VISION STATEMENT

The San Juan Public Lands provide multiple benefits for people in a manner that is sustainable over time. The ecosystems from which these benefits are derived are also sustainable.

The San Juan Public Lands continue to function as "working lands," meaning that historic uses such as livestock grazing and timber production continue at sustainable levels. At the same time, some areas remain in a wild or relatively pristine condition in order to provide for scenery, historic and cultural resources, clean water, biological diversity, and wildlife and fisheries habitat. The San Juan Public Lands continue to provide a variety of recreation settings and opportunities important to the people who live in southwestern Colorado, people who visit the area, and businesses that support those activities.

THE SETTING

The San Juan Public Lands (see Figure 2) lie amidst the mesas and mountains of Southwest Colorado at the junction of the Southern Rockies and the Colorado Plateau. Elevations within the area range from about 4,900 feet to over 14,000 feet above sea level. The San Juan consists of diverse landscapes, including large expanses of relatively pristine lands and other areas that are more developed, with roads and a wider variety of human activities evident. They provide opportunities for a broad range of human activities and uses, as well as natural processes, to occur.

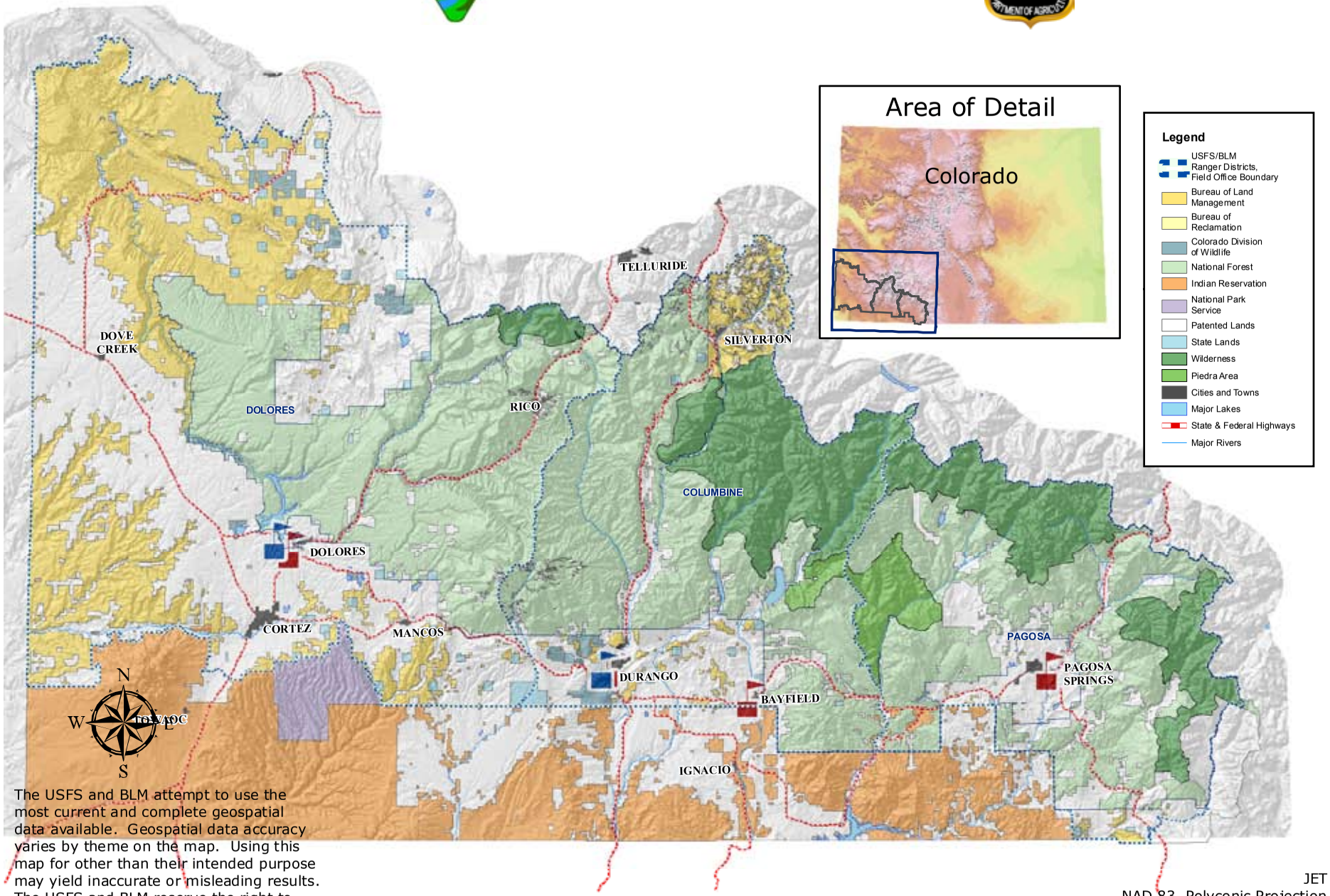
The San Juan is known for beautiful scenery, outstanding prehistoric and historic features, relatively unconfined recreation opportunities of high quality, and clean water and air. A large portion of the water in southwestern Colorado originates in mountainous, headwaters areas of the San Juan Public Lands.

The San Juan Public Lands contain some of the nearest high-elevation lands that offer a cooler-temperature refuge for visitors from states to the south and west. The area is ringed by numerous National Parks and Monuments (including Great San Dunes, Chaco, Mesa Verde, Grand Canyon, Canyonlands, and Arches National Parks; and Hovenweep and Canyons of the Ancients National Monuments). These factors, plus scenic attractions such as the San Juan Skyway and the Alpine Loop scenic byways, make Southwest Colorado a national destination for visitors.

The area has a rich heritage, ranging from pre-Puebloan culture to early Hispanic settlements, hard-rock mining, ranching, and contemporary recreation and retirement communities. There are many Native American communities within a few hundred miles that have connections to the area, including 21 Pueblo communities in New Mexico, and the Southern and Ute Mountain Ute, Jicarilla Apache, and Navajo Tribes, the Hopi Pueblos in Arizona, and the Uintah and Northern Utes Tribes of Northeast Utah.

Figure 2 - San Juan Public Lands (SJPL)

San Juan Public Lands



The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The USFS and BLM reserve the right to correct, update or modify geospatial inputs without notification.

JET
NAD 83, Polyconic Projection
October 29, 2007

THE SAN JUAN PUBLIC LANDS "NICHE"

The San Juan Public Lands (SJPL) consist of diverse landscapes, including large expanses of relatively pristine lands, as well as other areas that are more developed, with roads and a wider variety of human activities evident. The SJPL provide opportunities for a broad range of human activities and uses, as well as for natural processes, to occur.

The San Juan Public Lands are known for beautiful scenery, outstanding prehistoric and historic features, relatively unconfined recreation opportunities of high quality, and clean water and clean air. A large portion of the water in southwestern Colorado originates in the mountainous headwaters areas of the SJPL.

The people of southwest Colorado, as well as visitors to the area, have a strong tie to public lands and participate in their management. Many existing relationships and partnerships with a variety of interests and organizations serve as tangible evidence of important attachments to these public lands, and offer many opportunities for use, enjoyment, and cooperative stewardship.

THE STRATEGIC VISION

The U.S. Forest Service and the Bureau of Land Management have similar missions:

- ***USFS***: to sustain the health, diversity, and productivity of the nation's forests and grasslands in order to meet the needs of present and future generations.
- ***BLM***: to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

The mission of both agencies is based upon the relationship between the American people and their natural resource heritage. This relationship is founded on the principles of sustaining the nation's natural resources for future generations, producing personal and community well-being, and providing economic wealth for the people, communities, and businesses of the nation. Both agencies have Strategic Plans (as required by GPRA, 5 USC 306, 31 USC 1115-1119, and 31 USC 9703-9704) aimed at increasing the accountability of Federal agencies by measuring their progress toward achieving agency goals and objectives. The Strategic Plans were used during the development of this Draft Land Management Plan as guidance for developing desired conditions and outcomes.

DISTINCTIVE NATURE OF THE SAN JUAN PUBLIC LANDS

The San Juan Public Lands in southwestern Colorado have distinct characteristics that set them apart from other places. Some key characteristics are described below.

Diverse Geography

The San Juan Public Lands, which lie within the Colorado Plateau and Southern Rocky Mountains ecoregions, display tremendous geographic diversity. They range from about 4,900 feet in the canyon country (near the Utah border) to over 14,000 feet in the high peaks of the San Juan Mountains. The tremendous geologic, topographic, climatic, and vegetative diversity associated with these lands supports an unusually broad variety of biodiversity, as well as a wide range of habitats for flora and fauna. The variety of ecosystems found throughout the planning area, including semi-desert grasslands, pinyon-juniper woodlands, ponderosa pine forests, spruce-fir forests, alpine tundra, riparian areas and wetlands, offer exceptional diversity in scenery and recreational opportunities.

Scenery and Tourism

The diverse geography of the San Juan Public Lands provides for remarkable scenery and attracts many visitors to the area. The proximity to numerous national parks and national monuments in the Four Corners (including Mesa Verde, Grand Canyon, Canyonlands, and Arches National Parks; and Hovenweep and Canyons of the Ancients National Monuments), as well as scenic attractions (including the San Juan Skyway and the Alpine Loop Scenic Byway, and the Durango-Silverton Narrow Gauge Railroad) make southwestern Colorado a national destination for visitors.

Recreation

The size and the diversity of the San Juan Public Lands make a vast array of recreational opportunities activities (including scenic driving, ATV-use, mountain biking, hiking, horseback riding, camping, fishing, hunting, boating, and guided trips) possible. Past mining, logging, and grazing activities have created an impressive transportation network that provides people access to public lands in order to engage in the recreational experiences they seek).

Unroaded Lands

Within the planning area, there are large unroaded and undeveloped lands where natural ecological processes proceed with minimal human interference. These lands provide habitat for wide-ranging species, as well as linkages that facilitate species movements and gene flow. They act as reserves that protect the ecosystems and the full range of biological diversity within them. The planning area includes over 420,000 acres designated as Wilderness, including the Weminuche (which is the largest Wilderness Area in Colorado). An additional 600,000 acres within the planning area are currently roadless.

Heritage Resources

The lands within the planning area have a long and rich prehistoric and historic record that goes back approximately 10,000 years. Within the area, many important discoveries and a great depth of archeological research has taken place. The archeological record of the area contains evidence of the earliest agricultural societies in the region. The historic record of the area includes artifacts of Spanish and Euro-American explorers, trappers, miners, and settlers. This long record of human occupation has left one of the highest densities of prehistoric and historic cultural resources found anywhere in the United States.

Natural Gas

The lands within the planning area contribute significantly to the nation's ability to produce natural gas. Approximately 90 billion cubic feet (which is enough energy to heat a million homes) are produced annually.

Service First

Under a unique, cooperative venture called Service First, the USFS and BLM have combined resources and are working together in order to improve land management on the 2.5 million acres of public lands in southwestern Colorado. This is the first undertaking of its kind in the nation.

MANAGEMENT CHALLENGES

Some of the management challenges within the planning area include meeting the recreation demand, balancing multiple uses, performing ecological preservation, combating invasive plant species, protecting/enhancing biological diversity, and managing complex water-related issues. These management challenges are described below.

Meeting Recreation Demand

The local population surrounding the San Juan Public Lands is projected to increase by approximately 50,000 residents by 2025 (according to Colorado Demography Section forecasts). Demand for recreational opportunities is expected to increase, along with the increase in the population. Meeting this increasing demand without compromising the integrity of SJPL ecosystems requires careful planning and management.

Balancing Multiple Uses

Land management conflicts are common within the planning area, especially as people engaging in different uses increasingly compete for the same piece of land. Public lands that are adjacent to private lands (referred to as the wildland-urban interface or WUI) can also create a number of management challenges, including fire management, fuels reduction, recreation conflicts, and wildlife habitat preservation/protection. Complex land ownership patterns also create management challenges, including issues and conflicts in relation to boundaries, easements, public access, and roads.

Performing Ecological Restoration

Some ecosystems within the planning area are in need of restoration. This is due, in part, to past management activities that have changed their composition, structure, and/or function. Some ponderosa pine forests, for example, are in need of restoration in order to change their dense structure to one that is more similar to the open structure which was historically more common. Management challenges associated with restoration include finding cost-effective methods to restore ecosystems, developing a viable market for products produced from restoration activities, and prioritizing when and/or where restoration should occur.

Combating Invasive Plant Species

One of the most significant problems facing the San Juan Public Lands is the introduction and spread of invasive plant species. Invasive plant species, including noxious weeds, are a severe threat to native plants as well as to the overall biological diversity in the area.

Protecting/Enhancing Biological Diversity

Another significant management challenge for the San Juan Public Lands is the protection of rare and/or federally listed species. The demands from land management activities (including diversions and the consumptive use of water) will likely remain stable or increase. Without proactive habitat improvement projects, additional plant, terrestrial wildlife, and/or aquatic species could be listed as threatened or endangered, both on and off the San Juan Public Lands. Any additional listings would tend to add complexity to public land management, and would likely alter existing or future multiple-use opportunities.

Climate Change

Climate change can have many varied effects on ecosystems found on the San Juan Public Lands. Recorded changes in temperature and precipitation, concurrent with an increase in atmospheric CO2 concentration, can result in increases of the growing season, enhanced tree growth, changes in density of tree cover, changes in tree populations, and changes in the location of treeline.

Rising temperatures brought on by global warming add stress to trees, making them more susceptible to insects and disease, and stimulating the growth of underbrush and other fuels. Changing forests mean changing habitat for the wildlife species that depend on them.

It is very possible that the number of acres burned by wildfire could increase many-fold by the end of the century as a result of climate change. At the same time, there is great concern that scarce water supplies in the west could become even more scarce. It is also possible that the timing and nature of runoff from mountain watersheds could change, adding more stress and demand to available water supplies and further stressing aquatic ecosystems.

Because there is much uncertainty about the timing and specific effects of climate change on the San Juan Public Lands, it is anticipated that in the near future, we will need to develop new management practices and policies adapted to projected drifts in the geographic distribution of ecosystems. There will also be a need to understand and adapt to social and economic effects that climate change may bring.

Managing Water-Related Issues

Managing water-related issues will continue to be a complex and significant challenge throughout the planning area. Managers of the San Juan Public Lands will continue to be called upon to maintain clean water, protect water-dependent ecosystems, protect rare or threatened and endangered aquatic species, and perform watershed restoration while, at the same time, continuing to supply water for a variety of existing and future consumptive needs and multiple uses.

The population surge in the West continues to increase the diversion and the consumptive use of water and, at the same time, increases the demand for water-based recreation. Changes in the status quo of water appropriation and the complexity of Federal water management policy are a deep concern of State governments and senior water rights holders. The on-going regional drought has accelerated State initiatives designed to develop new water storage and diversion projects of various sizes. Regional climate shifts and global climate change could further exacerbate the complexity of these issues.

Historical Range of Variation (HRV)

The Historical Range of Variation (HRV) is used as an important concept for protecting species diversity and viability, sustaining ecosystems, and for developing Plan components relative to SJPL. HRV describes the range of ecological conditions (including vegetation structure and natural disturbance regimes) that existed within the planning area during the reference period (the period of indigenous settlement, lasting from approximately A.D. 1500 to the late 1800s. During this period broad-scale climatic conditions were similar to those of today, but European-American settlers had not yet introduced the sweeping ecological changes (including timber harvest, livestock grazing, fire suppression, water diversions, dams, and roads) that have greatly altered many Rocky Mountain landscapes. HRV information allows land managers to compare whether or not current ecological conditions within the planning area are similar, or dissimilar, to the HRV conditions that occurred within the same area in the past. The intent is not to manage the planning area according to HRV conditions. The intent is to use HRV conditions as reference points from which to help formulate attainable and sustainable desired conditions that meet a variety of land and resource management objectives. The key assumption here is that native species evolved under HRV conditions, and thus maintaining a full range of similar conditions offers the best assurance against losses of biodiversity (Seymore and Hunter 1999).

Sustainability

People are an integral part of ecosystems, and are fully dependent upon them for their short- and long-term well-being. Balancing the need for short-term goods and services with the long-term need for ecosystem persistence is a management challenge. In order to meet this challenge, ecosystems need to be managed for long-term sustainability. This means engaging in management activities and strategies that are in line with the physical and biological capabilities of the land; preserving all of the ecological pieces; preventing irreversible impacts to ecosystem resilience and ecosystem resistance to change; and ensuring the ability of ecosystems to meet the needs of future generations.

Land Management Plans must guide the sustainable management of Federal lands, as required by the Multiple-Use Sustained-Yield Act. This Act requires that Federal lands be managed in order to provide a continuous flow of goods and services to the nation. In order to meet this requirement, LMPs must provide a sustainable framework of social, economic, and ecological conditions that sustain native ecosystems and support diversity of native plant and animal species within the planning area. The requirements of the National Forest Management Act (NFMA) are accomplished in the planning process through a hierarchical and iterative approach that analyzes and provides guidance for ecosystem diversity and species diversity ("iterative" in that each step of the process is developed in small sections so that it can be thoroughly reviewed and analyzed, with the resulting new insight or knowledge used to help develop the next step in the process -- keeping track of what has been tried, approved, and/or discarded -- until a "blueprint" is developed that can serve as the final product).

The DLMP provides for ecological sustainability by recognizing and planning for the ecosystem diversity associated with the terrestrial, aquatic, and riparian areas and wetland ecosystems found within the planning area. It also accomplishes ecological sustainability by recognizing, and planning for, the species diversity associated with federally listed species, Management Indicator Species (MIS), Highlight Species, and BLM Special-Status Species found within the planning area. These ecosystems and species are the focus of management strategies and actions, and are accomplished through the development of DLMP components (including desired conditions, objectives, and guidelines).

Diversity and Viability

Management of ecological resources on San Juan Public Lands (SJPL) includes providing for a diversity of plant and animal communities and maintaining viable populations of all native and desired non-native wildlife, fish, and plant species. This is accomplished in this LMP in a multiple use framework through a combination of ecosystem management (that includes the management of reserves and human activities) and species-specific management.

The management of ecosystems is a cornerstone of this planning approach. It focuses on the principle that managing for natural diversity in the composition, structure, and function of the terrestrial ecosystems, riparian and wetland ecosystems, and aquatic ecosystems on SJPL will provide for sustainability. Another point of focus is the idea that sustaining these components of ecosystems will provide for the viability of the majority of species associated with them, including species with viability concerns and species we know little about. Our approach to managing ecosystems includes the protection of abiotic features and ecosystem processes including disturbance, succession, and hydrologic processes, all of which play an important role in providing ecosystem and species diversity and viability on SJPL.

Diversity and viability is also addressed by maintaining and protecting the many large unroaded lands on SJPL, and the intact ecosystems and linkages associated with them. These lands including wilderness areas, research natural areas, botanical areas, and roadless areas are relatively unaltered from human impacts and act as reserves to protect the ecosystems and the full range of biological diversity within them (Norton 1999).

In addition to the more conservation-focused strategy above, the SJPL ecosystem approach includes proactive management actions that promote ecosystem and species diversity, viability, and sustainability including wildland fire use, management-ignited fire, timber harvest, fuels reduction, and invasive species management. Wildland fire use and management-ignited fire will be used to introduce fire to ponderosa pine and warm-dry mixed conifer forests where it was a frequent disturbance agent during the reference period (HRV conditions), but has been absent from these ecosystems in many places for a long time. Timber harvest and fuels reduction projects will be used to reduce the density of trees and open up the forest canopy in ponderosa pine and warm-dry mixed conifer forests in order to create structural conditions more similar to those of the reference period (HRV conditions). Invasive species management will be used to prevent the introduction and spread of invasive species that compete with native species. These proactive management actions provide for the diversity and viability of ecosystems and species by creating sustainable ecosystem conditions.

The management of species is also fundamental to the SJPL planning approach since threats to some species and the factors limiting populations of other species are not always linked strongly to broader ecosystem conditions. The species approach is associated with maintaining the biological diversity and viability of all species, and focused on the needs of individual species that are rare or endemic, are at risk of decline, are economically important, or are not adequately protected by the ecosystem management approach. These special status species include federally listed species, candidate species, R2 Regional Forester's sensitive species, BLM special status species, and SJPL highlight species. See Appendix Q for additional information relative to diversity and viability on SJPL.

INTRODUCTION

Desired conditions are the overarching goals of land and resource management. In this DLMP, they are expressed as "goal" statements regarding the social, economic, and ecological attributes of public lands and resources toward which management strives and aspires to achieve. These statements, or descriptions, characterize or exemplify the desired outcomes of land management – and describe how the area should look and function in the future. Identifying and establishing desired conditions is the central focus of this DLMP.

Some desired conditions are general, while others are quite specific. Some desired conditions statements apply to the entire planning area, while others apply only to certain areas within the planning area. In this DLMP, desired conditions are first presented by topic for the entire planning area. Then they are presented by geographic area. Additionally, some desired conditions are associated with the Management Areas in which they are to be applied. Not every desired condition statement has a corresponding or follow-up DLMP component (i.e., objective or guideline). Follow-up components are provided only where necessary in order to address management needs.

PHYSICAL AND ECOLOGICAL RESOURCES

AIR QUALITY

Background

Air quality within the planning area has long been recognized as among the most pristine in the country (Malm et. al 2000; Copeland 1998). Visitors to the SJPL generally expect clear, clean air to be part of their overall experience. Air quality is an integral part of the natural environment and, in turn, affects water quality, soil chemistry, aquatic ecosystems, and vegetation. The Weminuche Wilderness Class I Area has been recognized by Congress as being an "outstanding special area" – deserving the highest air-quality protection in the nation.

Over the last 5 years, air-quality issues have emerged as a major resource concern in relation to energy development, prescribed burns, and human development. Air quality degradation in the Weminuche Wilderness Class I Area is predicted as a result of cumulative regional pollution (including from oil and gas field development, coal-fired power plants, and population increases) in the Four Corners area.

Atmospheric nitrogen deposition from anthropogenic sources of air pollution is increasing and has the potential to affect water quality and high-elevation aquatic and terrestrial ecosystems. Water bodies throughout the planning area are showing increasing levels of mercury pollution. Recently, McPhee Reservoir was officially designated as a water body impaired by mercury contamination and Vallecito Reservoir has new advisories for mercury contamination of fish. Coal-fired power plants are large sources of atmospheric mercury that can pollute water.

Desired Conditions – Air Quality

1.1 Air quality in the Weminuche Wilderness Class I Area is in pristine condition. Indicators of pristine conditions include air quality related values of visibility, lake chemistry, precipitation/atmospheric chemistry, soils chemistry, and aquatic/terrestrial biota.

1.2 Air quality for the Class II Areas within the planning area is maintained or improved with respect to pollutant concentrations so that the integrity of associated aquatic and terrestrial ecosystem components are protected.

1.3 Activities conducted on the SJPL maintain pristine air quality conditions at nearby Class I Areas outside of the planning area (such as at Mesa Verde National Park).

1.4 Visibility at designated scenic vistas in Class II Areas is maintained or improved within the planning area (see desired conditions for Scenery).

1.5 Visibility in the Weminuche Wilderness continues to improve, so that natural background conditions are obtained.

SOILS

Background

Providing for the sustainability of ecosystems is the overall desired condition throughout the planning area. Sustaining ecosystems includes protecting the physical, chemical, and biological properties of soils; and maintaining or enhancing soil productivity by preventing or minimizing soil compaction, displacement, erosion, puddling, and severe burning. Management activities on the SJPL that have the potential to adversely impact soil productivity include timber harvesting, livestock grazing, fuels treatments, natural fire, prescribed burns, oil and gas development, road construction, recreation development, and the construction of utility corridors.

Desired Conditions – Soils

2.1 Soil productivity is intact throughout most of the planning area.

2.2 Long-term levels of soil organic matter, soil nutrients, and litter are maintained throughout most of the planning area.

2.3 Ground cover (vegetation and litter) is maintained throughout most of the planning area.

2.4 Management-induced soil erosion, soil compaction, soil displacement, puddling, and/or severely burned soils are rare within the planning area.

2.5 Upland soils exhibit infiltration and permeability rates that minimize surface run-off and allow for the accumulation of the soil moisture necessary for plant growth and ecosystem function.

2.6 Wetland- and riparian-area soils have the soil moisture necessary for the growth of native hydrophytic plants and healthy ecosystem function.

2.7 The unique soils associated with the fens and hanging gardens found in the planning area are intact and have the water necessary to protect the rare plants and native biological diversity associated with them.

2.8 Soil productivity is improved in the mountain grasslands that are currently dominated by non-native plant species and displaying detrimental soil erosion and/or compaction.

2.9 Biological soil crusts found in the planning area are maintained or increased in the vegetation types in which they occur.

WATER

Background

The San Juan Public Lands are unique in that they encompass the headwaters of several large river systems (including the San Juan, the Piedra, the Los Pinos, the Animas, and the Dolores River systems). These river systems are vital resources to the States in the Four Corners area. Large mountain ranges running along the Continental Divide delineate much of the northern boundary of the planning area. The upper-elevation mountainous areas receive abundant precipitation. In addition, perennial streams, lakes and other water features are common on the landscape. Lower-elevation lands receive much less precipitation and they generally tend to have fewer (although larger) perennial rivers and more intermittent or ephemeral water bodies.

Water quality within the planning area is typically good. In the few water bodies exhibiting water quality problems, it is mercury, heavy-metals, salinity, and sediment that are the common pollutants. In some places, mine-related heavy metals pollution is being cleaned up. This is a result of the aggressive abandoned mine reclamation program underway in the planning area (see Abandoned Mine Lands section). Depletion and development of groundwater resources are emerging issues in the planning area, and are often associated with oil and gas development and private land development. High road densities, as well as poor road placement, design, and maintenance, have caused water-quality, floodplain, and channel morphology changes in some watersheds.

Drought has also impacted the planning area over the past decade. In fact, drought is a large contributing factor to the decrease in local water tables and to the reduced flow in streams, springs, and seeps. Dry upland conditions have increased grazing pressure on riparian areas and wetland ecosystems. The drought-related increase in large wildfires has impacted many watersheds by increasing flooding, erosion, and sedimentation (which has resulted in damage to private property near, and adjacent to, planning area boundaries).

Existing water-development projects continue to impact aquatic resources within the planning area. These projects range in size from small ponds and irrigation ditches, to large-scale diversion and storage projects (such as the Dolores Project/McPhee Reservoir). Due to increasing public demand, proposals for new (large and small) water-development projects also continue to increase. Addressing these increasing demands while, at the same time, maintaining the integrity of aquatic ecosystems, may be one of the biggest challenges to public lands management over the next few decades.

Desired Conditions - Water Quality

3.1 State water-quality standards are met and Colorado Water Quality Control Commission-classified water uses are supported for all water bodies.

3.2 Water quality for impaired water bodies on the State's 303(d) list moves toward fully supporting State-classified uses.

3.3 State "Outstanding Waters" within the planning area maintain the high levels of water quality necessary for this status.

3.4 Watersheds within the planning area containing saline soils exhibit stable upland, riparian, and channel conditions that produce water quality as close to reference conditions as possible; they produce the lowest possible saline contributions to the upper Colorado River (see Appendix K for saline watersheds).

3.5 Management activities throughout the planning area serve to protect and enhance the quality of municipal water supplies.

Desired Conditions - Stream Channels and Floodplains

3.6 Stream channel types that naturally construct floodplains are connected to their floodplains and carry overbank flows (which occur on the average every 1.5 years and are capable of transporting moderate or high flow events).

3.7 Physical channel characteristics are in dynamic equilibrium and commensurate with the natural ranges of discharge and load provided to a stream. Streams are also adjusted to the expected riparian vegetation composition and valley landforms that they occupy; they function correctly without management intervention.

3.8 Historically disturbed and degraded stream channels recover through floodplain development, increased riparian vegetation, and improved channel geomorphic characteristics.

