	G2G3/S2S3	--	Calcareous rocky slopes and ridges	Yes
Woolly fleabane	*Erigeron lanatus*	--	G3G4/S1	--	Alpine	Yes
Arctic cottongrass	*Eriophorum gracile*	--	G5/S2	--	Alpine	Yes
Northern fescue	*Festuca viviparoidea*	--	G4G5/SNR	--	Alpine	Yes
Hall's rush	*Juncus hallii*	-	G4G5/S3		Riparian	Yes
Siberian bog sedge	*Kobresia sibirica*	--	G5/S1	--	Alpine	Yes
Island purslane	*Koenigia islandica*	--	G4/S1	--	Alpine	Yes
Washington monkey flower	*Mimulus washingtonensis*	--	G4/S2 -	--	Riparian	Yes
Stalkpod locoweed	*Oxytropis podocarpa*	--	G4/S2	--	Alpine	Yes
Icegrass	*Phipsia algida*	--	G5/S1	--	Alpine	Yes
Alpine poppy	*Papaver radicatum ssp. kluanense*	--	G5T3T4/S2	--	Alpine	Yes
Smoothstem parrya	*Parrya nudicaulis*	--	G5/S2	--	Alpine	Yes
N/A	*Potentilla nivea var. pentaphylla*	--	G5/S2	--	Alpine	Yes
Weber's saw-wort	*Saussurea weberi*	--	G2G3/S2	--	Alpine	Yes
Alpine meadow rue	*Thalictrum alpinum*	--	G5/S2	--	Alpine	Yes

Table 32. Wyoming State Wildlife Action Plan rankings

		Extreme limiting factors are severe and continue to increase in severity	**Severe** limiting factors are sever and not increasing significantly	**Moderate** limiting factors are moderate and appear likely to increase in severity	**Minimal** limiting factors are moderate and not likely to increase in severity
Population status	**Imperiled** population size or distribution is restricted or declining and extirpation is possible	Aa NSS1	Ab NSS2	Ac N/A	Ad N/A
	Vulnerable population size or distribution is restricted or declining but extirpation is not imminent	Ba NSS2	Bb NSS3	Bc NSS4	Bd N/A
	Stable Population size and distribution are stable and the species is widely distributed	Ca N/A	Cb NSS4	Cc NSS5	Cd NSS6
	Expanding populations are expanding in number and/or distribution and the species is widely distributed	Da N/A	Db N/A	Dc N/A	Dd NSS7

Management indicator species synopsis

This section provides a summary of the process followed to select management indicator species. A complete document describing the five principles and seven steps in the selection process is available in the project record. Management indicator species were selected based on regional guidance and input from the Wyoming Game and Fish Department. Management indicator species are not the only monitoring tool for tracking the effects of management activities on species and their habitats; other monitoring has been prescribed in chapter 3, particularly for other species at risk (e.g., threatened or sensitive species).

Summary of management indicator species process

In the selection of management indicator species, the first principle involves identifying the priority issues for species viability and management effects to habitat that could be monitored and evaluated:

- Effects of commodity outputs and human uses, including timber harvest, livestock grazing, recreation use, and the associated road and trail networks
- Importance of riparian habitat and watershed and water quality related functions
- Lack of information regarding species of limited distribution or with limited habitat requirements
- Importance of old growth spruce/fir and all aspen habitat
- Lack of ability to proactively manage habitats to maintain structural diversity, including forested and non-forested (shrub) communities

The second principle was consideration of the major activities likely to occur on the Shoshone in the next planning period: livestock grazing, timber harvest, recreation use, and prescribed burning. In order to facilitate evaluation, the species selected needed to correspond to a Forest-wide condition or need and project level feasibility. Habitat aspects would be best evaluated if they can either be modeled and/or tracked through GIS and remote sensing due to the likelihood of continuing improvements and availability of this technology. The population monitoring requirement of the regulations should also contribute to this function.

The third principle was consideration of management indicator species selected on neighboring national forests to provide regional consistency.

The fourth principle was consideration of whether management indicator species were the best method to monitor and evaluate the issue. For example, if aspen extent and health or the amount and distribution of old growth conifer were the issues, these habitats can be directly monitored, rather than using a surrogate management indicator species. However, management indicator species are needed to monitor some species because knowledge for scientific habitat management is not complete and not all effects are known.

