

The Brunot Agreement

The Brunot Agreement, ratified by Congress in 1874, withdrew over 5,000 square miles in the mountains of southwest Colorado from the 1868 Ute Reservation. The agreement, entered into between the United States (as represented by Felix Brunot) and the Ute Indians in Colorado, was passed into law (18 Stat., 36) by the House of Representatives and the Senate of the U.S. Congress on April 29, 1874 (after Congress decided in 1871 that the United States would no longer make treaties with Native American tribes, yet continued to interact with Native American tribes in much the same manner through executive orders and agreements enacted as statutes). Under the “reserved rights doctrine,” hunting rights on reservation lands relinquished by the Utes were retained; that is, the tribes retained such rights as part of their status as prior and continuing sovereigns. Article II of the Bruno Agreement specified that “the United States shall permit the Ute Indians to hunt upon said lands so long as the game lasts and the Indians are at peace with the white people.” The Ute Mountain Ute Tribe’s hunting rights were acknowledged when the tribe sued the State of Colorado for their historical hunting rights in 1978. The rights were granted to the tribe under a consent decree that gave enrolled members of the Ute Mountain Ute Tribe the right to hunt deer and elk in the Brunot area for subsistence, religious, or ceremonial purposes. The consent decree specified that tribal members may hunt deer and elk without a state license year-round, providing that they obtain a tribal hunting permit. In 2013, the Ute Mountain Ute Tribe re-negotiated this agreement with the State of Colorado to include the Tribe’s fishing rights and the right to hunt a certain number of black bears, moose, mountain goats, big horn sheep and mountain lions, in addition to the existing take of elk and mule deer within the Brunot area. Other game animals may be hunted without a license and without bag limits, but only during hunting seasons established by CPW. In 2008, the Southern Ute Indian Tribe signed an agreement with the State of Colorado which reinstated their hunting and fishing rights within the Brunot area. The TRFO will continue to ensure that the hunting and fishing rights of the 1873 Brunot Agreement are upheld on public lands under its management jurisdictions. In exercising their Brunot hunting rights, the Ute Mountain Ute and Southern Ute tribal members are required to adhere to federal policy and regulations designed to protect natural and cultural resources.

The TRFO will continue to allow tribal members to collect botanical and other special forest products from public lands within the constraint of ecological sustainability. The TRFO will also coordinate and collaborate with tribal governments to increase awareness and knowledge of culturally significant plants, and will consider potential impacts on culturally significant plants in project design and implementation. Prescribed burn plans, noxious weed control, and other management projects should address and consider traditional uses and traditional management of culturally significant plants.

Important cultural areas and traditional cultural properties will be protected for current and future tribal use. The TRFO will continue to consult with tribes and pueblos, and knowledgeable individuals to identify important cultural areas and traditional cultural properties. If requested by the tribes, the TRFO will keep information on such localities and uses confidential.

The TRFO will maintain and strengthen the existing relationship of government-to-government consultation between the BLM and these 26 Native American tribes and pueblos. The TRFO will develop consultation protocols and other formal agreements between the BLM and Native American Indian Tribes with direct communication between the BLM line officer and tribal officials. The TRFO will provide opportunities for tribal participation and partnerships in educational, interpretive, social, and economic programs and will continue to work with the tribes and pueblos to educate the public on appropriate and respectful etiquette when visiting culturally sensitive sites.

CHAPTER 2 – RESOURCE DIRECTION

2.1 Tres Rios Field Office Geographic Area

The TRFO geographic area consists of 503,589 acres of BLM public land in southwest Colorado and is scattered across eight counties: Archuleta, Dolores, Hinsdale, La Plata, Montezuma, Montrose, San Juan, and San Miguel (See Figure 1.1 above). Public lands in this geographic area are incredibly diverse

and rich in natural and cultural resources, from the spectacular Rocky Mountain scenery of the Alpine Loop to the wealth of Ancestral Puebloan sites in the Four Corners area. There is also more than 300,000 acres of federal mineral estate underlying private lands (known as split estate) and mineral management on 800,000 acres of trust responsibility for tribal lands. 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.

Recreation opportunities within the TRFO geographic area include whitewater rafting, canoeing, kayaking, hiking, mountain biking, horseback riding, fishing, hunting, motorcycle riding, photography, wildlife viewing, picnicking, skiing, snowmobiling, OHV use, or driving along one of the many scenic routes. There are eight WSAs located in the TRFO geographic area (see Figure 2.1).

The Dolores River Canyon WSA (16,781 acres) is located approximately 17 miles west of Naturita, Colorado, and 28 miles north of Dove Creek. Elevations range from 5,000 to 5,300 feet. The dominant topographic feature of the WSA is the 30-mile-long, deeply cut, meandering canyon of the Dolores River. The canyon rim and adjacent mesas support pinyon-juniper woodlands with mixed desert shrubs on the slopes. The canyon bottoms support thick desert riparian vegetation, and scattered enclaves of cottonwood, ponderosa pine, aspen, and spruce-fir occur within the WSA. Desert bighorn sheep and river otter (*Lontra canadensis*) have been re-introduced to the WSA.

The McKenna Peak WSA (20,902 acres) is located in San Miguel and Dolores Counties approximately 45 miles northeast of Dove Creek. Elevations range from 6,300 to 8,600 feet. The major topographic feature of the WSA is McKenna Peak, which rises 1,000 vertical feet from Disappointment Valley. The WSA contains a wide variety of topographic features, including Mancos Shale badlands, Mesa Verde sandstone cliffs, canyons, mesas, and rolling hills. This wide variety of topography provides for a diverse vegetation complex within the WSA; barren areas, salt desert shrubs, pinyon-juniper woodlands, and Douglas-fir, oak brush and mountain mahogany can all be found within the WSA. The western third of the WSA is located within the Spring Creek Wild Horse Herd Management Area (HMA).

The Menefee Mountain WSA (7,303 acres) is located approximately 2 miles south of Mancos and 3 miles east of Mesa Verde National Park. Elevations range from 6,500 to 8,600 feet on Menefee Peak, with steep canyons radiating out from the 6-mile-long ridge of Menefee Mountain. Pinyon-juniper woodland is the dominant vegetation type at the lower elevations, with oak brush and pockets of ponderosa pine and spruce-fir at the higher elevations.

The Weber Mountain WSA (6,300 acres) is located just east of Mesa Verde National Park and is separated from the Menefee Mountain WSA by Weber Canyon. Elevations range from 6,600 to 8,200 feet with short, steep canyons radiating out from the 5-mile-long ridge of Weber Mountain. The WSA is characterized by pinyon-juniper woodland at the lower elevations, with oak brush and pockets of ponderosa pine and spruce-fir at the higher elevations.

Whitehead Gulch (1,870 acres), and Weminuche Contiguous (1,419 acres) WSAs are remnants of study areas which were exchanged with the USFS in a boundary adjustment completed in 1983. The scenic landscapes provide hikers and horseback riders opportunity to explore scenic landscapes in solitude. The Handies Peak WSA (1,041 acres) is also an opportunity to explore scenic landscapes in solitude.

Located just north of Disappointment Creek, the 22,000-acre Spring Creek Basin HMA is open to a variety of multiple uses. The area is maintained to provide for a range of 35 to 65 adult horses, and excess horses are generally gathered when numbers exceed 65. According to local lore, the horses are descendants of those brought to the Disappointment Creek area in the late 1800s by a horse rancher from Montana. DNA and blood testing have indicated that Thoroughbred and Morgan are the primary breed influences in this herd. Travel in the area is restricted to designated roads. This is a remote area and none of the roads in the herd area are graveled.

Rangelands comprise about 85% of the public land in the TRFO geographic area. Currently, the TRFO manages 100 active allotments serving 81 grazing permits and providing around 24,000 animal unit months (AUMs) of forage for domestic cattle and sheep.

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).

Popular drives in the geographic area include the Alpine Loop Backcountry Byway and the San Juan Skyway, which swivel through the San Juan Mountains. The 65-mile Alpine Loop Backcountry Byway winds through wild, roughed, land scattered with old mining ruins, ghost towns, scenic alpine meadows, mountain streams, and forested mountains.

The area includes high densities of significant Puebloan archeological sites, as well as more modern mining, railroad, logging, and grazing historical sites. The Dolores River flows for more than 200 miles through southwest Colorado, starting high in the San Juan Mountains and descending to the Colorado River at the Colorado-Utah border. The Dolores flows through five major western life zones, from the alpine life zone, at its headwaters to the Upper Sonoran life zone along much of its lower reaches (6,400 to 5,000 feet in elevation). The Dolores River Canyon is one of the primary scenic attractions in the geographic area.

The northwest corner of the TRFO geographic area is mostly BLM public lands, including Dry Creek Basin and Big Gypsum Valley in the North Canyonlands Section. Continued cattle grazing and oil and gas development is expected in the Paradox Basin. 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 runoff over highly erosive soils with high salinity content.

In the Grandview Area, land owned by the city of Durango is expected to undergo substantial real estate and commercial development during the life of this RMP. With local city and county support, there may be need for the municipality to acquire BLM lands to provide better access to the public due to urban expansion in and around the Grandview area in the future. 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). 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 prehistoric cultural landscape and is the last representative of Pueblo I occupation on public lands in the Durango area.

Desired Conditions

- 2.1.1 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). Mining and mineral extraction would continue to occur, subject to market demand, and associated plans, permits, and licenses would be processed in a timely and efficient manner. The local economy benefits from, and contributes to, sustainable resource management, as well as to the preservation of open space.
- 2.1.2 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..
- 2.1.3 A variety of looped single- 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.

- 2.1.4 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. 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).
- 2.1.5 Scenic vistas, especially along byways, are protected and enhanced through collaborative efforts with partners (e.g., Colorado Byways Commission, CPW, the Montezuma Land Conservancy, Colorado Department of Transportation [CDOT], and local governments).
- 2.1.6 Management of Gunnison sage-grouse and its habitat is achieved through a range-wide perspective on habitat management that provides a healthy sagebrush steppe ecosystem so that the sage-grouse, and other sagebrush obligate species in the system, benefit. An atmosphere of cooperation, participation, and commitment exists 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.
- 2.1.7 Salinity and sediment contributions of the Dolores River tributaries (including Disappointment, Big Gypsum, Little Gypsum, and Dry Creeks) are reduced through an integrated activity approach that achieves reduced erosion and improves land health.
- 2.1.8 The unique soils of the gypsum lands in the Dolores area (including portions of 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.
- 2.1.9 The hanging gardens that provide the habitat for kachina fleabane (*Erigeron kachinensis*), Eastwood's monkeyflower (*Mimulus eastwoodiae*), and common maidenhair (*Adiantum capillus-veneris*) have the water sources and hydrologic systems necessary in order to support and sustain these rare plant species.
- 2.1.10 Ponderosa pine forests on the mesa tops display structural diversity (including more old growth stands, stands with a clumped structure, stands with large old trees, snags, and large dead and downed wood on the forest floor).
- 2.1.11 Large patches of sagebrush shrublands 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.
- 2.1.12 Narrowleaf cottonwood riparian areas and wetland ecosystem communities throughout the low and middle elevations of the geographic area display moderate to high canopy cover (greater than 20%) of narrowleaf cottonwood trees, including young-, middle-, and old-age classes.
- 2.1.13 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.

- 2.1.14 Aspen management maintains age and class diversity and promotes healthy stand conditions.
- 2.1.15 Timber and fire management is used 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.

See relevant sections in Chapter 3 for specific management direction for the following areas within the TRFO geographic area and See Figure 3.1:

- BLM WSAs (McKenna Peak, Dolores River, Weber, Menefee, Handies Peak, Whitehead Gulch, and Weminuche Contiguous)
- Recommended WSR segments
- ACECs (Gypsum Valley, Anasazi Culture Area)
- BLM SRMAs (Dolores River Canyon, Durango, Silverton, and Cortez) (see Section 2.14, Recreation)
- Lands managed for wilderness characteristics
- Wild horse HMAs (Spring Creek)
- Scenic, historic, and backcountry byways (portions of the San Juan Skyway and the Alpine Loop)
- BLM wildlife management areas (Perins Peak, Willow Creek)
- National recreation and scenic trails (Continental Divide National Scenic Trail, Old Spanish Historic Trail)
- Other areas with specific management (Dolores River Canyon, Mesa Verde Escarpment, Silverton area)

Protected Areas Tres Rios Field Office Figure 2.1

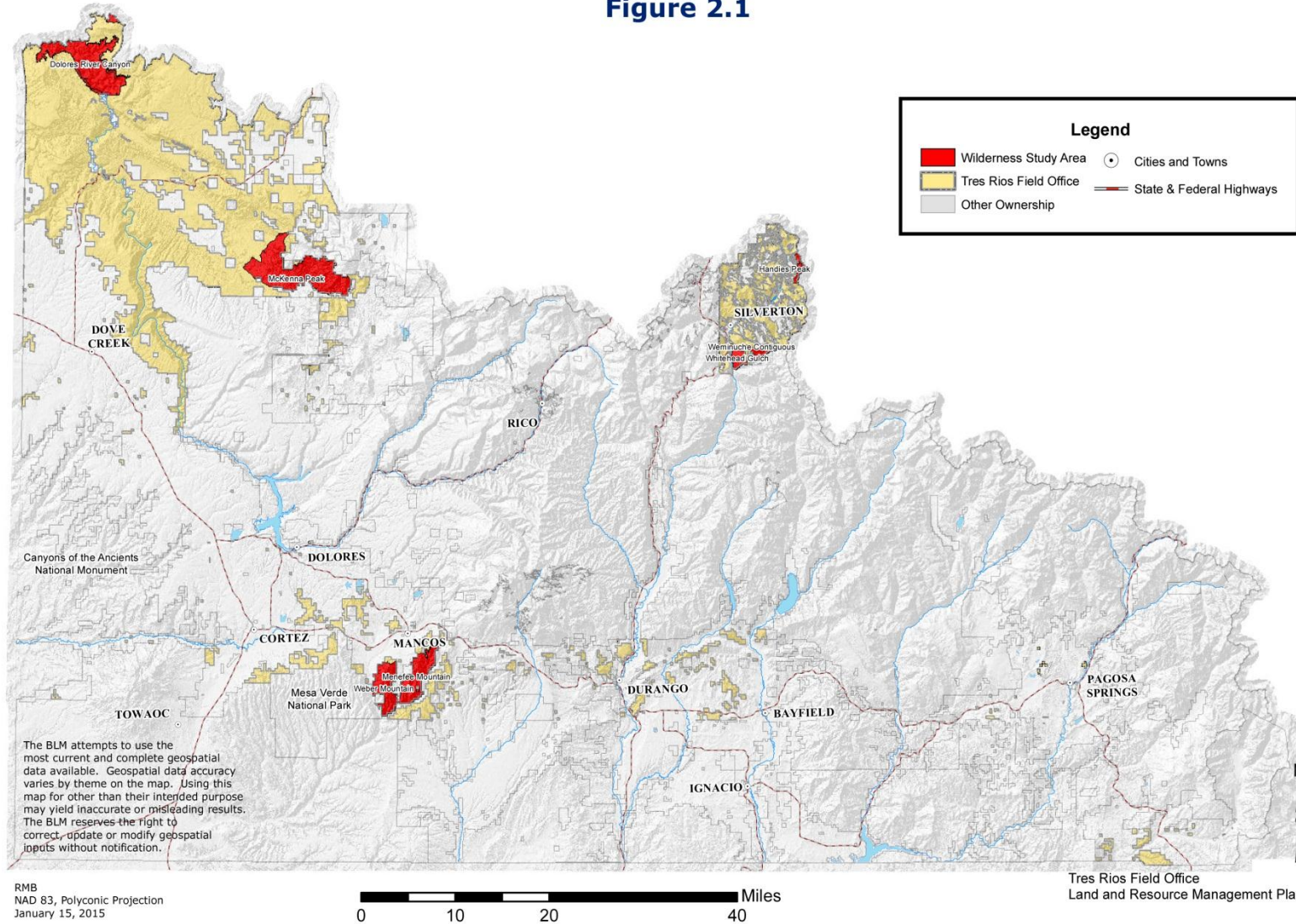


Figure 2.1 Protected Areas.

2.2 Ecological Framework and the Conservation of Species

The following strategies, concepts, and components are used in this RMP to establish an ecological framework for the conservation and management of ecosystems, habitats, and species. These are overarching strategies that have relevance to a wide range of program areas and agency actions occurring on TRFO lands. They are especially important to the four program areas of terrestrial ecosystems and plant species, terrestrial wildlife, riparian and wetland ecosystems, and aquatic ecosystems (Sections 2.2–2.6).

2.2.1 Sustainable Ecosystem Strategy

Ecosystems are communities of living organisms interacting with each other and with their physical environment (Kaufmann et al. 1994). They are dynamic systems that change in response to succession, climate, and the effects of disturbances, including those caused by fire, insects, disease, drought, wind, and humans. Humans are an integral part of ecosystems and depend on them for their short- and long-term well-being. In order to meet the social and economic needs of future generations, ecosystems are to be managed for sustainability. The concept of sustainability is a fundamental component of the RMP and is guided by the FLPMA. The FLPMA directs that public lands be managed based on multiple use and sustained yield, as well as the protection of other values including, but not limited to, scenic, historical, ecological, environmental, air and atmospheric, and water resource values.

Social and economic sustainability is associated with the provision of goods and services from the TRFO to people and communities over the long term. Sustainability takes into account the social and economic conditions of the planning area, including recreational opportunities, multiple uses that contribute to local and regional economies, and cultural resources. Ecological sustainability is intended to provide the ecological conditions that maintain or restore the diversity of native ecosystems and natural disturbance processes. This in turn will maintain suitable habitats for a wide range of plant and animal species and provide for the diversity and viability of plant and animal species, populations, and communities. When applied effectively, the sustainable ecosystems strategy will result in ecological conditions similar to those under which native species evolved. Achieving these conditions offers some assurance against further losses of biodiversity (Seymore and Hunter 1999). Managing for ecological sustainability is intended to ensure that ecosystems of the TRFO continue to maintain the ecological conditions necessary to provide goods and services needed by people and communities, now and in the future. This strategy is also consistent with the management of public lands as prescribed under the FLPMA.

The sustainable ecosystems strategy of the TRFO includes 1) protected area designation and preservation (a coarse-filter approach), 2) ecosystem management using sustainable ecosystem concepts, 3) the development and application of plan components (desired conditions, objectives, standards, and guidelines) that provide a framework for the management and preservation of ecosystems, and 4) monitoring the effects of management activities on the TRFO and the application of adaptive management principles. Effective monitoring and evaluation of how management activities are affecting ecosystems and species, and the correct application of adaptive management principles, will be critical to maintaining functional, sustainable ecosystems and addressing the needs of dependent species. Refer to Chapter 4 for a description of the TRFO monitoring components.

2.2.2 Disturbances

Major disturbances, including those caused by fire, insects, disease, drought, wind, floods, and humans, can have a profound effect toward shaping the composition, structure, and function of ecosystems at multiple scales and in creating a heterogeneous pattern of vegetation communities and habitats across the planning area. Disturbances vary in magnitude, size, and frequency, some of which humans have little control over. Multiple disturbances can interact in complex ways and often act in concert, which can predispose ecosystems to more intense effects. Many of these disturbances have significant long-term effects on terrestrial, riparian area and wetland, and aquatic ecosystems. It is not a question of whether disturbances will happen, but when, where, and at what scale they will happen. Disturbances can have a

major influence (adverse or beneficial) on the agencies' ability to achieve the desired conditions and objectives of the RMP.

2.2.3 Protected Areas

Protected areas are key components of the sustainable ecosystems strategy. Protected areas are lands especially dedicated to the protection and maintenance of biological diversity (International Union for Conservation of Nature 1994). They are large, mostly unaltered, undeveloped, and roadless lands that contain terrestrial, riparian area and wetland, and aquatic ecosystems at multiple scales. They serve as conservation reserves and refuges to protect the native biodiversity within them (Norton 1999; Noss 1991). They also provide wildlife movement corridors and landscape linkage areas that connect habitats and landscapes, which in turn facilitate the interaction of species.

Management objectives for protected areas include:

- Preserving habitats, ecosystems, and species in as undisturbed a state as possible;
- Conserving the area's biodiversity through protection, not through active management;
- Ensuring the integrity of its ecosystems; and
- Maintaining established ecological processes.

Establishing and preserving protected areas is a means to maintain ecosystem diversity, which presumably will protect the diversity and viability of native plant and animal species and communities, and the ecological processes occurring within those ecosystems.

Protected areas on the TRFO include eight Wilderness Study Areas that were designated in the 1980s. These areas comprise 57, 576 acres or approximately 11% of the BLM-administered lands in the planning area (see Figure 2.1).

Unaltered, unroaded, high-elevation terrestrial, riparian, and wetland ecosystems are represented in Wilderness Study areas on TRFO lands near Silverton. Unaltered, unroaded, mid-elevation ecosystems are represented in other BLM WSAs. These include ponderosa pine forests, pinyon-juniper woodlands, mountain shrublands, and shrublands, and herbaceous riparian areas and wetlands. For aquatic ecosystems, both lotic (running water) and lentic (standing water) ecosystems are well represented throughout the network of protected areas in the planning area. However, these waters are almost exclusively cold water systems.

2.3 Terrestrial Ecosystems and Plant Species

Introduction

Terrestrial ecosystems on the TRFO occur in upland landscape positions where they depend on water derived from direct precipitation. They contain soils that are moderately well to very well drained and plants that are obligate-upland or facultative-dry species (Reed 1988). Terrestrial ecosystems are defined by soils, climate zones, and major vegetation types, the latter used for naming the ecosystems (see Figure 2.3). Terrestrial ecosystems on the TRFO include spruce-fir forests, aspen forests, cool-moist mixed conifer forests, warm-dry mixed conifer forests, ponderosa pine forests, pinyon-juniper woodlands, mountain shrublands, sagebrush shrublands, semi-desert shrublands, mountain grasslands, semi-desert grasslands, and alpine (Redders 2012). Topographic variability (which includes mountains, hills, and tablelands), diverse geology (associated with volcanism, metamorphism, sedimentation, and glaciation), and microclimatic features (soil moisture regime, soil temperature regime, aspect, and elevation) add to the diversity of terrestrial ecosystems on the TRFO.

Terrestrial ecosystems encompass a majority of the land base and accompanying resources on TRFO lands. Hence, management of these ecosystems is a critical part of the RMP's sustainable ecosystems strategy, as previously described in Section 2.1.

There are currently a total of 12 special status plant species on the TRFO. There are four federally listed plant species, including one candidate for federal listing and 3 listed species that may occur on the TRFO. Designated critical habitat for one of the federally listed plant species also occurs on TRFO lands. Currently, most special status plant species on TRFO lands appear to have stable populations and trends. A list of the special status plant species known to occur or with habitat on the TRFO is found in , Appendix P, along with a brief description of the habitats where they occur.

Background

The management of terrestrial ecosystems and plant species includes protecting and sustaining the composition, structure, and function of the terrestrial, aquatic, and riparian/wetland ecosystems and the diversity and viability of the species within them, including special status plant and wildlife species. It also includes designating and preserving protected areas and reference sites; maintaining adequate ground cover (vegetation and litter); protecting the physical, chemical, and biological properties of soils; maintaining and restoring soil productivity; and preventing or minimizing adverse impacts from management actions. Tools for managing terrestrial ecosystems and plant species also includes using the best available science; developing vegetation and ecological classification systems; conducting vegetation, special status plant species, soils, and ecological inventories; identifying soil types and soil properties; identifying plants and plant communities; conducting biological assessments and evaluations; monitoring; and establishing RNAs, Areas of Critical Environmental Concern (ACECs), and special botanical areas.

Several RMP components below and in other sections refer to NatureServe conservation status rankings (NatureServe 2013). NatureServe and its member Natural Heritage Programs have developed a consistent method for evaluating the relative imperilment of both species and ecological communities based on the best available science. These assessments lead to the designation of a conservation status rank. The three broad categories that factor into these rankings include rarity, trends, and threats. Conservation status rankings include secure (G5), apparently secure (G4), vulnerable (G3), imperiled (G2), critically imperiled (G1), possibly extinct or eliminated (GH), and presumed extinct or eliminated (GX). The Colorado Natural Heritage Program provides a similar state-wide conservation status rank (reported as "S" rankings). The BLM has a long history of partnership with NatureServe, and have collaborated on a broad range of projects in such areas as planning, sensitive species inventory and assessments, ecological classification and mapping, and data sharing and technology development.

Desired Conditions

- 2.3.1 The composition, structure, and function of terrestrial ecosystems are influenced by natural ecological processes, including disturbance events such as fire, infestations by insects or disease, winds, and flooding.
- 2.3.2 Non-climate ecosystem stresses (e.g., high road densities, water depletions, air and water pollution) are reduced to improve the resilience and resistance of ecosystems to the future dynamics of a changing climate.
- 2.3.3 Key ecosystems that are not functioning properly are realigned/restored/renovated to survive the near-future dynamics of changing climate.
- 2.3.4 Future biodiversity, especially for endangered, rare, or dwindling species, is protected in the face of a changing climate by safeguarding habitats, preserving genetic diversity, and cooperating with seed banking efforts that provide secure, long-term storage of plant genetic resources.
- 2.3.5 Terrestrial ecosystems have a diverse composition of desirable native plants that are vigorous and self-perpetuating. Invasive plant species are absent or rare.
- 2.3.6 All development stages of the forested terrestrial ecosystems are well represented at the landscape scale and occur within the ranges identified in Tables 2.2.1 and 2.2.2.
- 2.3.7 Old growth ponderosa pine, old growth pinyon-juniper and old growth warm-dry mixed conifer forests are more abundant, occupy more acreage, and are well-distributed.
- 2.3.8 Terrestrial ecosystems, including habitat for special status plant species, are productive, sustainable, and resilient, and provide goods and services over the long-term.
- 2.3.9 Forested terrestrial ecosystems display a Fire Regime Condition Class of 1.
- 2.3.10 Canyon escarpments, and the terrestrial ecosystems that occur on them, serve as refugia for native biota.
- 2.3.11 The abundance and distribution of native grasses in semi-desert grasslands, sagebrush shrublands, pinyon-juniper woodlands, and semi-desert shrublands are maintained or increased.
- 2.3.12 The abundance and distribution of native perennials, in ponderosa pine forest and in Arizona fescue mountain grasslands, including Arizona fescue (*Festuca arizonica*), are maintained or increased.
- 2.3.13 Ponderosa pine forests, pinyon-juniper woodlands, sagebrush shrublands, semi-desert shrublands, mountain grasslands, and semi-desert grasslands that occur in suitable rangelands have a diverse composition of native bunchgrasses that are vigorous and self-perpetuating.
- 2.3.14 Forested terrestrial ecosystems have stand structures and tree species composition that offer resistance and resilience to changes in climate, including extreme weather events, or epidemic insect and disease outbreaks.
- 2.3.15 Non-forested terrestrial ecosystems have community structure and species composition that offer resistance and resilience to changes in climate, including extreme weather events, or epidemic insect and disease outbreaks.