Desired Conditions - Groundwater Resources

3.9 Aquifers maintain natural patterns of recharge and discharge, especially where they are important to surface features dependent upon groundwater for their existence (including caves, karst, springs, seeps, lakes, riparian areas and wetland ecosystems, fens, and intermittent and perennial streamflow).

3.10 Aquifers possessing groundwater of quality and/or quantity that provide multiple-use benefits, maintain water quality at natural conditions.

Desired Conditions - Watershed Conditions, Watershed Scale, and Water Uses

3.11 Upland areas function properly and do not contribute to stream-channel degradation.

3.12 Favorable conditions of flow exist that sustain supplies of high-quality water and that support multiple-use management.

3.13 The majority of unregulated or free-flowing streams within the planning area are retained in their current undeveloped condition; they provide potential reference conditions and offer unique opportunities for recreation, species conservation, and pleasing aesthetics.

3.14 The overall function and integrity of streams and stream reaches impacted by water developments are adequately protected for their baseline ecological and recreational values. This is accomplished by providing for adequate in-stream flows (as part of new water-development planning) as well as for existing water-development operations. This includes sustaining the ecological processes dependent upon flow patterns and stream volumes for the impacted watersheds.

3.15 The natural range of hydrologic flow patterns is sustained in streams so that functioning aquatic ecological systems can be maintained when water is transferred from one catchment to another. Water lost (i.e., there is no return flow) from watersheds as a result of water transfer does not adversely alter or impact the aquatic ecology of the watershed.

3.16 All water developments for Federal purposes have State water rights, if applicable. The use of water continues over the implementation-life of the Land Management Plan, when the water is available.

3.17 All water developments that involve the use of the San Juan Public Lands are authorized pursuant to applicable Federal authorities.

AQUATIC ECOSYSTEMS

Background

Water-dependent environments are essential for the interrelated and interacting communities and populations of plants and animals. These aquatic ecosystems include stream channels, lakes, and/or other water-dependent features, as well as the biotic communities and habitat features that occur therein. The aquatic biota includes native and desired non-native fish species, aquatic plants, aquatic insects, amphibians, macroinvertebrates, and periphyton communities. A variety of land management activities occurring throughout the planning area over the last 100 years have impacted aquatic ecosystems. Where they once occurred, or where they continue to occur, recreation, commercial, and management activities (including hard-rock mining, livestock grazing, timber harvesting, road construction, and a variety of water-development projects) have, in general, reduced the quantity and/or quality of aquatic habitats. As a result, the ability to support self-sustaining and functioning populations of fish and other aquatic biota has been reduced in a number of streams and rivers within the planning area. This is most evident in areas impacted by consumptive uses of water. The cumulative impacts of hundreds of existing water developments have resulted in adverse and on-going impacts to the composition, structure, and functioning of aquatic habitats. Where fish-population monitoring has been conducted downstream of water developments, significant decreases in population densities have been observed.

The introduction of non-native fish species, as well as the occurrence of potentially lethal pathogens, has resulted in the decline of some species. The stocking of non-native trout species over many years has come at a significant cost to the native Colorado River cutthroat trout. Native sucker species have also declined due to the loss of aquatic habitat, and as a result of hybridization with the introduced white sucker. The parasite *Myxobolus cerebralis* (which causes whirling disease in trout) is becoming more widespread throughout the planning area and is known to have increased mortality rates for infected populations.

More recently, fish population levels have been reduced by prolonged drought. This has reduced natural streamflow and resulted in increased demands for water for human consumptive uses. These increased demands have, in turn, resulted in numerous additional water-development proposals. With continued drought and the increasing demand for consumptive water uses, aquatic habitats and fish populations are likely to experience additional declines without aggressive, proactive management efforts.

Where possible, land management activities that incorporate the objectives for aquatic habitats and fisheries, implement Best Management Practices (BMPs), maintain streamflows, and/or implement site-specific mitigation measures will reduce the risks to aquatic resources and limit further declines in aquatic biota.

Desired Conditions - Aquatic Ecosystems

4.1 Range of flows is adequate to maintain physical aquatic habitats.

4.2 Long-term aquatic ecosystem sustainability is maintained.

4.3 Waterflow conditions in streams, lakes, springs, seeps, wetlands, fens, and aquifers support functioning habitats for a variety of aquatic and semi-aquatic species (including all native and/or desired non-native fish species, amphibians, aquatic plants and insects, macroinvertebrates, and periphyton communities).

4.4 Water bodies, riparian vegetation, and adjacent uplands provide habitats that maintain the viability of native and/or desired non-native aquatic communities (including fish, amphibians, invertebrates, plants and other associated aquatic species).

4.5 With regard to channel characteristics, water quality, and flow regimens, aquatic habitat within the planning area are diverse; they appropriately reflect the climate, geology, and natural vegetation of the area.

4.6 Aquatic habitat quantity and quality are maintained or enhanced in order to provide for the long-term sustainability and viability of all native and/or desired non-native vertebrate species.

4.7 Macroinvertebrate diversity and abundance reflect high water quality.

4.8 Connectivity between water bodies provides for all life history functions of aquatic species. Except where barriers are beneficial and necessary in order to achieve conservation goals for certain aquatic species, aquatic systems are connected in a manner that avoids fragmentation of aquatic habitats; they provide for the movement of aquatic species sufficient to ensure that fish populations are not isolated.

4.9 Physical characteristics (including bank stability, width-to-depth ratio, pool/riffle ratio, pool depth, slope, sinuosity, cover, and substrate composition) are commensurate with the natural ranges of discharge and loads provided to a stream; they sustain all life stages of native and/or desired non-native aquatic species.

4.10 All native and/or desired non-native fisheries thrive in the vast majority of systems historically capable of supporting such fisheries.

4.11 Populations of aquatic species throughout the planning area are viable, adequately mobile, genetically diverse, and functionally diverse.

RIPARIAN AREAS AND WETLAND ECOSYSTEMS

Background

In this Plan, riparian areas and wetland ecosystems are defined together as lands that occur in the interface between the aquatic ecosystem and the upland terrestrial ecosystem (where the water table is usually at, or near, the land surface) (Gregory et al. 1991; Risser 1990; Knofp et al. 1988; Brinson et al. 1981; Cowardin et al. 1979). They are frequently flooded, or at least seasonally saturated, due to a fluctuating water table; they have plant species, soils, and topography that differ considerably from those of the adjacent uplands (Elmore and Beschta 1987; Jones 1990).

The variability of riparian areas and wetland ecosystems within the planning area at the subclass level (which is based on the predominant leaf phenology of the life form in the upper canopy layer) includes evergreen riparian forests, deciduous riparian forests, mixed-evergreen-deciduous riparian forests, deciduous riparian shrublands, perennial forbs, and perennial graminoids.

Due to human impacts, riparian areas and wetland ecosystems have changed dramatically during the last century-and-a-half in the southwestern United States (Blair et al. 1996; Dick-Peddie 1993). Human impacts to riparian areas and wetland ecosystems include urbanization, agriculture, logging, livestock grazing, mining, recreation, roads, dams, diversions, and the introduction of non-native species. These impacts have reduced native hydrophytic (plants that have adapted to living in, or on, aquatic environments) species (most notably cottonwood and willows), increased invasive species, changed dominant life forms (from trees or shrubs to herbs), reduced water flow, and lowered water tables. The deciduous riparian forests, mixed-evergreen-deciduous riparian forests, and deciduous riparian shrublands types have probably been the most affected by human impacts. This is due to their easy access and characteristics which have made them desirable areas for settlement. Deciduous forest riparian areas and wetland ecosystems in good condition are scarce on the BLM lands within the planning area (Kram et al. 2005).

Some fens within the planning area have been adversely impacted by management activities, including by roads that are in or adjacent to them, by roads that may be impacting their hydrology, and by damage caused by off-road vehicles. The non-native shrub tamarisk, which competes with native cottonwoods and willows, has invaded much of the Dolores River Canyon and its lower tributaries.

Desired Conditions – Riparian and Wetland Ecosystems

5.1 Riparian areas and wetland ecosystems have vegetation that is vigorous and self-perpetuating; they exhibit a diverse composition of desirable native plant species that display multiple-size and multiple-age classes. Invasive plant species are absent or rare.

5.2 Riparian areas and wetland ecosystems have vegetation cover sufficient to catch sediment, dissipate energy, prevent erosion, stabilize stream banks, enhance aquatic habitat, and promote floodplain development.

5.3 Forest and shrubland riparian areas and wetland ecosystem types display hydrophytic trees and shrubs in a variety of size classes; they provide terrestrial and aquatic habitats, stream shading, woody channel debris, aesthetic values, and other ecosystem functions.

5.4 Woody debris in a variety of sizes is present in forest and shrubland riparian areas and wetland ecosystem types.

5.5 Riparian areas and wetland ecosystems are resilient and resistant to change from disturbances (including from floods, fire, and drought).

5.6 Riparian areas and wetland ecosystems have flow regimes and flooding processes that contribute to stream-channel and floodplain development, maintenance, and function; they facilitate the regeneration of hydrophytic plant species (including narrowleaf cottonwood and Rio Grande cottonwood) that depend on flooding for regeneration.

5.7 The composition, structure, and function of fens are intact (including their native plant species, organic soils, and hydrology).

5.8 The aquatic and terrestrial ecosystems that are interconnected with, and occur adjacent to, riparian areas and wetland ecosystems function properly; they display the ecological components necessary in order for the adjacent riparian areas and wetland ecosystems to function properly.

5.9 Upland areas, and the activities associated with them, do not adversely impact stream channels, and/or riparian areas and wetland ecosystems.

5.10 The critically imperiled wild privet shrublands and boxelder/river birch woodlands are protected; they have habitat to expand into; and they have the water quantity and hydrologic systems necessary in order to support and sustain these communities.

TERRESTRIAL ECOSYSTEMS

Background

In this DLMP, terrestrial ecosystems are defined as ecosystems that occur in relatively dry, upland landscape positions. Major vegetation types are used as the primary terrestrial ecosystems to describe ecosystem diversity and to analyze past, present, and future ecological conditions within the planning area (see Figure 3 - Major Vegetation Types). Development stages of the major vegetation types (used throughout the DLMP in order to further describe ecosystem diversity) are extensions of the Wildlife Structural Stages (WSS) found in the SJPL Region 2 Vegetation Database. In addition to tree size and crown cover, development stages include other structural and compositional components important to ecosystems and native biota. The young development stage generally correlates with WSS 2 (seedling-sapling). The mid-development stage generally correlates with WSS 3 (sapling-pole). The mature development stage generally correlates with WSS 4 (mature). The old-growth development stage was developed from attributes identified by Mehl 1992.

Desired conditions for the development stages of the major vegetation types were developed for this DLMP/DEIS by the Interdisciplinary (ID) Team. This was accomplished by comparing current conditions to HRV conditions, by identifying restoration needs, and by considering the short- and long-term ecosystem diversity needed in order to sustain the major vegetation types, as well as the native biota within them. Other desired conditions were developed in response to social considerations (including the need to protect the Wildland-urban Interface (WUI) from catastrophic fire events).

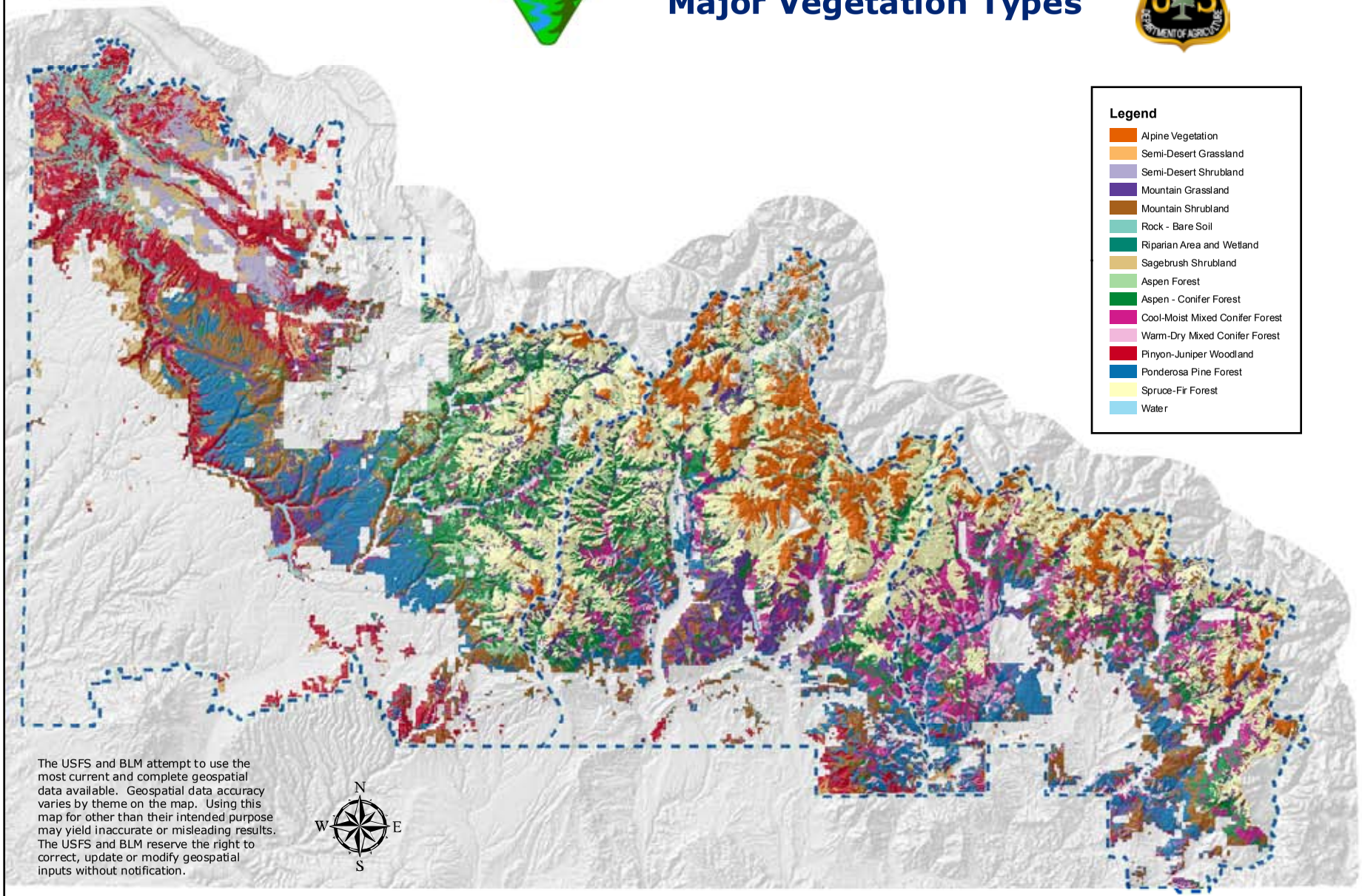
The overall goal for terrestrial ecosystems within the planning area is that they provide for a diversity of sustainable ecosystems that support a diversity of native plant and animal species. This would involve maintaining ecosystem structure, natural ecological processes, native biota, and the physical environment (soils and water). Ecosystem sustainability is about obtaining yields and services from ecosystems without irreversibly impacting their resilience, natural resistance to change, and/or their ability to meet the needs of future generations. The HRV, as described previously, is used as an important concept for sustaining ecosystems, as well as for developing desired conditions and other DLMP components relative to the terrestrial ecosystems within the planning area.

Disturbance processes (including wildland fire, insects, disease, and wind) play an important role in providing ecosystem diversity and sustainability within the planning area. Disturbance and recovery are important mechanisms for maintaining genetic, species, and ecosystem diversity. The flora and fauna, as well as the overall vegetation patterns within the planning area, reflect the temporal and spatial distribution of disturbance processes.

The current conditions found throughout the planning area differ from conditions that occurred during the reference period (HRV conditions). In many ponderosa pine forests, for example, the combination of unmanaged livestock grazing, timber harvesting, and fire exclusion during the last century have lengthened fire frequencies and have created unnatural forest structures (Romme et al. 2006). The current forest structures that display high stem densities of medium-sized trees and closed canopy covers are unlike the open-canopied, multi-sized structures of the ponderosa pine forests that dominated the reference period. Many of these forests have lost the large, old trees, as well as some of the native bunchgrasses that were once common in the area. Consequences of the current structure in ponderosa pine forests include epidemic insect and disease outbreaks, increased risk of destructive wildfires (fires that are much hotter than they were during the reference period; fires that are increasingly difficult to control), a reduction in ponderosa pine regeneration, an increase in the abundance of white fir, and a reduction in biological diversity (Moir et al. 1997, Wu 1999).

Similar to ponderosa pine forests, many warm-dry mixed-conifer forests currently display forest structures that differ from HRV conditions. This is due to the combination of fire exclusion and selective timber harvesting. Structures that display high stem densities and closed canopy cover are unlike the less dense, open-canopied structures of the warm-dry mixed-conifer forests that dominated the reference period. The large, old ponderosa pine and Douglas-fir trees that once dominated many of these forests are gone. They have been replaced by smaller, younger trees, including by white fir (which has significantly increased during the long fire-free period of the Twentieth Century). Consequences of the current structure of these forests are similar to those described above for ponderosa pine forests. The establishment of new ponderosa pine and Douglas-fir trees has tapered off, or stopped altogether, in many warm-dry mixed-conifer forests due to the dense stand conditions (Wu 1999).

Figure 3 - Major Vegetation Types



JET
NAD 83, Polyconic Projection
October 29, 2007

0 4.5 9 18 Miles

Many of the mountain grasslands found within the planning area have been significantly impacted by the unmanaged livestock grazing that occurred within the planning area from the late 1800s through to the mid-1900s (Romme et al. 2006). These grasslands currently display a composition and structure that is very different from the HRV conditions. Many native bunchgrasses (including Arizona fescue) are absent or rare within the planning area. They have been replaced by non-native species and/or by undesirable native species. Bare soil, compaction, and/or erosion have increased; forest litter has decreased. Structural conditions typically display an open canopy and reflect the short, sparse foliage of Kentucky bluegrass (which provides limited litter and organic matter for nutrient cycling and soil development, as well as limited protection to the soil surface from raindrop impacts, runoff, compaction, and erosion). This is unlike the HRV conditions, where there was typically a high density, relatively closed-canopy, and well-distributed arrangement of tall bunchgrasses (which provided an abundance of litter and organic matter for energy flow, nutrient cycling, and soil development, and protected the soil surface from raindrop impacts, runoff, compaction, and erosion).

Many of the semi-desert shrublands, semi-desert grasslands, sagebrush shrublands, and pinyon-juniper woodlands have also been significantly impacted by the unmanaged livestock grazing that occurred within the planning area from the late 1800s through to the mid-1900s. These areas currently display an herbaceous species composition that is very different from the HRV conditions. Native cool- and warm-season bunchgrasses are absent or rare on many sites (having been replaced by non-native species and/or by undesirable native species, including cheatgrass). Relative to HRV conditions, biological soil crusts in these vegetation types have also decreased.

Other current vegetation conditions within the planning area that differ from HRV conditions include a decrease in old-growth ponderosa pine and warm-dry mixed-conifer forests, a decrease in young- and mid-stages of spruce-fir and cool-moist mixed-conifer forests, a decrease in young aspen forests, a decrease in native bunchgrasses in many mountain grasslands, and an adverse increase in white fir in many mixed-conifer forests east of the Animas River.

Table 2 - Major Vegetation Types and Acres (SJPL-wide and by Geographic Area)

Major Vegetation Type	Total Acres	Columbine Acres	Dolores Acres	Pagosa Acres
Spruce-Fir Forest	519,200	224,500	131,000	148,700
Cool-Moist Mixed Conifer Forest	215,500	71,100	19,400	105,000
Aspen-Conifer Forest	236,700	87,200	83,400	51,100
Aspen Forest	91,500	11,500	41,800	3,800
Warm-Dry Mixed Conifer Forest	93,600	31,300	9,200	37,200
Ponderosa Pine Forest	411,500	58,500	121,200	72,000
Pinyon-Juniper Woodland	442,800	13,200	197,400	3,900
Mountain Shrubland	443,300	50,200	133,700	71,800
Sagebrush Shrubland	202,200	2,900	85,700	1,500
Semi-Desert Shrubland	93,800	0	60,000	0
Mountain Grassland	298,700	37,100	53,000	41,400
Semi-Desert Grassland	303,100	1,800	11,900	1,800
Alpine	186,400	121,500	14,600	37,300

Desired Conditions - General Terrestrial Ecosystems

6.1 The planning area sustains a full complement of native biological diversity at the ecosystem level while, at the same time, allowing for natural evolutionary and biogeographical processes (biogeography is the study of the geographic distribution of organisms).

6.2 Natural ecological processes (including succession, fire, insects, disease, wind events, and flooding) contribute to the maintenance of sustainable ecosystems; they shape the composition and structure of the vegetation communities and the landscape pattern found throughout most of the planning area.

6.3 The major vegetation types found within the planning area are sustainable, resistant to change, resilient, and dominated by desirable native plant species.

6.4 All development stages of all of the major vegetation types within the planning area are represented and distributed across the SJPL.

6.5 Old-growth ponderosa pine and warm-dry mixed-conifer forests are more abundant, larger, and better distributed than they are currently within the planning area.

6.6 Aspen and aspen-conifer forests display larger patches of the young-development stage.

6.7 Snags, large and small wood on the forest floor, and litter are present in all forest vegetation types; they serve to maintain soil productivity, protect the soil surface, and provide wildlife habitat.

6.8 Ecosystems that provide goods and services remain productive and able to provide these goods and services over the long-term.

6.9 The many, large unroaded lands that represent much of the ecological diversity found within the planning area (including Wilderness Areas, WSAs, Research Natural Areas (RNAs), and some Inventoried Roadless Areas (IRAs) remain unroaded, contain relatively intact ecosystems where natural processes dominate, provide habitat and corridors for native biota, and constitute part of a reserve system that helps to preserve the native biological diversity on the SJPL.

6.10 Landscape linkage areas provide habitat for, and facilitate the movement of, wide-ranging species, including forest carnivores.

6.11 Special biological diversity features within the planning area (old-growth forests, fens, Arizona fescue mountain grasslands, hanging gardens, unroaded lands, critically imperiled plant species and communities, etc.) are sustained.

6.12 The riparian areas and wetland ecosystems, fens, springs, and potentially rare flora and fauna associated with the 6th level glaciated watersheds of the landscape-scale clusters 7w and 9w (as identified in Aquatic Riparian Wetland Assessment, or ARWA) are protected and sustainable.

6.13 Lands in the WUI display stand structures and fuel conditions that reduce the rate of wildfire spread and make wildfire intensity less severe. This may result in ecological conditions unlike those that occurred during the reference period (HRV conditions).

6.14 Where practical, lands in the WUI display stand structures and ecological conditions similar to those that occurred during the reference period (HRV conditions).

6.15 The major vegetative types display a Fire Regime Condition Class of 1 (see Glossary, Volume 1, Chapter 5).

6.16 All rangelands display satisfactory rangeland conditions (see Glossary, Volume 3).

Desired Conditions - Disturbance Processes

6.17 Wildfire behavior in the WUI (in and around developed areas and communities) is relatively easy to control with conventional suppression methods and does not result in major destruction.

6.18 Fire frequencies and severities associated with the natural fire regimes of the major vegetative types found within the planning area are maintained or restored (except for some lands in the WUI).

6.19 Insect and disease processes and cycles are similar to those that occurred during HRV conditions. Epidemic outbreaks are rare.

6.20 Human-initiated disturbances (including tree harvesting, fuels treatments, prescribed burns, recreation, restoration sites, etc.) mimic natural disturbances on most of the SJPL.

Desired Conditions - By Major Vegetation Type

6.21 ***Ponderosa Pine Forests***: Ponderosa pine forests display variable stand structures. Most have open canopies with widely spaced trees and multiple canopy layers. Some are dense with closed canopies; others have a clumped structure where trees occur in groups surrounded by shrub and/or herb-dominated openings. Ponderosa pine seedlings and saplings are present, and large old, yellow-barked ponderosa pine trees are present. The abundance and distribution of Gambel oak and other native shrubs in the understory of these forests is variable and includes small and large patches of all size classes. Native herbs (including bunchgrasses, Arizona fescue, muttongrass and mountain muhly) are present and well-distributed in most ponderosa pine forests. Forest litter is common and well-distributed. Invasive plant species are absent or rare. Snags and large wood (on the ground) are common in late successional stages, as well as in young stands, following disturbance. Low-intensity, surface fires occur in most ponderosa pine forests (with frequencies ranging from about 12 to 30 years). All development stages of these forests are well-represented, including the old-growth stage that is currently under-represented.

6.22 ***Warm-Dry Mixed Conifer Forests***: Warm-dry mixed-conifer forests display variable stand structures and species composition. Most have open canopies with widely spaced trees and multiple canopy layers. Some are dense with closed canopies; others have a clumped structure where trees occur in groups surrounded by shrub and/or herb-dominated openings. Tree species composition includes an abundance of ponderosa pine and Douglas-fir trees (ranging from young to old). White fir trees are present, but are not dominant. The abundance and distribution of Gambel oak and other native shrubs in the understory of these forests is variable, and includes small and large patches of all size classes. Native herbs (including tall bunchgrasses) are common and well-distributed in most warm-dry mixed-conifer forests. Forest litter is common and well-distributed. Invasive plant species are absent or rare. Snags and large wood (on the ground) are common in late successional stages, as well as in young stands, following disturbance. Low-intensity, surface fires occur in most warm-dry mixed-conifer forests (with frequencies ranging from about 18 to 28 years). All development stages of these forests are well-represented, including the old-growth stage that is currently under-represented.

6.23 ***Cool-Moist Mixed Conifer Forests***: Cool-moist mixed conifer forests display variable stand structures and species composition. Most are dense with closed canopies and multiple canopy layers. Tree species composition includes an abundance of Douglas-fir trees (ranging from young to old). Patches of cool-moist mixed-conifer forest, ranging from small to large, are distributed across the landscape. The canopy cover of shrubs in the understory of these forests is highly variable. Native herbs are

common and well-distributed in most cool-moist mixed-conifer forests. Forest litter is common and well-distributed. Invasive plant species are absent or rare. Snags and large wood (on the ground) are abundant in late successional stages. High-intensity, stand-replacement fires occur in most cool-moist mixed-conifer forests (with frequencies of about 144 years). All development stages of these forests are well-represented, including the young- and mid-stages that are currently under-represented.

6.24 ***Spruce-Fir Forests***: Spruce-fir forests display variable stand structures and species composition. Most are dense with closed canopies and multiple canopy layers. Patches of spruce-fir forest, ranging from small to large, are distributed across the landscape. The canopy cover of shrubs in the understory of these forests is highly variable. Native herbs are common and well-distributed in most spruce-fir forests. Forest litter is common and well-distributed. Invasive plant species are absent or rare. Snags and large wood (on the ground) are abundant in late successional stages. High-intensity, stand-replacement fires occur in most spruce-fir forests (with frequencies longer than 200 years). All development stages of these forests are well-represented, including the young- and mid-stages that are currently under-represented.

6.25 ***Aspen and Aspen-Conifer Forests***: Aspen and aspen-conifer forests display variable stand structures, with most having high stem densities and high canopy cover. Some stands are even-aged with one or two canopy layers; others are uneven-aged with multiple canopy layers. Patches of aspen and aspen-conifer forests, ranging from small to large, are distributed across the landscape. The canopy cover of shrubs in the understory of these forests is highly variable. Native herbs are abundant and well-distributed in most aspen and aspen-conifer forests. Forest litter is common and well-distributed. Invasive plant species are absent or rare. Snags and large wood (on the ground) are abundant in late successional stages. Fires occur in most aspen and aspen-conifer forests (with frequencies of about 140 years). All development stages of these forests are well-represented, including the young-stage that is currently under-represented.