For the fourth principle, the following five categories of species were reviewed in compliance with the 1982 NFMA regulations at 36 CFR 219.19:

- Federally listed (under the Endangered Species Act) species
- Species with special habitat needs that may be influenced by management activities
- Species commonly hunted, fished, or trapped
- Non-game species of special interest

- Species whose population changes are believed to evaluate the effects of management activities

Plants, animals, communities, or special habitats were considered as potential management indicator species. Species' habitat requirements and their population biology elements were considered in relation to management activities.

The fifth principle was selecting an adequate but limited number of species. This principal included evaluating the management complexity (e.g., issues, habitat diversity, size, human uses) of the Shoshone, the budgets available, and the relationship of management indicator species in the overall monitoring and evaluation plan.

Results of the management indicator species selection process

It is important to recognize that it is not necessary to select a species for each category or each management issue listed above. Species that represent multiple categories of the five listed were also prioritized. From the five principles and seven steps followed, four species listed in Table 33 were selected from more than 100 species considered. Rationale for not selecting other species is listed in the project record.

Plan implementation

Management indicator species will be used in the planning, analysis, and design of projects implemented under the revised plan. Management indicator species may be evaluated using qualitative and quantitative habitat measures correlated to existing and likely population and habitat trends. The R2 HABCAP model may be suitable for use with the red-breasted nuthatch for analysis purposes, comparing Forest-wide conditions of habitat with anticipated project results to habitat. Acres of potential versus suitable habitat should be assessed in project level decisions for each applicable management indicator species. Management indicator species may be selected from the four species for project analysis, based on the habitat being manipulated or anticipated project effects.

Monitoring for management indicator species is also required at the Forest level. The monitoring protocols for each species are described in chapter 3, with further details in the project record.

Revisions to management indicator species used for monitoring and evaluation may occur through plan amendment or the next revision in response to improvements in knowledge, monitoring technologies, or changes in policy.

Table 33. Management indicator species on the Shoshone National Forest and the rationale for their selection

Species selected	Rationale (issue or habitat represented, monitoring feasibility)
Stream trout	**Rationale** Stream game trout species, including cutthroat trout, rainbow trout, and their hybrids, would be most sensitive to aquatic habitat disturbances. Most perennial streams on the Shoshone currently contain some type of game trout. Stream species generally would show more cumulative land management effects than lakes since they have significantly larger drainages. Through Wyoming Game and Fish Department and Forest Service monitoring, there is excellent information available on stream trout species distribution, densities, and overall population condition. **Challenges** Many streams on the Shoshone had been stocked with various non-native trout species. Brook trout are the most common stream species and are the most tolerant of poor habitat conditions of all the game trout species.
Brewer's sparrow	**Rationale** Brewer's sparrows' association with mature sagebrush habitats, which are in decline in lands surround the Shoshone, and management activities that involve prescribed burning and grazing in these habitats. Audible detections in avian point count monitoring and their good distribution in sage habitats across the Shoshone are also desirable features. They may provide indication of suitability of habitat for greater sage-grouse. **Challenges** Brewer's sparrows' status as a migratory species, with the Shoshone only used as habitat in the breeding season. They may provide indication of suitability of habitat for greater sage-grouse.

Species selected	Rationale (issue or habitat represented, monitoring feasibility)
Ruffed grouse	**Rationale** Ruffed grouse utilize aspen habitat, which is in short supply and below ideal levels on the Shoshone. The distribution and acreage of aspen on the Shoshone is known. Because of their audible detections during drumming, ruffed grouse can be monitored to estimate local annual population levels. **Challenges** Ruffed grouse are a hunted species; populations fluctuate and are cyclic.
Red-breasted nuthatch	**Rationale** The red-breasted nuthatch's year-round resident status and dependence on snags for nesting habitat in more mature conifer (structure stages 4B, 4C typically). Due to their audible detections, they are feasible to monitor through avian point counts, and have a Forest-wide distribution. **Challenges** Their ability to use a variety of mature conifer habitats.