- 2.3.16 Local seeds of desirable native plant species are available for revegetation and restoration efforts.
- 2.3.17 Suitable habitats for species vulnerable to climate change exist and serve as seed sources for revegetation and restoration efforts.
- 2.3.18 Forested ecosystems provide net positive carbon storage.
- 2.3.19 Five-needle pine species (southwestern white pine [*Pinus strobiformus*], limber pine [*P. flexilis*], and bristlecone pine [*P. aristata*]) are maintained as a component of forested ecosystems.
- 2.3.20 High-elevation stands dominated by aspen (*Populus tremuloides*) will be maintained or increased over time to ensure the persistence of aspen on the landscape in light of declining aspen health and loss of aspen in lower elevations associated with a warmer and drier climate.
- 2.3.21 Ponderosa pine, warm-dry mixed conifer, and cool-moist mixed conifer forest stands that are in the old growth development stage and that have not been previously harvested are managed for their old growth values through active or passive management.
- 2.3.22 **Ponderosa Pine Forests** - Ponderosa pine forests display variable density and structure. Most stands reflect uneven-age structure comprising variable-sized, even-aged clumps of trees. Clumps vary in size, ranging from as few as three trees to as many as 20 or more trees. Tree clumps vary in density from widely spaced large trees to tightly spaced small trees. Collectively, these forests contain multiple canopy layers. Between or surrounding these clumps are shrub- and/or grass/forb-dominated openings. Ponderosa pine seedlings and saplings are present, as are large old, yellow-barked ponderosa pine trees. The presence of other tree species—e.g., Douglas-fir, white fir, blue spruce (*Picea pungens*), or Rocky Mountain juniper (*Juniperus scopulorum*)—is infrequent to rare. The abundance and distribution of Gambel oak (*Quercus gambelii*) and other native shrubs in the understory of these forests is variable and includes small and large patches of all size classes. Native perennial grasses and forbs (including bunchgrasses, Arizona fescue, muttongrass [*Poa fendleriana*], and mountain muhly [*Muhlenbergia montana*]) are present and well-distributed in most ponderosa pine forests. Forest litter is common, though highly variable in depth and extent due to fire. Invasive plant species are absent or rare. Presence of snags or large wood (on the ground) is also highly variable due to fire. Low-intensity, high-frequency surface fires are common in most ponderosa pine forests (with frequencies ranging from about 12 to 30 years).
- 2.3.23 **Warm-Dry Mixed Conifer Forests** - Warm-dry mixed conifer forests display variable density and structure, similar to ponderosa pine forests, with added complexity in species composition. Most stands reflect uneven-age structure composed of variable-sized, even-aged clumps of trees. Some have open canopies with widely spaced trees, especially on warmer aspects; some are dense with more closed canopies (e.g., on cooler aspects). Composition is dominated by ponderosa pine. Douglas-fir is a typical minor component. Trees range from young to old. White fir, blue spruce, or limber pine may be present, but infrequent. Shrub- and/or grass/forb-dominated openings are common. 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 grasses and forb (including tall bunchgrasses) are common and well distributed in most warm-dry mixed-conifer forests. Invasive plant species are absent or rare. Forest litter is common, though variable in depth and extent due to fire. Presence of snags or large wood (on the ground) is also variable due to fire. Low-intensity, surface fires occur in most warm-dry mixed conifer forests (with frequencies ranging from about 18 to 28 years). Tree species composition is

closely tied to fire frequency, with Douglas-fir and white fir (or blue spruce) increasing during longer fire-free periods, and ponderosa pine increasing during shorter fire-free periods.

- 2.3.24 **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); other species include white or subalpine fir (*Abies lasiocarpa*), blue or Engelmann spruce (*Picea engelmannii*), aspen, or limber pine. 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 grasses and forbs 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. Mixed-severity fires occur in most cool-moist mixed conifer forests (with frequencies of about 144 years). All development stages of these forests are well represented.
- 2.3.25 **Spruce-Fir Forests** - Spruce-fir forests display variable stand structures and species composition. Engelmann spruce is generally dominant; subalpine (or corkbark) fir makes up a lesser, but common, component. Bristlecone pine (*Pinus longaeva*), limber pine, aspen, white fir, or Douglas-fir are infrequent to rare and usually found on warmer, drier aspects. Most spruce-fir forests 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. High-elevation spruce-fir forest can have bristlecone pine, but is rare. Native grasses and forbs 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 most development stages. High-intensity, stand-replacement fires can occur in most spruce-fir forests (with frequencies longer than 200 years); most fires are of limited scale and variable intensity. All development stages of these forests are well-represented.
- 2.3.26 **Aspen Forests** - Aspen forests display simple to variable stand structures—generally simple where conifer is rare or absent or variable where conifer comprise a substantial portion (up to 49% of the canopy cover). Patches of aspen, ranging from small to large, are distributed across the landscape. Aspen is infrequent to rare in the lowest- and highest-elevation forests (ponderosa pine and spruce-fir, respectively), and common throughout mixed conifer forests. The canopy cover of shrubs in the understory of these forests is highly variable. Native grasses and forbs 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. Fire frequency in aspen stands is about 140 years. All development stages of these forests are well-represented.
- 2.3.27 **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. Tree species composition varies in pinyon pine (*Pinus edulis*) and/or juniper (*Juniperus* sp.) abundance, ranging from young to old. The canopy cover and size of Gambel oak, sagebrush (*Atriplex* sp.), and other shrubs in the understory of these forests is variable. Native grasses and forbs are present and well distributed. Biological soil crusts and 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 to 123 years).
- 2.3.28 **Mountain Shrublands** - Mountain shrublands display variable stand structures. Most are dense with high canopy cover; others are open with widely spaced shrubs. Gambel oak and other deciduous native shrubs (including mountain mahogany [*Cercocarpus montanus*],

serviceberry [*Amelanchier* sp.], chokecherry [*Prunus virginiana*], fendlerbush [*Fendlera rupicola*], and squaw apple [*Peraphyllum ramosissimum*) are abundant and well distributed. Native grasses and forbs are abundant and well distributed. Invasive plant species are absent or rare. Litter is common and well distributed. High-intensity, replacement fires occur in most mountain shrublands.

- 2.3.29 **Sagebrush Shrublands** - 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 grasses (including Indian ricegrass [*Oryzopsis hymenoides*], galleta [*Pleuraphis* sp.], western wheatgrass [*Pascopyrum smithii*], and needle and thread [*Hesperostipa comata*]) 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. High-intensity, replacement fires occur in most sagebrush shrublands.
- 2.3.30 **Semi-Desert Shrublands** - Semi-desert shrublands are dominated by native shrubs that could include shadscale saltbush (*Atriplex confertifolia*), winterfat (*Krascheninnikovia lanata*), fourwing saltbush (*Atriplex canescens*), plains pricklypear (*Opuntia polyacantha*), rubber rabbitbrush (*Ericameria nauseosa*), spiny hopsage (*Grayia spinosa*), greasewood (*Sarcobatus* sp.), and/or basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). Stand structures display open or moderately dense shrubs with native perennial grasses and forbs in the openings between them. Native grasses (including Indian ricegrass, galleta, western wheatgrass, and needle and thread) 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 litter are common on most sites.
- 2.3.31 **Semi-Desert Grasslands** - Semi-desert grasslands are dominated by native perennial bunchgrasses (including Indian ricegrass, galleta, and needle and thread). Invasive plant species and/or undesirable native plant species that are currently abundant on most sites are absent or rare. Biological soil crusts and litter are common on most sites.
- 2.3.32 **Mountain Grasslands** - Mountain grasslands display moderate to high canopy cover of desirable native perennial grasses and forbs (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. Litter is common and well distributed.
- 2.3.33 **Alpine** - Alpine terrestrial ecosystems sustain their ecosystem diversity. They display a diverse composition of desirable native plant species and vegetation communities (including fellfield and turf types). Invasive plant species are absent or rare.
- 2.3.34 Soil productivity is maintained at site potential or is trending towards site potential.
- 2.3.35 Long-term levels of soil organic matter and soil nutrients (including soil carbon) are maintained at sustainable levels.
- 2.3.36 Ground cover (vegetation and litter) is adequate to protect soils and prevent erosion.
- 2.3.37 Upland soils exhibit infiltration and permeability rates that minimize surface runoff and allow for the accumulation of the soil moisture necessary for plant growth and ecosystem function.
- 2.3.38 Biological soil crusts are maintained or increased in pinyon-juniper woodlands, sagebrush shrublands, semi-desert shrublands, and semi-desert grasslands.

- 2.3.39 Fens, wetlands, and hanging gardens have the water sources and hydrologic systems necessary to support and sustain the special status plant species associated with them.
- 2.3.40 Shale and gypsum soils have the characteristics necessary to support and sustain the special status plant species associated with them.
- 2.3.41 Soils that provide habitat for all special status plant species maintain the soil conditions necessary to support and sustain those species.
- 2.3.42 Areas that are identified as critical habitat or proposed critical habitat for federally listed plant species have the characteristics necessary to provide for the growth and reproduction of the federally listed plant species for which they were designated.

Table 2.3.1: Desired Conditions for Development Stages on Tres Rios Field Office Lands

Terrestrial Ecosystem	Development Stage	Current Condition (% of veg type)	Desired Condition (% of veg type)	Historic Range of Variation (% of veg type)
Spruce-fir forest	Young	0	10–20	0–45
	Mid-open	12	10–15	5–47%
	Mid-closed	4	10–15	5–47%
	Mature-open	14	15–20	#
	Mature-closed	69	15–20	#
Cool-moist mixed conifer forest	Young	0	10–20	1–36
	Mid-open	48	10–15	8–49
	Mid-closed	36	10–15	8–49
	Mature-open	1	15–20	#
	Mature-closed	15	15–20	#
Warm-dry mixed conifer forest	Young	0	5–10	1–10
	Mid-open	14	5–10	5–14
	Mid-closed	24	5–10	5–14
	Mature-open	7	35–45	#
	Mature-closed	55	15–25	#
Ponderosa pine forest	Young	0	5–10	1–14
	Mid-open	24	5–10	4–14
	Mid-closed	36	5–10	4–14
	Mature-open	11	40–60	#
	Mature-closed	29	15–25	#
Aspen forest	Young	1	15–25	1–55
	Mid-open	22	10–15	4–55
	Mid-closed	62	15–20	4–55
	Mature-open	1	25–30	35–86
	Mature-closed	14	25–30	35–86

Objectives

- 2.3.43 Within 10 years, restore or improve soil productivity and soil carbon on at least 5 miles of routes that will be closed or decommissioned..
- 2.3.44 Within 10 years, inventory and map stand structure changes that have resulted from spruce beetle (*Dendroctonus rufipennis*) mortality and wildfire..
- 2.3.45 Within 15 years, increase the percent of ponderosa pine forests in the young development stage from 0% to 3% by using mechanical treatments (e.g., timber harvest) or fire (prescribed or natural ignitions).
- 2.3.46 Within 15 years, increase the percent of warm-dry mixed conifer forests in the young development stage from 0% to 3% by using mechanical treatments (e.g., timber harvest) or fire (prescribed or natural ignitions).
- 2.3.47 Within 15 years, improve the composition, structure, and function of 5,000 acres of ponderosa pine forests by using low-intensity fire).
- 2.3.48 Within 15 years, improve the abundance and distribution of perennial native bunchgrasses on 3,000 acres of semi-desert shrublands or semi-desert grasslands.
- 2.3.49 Over the next 15 years, secure a reliable source of local seed stock for eight or more native grass, forb, and shrub species to be used for revegetation and restoration after disturbance.
- 2.3.50 Over the life of the RMP, collect seed from 10 local vulnerable grass, forb, and shrub species, including some alpine species, for long-term storage to protect genetic sources.
- 2.3.51 Use locally produced biochar to sequester carbon, reduce erosion, and enhance soil productivity and water retention on a minimum of 0.5 acre per year for five years.
- 2.3.52 After natural disturbance events or on restoration projects over the next 15 years, increase the variety of native non-commercial tree species and native shrubs used on a minimum of 25 acres.
- 2.3.53 Over the next 15 years, revegetate and reclaim 5 acres using native early-successional plant species developed from local plant sources to accelerate restoration success.
- 2.3.54 Over the next 20 years, enhance the resiliency of alpine ecosystems and provide refugia for alpine dependent species on 100 acres through implementing recreation management plans, completing mine land reclamation, or conducting other management activities.

Standards

- 2.3.55 The construction of new permanent roads and utilities must not occur in protected areas in order to protect the ecological integrity of the terrestrial ecosystems within them, prevent ecosystem fragmentation, prevent the disruption of wildlife travel corridors, and prevent the establishment and spread of invasive plants.
- 2.3.56 Projects or activities in habitat occupied by federally listed plant species, or in designated critical habitat, must be designed and conducted in a manner that preserves the primary constituent elements needed to sustain the life history processes of those federally listed plant species.

- 2.3.57 Projects or activities occurring in fens, wetlands, or hanging gardens that are occupied by special status plant species must be designed to maintain the hydrologic systems necessary to support and sustain those species.
- 2.3.58 Projects or activities that occur in shale and gypsum soils that are occupied by special status plant species must be designed to maintain the soil characteristics necessary to support and sustain those species.

Guidelines

- 2.3.59 Agency actions should not adversely affect the long-term soil productivity or carbon storage of terrestrial ecosystems.
- 2.3.60 Ground-disturbing management activities should not occur on lands that have a high potential for mass movement, including lands associated with soil survey map units 254, 386, 606, 720, 926, 20511D, 30506D, 34301D, 34306D, 34506D, 50803D, 50806D, 70806D, 70807D, 74803D, 80604D, 80803D, and 80804D, or lands that display evidence of slope instability, unless site-specific field analysis indicates that mass movement is not likely to occur on those lands.
- 2.3.61 Projects or activities occurring in suitable habitat for federally listed plant species should be managed to minimize long-term impacts to the suitable habitat.
- 2.3.62 Agency actions should avoid or otherwise mitigate long-term adverse impacts in terrestrial ecosystems that have plant communities with G1 or G2 NatureServe Plant Community conservation status ranks in order to maintain the ecological integrity of those rare plant communities.
- 2.3.63 Agency actions should be designed to avoid or minimize impacts in canyon escarpments, unless the activity is designed to maintain or restore the composition, structure, or function of the terrestrial ecosystems within those escarpments.
- 2.3.64 Ground-disturbing projects on shale soils of the Mancos Shale, Lewis, Fruitland, and Morrison geologic formations, and other highly erosive soils, should be designed to include efforts that avoid or mitigate soil erosion or compaction (see Appendix I).
- 2.3.65 Ground-disturbing activities in watersheds that are highly sensitive to anthropogenic disturbances, as identified in Appendix I, should be designed to avoid or mitigate soil erosion or compaction.
- 2.3.66 Adequate slash (including tree tops and limbs), if deemed necessary for soil protection or nutrient cycling, should be left on-site following timber harvest and mechanical fuels treatments, and distributed as needed.
- 2.3.67 Wood chips produced by mastication treatments should be dispersed on the ground at a maximum depth of 3 inches over at least 80% of the covered area, and no chip piles should exceed 6 inches in depth.
- 2.3.68 Management activities in areas with biological soil crusts should be designed to minimize adverse impacts to the soil crusts.
- 2.3.69 Ground disturbance should be limited or otherwise mitigated on gypsum soils and organic soils (histosols) in order to protect the ecological integrity of these rare and unique soils and the rare plants associated with these soils.

- 2.3.70 Clearcuts in aspen forest stands that are 20 acres or greater should include wildlife leave tree groups of 0.5 to 5 acres in size on 10% to 15% of the clearcut. Where possible groups should have the following characteristics: live and/or dead large-diameter wood on the forest floor (greater than 15 inches diameter at breast height [dbh]), trees with evidence of cavities, broken or dead tops, or lightning strikes. Basal areas should exceed 100 square feet per acre.
- 2.3.71 Following timber harvest and mechanical fuels treatments, snags and large wood on the forest floor should meet the minimum standards described in Table 2.3.2 unless the stand did not contain these attributes before the activity, in which case treatments should be designed to help meet those standards in the future.
- 2.3.72 Certified, weed-free native seed mixes of local ecotypes should be used to revegetate terrestrial ecosystems where commercially available. Non-native, non-invasive plant material may be used in limited situations where considered necessary in order to protect resources and/or stabilize soils in a timely fashion. Persistent non-natives or invasive exotic plant species should be avoided.
- 2.3.73 If the desired conditions for the development stage of a terrestrial ecosystem type (see Tables 2.2.1 and 2.2.2) are underrepresented, management activities should be designed to move that development stage closer to the desired conditions, particularly in watersheds lacking the development stage.
- 2.3.74 Revegetation and reforestation plans or activities should consider the following strategies to maintain or improve resilience of forested and non-forested ecosystems:
- use a variety of species and phenotypes;
 - emphasize use of native species, collected locally;
 - use both commercial and non-commercial species for reforestation (non-commercial species include southwestern white, limber or bristlecone pine); and
 - use seed collected from across the range of climate zones.

Table 2.3.2: Desired Conditions for Snags and Large Wood on Tres Rios Field Office Lands

Forest Type	Snags			Large Downed Wood	
	Minimum Diameter (dbh)	Number (per acre)	Minimum Height (feet)	Minimum Diameter (dbh)	Number (linear feet per acre)
Spruce-fir forests	15	3–5	25	15	200
	9*	5–10			
Cool-moist mixed conifer forests	15	2–3	25	15	150
	9*	5–10			
Aspen	9	5–10	25	9	150
Warm-dry mixed conifer forests	15	1–2	25	15	80
	9*	3–5			
Ponderosa pine forests	15 (12)	1	25 (15)**	15 (12)**	30
	9*	2–3			
Note: Quantities are based on an average per acre basis across treatment units. dbh = diameter at breast height.					
*If larger trees are not available, then the smaller minimum will apply and requires the greater number per acre range.					
**Numbers in parentheses apply to Dolores Ranger District (USFS) and adjacent TRFO lands. Due to past harvest activity on the Dolores Ranger District and adjacent TRFO there is a lower abundance of larger snags available for habitat.					

Major Vegetation Types

Tres Rios Field Office

Figure 2.3

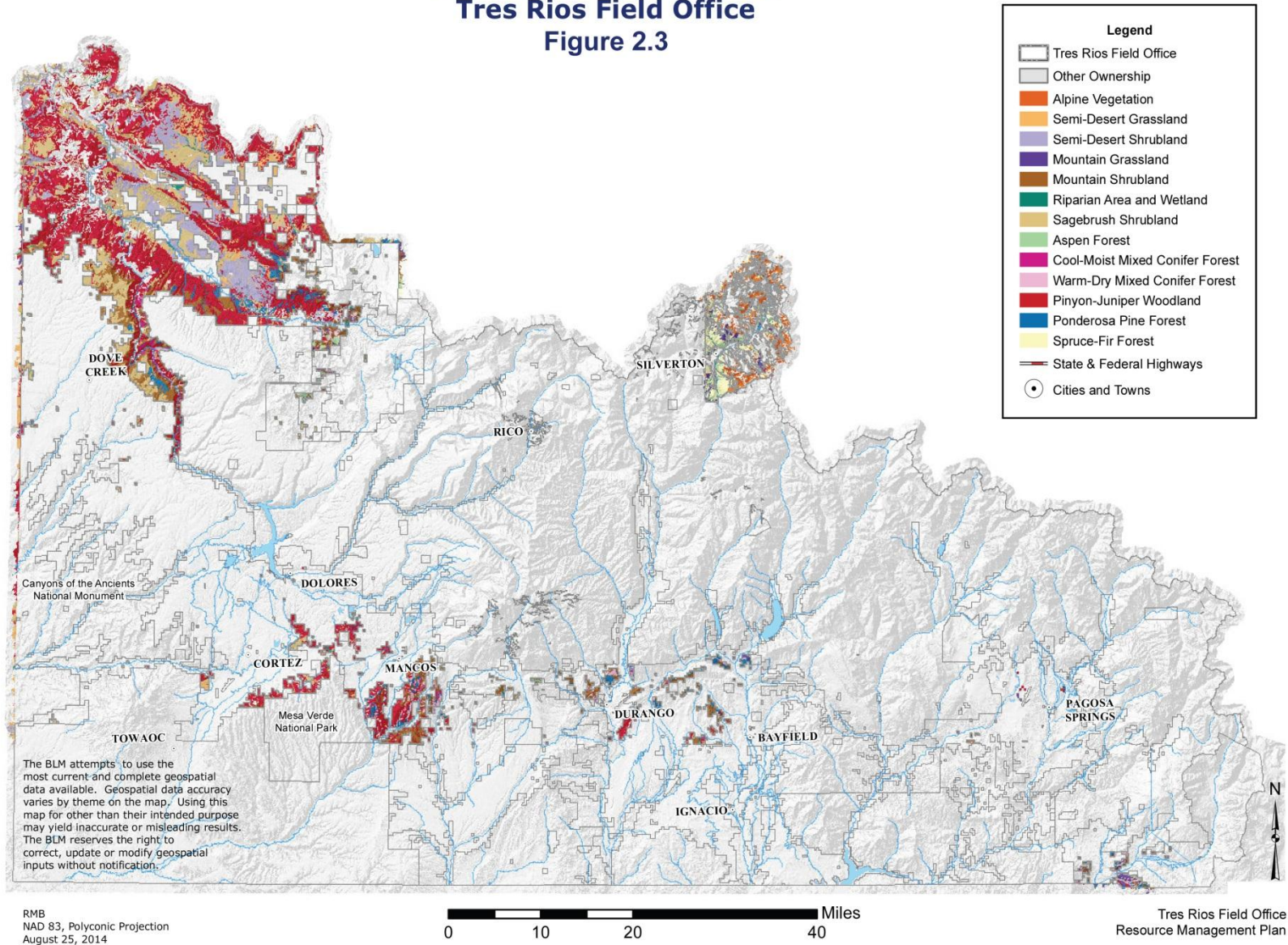


Figure 2.3 Major Vegetaion Types

2.4 Terrestrial Wildlife

Introduction

Lands administered by the TRFO have long served an important role in supporting a wide variety of wildlife species that are critical to the needs and values of the human population. Currently, the wildlife resource remains a cherished and important aspect to the people who live within and/or visit the planning area.

A wide variety of ecosystem types represent broad-scale habitat types on TRFO lands. These ecosystems are described in detail in sections 2.2 and 2.4 of this RMP and in corresponding sections in the FEIS. The soils, landforms, climate regimes, and major vegetation types associated with these ecosystems provide a diverse array of habitat conditions ranging from alpine tundra at the highest elevations to semi-desert shrublands and grasslands at the lowest elevations. Cliffs, caves, streams, waterfalls, and open water bodies also provide important wildlife habitat on the TRFO. Based on species distribution maps for Colorado, over 300 wildlife species use the ecosystem diversity of TRFO lands to meet their habitat needs (Fitzgerald et al. 1994; Hammerson 1999; Kingery 1998). Additional species may also pass through during migration and utilize habitats on or near the planning area for feeding or resting purposes.

Wildlife is a primary component of ecosystem function and an important part of the sustainable ecosystem strategy for TRFO lands. They also provide substantial renewable economic values on which local communities depend. The categories and types of wildlife species on the TRFO reflect the diversity of habitats available to them. Some species, such as mule deer (*Odocoileus hemionus*) and Rocky Mountain elk (*Cervus canadensis*), are steeped in the local culture and tradition and have long been important to the local people and communities. However, many non-game species are recognized for the economic, aesthetic, and ecological values they provide. Some of the wildlife species that occur on the TRFO are migratory and/or wide-ranging and utilize several different habitat types while others are more sedentary and utilize only a single vegetation type or individual component within a vegetation type. All species contribute to or influence the ecological processes that maintain biodiversity on the TRFO.

The RMP provides guidance for project-level implementation to maintain or move the planning landscape toward desired conditions for wildlife habitat. Human population increases and better resource information are creating additional demands on wildlife resources that include increasing trends in recreation uses, extractive uses, and travel demands. The mix of multiple use management on the landscape can affect habitat effectiveness and wildlife populations in different ways. The RMP guidance provides for multiple uses on the planning area that fall within the limits for maintaining the ecological integrity of ecosystems and protection of wildlife habitat.

Objectives for terrestrial wildlife and other resource programs will contribute to the maintenance of and/or improved wildlife habitat conditions (as described in Section 2.2). RMP components described in other resource programs will also help the BLM achieve terrestrial wildlife desired conditions (Appendix M).

The emphasis of the TRFO wildlife program is to provide ecological conditions to support all native and desired non-native terrestrial wildlife species over the life of the RMP and contribute to the stability and recovery of special status species while implementing management actions approved under this plan. To achieve these conditions a sustainable ecosystems strategy is used in this RMP to provide a range of habitat conditions and provide the ecological framework for the conservation and management of ecosystems, habitats, and species occurring on TRFO lands. The sustainable ecosystems strategy includes a four-pronged approach: 1) the designation and management of protected areas, 2) the application of ecosystem management using sustainable ecosystem concepts, 3) the development and application of the RMP components (desired conditions, objectives, standards, and guidelines) that provide a framework for the management and preservation of ecosystems, and 4) the monitoring of effects of management activities with application of adaptive management principles in response to monitoring results. This approach is expected to provide for maintenance of wildlife populations across the planning area. Effective monitoring and evaluation of how management activities are affecting

ecosystems and wildlife, and the application of adaptive management principles, will be critical to maintaining functional, sustainable ecosystems and addressing the needs of dependent species. Refer to Chapter 4 below for a description of the wildlife monitoring requirements and the data sources and methodology that apply to wildlife population and habitat monitoring.