6.26 ***Pinyon-Juniper Woodlands***: Pinyon-juniper woodlands display variable stand structures. Some have open structures with widely spaced trees; others are dense with high canopy covers. Most stands are uneven-aged with multiple canopy layers. Tree species composition includes an abundance of pinyon-pine and juniper trees, ranging from young to old. The canopy cover and size of Gambel oak and other shrubs in the understory of these forests is variable. Native herbs are present and well-distributed. Biological soil crusts and forest litter are common and well-distributed on most sites. Invasive plant species are absent or rare. High-intensity, stand-replacement fires occur in most pinyon-juniper woodlands (with frequencies of 100-123 years).

6.27 ***Mountain Shrublands***: Mountain shrublands display variable stand structures. Most are dense with multiple canopy layers; others are open with widely spaced shrubs. Gambel oak and other deciduous native shrubs (including mountain mahogany, serviceberry, chokecherry, fendlerbush, and squawapple) are abundant and well-distributed. Native herbs are abundant and well-distributed. Invasive plant species are absent or rare. Forest litter is common and well-distributed.

6.28 ***Sagebrush Shrubland***s: Sagebrush shrublands display variable stand structures. Some are open with widely spaced shrubs; others are dense. Some large patches are present. Sagebrush and other native shrubs are abundant and well-distributed. Native perennial bunchgrasses (including Indian ricegrass, galleta, Western wheatgrass, and needle-and-thread – which are currently lacking on many sites) are abundant and well-distributed. Encroachment of pinyon and juniper trees is absent or rare. Invasive plant species are absent or rare. Biological soil crusts are common and well-distributed on many sites.

6.29 ***Semi-Desert Shrublands***: Semi-desert shrublands are dominated by native shrubs that could include shadscale saltbush, winterfat, fourwing saltbush, plains pricklypear, rubber rabbitbrush, spiny hopsage, greasewood, and/or basin big sagebrush. Stand structures display open or moderately dense shrubs with native perennial herbs in the openings between them. Native grasses (including Indian ricegrass, galleta, Western wheatgrass, and needle-and-thread -- which are currently lacking on many sites) are abundant and well-distributed. Invasive plant species and/or undesirable native plant species that are currently abundant on most sites are absent or rare. Biological soil crusts and forest litter are common on most sites.

6.30 ***Semi-Desert Grasslands***: Semi-desert grasslands are dominated by native perennial bunchgrasses (including Indian ricegrass, galleta, and needle-and-thread – which are currently lacking on many sites). Invasive plant species and/or undesirable native plant species that are currently abundant on most sites are absent or rare. Biological soil crusts and forest litter are common on most sites.

6.31 ***Mountain Grasslands***: Mountain grasslands display moderate to high canopy cover of desirable native herbs (including Arizona fescue at mid-elevations and Thurber fescue at higher elevations). Invasive plant species and undesirable native plant species that are currently abundant on many sites are absent or rare. Forest litter is common and well-distributed.

6.32 ***Alpine***: Alpine ecosystems sustain their ecosystem diversity. They maintain the ecological attributes and processes that allow them to provide watershed values, habitat for native biota, panoramic vistas, and/or for solitude. They display a diverse composition of desirable native plant species and vegetation communities (including fellfield, turf, wetland, and dwarf willow types). Invasive plant species are absent or rare.

Table 3 - Desired Conditions for Development Stages of the Forest Vegetation Types

Vegetation Type*	Development Stage*	Current Condition** (% of vegetation type)	Historic Range of Variation*** (% of vegetation type)	Desired Condition**** (% of vegetation type)
Spruce-Fir	young	1.5	0-45	10-20
	mid	6.5	5-47	20-30
	mature	70	#	30-40
	old growth	22	#	25-35
Cool-Moist Mixed-Conifer	young	0.5	1-36	10-20
	mid	10	8-49	20-30
	mature	79	#	30-40
	old growth	11	#	20-30
Aspen	young	1	1-55	15-25
	mid	31	4-55	25-35
	mature	68	35-86	50-60
Warm-Dry Mixed-Conifer	young	0.5	1-10	10-15
	mid	8.5	5-14	10-15
	mature-open	4.5	#	35-45
	mature-closed	77	#	15-25
	old growth	10	#	20-30
Ponderosa Pine	young	0.5	1-14	5-10
	mid-open	3.5	4-14	5-10
	mid-closed	4	4-14	5-10
	mature-open	35	#	40-60
	mature-closed	55	#	15-25
	old growth	2.5	#	10-15

*Draft Environmental Impact Statement ** SJPL R2VEG *** RMLANDS **** Interdisciplinary Team # not available

TERRESTRIAL WILDLIFE

Background

Habitat assessments of landscape condition and trends on the SJPL have identified several major factors that have influenced change in forested and non-forested habitat conditions since the reference period. Factors include fire exclusion, timber harvesting, road and urban development, livestock grazing, and recreational uses associated with a rapidly growing human population. These conditions and trends have implications for wildlife species that include:

- changes in forest structure and composition that may contribute to uncharacteristic wildfire behavior in lower-elevation forest types;
- disturbance from people on roads with road densities varying from a high of about 6.0 miles per square mile to a low of about 0.29 miles per square mile;
- competition from invasive plant species that compromise plant diversity, habitat quality, and connectivity (which may impact habitat connectivity and effectiveness for terrestrial wildlife and impact habitat quality for plant species);
- reduction or degradation of habitats for some wildlife and plant species where human impacts have occurred and/or where natural disturbance regimes have been altered;
- urban development and infringement into some traditionally important wildlife habitats (including big game winter range at lower to moderate elevations); and
- rapidly increasing human populations that place uses and demands upon the landscape that, in turn, alter habitat security and contribute disturbance impacts to wildlife species.

There are 12 recognized major vegetation types within the planning area that provide habitat conditions for a wide variety of terrestrial wildlife species. Past timber harvesting has influenced many vegetation types throughout the planning area (including older clear-cuts, and their associated roads, within the spruce-fir forests that have influenced habitat conditions over time). However, in general, alterations to these vegetation types have been the most severe in the lower elevations, and the least severe in the higher elevations. Approximately 44% of the planning area is in Inventoried Roadless Areas or in designated Wilderness Areas that often overlap the spruce-fir and alpine tundra habitat types. Roadless and/or Wilderness qualities offer large areas of habitat that are relatively undisturbed by humans and that are particularly valuable for many wildlife species. Large, intact, wild areas are a valuable characteristic trait of the planning area, and will increase in value as a wildlife resource as the population of southwestern Colorado continues to grow (resulting in an increase in the conversion of private lands to other uses).

Population growth (and the associated activities), land use conversions, and lack of fire frequency in fire-dependent systems have led to changes in big game winter range quality and availability for elk, deer, and bighorn sheep (see Figures 4 and 5). Winter range includes much of the lower-elevation ecosystems found within the planning area, as well as in adjacent lands under other ownership. The availability of effective winter range is considered to be a limiting factor to big game populations within southwestern Colorado.

Desired Conditions - Terrestrial Wildlife

7.1 Wildlife populations across the planning area are viable and self-sustaining with healthy habitat conditions that are adequately connected and genetically diverse.

7.2 Winter big game range is capable of supporting populations that meet State population objectives; it provides sustainable forage and habitat in areas with low levels of human disturbance (which wintering wildlife need).

7.3 Invasive exotic wildlife species and diseases, as recognized by the State of Colorado, do not become established within the planning area. Existing invasive exotic wildlife species and diseases do not spread.

7.4 Habitat features, (including seeps, willow patches, snags, caves, and lek sites) occur in conditions suitable to support associated flora and fauna (with abundance and distribution commensurate with the capability of the land).

7.5 Large predator species play a natural role in ecological diversity and functioning.

7.6 Projects and activities occurring near State and Federal highways, as well as near USFS and BLM roads within the planning area, provide for connectivity of habitats across highways to facilitate effective wildlife movement.

7.7 Snag and downed wood features occur in quantities that support self-sustaining populations of associated species that need these components and help maintain natural ecological processes.

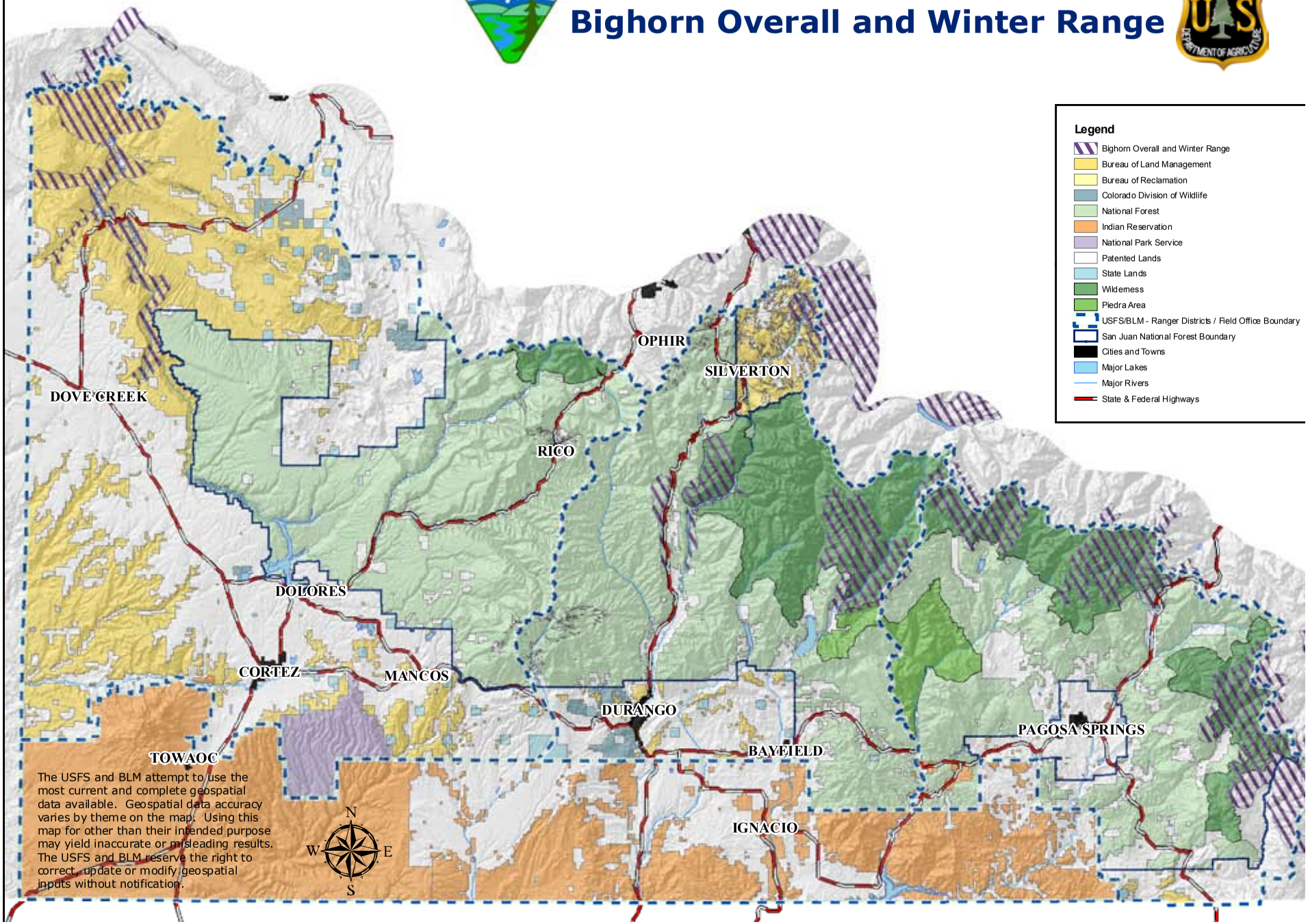
7.8 Effectively secure raptor nesting habitat occurs throughout the planning area with abundance and distribution commensurate with the capability of the land to sustain populations.

7.9 Terrestrial wildlife species sensitive to human disturbance find the habitat conditions they need during critical life cycle functions in order to maintain sustainable populations.

7.10 Vegetation openings created through management actions are guided by HRV in order to preserve the natural patchiness inherent in Southern Rockies ecosystems (providing effective habitat for area dependent species).

Figure 4 - Bighorn Sheep Winter Range

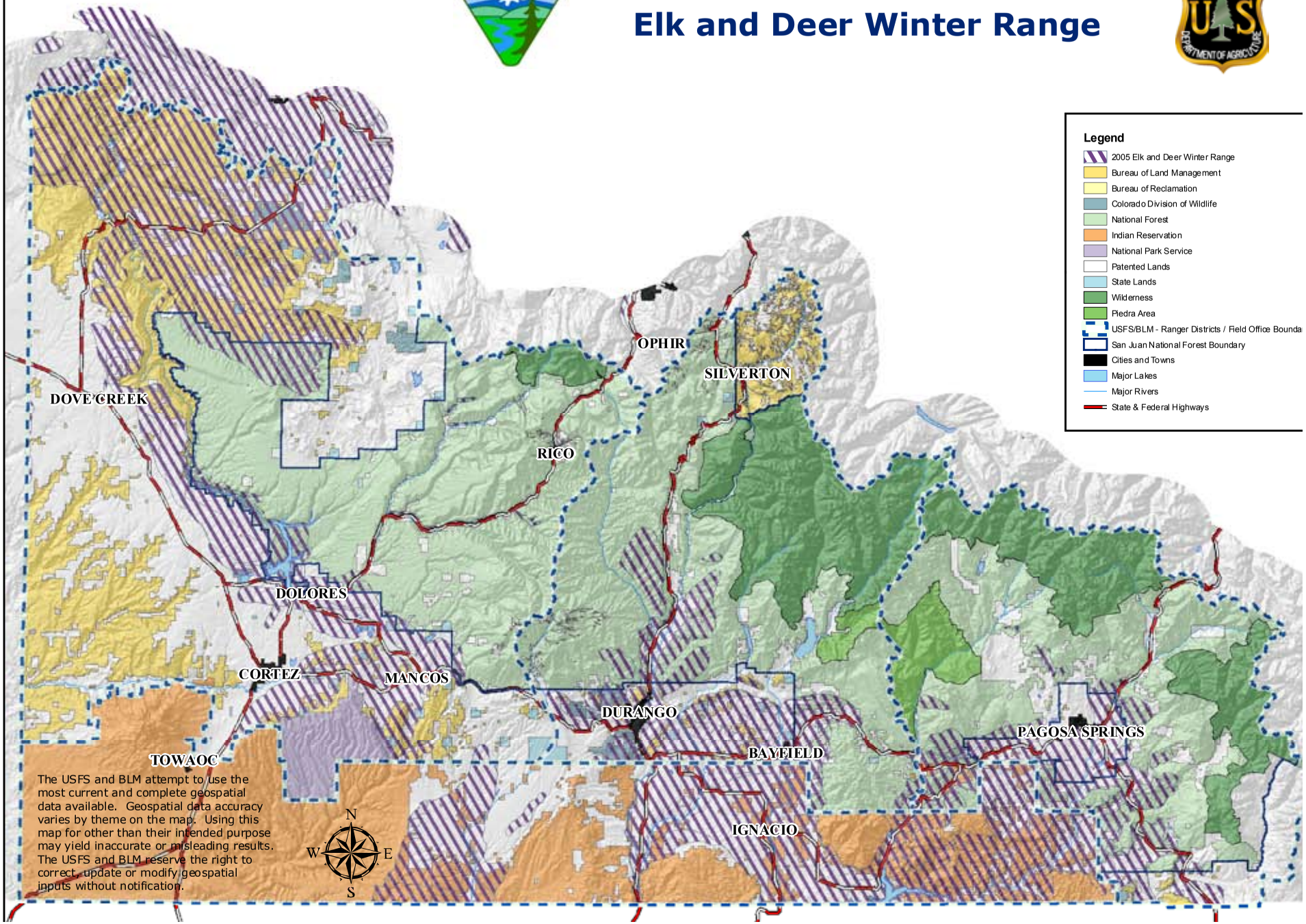
San Juan Public Lands
Bighorn Overall and Winter Range



The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The USFS and BLM reserve the right to correct, update or modify geospatial inputs without notification.

Figure 5- Elk and Deer Winter Range

San Juan Public Lands
Elk and Deer Winter Range



The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The USFS and BLM reserve the right to correct, update or modify geospatial inputs without notification.

SPECIAL STATUS SPECIES

Background

This section addresses desired conditions for wildlife, fish and plant species. Ecological conditions that provide for ecosystem sustainability are the context for the evaluation and management of species. It is assumed that protecting the composition, structure, and function of the terrestrial, riparian and wetland, and aquatic ecosystems on SJPL will sustain those ecosystems, and sustain the diversity and viability of the vast majority of species within them, including species with a viability concern and species we know little about. A species approach is needed however for individual species that are not adequately protected by the ecosystem management approach, are rare or endemic, or are at risk of decline. These special status species include federally listed species, candidate species, R2 Regional Forester's Sensitive Species, BLM Special Status Species, and SJPL Highlight Species. See lists of these species groups in appendices M - P.

- ***Federally listed Species***: Federally listed species are those that are listed by the U.S. Department of the Interior (USDOI), the U.S. Fish and Wildlife Service (USFWS), and/or the National Oceanic and Atmospheric Administration National Marine Fisheries Service as threatened or endangered under the Endangered Species Act (ESA) of 1973.
- ***USFS Region 2 (R2) Forester's Sensitive Species***: R2 Regional Forester's Sensitive Species are those plant, animal, and fish species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5).
- ***BLM Special-Status Species***: BLM Special-Status Species are those designated as federally endangered, threatened, proposed, or candidate under the ESA; those designated by the Colorado Division of Wildlife (CDOW) as State endangered or threatened; and BLM Sensitive Species (which are species under status review by the USFWS; species with numbers declining so rapidly that Federal listing may become necessary; species with typically small, and widely dispersed, populations; and/or species inhabiting ecological refugia or other specialized or unique habitats).
- ***San Juan Public Lands Highlight Species***: SJPL Highlight Species are those for which the Responsible Official determines management actions may be necessary in order to prevent listing under the ESA, or those for which management actions may be necessary or desirable in order to achieve ecological or other multiple-use objectives.

  SJPL Highlight Species were selected from the following categories:

  - NatureServe – Queried by G1-3, T1-3, N1&2, S1&2 species, queried for each county in the planning area.
  - USFS Region 2 Sensitive Species List, list for entire Region 2.
  - BLM State Sensitive Species list, queried for San Juan Public Lands.
  - Colorado Division of Wildlife listing of Endangered, Threatened and Species of Special Concern, queried by State.
  - US Fish and Wildlife Service Birds of Conservation Concern (BCC), queried by Bird Conservation Region (BCR) 16.
  - Federal Proposed and Candidate Species, queried by State of Colorado.

- San Juan BLM Species of Concern – 1985 Resource Management Plan.
- Forest Service Management Indicator Species (MIS) for SJPL.
- Hunted, Fished, Public Interest.
- Recently Federal de-listed species, for Colorado (American peregrine falcon, Bald eagle).
- Petitioned for Federal listing (currently, no outstanding petitions for SJPL species).
- Other Species of Public Interest.
- Additional species w/local or regional conservation concern.

Desired Conditions - Special Status Species - General

8.1 Federally listed species, R2 Regional Forester's Sensitive Species, BLM Special-Status Species, and SJPL Highlight Species have self-sustaining populations and additional habitat into which they can expand.

8.2 The ecosystems and habitats on which federally listed species, R2 Regional Forester's Sensitive Species, BLM Special-Status Species, and SJPL Highlight Species depend are sustained.

8.3 The abundance, distribution, and habitat of Federally listed species improve to the point where the provisions of the ESA are no longer necessary.

8.4 R2 Regional Forester's Sensitive Species and those BLM Special-Status Species not currently listed as endangered or threatened are not trending toward Federal listing under the ESA. The abundance, distribution, and habitat of these species throughout the planning area improve to the point where their recognition as R2 Regional Forester's Sensitive Species, BLM Special-Status Species, and SJPL Highlight Species is no longer warranted.

8.5 Native and/or desired non-native species, including special status species, are able to disperse freely across the planning area and into adjacent lands (which will allow for the interchange between populations and the maintenance of genetic diversity).

PLANT SPECIES

Background

Pediocactus knowltonii, an endangered species, is the only federally listed plant species associated with SJPL. It is not known to occur on SJPL, but there is potential habitat for it on SJPL. Seventeen USFS Region 2 Regional Forester's Sensitive plant species and eight BLM Sensitive plant species are known to occur on SJPL. Six other R2 Regional Forester's sensitive plant species and one other BLM sensitive plant species could occur on SJPL because potential habitat for them exists there. Fifty SJPL Highlight plant species occur on SJPL. All R2 Regional Forester's Sensitive Plant Species and BLM Sensitive Plant Species known to occur within the planning area are also identified as SJPL Highlight Species. Species lists for SJPL are found in Plan Appendices.

SJPL Highlight plant species include those with NatureServe ranks of G1, G2, G3, T1, T2, or T3 that are known to occur within the planning area. G1 and T1 species are critically imperiled, and are at a very high risk of extinction due to their extreme rarity (known from 5 or fewer occurrences). G2 and T2 species are imperiled, and are at a high risk of extinction due to very restricted ranges and to their extremely low populations (known from 20 or fewer occurrences). G3 and T3 species are vulnerable and are at moderate risk of extinction due to a restricted range and to their relatively low populations (known from 80 or fewer occurrences).

SJPL Highlight plant species also include those species that are known to occur within the planning area with NatureServe ranks of S1 or S2, as well as one species (Arizona fescue) of local conservation concern (due to populations that have declined significantly compared to HRV conditions). S1 species are critically imperiled in Colorado due to their extreme rarity (known from 5 or fewer occurrences), which makes them especially vulnerable to extirpation (local extinction) from the State. S2 species are imperiled in Colorado due to very restricted ranges and very low populations (known from 20 or fewer occurrences), which makes them very vulnerable to extirpation from the State.

Currently, the SJPL Special Status Plant Species that occur within the planning area appear to have stable populations and trends.

Desired Conditions - Special Status Plant Species

9.1 The planning area sustains and provides habitat for its full complement of native plant diversity at the genetic and species levels while, at the same time, allowing for natural evolutionary and biogeographical processes.

9.2 Native plant species are abundant and well-distributed throughout the planning area. Their photosynthetic and reproductive abilities are intact throughout the growing season.

9.3 Physical conditions associated with R2 Regional Forester's Sensitive Plant Species, BLM Sensitive Plant Species, and SJPL plant Highlight Species (including climate, landform, soils, and nutrient availability) provide the habitat conditions necessary for self-sustaining populations of these species.

9.4 Large, old ponderosa pine and Douglas-fir trees, which have been extensively harvested in the past, are abundant and well-distributed across the ponderosa pine and mixed-conifer forests within the planning area.

9.5 Rangeland bunchgrasses are abundant and well-distributed throughout the planning area. Their photosynthetic and reproductive abilities are intact throughout the growing season.

9.6 The fens that provide the habitat for *Eriophorum altaicum var. neogaeum, Carex diandra, Carex viridula,* and *Drosera anglica* have the water sources and hydrologic systems necessary in order to support and sustain these rare plant species.

9.7 The hanging gardens that provide the habitat for *Erigeron kachinensis, Mimulus eastwoodia,* and *Adiantum capillus-veneris* have the water sources and hydrologic systems necessary in order to support and sustain these rare plant species.

9.8 The riparian areas and wetland ecosystems that provide the habitat for *Epipactis gigantea, Utricularia minor, Hackelia gracilenta, Aralia racemosa, Cryptogramma stelleri, Cystopteris Montana,* and *Draba smithii* have the water sources and hydrologic systems necessary in order to support and sustain these rare plant species.

9.9 The highly erosive and easily compacted shale soils found within the planning area that provide the habitat for *Lesquerella pruinosa, Ipomopsis polyantha, Astragalus missouriensis var. humistratus, Physaria pulvinata,* and *Townsendia glabella* maintain the soil productivity necessary in order to support and sustain these rare plant species.

9.10 The gypsum soils found within the planning area that provide the habitat for *Cryptantha gypsophila, Lecanora gypsicola, Acarospora nodulosa var. nodulosa, Gypsoplaca macrophylla, Sporobolus nealleyi* maintain the soil productivity necessary in order to support and sustain these rare plant species.

9.11 The fragile alpine ecosystems that provide the habitat for *Machaeranthera coloradoensis, Townsendia rothrockii, Draba borealis, Draba porsildii,* and *Parnassia kotzebuei* are resilient to the current and potential impacts of global warming; they are able to support and sustain these rare plant species.

9.12 The ponderosa pine forests that provide the habitat for *Astragalus missouriensis var. humistratus, Townsendia glabella, Castilleja lineate, Astragalus proximus, Cypripedium parviflorum,* and *Triteleia grandiflora*, and that currently have forest structures and fire frequencies unlike those that occurred during the reference period (HRV conditions) have, or attain, the ecological conditions necessary in order to support and sustain these rare plant species.

9.13 The mountain grasslands that provide the habitat for *Carex oreocharis, Lesquerella pruinosa,* and *Festuca arizonica* and that currently have a species composition and structure unlike those that occurred during the reference period (HRV conditions) have, or attain, the ecological conditions necessary in order to support and sustain these plant species.

9.14 *Festuca arizonica* is abundant and well-distributed in the mid-elevation mountain grassland and ponderosa pine forest types.

WILDLIFE SPECIES

Background

Under the species approach to planning, terrestrial wildlife species were screened and identified as threatened and endangered species (T & E) and BLM and USFS Sensitive Species (SS). Specific guidance has been developed and utilized in determining the species identified for each of the above categories. In addition to the above categories, other Highlight Species of public interest and/or of conservation concern within the planning area were identified in order to assist in the development of planning direction and DLMP components. The following desired conditions provide species-specific guidance (going beyond the ecosystem habitat guidance) that is needed for species recovery and for the sustainability of these categories of species. (Species lists for the SJPL are found in the T & E, BLM and USFS Sensitive Species, and SJPL Highlight Species Appendices. Guidance for amphibians is included in the Aquatic Species section. See Appendices M-P.)

Management activities and permitted uses within the planning area have the potential to affect a variety of species, as well as their habitats. These activities should be evaluated, with the intention being to minimize possible adverse impacts and to contribute to species recovery and sustainability. Continued monitoring and proactive management that identifies and addresses species limiting factors should be considered and implemented as part of terrestrial wildlife program management.

The following abbreviations are used in this section:

- E - Federally Endangered Species;
- T - Federally Threatened Species;
- H - Highlight Species;
- C - Federal Candidate Species;
- BLM SS - BLM Sensitive Species; and
- USFS SS - USFS Sensitive Species.

Desired Conditions - Special Status Wildlife Species

Threatened and Endangered Species

10.1 ***Uncompahgre fritillary butterfly (E)***: Suitable habitat maintains viable populations (including snow willow populations and their associated hydrologic function). Occupied and unoccupied habitats for butterfly colonies remain suitable for occupation.

10.2 ***Southwestern willow flycatcher (T)***: Suitable willow habitat across the planning area supports breeding within occupied habitat. Capable habitat recovers to suitable conditions in order to support breeding.

10.3 ***Mexican spotted owl (T)***: Suitable habitat, including mature conifer and deciduous woodlands in narrow canyon bottoms with associated rock outcroppings, occurs within the planning area in order to support successful reproduction within occupied habitat.

10.4 ***Canada lynx (T)***: Canada lynx populations become self-sustaining and viable, finding suitable habitat condition across the planning area that support successful foraging. reproduction, and dispersal to other habitats within southern Colorado and northern New Mexico.

BLM and USFS Sensitive Species and Highlight Species

10.5 ***Bald eagle (H, BLM SS, USFS SS)***: Bald eagle breeding populations continue to expand and use suitable breeding habitat throughout the planning area. Wintering populations find conditions and resources (including suitable conditions for roosting and foraging along streams, rivers, and terrestrial habitats) in order to sustain them through the winter season.