RMP implementation will involve close coordination with the CPW and the USFWS. In particular, the TRFO considers these agencies to be the best source of population data for distribution and range maps and will coordinate closely with them to keep habitat data current during plan implementation. Partnerships with other state and federal agencies, as well as with tribal governments and other interested organizations and individuals, will help better manage for wildlife habitats and populations. These cooperative efforts will serve as an important way to achieve desired conditions and to accomplish multiple-use plan objectives.

The TRFO will follow the most current and applicable FWS-established recovery plans and comparable strategies for pertinent listed species and habitat occurring on TRFO lands, including but not limited to the Canada Lynx Conservation Assessment and Strategy and the the Mexican Spotted Owl Recovery Plan.

Desired Conditions

- 2.4.1 Wildlife populations are self-sustaining, connected, and genetically diverse across TRFO lands.
- 2.4.2 Big game severe winter range, winter concentration areas, and production areas are capable of supporting populations that meet state population objectives. These areas provide sustainable forage and habitat in areas with acceptable levels of human disturbance which do not reduce habitat effectiveness.
- 2.4.3 Invasive exotic wildlife species and diseases do not become established within the planning area. Existing invasive exotic wildlife species and diseases do not spread.
- 2.4.4 Habitat components (e.g., snags and downed logs) are maintained. Unique habitat types (e.g., springs, seeps, willow carrs, caves, and cliffs) support associated flora and fauna (with abundance and distribution commensurate with the capability of the land).
- 2.4.5 Large predator species contribute to ecological diversity and ecosystem functioning.
- 2.4.6 Projects and activities occurring on BLM lands near state and federal highways are designed to provide for long-term connectivity and integrity of habitats to facilitate effective wildlife movement.
- 2.4.7 Snag and downed wood features occur in quantities that support self-sustaining populations of associated species.
- 2.4.8 Effective raptor nesting habitat occurs throughout the planning area with abundance and distribution commensurate with the capability of the land to sustain populations.
- 2.4.9 Ecosystems and habitat conditions for terrestrial wildlife species sensitive to human disturbance are maintained.
- 2.4.10 Vegetation openings created through management actions preserve the natural patchiness inherent in Southern Rocky Mountain ecosystems.
- 2.4.11 Habitat continuity and travel corridors exist and persist to facilitate species movement and establishment into newly suitable areas as a result of changing habitats.
- 2.4.12 Populations are conserved by maintaining or improving habitat availability and quality through the incorporation of conservation strategies and species' habitat needs during project development and implementation.

- 2.4.13 Riparian and aquatic habitat, including springs and fens, support well-distributed populations of invertebrate and vertebrate riparian and aquatic dependent wildlife special status species.
- 2.4.14 Disturbances from management activities occur at levels that support critical life functions and sustain key habitat characteristics for wildlife special status species.
- 2.4.15 Areas identified as critical habitat or proposed critical habitat for special status wildlife species have the characteristics to support sustainable populations, promoting recovery of the species.
- 2.4.16 The alpine and subalpine willow (*Salix* sp.) dominated riparian areas, providing crucial winter habitat for white-tailed ptarmigan (*Lagopus leucura*) and snowshoe hare (*Lepus americanus*), do not bioaccumulate heavy metals above historically occurring background levels which enter the food chain. Areas of contamination do not become limiting factors for wildlife population sustainability.
- 2.4.17 Management actions maintain or improve habitat conditions for special status species, contributing to the stability and/or recovery of these species.
- 2.4.18 Special status species are able to disperse within the planning area and into adjacent lands. This will allow for the interchange between populations and the maintenance of genetic diversity.

Objectives

- 2.4.19 Treat 2,000 or more acres of vegetation over the life of the RMP to improve habitat that supports terrestrial wildlife across the planning area.
- 2.4.20 **Gunnison Sage-grouse (*Centrocercus minimus*):** improve habitat for Gunnison sage-grouse when conducting resource management actions within occupied habitat.
- 2.4.21 **Nokomis Fritillary Butterfly (*Speyeria nokomis*):** Over the life of the RMP, restore the hydrologic conditions and plant communities during project implementation at springs or seeps capable of supporting Nokomis fritillary while, at the same time, retaining the water development for livestock or other uses.
- 2.4.22 **Bats:** Over the life of the RMP, all mine closures for human safety at sites supporting bat populations include structures (such as bat gates) designed to provide for continued use as bat habitat.
- 2.4.23 **Inventory and Monitoring:** Improve knowledge on the distribution of wildlife special status species and their habitats by inventorying habitat and species as identified in the RMP monitoring section over the life of the RMP. Work with conservation partners in the study, management, and monitoring of these species.
- 2.4.24 **Invasives and Disease:** Over the life of the RMP, coordinate with CPW to prevent introductions or spread of fish or terrestrial wildlife species, as needed, where there is potential for negative impacts on wildlife special status species.

Standards

- 2.4.25 Standards for the golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), and peregrine falcon (*Falco peregrinus*) are listed in Table 2.3.
- 2.4.26 **Bats:** If abandoned mines are closed and determined by an agency biologist to be suitable for maternity or hibernacula, surveys will be conducted to determine occupancy. If surveys

cannot be completed, occupancy will be assumed and mine closures must allow for bat access. Abandon mines that are determined to be hazardous to bats will be closed to bats.

- 2.4.27 **Bats:** Human access at occupied caves or abandoned mines will be restricted as necessary during the following periods to maintain essential life cycle processes (dates may vary as determined by an agency biologist):
- Maternity sites - April 15 through September 1
 - Swarming sites - August 15 through October 15 (30 minutes before sunset to 30 minutes after sunrise)
 - Winter hibernacula - October 15 through May 15
- 2.4.28 **Bighorn Sheep (*Ovis canadensis*):** During project-level planning on domestic sheep (*O. aries*) allotments, management options must be developed to prevent physical contact between domestic sheep and bighorn sheep. Actions may include but are not limited to temporal separation, boundary modification, livestock-type conversion, or allotment closures.
- 2.4.29 **Bighorn Sheep:** Grazing permit administration in occupied bighorn sheep habitat must utilize measures to prevent physical contact between domestic sheep and bighorn sheep. Permit administration actions may include but are not limited to temporal separation, use of guard dogs, grazing rotation adjustments, or relocation of salting and bed grounds.
- 2.4.30 **Bighorn Sheep:** Management of recreational pack goats and other domestic goats (*Capra aegagrus hircus*) must utilize measures to prevent physical contact with bighorn sheep.
- 2.4.31 **Bighorn Sheep:** Domestic goats used for invasive plant control must be veterinarian certified as free of pathogens transmissible to bighorn sheep, except in areas where there is no risk of contact with bighorn sheep.
- 2.4.32 **Butterflies:** Management actions that could adversely impact occupied habitat used by special status butterfly species for reproduction must be designed to sustain host plant species.
- 2.4.33 **Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*):** New noise sources resulting from management activities must not contribute to noise levels that negatively impact sharp-tailed grouse leks during the active lek season (March 1 to June 30) based on best available science
- 2.4.34 **Gunnison Sage-grouse:** Management activities must not occur from March 1 to June 30 within occupied habitat suitable for nesting to allow for breeding and December 1 to March 15 for known winter habitat.
- 2.4.35 **Gunnison Sage-grouse:** New structural improvements or surface disturbance must not occur within known winter concentration area or within a 0.6-mile radius of known Gunnison sage-grouse leks.
- 2.4.36 **Gunnison Sage-grouse:** In occupied habitat fuels treatments must be designed and implemented with an emphasis on protecting and enhancing existing sagebrush ecosystems
- 2.4.37 **Gunnison Sage-grouse:** Invasive vegetation must be monitored and controlled post-treatment.
- 2.4.38 **Gunnison Sage-grouse:** New noise sources resulting from management activities should not contribute to noise levels that negatively impact sage-grouse leks during the active lek season (March 1 to May 15) based on best available science.

Guidelines

- 2.4.39 Guidelines for the golden eagle, bald eagle, osprey (*Pandion haliaetus*), peregrine falcon, northern goshawk (*Accipiter gentilis*), burrowing owl (*Athene cunicularia*), and all other accipiter, buteo, falcon, harrier, and owl species are listed in Table 2.4.
- 2.4.40 In order to determine site occupation, pre-implementation surveys may be required for projects occurring in habitats that may support populations of sensitive species and species listed or proposed under the ESA, as determined by an agency biologist.
- 2.4.41 **Bats:** Human access should be managed at caves and abandoned mines where known bat populations exist to protect bat habitat from disturbance and/or the introduction of pathogens. Management examples include, but are not limited to, seasonal or permanent closures and excluding humans by installing bat gates.
- 2.4.42 **Bats:** Where known bat concentrations of significant conservation concern are located outside caves or abandoned mines (such as in bridges structures, rock crevasse, or tree snags), human disturbance should be managed in order to protect those populations and the concentration site's physical features.
- 2.4.43 **Bats:** At swarming sites, hibernacula, and maternity sites, activities that may alter the suitability of the cave or abandoned mine for bat occupation should not occur within 500 feet of the entrance, unless to rehabilitate the suitability of the site or install mine safety closures.
- 2.4.44 **Migratory Birds:** Projects or activities should consider and undertake proactive bird conservation actions as practicable particularly during breeding season to maintain or improve habitat needs over the long-term for species identified by each agency as priority for conservation action.
- 2.4.45 The drainage of acid-mine runoff through alpine and subalpine willow-dominated riparian areas that provide crucial winter habitat for white-tailed ptarmigan and snowshoe hare should be avoided in order to prevent physiological impacts from the effects of bioaccumulation of heavy metals.
- 2.4.46 **Pollinators:** Pollinators should be considered during the application of pesticides to prevent population-level impacts and maintain pollinator function in the ecosystem.
- 2.4.47 New structural improvements, reconstruction, and operations should be designed to provide for wildlife movement to sustain populations.
- 2.4.48 Projects or activities that adversely impact pronghorn (*Antilocapra americana*) and elk production areas should be limited or avoided. This will keep reproductive success from being negatively impacted from management activities by using access restrictions during the following periods:
- Pronghorn: May 1–July 1
 - Elk: May 15–June 30
- 2.4.49 Management activities and access should be limited or avoided in critical winter range, severe winter range, and winter concentration areas for pronghorn, elk, and mule deer during the following times to keep survival and reproduction from being negatively impacted (see Figures 2.3.1, 2.3.2, and 2.3.5):
- Pronghorn: December 1–April 30
 - Elk: December 1–April 30
 - Mule deer: December 1–April 30
- 2.4.50 Severe and critical big game winter range and winter concentration areas:

Conditions-based winter wildlife closures should be implemented in order to protect critical and severe winter range and winter concentrations areas for elk and mule deer. Specific areas of concern are noted below; additional areas may be analyzed for closure on a site-specific basis.

Durango SRMA (including Perins, Animas City Mountain, Grandview, Skyline): Winter closure will occur from Dec 1 to April 15 each year. The closure may be extended to April 30 if conditions and wildlife needs are warranted.

Cortez SRMA: Critical winter range closure will be placed on Chutes-n-Ladders, Summit and the Aqueduct portions of the SRMA and closure time periods will be analyzed during the site-specific analysis.

Dolores SRMA: Seasonal closure to motorized travel from Snaggle tooth to Disappointment Creek annually from February 1 through May 1 to protect Desert Bighorn Sheep lambing.

- 2.4.51 **Ungulates:** Projects or activities in big game critical winter range, winter concentration areas, severe winter range, production areas, and important migration corridors should be designed and conducted in a manner that preserves and does not reduce habitat effectiveness within those mapped areas.
- 2.4.52 **Ungulates:** In order to provide for healthy ungulate populations capable of meeting state population objectives, anthropomorphic activity and improvements across the planning area should be designed to maintain and continue to provide effective habitat components that support critical life functions. This includes components of size and quality on the landscape providing connectivity to seasonal habitats (wildlife travel corridors), production areas, critical winter range, severe winter range, and winter concentration areas, along with other habitat components necessary to support herd viability.
- 2.4.53 **Bighorn Sheep:** Projects or activities that adversely impact bighorn sheep production areas by reducing habitat effectiveness should be limited or avoided, using access restrictions during the following periods (see Figure 2.3):
- Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*): April 15–June 30
 - Desert bighorn sheep (*O.c. nelsoni*): February 1–May 1
- 2.4.54 **Bighorn Sheep:** Projects or activities that adversely impact bighorn sheep severe winter range and winter concentration areas by reducing habitat effectiveness should be limited or avoided using access restrictions during the following periods:
- Rocky Mountain bighorn sheep: November 1–April 15
 - Desert bighorn sheep: December 1–April 15
- 2.4.55 **Wildlife Corridors:** Public ownership of important wildlife movement corridors should be maintained. Priority areas are those adjacent to public highways or where public lands are identified as a key component in maintaining the integrity of seasonal movements by wildlife in an otherwise restricted landscape.
- 2.4.56 **Columbian Sharp-tailed Grouse:** Surveys for new/unknown Columbian sharp-tailed grouse leks within occupied Columbian sharp-tailed grouse habitat should be completed prior to project approval in order to determine if additional management actions to provide for habitat effectiveness are necessary.
- 2.4.57 **Columbian Sharp-tailed Grouse:** Management activities that adversely impact critical life functions should not occur from March 15 to July 30 within a 1.25-mile radius of mapped occupied Columbian sharp-tailed grouse leks to allow for breeding and December 1 to March 15 for known winter habitat to provide for effective winter habitat to support populations on the landscape.

- 2.4.58 **Columbian Sharp-tailed Grouse:** No new structural improvements or surface disturbance should occur within known winter habitat or within a 0.4-mile radius of known Columbian sharp-tailed grouse leks to maintain effective habitat for critical life functions.

***Gunnison Sage-grouse*²**

- 2.4.59 Structures in sage-grouse habitat should be constructed to limit risk of collision and predation
- 2.4.60 Projects in occupied Gunnison sage-grouse habitat should be designed to mitigate or avoid the direct or indirect loss of habitat necessary for maintenance of the local population or reduce to acceptable levels the direct or indirect loss of important habitat necessary for sustainable local populations. Projects will incorporate special reclamation measures or design features that accelerate recovery and/or re-establishment of affected sage-grouse habitat as much as possible.
- 2.4.61 Applicable BMPs should be applied to all mineral proposals as Conditions of Approval within occupied sage-grouse habitat to provide for adequate effective habitat and breeding, nesting, and wintering habitat.
- 2.4.62 Remote methodologies for monitoring, transporting fluids to centralized collection tanks, etc., should be utilized to minimize human disturbance in Gunnison sage-grouse habitat.
- 2.4.63 Fuels treatments should be designed to meet strategic protection of identified occupied sage-grouse habitat.
- 2.4.64 Use of native seeds should be used for revegetation following fuels management treatment based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet sage-grouse habitat objectives
- 2.4.65 Within occupied Gunnison sage-grouse critical habitat the RCP grazing guidelines should be incorporated when appropriate.
- 2.4.66 Within occupied habitat, grazing in treatment areas should be deferred for 2 growing season after treatment, unless needed for seedbed preparation or desired understory and overstory are established.
- 2.4.67 When developing or modifying water developments, BMPs (Appendix N) should be used to mitigate potential impacts from West Nile virus on sage-grouse within occupied habitat.

Table 2.4: Raptor Timing and Buffer Zone Distance Standards and Guidelines

Species	Impact/Risk	Time Frame	Buffer Distance****	Source
Golden eagle	Structural improvements*	Year-round	New structures must not occur within a 0.5-mile radius of an active nest. (S)***	CPW 2008
	Disturbance**	February 1 – July 15	Human encroachment should not occur within 0.5 mile of an active nest during the nesting season. (G)***	CPW 2008
Bald eagle	Structural improvements*	Year round	New structures must not occur within a 0.5-mile radius of an active nest. (S)***	TRFO

² The BLM issued a Notice of Intent on July 18, 2014 to incorporate conservation measures into BLM land use plans amend throughout the range of the Gunnison sage-grouse, and the programmatic Environmental Impact Statement will amend the Approved RMP for the Tres Rios Field Office. Therefore, management actions pertinent to Gunnison sage-grouse in the Approved RMP may be amended at that time.

Species	Impact/Risk	Time Frame	Buffer Distance****	Source
	Disturbance**	January 15– July 15	Human encroachment should not occur within 0.5 mile of an active nest during the nesting season. (G)***	TRFO
Bald eagle winter roost	Structural improvements*	Year round	New structures must not occur within 0.5 mile of a communal roost site. (S)	TRFO
	Disturbance**	November 15 –March 15	Human encroachment should not occur within a 0.25-mile radius (indirect line of sight) or a 0.5-mile radius (direct line of sight) of a communal winter roost site (as identified by CPW and the managing agency biologist). (G) Limit activity between 10 a.m. and 2 p.m. if encroachment will occur within buffer zones. (G)	CPW 2008
Osprey	Disturbance**	April 1– August 31	Human encroachment should not occur within 0.25 mile of a nest during the nesting season. (G)	TRFO
	Structural Improvements*	Year-round	New structures should not occur within a 0.25-mile radius of an active nest. (G)	CPW 2008
Peregrine falcon	Structural Improvements*	Year-round	New structures must not occur within a 0.5-mile radius of an active cliff nest complex. (S)	CPW 2008
	Disturbance**	March 15– July 31	Human encroachment should not occur within 0.5 mile of a nest during the nesting season. (G)	CPW 2008
Northern goshawk	Disturbance**	March 1– August 31	Human encroachment should not occur within 0.5 mile of a nest during the nesting season. (G)	TRFO
	Structural Improvements*	Year-round	New structures should not occur within a 0.5-mile radius of an active nest. (G)	CPW 2008
Burrowing owl	Disturbance**	March 15– August 15	Human encroachment should not occur within 0.25 mile of nest burrows when owls may be present during the nesting season. (G)	Romin and Muck 2002
	Structural Improvements*	Year-round	New structures should not occur within a 0.25-mile radius of active nests or within occupied habitat. (G)	Romin and Muck 2002
All other raptors	Disturbance**	Varies by species	Determination of the application of these specific seasonal restrictions, timing limitations, and/or buffer distances should be made by the project biologist, guided by agency requirements, along with professional knowledge and experience. They will be considered on a case-by-case basis, taking into consideration site-specific factors such as topography, vegetation, species of raptor, historic patterns of human activity and infrastructure, and observed behaviors of individual birds. (G)	Romin and Muck 2002

Species	Impact/Risk	Time Frame	Buffer Distance****	Source
	Structural Improvements*	Varies by species	Determination of the application of these specific seasonal restrictions, timing limitations, and/or buffer distances should be made by the project biologist, guided by agency requirements, along with professional knowledge and experience. They will be considered on a case-by-case basis, taking into consideration site-specific factors such as topography, vegetation, species of raptor, historic patterns of human activity and infrastructure, and observed behaviors of individual birds. (G)	Romin and Muck 2002
*Structures include improvements such as roads, trails, radio towers, power lines, aboveground transmission corridors, and wells as proposed following nest establishment. This is not intended to include structures that historically occurred in the area prior to nest establishment. **This does not apply to historic levels and patterns of disturbance under which the nest was established and is intended to apply to additional levels and change in disturbance patterns. ***Golden and bald eagle nest as defined under the Bald and Golden Eagle Protection Act. ****Buffer distances for some species may vary based on site-specific information, current science, and agency wildlife biologists' professional judgment. Area closures may be considered where appropriate. Note: (S) = Standard; (G) = Guideline. Table information is based on a variety of sources, including 2008 Colorado Parks and Wildlife raptor guidelines, Romin and Muck (2002), professional knowledge of local area conditions, Reynolds et al.'s (1992) recommendations specific to region, and Bald and Golden Eagle Protection Act conformance Where literature and other evidence shows, exceptions may occur when individuals are adapted to human activity. Management is designed to reduce impacts during sensitive periods.				

Elk Severe Winter Range, Winter Concentration Areas and Production Areas

Tres Rios Field Office

Figure 2.4.1

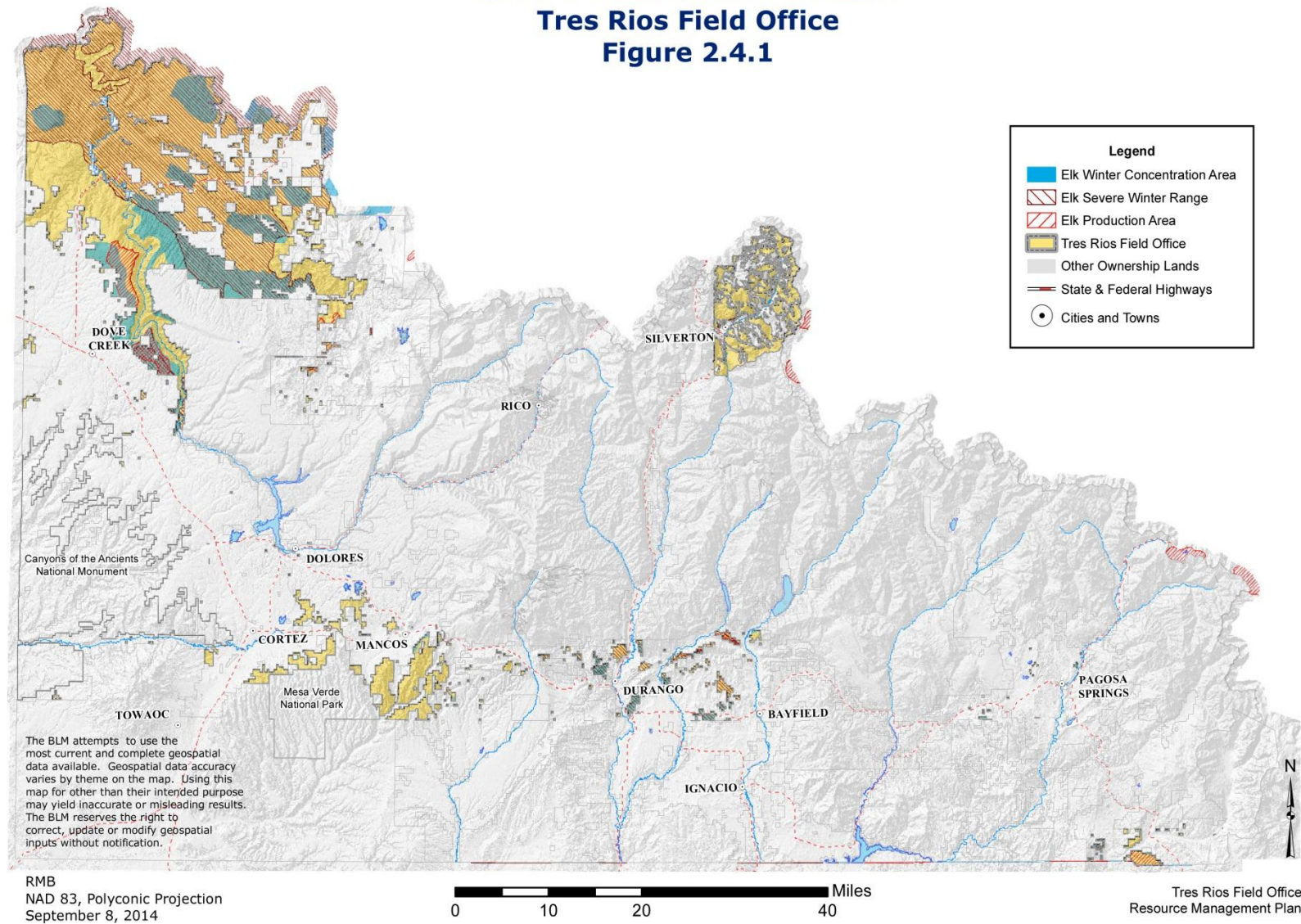


Figure 2.4.1 Elk Severe Winter Range, Winter Concentration Areas and Production Areas

Mule Deer Severe Winter Range, Winter Concentration Areas and Production Areas

Tres Rios Field Office

Figure 2.4.2

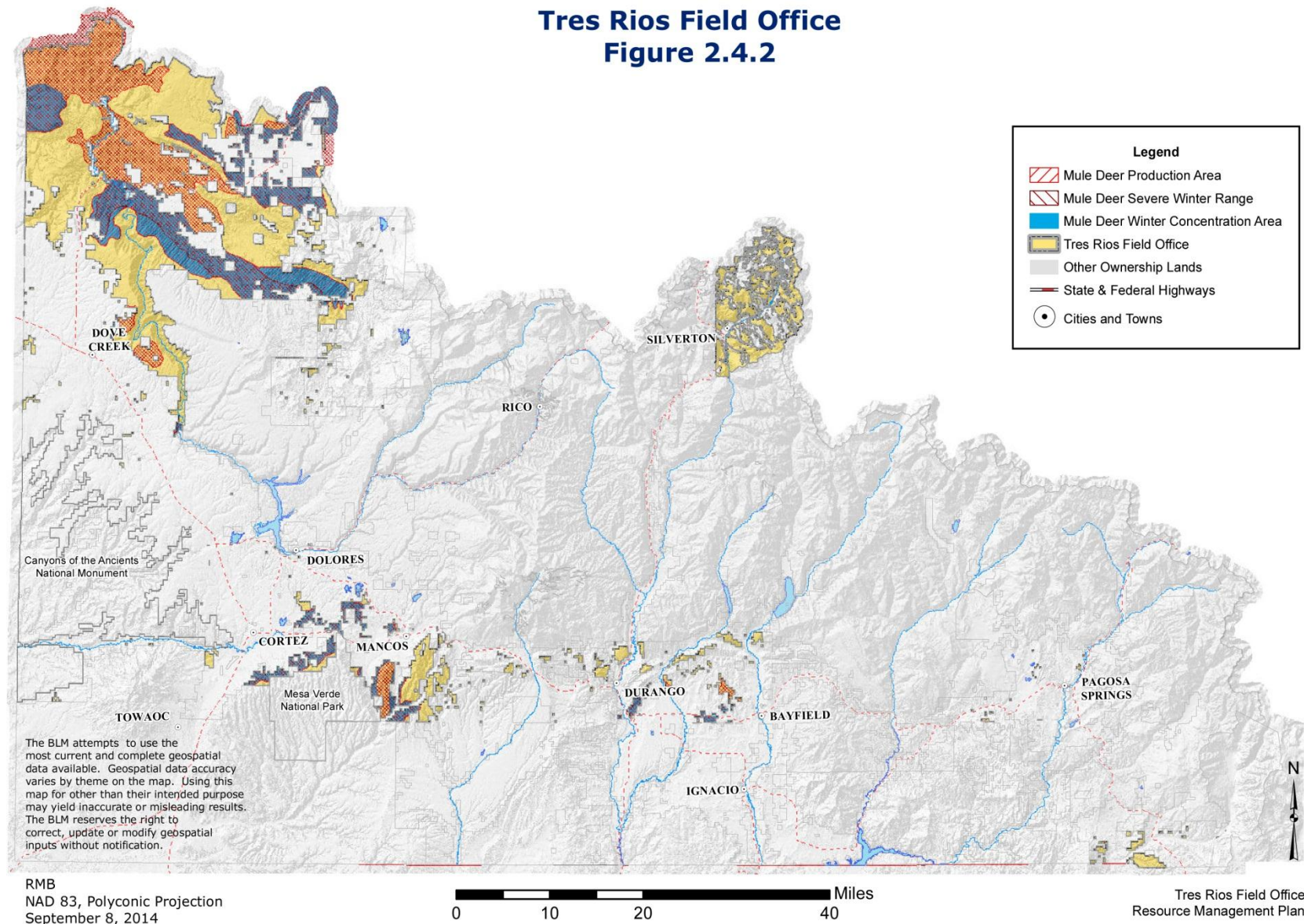


Figure 2.4.2 Mule Deer Severe Winter Range, Winter Concentration Areas and Production Areas.

Bighorn Sheep Severe Winter Range, Winter Concentration Areas and Production Areas

Tres Rios Field Office

Figure 2.4.3

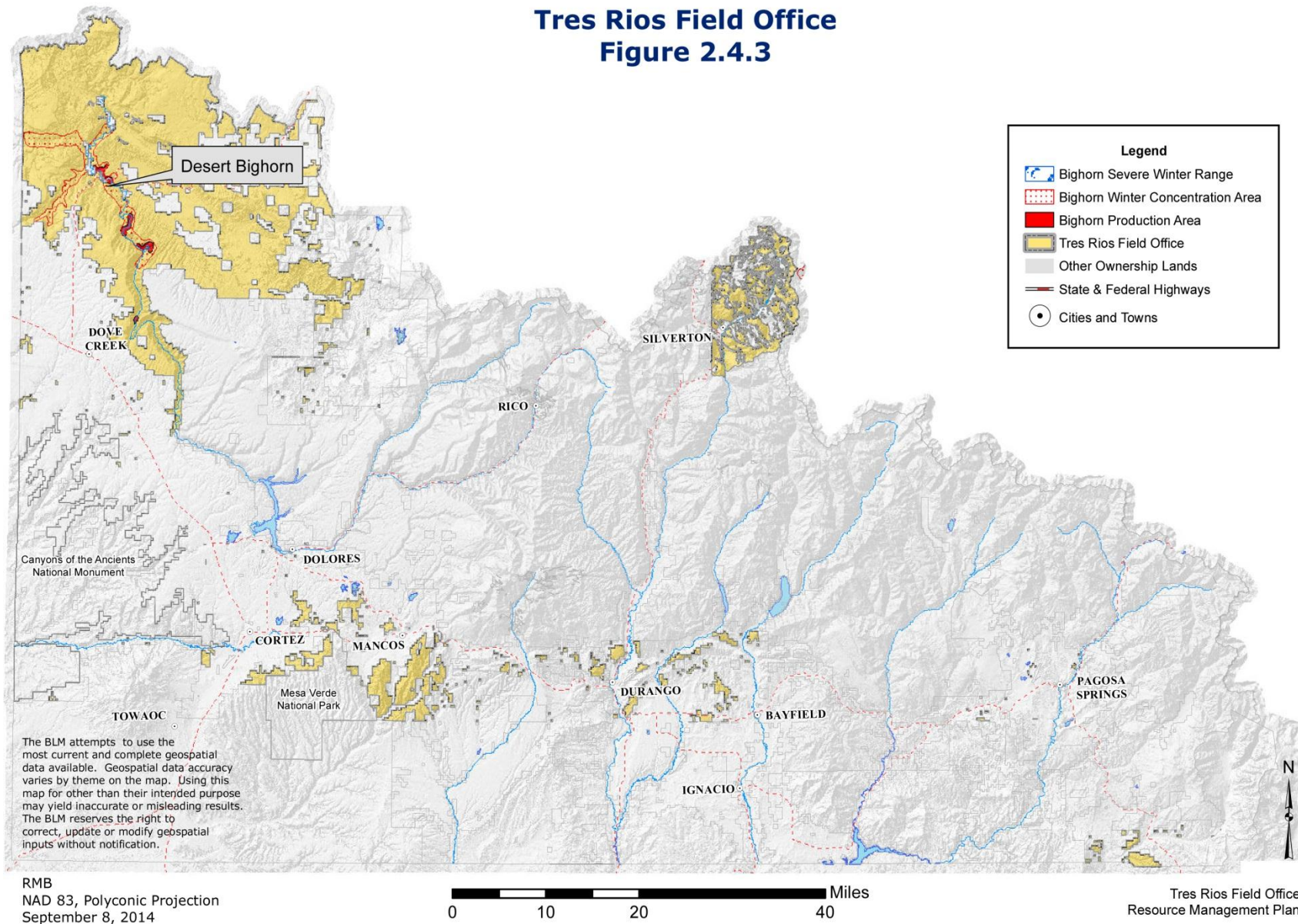


Figure 2.4.3 Bighorn Sheep Severe Winter Range, Winter Concentration Areas and Production Areas.

Gunnison Sage Grouse Habitat

Tres Rios Field Office
Figure 2.4.4



Tres Rios Field Office
Resource Management Plan

The BLM attempts 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 BLM reserves the right to correct, update or modify geospatial inputs without notification.

RMB
NAD 83, Polyconic Projection
September 8, 2014

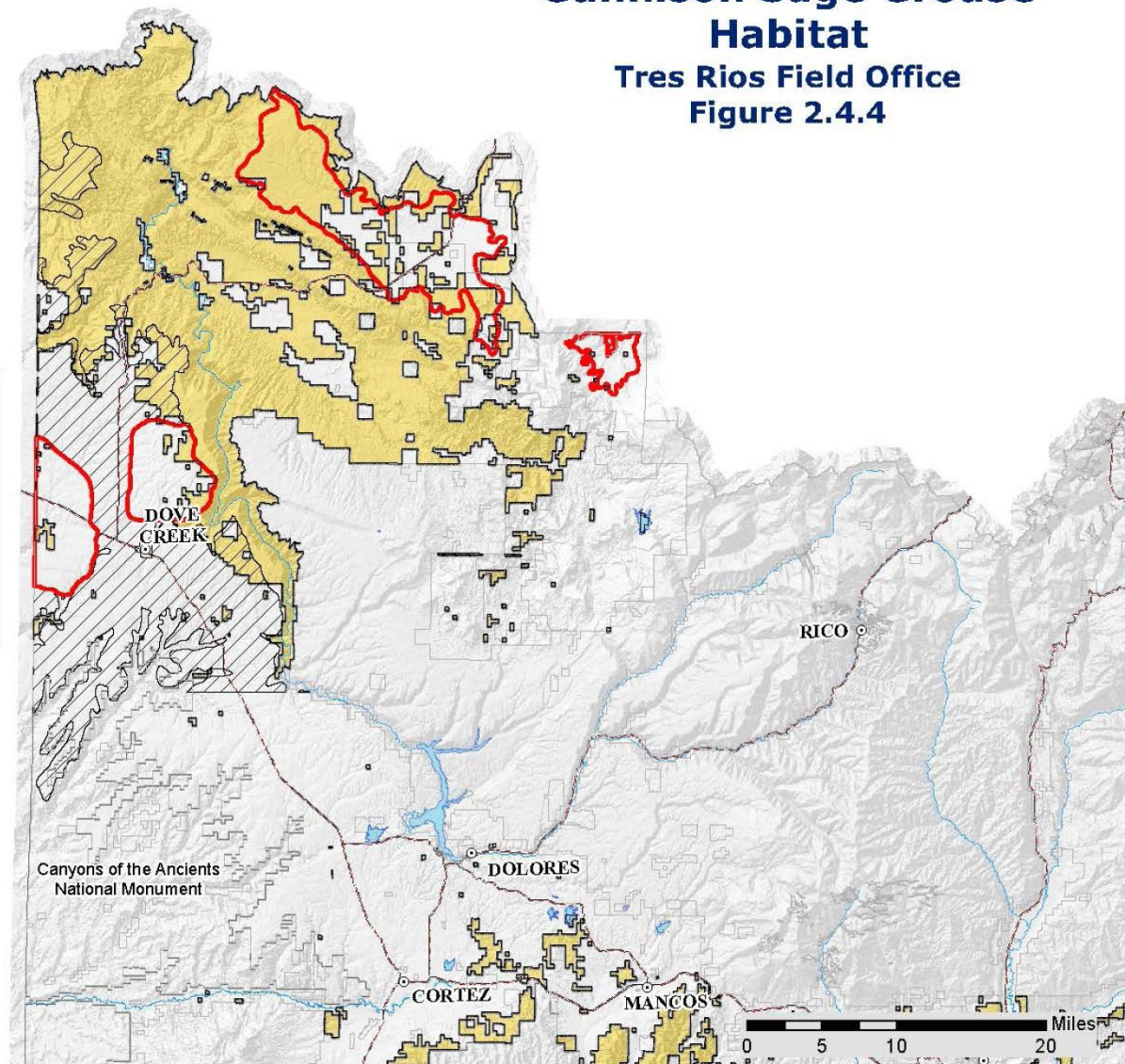
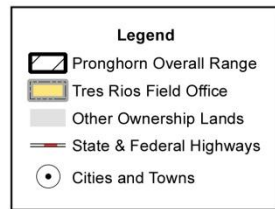


Figure 2.4.4 Gunnison Sage-grouse Proposed Occupied and Unoccupied Critical Habitat.

Pronghorn Overall Range Tres Rios Field Office Figure 2.4.5

NOTE: Overall range for this herd is also considered the Winter range and Production Area



Tres Rios Field Office
Resource Management Plan

The BLM attempts 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 BLM reserves the right to correct, update or modify geospatial inputs without notification.

RMB
NAD 83, Polyconic Projection
September 8, 2014

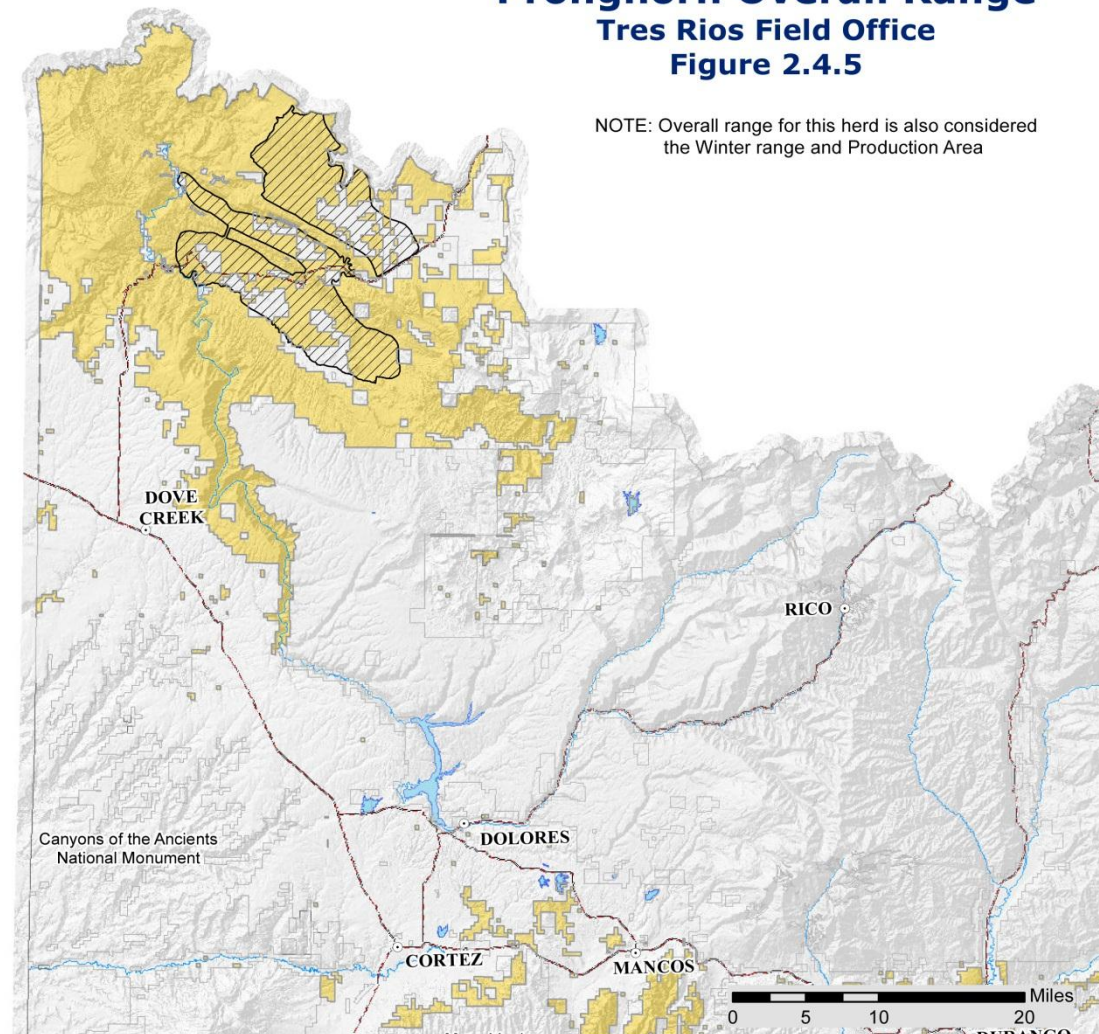


Figure 2.4.5 Pronghorn Overall Range.

2.5 Riparian Area and Wetland Ecosystems

Introduction

Riparian area and wetland ecosystems occur on valley floors and other low-lying landscape positions where the water table is usually at or near the land surface. They are frequently flooded or at least seasonally saturated by a fluctuating water table, and they depend on water derived from direct precipitation and upland sources. Riparian area and wetland ecosystems have soils that are somewhat poorly to very poorly drained and hydrophytic plants that are obligate-wetland or facultative-wet species (Reed 1988). These ecosystems, which are primarily associated with perennial and intermittent streams, enhance water quality, store water, provide habitat for wildlife and plants, and provide recreation and aesthetic values. Natural ecological processes and disturbances including fire, drought, wind, floods, flow regimes, and succession play a fundamental role in shaping the composition, structure, and function of riparian area and wetland ecosystems.

Although they are small in extent, riparian area and wetland ecosystems represent a very important ecological component. Riparian zones of the Southwest contain the greatest diversity of native vegetation communities, birds, fish, and terrestrial vertebrates (Durkin et al. 1995; Hink and Ohmart 1984; Howe and Knopf 1991; Siegel and Brock 1990). Riparian area and wetland ecosystems on TRFO lands include a general type and four physiognomic types. The general riparian area and wetland ecosystem type is defined by its soils, topographic position, and the riparian area and wetland major vegetation type (Redders 2012). Ecosystem physiognomic types, which are defined by their soils and the dominant life form in the uppermost canopy layer, include evergreen riparian forests, deciduous riparian forests, deciduous riparian shrublands, and riparian area and wetland herbaceous lands (which include fens and hanging gardens).

These ecosystems are an important part of the RMP's sustainable ecosystems strategy. This strategy includes maintaining or restoring the diversity and ecological integrity of ecosystems on TRFO lands, which in turn will protect the diversity and population viability of the majority of plant and animal species within the ecosystems. See Section 2.1 in the RMP for more information on ecosystems and the sustainable ecosystems strategy.

Riparian area and wetland ecosystem management includes maintaining or restoring the composition, structure, and function of these ecosystems; maintaining adequate vegetation cover; maintaining soil productivity; protecting water quality and aquatic habitats; and preventing or minimizing adverse impacts from management actions. Management also includes developing ecosystem classification systems, conducting riparian area and wetland inventories, monitoring, identifying plants and plant communities, using the best available science, and determining the condition of riparian area and wetland ecosystems.

Desired Conditions

- 2.5.1 Riparian area and wetland ecosystems have a diverse composition of desirable native hydrophytic plants that are vigorous and self-perpetuating. Invasive plant species are absent or rare.
- 2.5.2 Riparian area and wetland ecosystems have vegetation cover sufficient to catch sediment, dissipate energy, prevent erosion, stabilize stream banks, enhance aquatic and terrestrial wildlife habitat, and promote floodplain development.
- 2.5.3 Forest and shrubland 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.
- 2.5.4 Woody debris in a variety of sizes is present in forest and shrubland riparian area and wetland ecosystem types.

- 2.5.5 Riparian area and wetland ecosystems are resilient to change from disturbances (including from floods, fire, and drought) and offer resistance and resilience to changes in climate.
- 2.5.6 Riparian area and wetland ecosystems have flow regimes and flooding processes that contribute to stream-channel and floodplain development, maintenance, and function, and facilitate the regeneration of native hydrophytic plants (including narrowleaf cottonwood [*Populus angustifolia*] and Rio Grande cottonwood [*P. deltoides* ssp. *wislizeni*]) that depend on flooding for regeneration.
- 2.5.7 The composition, structure, and function of fens and hanging gardens are intact (including their native plant species, organic soils, and hydrology).
- 2.5.8 Riparian area and wetland ecosystems that contain plant communities with G1, G2, S1, or S2 CNHP/NatureServe Plant Community conservation status ranks are protected, have habitat to expand into, and have the water quantity and hydrologic systems necessary in order to support and sustain these communities.
- 2.5.9 Soil productivity is intact on all riparian area and wetland ecosystems.
- 2.5.10 Long-term levels of soil organic matter and soil nutrients are maintained at acceptable levels on all riparian area and wetland ecosystems.
- 2.5.11 Ground cover (vegetation and litter) is adequate to protect soils and prevent erosion on all riparian area and wetland ecosystems.
- 2.5.12 Long term impacts to soils (e.g., soil erosion, soil compaction, soil displacement, puddling, and/or severely burned soils) from management actions are rare on all riparian area and wetland ecosystems.

Objectives

- 2.5.13 Within 10 years, restore the ecological integrity of two deciduous riparian shrubland sites that currently classify as riparian herbaceous lands by increasing the canopy cover of native hydrophytic shrubs by at least 10%.
- 2.5.14 Within 10 years, determine the functional condition of 25 miles of riparian area and wetland ecosystems using the Proper Functioning Condition assessment method (Prichard 1998).
- 2.5.15 Within 15 years, treat three fens with impaired functions.
- 2.5.16 Within 5 years, eradicate tamarisk and Russian olive (*Elaeagnus angustifolia*) on two stream reaches or two seeps/springs, and if needed conduct follow-up treatment to prevent the establishment or spread of other invasive species.
- 2.5.17 Maintain or restore native riparian and upland ecosystems and connected uplands that have been treated to control non-native species on a minimum of 50 miles of stream reaches over the next 20 years.

Standards

- 2.5.18 Long term adverse effects to the hydrology, soils, and vegetation of fens and hanging gardens from management activities in or adjacent to them (including motorized travel, road construction, water pumping, and peat removal) must not occur.
- 2.5.19 Agency actions in protected areas must not adversely affect the long-term ecological integrity of the riparian area and wetland ecosystems within them.

- 2.5.20 Management actions must not cause long-term change away from desired conditions in riparian or wetland vegetation communities.

Guidelines

- 2.5.21 Agency actions should avoid or otherwise mitigate long-term adverse impacts to riparian areas and wetlands.
- 2.5.22 Agency actions should avoid or otherwise mitigate long-term adverse impacts in riparian area and wetland ecosystems that have plant communities with G1, G2, S1, or S2 CNHP/NatureServe Plant Community conservation status ranks, including wild privet (*Forestiera pubescens*) shrublands and boxelder/river birch (*Acer negundo/Betula fontinalis*) woodlands, in order to maintain the ecological integrity of those rare plant communities.
- 2.5.23 Agency actions should avoid or otherwise mitigate damage to the long-term soil productivity of riparian area and wetland ecosystems.
- 2.5.24 Livestock browsing should not remove more than 25% of the annual leader growth of hydrophytic shrubs and trees.
- 2.5.25 Agency actions should avoid or otherwise mitigate adverse impacts to the abundance and distribution of willows to maintain or improve the ecological integrity of riparian area and wetland ecosystems.
- 2.5.26 Certified, weed-free native seed mixes of local ecotypes should be used to revegetate riparian area and wetland ecosystems where commercially available. Non-native, non-invasive plant material may be used in limited situations where considered necessary in order to protect resources and/or stabilize soils in a timely fashion. Persistent non-natives or invasive exotic plant species should be avoided.
- 2.5.27 Woody riparian vegetation along low-gradient ephemeral and permanent stream channels should be maintained or restored to ensure terrestrial food sources for invertebrates, fish, birds, and mammals, and to minimize water temperature changes.

2.6 Aquatic Ecosystems and Fisheries

Introduction

Aquatic ecosystems support a variety of water-dependent species, populations, and communities of plants and animals. These ecosystems include various types of flowing and standing waters that provide aquatic habitats sufficient to support the many biotic communities that depend on abundant, clean waters. The major biological components of these ecosystems include fish, amphibians, macroinvertebrates, zooplankton, macrophytes, and periphyton communities. The physical components are composed of features such as stream gradient, sinuosity, substrate material, stream bank material, large woody debris, and most importantly, water (refer also to Section 2.7, Water Resources).

The TRFO aquatics program strives to provide the ecological conditions within their streams, rivers, and lakes, sufficient to support a diversity of native and desired non-native fish species and other aquatic biota over the long term. Proactive management of aquatic habitats and populations is critical to reversing downward population trends. Special emphasis is given to recovery efforts for native cutthroat trout (*Oncorhynchus clarkii*) subspecies. Management of the Colorado River cutthroat trout (*O.c. pleuriticus*) is guided by the Conservation Agreement and Strategy for Colorado River Cutthroat Trout in the States of Colorado, Utah, and Wyoming (Colorado River Cutthroat Trout Task Force 2001). Management of the “greenback lineage” subspecies (*O.c. stomias*) applies the same principles as those for Colorado River cutthroat, but also is also guided by the Greenback Cutthroat Trout Recovery Plan (USFWS 1998a).

Ensuring adequate stream flow and lake levels are prerequisites to maintaining healthy aquatic ecosystems and the associated fish populations. Cooperative and collaborative efforts are the preferred approach to sustaining aquatic ecosystems and ensuring populations of aquatic species are maintained or improved.

Aquatic Special Status Species

Aquatic special status species for the TRFO are listed in Table 2.6.1. These species receive special management emphasis due to their historic declines and present populations. In addition to the RMP components that specifically address some of the needs of these species, the TRFO uses additional guidance in the form of recovery plans and conservation strategies, examples of which are listed within Table 2.6.1. The common objective among the RMP components, recovery plans, and conservation strategies are to 1) stabilize and maintain existing populations, and 2) expand the distribution and overall abundance of these species to a point where long-term population is no longer of concern. The RMP components were developed with these two fundamental objectives in mind.

Unless a formal change in the status of greenback lineage cutthroat trout is recognized by the USFWS, populations of greenback lineage cutthroat trout will be treated as a federally listed species and afforded full protection under the ESA. The Greenback Cutthroat Trout Recovery Plan (USFWS 1998a) will be used as management guidance for greenback lineage populations.

In addition, agency actions that result in consumptive water uses must be in compliance with the Section 7 Agreement and Recovery Implementation Program Action Plan (USFWS 1993) and San Juan Basin Recovery Implementation Program (USFWS 2003) for four endangered fish species found in the Upper Colorado and San Juan River systems (Colorado pikeminnow [*Ptychocheilus lucius*], razorback sucker [*Xyrauchen texanus*], humpback chub [*Gila cypha*], and bonytail [*G. elegans*]).