10.6 ***Nokomis fritillary butterfly (H, FS SS)***: *Viola nephrophylla,* and the associated plant community, in conjunction with the supporting hydrologic conditions, occur at all springs and seeps capable of supporting Viola nephrophylla and the associated Nokomis fritillary.

10.7 ***American peregrine falcon (H, BLM SS, USFS SS)***: American peregrine falcons find the habitat conditions and activity disturbance levels that support critical life cycle functions in order to maintain sustaining stable or increasing populations on the SJPL.

10.8 ***Columbian sharp-tailed grouse (H)***: Shrub communities within the Dolores geographic area provide high quality habitat for sharp-tailed grouse. Mountain shrubland and associated grassland/forb communities provide conditions that support the life stages for a sustaining population.

10.9 ***Gunnison Sage-grouse (H, BLM SS)***: See the Desired Conditions for the Dolores geographic area.

10.10 ***Yellow-billed cuckoo (H, BLM SS, USFS SS)***: Cottonwood forests with dense willow understory occur on all sites capable of supporting these structures.

10.11 ***Botta's pocket gopher (H)***: Botta's pocket gophers find adequate areas of undisturbed soils and suitable habitat in a connected network.

10.12 ***Yuma skipper (H)***: Sites capable of supporting populations of Yuma skipper provide the necessary hydrologic function, foraging, and reproduction conditions.

10.13 ***Golden eagle (H)***: Golden eagles find effective reproductive and foraging habitat (including abundant hare/rabbit and ground squirrel populations on capable sites within the planning area). Human-related disturbances do not affect breeding success and recruitment.

10.14 ***Black swift (H, USFS SS)***: The hydrologic integrity of flows over waterfall breeding habitat provides effective habitat for established breeding colonies.

10.15 ***Northern goshawk (H, BLM SS, USFS SS)***: Northern goshawk finds the amount and mix of habitat conditions (including mature aspen and conifer stands for nesting, a mix of forest stand types and composition for foraging as described in the Region 2 goshawk assessment), and human disturbance levels that support foraging, breeding, and recruitment into a sustaining population.

10.16 ***White-tailed ptarmigan (H, USFS SS)***: Adequate wintering willow habitat near timberline is available for ptarmigan. This habitat is free of limiting contaminants (including cadmium) and has limited human disturbance.

10.17 ***Mule deer (H)***: Resource management and human disturbance levels (especially in fall and winter ranges, and on calving/fawning grounds) provide for effective habitat, as defined by State agency partners. These support critical life cycle functions and seasonal needs for sustaining herds capable of meeting State population objectives.

10.18 ***Bighorn sheep (H, USFS SS)***: Bighorn sheep populations are viable. They are not limited by disease transmission from domestic sheep and goats occurring within the planning area.

10.19 ***Gunnison's prairie dog (H, USFS SS)***: Gunnison's prairie dog populations find the vegetation, soil, and hydrologic complex with a diversity of grass and forb understory that supports viable populations where sites are capable of providing effective habitat.

10.20 ***River otter (H, USFS SS)***: Aquatic, wetland, and riparian systems provide effective habitat characteristics (including stream flows and productive prey populations of game and non-game fishes) that support foraging and reproductive conditions for viable populations.

10.21 ***Sagebrush shrublands and semi-desert shrublands wildlife group (desert spiny lizard (H, BLM SS); longnose leopard lizard (H, BLM SS), Brewer's sparrow (H, USFS SS), sage sparrow (H, USFS SS), and loggerhead shrike (H, USFS SS))***: The vegetation, soil, and hydrologic complex (including sagebrush patches of differing size class and sites supporting a diversity of grass and forb understory) supports self-sustaining, viable populations of species in this group where sites are capable of providing effective habitat.

10.22 ***Cavity-nesting wildlife group (American three-toed woodpecker (H, USFS SS), boreal owl (H, USFS SS), flammulated owl (H, USFS SS), Lewis' woodpecker (H, USFS SS), purple martin (H, USFS SS), mountain bluebird (H, USFS MIS), and red-naped sapsucker (H))***: Snags occur in numbers, size, and quality in timber types within the planning area (including managed and unmanaged areas) providing reproductive and forage resources that sustain viable populations.

10.23 ***Pinyon/juniper wildlife group (gray vireo (H), pinyon jay (H))***: Large blocks of intact pinyon-juniper provide conditions that support reproduction and recruitment into self-sustaining populations. Lack of human disturbance during critical times allows reproductive success of colonial nesting.

10.24 ***Alpine/spruce-fir wildlife group (American marten (North American wolverine (H, USFS SS)***: Habitat provides connectivity at broad spatial scales, forest stands with a diverse array of structural stages (including mature and old-growth forest), and a mix of habitat types, with levels of human disturbance capable of supporting foraging, breeding, and dispersal conditions for sustainable, viable populations.

10.25 ***Bat wildlife group (Allen's big-eared bat (H, BLM SS), big free-tailed bat (H, BLM SS), fringed myotis (H, BLM SS, USFS SS), spotted bat (H, BLM SS, USFS SS), Townsend's big-eared bat (H, BLM SS, USFS SS), yuma myotis (H, BLM SS)***: Populations find a mix of habitat conditions (including riparian areas and wetland ecosystems with diverse overstory and understory conditions) supporting a range of conditions for insect populations that support foraging, breeding, roosting, and hibernacula within the planning area, where the land is capable of doing so. Human activity does not limit habitat or populations.

AQUATIC SPECIES

Background

Management activities within the planning area have the potential to impact four endangered fish species and their designated critical habitats. These species are the bonytail chub, humpback chub, Colorado pikeminnow, and razorback sucker. They reside downstream of the SJPL in the San Juan River and Dolores River systems. Activities occurring within the planning area that result in water depletions, changes in the timing of stream flows, and/or in changes in water quality to the occupied rivers, have the potential to adversely impact these endangered species. As a result, consultation with the USFWS is required for project-level activities affecting stream flow. Species management is guided by two USFWS Recovery Implementation Programs. One addresses the needs for San Juan River populations, and one addresses the needs for the upper Colorado River populations (including the Dolores River system).

To varying degrees, management activities within the planning area have affected all aquatic species. Of great concern are impacts to native fish species (USFS and BLM Sensitive Species), including the flannelmouth sucker, the bluehead sucker, the roundtail chub, and the Colorado River cutthroat trout (which has been petitioned for listing under the ESA). Region 2 of the USFS has developed Conservation Assessments for the chub and two sucker species (Ptacek et al., 2005; Rees et al, 2005a; Rees et al. 2005b). These assessments identify a range of risk factors to be avoided and assist managers in identifying management options.

The status and management of the Colorado River cutthroat trout is addressed in the Conservation Agreement and Strategy for Colorado River Cutthroat Trout in the States of Colorado, Utah, and Wyoming (commonly referred to as the Tri-State Agreement) (CRCT Task Force 2001). This agreement represents a multi-agency approach among the three States designed to proactively manage the species. Emphasis is placed on protecting existing populations, on expanding the range of occupied habitats, and on establishing interconnected populations (metapopulations) within specified geographic management units.

Management activities having the potential to affect the riparian and aquatic ecosystems occupied by these species should be carefully evaluated in order to minimize possible impacts. In addition, continued monitoring and proactive management that identifies and addresses the limiting factors for these populations should be emphasized.

Desired Conditions Statements - Special Status Aquatic Species

11.1 ***Threatened, Endangered, or Sensitive Species***: Aquatic habitats support the genetic integrity and life history strategies of native fish populations.

11.2 ***Threatened, Endangered, or Sensitive Species***: Populations of threatened, endangered, or USFS and BLM aquatic Sensitive Species are viable, adequately mobile, genetically diverse, and functionally diverse.

11.3 Aquatic habitat quantity and quality are maintained or enhanced in order to provide for the long-term sustainability and viability of all native and/or desired non-native aquatic species.

11.4 ***Threatened, Endangered, or Sensitive Species***: All native aquatic species thrive in the ecosystems historically capable of supporting these species.

11.5 Composition, structure, and function of aquatic ecosystems are maintained similar to the HRV conditions, and are commensurate to the channel characteristics, water quality, and flow regimes reflective of the climate, geology, and natural vegetation of the area.

11.6 The composition, structure, and functional elements that perpetuate ecosystem and species diversity are maintained and restored, where necessary.

11.7 The quantity and quality of aquatic habitats are sufficient to support existing populations of aquatic Special-Status Species within the planning area.

11.8 Stream flows are adequate to support viable populations of desired aquatic species and are maintained in cooperation with the CDOW, the Colorado Water Conservation Board, the USFWS, and the Army Corps of Engineers.

11.9 Habitat improvements enhance recreational fishing opportunities.

11.10 ***Amphibian Species Group (canyon treefrog (H); northern leopard frog (H); boreal toad (H, USFS SS)***: Riparian, wetland, and aquatic ecosystems provide the hydrologic integrity, water quality, cover, and forage in order to ensure reproduction and recruitment into self-sustaining populations. Human activities do not contribute to the movement of disease organisms into recognized breeding sites.

MANAGEMENT INDICATOR SPECIES

Background

Management Indicator Species (MIS) serve several related functions in Forest Plan development and implementation. These species are identified during Forest Plan development to focus attention on particular management issues and the environmental features related to those issues. As such MIS motivate particular plan strategies and design criteria. MIS also aid in analysis of plan effects and help illuminate differences in plan alternatives that relate to species management. Finally, MIS aid in evaluation of plan implementation. Therefore these species are monitored at the Forest Plan scale to assess the effects of management activities on their populations and on the habitats with which they are associated. Changes in MIS populations or their habitats could indicate that current management is adversely affecting the composition structure, or function of those habitats, resulting in Plan direction not being met and the need for changes in management direction.

MIS are selected from the 5 categories listed below:

1) Endangered and threatened plant and animal species identified on State and Federal lists;
2) Species commonly hunted, fished, or trapped;
3) Non-game species of special interest;
4) Species with special habitat needs that may be influenced significantly by planned management programs.
5) Additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality.

The MIS chosen for the San Juan National Forest were considered the best species to evaluate the effects of management activities and management issues as shown in Table 3.1. MIS on SJPL were not selected for species viability issues although sensitive species and Federally listed Threatened and Endangered species were carefully considered as MIS.. Management Indicator Species apply to National Forest System Lands (as required by 36 CFR 219); they do not apply to BLM lands.

Table 3.1 – Management Indicator Species on SJPL

Management Indicator Species	Plan Issues For Selection
FISH	FISH
Trout species *(Oncorhynchus clarki pleuriticus)* *(Oncorhynchus sp.)* *(Salvelinus fontinalis)* *(Salmo trutta)* *(Oncorhynchus mykiss)*	Effects to water quantity due to water depletions associated with reservoirs, diversions, and oil and gas development. Effects to water quality due to soil erosion and sedimentation associated with ground-disturbing activities (fuels treatments, oil and gas development, timber harvest, livestock grazing, road construction, and recreation).
WILDLIFE	WILDLIFE
Abert's squirrel *(Sciurus aberti)*	Effects to native species and their habitat associated with changing the structure and function of ponderosa pine forests due to timber harvest activities and fuels treatments that remove ponderosa pine trees and Gambel oak.
American marten *(Martes americana)*	Effects to native species and their habitat in spruce-fir and cool-moist mixed conifer forests due to recreation and timber harvest activities.
Mountain bluebird *(Sialia currucoides)*	Effects to native species and their habitat associated with changing the composition, structure, and function of aspen forests due to clearcut timber harvest activities.
Elk *(Cervus elaphus)*	Effects to native species and wildlife winter range (pinyon-juniper woodlands, sagebrush shrublands, mountain shrublands, and ponderosa pine forests) due to recreation activities, fuels treatments, oil and gas development, and timber harvest activities.

Desired Conditions - Management Indicator Species

12.1 MIS maintain self-sustaining populations and have unocupied habitat to expand into.

12.2 MIS are able to disperse freely across the planning area allowing for the interchange between populations and the maintenance of genetic diversity.

12.3 ***Abert's squirrel***: Ponderosa pine habitats provide the interconnected structure in mature conifer stands that produce abundant cone crops and associated conditions (including production of above-and-below-ground fungi) and provide for quality reproductive habitat that support sustainable populations within the planning area.

12.4 ***Elk***: Resource management and human disturbance levels (especially in fall on winter ranges and on calving/fawning grounds) provide for effective habitat, as defined by State agency partners. These support critical life cycle functions and seasonal needs for sustaining herds capable of meeting State population objectives.

12.5 ***Mountain bluebird***: Snags occur in numbers, size, and quality in aspen and low- to mid-elevation timber habitat types adjacent to open foraging habitat within the planning area (including managed and unmanaged areas) providing reproductive and forage resources that support populations.

12.6 ***American marten***: Spruce-fir forest habitat provides connectivity at broad spatial scales, forest stands with a diverse array of structural stages (including mature and old-growth forest), and a mix of habitat types, with levels of human disturbance capable of supporting foraging, breeding, and dispersal conditions that maintain self-sustaining, populations.

12.7 ***Trout***: Aquatic habitats support the genetic integrity and life history strategies of native trout populations.

12.8 ***Trout***: Aquatic habitat quantity and quality are maintained or enhanced in order to provide for the long-term sustainability and viability of all native and/or desired non-native trout species.

12.9 ***Trout***: All native trout species thrive in the ecosystems historically capable of supporting these species.

12.10 ***Trout***: Composition, structure, and function of aquatic ecosystems are maintained similar to the HRV conditions, and are commensurate to the channel characteristics, water quality, and flow regimes reflective of the climate, geology, and natural vegetation of the area.

12.11 ***Trout***: Stream flows are adequate to support populations of trout species and are maintained in cooperation with the CDOW, the Colorado Water Conservation Board, the USFWS, and the Army Corps of Engineers.

INVASIVE SPECIES

Background

Within the planning area, invasive plants are currently managed in accordance with an invasive species action plan. This species action plan, which covers a 3-year timeframe, lists prevention practices, early detection and rapid response strategies, and priority inventory and treatment areas. All resource areas participate in invasive species management within the planning area.

Invasive terrestrial wildlife species have the potential to out-compete native species using similar niches within the ecosystem. These changes may result from influences to the biotic (relating to, produced by, or caused by living organisms, such as plant or animal) and abiotic (non-living chemical and physical factors in the environment, such as soils, hydrology, etc.) components of the ecosystem. The resulting changes may allow invasive species to directly or indirectly impact the native species and their related ecosystems.

Invasive species move across jurisdictional boundaries and property lines; therefore implementation of the DLMP will involve close coordination and partnerships with local, State, Native American tribal, and other Federal agencies; public and private organizations; and the general public.

Desired Conditions Statements - Invasive Species

13.1 Invasive plant species (including noxious weeds) are absent or rare within the planning area.

13.2 Invasive species (including those that cause whirling disease, and insects) are absent or rare within the planning area.

13.3 Noxious weed management is successfully coordinated with adjacent land owners.

13.4 The planning area has a transportation system comprised of specific roads and trails that do not contribute to the spread of non-native species along travel corridors.

13.5 Invasive species, both terrestrial and aquatic, are absent or rare within the planning area, and are not influencing native populations or ecosystem function.

13.6 Non-native plants are not introduced or spread within Wilderness Areas or WSAs.

PEOPLE AND COMMUNITIES

Background

Southwestern Colorado is a mosaic of natural features, settlement patterns, economic activities, recreational activities, social values, formal institutional relationships, and informal communication networks, all of which are tightly interrelated. An attachment to the land, both public and private, is inherent to life within the planning area, both historically and in the contemporary context. The San Juan Public Lands provide natural resources, as well as a diverse array of settings for physical, emotional, mental, and even spiritual experiences.

Although the timber and livestock industries do not carry the relative economic importance that they once did, they still remain active in the area and contribute valuable outcomes [including the persistence of intact privately owned cattle ranches (and their contribution to open space) and forest restoration]. Gas and oil development helps boost regional income and spurs local business investment while, at the same time, producing significant local and State government tax revenue. Renewed interest in other mineral resources may occur if feasible markets develop.

The opportunity and desire to experience public lands are increasingly central to contemporary lifestyles, and as local population and visitor numbers increase, so will the dependence upon these public lands. The diverse settings for a wide variety of experiences within the planning area (ranging from athletic recreation, to scenic driving, to the pursuit of scientific knowledge) play an irreplaceable role in the quality of life in the region. Public lands are vital to the people and communities of southwestern Colorado; therefore, this DLMP includes elements specifically related to outcomes for people and for the communities near the planning area.

Desired Conditions - People and Communities in General

14.1 Use and enjoyment of lands and resources within the planning area occurs within the capabilities of the land, extending the benefits of public lands to future generations by keeping elements of the ecosystem upon which these benefits rest healthy and resilient.

ACCESS AND TRAVEL MANAGEMENT

Background

The transportation system within the planning area consists of roads and trails that provide people with access to public lands and to private in-holdings. Virtually every activity that takes place within the planning area uses the transportation system (including outdoor recreation, wildfire management, livestock and wildlife management, natural resource development, private in-holdings access, and electronic communication site and utility corridor maintenance, as well as the management and monitoring of public lands).

Within the planning area, there are over 3,000 miles of system roads and more than 1,300 miles of system trails. These roads and trails were originally constructed in order to support management activities (including for fire suppression, timber harvesting, mining, livestock grazing, and recreation). The transportation system consists of various types of routes. Public use of some roads may be allowed seasonally, or it may be permitted all year (if there is a demonstrated need to provide residential, recreational, commercial, and/or other types of access). Some roads are reserved for administrative use (by the USFS or BLM for management purposes, or by permittees to access special use permit areas). Trails generally fall into one of two general classes: non-motorized or motorized. Non-motorized trails may be further classified as non-mechanized (foot traffic, pack and saddle, etc.) and mechanized (mountain bikes). Motorized trails are generally intended for vehicles that are less than a certain specified width (usually around 50 inches), which excludes most highway-legal vehicles, except motorcycles.

In the last few decades, funding has not been sufficient to maintain all public lands roads and trails to required standards. Generally, the limited funding received has been focused on maintenance of higher standard roads that serve multiple-access needs. Limited funding for trails has resulted in fewer miles of trails being maintained. It has also resulted in a focus on roads and trails that are deemed unsafe, those that receive the highest use, or those that present the greatest threat to ecological integrity.

Road management activities have included the decommissioning of roads, the construction of new roads, and the closure of roads. Decommissioning roads that are not needed for access (currently, or in the foreseeable future) is generally performed in order to reduce resource impacts. Generally, new construction may occur when access to a particular resource or private in-holding is needed. These roads may be permanent, if intended for long-term use, or they may be temporary (such as many timber sale and energy development roads). Closing roads or limiting motorized use to administrative purposes are management strategies that may be employed for a variety of reasons (including wildlife protection, resource protection, and/or public safety). Population growth and the increased development of private in-holdings have increased the demand for uses of roads within the planning area as primary access routes to residential developments. This has created a demand to upgrade roads in order to accommodate all-weather, year-round traffic, and a need to evaluate the jurisdictional status of roads that are used predominantly for residential access.

Roadless areas are large land tracts (of 5,000 acres or more) or lands that are contiguous with other inventoried roadless areas (IRAs) or Wilderness Areas. These areas do not contain authorized roads, significant alterations to the landscape, or other permanent improvements. The transportation system is generally managed in order to maintain the character of these inventoried roadless areas.

The demand for recreational motorized and non-motorized access has increased dramatically in recent years. Advances in the performance and the technology of OHVs/ATVs, UTVs (utility vehicles), motorcycles, snowmobiles, mountain bikes, and wheelchairs have increased the demand for additional motorized and non-motorized recreational access and routes. New technology and more motorized use within the planning area has resulted in some users creating new routes (also known as user-created routes or social routes). Resource problems related to these user-created routes are developing across the planning area, especially in areas that are open to cross-country motorized travel.

The USFS Travel Management Rule (November 9, 2005) requires that each national forest designate a system of roads, trails, and areas for motor vehicle use by vehicle class and, if appropriate, by time of year. The rule addresses any future proliferation of user-created routes by prohibiting cross-country motorized travel (except in small designated areas). The rule is consistent with the BLM requirements for motorized off-road use (43 CFR Subpart 8340). Since the planning area is a Service First unit, the framework provided by the rule will be used in order to implement travel management planning across both USFS- and BLM-administered lands.

Within the planning area, the travel management planning process will result in a system of designated roads, trails, and areas for motorized use. The planning process is a public process; therefore, input from both motorized and non-motorized users is of value in determining access needs and strategies for reducing user conflicts. Travel analysis is used to inform decisionmakers of opportunities that would improve the transportation system and increase its ability to support multiple uses and accommodate desired and needed public access while, at the same time maintaining desired conditions for all other resources (such as wildlife and soils). Travel management proposals developed through travel analysis are also evaluated through the NEPA process. Travel management decisions on route designations are illustrated on a Motor Vehicle Use Map (MVUM) that is free to the public. The MVUM will be updated annually in order to reflect any new travel management decisions.

Desired Conditions - Access and Travel Management

14.2 The transportation system within the planning area consists of roads, trails, and bridges that are fiscally sustainable and safe; they allow for the use of, and enjoyment by, the public, and they meet resource management objectives.

14.3 The transportation system provides reasonable and legal access for resource management and recreation; it is dynamic and adaptable to resource and user needs.

14.4 Destination and loop trails exist for motorized and non-motorized recreation users. New trail development focuses on the creation of loop opportunities and on the utilization of existing routes, when feasible.

14.5 Existing public access to the planning are across private lands and/or across other jurisdictions is retained or improved.

14.6 The road and trail system has adequate signage for visitors traveling through the planning area.

14.7 The public has access to information about the transportation system (including specific travel route designations, available recreational opportunities, environmental stewardship guidelines, and safe travel information.)

14.8 Motorized use occurs only on designated roads and trails, as well as in small designated areas (except as exempted by 36 CFR Part 212.51). No new unauthorized or user-created routes develop within the planning area.

14.9 Unneeded roads and trails are decommissioned and reestablished with native vegetation cover.

14.10 Roads are managed by the appropriate public road authority when any one of the following conditions exists:

- the road serves predominantly non-SJPL traffic;
- the road is necessary for mail, school, and/or other local governmental purposes;
- the road provides year-long residential access to private property within, or adjacent to, the planning area.

14.11 Travel management planning is a continuous process designed to improve the transportation system.

14.12 Motorized and non-motorized users, as well as local, State, Native American tribal, and other Federal agencies, are actively engaged in travel management planning, route designation and implementation, and route monitoring.

14.13. Transportation system components do not encroach onto streams and/or onto riparian areas andwetland ecosystems in ways that impact channel fluctuation or channel geometry (the relationships between channel discharge and channel cross-sectional factors, such as area, width, and depth). Sediment delivery from the transportation system does not measurably impact pool frequency, pool habitat, and/or spawning habitats.

14.14 The character of roadless areas is maintained in order to preserve large expanses of undeveloped lands that can be managed for wildlife habitat, scenic quality, and recreation.

RECREATION

Background

The San Juan Public Lands offer visitors and local area residents extraordinary opportunities to experience the benefits of their public lands. Local and regional economies depend upon the recreation market (which is heavily influenced by the opportunities afforded by the public lands). Visitors value the unique and outstanding recreational assets offered by the SJPL. The "backyard" or rural recreation setting provided by many of these lands is an amenity to the active lifestyles and quality of life for local residents.

Visitors seeking the outdoors have an impressive range of options within the planning area. Mining, logging, and grazing have created an extensive transportation network across the planning area. In contrast, the large extent of rugged mountains and canyons with limited roads and access offer vast undeveloped areas offering their own unique recreation opportunities. The planning area offers primitive settings that provide opportunities for solitude and personal challenge. Less primitive, more modified settings provide opportunities for social interaction and greater comfort. Local communities, partners, volunteers, and permit holders are involved in (and benefit from) providing recreation opportunities. Recreation benefits contribute to the sustainability of the culture and the economy of local communities.

The San Juan Public Lands have remarkable values related to cultural traditions, history, scenery, and environmental resources and ecosystems. These values help to define a sense of place, and provide a unique recreation market and identity for SJPL. Public lands within the planning area offer people resource-dependent recreation opportunities and settings with which to meaningfully experience nature, history, and culture.

Desired Conditions - Recreation

15.1 Recreation users have opportunities to benefit from the diversity of varied terrain, scenery, and nature in the canyons, mountains, and mesas, as well as on the rivers of the San Juan Public Lands.

15.2 Established road and trail travel corridors offer high quality scenery. Developed recreation facilities (including trailheads) provide relatively easy access to visitors, enabling them to enjoy a wide range of recreation experiences (from summer driving tours to winter alpine adventures).

15.3 The recreation market emphasizes resource-dependent recreation settings, services, and conditions that offer the benefit of interaction between people and their natural and cultural public land heritage. With the exception of ski areas, highly developed facilities (including guest lodges, waterslides, golf courses, etc.) are not located within the planning area.

15.4 Recreation management is guided by recreation "setting" prescriptions established on Recreation Opportunity Spectrum (ROS) maps by geographic area, as well as by other resource goals and objectives. Although recreation opportunities are extensive throughout the planning area, there may be some areas where no recreation is appropriate.

15.5 Recreation tourism provides economic and social benefits to local communities and to the region; this is consistent with sustainable land practices, the protection of sense of place, and the market demand for SJPL-related values. The USFS and BLM collaborate with local communities, educational institutions, businesses, non-profit organizations, volunteers, and others interested in the planning area in order to market recreation opportunities effectively and appropriately, consistent with USFS and BLM goals.

15.6 Public lands near communities provide a day-to-day lifestyle connection with the foothills, canyons, and mountains. Neighborhood trailheads and convenient access points provide quick entry to a natural setting. These lands are a community asset and help contribute to a healthy lifestyles for people of all ages.

15.7 The SJPL offer motorized and non-motorized recreation experiences in large, predominantly naturally appearing landscapes, where active management may occur. Primitive dispersed camping sites, developed campgrounds, and trailheads are present in order to support dispersed recreation use.

15.8 Over-ground and over-snow motorized travel suitability maps serve as guidelines for determining recreation travel within the planning area.

15.9 A wide variety of information, education, and interpretive venues about recreational opportunities are available through various media and resources. Interpretive and volunteer efforts are focused on attaining agency goals and objectives.

15.10 Adequate maintenance and services at some sites are sustained through the collection of fees and donations, as well as through the work of concessionaires, volunteers, and partnerships.

15.11 Trailheads only provide the minimal level of amenities, as appropriate for the setting and sufficient to protect the resources.

15.12 Trails within the MA 7s (Public and Private Lands Intermix) are constructed and maintained primarily through community partnerships.

Recreation Opportunity Spectrum (ROS)

The ROS offers a framework that establishes settings (including access, remoteness, naturalness, built environment, social encounters, visitor impacts, and management) for the planning area. (These conditions are shown on the Established ROS Settings Maps for summer and winter. See ROS maps in Part 3 of the DLMP. Additional management direction related to recreation setting prescriptions is found in the Guidelines section of the DLMP. This map shows broad desired setting conditions for the entire planning area; therefore, site-specific analysis is generally necessary in order to further refine desired setting conditions that may apply to site-specific projects. See the Glossary for ROS term definitions).

Primitive ROS Settings

Primitive ROS settings include Congressionally designated Wilderness Areas, BLM WSAs, and areas recommended to Congress for designation as Wilderness. In general, these lands are 5,000 acres or larger, and are affected primarily by the forces of nature. They offer opportunities for solitude, natural quiet and unconfined recreation for non-motorized and non-mechanized travel year-round. Decisions made under the 1998 Wilderness Management Direction amendment to the 1983 Land and Resource Management Plan continue to be valid, and are incorporated into this DLMP by reference. Wilderness lands are categorized into three settings that describe the relative naturalness and level of remoteness of the area: 1) unspoiled pristine lands; 2) unmodified primitive lands; and 3) concentrated use, semi-primitive lands. WSAs would be managed by the BLM Interim Management Guidelines until Congress acts to create wilderness, or releases those lands from consideration.