Table 2.6.1: Special Status Aquatic Species for the Tres Rios Field Office

Aquatic Special Status Species	Current Status	Species Management Plan
Colorado River cutthroat trout (<i>Oncorhynchus clarki pleuriticus</i>)	BLM Sensitive	Conservation Agreement and Strategy for Colorado River Cutthroat Trout in the States of Colorado, Utah, and Wyoming (Colorado River Cutthroat Trout Task Force 2001)
Greenback lineage cutthroat trout (<i>Oncorhynchus clarki stomias</i>)	USFWS Threatened	Greenback Cutthroat Trout Recovery Plan (USFWS 1998a)
Bluehead sucker (<i>Catostomus discobolus</i>)	BLM Sensitive	Bluehead Sucker: A Technical Conservation Assessment (Utah DNR 2006)
Flannelmouth sucker (<i>Catostomus latipinnis</i>)	BLM Sensitive	Flannelmouth Sucker: A Technical Conservation Assessment (Utah DNR 2006)
Roundtail chub (<i>Gila robusta robusta</i>)	BLM Sensitive	Roundtail Chub: A Technical Conservation Assessment (Utah DNR 2006)
Boreal toad (<i>Bufo boreas boreas</i>)	BLM Sensitive	Boreal Toad Conservation Plan and Agreement (USFWS 2001b)
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	USFWS Endangered BLM Sensitive	Recovery Implementation Program for Endangered Fish Species In The Upper Colorado River Basin (USFWS 1995), Colorado Squawfish Recovery Plan (USFWS 1991)

Aquatic Special Status Species	Current Status	Species Management Plan
Downstream big river fishes Note: Three species (razorback sucker, humpback chub, bonytail) are not present on the TRFO, but are affected by management actions on the TRFO that result in water depletions to the lower basins.	USFWS Endangered BLM Sensitive	Recovery Implementation Program for Endangered Fish Species In The Upper Colorado River Basin (USFWS 1995), San Juan River Basin Recovery Implementation Program (USFWS 2003), Razorback Sucker Recovery Plan (USFWS 1998b), Bonytail Chub Revised Recovery Plan (USFWS 1990a), Humpback Chub Recovery Plan (USFWS 1990b)

Desired Conditions

- 2.6.1 Long-term sustainability of aquatic ecosystems is maintained.
- 2.6.2 Streams, lakes, riparian vegetation, and adjacent uplands provide habitats adequate to maintain healthy aquatic ecosystems capable of supporting a variety of native and desired non-native aquatic communities.
- 2.6.3 The quantity and quality of aquatic habitats are maintained or enhanced to provide for the long-term sustainability of biological diversity of all native and/or desired non-native vertebrate species.
- 2.6.4 Channel characteristics, water quality, flow regimens, and physical habitat features are diverse and appropriately reflect the climate, geology, and natural biota of the area.
- 2.6.5 An adequate range of stream flow provides for the long-term maintenance of physical habitat features. Channel features, including bank stability, width-to-depth ratio, pool/riffle ratio, pool depth, slope, sinuosity, cover, and substrate composition, are commensurate with those expected to occur under natural ranges of stream flow.
- 2.6.6 Water flow conditions in streams, lakes, springs, seeps, wetlands, fens, and aquifers support functioning habitats for a variety of aquatic and semi-aquatic species and communities.
- 2.6.7 Macro-invertebrate diversity and abundance reflect high water quality.
- 2.6.8 Populations of aquatic species are adequately mobile, genetically diverse, and functionally diverse throughout the planning area.
- 2.6.9 Aquatic systems are connected in a manner that avoids fragmentation of aquatic habitats and isolation of aquatic species. Connectivity between water bodies provides for all life history functions of aquatic species except where barriers are beneficial and necessary to achieve conservation goals for certain aquatic species.
- 2.6.10 All native and desired non-native fish species are disease free and thrive in the vast majority of systems historically capable of supporting such species.
- 2.6.11 Abundant Colorado River cutthroat trout populations are maintained and other areas are managed for increased abundance.
- 2.6.12 Threats to Colorado River cutthroat trout and its habitat are eliminated or reduced to the greatest extent possible.
- 2.6.13 The distribution of Colorado River cutthroat trout is increased where ecologically, sociologically, and economically feasible.

Objectives

- 2.6.14 Annually evaluate two streams for adequacy of instream flows sufficient to achieve RMP direction.
- 2.6.15 Annually enhance or restore at least 1 mile of stream habitat to maintain or restore the structure, composition, and function of physical habitat for BLM sensitive species.
- 2.6.16 Over the life of the RMP, connect at least two miles of fragmented stream habitat to provide for aquatic species movement.

Standards

- 2.6.17 Prior to use in other waters, all agency, partnering agency, and contractor field equipment having had contact with whirling disease waters must be decontaminated using current decontamination procedures.
- 2.6.18 To prevent the spread of chitrid disease, established decontamination protocols must be used when working in waters and water influence zones for current and historic breeding sites for all sensitive and listed aquatic and amphibious species.

Guidelines

The guidelines outlined below are designed to maintain aquatic ecosystems. As noted in the introduction to Section 2.6, cooperative and collaborative methods will be the preferred approach for meeting these.

The BLM will work with the Colorado Department of Natural Resources and the Colorado Water Conservation Board, pursuant to MOUs established between these parties, to identify potential management options for meeting guidelines 2.6.19 and 2.6.22 taking into consideration water availability, impacts to water yield, and alternative flow protection programs and tools. When deciding upon an appropriate method for protection of aquatic habitat, the BLM will consider the impacts to water yield that could occur from having both an instream flow water right and bypass flow requirement on the same stream system.³

- 2.6.19 Where native or desired non-native fish species occur, or should occur, a minimum level of aquatic habitat shall be maintained by identifying the minimum flow rates required to support that habitat using at least one of the following four options (2.5.19a–2.5.19d):
 - 2.6.19a. From April 1 through September 30, an instantaneous minimum flow equal to 40% of the average annual flow; from October 1 through March 31, an instantaneous minimum flow equal to 20% of the average annual flow (Tennant 1972).
 - 2.6.19b. Streamflow in riffle habitats shall be maintained at levels that maintain the minimum values for mean water depth, wetted perimeter, and mean velocity, as defined in Table 2.6.2, for each stream size category (e.g., bankfull width).
 - 2.6.19c. Streamflow in each reach shall be sufficient to maintain a minimum of 50% of the weighted usable area, for each life stage of each target species (USFWS 1984). The weighted usable area baseline (100%) will be the amount of habitat that would occur under natural, unaltered flow conditions.

³ Utilizing both methods may sometimes be necessary to protect stream flow due to the nature of BLM lands being interspersed with private lands

- 2.6.19d. Streamflow in each reach shall be maintained at levels that have been determined using alternate methods and where it can be clearly demonstrated, to the satisfaction of the BLM, that said flows will be adequate to achieve the RMP's goals and objectives for aquatic ecosystems.

Table 2.6.2: Metrics Applicable to Guideline 2.5.19b

Bankfull Width (feet)	Mean Depth (feet)	Wetted Perimeter (%)	Mean Velocity (feet/second)
1–2	≥ 0.2	50	1.0
21–40	0.2–0.4	50	1.0
41–60	0.4–0.6	50–60	1.0
> 60	> 0.6	> 60	1.0

- 2.6.20 Minimum pool levels should be established for water storage facilities where aquatic BLM sensitive species occur.
- 2.6.21 Except where barriers are beneficial and necessary to achieve conservation goals for certain aquatic species, fragmentation of aquatic habitats and isolation of aquatic species should be avoided.
- 2.6.22 Sediment delivery to streams occupied by threatened, endangered, or sensitive species should be avoided.
- 2.6.23 Activities that may cause sedimentation to amphibian habitats should be minimized.
- 2.6.24 Drainage of acid-mine runoff into riparian areas and wetland amphibian habitats should be avoided.
- 2.6.25 Agency actions should avoid or mitigate impacts within 100 feet of occupied boreal toad (*Bufo boreas boreas*) breeding sites between May 15 and September 30 (breeding season).
- 2.6.26 Agency actions should maintain or improve hydrologic function and water quality of known and historic breeding sites for all sensitive and listed aquatic and amphibious species to provide for effective habitat.

2.7 Water Resources

Water Quality

The highest priorities for improving water quality will be water bodies included on Colorado's Section 303(d) List of Impaired Waters, saline soil watersheds, priority watersheds identified through the Watershed Condition Framework (USFS 2012a), and/or watersheds identified as having the highest level of anthropogenic disturbance (see Appendix I). Monitoring the implementation and effectiveness of water quality improvement projects and water quality protection measures will continue to be a required component to meeting the intent of the Clean Water Act throughout the planning area. In compliance with the Colorado River Basin Salinity Control Act, the TRFO will use watershed restoration, stream enhancement, erosion control, and other measures to reduce or prevent salt from entering tributaries of the Colorado River.

Maintain or Improve Watershed Condition and the Function of Streams and Floodplains

Streams of the TRFO should effectively transport sediment and a natural range of flows, including periodic floods. Streams should also provide aquatic and riparian habitat, and support a broad spectrum of recreational opportunities.

Landscape-scale watershed condition assessments have not yet been completed. BLM watersheds of concern are listed in Appendix I. Watersheds where integrated restoration efforts have the best chance of successfully improving impaired watershed conditions or can maintain properly functioning watershed conditions will be given priority for restoration.

Manage Water Uses

Existing non-federal water uses and proposed new uses on TRFO lands are authorized pursuant to applicable federal authorities, current agency policies and directives, and additional consideration given to applicable interagency MOUs and agreements. Surface water and groundwater development authorizations (both new and re-issuances) must contain the necessary terms and conditions to meet terrestrial, aquatic, and/or other resource management desired conditions and objectives as required by the FLPMA.

Where water is necessary for federal uses within the planning area, water rights for consumptive uses will be obtained by the BLM. Federal purposes typically include water for livestock, recreation, aesthetics, facilities, evaporation, irrigation, augmentation and exchange, administrative sites, firefighting purposes, and terrestrial and aquatic wildlife.

When evaluating priorities for flow and habitat protection, streams supporting federally listed species and/or sensitive species, streams that have a high level of recreational use(s), and perennial streams that are currently undeveloped (no existing water developments) will be emphasized.

Desired Conditions

Water Quality

- 2.7.1 State water quality standards and anti-degradation rules are met and state-classified water uses are supported for all water bodies.
- 2.7.2 Water quality for impaired water bodies on the State of Colorado's 303(d) list move toward fully supporting state-classified uses.
- 2.7.3 State "Outstanding Waters" within the planning area maintain the high levels of water quality necessary for this status.
- 2.7.4 Watersheds within the planning area containing saline soils exhibit stable upland, riparian, and channel conditions that produce water quality as close as possible to reference conditions. These watersheds produce the lowest possible saline contributions to the upper Colorado River (per the Colorado River Basin Salinity Control Act for the BLM) (Appendix I for saline watersheds).
- 2.7.5 Water from TRFO lands will meet applicable drinking water standards when given adequate and appropriate treatment. Management activities throughout the planning area protect and/or enhance the water quality of municipal supply watersheds. Enhancement may be achieved by watershed restoration or other activities.

Stream Channels and Floodplains

- 2.7.6 Stream channel types that naturally build floodplains are connected to their floodplains and riparian areas, maintain the ability to transport overbank flows (which occur on the average every 1.5 years), and are capable of transporting moderate or high flow events.
- 2.7.7 Physical channel characteristics are in dynamic equilibrium and commensurate with the natural ranges of discharge and sediment load provided to a stream. Streams have the most probable form and the expected native riparian vegetation composition within the valley landforms that they occupy; they function correctly without management intervention.

- 2.7.8 Historically disturbed and degraded stream channels recover through floodplain development; establishment of riparian vegetation with correct structure, composition, and function; and stable channel geomorphic characteristics.

Groundwater Resources

- 2.7.9 Aquifers maintain natural conditions of recharge and discharge, especially where they are important to surface features dependent on groundwater for their existence (including caves, karst, springs, seeps, lakes, riparian areas, hanging gardens, wetland ecosystems, fens, and intermittent and perennial streams).
- 2.7.10 Potentially usable aquifers and water-bearing intervals possessing groundwater of quality and/or quantity that could provide multiple-use benefits and maintain water quality at natural conditions.
- 2.7.11 Administrative and permitted activities do not contribute to the reduction of surface water or groundwater that supplies seasonal springs, seeps, small ponds, and small wetlands considered most vulnerable to a changing climate.

Watershed Conditions, Watershed Scale, and Water Uses

- 2.7.12 Upland areas function properly and do not contribute to stream-channel degradation.
- 2.7.13 The majority of undeveloped and 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 aquatic habitat, recreation, species conservation, and pleasing aesthetics.
- 2.7.14 The overall function and integrity of streams impacted by water developments are adequately protected for their baseline ecological and recreational values. This is accomplished by providing for adequate stream flows as part of water development planning for existing or new water development projects. This includes sustaining ecological processes dependent on flow within the impacted watersheds.
- 2.7.15 In unique cases where 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 or the stream. Conversely, aquatic ecology and stability of the streams and watersheds receiving imported water are not adversely impacted.
- 2.7.16 All water developments for federal purposes have state water rights, if applicable. The beneficial use of water continues over the implementation life of the RMP, when the water is available.
- 2.7.17 All approved water developments that involve the use of TRFO lands are permitted pursuant to applicable federal authorizations.

Objectives

Water Quality

- 2.7.18 Work with the selenium task force annually to reduce salt delivery to the upper Colorado River Basin.
- 2.7.19 Every 5 years rehabilitate 10 or more acres to reduce erosion and sedimentation delivery to water bodies.

- 2.7.20 Over the implementation life of the RMP, actively participate in the development of all of the TMDL determinations and/or other appropriate options for the restoration of State of Colorado 303(d) listed impaired water bodies within the planning area.
- 2.7.21 Over the life of the RMP, implement BMPs to minimize management impacts to water quality. The effectiveness of BMPs will be improved if necessary through adaptive management.

Maintain or Improve Watershed Condition and Stream/Floodplain Function

- 2.7.22 Routes will be decommissioned as identified through the travel management planning process. Watersheds listed in Appendix I could be considered priority for decommissioning efforts.

Managing Water Uses

- 2.7.23 Pursue appropriated water rights for new or outstanding BLM water uses.
- 2.7.24 Over the implementation life of the RMP, put all consumptive use water rights owned by the BLM to beneficial use and that use documented.
- 2.7.25 Based on review of monthly water court resumes, enter into any water court case necessary to protect BLM water rights and water-dependent resources.
- 2.7.26 Over the life of the RMP, enforce compliance where the BLM places conditions and other requirements on special use authorizations related to water diversion or storage that are outside the jurisdiction of the Colorado Division of Water Resources.

Standards

- 2.7.27 Land use activities, including but not limited to new or replaced/retrofitted/reconstructed/reauthorized infrastructure, must not impact potentially useable groundwater quality or quantity to the extent that groundwater-dependent features are adversely affected. Examples of some groundwater-dependent features are springs, seeps, fens, and intermittent or perennial streams.
- 2.7.28 Activities must not be allowed within aquatic management zones that will cause a long-term change from desired conditions. The protection or improvement of riparian values, water quality, aquatic community, and for long-term stream health in these areas must be emphasized. Aquatic management zones have a minimum horizontal width from the top of each bank of 100 feet or the mean height of the mature late-seral vegetation, whichever is greater.
- 2.7.29 In all places where technically feasible, pitless, self-contained drilling systems (e.g., closed loop drilling systems) must be used for all leasable fluid minerals wells.

Guidelines

- 2.7.30 Ditches authorized on the TRFO should maintain a sufficient freeboard above the water line of the ditch to avoid or minimize damage to the ditch or from overtopping. Headgates and conveyance structures should be maintained in good functioning condition and should be clear of sediment and other debris in order to ensure proper operation. The operator should close the headgate at the end of the diversion (e.g., irrigation) season.

- 2.7.31 Water conveyance structures authorized on the TRFO should be maintained to prevent and control soil erosion and gulying on adjacent lands resulting from operations and maintenance of the structure. Design criteria may include maintaining the ditch channel to prevent downcutting and ditch failure, removal of all obstructions from the channel, and prompt remediation of pipeline breaks and ditch failures, and rehabilitation of any erosion resulting from failure of a water conveyance structure.
- 2.7.31a Water conveyance structures authorized on the TRFO should allow for the passage of aquatic organisms if there is the potential to obstruct such passage to potential or occupied habitat.
- 2.7.31b Headgates should contain measurement devices that can be used to determine compliance with land use authorization permits.
- 2.7.32 As a general practice non-toxic fluid, additives, and other materials should be used for well drilling – whether for water or fluid mineral development-- to protect surface water and groundwater quality.
- 2.7.33 Exploration and production waste should be disposed of using BMPs that meet state regulations and specific BLM requirements. Exploration and production waste should be disposed of in such a manner as to not to inhibit reclamation success of the site.
- 2.7.34 Operators should use proven technologies for the recycling of fresh water, drilling fluids, and produced water for reuse in drilling and completion operations or other beneficial purposes whenever possible.
- 2.7.35 As individual fields are developed, centralized liquid gathering systems should be used for the delivery and gathering of drilling, completion, and produced fluids such as fresh water, waste/produced water, and condensate.
- 2.7.36 Water Use and Disposal Management Plans should be included in Plans of Development for fluid minerals projects and solid minerals projects.
- 2.7.37 Ground disturbance, facilities construction, and incompatible land management activities (those activities that may pose a risk of impacting water quality) on TRFO lands should be prohibited on lands within 1,000 horizontal feet of either side of a classified surface water supply stream segment (as measured from the average high water mark of a water body) for a distance of 5 miles upstream of public water supply intakes for towns, cities, and municipalities. These activities should also be prohibited within a minimum distance of 1,000 horizontal feet for source water protection areas for towns, cities, and municipalities using a groundwater well or spring.

2.8 Livestock and Rangeland Management

Introduction

BLM Colorado's Standards for Public Land Health (BLM Manual H-4180-1) describe the resource conditions and acceptable management practices for BLM lands. Standards of land health are expressions of levels of physical and biological condition or degree of function required for healthy lands and sustainable uses, and define minimum resource conditions that must be achieved and maintained. Standards are applied on a landscape scale and relate to the potential of the landscape. Standard 2 requires that riparian habitat associated with perennial streams functions properly, provides habitat, provides biodiversity, and meets water quality standards. Standard 3 specifies that wildlife and fish communities are maintained at viable population levels commensurate with habitat potential. Standard 4 requires that special status species and their habitats are maintained and enhanced.

Rangeland Planning

Management decisions, based on NEPA analyses, may result in the modification and/or development of new AMPs. New AMPs should be completed within 1 year of a grazing decision. Vacant allotments not initially analyzed under Rescissions Act planning or as part of a decision to issue a grazing permit will be evaluated over the implementation life of the RMP in order to determine their value for restocking, use as forage reserves, altering management, or closure and dedication to other uses or values.

Range Improvements

Range improvement projects (including fences, water developments, vegetation improvement projects, etc.) will be implemented, as necessary, in order to move the program toward desired conditions and/or address other resource concerns. These projects will be described and authorized in site-specific NEPA analyses. Range improvements will be prioritized in AMPs based on resource objectives. Per agency policy, prior to implementing projects that require temporary changes to current livestock management (e.g., seeding, prescribed fire, fuel reduction projects), the TRFO will closely consult and coordinate with any affected range permittees.

Suitability and Availability of Lands for Livestock Grazing

The BLM Land Use Planning Handbook requires that BLM lands be identified as available or unavailable for livestock grazing. Using the processes described in the BLM's Land Use Planning Handbook, a suitability analysis was conducted. It provides a determination of areas generally suitable and capable for livestock grazing. Availability of allotments was determined based on the suitability analysis.

For TRFO lands, 388,202 acres are available for cattle grazing, and 31,973 acres are available for sheep. There are also a total of 20,537 available animal unit months (AUM) for cattle on TRFO lands, and 2,183 AUMs for sheep.

Figures 2.7.1 and 2.7.2 depict lands suitable for livestock grazing across the planning area, and Figure 2.7.3 depicts availability, status and stocking rates on TRFO grazing allotments. Appendix L lists TRFO grazing allotments available for livestock grazing as well as permitted AUMs by allotment.

Desired Conditions

- 2.8.1 Rangeland provides forage for qualified local livestock operations and helps ranches remain sustainable and intact.
- 2.8.2 Rangelands and permitted livestock grazing use contribute to the maintenance of large open spaces on private lands.
- 2.8.3 Permitted livestock grazing fee collections contribute to the local county fund base for roads, schools, and range improvements.
- 2.8.4 Rangelands provide 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).
- 2.8.5 Rangelands provide diverse, healthy, and sustainable plant communities and conserve soil quality.
- 2.8.6 The abundance and distribution of native grasses in semi-desert grasslands, sagebrush shrublands, pinyon-juniper woodlands, and semi-desert shrublands do not decrease due to livestock grazing management.
- 2.8.7 Rangeland management maintains or increases the abundance and distribution of native perennials, including Arizona fescue, in ponderosa pine forests.

Objectives

- 2.8.8 Annually administer at least 25% of active (improve and maintain category) grazing allotments to standard on a priority basis ensuring that all active grazing allotments during the life of the RMP receive appropriate administration. Work with grazing permittees and peers to resolve livestock grazing management issues. Take appropriate administrative action as needed to improve livestock grazing management.

Standards

Livestock Management

- 2.8.9 Manage public lands according to BLM Colorado Public Land Health Standards (BLM 1997).
- 2.8.10 Grazing permit administration in occupied bighorn sheep habitat must utilize measures to prevent physical contact between domestic sheep and bighorn sheep. Permit administration actions may include but are not limited to use of guard dogs, grazing rotation adjustments, or relocation of salting and bed grounds.
- 2.8.11 Management of domestic sheep must utilize measures to prevent physical contact with bighorn sheep.

Rangeland Vegetation

- 2.8.12 Project-level NEPA analysis and decisions, and the resultant AMPs, must identify key herbaceous and woody plant species and their respective utilization guidelines.

Guidelines

Livestock Management

- 2.8.13 Land managers should phase out grazing systems that allow for livestock use in an individual unit during the entire vegetative growth period (season-long), except where such management has been determined to be able to achieve or maintain desired conditions.
- 2.8.14 If grazing privileges are relinquished or cancelled where fragile soils, low forage production, low livestock water availability, and/or conflicts with other resources make livestock grazing undesirable, the privileges should not be re-allocated.
- 2.8.15 Prior to allocating grazing privileges for a new grazing permittee on unallocated grazing allotments, the needs of existing rangeland management, as well as ecological diversity and species viability, should be considered.
- 2.8.16 Grazing systems should be designed in a manner to provide periodic rest to forage species during the critical growing season in order to promote species diversity, reproduction, and productivity.
- 2.8.17 When designing a grazing plan, ongoing and potential forage and browse competition among livestock, big game, and wild horses should be considered.
- 2.8.18 The designation of grazing allotments to be used as forage reserves should be considered when grazing privileges terminate, if such designations would improve land management as well as livestock management opportunities.
- 2.8.19 Grazing management activities should be modified in, or livestock excluded from, riparian areas that are “nonfunctional” or “functional-at risk” with a downward trend (as rated by the

Proper Functioning Condition protocol), where livestock have been determined to be a key causative agent.

2.8.20 Trailing of livestock should be avoided along riparian areas to the extent practicable.

2.8.21 Rangeland management should incorporate measures to conserve soil quality.

2.8.22 Consider closing custodial allotments when term grazing permits expire where public lands cannot be properly managed due to the subdividing of surrounding base property, or due to insufficient or livestock water availability, access, management flexibility, and/or lack of capable rangeland.

Rangeland Vegetation

2.8.23 Vegetation management planning should emphasize restoration needs in the sagebrush ecosystem type.

2.8.24 Livestock should be moved from the grazing unit or allotment when utilization guidelines on key areas are met or exceeded, as identified in Table 2.8.1, or as specified in a NEPA decision for the particular allotment's AMP or annual operating instructions.

Table 2.8.1: Allowable Use Guidelines by Livestock Grazing Management System

Management System	Allowable Forage Utilization Guideline *
Season-long	30%
Rotation	45%
Deferred rotation	50%
Rest rotation	50%
* Utilization percentages are expressed in terms of annual forage production present at the time the livestock leave the area and are generally a measurement of designated key species on key areas.	

2.8.25 The residual riparian vegetation guidelines, as shown in Table 2.8.2, should be met or exceeded at the time the livestock leave the pasture/allotment.

Table 2.8.2: Post-grazing Vegetation Heights under Different Seasons of Use in Riparian Areas and Wetlands

Season of Use	Residual Riparian Vegetation Height *
Season-long (i.e., no regrowth potential)	6 inches
Early growing season (i.e., significant regrowth potential)	3 inches
Mid-season (i.e., limited regrowth potential)	4 inches
Late season (i.e., little to no regrowth potential)	4–6 inches
Late fall and winter (i.e., dormant season use)	6 inches
* Maximum riparian and wetland allowable use (residue) guidelines to be applied on key sedge or rush species. For riparian areas lacking sedge and/or rush species, use existing herbaceous vegetation utilization guidelines. Consider the duration livestock has access to key areas when setting allowable use guidelines—the shorter the duration, the less the opportunity for repeat grazing of individual plants.	

- 2.8.26 Allowable use, residual vegetation, and other grazing guidelines apply to wildlife, livestock, and wild horses. If allowable use guidelines are exceeded, reductions to livestock forage utilization levels, wild horse numbers, or recommendations for reductions in wildlife numbers should be made.
- 2.8.27 Based on vegetation type, sheep grazing should be planned to reflect moderate use after grazing. Where appropriate, such as areas outside the aspen-forb type, forage should show that it has been topped and selectively grazed; trampling should be minimal and trailing may be evident, but not common. Within the aspen-forb type trampling and trailing may be evident, but day bedding close to water, as well as well as trailing to and from water, should not be evident.

Range Improvements

- 2.8.28 Project planning should consider the need to retreat non-structural range improvements.
- 2.8.29 Livestock grazing use should be deferred following vegetation treatments, such as prescribed fire or wildfire, until recovery objectives are met or it is demonstrated that such use would not be detrimental.
- 2.8.30 Where appropriate, and where the appropriate kind and class of livestock are available, livestock grazing should be considered as an invasive species management tool.
- 2.8.31 Wildlife needs should be considered in the design of structural and non-structural range improvements.
- 2.8.32 Livestock grazing on lands proposed for disposal should not be re-authorized after current term grazing permits expire, unless disposal will not occur within the term of the new permit.

Lands Suitable and Capable for Cattle Grazing

Tres Rios Field Office

Figure 2.8.1

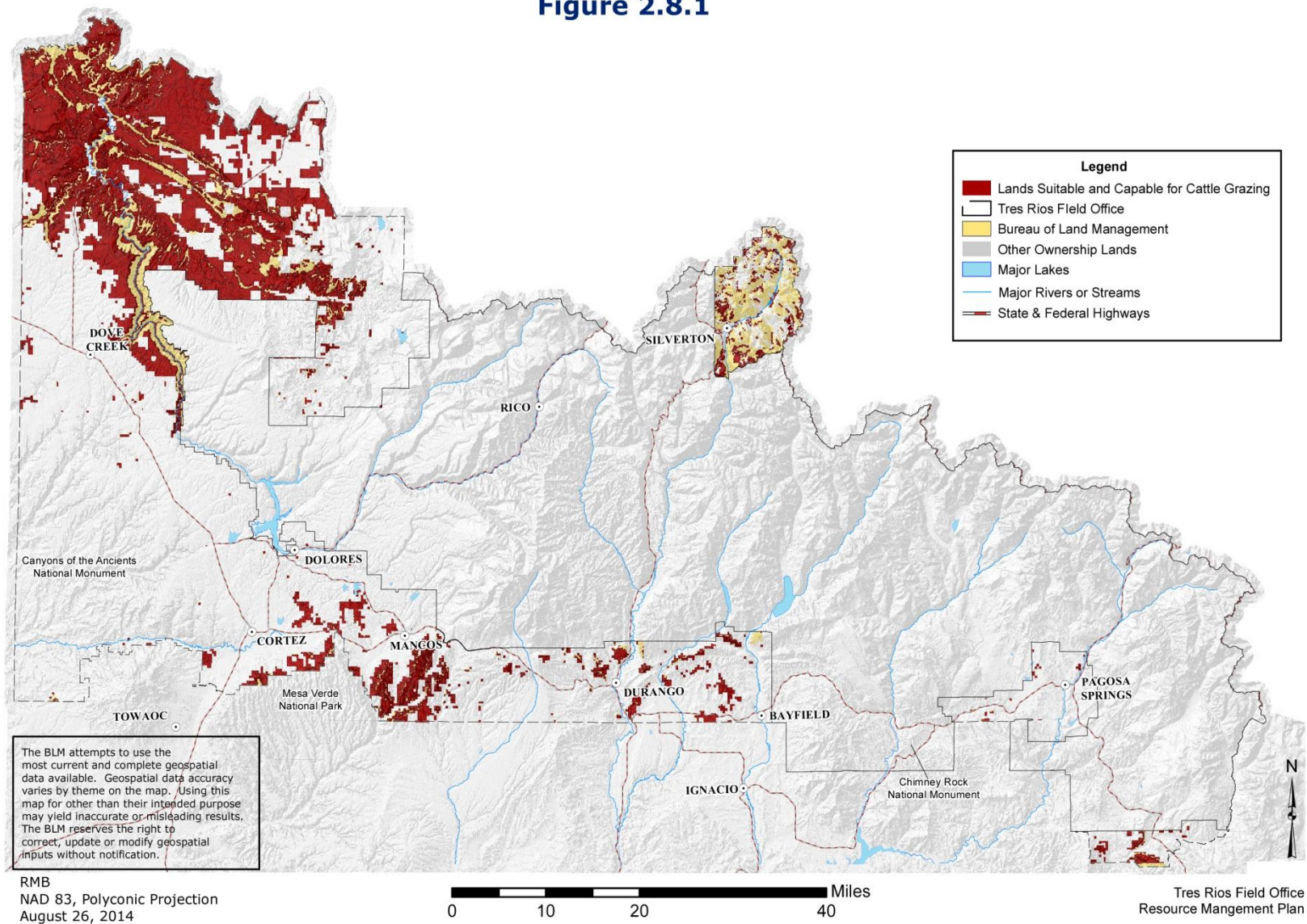


Figure 2.8.1 Lands Suitable and Capable for Cattle Grazing

Lands Suitable and Capable for Sheep Grazing

Tres Rios Field Office

Figure 2.8.2

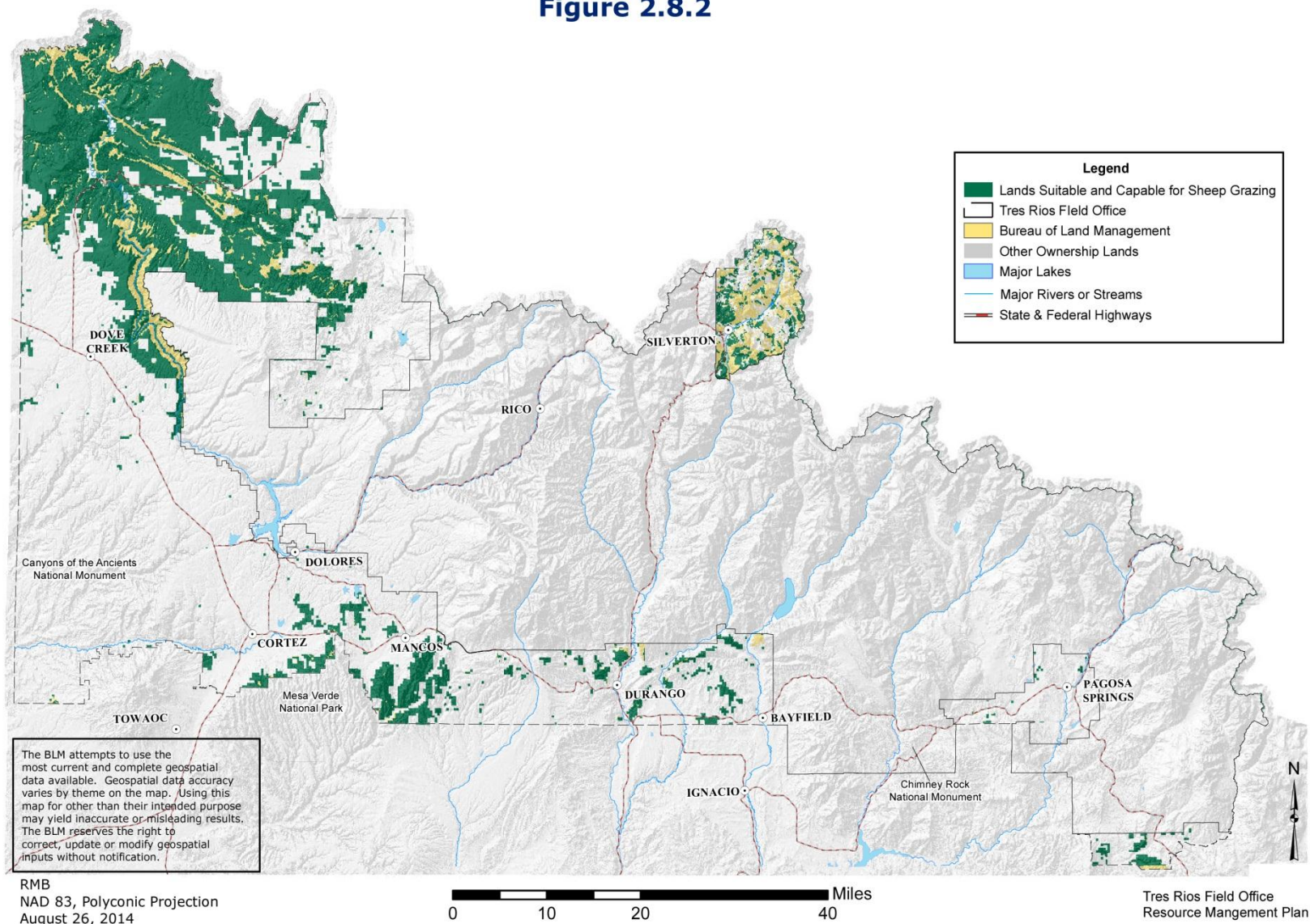


Figure 2.8.2. Lands Suitable and Capable for Sheep Grazing.

Available Grazing Allotments and Comparative Stocking Rates

Tres Rios Field Office

Figure 2.8.3

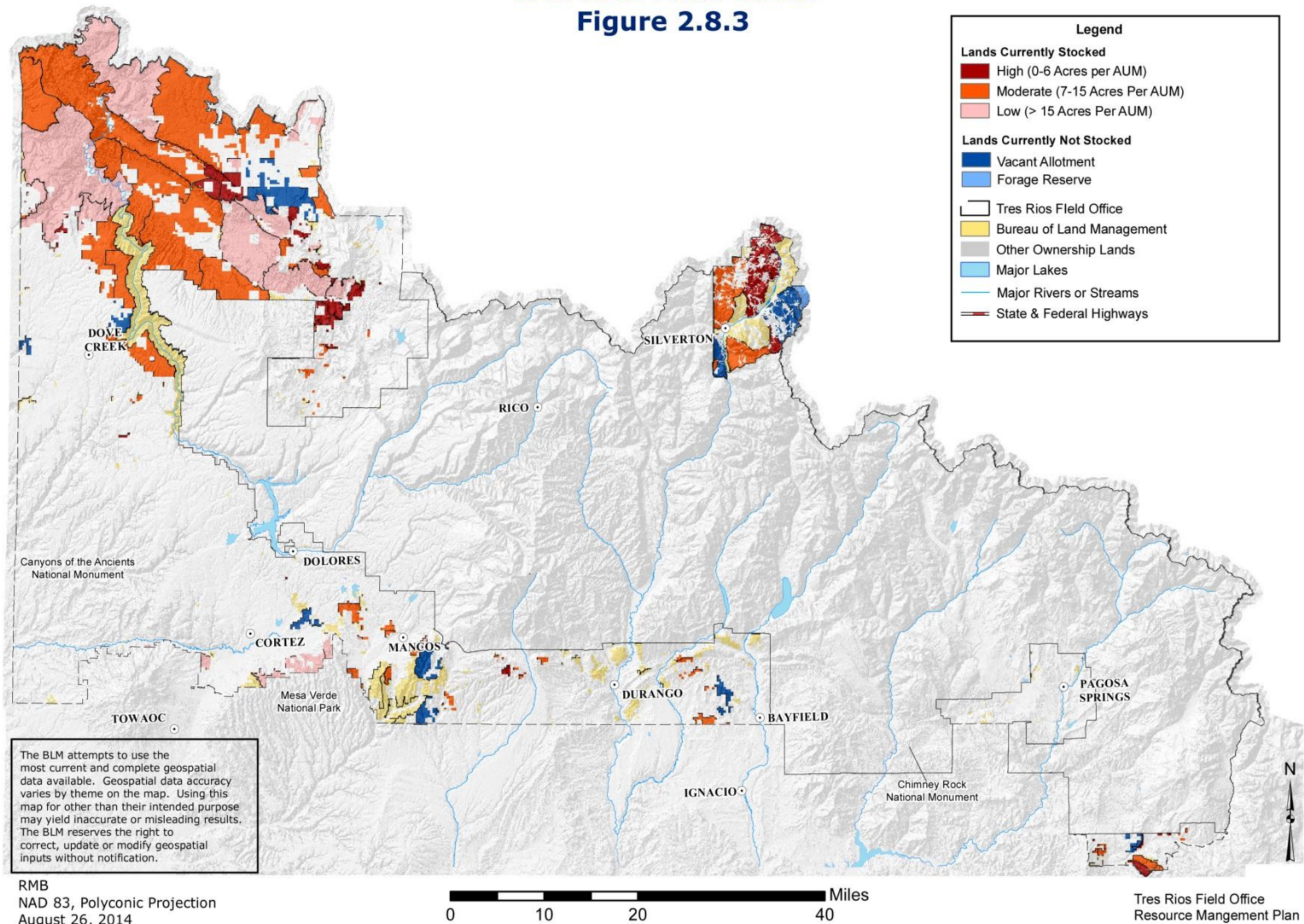


Figure 2.8.3. Available Grazing Allotments and Comparative Stocking Rates.

2.9 Invasive Species

Introduction

Within the planning area, invasive plants are currently managed in accordance with an Invasive Species Action Plan (USFS and BLM 2012). This plan, which covers a 3- to 5-year time frame, 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, as well as aquatic invasive 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.

Desired Conditions

- 2.9.1 Invasive species management is coordinated with adjacent landowners.
- 2.9.2 Federal lands have a transportation system composed of specific roads and trails that do not contribute to the spread of invasive species along travel corridors.
- 2.9.3 Invasive species, both terrestrial and aquatic, are absent or rare within the planning area, and are not influencing native populations or ecosystem function.
- 2.9.4 Invasive species are not introduced or spread within protected areas.
- 2.9.5 Management activities do not contribute to the spread of invasive annual plants or other invasive species.

Objectives

- 2.9.6 Within 15 years, contain priority Class B invasive species identified in the Invasive Species Action Plan.
- 2.9.7 Within 15 years, increase annual treated acres of noxious weeds to 10% of known infested acres.
- 2.9.8 Over the life of the RMP, include backcountry treatment within the total annual noxious weed treatment target.
- 2.9.9 Over the life of the RMP, eradicate newly established invasive species, especially Colorado Class A noxious species.

Standards

- 2.9.10 Projects or activities that would authorize the use of forage products must use certified noxious weed seed-free forage products.
- 2.9.11 Invasive species must be managed using integrated weed management principles.
- 2.9.12 Include provisions that are necessary to prevent the spread of and to control the introduction of invasive species in contracts and permits for use of TRFO lands and resources.

Guidelines

- 2.9.13 Cleaning facilities and associated educational materials should be developed for boating areas in cooperation with CPW or other state and local regulatory agencies.
- 2.9.14 Wildland fire operations should follow direction provided in Interagency Standards for Fire and Fire Aviation Operations (NFES 2724; USFS et al. 2013) under the Operational Guidelines for Aquatic Invasive Species section to prevent the introduction and spread of aquatic invasive species.
- 2.9.15 Project planning and implementation should consider the need to prevent the introduction and spread of aquatic invasive species. The SJNF and TRFO Invasive Species Action Plan (USFS et al. 2012) provides a useful reference for appropriate management and mitigation measures.
- 2.9.16 High risk aquatic invasive species areas should be a priority for inventory and monitoring activities.
- 2.9.17 Proper equipment (e.g., vehicles, waders), cleaning techniques, and chemicals should be used as necessary to prevent the spread and establishment of aquatic invasive species.
- 2.9.18 For all proposed projects or activities, the risk of invasive aquatic and plant species introduction or spread should be determined and appropriate prevention and mitigation measures implemented.

2.10 Timber and Other Forest Products

Introduction

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.

Desired Conditions

- 2.10.1 Forest vegetation management that results in, among other objectives, meeting needs or demands for forest product offerings (commercial, personal, or other use) is done in a manner that:
 - maintains or improves ecosystem function, resilience, and sustainability;
 - supports, at least, the current level of economic activity in the local timber industry;
 - provides economic or social support to local communities;
 - ensures current and future needs for Native American tribal use, including that associated with special forest products (e.g., teepee poles);
 - utilizes, to the fullest extent practicable, potential products including sawtimber, poles, topwood, or slash (e.g., limbs, foliage);
 - supports innovation in utilization, including conversion of cut-tree mass into biofuels, pellets, biochar, or other useful products;
 - efficiently balances or reduces costs of implementation of treatment activities; and
 - anticipates climate-related plant succession changes (such as favoring heat- or drought-resistant tree species as leave trees, or in reforestation).
- 2.10.2 Reforestation activities use native tree species germinated from locally collected seed stock to improve the resiliency of forest ecosystems.

Objectives

- 2.10.3 Annually review seed inventories to ensure adequate seed from locally collected native tree species is available for planned reforestation activities.

Standards

- 2.10.4 Timber cutting may occur for such purposes as salvage, protection or enhancement of biodiversity or wildlife habitat, scenic-resource management, or research or administrative studies.

2.11 Insects and Disease

Introduction

Insects and diseases (which tend to be species-specific and often attack plants that have been weakened by other disturbances such as drought) affect tree growth, fire potential, nutrient cycling, and the composition and structure of the vegetation (Schmid and Mata 1996). At endemic levels, native insects have little impact on forest structure. At epidemic levels, insects can cause tree mortality across whole landscapes. Diseases generally increase gradually or remain at similar levels over time (Rocky Mountain Region 2010). Diseases often weaken trees, making them more susceptible to bark beetle attack. Defoliators, such as western spruce budworm (*Choristoneura occidentalis*), can cause substantial damage outside periods of drought when and where favorable moisture and stand conditions result in abundant host habitat.

Insects that can have a significant impact on forest stands on SJNF lands include spruce beetle, Douglas-fir beetle (*Dendroctonus pseudotsugae*), western pine beetle (*D. brevicornis*), mountain pine beetle (*D. ponderosae*), fir engraver beetle (*Scolytus ventralis*), and western spruce budworm (*Choristoneura occidentalis*). Other insects that impact the planning area include Douglas-fir pole beetle (*Pseudohylesinus nebulosus*), western balsam bark beetle (*Dryocoetes confusus*), engraver beetle (*Ips* sp.), roundheaded pine beetle (*D. adjunctus*), pinyon twig beetle (*Pityophthorus* sp.), aspen bark beetles (*Tryphloeus populi* and *Procryphalus mucronatus*), bronze poplar borer (*Agrilus liragus*), poplar borer (*Saperda calcarata*), western tent caterpillar (*Malacosoma californicum*), large aspen tortrix (*Choristoneura conflictana*), and aspen leaf miner (*Phyllocnistis populiella*). Grasshoppers (various species) and Mormon crickets (*Anabrus simplex*) can also become pests through periodic population increases.

Diseases that have a significant impact on forest stands include shoestring root rot (*Armillaria ostoyae*), Indian paint fungus (*Echinodontium tinctorium*), red ring decay (*Phellinus pini*), white trunk rot (*P. tremulae*), fir broom rust (*Melampsorella caryophyllacearum*), annosus root rot (*Heterobasidium annosum*), Douglas-fir dwarf mistletoe (*Arceuthobium douglasii*), Southwestern dwarf mistletoe (*A. vaginatum* ssp. *cryptopodum*), pinyon pine dwarf mistletoe (*A. divaricatum*), sooty bark canker (*Encoelia pruinosa*), hypoxylon canker (*Hypoxylon mammatum*), black canker (*Ceratocystis fimbriata*), cytospora canker (*Valsa sordida*), and black stain root fungus (*Leptographium wageneri*).

Desired Conditions

- 2.11.1 Terrestrial ecosystems have age- or size-class diversity and compositional diversity that make them resistant to insect and disease outbreaks.
- 2.11.2 Epidemic outbreaks are rare after management actions have been completed.
- 2.11.3 Mortality of aspen trees in high value aspen forests due to sudden aspen decline is significantly reduced.

Objectives

- 2.11.4 Within 10 years, continue with treatment of developed recreation facilities, ski areas, and administrative sites to reduce susceptibility and hazards from insect and disease incidence, and increase long-term forest health, vigor, and resiliency.

2.12 Fire and Fuels Management

Introduction

Following the issuance of the RMP Record of Decision, the Tres Rios Field Office specialists will update the current Fire Management Plan (FMP) for the planning area, which is a strategic plan defining the fire

management program based on desired conditions and objectives. The FMP addresses strategies for all aspects of fire management activities. The response to wildland fire, regardless of ignition source or location, is set forth in the FMP, and addresses a full range of fire management activities that support firefighter and public safety, ecosystem sustainability, values to be protected, and environmental issues. Within the FMP are goals, strategies, and guidelines relating to fire based on the overall direction of, and compatibility with, the RMP. The FMP relies on a cooperative and collaborative process with other federal, state, and local agencies, fire managers, and other stakeholders to develop and implement consistent fire planning.

The use of wildland fire, along with mechanical and other fuels management strategies, should create forest conditions that meet desired conditions for the vegetation types within the planning area. Providing appropriate response to all wildfires and allowing fire to perform its natural role in the ecosystem, as much as possible, will be an integral part of the program emphasis. Recognizing that effective fire management spans jurisdictional boundaries, the fire and fuels program will also continue to partner with, and assist, local jurisdictions and communities in order to develop community wildfire protection plans designed to reduce the risk of wildfires.

Desired Conditions

- 2.12.1 Firefighter and public safety concerns are met for all fire management and fuel treatment projects.
- 2.12.2 Wildfire behavior in the WUI (in and around developed areas and communities) does not result in damage to property and protects public safety.
- 2.12.3 Wildland fire management maintains a balance between fire suppression and use of wildland fire (including both prescribed fire and natural ignitions) to regulate fuels and maintain forest ecosystems in desired conditions.
- 2.12.4 Use of wildland fire and fuels reduction treatments creates vegetation conditions that reduce the threat to real property and infrastructure from wildfire.
- 2.12.5 The WUI will have defensible space and dispersed patterns of fuel conditions that favorably modify wildfire behavior and reduce the rate of wildfire spread in and around communities at risk.
- 2.12.6 Major vegetation types reflect little or no departure from historic range of variation of fire frequency and intensity (e.g., reflect Fire Regime Condition Class 1).
- 2.12.7 Planned and unplanned fire ignitions are used to increase resiliency and diversity across all forest and rangeland vegetation types.
- 2.12.8 The occurrence of low elevation fires burning upward into spruce-fir forest will increase over time to promote the heterogeneity of spruce-fir forests.

Objectives

- 2.12.9 Annually, for the next 10 years, complete an average of 1,000 acres of hazardous fuels reduction in the WUI.
- 2.12.10 Annually, for the next 10 years, complete an average of 1,000 acres of fuels reduction and resource enhancement using fire managed for resource benefit.
- 2.12.11 Include evaluations for immediate suppression, management for resource benefit, or a combination of both actions for wildland fire response.

Standards

- 2.12.12 Natural fire ignitions will be used, when feasible, to reintroduce fire into fire-adapted and dependent ecosystems. Fire for ecological benefit will be used as a resource management tool where and when allowed.
- 2.12.13 Restoration and recovery in areas, when possible, must be provided where critical resource concerns merit rehabilitation for controlling the spread of invasive species, protecting areas of cultural concern, or protecting critical or endangered species habitat.

Guidelines

Unplanned ignitions, wildland fire tactical options, and planned ignitions will be determined on a case-by-case basis. Implementation direction for areas with special designations (e.g., ACECs, WSAs) is found in Chapter 3 of this RMP.

- 2.12.14 Unplanned ignitions, wildlife fire tactical options, and planned ignitions will be determined on a case-by-case basis. Implementation direction for areas with special designations (e.g., ACECs, WSAs) is found in Chapter 3 of this RMP.
- 2.12.15 Seeding and other site rehabilitation practices should be provided, as necessary, on wildland fire and managed wildland fire areas. Fire suppression support activities and facilities (including constructed fire lines, fuel breaks and safety areas, fire camps, staging areas, heli-bases, and heli-spots), as well as mechanical and prescribed fire treatment areas, should follow the same site rehabilitation practices.
- 2.12.16 Aerial application of retardant in live water, wetlands, and riparian areas should be avoided unless necessitated by human safety or property loss considerations.

2.13 Air Quality

Introduction

Several air pollutants have become concerns on the TRFO over the last 10 years. These include mercury, nitrogen, sulfur, methane, carbon dioxide, ozone, and ozone precursors. Many of these pollutants originate from outside the planning area. Oil and gas projects and prescribed burns and wildfire are among the activities occurring within the TRFO have the potential to impact air quality. The Colorado BLM has developed a statewide Colorado Air Resource Protection Protocol (CARPP). The protocol identifies the many components necessary for statewide air quality management from BLM-authorized activities throughout Colorado. The CARPP outlines processes to address air quality issues identified by the BLM or public scoping within a NEPA process. The CARPP also clarifies how air resources goals and objectives are being, or will be, achieved in the context of management actions set forth in this RMP. The CARPP is not a decision document, but rather a strategy to address air resource concerns consistently throughout BLM Colorado.

Examples of implementation activities include monitoring, regional air quality modeling and modeling studies, refined project analysis, emissions inventories, air pollution reduction measures, and adaptive management. It is anticipated that the CARPP could provide more detailed incremental analysis that will better inform future project-level decisions (such as leasing) made as a result of this RMP. It is also anticipated that the direction in the Colorado Air Resource Protection Protocol will be modified based on implementation effectiveness. The TRFO will utilize the direction identified in the CARPP to mitigate air quality impacts and supplement the air quality management direction identified in the RMP. The current direction identified in the CARPP is part of the RMP project record.

Additional air quality control technology and emission reductions could become necessary to achieve air quality desired conditions, as identified through future air quality modeling and monitoring. Such measures would be implemented through subsequent analysis and in consultation with affected agencies, including federal land management agencies, CDPHE and EPA.

Desired Conditions

- 2.13.1 Activities conducted do not hinder progress toward maintaining natural conditions for air quality at nearby Class I Areas outside the planning area, including Mesa Verde National Park. Indicators of natural conditions include air quality-related values of visibility, water and snow chemistry, precipitation/atmospheric chemistry, soils chemistry, and aquatic/terrestrial biota. Determination of what constitutes “natural conditions” will be based on information provided by managers of potentially affected Class I areas.
- 2.13.2 Air quality for the Class II areas within the planning area are maintained or improved with respect to pollutant concentrations so that human health and the integrity of associated aquatic and terrestrial ecosystem components are protected.
- 2.13.3 Visibility at designated scenic vistas in Class II areas is maintained or improved within the planning area (see desired conditions in Section 2.16).
- 2.13.4 Activities conducted do not hinder progress towards achieving natural visibility conditions in Class I areas managed by other agencies outside the planning area.
- 2.13.5 Management activities control dust in order to minimize impacts of dust-on-snow events.
- 2.13.6 Administrative and permitted activities emit the lowest practicable greenhouse gas emissions and have the smallest ecological footprint possible to promote sustainable natural resource management.

Objectives

- 2.13.7 Over the implementation life of the RMP prevent or reduce the atmospheric deposition of nitrogen and sulfur and allow no more than a 10% change from established baseline for lakes with an acid neutralizing capacity (ANC) $\geq 25 \mu_{eq}/L$, and for lakes with an $ANC < 25 \mu_{eq}/L$ allow no more than $1 \mu_{eq}/L$ decrease in ANC within agency control.

Standards

Based on the results of the 2010 air quality model completed for the plan revision, air quality standards and guidelines were developed to mitigate potential impacts associated with oil and gas development, in particular to reduce levels of NO₂, SO₂ and impacts to visibility and ecosystem resources. The air quality standards identified as requirements in the Proposed RMP have been carried forward into the Approved RMP, below, and will be applied as Conditions of Approval to all Applications for Permits to Drill through the NEPA process. Based on project-level NEPA analysis, some or all of the guidelines may also be applied as Conditions of Approval.