Semi-Primitive ROS Settings

Semi-primitive ROS settings are non-Wilderness lands characterized by a predominantly naturally appearing landscape and by opportunities for natural quiet. Concentrations of users are low. Opportunities are provided that allow visitors to have a high degree of interaction with the natural environment, as well as a sense of remoteness, quiet, and solitude. Trail systems are designed in order to provide challenge and opportunities for self-reliance. Remote areas can be motorized, mechanized, or non-motorized. Administrative actions and commercial uses (including recreation) occur; however, they are not common.

Desired Conditions Statements - ROS

15.13 Projects and activities are consistent with the established ROS settings.

15.14 Much of the planning area is characterized by a landscape with a recreation setting of Semi-Primitive ROS and Roaded Natural ROS. A network of well-maintained passenger car roads provides Roaded Natural ROS travel corridors that access extensive areas characterized by a more Semi-Primitive ROS recreation setting. Beyond these well-traveled road corridors, contact frequency between visitors is less, secondary roads are more rugged and challenging with numerous 4x4 routes, visitor facilities are rare, and the sights and sounds of nature predominate.

15.15 Primitive ROS settings are retained at their current level of naturalness or restored, as needed.

15.16 Primitive ROS and Semi-Primitive ROS areas provide a variety of recreational opportunities, including:

- High-quality resource-dependent recreation accessible from major travel corridors;
- Single and multi-day challenging recreation activities and adventures;
- Non-motorized and motorized scenic backcountry experiences; and
- Self-discovery and challenge in areas with pristine natural conditions and solitude.

15.17 New trail construction in Primitive ROS and Semi-Primitive ROS settings protect resources, enhance recreation experience/challenge, mitigate user conflicts, and/or provide loops and/or links to other trail networks.

Desired Conditions - Dispersed Recreation

15.18 Dispersed recreation is an important opportunity offered throughout the planning area, and occurs extensively. Facilities for dispersed recreation are minimal, and are provided in order to protect resources and to enhance recreation experiences (and are compatible with established ROS settings, opportunities, and benefits). Access and parking, regulations, orientation, and safety information are effectively provided.

15.19 Activities are regulated primarily in order to protect the quality of the recreation settings and benefits, as well as to protect natural and cultural resources. Managers monitor conditions and implement management strategies in order to maintain desired setting characteristics.

15.20 Commercial Outfitting/Guiding is often provided within dispersed recreation areas in order to provide the expertise and equipment necessary for visitor safety, resource protection, and quality recreation experiences.

15.21 Dispersed camping opportunities are available for a wide variety of users. Motorized access to dispersed camping opportunities is addressed through travel management planning. Dispersed campsites are located outside of riparian zones and other sensitive resource areas. Campsites may be closed, repaired, rehabilitated, and/or hardened when unacceptable environmental or social impacts occur. Dispersed recreation resulting in resource impacts or user conflicts is effectively addressed.

15.22 Dispersed camping does not interfere or compete with the operation of developed campgrounds, private residences, or subdivisions.

15.23 Effective parking and directional/information signing is in place in order to support sustainable dispersed recreation use.

15.24 Traditional wildlife and fishery resources are available for Native American tribal use under established treaties and agreements.

15.25 Habitats support sustainable wildlife populations for consumptive and non-consumptive uses (including hunting, wildlife viewing, and eco-tourism) that contribute to local, State, Native American, and national economies.

Desired Conditions - Developed Recreation

15.26 Developed recreation sites meet accessibility standards, and are consistent with the established recreation niche of the area. The scale of development and amenities at facilities and at sites is consistent with established ROS and identified markets. The ROS setting for most developed facilities is Roaded Natural or Rural. Trailhead settings range from Semi-Primitive Motorized ROS to Rural ROS.

15.27 Developed recreation facilities are maintained to required standards. Facilities that do not meet standards, or that have a disproportionately high operating cost, are reconstructed, closed, or decommissioned.

15.28 The USFS and BLM provide visitor information, education, and interpretation consistent with their interpretive and conservation education strategy.

15.29 Vegetation and fuels management actions within, and adjacent to, developed recreation sites maintain or enhance scenery and meet specific-site plan objectives (including privacy screening, fall color enhancement, and disease resistance). Revegetation in developed sites uses native plant material and is designed in a manner that maintains a natural appearance.

15.30 Recreation sites and facilities are designed with an architectural theme intended to blend facilities with the natural environment while, at the same time, portraying an image consistent with the vernacular architecture (methods of construction that use locally available resources) that utilizes Low-Energy Environmental Design (LEED) guidelines.

15.31 Developed recreation sites are withdrawn from locatable mineral entry.

Desired Conditions - Winter Recreation

Winter recreation opportunities within the planning area provide important benefits to local residents and to visitors. A variety of local and State partners (including both for-profit and not-for-profit) assist the USFS and BLM in managing both motorized and non-motorized winter recreation areas. Commercial Outfitters/Guides also offer an important service related to safe winter recreation.

15.32 Winter recreation access is on plowed roads managed as Roaded Natural ROS. Trailhead parking areas are developed at key concentration points in order to accommodate the loading and unloading of equipment and people. These locations offer important safety, regulatory, and orientation information.

15.33 Away from road access points, the winter ROS includes Semi-Primitive Non-Motorized ROS or Semi-Primitive Motorized ROS. In some locations, there may be seasonal restrictions and/or changes in routes or access points in order to facilitate other resource activities for motorized use during one part of the season, and to facilitate non-motorized use during another part of the season.

15.34 Winter non-motorized areas provide a variety of non-motorized recreation opportunities in a quiet, natural setting (including groomed and un-groomed snow). Noise from motorized use is an exception in areas away from the main road corridors.

15.35 Winter motorized areas are managed in order to provide a variety of motorized recreation opportunities with a variety of challenge. In addition to areas open to cross-county, over-snow motorized use, these areas may contain groomed trails, marked trails that are not groomed, and/or unmarked/unmaintained open trails. There may be timing restrictions in wildlife habitat areas or timing restrictions due to ground conditions.

Desired Conditions - Ski Areas

15.36 In cooperation with the USFS and BLM, all areas are developed, maintained, and operated by the private sector in order to provide opportunities for intensively managed outdoor recreation activities during all seasons.

15.37 Ski areas are characterized by a vegetation mosaic that includes natural and human-made grassy openings intermixed with forested and/or partially forested areas and rocky outcroppings. Forested areas provide sustainable cover with a variety of species and age classes in patterns typical of the area's natural landscape character. These areas are not part of the scheduled timber production base. Vegetation management (which may include herbicides, commercial harvesting, and/or grazing) is used in order to achieve and maintain desired conditions for the ski area in a sustainable manner. Vegetation conditions reduce the potential hazards and risks of undesirable changes from windthrow, insects, disease, and/or fire.

15.38 Recreation is intensively managed at ski areas. Facilities directly support skiing activities and management. Winter terrain parks within ski areas are concentrated in specific locations, rather than dispersed throughout the mountain. Facilities are used throughout the year in order to satisfy a variety of seasonal recreation demands. New trail developments are generally for non-motorized recreation uses.

15.39 Although development on associated private land may be of a rural or urban nature, the ROS setting on national forest lands is generally Roaded Natural. Motorized ROS travel, both winter and summer, is generally limited to administrative or emergency purposes. Summer uses in ski areas within the planning area favor non-motorized, low-impact activities (including sight-seeing, hiking, wildlife viewing, and mountain biking) that require few permanent structures.

15.40 Scenery provides a range of scenic integrity objectives from low to moderate. Protection of scenic values is emphasized through basic landscape design principles. The visual impacts of structures, ski lifts, roads, utilities, buildings, signs, and other built facilities are minimized. Facilities, as seen from key viewpoints, are architecturally designed to blend and harmonize with the surrounding land setting. Guidelines are developed for each ski area in order to guide decisions related to the built environment (including architectural style, scale, colors, materials, and landscaping). Facilities that no longer serve a useful purpose are removed. Visitors are aware, through signs and interpretive venues, that the ski area is public land.

15.41 Where feasible and desirable, backcountry skiing, snowshoeing, and/or snowboarding activities may be facilitated or enhanced by visitor services at established ski areas.

Desired Conditions - Recreation Special Uses

Special use permits are issued in order to provide a variety of safe high-quality recreation opportunities to visitors. Local Outfitters/Guides, and other recreation professionals, provide services to visitors who want additional knowledge, guidance, equipment, and/or other support for a successful recreational experience within the planning area. Outfitting/Guiding is generally limited to services directly related to safety or improved conservation education.

15.42 Allowable uses and capacity for specific activities within certain geographic areas are consistent with a capacity and needs analysis. Permitted activities are compatible with the desired ROS setting and MA designations.

15.43 Recreation special use facilities are rare and temporary; they are consistent with established ROS guidelines.

15.44 The recreation residence program is managed within existing authorized tracts.

Desired Conditions - Structured Recreation Management Areas (SRMAs)

There are 4 Structured Recreation Management Areas (SRMAs) within the planning area: the Silverton, the Dolores River Canyon, the Cortez, and the Durango SRMAs. SRMAs have been identified by the public as important places for various types of recreation within distinct landscape settings. SRMAs have distinct recreation markets (community, destination, remote) and identified recreation niches (who and where). Users of the areas, and specific recreation benefits, have been identified for each of the SRMAs. In addition, the important recreation setting components for each SRMA are identified in this DLMP and on the ROS map. Recreation occurs across the public lands, as well as within all management areas. The purpose of identifying SRMAs is to focus and prioritize recreation management efforts in order to meet MA objectives, to guide visitors to opportunities that provide specific benefits within suitable areas, and to better integrate recreation activities with the other recreation uses in the areas (see Suitability in Part 2 for more information about MAs).

Consistent with MA direction, recreation management in SRMAs must co-exist with a wide variety of resource management activities while, at the same time, marketing to recreation niches and resolving recreation user conflicts. Generally, SRMAs occur within MA 4s (High-Use Recreation Emphasis), MA 5s (Active Management), and MA 7s (Public and Private Lands Intermix). This requires integrating recreation management with:

- the multiple-use resource management occurring within MA 5s, and its effect on the desired recreation settings;
- the intense backyard social demands and community use aspects of MA 7s;
- the high recreation facility development level occurring within the MA 4 corridors.

The concept of SRMAs originated from the BLM (for the BLM, SRMAs stand for Special Recreation Management Areas). SRMAs that occur on BLM lands have additional planning criteria (see Appendix E, Volume 3).

On BLM lands, areas not identified as SRMAs are generally managed as Extensive Recreation Management Areas (ERMAs), another concept developed by the BLM. Within the planning area, there is one ERMA that, in general, includes all BLM lands not within a SRMA.

15.45 SRMAs are appropriately marketed and have local, directional and site signs, and agency visitor information.

15.46 BLM lands not identified as SRMAs are managed as ERMAs.

Desired Conditions - SRMAs

15.47 ***Cortez SRMA***: This community recreation-tourism market provides local residents a day-use recreation setting for both motorized and non-motorized recreation. Mountain biking, hiking, and trail running take place in Phil's World. Mud Springs provides a location for OHV-use to take place. The purpose of this SRMA is to maintain a predominantly Semi-Primitive ROS day-use recreation settings for both motorized and non-motorized recreation. Both areas would allow use to take place on a trail network designed in order to minimize conflicts and to keep user encounters at a low level (see Appendix E, Volume 3, for a more extensive description of the Cortez SRMA).

15.48 ***Dolores River SRMA***: This destination recreation-tourism market provides rafting experiences within 5 Recreation Management Zones (RMZs), targeting participants from southwestern Colorado and the southwestern United States. Although the RMZs are predominantly in a Semi-Primitive ROS setting, they also include some Frontcountry and Rural ROS settings. There are opportunities for camping (in designated campgrounds and in dispersed areas), and for day-use recreation (including picnicking, mountain biking, hiking, and motorized recreation). Administration of this area provides direction designed to limit impacts from recreation activities associated with rafting, as set forth in the 1990 Dolores River Corridor Plan.

15.49 ***Durango SRMA***: This community recreation-tourism market provides local residents a day-use recreation setting for non-motorized recreation. Mountain biking, hiking, and trail running takes place at Animas Mountain, Grand View, Log Chutes, and Skyline. East Animas and Turtle Rock provide locations for rock climbing. The focus of this SRMA is to maintain a predominantly Backyard ROS day-use recreation settings for non-motorized recreation. These areas would allow use to take place on a trail network designed to minimize conflicts and to keep user encounters at a low level (see Appendix E).

15.50 ***Silverton SRMA***: This is a destination recreation-tourism market for Colorado, the southwestern United States, and several local communities (including Silverton, Ouray, Ridgway, Durango, and Montrose). The SRMA offers spectacular scenic vistas, visitor interpretation, and a year-round rest stop for travelers on the Alpine Loop and the San Juan Skyway. During winter months, the high mountain passes support recreation demand for adventure skiing, snowcatting, heli-skiing, backcountry skiing and boarding, and snowmobiling. Summer OHV-use on designated routes, as well as heritage tourism of the mining history are the primary uses. In the winter, management focuses on access and parking along Frontcountry ROS recreation corridors (which are in high demand). Access is facilitated by developed trailheads and Colorado Department of Transportation (CDOT) snowplowing. Essential visitor information and sanitation are provided throughout the year. A management issue for winter use includes whether or not to segregate motorized and non-motorized uses in some locations in order to ensure opportunities for backcountry quiet. In summer, this SRMA offers scenic corridors and trailheads to the much more remote high alpine backcountry. This SRMA has many scenic viewpoints where people stop to appreciate spectacular views; therefore, the USFS and BLM take advantage of the opportunity for public interpretation and conservation education (see Appendix E).

HERITAGE AND CULTURAL RESOURCES

Background

The San Juan Public Lands have a long and rich prehistoric and historic record, with human settlement of the area spanning back approximately 10,000 years. The archeological record related to the planning area contains some of the earliest agricultural societies in the region. The historic period brought Spanish and Euro-American explorers, trappers, miners, and settlers into the area. This long record of human occupation has left one of the highest densities of prehistoric and historic heritage and cultural resources found in the United States. These sites have national, international, and Native American tribal significance.

Heritage and cultural resources are non-renewable resources that include historic and prehistoric artifacts, structures, sites, districts, and archival materials important for their scientific, educational, economic, traditional, and social values. Visitation to heritage and cultural resource sites within the planning area is an important contributor in the region's economy, and draws great interest from people from all over the world.

The USFS and the BLM are responsible for identifying, evaluating, and protecting heritage and cultural resources on the public lands they manage. Significant heritage and cultural resources within the planning area include resources that are eligible for listing, or are already listed, on the National Register of Historic Places (NRHP), Priority Heritage Assets, and on the Strategic Sites List.

The heritage and cultural resources found within the planning area face numerous impacts from natural and human disturbances. Population and visitation growth and development impact non-renewable heritage and cultural 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 and Cultural Resources

16.1 Significant heritage and cultural resources are maintained in good to excellent physical condition. Significant cultural values are protected or preserved. Heritage and cultural sites are preserved and stabilized, and may be available for interpretation and research; they may have site-specific management plans. Sites are protected from physical damage and excessive wear-and-tear resulting from visitor use.

16.2 The visual and aesthetic setting and physical associations of the sites are protected so that the visitor experience of the historical/cultural landscape and setting is maintained.

16.3 USFS/BLM activities are compatible with site objectives or are temporary in their impact to the landscape, as well as to the overall visitor experience.

16.4 A management presence at key heritage and cultural resource sites is provided in the form of signage, brochures, site stewards, volunteer projects, and/or in other ways that aid in protecting heavily visited resources. Appropriate access to sites of interest is provided.

16.5 Interpretive displays, visitor contacts, and/or brochures are available in order to help visitors and employees understand, and appreciate, the heritage and cultural resources associated with the planning area. A wide range of heritage activities, experiences, and products (both on-site and off-site) are available for visitor enjoyment and education. Off-site activities include museum displays, brochures, audio programs, classroom presentations, and field trips. Interpretive efforts are compatible with the physical, cultural, and recreational settings and values of the resources.

16.6 Select historic cabins are restored and adaptively reused for appropriate recreation and/or for interpretive use.

16.7 Site-stewardship programs are encouraged and expanded in order to provide monitoring, protection, public education, and interpretation.

16.8 Looting of sites is reduced through increased public awareness and education related to cultural resources. Vandalism at sites is promptly remedied to prevent recurrence.

SCENERY, VISUAL RESOURCES, AND THE BUILT ENVIRONMENT

Background

The San Jan Public Lands possess outstanding and diverse scenery, capable of enhancing a wide variety of experiences. Many people choose to live in southwestern Colorado, in large part, so that they can benefit from the high-quality scenery (with such views even serving as an important selling point for commercial and residential real estate). Scenery is the backdrop for all forms of recreation occurring on both public and private lands. High-quality scenery is also a primary reason people from outside of the area visit the San Juans – with scenic byways and backcountry byways alone attracting hundreds of thousands of people annually.

Planning for scenic resources within the planning area involves management strategies that protect scenic resources, as well as those that increase opportunities for viewing those scenic resources. The desired conditions below specify outcomes that would maintain, protect, and enhance the scenery within the planning area.

Desired Conditions - Scenery, Visual Resources, and the Built Environment

17.1 Public demand is met for high-quality scenery that benefits regional tourism, the local and regional economy, the local and regional community image, and overall recreation opportunities. Existing natural appearing scenic landscapes are maintained.

17.2 Valued viewsheds, vistas, and cultural 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, fuel reduction, vista creation, wildland fire uses, and insect and disease prevention and suppression.

17.3 Views from developed sites, roads, trails, and viewpoints of concern are predominantly within natural-appearing landscapes. Views within developed recreation sites may appear heavily altered (due to recreation support facilities, recreation developments, hazard tree management, etc.).The natural appearance of forested ridgetops viewed from nearby communities is protected.

17.4 Visitors have many convenient and safe opportunities to view world-class scenery. Visitors have opportunities to experience important scenic elements (including landscape vistas, park-like groves of old-growth ponderosa pine, large aspens, spectacular fall color displays, scenic riparian corridors, historic architecture, etc.).

17.5 Scenic pullouts, vista points, waysides, and access points are developed, as appropriate, in order to support scenic viewing as a primary visitor activity.

17.6 Vegetation composition and structure valued for scenic character (including landscapes with a predominance of aspen and ponderosa pine) are showcased along scenic routes, at recreation sites, and at key viewsheds.

17.7 Conservation of significant cultural and natural viewsheds is established through strong partnerships between the USFS and BLM; State and local agencies: tribal governments; land trusts, and other interested individuals and organizations.

17.8 The built environment (including recreation facilities, utilities, resource management structures – including those constructed and/or maintained by permittees) reflects and complements the architectural character of the Rocky Mountain Province or the Southwest Province (USDA FS BIEG FS-710), as appropriate, and reflects local vernacular architecture and natural landscape context. The quality of the built environment benefits from sound site planning and environmental design principles utilizing efficient energy sources.

17.9 Vegetation valued for its scenic character is sustainable and consistent with the inherent landscape character.

17.10 Public lands are in a condition that meets the minimum established scenic objectives for the SJPL (generally, this is high or moderate scenic integrity objective or a VRM Class III).

INTERPRETATION AND CONSERVATION EDUCATION

Background

The San Juan Public Lands have the remarkable opportunity to connect with millions of people who visit, or are interested in visiting, their public lands. An important goal of the USFS and BLM is to help people understand, appreciate, and use their public lands. Due to the remote location, varied geography, and multiple-use patterns, the planning area requires a vibrant and focused interpretive program in order to support this goal. In order to protect invaluable cultural and natural resources, interpretive services and conservation education must be an integral part of implementing and maintaining the identity of the area, and implementing an effective resource management strategy that educates and informs visitors.

Currently on the SJPL, there are many facilities and services in place that deliver interpretive and conservation education services to the public. The USFS and BLM will sharpen their focus in order to more meaningfully deliver what the public wants to know, and needs to know, about the land management agencies, their mission and programs, and stakeholder responsibilities.

Desired Conditions - Interpretation and Education

18.1 The public benefits from a public lands interpretive and education strategy that reflects USFS and BLM priorities and key public information needs. The public understands the mission of the SJPL and its diverse cultural and natural resource management priorities and exhibits effective stewardship behavior on the SJPL.

18.2. Messages are consistent and effectively delivered to the public, reaching a wide variety of age, gender, class, ethnic, and cultural groups.

18.3 Resource management messages are articulated in all education and interpretive products, programs, and public contacts.

18.4. A wide variety of information, education, and interpretive venues are available through various media so that people can easily access information about recreational opportunities and resources.

18.5 All visitor information services, public affairs, interpretation and conservation education functions of the USFS and BLM have a unified and clear communication strategy.

18.6 All SJPL personnel play a role in public communications, in terms of offering conservation education, interpretation, public affairs, and visitor information services.

18.7. The SJPL fosters research, education, and interpretation of the area's rich natural and cultural heritage.

18.8 Effective interpretation and conservation education, as well as proactive land stewardship, are accomplished with a wide range of partners (including commercial Outfitters/Guides; permittees; volunteer groups; local, State, and Native American tribal, and other Federal agencies; interested individuals and organizations, etc.).

18.9 Public education opportunities, through interpretation and conservation education programs, promote ethical and non-limiting use of wildlife resources within the planning area.

TIMBER AND OTHER FOREST PRODUCTS

Background

The timber management program on the San Juan National Forest has followed the trend of many other national forests with regard to high harvesting levels (especially early in the Twentieth Century in support of mining and settlement, with another spike in harvesting following World War II). Peak harvesting levels were near 75 million board feet annually. Since that time, harvesting levels have continued to decline, and many larger local mills have closed (see Appendix W, Timber Demand Study, Volume 3). The planning area has a high quality aspen resource, and has been actively involved in aspen management since the 1940s. There is currently not an active commercial timber program on the BLM lands within the planning area; however, non-commercial products (including post and poles, Christmas trees, and other non-forest products) are available.

The forest products industry continues to be very important to Montezuma and Montrose Counties, where wood processing facilities are located. Although the level of timber harvesting has declined in the past decade, ecological desired conditions in forested areas are, in large part, dependent upon the timber program and on the capacity of the timber industry to change vegetation conditions. Without the timber industry, the ability to manage vegetation would be significantly reduced. Commercial timber harvesting is an important tool for managing vegetation on the SJPL.

Desired Conditions - Timber and other Forest Products

19.1 Commercial timber and forest products are available in order to support, at least, the current level of economic activity in the local timber industry while, at the same time, allowing the SJPL to achieve other desired conditions.

19.2 Lands classified as “suitable” for timber production have a regularly scheduled timber harvesting program that provides benefits to people while, at the same time, achieving ecosystem function and sustainability.

19.3 Lands classified as “not suitable” for regularly scheduled timber production (but where timber harvesting could occur for other multiple-use purposes) have an irregular, unscheduled timber harvesting program that achieves ecosystem function and sustainability while, at the same time, providing benefits to people.

19.4 Small-diameter, woody material resulting from hazardous fuel reduction activities are transformed into marketable products, thereby utilizing forest products and reducing implementation costs.

19.5. Within the capacity of the land, current and future demands are met for special forest products for personal, commercial, and Native American tribal use.

LIVESTOCK AND RANGELAND MANAGEMENT

Background

Livestock grazing was initially undertaken in the 1880s to support local mining operations and to take advantage of the natural grasslands. As the rate of homesteading increased, and other laws designed to increase the rate of western settlement were passed, livestock numbers on public lands increased. With the creation of the San Juan National Forest in 1906, Federal livestock management was directed toward allocating forage to local dependent users. With the passage of the Taylor Grazing Act in 1934, the same approach was continued on unreserved public lands (and the days of the open range came to an end).

Generally, rangeland management activities from the 1940s through to the 1980s were directed toward improving watershed conditions in the West (through the use of large amounts of capital and new technology). Rangeland management practices designed to accomplish these goals included increased water development, fencing, brush control practices, reseeding, and the use of intensive grazing systems. It was generally believed that this prescriptive approach would meet management objectives.

From the late 1980s to the present, rangeland management activities have been directed toward improving rangelands through adaptive management. Factors including the increase in big game numbers, the listing of threatened and endangered species, the implementation of hazardous fuels reduction projects, the on-going drought, and persistent water-quality issues have all added to management challenges.

Cattle numbers peaked in the 1920s; sheep numbers peaked in the 1930s. Currently, livestock numbers are at 50% and 5%, respectively, of their historic highs. Authorized livestock numbers on the SJPL are about 90% of permitted numbers. Market factors, administrative actions, and the drought have all contributed to the USFS and the BLM not meeting sustained grazing level goals in the past few decades.

Desired Conditions - Livestock and Rangeland Management

20.1 Rangeland provides forage for qualified local livestock operations and helps ranches remain sustainable and intact.

20.2 Rangelands and permitted livestock grazing use, contribute to the maintenance of large open spaces on private lands through the maintenance of sustainable ranching operations.

20.3 Permitted livestock grazing fee collections contribute to the local county fund base for roads, schools, and range improvements.

20.4 Rangelands sustain healthy and sustainable habitat for wildlife populations that, in turn, support recreational hunting, fishing, and/or viewing (thereby contributing to the local and regional economy).

MINERALS AND ENERGY

Background

Prospecting and mining within the planning area date back more than 120 years. The first recorded discovery of gold in the region was in 1848, in the Silverton area. This was followed by discoveries in the Durango and Rico areas in the 1860s. Today, there are few active metal mining operations in the area, but increases in the price of gold, silver, and copper are likely to spur renewed interest in historic mining areas (including Silverton). Recent interest in nuclear power generation and other demands will likely continue the current mining of uranium, as well as the expanded exploration for this resource.

Deposits of mineral materials occur within the planning area. Bulk stone is sold for building material, aggregate, bulk fill, rip-rap, road surfacing, decoration, and landscaping. Current sites with small- to medium-scale development are canyon walls, stream channels, talus slopes, landslides, ancient river terraces, glacial moraines, floodplains, road cuts, quarries, and pits. Large boulders are a relatively recent target for purchase (used for river renovation work). These large boulders occur throughout the planning area in stream deposits, glacial drift and till, landslides, and floodplains. Most are found at higher elevations, although those closest to existing roads are primary targets for purchase.

Coal deposits occur within the late Cretaceous and Tertiary Period rocks found near Durango and Chimney Rock. Active underground mining operations are also occurring on private lands near Durango. Geothermal resources within the planning area are of low or medium temperature. Geothermal fluid resources that occur within the planning area (as well as in the surrounding areas) include warm water emanating from geysers, springs, and wells. Most warm springs are located near faults that serve as conduits for upward flow of groundwater that is heated by deep circulation from mainly volcanic sources. Except for the town of Pagosa Springs (where hot water from hot springs is currently used in order to heat buildings and public sidewalks), the thermal springs are at present either undeveloped or developed for recreational and therapeutic uses in private and public pools. Only three springs are on public lands: Geyser, Piedra, and Rainbow.

Oil and gas (natural gas and carbon dioxide) deposits occur in sedimentary basins throughout the planning area. Only the central area of the SJPL (from the north rim of the San Juan Basin north to Silverton) has no known potential. Areas of significant potential or known reserves and production are the Paradox Basin area (roughly the lands west of the Dolores River), the northern San Juan Basin (approximately the area south of U.S. Highway 160, between Durango and Chimney Rock), and the San Juan Sag (the area east of Pagosa Springs). Development of these deposits began early in the Twentieth Century with discoveries in the Paradox Basin. A major natural gas deposit is currently in development in the northern San Juan Basin. Exploration and development are underway in the Paradox Basin northwest of Cortez, and limited exploration is occurring intermittently in the San Juan Sag (which is southeast of Pagosa Springs). There are currently approximately 100,000 acres of lease nominations being processed for the Paradox Basin area, and about 5,000 acres of lease nominations being processed for the San Juan Sag. (A separate EIS for the proposed development of coal-bed methane gas in the northern San Juan Basin is currently being developed.) As oil and gas prices increase, and political decisions emphasize development of domestic resources, it is likely that all areas of the SJPL will see increasing interest in exploration and development.