- 2.13.8 All new facilities and installations must use engines that meet the following standards within a stationary facility for fluid minerals (does not apply to non-stationary drill rigs or other temporary/mobile engines). Engines less than 300 horsepower de-rated for elevation (excluding very small engines less than 40 horsepower) must not exceed a nitrogen oxide (NO_x) limit of 2.0 grams per horsepower-hour or the minimum acceptable limit as determined by air quality regulatory agencies, using whichever is the most restrictive emission limit.
- 2.13.9 All replacement or reconditioned reciprocating internal combustion engines less than 300 horsepower de-rated for elevation (excluding very small engines less than 40 horsepower)

must not exceed a NO_x limit of 2.0 grams per horsepower-hour or the minimum acceptable limit as determined by air quality regulatory agencies, using whichever is the lower emission limit.

- 2.13.10 All new facilities and installations will use engines that meet the following standards within a stationary facility for fluid minerals (does not apply to non-stationary drill rigs or other temporary/mobile engines). Engines 300 horsepower or greater de-rated for elevation must not exceed a NO_x limit of 1.0 gram per horsepower-hour or the minimum acceptable limit as determined by air quality regulatory agencies, using whichever is the lower emission limit.
- 2.13.11 All replacement or reconditioned reciprocating internal combustion engines 300 horsepower or greater de-rated for elevation must not exceed a NO_x limit of 1.0 gram per horsepower-hour or the minimum acceptable limit as determined by air quality regulatory agencies, using whichever is the lower emission limit.
- 2.13.12 Green completion technology for oil and natural gas well completions and for restimulation or refracture activities during workovers is required to prevent venting and most flaring of methane gas and other air pollutants into the atmosphere. Green completion practices include, but are not limited to, 1) maximal capturing of fluids, well effluent, and flammable gases as soon as practicable during flowback and cleanout operations; 2) separation of sand, hydrocarbon and other liquids, and gas from saleable products of saleable quantity; 3) storage and delivery of saleable products to sales line; and 4) environmentally safe disposal of non-saleable waste products. Venting of flammable gas during the well completion process must not be allowed except for gas testing or for safety and emergency situations. This standard is required for all non-wildcat oil and natural gas wells and will be implemented in all places where technically feasible. (Technically feasible will be determined by the BLM, with input from air quality regulatory agencies as needed).
- 2.13.13 For exploration, production, transport, and processing of oil and natural gas, storage vessels must not leak and tank thief hatches must be closed when not being serviced during liquid transport, repair, or measuring activities. Valves must be maintained in a leak-free condition (<10,000 parts per million [ppm] leakage). The venting of volatile organic compounds and hazardous air pollutants emissions will achieve at least 95% emission reduction from uncontrolled emissions through the use of vapor recovery units, combustion, or other practices allowed by air quality regulatory agencies.
- 2.13.14 Valves and pipes in liquid hydrocarbon service must periodically (at minimum on an annual basis) be inspected visually, audibly, or by other means for evidence of leaks. If leaks are detected, equipment must either be repaired or replaced as applicable.
- 2.13.15 No-bleed, low-bleed, or air-driven pneumatic devices are required for all new and retrofitted oil and natural gas production sites to reduce methane emissions. Exceptions may be made for safety and operational requirements.
- 2.13.16 All new separators and dehydrators used for natural gas production must use 95% control efficiency or better volatile organic compound emission control technology compared to uncontrolled emissions.
- 2.13.17 At any one point in time, no more than four fluid mineral well pads and associated access roads will be constructed and drilled (or re-completed) with combustion engines concurrently in any given square mile. This standard does not limit the number of well pads per square mile, only the simultaneous construction and drilling of wells. This standard is necessary to minimize near-field air pollutant concentrations and ensure compliance with National Ambient Air Quality Standards (EPA 2013).

Guidelines

- 2.13.18 Construction activities that disturb a surface area greater than 1 acre and are of a duration greater than 5 days should use effective dust-suppression materials and techniques to prevent dust from visibly transporting from the area of disturbance (e.g., well pad, landing, parking area, mine) or drift more than 50 feet from the road prism. In addition, all activities should handle, transport, and store material in such a way to prevent particulate matter (dust) from visibly transporting from the storage area or area of disturbance. There will be no oil, solvents, or other unacceptable contaminants in fluids used for dust abatement.
- 2.13.19 Volatile organic compounds, hazardous air pollutants, and greenhouse gases should not be vented from existing wells and should achieve at least 95% emission reduction from uncontrolled emissions through capture and delivery to sales pipeline, vapor recovery units, combustion, or other practices allowed by air quality regulatory agencies. This would eliminate most venting from well blow-downs, during the well completion process, from oil wells freely venting casing gas, and from defective gas well-bores. Exceptions may be allowed for Bradenhead testing or other well tests where venting occurs for time periods of less than 10 minutes.
- 2.13.20 For new lease or new development areas, new mineral development facilities should be collocated and/or centralized. Facilities include roads, well pads, utilities, pipelines, compressors, power sources, fluid storage tanks, and other associated equipment. Collocation of wells (more than one well per pad) should be required where feasible.
- 2.13.21 Optimization (use of fewer, larger, and more efficient engines with lower emission rates, rather than using many small engines with higher cumulative emissions, less efficiency, and higher cumulative horsepower) should be required for fluid mineral development. For example, if new activities add an additional small engine(s) so that multiple combustion engines less than 40 horsepower each exist on the same location, the TRFO will review the site to determine if optimization should be used to reduce total location emissions.
- 2.13.22 Centralized and efficient liquid gathering systems should be used to carry condensate and produced water from wells to centralized gathering facilities to reduce mobile source emissions and other traffic impacts.
- 2.13.23 Drill rig engines used for new or recompleted wells should meet the most current non-road diesel engine rules for Tier 2, Tier 4 transitional, or Tier 4 emission standards as these standards phase in over time.

2.14 Access and Travel Management

Introduction

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).

There are many hundreds of miles of roads, primitive roads, and trails in the planning area that the BLM actively manages as components of the agency's transportation system. Many of these roads and trails were originally constructed in order to support management activities (including fire suppression, timber harvesting, mining, livestock grazing, and recreation).

Motorized Travel Suitability and OHV Area Designations

A key component of access and travel management is the identification of areas where motorized travel is prohibited, where it is allowed, and any use limitations in areas where it is allowed.

Agency-specific direction for the management of motorized travel and OHV use on BLM lands is set forth in 43 CFR 8340 and 8342. This RMP does not establish site-specific, route-by-route designations. Rather, the area classifications made in this RMP provide a framework for future route-by-route designation. Some of the criteria used for the eventual designation of specific routes would include the need for access, impacts to private property, desired recreation opportunities, erosion potential and slope, resource protection, route density, and wildlife habitat considerations.

A travel management plan is not intended to provide evidence bearing on or addressing the validity of any assertion associated with Revised Statute 2477 (R.S. 2477). R.S. 2477 refers to a law passed by Congress in 1866 that provided that “the right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted” (43 USC 932). Although the 1866 act was repealed by the FLPMA in 1976, rights associated with R.S. 2477 were preserved. R.S. 2477 rights are determined through a process that is entirely independent of the BLM’s RMP planning process. Consequently, travel management planning should not take into consideration R.S. 2477 assertions or evidence. Travel management planning should be founded on an independently determined purpose and need that is based on resource uses and associated access to public lands and waters. At such time as a decision is made on R.S. 2477 assertions, the BLM will adjust its travel routes accordingly.

BLM route designations are illustrated on a travel map that is published in conjunction with any new travel management decision. Motorized travel off the designated roads, motorized trails or areas, or otherwise inconsistent with the designations displayed on a BLM travel map is prohibited, unless the motorized use has been specifically exempted under BLM direction or by written authorization.

BLM Motorized Use Classifications

In accordance with definitions and criteria in 43 CFR 8340, the BLM designates OHV management areas by classifying areas as closed, limited, or open to motorized travel. Motorized travel within closed areas is prohibited; within open areas, motorized travel is allowed cross-country, and is not limited to specific roads and trails. Within areas classified as limited, motorized travel is limited to *designated* roads, primitive roads, and trails where site-specific travel management planning has occurred or, where site-specific travel management planning has not occurred, interim management limits motorized use to *existing* roads and trails.

The majority of TRFO land is currently unclassified and has not undergone site-specific travel management planning with a few exceptions. The 1985 San Juan/San Miguel RMP limited motorized travel to existing roads in the Silverton SRMA (51,180 acres), Bull Canyon (5 acres), Indian Henry’s Cabin (160 acres), and Disappointment Valley (46,000 acres). The RMP also closed the Dolores SRMA (22,464 acres), Weber Mountain (4,680 acres), Menefee Mountain (4,040 acres), Perins Peak/Animas Mountain (3,200 acres), and the Dolores WSA (28,539 acres). Additionally, the Mancos-Cortez Travel Management Plan (USFS and BLM 2008) analyzed limiting motorized use to a designated system of roads and trails in the Mud Springs and Phil’s World areas (see Figures 2.13.2 and 2.13.3). This system of routes is carried forward under this RMP and would further limit mechanized travel to designated routes upon completion and publication of supplemental rules in the Federal Register (see Appendix E, Cortez SRMA, for additional guidance).

For the remainder of the TRFO (and outside of ‘open’ or ‘closed’ areas), a travel management planning process will transition management from a “limited to existing roads and trails” system to a “limited to designated roads and trails” system within 5 years of the approval of this RMP, subject to available resources, including funding and labor. This process will include public involvement and will be guided by the designation criteria found in 43 CFR 8342.1. Additional limitations to travel that could be proposed may include time of day restrictions, method of travel restrictions, vehicle size restrictions, seasonal

restrictions, administrative use restrictions, or other types of limitations. A number of future data needs have been identified, which include, but are not limited to:

- establishment of rights-of-way (ROWS) and easements for transportation linear features;
- inventory of existing routes and constructed feature characteristics;
- needed route improvements to facilitate access to and across public lands;
- methods and volume of use on existing routes;
- modes of travel appropriate to specific routes; and,
- resource issues.

In accordance with 43 CFR 8341.2, where OHVs are causing or will cause considerable adverse effects on soils, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas will be immediately closed to the type(s) of vehicle causing the adverse effects until they are eliminated and measures are implemented to prevent recurrence.

Under the interim system of limiting motorized use to existing roads and trails as proposed in this RMP, motorized use is limited to those roads and trails depicted on Figure 2.14.1 a-d, which represents the current known network of transportation linear features. If necessary, during the course of comprehensive travel planning, the existing route map may be updated and posted on the TRFO website (BLM 2013). Printed copies of updated existing route data will be made available at the Dolores Public Lands Office upon request. During interim management of limited areas, and in areas identified as limited to designated, the following four exceptions allow motorized vehicle travel away from existing roads, primitive roads, and trails under the circumstances specified in each. In closed areas, motorized use would be allowed under exceptions 1 and 2 only.

Exceptions:

1. Any vehicle whose use is expressly authorized in writing by the Authorized Officer (administrative access, permitted access);
2. Any fire, military, or law enforcement vehicle while it is being used for emergency purposes;
3. For purposes such as parking, turning around, or passing another vehicle;
4. Oversnow use by vehicles designed for that purpose when snow cover is adequate to protect the underlying vegetation and soils from the impacts of that use, except in:
 - a. Designated (by CPW) big game severe winter relief and winter concentration areas, and
 - b. Designated (by CPW) occupied Gunnison sage-grouse habitat.

In areas where route designations are completed, such as areas covered by the 1985 San Juan/San Miguel RMP and the Mancos-Cortez Travel Management Plan and following completion of route designations throughout the remainder of TRFO lands, any routes subsequently approved by the BLM will be incorporated into the designated route system.

Program Emphasis

Access and opportunity to experience areas through both motorized and non-motorized travel is a key component of recreation, as well as a primary management emphasis. Efforts will focus on the designation of effective motorized and non-motorized travel routes over the long-term, consistent with desired conditions. Signing, enforcement, public information, and route maintenance and restoration will take place, as appropriate.

The transportation system program will emphasize a minimum transportation system that provides safe and efficient public and agency access to the public lands. Agency-specific travel management planning processes will be used to identify management opportunities for ensuring that the systems are efficiently maintained, environmentally compatible, and responsive to agency and public needs. Agency managers will work towards aligning the total miles of roads and trails within TRFO lands with fiscal constraints.

Reconstruction and maintenance activities will focus on diminishing impacts to resources, particularly water resources and aquatic ecosystems, and improving roadway safety while reducing the backlog of deferred maintenance.

Road construction and reconstruction requirements needed to support resource development activities will be determined and evaluated at the project level. These roads will be designed and constructed to minimize surface disturbance by collocating new facilities, when feasible, and using the existing road networks to the maximum extent possible. Roads will be constructed or reconstructed to a standard commensurate with the planned use. Design and construction BMPs will be used to minimize impacts to wildlife, water resources, aquatic ecosystems, and other resource concerns identified at the project level. Unless designated as part of the TRFO transportation system, roads constructed for resource development will

- be temporary;
- be maintained to standard by the permittee or responsible party through written authorization;
- be decommissioned and revegetated with TRFO-approved native species; and
- be monitored for success for 3 years following project completion.

Travel Management Planning

Travel management planning during RMP implementation will result in the designation of a system of roads, trails, and areas for use by motorized, mechanized, and non-mechanized modes of travel. The principal goal of travel management planning is to reduce the development of unmanaged roads and trails and the associated impacts to water resources and aquatic ecosystems, wildlife conflict impacts, and user conflicts. The travel management planning process aims to provide a variety of road and trail access for recreation, special uses, other forest resource management, and fire protection activities. Planning, design, and operation will seek to maximize user experience while addressing safety and resource protection needs.

Although travel management planning is subject to the availability of adequate resources, including funding and labor, Table 2.14 identifies the sequence of geographic areas in which TRFO would prioritize travel planning following the release of the Record of Decision for this RMP. Depending upon available resources and subsequent strategy, some of these areas may be combined to more efficiently complete the associated travel management plans.

Table 2.14. Travel Management Priorities in the TRFO, by Geographic Area.

Priority Order	Geographic Area	Applicable Existing Travel Plans
1	Mancos-Cortez	Mancos-Cortez Travel Management Plan (2008)
2	Silverton area	San Juan/San Miguel RMP (1985); limited motorized travel to existing roads in the Silverton Special Recreation Management Area
3	Greater Durango area	(none)
4	Dispersed TRFO lands (including but not limited to Disappointment Valley, Dry	(none)

	Creek Basin, Gypsum Valleys)	
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Desired Conditions

- 2.14.1 The transportation system within the planning area consists of roads, high-clearance or primitive roads, trails, and bridges that are fiscally sustainable and safe as appropriate for the designated use or desired user experience; they allow for the use of, and enjoyment by, the public, and they meet resource management objectives. Sufficient condition surveys and inspections are conducted to promote road safety and prioritize road maintenance expenditures.
- 2.14.2 The transportation system provides reasonable and legal access for resource management and recreation; it is dynamic and adaptable to resource and user needs.
- 2.14.3 Destination and loop trails exist for motorized and non-motorized recreation users. New trail development within the planning area focuses on the creation of loop opportunities and when feasible, using existing routes to do so, when such use does not compromise the intent and sustainability of the route. New routes within the planning area are designed with the goals of preserving settings, complementing the landscape, and providing the desired user outcomes/benefits.
- 2.14.4 Public access to lands that cross private lands and/or cross other jurisdictions is acquired, retained or improved through proper authorization and coordination with adjacent landowners.
- 2.14.5 The road and trail systems have adequate destination signage, mapping, and route markers to assist transportation system users in navigating throughout the planning area.
- 2.14.6 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).
- 2.14.7 Motorized use occurs only on designated roads and trails, as well as in small designated open areas (except as exempted by 43 CFR 8340). No new unauthorized or user-created routes develop within TRFO lands. Any addition of new designated routes to the transportation system will be analyzed using the appropriate planning process and level of environmental analysis.
- 2.14.8 Roads and trails that are identified for closure are decommissioned and re-established with native vegetation cover.
- 2.14.9 Travel management plans are complete for all TRFO lands within 5 years of approving this RMP, subject to available resources, including funding and labor. Travel management planning remains a continuous process designed to improve the transportation system.
- 2.14.10 Motorized and non-motorized users, as well as local, state, tribal, and other federal agencies, are actively engaged in travel management planning, route designation and implementation, and route monitoring.
- 2.14.11 Transportation system components are designed, constructed, and maintained to avoid encroaching onto streams and/or onto riparian areas and wetland 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.

- 2.14.12 Ensure that all year-round accesses to private in-holdings are authorized by the applicable agency. Roads are upgraded by the proponent, when deemed necessary to meet TRFO road standards for traffic type, volume, and season of use.

Objectives

- 2.14.13 Develop maintenance, monitoring, signing, and implementation plans during the comprehensive travel management planning process, using guidance provided in BLM *H-8342 – Travel and Transportation Handbook* for BLM routes (BLM 2012b). Designated routes will be assigned maintenance intensities at that time. Maintenance objectives by maintenance intensity level are described in Appendix A of BLM Manual 9113, Roads Manual (BLM 2011d).
- 2.14.14 Develop travel management plans in accordance with the designation criteria in 43 CFR 8342.1 for BLM lands. Routes that are not included in the designated motorized transportation system will be evaluated for their resource impact potential. Those with high potential for resource impacts will be prioritized for decommissioning as part of the implementation plan for each individual travel management plan decision. Each implementation plan will identify those routes prioritized for decommissioning, the method(s) that may be used, and a schedule for completion.

Standards

Roads

- 2.14.15 Road construction and reconstruction must be designed and constructed in accordance with the most recent applicable agency design and construction direction.

Temporary Roads

- 2.14.16 No temporary road shall be constructed prior to the development of a project-specific plan that defines how the road shall be managed and constructed. The plan must define the road design, who are the responsible parties and their roles in construction, maintenance and decommissioning, the funding source, a schedule for construction, maintenance and decommissioning, the methods(s) for decommissioning, and post-decommissioning monitoring requirements for determining decommissioning success.

Guidelines

Roads

- 2.14.17 The use of motor vehicles on roads constructed for specific non-public purposes should be limited to administrative use only.

Temporary Roads

- 2.14.18 In order to minimize disturbance, temporary roads should be constructed to the minimum standard needed for the specific project (the minimum standard that would provide for the protection of resource values identified during the environmental analysis).

Road and Trail Maintenance

- 2.14.19 Maintenance intensities derived from the Roads and Trails Terminology report (BLM 1996b) should be used to guide maintenance activities.

Route Density

2.14.20 **Road Density Guideline for Water Quality and Watershed Health:** In order to protect water quality, watershed function, major surface source water protection areas for municipalities, and to ensure compliance with the Colorado River Basin Salinity Control Act, use the best available information for determining the appropriate level of road density when analyzing and approving management actions that affect motorized routes.

2.14.21 **Road and Motorized Trail Density Guideline for Wildlife:** In order to maintain wildlife habitat effectiveness of TRFO lands, road and motorized trail densities should be considered in the following areas when analyzing and approving management actions that affect motorized routes:

- Big game production areas (calving or lambing areas)
- Elk and deer severe winter range
- Elk and deer winter concentration areas
- Deer critical winter range