Exploration for, and development of, mineral resources on public lands is required by law to meet all applicable environmental protection measures. For all proposed activities that have the potential for disturbance to lands and/or resources, a Plan of Operations is required. This Plan of Operations is subject to full public environmental analysis and review before the operation can be approved. Consistent with all required environmental protection measures, Plans of Operation include provisions for access, design, construction, maintenance, and rehabilitation.

Desired Conditions - Minerals and Energy

21.1 The planning area complies with the direction of the Energy Policy Act of 2005, and contributes to the nation's supply of mineral and energy resources.

21.2 Mineral materials (including gravel and decorative stone) are available to support resource management needs, personal and hobby use, and commercial pursuits.

DESIGNATED ENERGY CORRIDORS AND LINEAR ENERGY TRANSMISSION AUTHORIZATIONS

Background

Section 368 of the Energy Policy Act of 2005 directs the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate energy transmission corridors on Federal land in 11 Western states (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for oil, gas, and hydrogen pipelines, and for electricity transmission and distribution facilities. Energy corridors differ from energy transmission Rights-of-Way (ROWs)/special use authorizations due to the fact that corridors are intended to support different types of compatible energy-transport systems; whereas a ROW/special use authorization is a project-specific assignment of a relatively narrow strip of land permitted and limited to a single energy-transmission project.

Desired Conditions - Energy Corridors

22.1 In accordance with the Energy Policy Act of 2005, energy corridors throughout the planning area improve the delivery of electricity, oil, and gas in the West while, at the same time, enhancing the western electric transmission grid by improving reliability, reducing congestion, and contributing to the national electrical grid.

22.2 Future linear transmission uses are encouraged to occur adjacent to existing authorized routes for transmission lines over 69 kilovolts, and for pipelines more than 10 inches in diameter. Local distribution lines and smaller pipelines are located in conjunction with the existing road system or other previously disturbed areas.

ABANDONED MINES AND HAZARDOUS MATERIALS

Background

Within the planning area, work on the abandoned mine program began in 1994 with an inventory of abandoned mines on public lands. At the same time, the Colorado Water Quality Control Division proposed a watershed risk-based approach to abandoned mine remediation. This consists of four major stages:

1. Statewide analysis and watershed prioritization;
2. watershed characterization and mine prioritization;
3. mine-site characterization and remediation; and
4. post-remediation monitoring.

This approach was used by the State agencies and by Federal land management agencies to identify the upper Animas River watershed as ranking at the top of the high-priority watersheds. Funding for alternative minimum level (AML) water-quality projects began in 1997 with two pilot projects: the upper Animas River watershed in Colorado, and the Boulder Creek watershed in Montana.

The Animas River Stakeholders Group (ARSG) was formed in 1996 in order to take the lead in area watershed characterization and remediation. The group's members come from the public and private sectors. Their mission is to improve water quality and habitat along the Animas River (which is in the Columbine Geographic Area, for the purpose of this DLMP). Over the last decade, ARSG has received grants and professional support from State and Federal agencies, as well as from private interests for the characterization and remediation of the watershed. The characterization work culminated in the Use-Attainability Analysis of the Upper Animas Watershed. This report includes watershed characterization, mine clean-up prioritization, and remediation plans. Watershed characterization provided baseline scientific information and enabled the reduction of necessary mine clean-ups from 1,500 to 100 (or less). Water-quality objectives were also developed.

Another area with a high concentration of mining is the area around Rico, which is in the Dolores River watershed (which is in the Dolores Geographic Area, for the purposes of this DLMP). The State of Colorado and the U.S. Environmental Protection Agency (EPA) have overseen voluntary clean-ups (VCUP) of some mine areas on private land, as well as on mixed-ownership sites. Mine sites exist in many other locations throughout the planning area that may cause pollution or may pose a safety hazard.

Most of the hazardous materials incidents within the planning area are the result of transportation accidents on State and/or Federal highways. Trucking accidents can result in spills of fuel (or of any hazardous products that the truck was carrying). These incidents are the responsibility of the transportation company to clean up. Clean-ups within the highway ROWs are under the jurisdiction of the Colorado State Patrol (CSP) for State and Federal highways, and under the jurisdiction of the local Sheriff's Departments for county roads. Illegal dumping on the SJPL is also a potential hazardous materials issue. In addition, hazardous materials can also be related to operations conducted or authorized by the USFS and BLM (including the use of pesticides, fuels, and/or lubricants).

Desired Conditions - Abandoned Mines and Hazardous Materials

23.1 Abandoned mine reclamation within the planning area contributes to water quality improvement and to historic resource protection.

23.2 Abandoned mines do not endanger the environment, wildlife, the public, or SJPL employees.

23.3 USFS- and BLM-authorized actions occur without causing hazardous material spills or waste contamination.

LANDS AND SPECIAL USES

Background

The planning area contains both BLM- and USFS-administered lands. Although the laws and regulations that guide the two agencies differ in some details, the general vision for land management across the planning area is the same. The following discussion applies to both BLM and USFS lands, unless a specific distinction is identified.

Special Use Permits, ROW grants, easements, and leases authorize the occupancy and use of public lands by private individuals and/or by companies for a variety of activities (including roads, utility lines, communication sites, dams, and other private or commercial uses that cannot be accommodated on private land). The USFS and BLM administer approximately 980 non-recreation Special Use Permits on the SJPL.

Land Ownership

Public lands are generally retained in Federal ownership in order to provide long-term values. The vision for the planning area is to retain in public ownership all lands currently under its administration that meet the long-term needs of maintaining the integrity of contiguous natural ecosystems, river frontage, riparian areas and wetland ecosystems, recreation and open space, scenery, clean air and water, and refuge from development for plant and animal populations. Under the direction of the DLMP, on a case-by-case basis and through the methods available to each agency, the USFS and the BLM would acquire lands and/or mineral estates that enhance this vision. They would dispose of lands and/or mineral estates that do not meet these needs. In all such cases, the primary guiding principle would be the greater public benefit.

Land Use and Access Authorizations

The USFS and BLM provide authorizations for occupancy and use for a variety of private and commercial entities; as well as for local, State, Native American tribal, and other Federal agencies. This is accomplished through easements, ROWs, Special Use Permits, leases, and other instruments. Trespasses and encroachment issues are resolved through removal, remediation, or authorization. The SJPLC maintains and enhances public access to the lands identified for retention (BLM), as well as to other public lands where improved access meets resource and/or management needs. The SJPLC engages in cooperative management of private and commercial access needs (with private individuals; developers; State and local agencies, and tribal governments) and encourages the formation of “road-user associations” where multiple users require access.

All authorized uses on public lands are required, by law, to meet all applicable environmental protection measures. For all proposed activities that have the potential for disturbance to lands and resources, a project design is required and is subject to full public environmental analysis, review, and monitoring.

Land Withdrawals

Formal withdrawal of land from specific land uses and/or types of management is a tool designed to ensure the reservation of the land or resource for a dominant use (including for municipal watersheds, hydropower facilities, or for fossil fuel supplies). Other withdrawals remove lands from the operation of mining and mineral leasing laws in order to protect higher values or uses (including for threatened or endangered wildlife, designated Wilderness, or for high-value facilities and improvements). Withdrawals require a full public environmental analysis and decision process. The vision for the planning area is to pursue formal withdrawal of lands where this process has identified lands with high values and resources needing protection that cannot be provided by routine management, or where withdrawal is required by law.

Desired Conditions - Lands and Special Uses

24.1 Public land ownership boundaries are clearly marked on the ground, and land ownership information is easily accessible to the public.

24.2 Surface and mineral ownerships within the planning area are consolidated in order to meet resource and community needs, and to facilitate efficient land management.

24.3 The SJPL retains and/or acquires river frontage, riparian areas and wetland ecosystems, and other lands that would enhance or protect recreation, open space, scenery, clean air and water, and key habitat for species.

24.4 The SJPL acquires adequate access to isolated lands for resource or management needs.

24.5 Road access to private land is granted only where no other reasonable alternative exists, and where it meets the appropriate road design and maintenance standards necessary for resource protection and public safety.

24.6 Road use authorizations for roads that serve predominantly non-SJPL purposes are provided to local road jurisdictions (reserving public access, where appropriate).

GEOLOGY

Background

The planning area showcases examples of almost every type of igneous terrain, from nearly 2 billion-year-old metamorphic and igneous basement rock to still-forming hot-springs mineral deposits. Its active geological processes pose dangers and challenges related to the effective management of the planning area. The area's potential for research and resource development recognizes its variety of landscapes: from 14,000-foot mountains to the semi-arid deserts; from fresh glacial cirques and valleys to narrow canyons and wide river channels; its river-cut cross-sections of geologic time stretching halfway back to the birth of the planet; its mineral wealth that fueled the settlement of Colorado (and still provides raw materials to the local communities and to the world); and its geologic record of some of the most fundamental events in earth history (including great mass extinctions, the rise of plant and animal life on land, and the age of the mammals).

Desired Conditions - Geology

25.1 The planning area contributes to the nation's scientific growth by fostering research, education, and interpretation of the area's rich geological heritage.

25.2 Planning area facilities are located and constructed so that the public is not endangered by geologic hazards.

PALEONTOLOGICAL RESOURCES

Background

Paleontologic resources (fossils) constitute a fragile and non-renewable scientific record of the history of life on earth. Management requirements related to ground-disturbing activities are applied in order to protect paleontologic resources and the scientific values they contain. Avoidance of significant sites is the preferred mitigation for adverse impacts to paleontologic resources.

In 1996, a classification system called the "Probable Fossil Yield Classification" (PFYC) was developed by the USFS's Paleontology Center of Excellence and the Region 2 Paleo Initiative in order to promote consistency throughout and between agencies (USFS 1996b). The PFYC system provides baseline guidance for assessing the relative occurrence of important paleontological resources, as well as assessing the need for mitigation. Geologic units are classified at the formation, or member, level according to the probability of yielding paleontological resources of concern to land managers. Classifications range from Class 1 to Class 5, and are based on the relative abundance of vertebrate fossils, uncommon invertebrate, or plant fossils, as well as on their sensitivity to adverse impacts. A higher classification number indicates a higher fossil yield potential and greater sensitivity to adverse impacts (see Appendix Y, Volume 3 for a description of the 5 PFYC classes and the suggested management direction indicated for each class. Geological formations that are known to contain significant vertebrate, invertebrate, and plant fossils include but are not limited to those listed in Appendix Y.) Within the planning area, the BLM identified the Morrison Formation as having the potential for fossil occurrences. The Morrison Formation is also the focus of the vanadium and uranium mining that has occurred historically on public lands, and within Department of Energy (DOE) leases. Vanadium and uranium mining is expected to increase during the planning horizon. Most of the planning area has not been surveyed for paleontological resources, and the extent of occurrences of most paleontological resources is not known.

Desired Conditions - Paleontological Resources

26.1 Significant fossil resources are available for appropriate scientific, educational, and, where appropriate, recreational uses by present and future generations.

26.2 Vertebrate fossil resources of the PFYC Class 5 formations are available for interpretation and research in a relatively undisturbed condition.

26.3 The Horse Range Mesa vertebrate fossil site is managed for the relevance and importance of Camarasaurus and Stegosaurus dinosaur fossils.

PARTNERSHIPS

Background

Research and stewardship activities within the planning area are accomplished through an extensive network of potential partners. This includes, but is not limited to, not-for-profit organizations; local, State, Native American, and other Federal agencies; a variety of universities and colleges; public land user groups; entities operating under use permits; and scientific researchers. Although most stewardship activities, and the partnerships that make them possible, are focused on specific tasks (for example, clearing the Colorado Trail of avalanche debris), the outcomes tend to extend far beyond accomplishing the task at hand.

The end result of a partnership effort is usually a deeper understanding of the economic, ecological, and social dynamics of managing public lands (and sometimes private lands), as well as a broader sense of responsibility for caring for resources, and an increased respect for other perspectives (and other user groups). Community-based stewardship attempts to incorporate local land stewardship ethics in a context of open citizen participation, and to include all interested individuals and groups. A well-documented example within southwestern Colorado is the Ponderosa Pine Forest Partnership, in which local environmentalists and the timber industry (in total gridlock in the early 1990s) cooperated in science-based efforts in order to restore ecological health to local ponderosa pine forests while, at the same time, sustaining small, local wood products businesses. To date, ecological restoration has been accomplished, or is in the process of being accomplished, on approximately 8,000 acres. Many more examples of successfully engaging partners in caring for public lands exist, and more are developing as needs arise.

Research constitutes a specific form of partnership and involves a variety of interests that continue to bring forth new theories, observations, and findings relevant to resource management within the planning area. Partnerships with researchers and local communities are encouraged in order to increase knowledge and education. An emphasis on non-destructive research is preferred, and site-specific research activities are administered under appropriate authorizations.

Desired Conditions - Partnerships

27.1 The SJPL retain their national reputation as a place where people are willing to actively engage in caring for the land and resources. A variety of organizations and individuals volunteer to work in stewardship roles, serving as an integral part of the management of SJPL.

27.2 Individuals engaged in commercial pursuits within the planning area actively engage in caring for the land and resources.

27.3 Research addresses current management issues and long-term ecological change, and involves interdisciplinary evaluation of a common site.

INTRODUCTION

The preceding section describes SJPL-wide desired conditions, expressing and describing a broad range of conditions throughout the San Juan Public Lands. The geographic area desired conditions, found in this section, focus on desired conditions within each of the three Ranger District/Field Offices: the Dolores, the Columbine, and the Pagosa. For the purposes of the DLMP, these are referred to as geographic areas. Each geographic area description below includes a brief history of the area, as well as a discussion of trends within the surrounding communities in relation to the planning area.
The following factors were considered in shaping the geographic area desired conditions:

- unique ecological and cultural attributes;
- resource conditions, assessments, and trends;
- economic and social contributions of the public lands to neighboring communities and to the region;
- past and current management practices and investments; and
- public demand, uses, and trends.

Combined, these factors shape desired conditions for each geographic area, and also give shape to the general management emphasis of smaller areas, termed management areas, within each geographic area.

MANAGEMENT AREAS (MAs)

The desired level of management, and the specific use of resources, varies from location to location throughout the planning area. In conjunction with resource desired conditions and objectives, the management emphasis for a particular area is described by Management Areas (MAs). Based on public scoping and agency knowledge of the land, MAs have been applied to all lands within the planning area. There are seven Management Areas (further described in Part 2 of the Plan) that range from areas where natural processes dominate and shape the landscape to areas that are intensely managed. Management Areas also describe the overall appearance desired within the area, as well as uses and activities that may occur or that are generally suitable.

The composition of Management Areas within each geographic area provides a spatial understanding of where management activities and uses may occur, as well as where particular desired conditions will be emphasized. Below, each MA is briefly described (see Suitability in Part 2 of the DLMP for a complete description of MAs). For each geographic area, the MA composition is described and mapped.

Management Area 1 (MA 1): Natural Processes Dominate

These relatively pristine lands are places where natural ecological processes operate free from human influences. Succession, fire, insects, disease, floods, and other natural processes and disturbance events shape the composition, structure, and landscape patterns of the vegetation. These areas contribute significantly to ecosystem and species diversity and sustainability; serve as habitat for fauna and flora; and offer wildlife corridors, reference areas, primitive recreation opportunities, and places for people seeking natural scenery and solitude. Roads and human structures are absent and management activities are limited on MA 1 lands. Motorized travel, and in most cases, motorized equipment are prohibited. MA 1s include designated Wilderness Areas, the Piedra Area, Wilderness Study Areas (WSAs), and other lands where a primary desired condition is to maintain the undeveloped natural character of the landscape.

Management Area 2 (MA 2): Special Areas and Unique Landscapes

These areas possess one or more special feature or characteristic that makes them, and their management, unique from other areas within the planning area. MA 2s include Research Natural Areas (RNAs), Areas of Critical Environmental Concern (ACECs), Wild Horse Herd Management Areas (HMAs), Archeological Areas, Habitat Areas, Botanical Areas, and other unique areas that have a mix of special features and uses. In general, MA 2s are managed in order to protect or enhance their unique characteristics; therefore, management intensity and suitability varies by each area (see Special Areas in Part 2 of the DLMP for a description of each MA 2, including any additional specific desired conditions, objectives, suitability, or design criteria for each area).

Management Area 3 (MA 3): Natural Landscapes, with Limited Management

These relatively unaltered lands are places where natural ecological processes operate primarily free from human influences. Succession, fire, insects, disease, floods, and other natural processes and disturbance events predominantly shape the composition, structure, and landscape patterns of the vegetation (although management activities may also have an influence). These areas contribute to ecosystem and species diversity and sustainability; serve as habitat for fauna and flora; and offer wildlife corridors, reference areas, primitive and semi-primitive recreation opportunities, and places for people seeking natural scenery and solitude. Roads and human structures are present, although uncommon.

Management activities are allowed, but limited, on MA 3s. They occur mostly for restoration purposes needed because of natural disturbance events or past management actions. Management activities may include restoration of ecological conditions or habitat components; prescribed burns; wildland fire use; salvage logging following fire, insect epidemics, and/or wind events; hazardous fuels reduction; and invasive species reduction. Temporary road construction and motorized equipment may be used in order to achieve desired conditions; however, most roads would be closed upon project completion. Most MA 3s emphasize non-motorized recreation opportunities, but motorized travel occurs in some areas on existing roads and some trails. Livestock grazing occurs on many of these lands.

Management Area 4 (MA 4): High-Use Recreation Emphasis

These areas are places with relatively high levels of recreation use that is managed in order to provide a wide variety of opportunities and experiences to a broad spectrum of visitors. They are associated with, and often provide, access to popular destinations, transportation corridors, scenic byways, scenic vistas, lakes, and streams. Developed recreation facilities that provide user comfort and resource protection are present.
These areas tend to be altered by human activities, but also include some more undeveloped places (including backcountry travel corridors). Visitors can expect to see a wide range of human activities and development (including roads, trails, interpretive sites, campgrounds, trailheads, fences, and day-use facilities). Both motorized and non-motorized activity is common. Natural ecological processes and disturbance agents (including succession and fire) are often influenced by humans on most of these lands. Resource uses (including livestock grazing, timber management, and wildlife management) may occur in conjunction with surrounding recreation and scenic objectives.

Management Area 5 (MA 5): Active Management (commodity production to meet multiple-use goals)
These multiple-use areas are places where active management occurs in order to meet a variety of social, economic, and ecological objectives. They are easily accessible, occurring mostly on roaded landscapes and relatively gentle terrain. These are lands where timber harvesting, oil and gas activities, and intensive livestock grazing occur and influence the composition, structure, and landscape patterns of the vegetation. Natural ecological processes and disturbance agents (including succession and fire) are often influenced by humans on many of these lands. A mosaic of vegetation conditions is often present, some showing the effects (impacts) of past management activities; others appearing predominantly natural. These areas contribute to ecosystem and species diversity, and serve as habitat for fauna and flora.

In MA 5s, visitors can expect to see a wide range of human activities, development, and management investments (including roads, trails, fences, corrals, stock ponds, timber harvesting equipment, oil and gas wells, and livestock). Maintenance of past and current investments is anticipated to be continued for future management opportunities. Motorized and non-motorized recreation opportunities are easily accessed by the relatively dense network of roads found on these lands. Hiking trails provide access for visitors (who can expect contact with others). Developed recreation facilities that provide user comfort and resource protection are present.

Management Area 7 (MA 7): Public and Private Lands Intermix
These areas are places where the public lands within the planning area are in close proximity to private lands; therefore, coordination with communities and local governments is essential in order to balance the needs of both parties. MA 7s are often associated with towns and cities, as well as with the houses, structures, people, and values associated with them. Visitors can expect to see a wide range of human activities and development (including roads, trails, fences, signs). In some MA 7 areas, oil and gas development is evident.

The close proximity of these areas to private lands makes them a priority for fuels and vegetation treatments in order to reduce wildfire hazards. The backyard or rural recreation setting provided by many of these lands is an amenity to the active lifestyles and quality of life for local residents. Hiking, biking, and dog-walking are common activities. These areas contribute to ecosystem and species diversity, and serve as habitat for fauna and flora. Winter range for deer and elk is a common component of MA 7s, as are seasonal closures in order to reduce animal disturbance. Natural ecological processes and disturbance agents (including succession and fire) are influenced by humans on most of these lands.

Land exchanges, acquisitions, and disposals can be undertaken in order to improve the intermingled land ownership patterns that are common in MA 7s. Cooperation with adjacent landowners and local governments is common in order to improve access and to convey roads to county jurisdictions, where appropriate. Cooperation is also be important in order to improve transportation network, protect resources, and allow authorized legitimate access to public lands. Utility and communication distribution lines tend to be more common in these areas.

Management Area 8 (MA 8): Highly Developed Areas
These lands are places that have been altered with long-term development (including downhill ski areas and large dams). In these areas, human activities have created lasting changes in the composition, structure, and function (ecological processes and disturbance agents) of the associated ecosystems. These areas, which often provide large socioeconomic benefits, include Durango Mountain Resort, Silverton Mountain Resort and the McPhee Dam.

DOLORES GEOGRAPHIC AREA

General Location and Description

Dolores is the westernmost geographic area within the planning area (bordering Utah in places). It lies predominantly in Montezuma, Dolores, and San Miguel Counties, with some lands in Montrose County. The Dolores Ranger District/Field Office consists of approximately 1,033,630 acres of USFS and BLM lands. Dolores has the greatest amount of BLM lands on the SJPL – approximately 436,834 acres.

Some of the BLM lands in the southern portion are adjacent to Mesa Verde National Park, and to the Ute Mountain Ute Reservation and Southern Ute Reservation. Some of the BLM lands in the northwest portion border the Uncompahgre (Colorado), Moab (Utah), and Monticello (Utah) Field Offices of the BLM. USFS lands share a northern border with the Uncompahgre National Forest.

The social center of this geographic area is the Town of Cortez (with a population of approximately 8,500 people). Cortez is the Montezuma County seat, as well as the commercial center for the smaller communities of Mancos, Dolores, Rico, and Dove Creek (which is the Dolores County seat), all with populations of 1,200 or less. Public lands in the northwestern portion of this geographic area tie more to towns in Montrose and San Miguel Counties (including Norwood and Montrose) in Colorado, and to Monticello, Utah.

Although most of the towns are close to public lands, they lie in broad valleys with a good deal of private land on their borders. The Town of Rico, which is surrounded by USFS lands, is an exception (see Special Areas in Part 2 of the DLMP for a discussion of the Rico area).

The main river systems are the Mancos River (which has headwaters in the La Plata Mountains) and the Dolores River (which has headwaters in the Lizard Head Wilderness). Both rivers provide irrigation for pastures, hay meadows, and other crops on private lands in the area. McPhee Reservoir, on the Dolores River, is the second largest body of water in Colorado. It is an important recreation area, as well as a source of domestic and irrigation water. Use of water from these rivers has greatly affected both historical settlement patterns and current land uses.

Significant portions of the San Juan Skyway traverse the Dolores geographic area (including Highway 145, from Lizard Head Pass down through Rico to Dolores and Cortez, and from there Highway 160 to the Montezuma-La Plata County line, which is the boundary with the Columbine geographic area). Other major segments of the Skyway are to the east, in the Columbine geographic area, and on the Uncompahgre National Forest to the north (going through Ouray, Ridgway, and Telluride). Since its designation as a Scenic Byway, the San Juan Skyway has been one of the most popular recreation attractions in southwestern Colorado. It is one of only 26 All-American Roads in the United States. The Skyway's diverse natural and cultural resources, combined with its unique and spectacular scenery, give it a claim as one of the crown jewels of scenic byways in the entire nation. Portions of the Trail of the Ancients Scenic Byway are also located within the Dolores geographic area (see Special Areas for more information on the Byways).

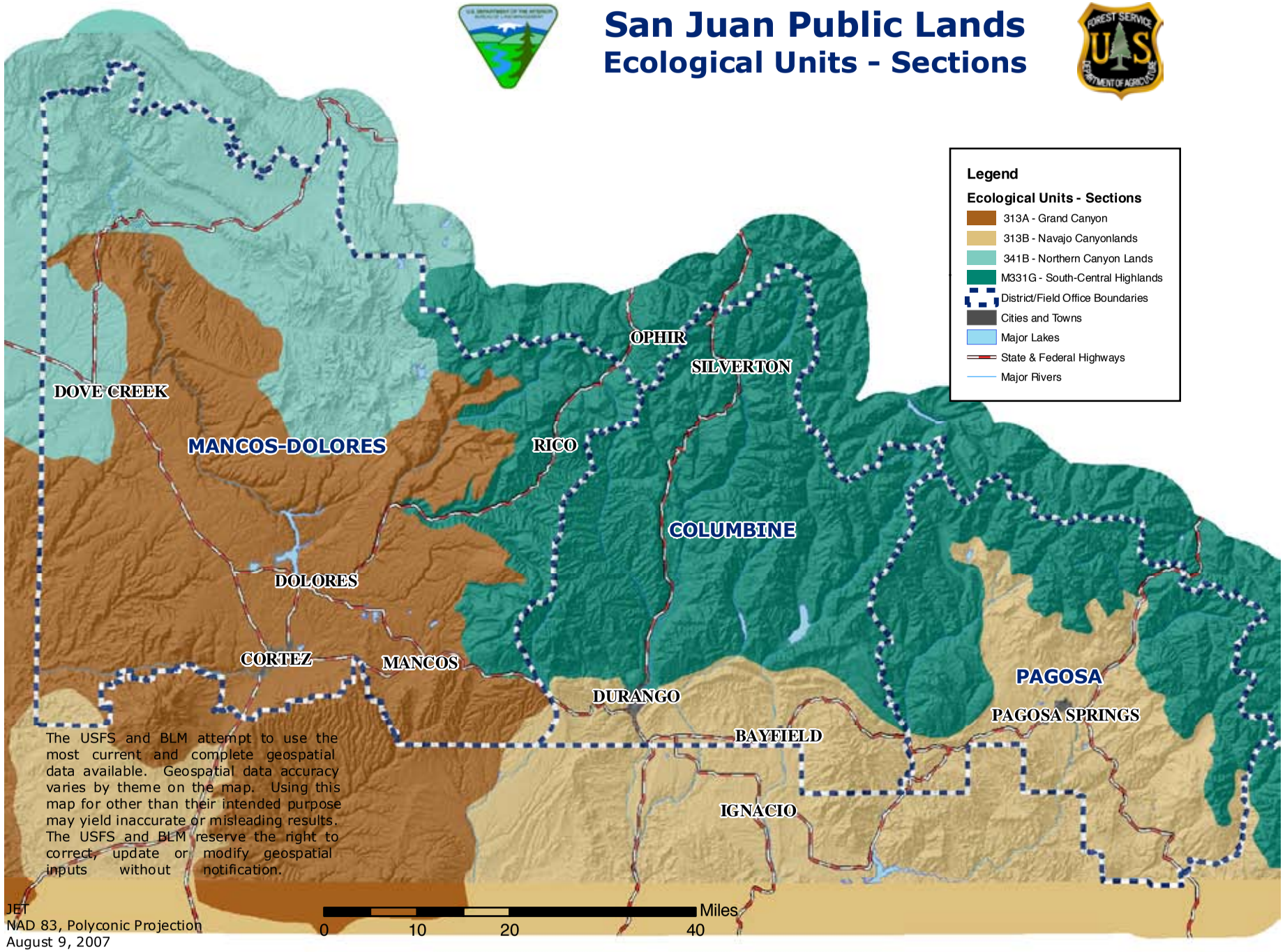
Other outstanding scenic attractions in this geographic area include the West Dolores Road and the Dolores River Canyon. The area includes high densities of significant Puebloan archeological sites (including the Anasazi Archeological District around McPhee Reservoir, and the Mesa Verde Escarpment), as well as more modern mining, railroad, logging, and grazing historical sites.

The Dolores geographic area falls into three distinct ecological units (see Figure 6 - Ecological Units), also referred to as sections. The San Juan Mountains, which are part of the southern Rocky Mountains, in the eastern portion of the geographic area fall into the South-Central Highlands Section. The San Juan Mountains are unusual within the north-south orientation of the Rocky Mountains, in that they are a large mountain range with an east-west orientation. This part of the geographic area includes the Lizard Head Wilderness and several IRAs (including Storm Peak, Ryman, Black Hawk Mountain, and portions of San Miguel and Hermosa). This area has much less human development than the rest of the Dolores Geographic Area, with most of the development occurring on private land in the Dolores River Valley (including the Town of Rico). The area also contains some roads associated with historic, and current, timber harvesting and historic mining (especially near Rico). Big game hunting is popular in the fall. Aspen trees are an important component of the vegetation here, both for their scenic quality and to support the wood product plants in the area.

The northwestern end of the Dolores geographic area, including Dry Creek Basin and Big Gypsum Valley, is in the North Canyonlands Section. This lower elevation country has been extensively roaded for oil and gas development, as well as for uranium exploration and mining. Continued oil and gas development is expected in the Paradox Basin. There is also a high probability of more uranium and vanadium development as a result of a proposed processing facility near Naturita, Colorado. The area is also used for cattle grazing. Two undeveloped portions of this area are the Dolores and McKenna Peak WSAs. Geology in portions of the area consists of sedimentary shale and sandstone formations, and is largely responsible for the area's water quality. Surface water quality is considered poor. It is high in salinity and sediment from surface run-off over highly erosive soils with high salinity content. The area includes the Spring Creek Wild Horse Herd Management Area, and important Gunnison Sage-grouse habitat.

Most of this geographic area is in the Grand Canyon Section. The higher elevations are dominated by ponderosa pine on rolling topography that is more accessible than most of the SJPL. An area of approximately 180,000 acres known as "The Pine Zone" was heavily logged in the early 1900s. This area is still being logged; however, the emphasis is now on restoring more natural conditions. Cattle grazing occurs over most of the area. The area is also popular for big game hunting. The Dolores River Canyon through this area has spectacular scenery, important archeological resources, Wilderness characteristics, unique plant communities and, on years when adequate water is available below McPhee Reservoir, outstanding white-water rafting. The flatter, higher ground within this section is almost all in MA 5s, with a wide range of multiple-use activities occurring. Development and management intensity is much more limited in the canyons.

Figure 6- SJPL Ecological Units



Desired Conditions - Dolores Geographic Area

28.1 Public lands continue to function as "working lands." Collaborative forest health and rangeland management practices reduce wildfire hazards, contribute to the viability of private ranch lands, and sustain ecosystem services (including watershed health and wildlife habitat). The local economy benefits from, and contributes to, sustainable resource management, as well as to the preservation of open space.

28.2 The Dolores River system remains a primary water source in order to meet domestic and agricultural needs while, at the same time, contributing a wide array of recreational, ecological, and aesthetic services. Collaborative efforts support watershed health, in-stream water quality, scenic assets, healthy native and sport fish populations, rafting and flat water boating opportunities, and flow and spill management below McPhee Dam in support of ecological, recreational, reservoir management, and water-rights imperatives.

28.3 A variety of looped single-track and two-track opportunities for motorized and mechanized recreation exist at a range of elevations, offering different levels of difficulty. Motorized and mechanized opportunities are balanced with opportunities for foot and horseback access to areas of relative quiet and solitude at a variety of elevations. Much of the primary access to these areas is shared, based on mutual courtesy and on a strong stewardship ethic that is primarily self-enforced and maintained by individuals and user groups.

28.4 Cultural and historic resources are protected, interpreted, and promoted through an integrated network involving the Anasazi Heritage Center, Canyons of the Ancients National Monument, the Ute Mountain Tribal Park, Mesa Verde National Park, and community visitor centers (including the Cortez Cultural Center, the Galloping Goose Museum, and the Mancos Visitor Center). Residents and visitors are educated and oriented in a manner that enhances and encourages their participation in the enjoyment and stewardship of cultural resources (which are significant contributors to the local economy).

28.5 Scenic vistas, especially along the San Juan Skyway and the West Dolores Road, are protected and enhanced through collaborative efforts with partners (including the Colorado Byways Commission, Colorado State Parks and Recreation, Montezuma Land Conservancy, Office of Community Services, CDOT, Montezuma and Dolores Counties, and the Town of Rico).

28.6 The McPhee Reservoir area is one of the Four Corners' "recreation gems." A viable marina facility is re-established that offers, at a minimum, basic services for those enjoying water sports and fishing. A strong connection exists between the reservoir and the Town of Dolores.

28.7 Abundance and viability of Gunnison Sage-grouse, and their habitat, are achieved through a range-wide perspective on their management that provides a healthy sagebrush steppe ecosystem so that they, and other sagebrush obligate species in the system, benefit. An atmosphere exists of cooperation, participation, and commitment among wildlife managers, landowners, private and public land managers, other stakeholders, and the interested public in the development and implementation of conservation actions that recognize the importance of sustainable local economies as being essential to successful conservation. Gunnison Sage-grouse protection and restoration is enhanced through these cooperative efforts while, at the same time, oil and gas development, mining, recreation, and grazing continue.

28.8 Salinity and sediment contributions of the Dolores River tributaries (including Disappointment Creek, Big Gypsum, Little Gypsum, and Dry Creek) are reduced through an integrated activity approach that achieves reduced erosion and improves land health.

28.9 The unique soils of the gypsum lands in the Dolores geographic area (including Big Gypsum Valley, Little Gypsum Valley, and the Spring Creek area) are intact and have the soil productivity necessary in order to protect the rare biota associated with them.

28.10 The hanging gardens of the Dolores geographic area that provide the habitat for *Erigeron kachinensis, Mimulus eastwoodia,* and *Adiantum capillus-veneris* have the water sources and hydrologic systems necessary in order to support and sustain these rare plant species.

28.11 Ponderosa pine forests on the mesa tops of the Dolores geographic area display more structural diversity than currently exists (including more old-growth stands, more stands with a clumped structure, more stands with large old trees, more snags, and more large dead-and-down wood on the forest floor).

28.12 Large patches of sagebrush shrublands in the Dolores geographic area provide suitable habitat for the Gunnison Sage-grouse, and display a variety of structural conditions (including sagebrush patches with low and high cover and sagebrush patches with short and tall stems).They also display native herbs that are abundant and well-distributed.

28.13 Narrowleaf cottonwood riparian areas and wetland ecosystem communities throughout the low and middle elevations of the Dolores geographic area display moderate to high canopy cover (greater than 20%) of narrowleaf cottonwood trees, including young-, middle-, and old-age classes.

28.14 Willow riparian areas and wetland ecosystem communities throughout the low- and mid-elevations of the Dolores geographic area display moderate to high canopy cover (greater than 20%) of willows, including young-, middle-, and old-age classes.

28.15 Aspen management maintains age and class diversity and promotes healthy stand conditions while, at the same time, continuing to supply a sustainable supply of aspen products to the local and regional industries.

28.16 Timber and fire management is utilized in order to restore stands to an uneven age condition where natural fire regimes and natural processes can occur, and where a multi-aged and multi-cohort forest structure resilient to disturbance is established. Timber management in the ponderosa pine incorporates restoration forestry into commercial timber sales at an appropriate scale that provide support, stabilization, and diversification of the local industry.

The following areas have been identified for their recreation market, niche, and setting. While other resource activities occur within these areas, the desired condition for the recreation experience is specifically described for the following areas:

28.17 ***Boggy Draw area***: A community recreation-tourism market provides local residents a day-use recreation setting for both motorized and non-motorized recreation. Hiking, mountain biking, and OHV-recreation take place on a trail and road network designed to minimize conflicts and to keep user encounters at a low level. Some trails and trailheads may be designed and designated for different types of uses. Access to the area is on main road corridors that provide a gateway to a Semi-Primitive ROS setting. Winter recreation is similar to summer recreation, in that it offers a mix of motorized and non-motorized recreation from developed trailheads. The physical setting appears natural, but active management related primarily to grazing and vegetation management is prevalent. Administration actions in this area emphasize extensive active management while, at the same time, providing for cultural interpretation and conservation education messages. Travel management and additional essential visitor information and services are visible.

28.18 ***Sage Hen area***: A community recreation-tourism market provides local residents a day-use recreation setting with an "informal" ambiance within a setting that is designed to protect cultural resources and provide public services. Administration and development are designed to facilitate a high level of use, as well as easy access to picnicking, short loop hikes, and water. Management of this area emphasizes cultural interpretation and conservation education messages. Motorized access is provided in a way that minimizes effects to the overall pedestrian theme of the area. The setting is predominantly Frontcountry ROS.

28.19 ***Haycamp Mesa area***: A community recreation-tourism market provides local residents a day-use recreation setting for motorized recreation. OHV-use takes place on a trail and road network designed to minimize conflicts and to keep user encounters at a low level. OHV-use, picnicking, dispersed and developed camping, mountain biking, and hiking are the primary recreation activities. A trail and road network exists in order to support this type of recreation, to minimize conflicts, and to keep user encounters at a low level. Access to the area is on main road corridors that provide a developed gateway to Semi-Primitive ROS settings. Winter recreation is similar to summer recreation, in that it offers a mix of motorized and non-motorized recreation from developed trailheads. Management actions are visible within this "working forest landscape" and are primarily the result of forest restoration activities, grazing, travel management actions, and/or essential visitor information and services.

28.20 ***Aspen Loop area***: A community recreation-tourism market provides local residents a recreation setting for motorized recreation. OHV-use takes place on a trail and road network designed to minimize conflicts and keep user encounters at a low level. OHV-use, scenic viewing (especially of fall colors), picnicking, dispersed and developed camping, mountain biking, and hiking are the primary recreation activities. A trail and road network exists in order to support this type of recreation, to minimize conflicts, and to keep user encounters at a low level. Access to the area is on main road corridors that provide a developed gateway to Semi-Primitive recreation settings in the aspen-covered mesas and in the La Plata Mountains. In addition, the Aspen Loop Trail continues to provide a high quality motorized recreation travel corridor. Winter recreation is similar

to summer recreation, in that it offers a mix of motorized and non-motorized recreation from developed trailheads. Management actions in the dispersed areas are visible, but subtle, within this "working forest landscape" and are primarily the result of forest restoration activities, grazing, travel management actions, and essential visitor information and services. The more developed settings of Jersey Jim Lookout and Transfer Campground have additional amenities and resource protection, as appropriate.

28.21 ***Chicken Creek area***: A community recreation-tourism market provides local residents a day-use setting for primarily non-motorized winter recreation close to town, and is part of the Aspen Loop/ Hay Camp Mesa.

28.22 ***Lizard Head Pass area***: A is a strong destination market for several local communities (including Ridgway, Montrose, Telluride, Rico, Dolores, Mancos, and Cortez). This area offers spectacular scenic vistas, visitor interpretation, and a year-round rest stop for travelers on the San Juan Skyway. During winter months, this high pass supports recreation demand (including for backcountry skiers and snowmobiles). Winter parking and access along this Roaded Natural ROS corridor is scarce and in high demand. Winter parking is facilitated by developed trailheads and by Colorado Department of Transportation (CDOT) snowplowing. Essential visitor information and sanitation are provided. Segregation between motorized and non-motorized uses in some locations ensures opportunities for quiet recreation in the backcountry. In summer, this pass serves as a scenic corridor and as a "jump-off" point to the much more remote high alpine backcountry. This pass has scenic viewpoints where people stop to appreciate spectacular views, providing a good opportunity for public interpretation and conservation education.

Dolores Geographic Area Integrated Strategy Plan Components

As detailed in Strategy in Part 2 of the DLMP, the Dolores Geographic Area includes the following special areas and unique landscapes (see Part 2 "Special Areas" for details):

- Wilderness (Lizard Head Wilderness Area)
- BLM Wilderness Study Areas (McKenna Peak, Dolores River, Weber, and Menefee)
- Forest Service Recommended Wilderness Areas (Portions of the Lizard Head and Hermosa IRAs)
- Recommended Wild and Scenic River Segments (the Dolores River from McPhee to Bedrock; Summit Canyon; and Coyote Wash)
- Research Natural Areas (Narraguinnep and Grizzly Peak)
- Areas of Critical Environmental Concern (Big Gypsum)
- Wild Horse Herd Management Areas (Spring Creek)
- Scenic, Historic, and Backcountry Byways (portions of the San Juan Skyway and the Trail of the Ancients Scenic Byway)
- National Recreation and Scenic Trails (Calico and Highline trails)
- Habitat Management Areas (Willow Creek for Sage-Grouse)
- Unique Landscapes (Rico, Dolores River Canyon, Mesa Verde Escarpment, McPhee)
- Structured Recreation Management Areas (Dolores River and Cortez)

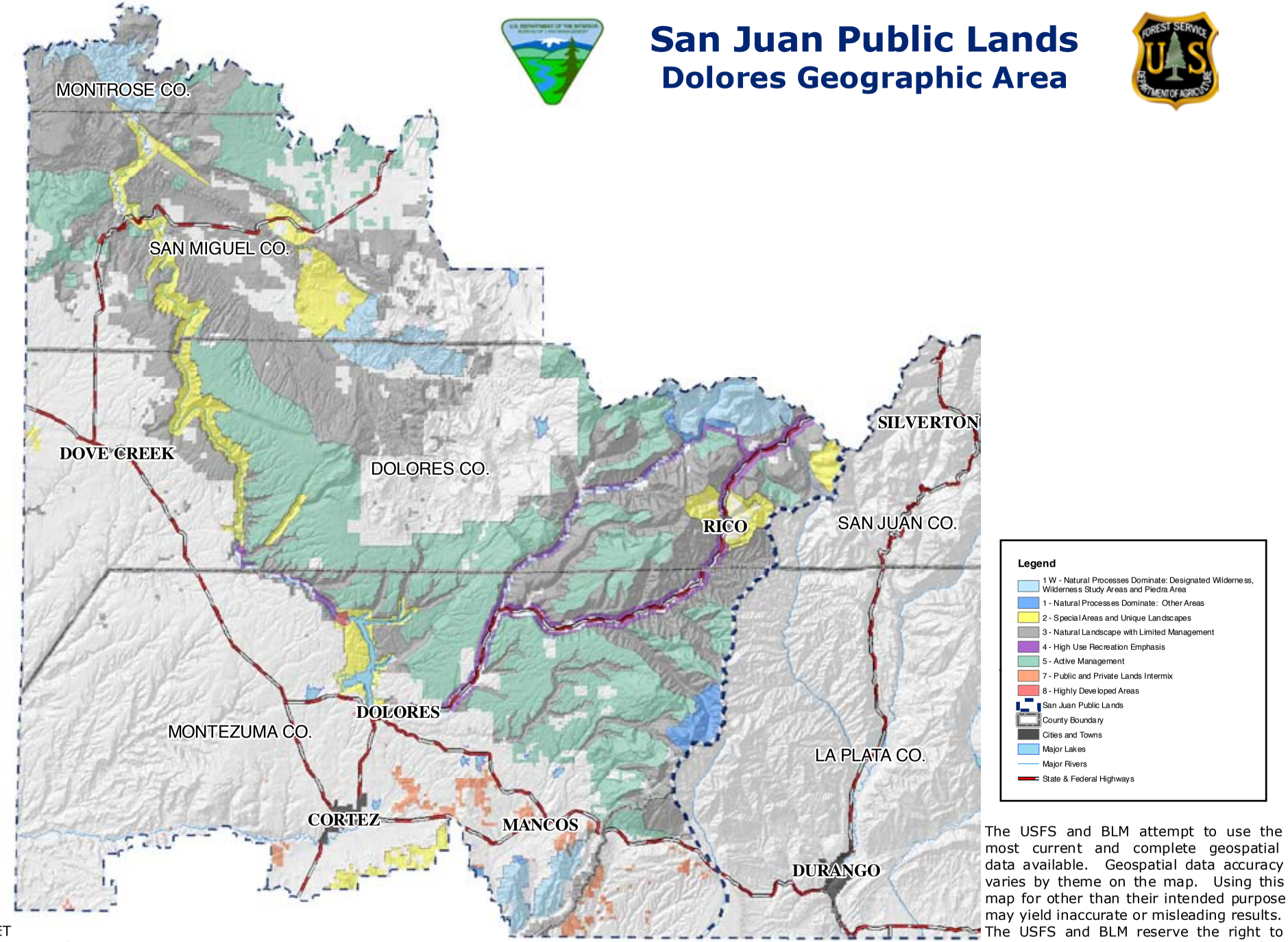
Management Area Composition

Table 4 shows the distribution of MAs within the Dolores geographic area (see Suitability in Part 2 of the DLMP).

Table 4 - Dolores Geographic Area Management Areas Distribution

Management Area	Proposed Plan (Preferred Alternative) (acres)	Percentage of Geographic Area (USFS and BLM Lands)
MA 1 Natural Processes Dominate	83,231	8%
MA 2 Special Areas and Unique Landscapes	93,755	9%
MA 3 Natural Landscapes, with Limited Management	445,777	43%
MA 4 High-Use Recreation Emphasis	28,302	3%
MA 5 Active Management (commodity production in order to meet multiple-use goals)	364,997	35%
MA 7 Public and Private Lands Intermix	17,743	2%
MA 8 Highly Developed Areas	602	>1%
Total	***1,034,406***	***100%***

Figure 7 - Dolores Geographic Area



JET
NAD 83, Polyconic Projection
August 13, 2007

The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The USFS and BLM reserve the right to correct, update or modify geospatial inputs without notification.

COLUMBINE GEOGRAPHIC AREA

Background

The Columbine geographic area forms the central part of the planning area. It is situated primarily in La Plata and San Juan Counties, with some lands in Hinsdale and Archuleta Counties. The Columbine Ranger District/ Field Office consists of approximately 744,860 acres of USFS and BLM lands. The public lands are primarily USFS (92%), except for a significant concentration of BLM lands near Silverton, as well as scattered parcels at lower elevations.

The Columbine Geographic Area shares a northern border with the Uncompahgre and Rio Grande National Forests, and with the BLM Uncompahgre and Gunnison Field Offices. Some BLM land is immediately adjacent to the City of Durango, and additional BLM lands are interspersed with private property near Durango and Bayfield (between the national forest border and the Southern Ute Reservation).

The social center of this geographic area is the City of Durango (with a population of approximately 16,000 people). It is the County Seat for La Plata County (with a population of approximately 47,000 people). It is also the commercial center for the smaller communities of Bayfield (approximately 1,800 people), Ignacio (approximately 775 people), and Silverton (approximately 600 people; which is the San Juan County Seat). Farmington, Aztec, and Bloomfield (New Mexico) have ties to the area as trade centers, support for the oil and gas industry, and as recreation users (especially of La Plata Canyon).

The historic mining town of Silverton is surrounded by BLM public lands. Silverton is situated high in the San Juan Mountains, at an elevation of 9,305 feet. It is one of the main portals to the Alpine Loop Backcountry Byway (others being Ouray and Lake City). Silverton is also the destination for tourists riding the narrow-gauge railroad from Durango. Silverton Mountain, which is on a mix of private and BLM lands, is one of the newest ski areas in the country, and offers some of the most challenging terrain (see the Silverton Special Area in Part 2).

Durango Mountain Resort (DMR) lies between Silverton and Durango, off of Highway 550. DMR has a base area on private land, with some additional base facilities and ski runs permitted on the San Juan National Forest. La Plata and San Juan Counties have approved a Planned Unit Development (PUD) for the private lands adjacent to the DMR, with the potential for over 2,000 resort housing and lodging units supported by substantial commercial development. The likely increase in population adjacent to public lands will result in a need for close coordination on issues (including trail development, fuels reduction, and wildlife habitat).

Significant portions of San Juan Skyway traverse the Columbine geographic area (including as Highway 550 from Durango north to Silverton, and over Red Mountain Pass, which is the boundary with the Uncompahgre National Forest). A lower elevation portion of the Skyway follows Highway 160 from Mancos Hill to Durango. The other towns in the Columbine geographic area are situated at lower elevations (and have milder climates). Durango is situated at the intersection of Highway 550 (which connects with Silverton to the north, and Aztec and Farmington, New Mexico to the south) and Highway 160 (which connects with Cortez to the west, and Pagosa Springs to the east). It is a hub for the area. Durango is one of the more mature tourism towns in Colorado, with a historic downtown. It is supported by tourism related to the Durango-Silverton Narrow Gauge Railroad, the Animas River, DMR, Mesa Verde National Park, and the Weminuche Wilderness Area. Durango is one of a handful of towns that can make a good claim to the title “mountain bike capital of the world.” Durango is also home to Fort Lewis College. It is the governmental, commercial, and entertainment center for southwestern Colorado. Residents of Durango have easy access to USFS and BLM lands within the planning area.

The Grandview Area, which is near Durango, is being annexed to the City of Durango (with substantial real estate and commercial development expected for this area during the life of this LMP). Durango is interested in acquiring BLM lands in this area in order to provide better access to the new hospital and adjacent developments. Acquisition of some of the adjacent BLM lands under the Recreation and Public Purposes Act is under consideration. BLM-administered lands in the Grandview Area are currently managed under a Coordinated Resource Management Plan (2000), offering a co-emphasis on recreation (non-motorized trails), wildlife winter habitat, and sand and gravel production. A review and possible modification of the Grandview Coordinated Resource Management Plan is expected in the near future (which would address new management challenges anticipated from on-going development adjacent to the BLM lands). BLM-administered lands in the Grandview Area currently provide an extensive trail network that is immediately adjacent to Durango (popular for hiking, horseback riding, and mountain biking). Substantial partnership-based wildlife-habitat improvement projects have been carried out on the property. Recreation and mineral development are to be designed in a manner that maintains winter wildlife habitat effectiveness (including closure to public and recreation access during some winters). The land also contains a very significant pre-historic cultural landscape and is the last representative of Pueblo I occupation on public lands in the Durango area.

Bayfield has been a bedroom community to Durango, but is developing a significant business infrastructure of its own which is expected to grow in the coming years.

The main river systems in the Columbine geographic area are the Animas (with headwaters above Silverton) and the Los Pinos, or Pine (with headwaters in the Weminuche Wilderness). Both rivers drain into the San Juan River in northern New Mexico, which then joins the Colorado River. Water diversion for agriculture and municipal use is important on both rivers. Both river systems also contain relatively pristine stretches that are valued for their scenery and recreational opportunities.

Vallecito Reservoir is in this geographic area; it is the most developed lakeshore resort and recreation area in southwestern Colorado. Above Vallecito Reservoir, and nearby Lemon Reservoir, are access points to the Weminuche Wilderness. The Pine River flows south from Bayfield through the Town of Ignacio, which is a tri-ethnic community that serves as the headquarters of the Southern Ute Tribe. The Southern Ute Tribe has combined decades of revenues from energy production with excellent management in order to become one of the wealthiest tribes in the country.

The Columbine geographic area falls primarily in the South-Central Highlands Section, with only the southernmost low elevation lands in the Navajo Canyonlands Section. The higher country, part of the San Juan Mountains, is characterized by steep, rugged terrain with predominantly spruce-fir, aspen, and mixed-conifer forests. Much of the area to the east of Highway 550 and the Animas River is in either the Weminuche Wilderness or in the Piedra Area (designated in the 1993 Colorado Wilderness Act to be managed so as to preserve its Wilderness character). Inventoried Roadless Areas include Baldy, Florida River, Runlett Park, and smaller areas adjacent to the Weminuche Wilderness Area and the Piedra Area.

The Missionary Ridge Fire in 2002 burned approximately 73,000 acres in the area north of Durango (east of Highway 550), over to the western edge of the Piedra Area (east of Vallecito Reservoir). Early rehabilitation efforts have gone well; however, restoration would continue to be a concern during the life of the LMP. Continued cooperation with local communities (including Vallecito) that were greatly affected by the fire and its aftermath will continue to be a management goal.

Much of the high country west of Highway 550 is unroaded, including the Hermosa area (which is the largest roadless area outside of designated Wilderness in Colorado, consisting of approximately 148,139 acres). The Hermosa Trail, which parallels the main stem of Hermosa Creek, is considered one of the top mountain bike rides in the country. The portion of the Hermosa Creek west of the trail is managed as a MA 1, with much it recommended for inclusion in the National Wilderness Preservation System. The eastern portion, including the trail, is managed as MA 3. Although this portion includes several popular motorcycle routes, non-motorized recreation is emphasized for most of the Hermosa area. The San Miguel is another large roadless area (a significant portion of which is to be managed as a MA 1, including Engineer Mountain).

The lower elevation USFS and BLM lands in the southern end of the Columbine geographic area are part of the Navajo Canyonlands Section. This area is characterized by low- to mid-elevation mountains, mesas, hills, and valleys with mild to moderate winters and predominantly mixed-confer, ponderosa pine, pinyon-juniper, and mountain grassland vegetation.

The Navajo Canyonlands hold substantial coal and gas resources. Coal-bed methane reserves exist in large quantities in the northern San Juan Basin area (including USFS and BLM lands south of Highway 160 on both sides of the La Plata County and Archuleta County border). Most of this area was leased for oil and gas development prior to the development of this DLMP, with additional development authorized by the Northern San Juan Basin Coalbed Methane EIS ROD in 2007. (Direction for the area, consistent with that ROD, is found in the HD Mountains Special Management Area discussion in Part 2 of the DLMP.)

The vast amount of undeveloped land that provides a setting for backcountry recreation is a primary reason people visit this area. Additionally, the area contains some unique access into high-elevation remote areas (including the Durango-Silverton Narrow Gauge Railroad's access to Weminuche Wilderness trailheads, and historic mining roads into the high-elevation mountains around Silverton and in La Plata Canyon). Compared to the other geographic areas, the Columbine Geographic Area has the most trailheads providing access into the backcountry. Given local population, visitors, tourism amenities, access to the backcountry, and the proximity of other regional destinations, the Columbine Geographic Area experiences the greatest amount of recreation users and resulting recreation management challenges.

The economies of the communities in the Columbine geographic area have evolved towards an increasing emphasis on amenity migration (the movement of people for pleasure rather than for economic reasons), recreation tourism, and resort development; but still have ties to multiple-use management. The historic connections of La Plata County to ranching, hunting, and public land grazing are of continuing importance as the area struggles to protect the scenic, wildlife, and cultural aspects that ranching and Outfitting/Guiding play in the overall appeal of the area. Although the historic ties to sawmilling have substantially diminished, the Missionary Ridge Fire was a reminder of the continued need for forest management, and the economies that help support forest management on public and private lands. The fact that La Plata County is one of the top energy producing counties in Colorado also presents multiple-use management challenges.

Desired Conditions - Columbine Geographic Area

29.1 The full spectrum of outdoor recreational opportunities, ranging from wilderness settings to in-town access, is provided. This is the result of a collaborative process for the allocation and sharing of uses and stewardship responsibilities designed to protect the quality of the human experience and health of the natural environment.

29.2 Extensive heritage resources remain central to the area's economy, culture, and recreational experience. Heritage resources (including the Silverton Historic Mining District), as well as the natural settings that make these resources so unique, are protected and sustainable.

29.3 Destination and resort development, especially along the river corridors, is planned, developed, and managed in order to minimize their impact on the health of surrounding landscapes, natural resources, and communities. This is the result of sustained cooperation from the land management agencies, interested citizens; State and local agencies; and developers.

29.4 Oil and gas development is planned, conducted, and reclaimed to a standard commensurate with the ecological, aesthetic, and human values attached to the land where the extraction is occurring.

29.5 Opportunities for research, particularly applied research, are fully developed with local partners (including Fort Lewis College, the Mountain Studies Institute, and the Center for Snow and Avalanche Research, as well as other interested groups and institutions)

29.6 Winter sports conflicts are reduced through cooperative efforts between motorized and non-motorized advocates. Some areas may emphasize one use over another, but many potential problems are resolved through agreements on locations of parking areas, grooming, and route locations. High-quality opportunities are available for both snowmobiling and backcountry skiing.

29.7 The wetlands and fens associated with the upper Pine River and Flint Creek watersheds in the Columbine geographic area (where a high density of fens occur), are protected and have the water sources and hydrologic systems necessary in order to support and sustain these ecosystems.

29.8 The wetlands and fens associated with the Lime Creek watershed and the Mountain View Crest and Molas Lake areas in the Columbine geographic area (where high concentrations of wetlands and potential fens occur) have the water sources and hydrologic systems necessary in order to support and sustain these ecosystems.

29.9 The Missionary Ridge wildfire area in the Columbine geographic area displays less bare soil and erosion, and a higher abundance and distribution of native herbaceous plant species.

29.10 The landscapes associated with the intensive gas development in the Columbine geographic area display minimal fragmentation. The major vegetation types associated with those lands, particularly the ponderosa pine forests, pinyon-juniper woodlands, and mountain shrublands, display compositions and structures similar to those that occurred before the development.

The following areas have been identified for their recreation market, niche, and setting. While other resource activities occur within these areas, the desired condition for the recreation experience is specifically described for the following areas:

29.11 ***Engineer Mountain area***: This area offers quick access to an undeveloped recreation-tourism market close to the San Juan Skyway. This area has a Primitive ROS setting in a scenic high alpine environment, offering access to Engineer Mountain (12,968), and links to the Colorado Trail and to the Coal Bank and Molas Pass areas. Developed trailheads connect to remote roadless areas where solitude and a natural environment can be experienced. Hiking, mountain biking, and equestrian uses are popular activities for visitors who appreciate the rugged narrow trails winding through the high, open country. Day-use predominates, although some backpacking occurs. Guided hunting parties, supported by packhorses, camp during hunting season. Essential services are provided at entry points on the San Juan Skyway (including sanitation, parking, and visitor information).

29.12 ***East Missionary Ridge area***: This community recreation-tourism market provides local residents a day-use recreation setting for non-motorized recreation. This area supports Semi-Primitive ROS settings for people in Durango, as well as for people from nearby subdivisions who enjoy easy access to non-motorized recreation (including hiking, scenic viewing, horseback riding, wildlife watching, as well as a quick escape from the urban environment for exercise and fresh air). Facility development is limited to essential sanitary and informational services, as well as to parking and travel management. The environment is natural-appearing, except for developed communication sites.

29.13 ***Saul's Creek area***: This community recreation-tourism market serves as part of Bayfield's "backyard." The recreation settings within these areas support day-use primarily for nearby community residents who enjoy easily accessed motorized and non-motorized Semi-Primitive ROS recreation on designated routes (including car camping, firewood gathering, hunting, hiking, mountain biking, cross-country skiing, and wildlife watching). Facility development is limited to essential sanitary and informational services, as well as to parking and travel management. Numerous old roads serve as access and travel ways for visitors. Although the sites and sounds of nature predominate, visitors may also experience a "working forest" atmosphere (including evidence and aspects of vegetation management, oil and gas development, grazing, and fuelwood gathering).

29.14 ***La Plata Canyon area***: This destination recreation-tourism market primarily serves people from the Durango, Mancos, Hesperus, Cortez, and Farmington areas who frequent the area to enjoy the predominantly natural environment. The setting for this area is a Roaded Natural ROS that supports day use and overnight use. Developed campgrounds and designated dispersed campsites are rustic and low-key within a dramatic canyon environment (offering frequent visible evidence of the old mining district). Evidence of management (including signs and structures) is frequent in order to address private property, sanitation, and resource protection concerns. Motorized use is primarily for scenic viewing, accessing pedestrian activities (including fishing, hiking, and biking), or for just "passing through" in order to get to the high country. Road design and maintenance is at a level that keeps speeds low and safe for pedestrians.

29.15 ***Beaver Meadows area***: This community recreation-tourism market provides local residents a day-use recreation setting for both motorized and non-motorized recreation. The recreation setting within this area is Frontcountry ROS, primarily for local community visitors who enjoy easily accessed motorized and non-motorized recreation on designated routes. Activities may include car camping, ATV- and OHV-use, fire wood gathering, hunting, mountain biking, and wildlife watching. Facility development is limited to essential sanitary and informational services, as well as to parking and travel management. Numerous old roads serve as access and travelways for visitors. Designated trails provide miles of motorized opportunities. Winter recreation includes snowmobiling, snowshoeing, and skiing on groomed trails. Although the sites and sounds of nature predominate, visitors may also experience a "working forest" atmosphere (including evidence and aspects of vegetation management, grazing, and wood gathering).

29.16 ***Hermosa area***: The desired condition for this large, and primarily roadless, Semi-Primitive ROS area is to maintain a recreation setting that offers ample non-motorized recreation and limited motorized recreation for nearby communities, and a destination recreation-tourism market, within a natural appearing environment, for visitors. Hiking, mountain biking, fishing, hunting, horseback riding, and OHV-use take place on a trail network designed to minimize conflicts and to keep user encounters at a low level. Some trails and trailheads may be segregated for different types of uses. Access to the area is on developed road corridors that provide a gateway to more primitive recreation settings. Natural quiet, solitude, and a sense of remoteness are still found within the Hermosa backcountry. Management actions are visible, but subtle, and are primarily the result of forest restoration, travel management, and essential visitor information services. Winter recreation is limited, due to restricted access.

Columbine Geographic Area Integrated Strategy Plan Components

As detailed in "Strategy" in Part 2 of the DLMP, the Columbine geographic area includes the following special areas and unique landscapes (see Part 2 "Special Areas" for a full description):

- Wilderness (Weminuche Wilderness)
- BLM Wilderness Study Areas (Whitehead Gulch and West Needles)
- Forest Service Recommended Wilderness Areas (a portion of the Hermosa IRA and the Elk Park portion of the Weminuche Adjacent IRA).
- Recommended Wild and Scenic River Segments (Animas River form Bakers Bridge to Sultan Creek; Mineral Creek; South Fork of Mineral Creek; Hermosa Creek and tributaries; Los Pinos, and tributaries, above Vallecito Reservoir)
- Research Natural Areas (Electra and Hermosa)
- Botanical Areas: (Chatanooga and Burro Bridge Iron Fens)
- Habitat Management Areas (Perins Peak)
- Archeolgocial Areas (Falls Creek)
- Scenic, Historic, and Backcountry Byways (portions of the San Juan Skyway and the Alpine Loop Backcountry Byway)

- National Recreation and Scenic Trails (portions of the Continental Divide National Scenic Trail and the Colorado Trail)
- Unique Landscapes (Silverton and HD Mountains)
- Structured Recreation Management Areas (Durango and Silverton)

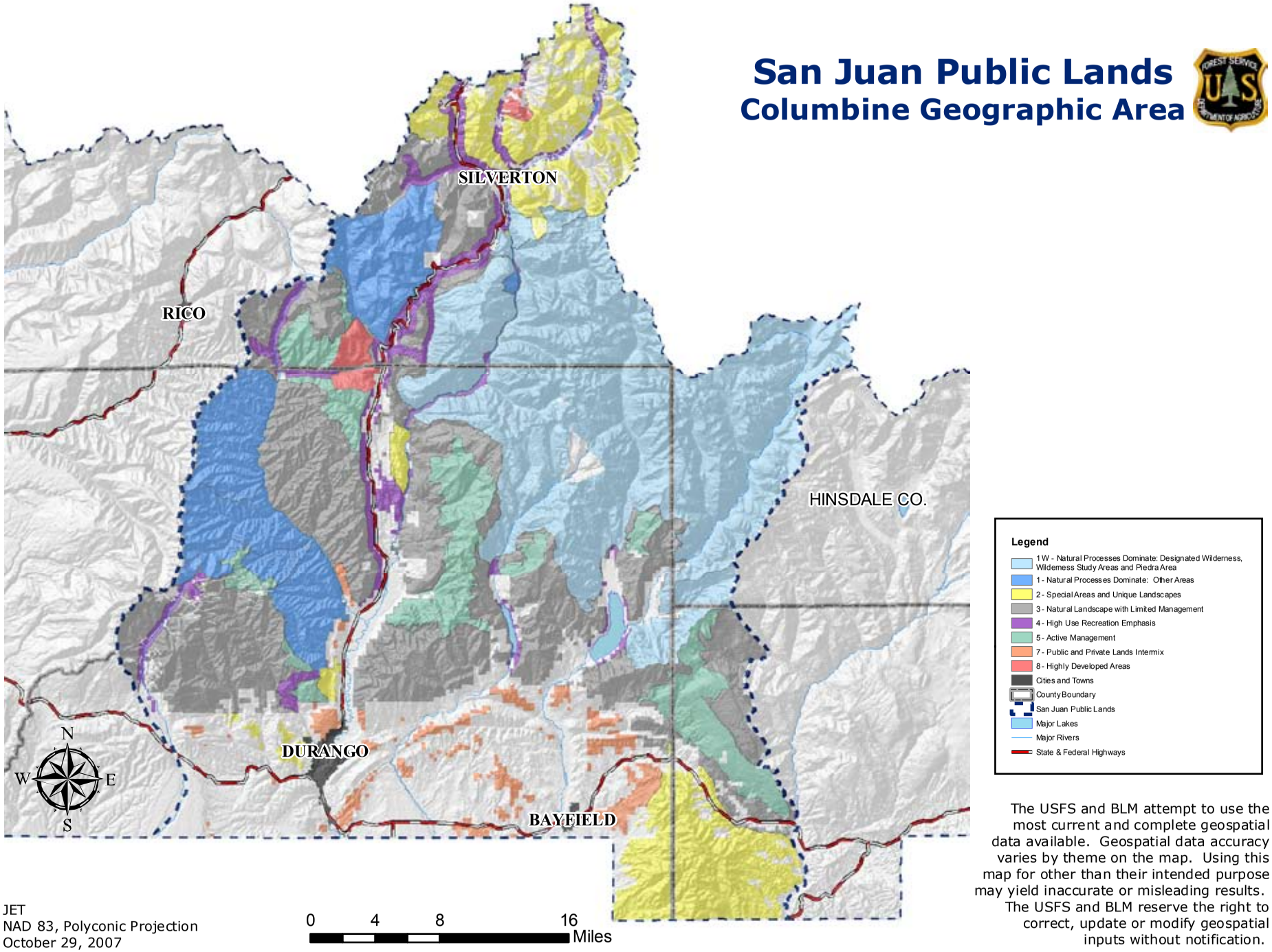
Management Area Composition

Table 5 shows the distribution of MAs within the Columbine Geographic Area (see "Suitability" in Part 2 of the DLMP for more discussion of MAs).

Table 5 - Columbine Geographic Area Management Areas Distribution

Management Area	Proposed Plan (Preferred Alternative) (acres)	Percentage of Geographic Area (USFS and BLM Lands)
MA 1 Natural Processes Dominate	316,969	42%
MA 2 Special Areas and Unique Landscapes	90,359	12%
MA 3 Natural Landscapes, with Limited Management	209,938	28%
MA 4 High-Use Recreation Emphasis	38,794	5%
MA 5 Active Management (commodity production in order to meet multiple-use goals)	61,908	8%
MA 7 Public and Private Lands Intermix	21,872	3%
MA 8 Highly Developed Areas	6,793	1%
Total	***746,633***	***100%***

Figure 8 - Columbine Geographic Area



JET
NAD 83, Polyconic Projection
October 29, 2007

The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The USFS and BLM reserve the right to correct, update or modify geospatial inputs without notification.

PAGOSA GEOGRAPHIC AREA

General Location and Description

The Pagosa Geographic Area is the easternmost geographic area in the San Juan Public Lands. It is bounded by the Continental Divide (the boundary with the Rio Grande National Forest) on the north and on the east. It is predominantly situated in Archuleta, Hinsdale, and Mineral Counties, with some lands in Rio Grande and Conejos Counties. Some of the USFS lands, and, to a lesser extent, BLM lands at the southern end are adjacent to the Southern Ute Reservation. The Pagosa Ranger District/Field Office consists of approximately 586,431 acres of USFS and BLM lands. These are primarily USFS, with approximately 5,507 acres of BLM lands in scattered parcels in the southern end of the area.

The social center of the geographic area is the Town of Pagosa Springs (with a population of approximately 1,620 people). Although Pagosa Springs is the only incorporated town in the geographic area, much of the population of Archuleta County (with a population of approximately 10,000 people), is in low-density residential and second-home enclaves, most notably in the Pagosa Lakes Area. The geographic area includes significant acres of Hinsdale and Mineral Counties, but the towns, as well as almost all of the population of those counties, are situated north of the Continental Divide and the Weminuche Wilderness Area (with little social connection and limited road access to the residents and businesses in the Pagosa geographic area).

Pagosa Springs sits at the intersection of Highway 160 (before the road turns north to head over Wolf Creek Pass) and Highway 84 (which heads south into northern New Mexico). Pagosa Springs was historically a compact sawmill and ranching town, with a Hispanic and pioneer Anglo ranching and sawmilling culture supported by productive forest land and livestock grazing. The area has long-standing ties with people coming out of Texas and New Mexico in the summer (to where it's cool and green), and from around the county in the fall (many to hunt big game). Besides the pleasant climate, the area is known for outstanding scenery. Many winter visitors to Wolf Creek Ski Area, as well as backcountry skiers and snowmobilers, stay in Pagosa Springs (rather than in South Fork, which is on the other side of Wolf Creek Pass).

On a percentage basis, Archuleta County is the fastest growing county in southwestern Colorado. Amenity migration and second-home development began in the 1970s (with the development in the Pagosa Lakes area west of Pagosa Springs) and now fills most of the triangle of developable land between Highway 160, the Piedra Road, and the forest boundary east of Martinez Creek. Similar development has pushed against the USFS boundary to the west of Pagosa Springs and north of Highway 160. Much of the USFS-and BLM-administered lands around Pagosa Springs are in MA 7s (Public and Private Lands Intermix), which reflects this development. In addition to fire-risk reduction in these areas, development of trails and recreation opportunities and the protection of wildlife habitat (especially winter range) are important.

The main river systems in this geographic area are the Piedra River (which has headwaters in the Weminuche Wilderness Area) and the San Juan River (with the headwaters of the West Fork of the San Juan beginning north of Pagosa Springs in the Weminuche Wilderness Area; and the East Fork of the San Juan beginning northeast of Pagosa Springs in the South San Juan Wilderness Area). These rivers, and their tributaries, are important for recreation and scenic quality, as well as for irrigation and domestic water supplies. They also support a diverse mix of aquatic habitats, and riparian and wetlands ecosystems that contribute to the ecologic and economic values of the area.

Approximately 85% of the public lands in the Pagosa geographic area are in the South-Central Highlands Section (including portions of the Weminuche Wilderness Area, the South San Juan Wilderness Area, and the Piedra Area). The Treasure Mountain and Turkey Creek IRAs (which lie between the Weminuche and the South San Juan Wilderness Areas) contain important linkages and corridors for wildlife movement. Other IRAs include Graham Peak and areas adjacent to the Weminuche and the South San Juan Wilderness Areas, and the Piedra Area. These areas are managed, for the most part, in order to preserve their undeveloped character.

At middle and lower elevations in this geographic area, there is an extensive network of roads, primarily left by historical logging. These roads support many forms of dispersed recreational use and camping, and are heavily used during hunting season. Restoration-oriented logging is expected in the ponderosa pine and mixed-conifer forest found in this area. This area receives more precipitation than most of the southwest and has good growing conditions for timber. Large trees, including aspen, are common.

Having moderate climates, the lower elevation mountains, mesas, and valleys are dominated by mountain grasslands, and mixed-conifer, ponderosa pine, and pinyon-juniper woodlands (in the Navajo Canyonlands Section where human settlement has evolved). Much of the human development in the Pagosa geographic area is at the interface with forest lands, presenting wildfire hazard mitigation challenges that are being actively addressed through county policy, community wildfire protection planning, and mitigation.

A related challenge is the network of access roads connecting Highways 160 and Highway 84 to the San Juan Public Lands. These roads provide access to residential subdivisions and other private in-holdings. They also provide recreation access to public lands for local visitors, as well as for visitors from out of the area. The pressure on these roads presents maintenance demands and costs that must be worked out collaboratively among local, State, and other Federal agencies; property owners; and public lands users. Growth in the Pagosa Geographic Area has reached a point where more domestic water and water storage are needed in order to meet increasing demand. This requires continued cooperation, in terms of exploring alternatives that involve storage and/or diversion facilities located on Federal lands (where protecting the ecological integrity of affected stream channels is mandated).

The Pagosa Geographic Area's most striking heritage resource is the Chimney Rock Archeological Site. The user-supported interpretive tours, special events, and Visitor Center at this unique pre-Puebloan site are conducted and staffed by a very active group of volunteer citizens.

Desired Conditions - Pagosa Geographic Area

30.1 Management activities maintain or enhance the ecological sustainability and integrity of the area. The demands of residents and users are balanced with the protection of watersheds, wildlife habitat, vegetation, soil productivity, and undisturbed natural areas.

30.2 The Pagosa Geographic Area is a destination for hunters, hikers, and motor vehicle enthusiasts. It promotes partnerships and responsible stewardship in all recreational uses of the public lands. Collaboration between the USFS and BLM, and user groups is a primary resource for building and maintaining the recreational facilities, and for protecting the health of the land.

30.3 The local economy is supported and diversified by SJPL activities and programs (including maintaining roads, facilities, and campgrounds; supporting stewardship and partnerships; and providing a wide spectrum of recreation and tourism opportunities).

30.4 The USFS and BLM recognize the needs of the area's growing population of residents and visitors. SJPL facilities (including roads, bridges, campgrounds, and trailheads) are designed and maintained to the proper standards for safe and efficient access to public lands.

30.5 The SJPLC actively cooperates with local governments, residents, and land users in order to maintain and enhance the safety and enjoyment of the public lands. This is accomplished through the protection of scenery, the mitigation of WUI fire danger, and land-ownership adjustments.

30.6 White fir is less abundant in the warm-dry and cool-moist mixed-conifer forests of the Pagosa geographic area. The rare bristlecone pine forests that only occur in the Pagosa geographic area are protected and sustainable.

The following areas have been identified for their recreation market, niche, and setting. While other resource activities occur within these areas, the desired condition for the recreation experience is specifically described for the following areas:

30.7 ***Williams Creek Reservoir Developed Corridor area***: This area serves a community/designation recreation-tourism market providing local residents and visitors a setting for both motorized and non-motorized recreation. The desired condition for this recreation corridor is a Roaded Natural ROS setting that supports day and overnight recreation use for visitors who are seeking a natural environment. During hunting season, this area serves a wider destination market (including visitors from many western states). Developed campgrounds and designated dispersed campsites are rustic and low key, complementing the spectacular backdrop of the mountains of the Weminuche Wilderness. During hunting season, this corridor reaches capacity and experiences a high use and mix of recreation (including hunting, hiking, fishing, picnicking, and camping). This area also serves as a primary access point into the Weminuche Wilderness. Visitor information, parking, and other essential services support access to day and overnight Wilderness recreation. Road design and road maintenance is at a level that keeps speeds low to safely accommodate pedestrians. During winter, this corridor offers motorized and non-motorized winter recreation from a plowed road-head (including snowmobiling, skiing, and snowshoeing).

30.8 ***Turkey Springs, Mill Creek, Jackson Mountain, Buckles Lake areas***: These areas serve a community recreation-tourism market as part of Pagosa Spring's "backyard," providing local residents a day-use recreation setting for both motorized and non-motorized recreation. The settings within these areas support day-use for those who enjoy easy access to hiking, mountain biking, cross-country skiing, and wildlife watching in a predominantly natural environment. The setting has aspects of both Semi-Primitive ROS and Roaded Natural ROS (depending, primarily, on the proximity to developed roads). Management actions are visible, but subtle, within this "working forest landscape" (offering evidence and aspects of forest restoration activities, including grazing, travel management actions, and essential visitor information and services).

30.9 ***First Fork of the Piedra River area***: This area is a recreation-tourism market for local residents from Durango, Bayfield, and Pagosa Springs in a Semi-Primitive ROS setting that supports day and overnight recreation use for visitors seeking a natural environment. During hunting season, this area serves a wider destination market (including visitors from many western states.) Camping is dispersed, rustic, and low-key. During hunting season, this corridor experiences high use and a mix of recreation (including hunting, hiking, fishing, picnicking, and camping). This area has two developed trailheads offering access into the primitive Piedra Area. Road design and the low level of maintenance keeps speeds low to safely accommodate pedestrians. During winter, this corridor offers a low level of motorized and non-motorized winter recreation from the road-head (including snowmobiling, skiing, and snowshoeing).

30.10 ***Wolf Creek Pass area***: This is a strong destination market for several local communities (including South Fork, Pagosa Springs, and communities in the San Luis Valley).This area offers spectacular scenic vistas, visitor interpretation, and a year-round rest stop for travelers on U.S. Highway 160. During winter months, this high pass supports recreation demand (including downhill skiing in the Wolf Creek Ski Area, backcountry skiing, and snowmobiling). Winter parking and access along this Roaded Natural ROS corridor is scarce and in high demand. Winter parking is facilitated by developed trailheads and by CDOT snowplowing. Essential visitor information and sanitation are provided. Segregation between motorized and non-motorized uses in some locations ensures opportunities for backcountry quiet. In summer, this pass serves as a scenic corridor and as a jump-off to the much more remote high alpine backcountry. This pass has scenic viewpoints where people stop to appreciate spectacular views; therefore, the SJPLC takes advantage of the opportunity for public interpretation and conservation education.

Pagosa Geographic Area Integrated Strategy Plan Components

As detailed in "Strategy" in Part 2 of the DLMP, the Pagosa Geographic Area includes the following special areas and unique landscapes (see Part 2 "Special Areas" for a full description):

- Wilderness (Weminuche and South San Juan)
- Other Congressional Designations (Piedra Area)
- Forest Service Recommended Wilderness Areas (portions of the Turkey Creek, Monk Rock, and Weminuche Adjacent IRAs).
- Recommended Wild and Scenic River Segments (The Piedra River, from Highway 160 to the Forks; East Fork of the Piedra, north of the Wilderness boundary; middle Fort of the Piedra; and West Fork of the San Juan River).
- Archeological Areas (Chimney Rock)
- Research Natural Areas (Williams Creek, Martinez Creek, Hidden Mesas, Navajo River, Piedra, Porpyry Gulch)
- Botanical Areas (O'Neal Hill, site of the globally rare Pagosa Springs bladderpod, *Lesquerella pruinosa*).
- National Recreation and Scenic Trails (portions of the Continental Divide National Scenic Trail).

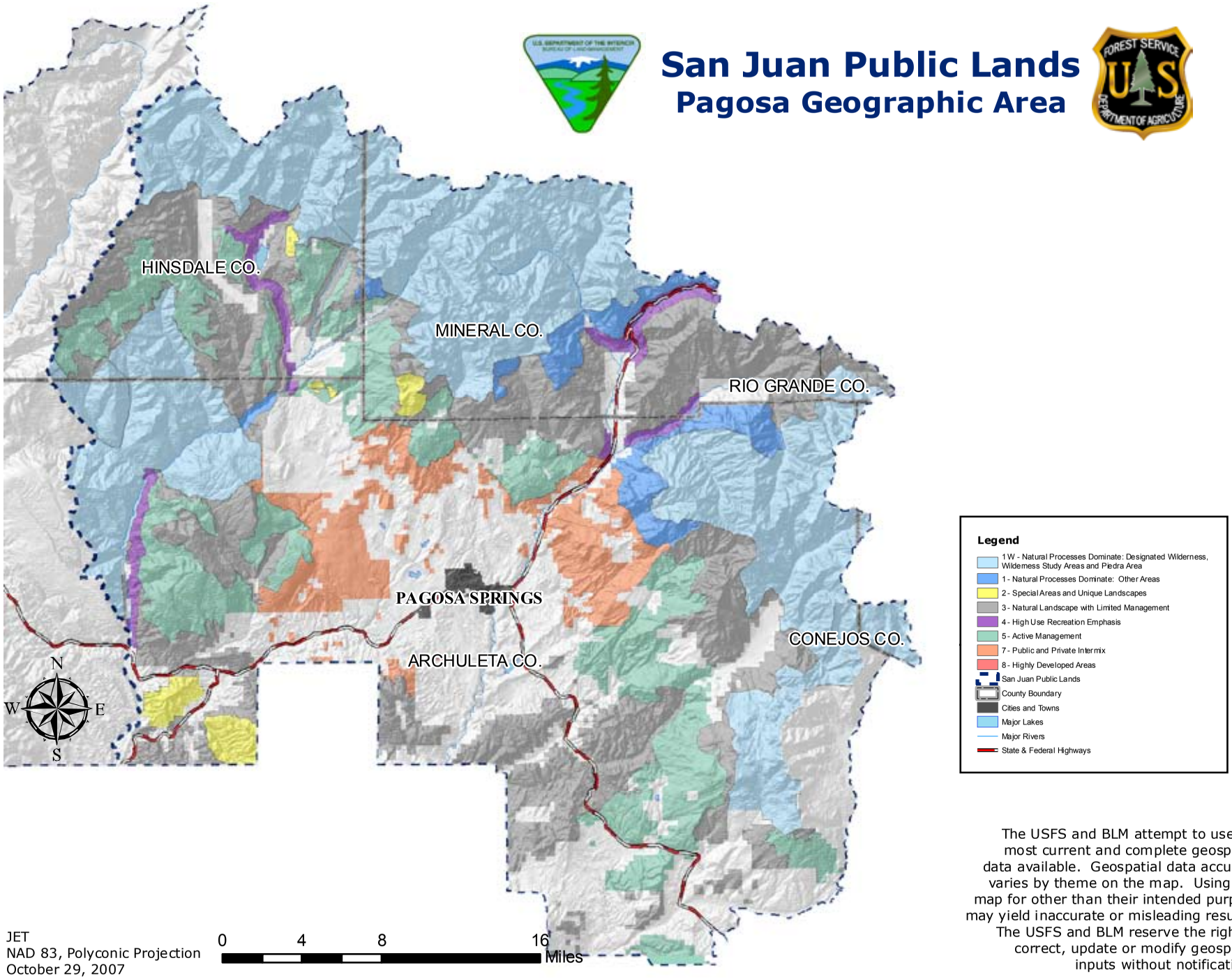
Management Area Composition

Table 6 shows the distribution of MAs within the Pagosa Geographic Area (see Suitability in Part 2 of the DLMP for more discussion of MAs).

Table 6 - Pagosa Geographic Area Management Areas Distribution

Management Area	Proposed Plan (Preferred Alternative) (acres)	Percentage of Geographic Area (USFS and BLM Lands)
MA 1 Natural Processes Dominate	252,107	43%
MA 2 Special Areas and Unique Landscapes	9,383	2%
MA 3 Natural Landscapes, with Limited Management	169,450	29%
MA 4 High-Use Recreation Emphasis	12,457	2%
MA 5 Active Management (commodity production in order to meet multiple-use goals)	102,509	17%
MA 7 Public and Private Lands Intermix	42,141	7%
MA 8 Highly Developed Areas	0	0%
Total	***252,107***	***100%***

Figure 9 - Pagosa Geographic Area



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