OHV Area Designations

Tres Rios Field Office

Figure 2.14.1

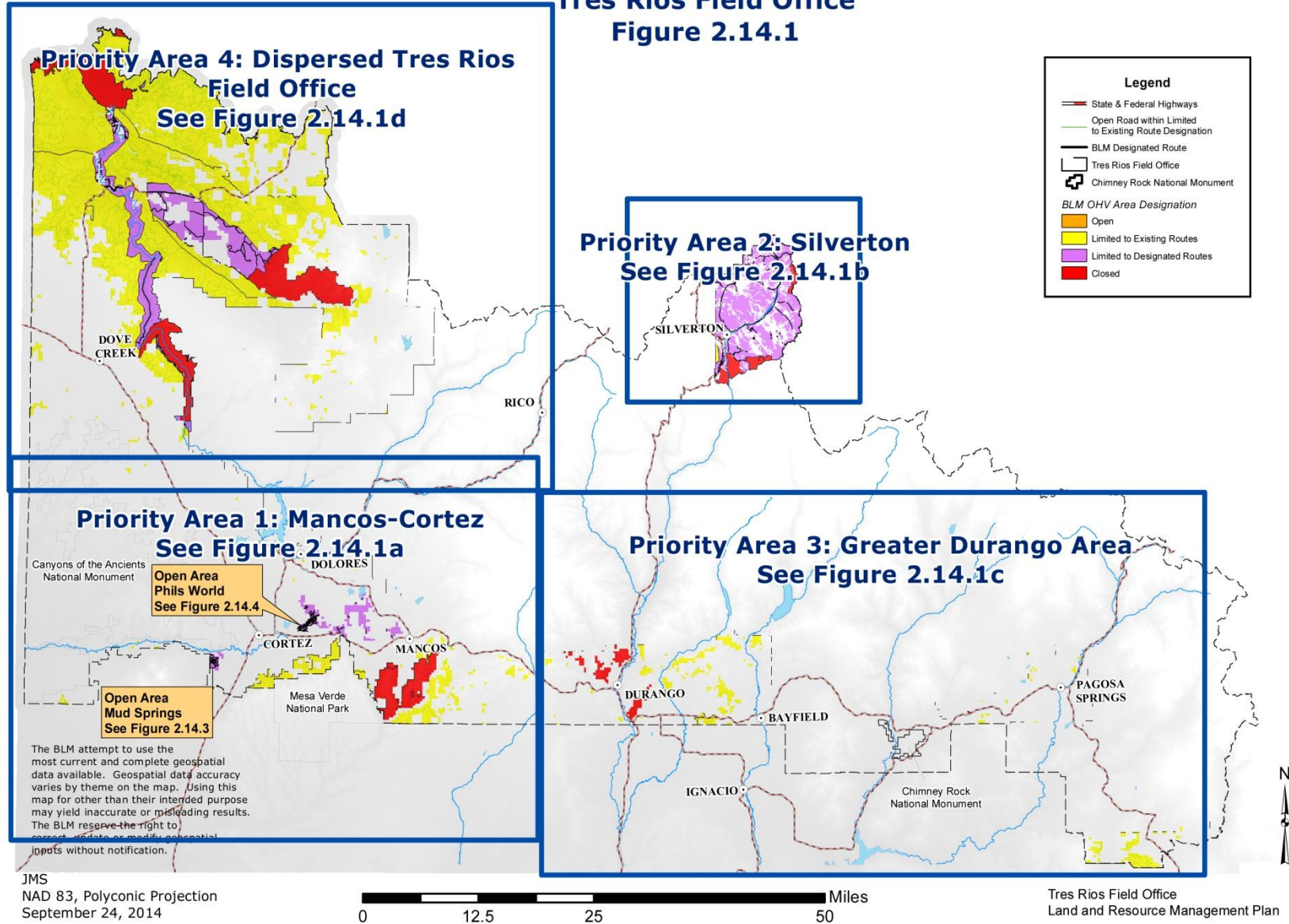


Figure 2.14.1 OHV Area Designations

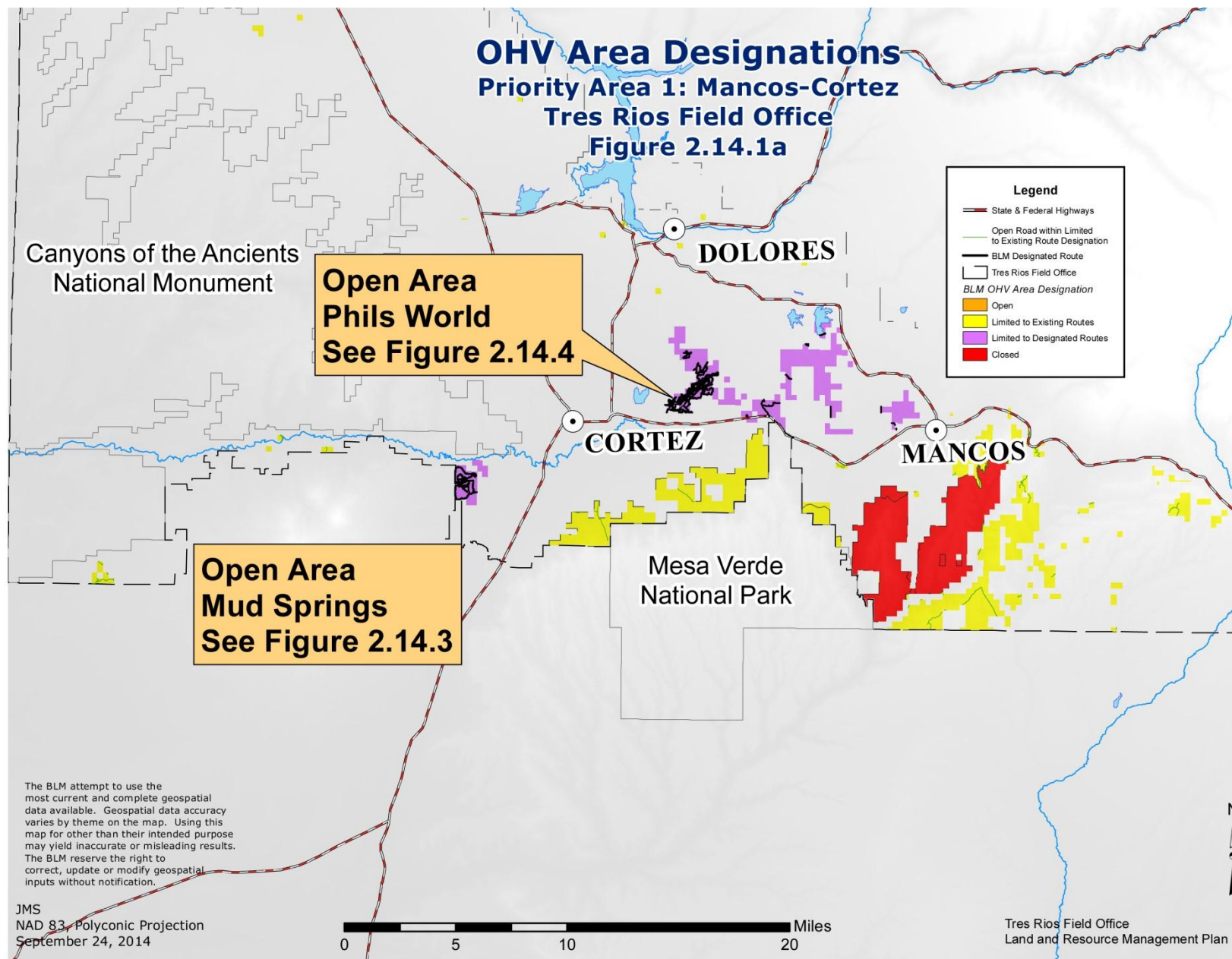
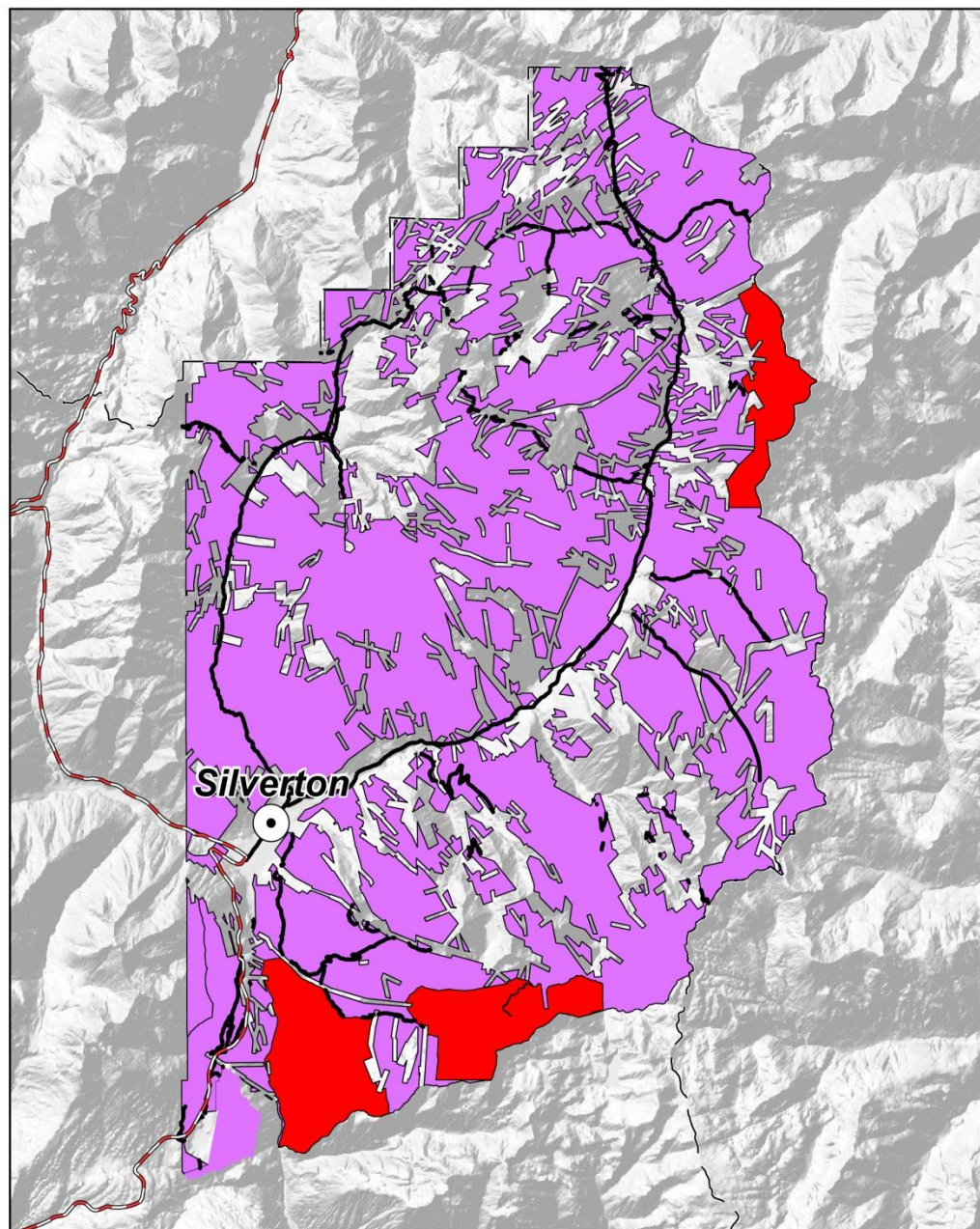


Figure 2.14.1a. OHV Area Designations, Priority Area 1: Mancos-Cortez



OHV Area Designations Priority Area 2 : Silverton Tres Rios Field Office Figure 2.14.1b

Legend

- State & Federal Highways
- BLM Designated Route
- Tres Rios Field Office
- BLM OHV Area Designation**
 - Limited to Existing Routes
 - Limited to Designated Routes
 - Closed

0 1.25 2.5 5 Miles

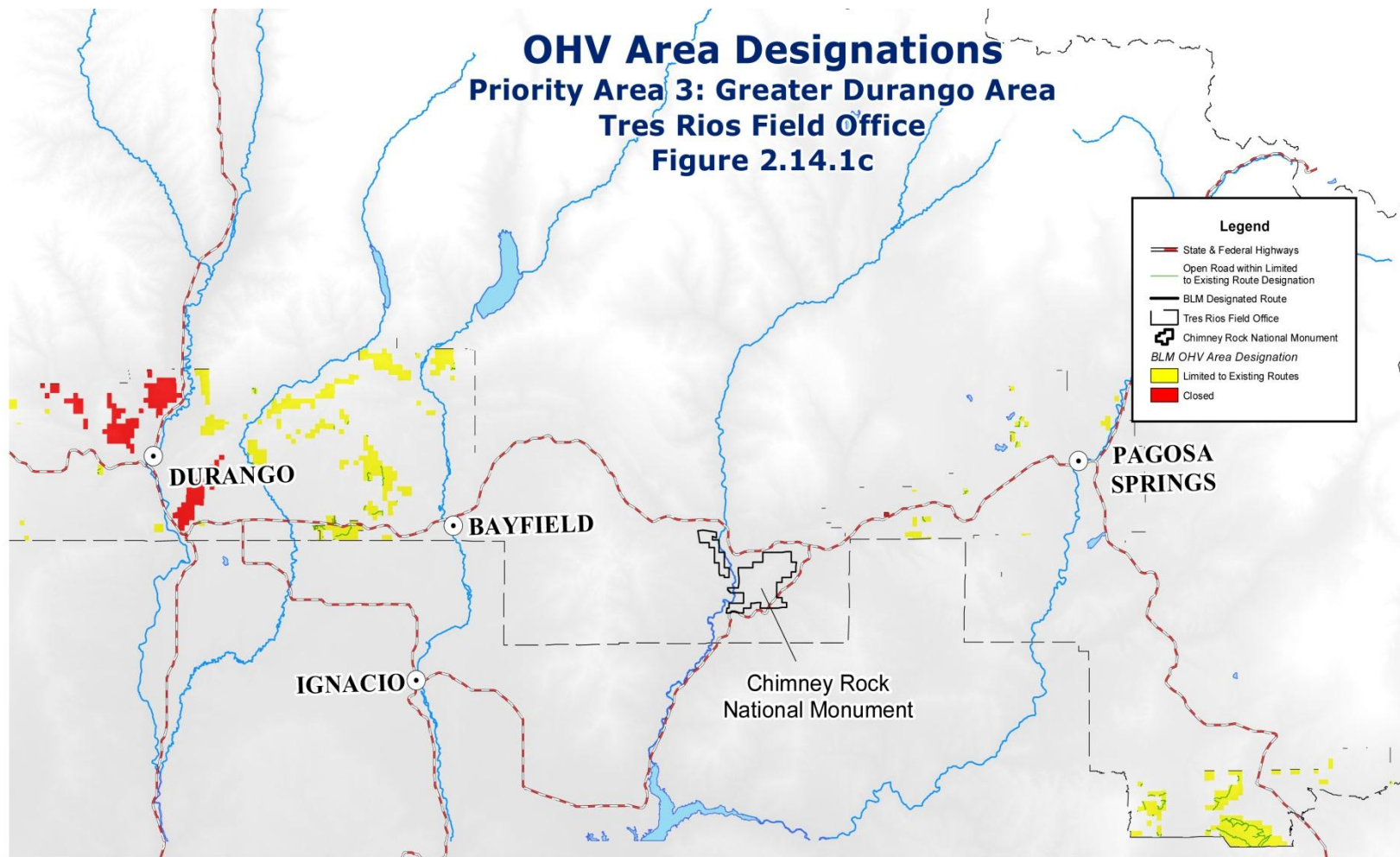


The BLM attempts to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The BLM reserves the right to correct, update or modify geospatial inputs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

RMB
Polyconic projection, NAD 83
January 15, 2015

Tres Rios Field Office
Land and Resource Management Plan

Figure 2.14.1b. OHV Area Designations, Priority Area 2: Silverton



The 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 BLM reserve the right to correct, update or modify geospatial inputs without notification.

JMS
NAD 83, Polyconic Projection
September 24, 2014

0 5 10 20 Miles



Tres Rios Field Office
Land and Resource Management Plan

Figure 2.14.1c. Priority Area 3: Greater Durango Area.

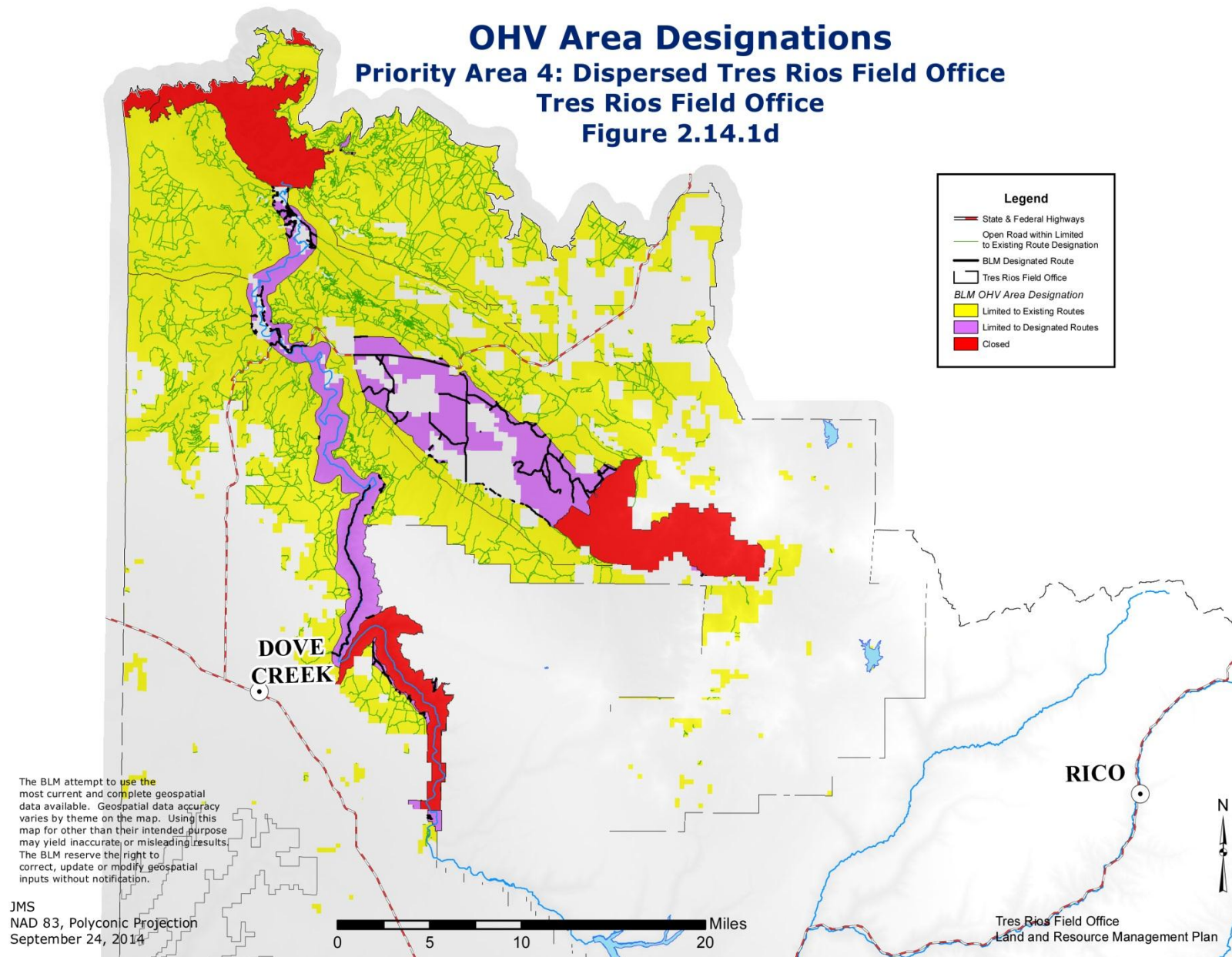
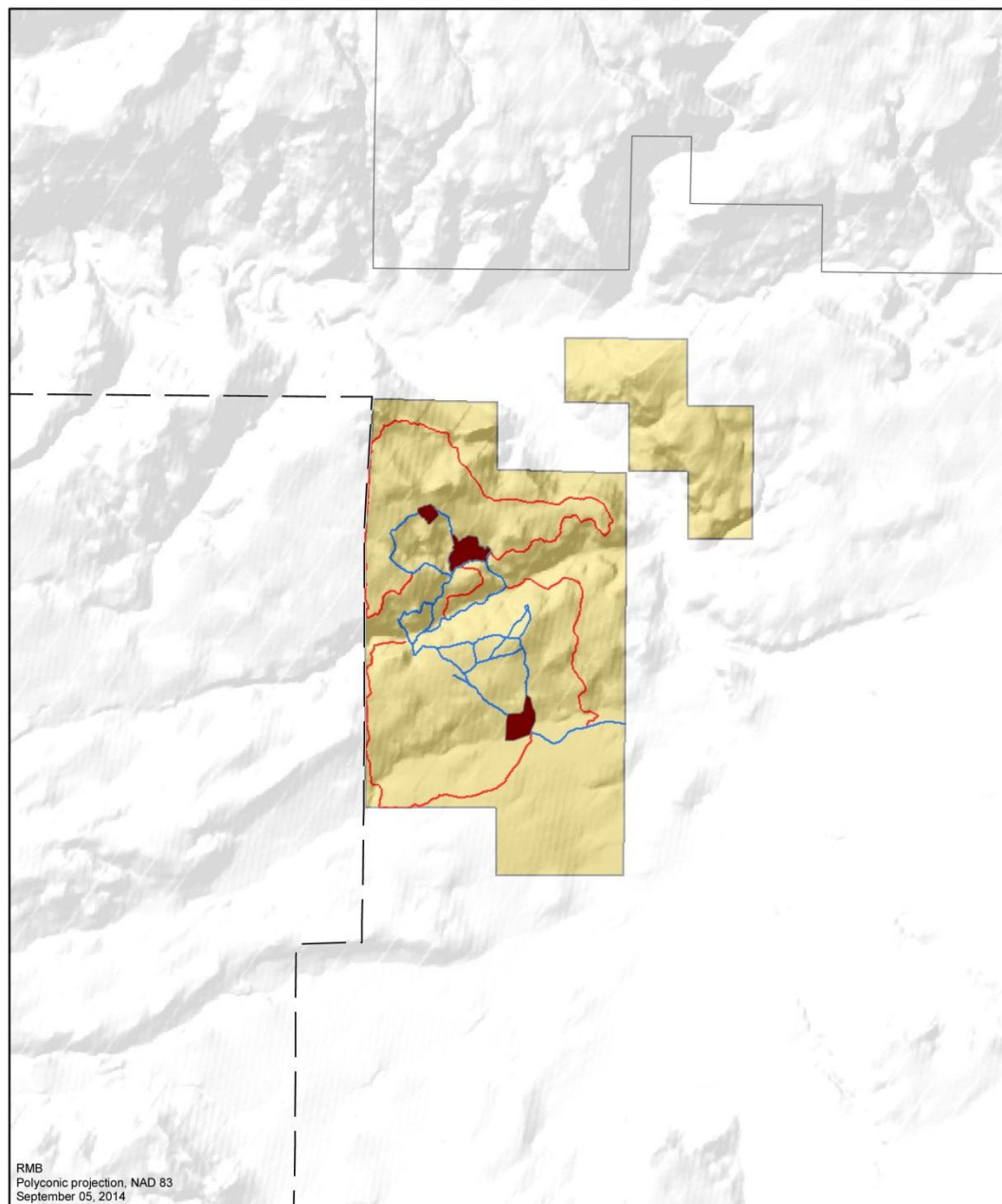
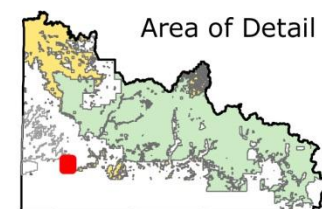
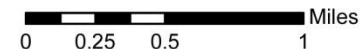
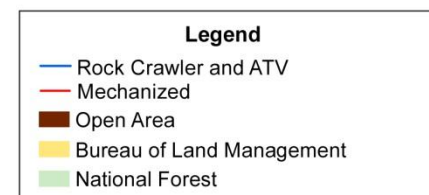


Figure 2.14.1d. Priority Area 4: Dispersed Tres Rios Field Office.



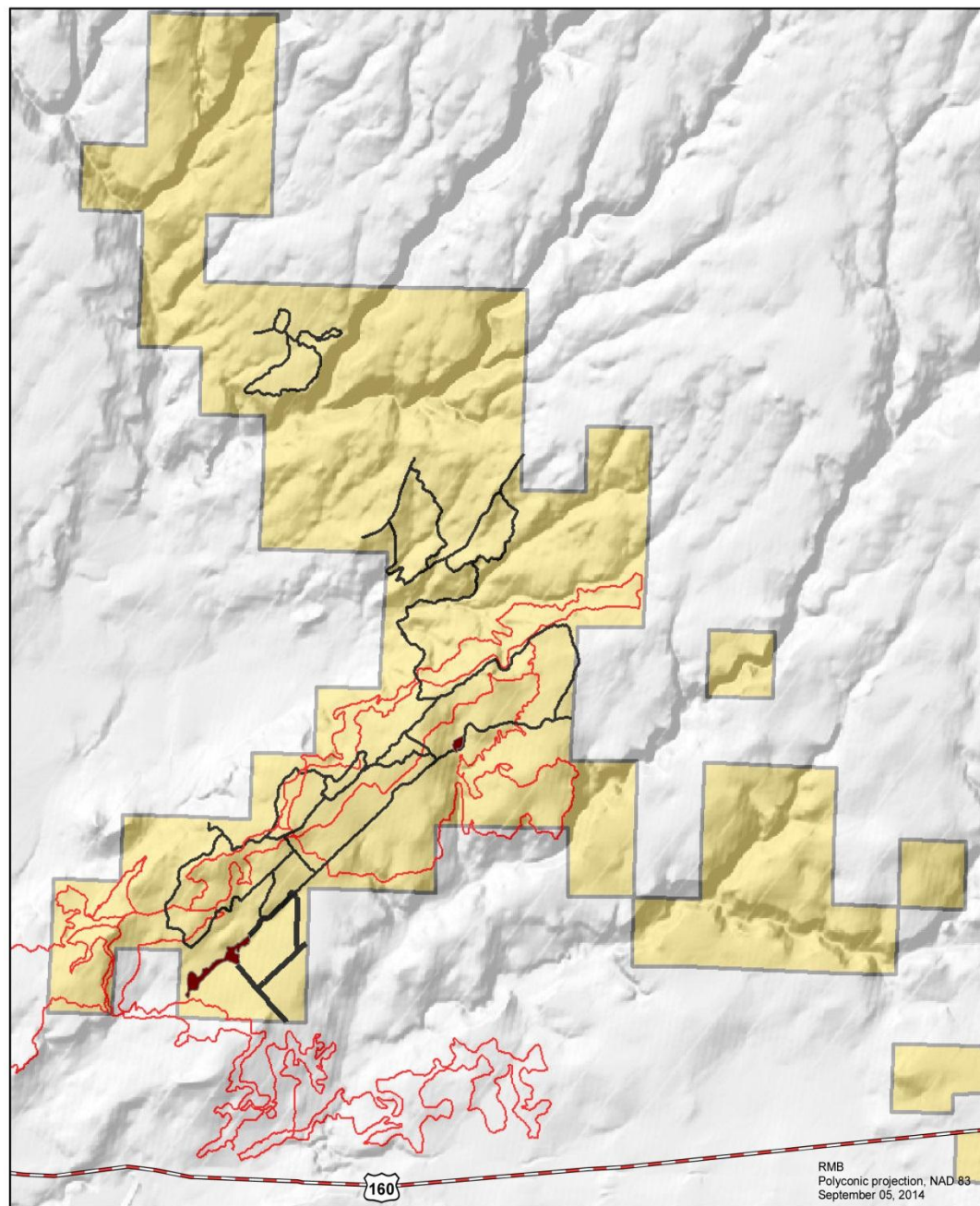
Mud Springs Designated Routes Tres Rios Field Office Figure 2.14.3



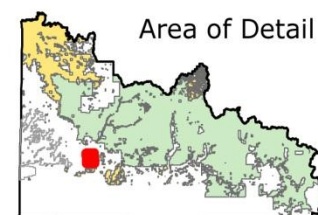
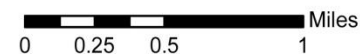
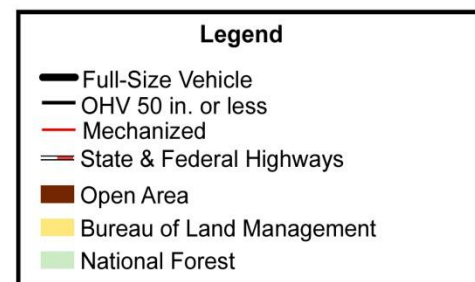
The BLM attempts to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The BLM reserves the right to correct, update or modify geospatial inputs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

Tres Rios Field Office
Land and Resource Management Plan

Figure 2.14.3. Mud Springs Designated Routes.



Phil's World Designated Routes Tres Rios Field Office Figure 2.14.4



The BLM attempts 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 BLM reserves the right to correct, update or modify geospatial inputs without notification.

Tres Rios Field Office
Land and Resource Management Plan

Figure 2.14.4. Phil's World Designated Routes.

2.15 Recreation

Introduction

The recreation management focus of the TRFO is to ensure the continued availability of resource-dependent outdoor recreation experiences that are suitable for the landscape and that are not readily available from other public or private entities. The TRFO recreation programs will emphasize the extraordinary natural, cultural and scenic resource values of the planning area and effectively manage the high public demand. The program will consider the proximity of the planning area to growing communities and recognize the need for public understanding of their stewardship role upon the TRFO.

The TRFO will provide place-based recreation management by focusing on activities and unique settings for which an area is best suited. Recreation suitability will guide the direction of recreation management within the planning area with regard to access, intensity of visitor management, social encounters, naturalness, built environment, and carrying capacity.

Recreation Facilities

The TRFO manager will continue to assess the future of recreation facilities in order to establish a program that is balanced, sustainable, realistic, and responsive to public needs. Services will be provided with allocated funds, revenues, and partnerships. Managers will also seek other creative methods in order to maximize public benefits. Facilities will be redesigned, as necessary, in order to benefit a larger and more diverse audience and address demographic changes. New large-scale facilities are not anticipated during this planning cycle. Emphasis will be placed on the maintenance and improvement of existing developed facilities and on protection of resource issues in dispersed recreation areas.

Communities and Partners

Local communities and partners have strong ties with TRFO lands. These communities and partners have become ever more critical in helping the TRFO manager address complex resource management situations, declining recreation budgets, and meeting the demands of growing communities that seek to benefit economically from recreation and tourism on TRFO lands. Efforts in this area will focus on building partnerships with communities interested in protecting and enhancing public land recreation access while sustainably using the TRFO for its economic, scenic, and recreation benefits. This includes use of scenic byways and the abundant heritage resources readily accessible from the San Juan Skyway.

Travel Corridors

Two scenic and historic byways (San Juan Skyway and Alpine Loop) and numerous lesser known routes provide for adventure and exploration of national and regional interest. In particular, historic mining, ranching, and views of rugged wilderness are easily enjoyed by thousands each year. These routes provide an important and effective interface between visitors and the public lands.

Recreation management will protect and enhance opportunities for viewing scenery and cultural resources along these travel corridors. Most visitor service developments will occur along these corridors. These travel corridors will serve as “information gateways” and facilitate access to more remote areas of the TRFO. Partnerships and grants will be a primary method for achieving objectives related to these travel corridors. See Chapter 3 of the RMP for additional information on byways and scenic corridors.

Dispersed Recreation Experiences

Dispersed recreation will continue to be an important benefit offered within the planning area. Dispersed recreation includes both day and overnight use and provides important recreational benefits, which include the opportunity to enjoy natural landscapes, escape from crowds, engage in physical exercise, and/or recreate with family and friends. The management of these benefits will seek to balance the strong desire people have for freedom of choice regarding recreation activities, while providing for adequate

protection of cultural and natural resources and the need to manage conflicting recreation uses. In spite of the large expanse of undeveloped areas available for dispersed recreation use, not every acre is suitable for every use. Management planning must balance the competing recreational uses with resource protection.

Recreation Setting Characteristics Matrix/Recreation Opportunity Spectrum

The USFS' Recreation Opportunity Spectrum (ROS) offers a framework that establishes recreational settings (based on access, remoteness, naturalness, built environment, social encounters, visitor impacts, and management) within the planning area. The resulting recreation zones are shown on the "ROS Settings Maps," with separate maps for summer and winter activities. The ROS zones for the various alternatives are presented in Appendix E. These maps show 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.

The BLM uses the Recreation Setting Characteristics Matrix. The Recreation Setting Characteristics Matrix classifies the settings as primitive, back country, middle country, front country, rural, and urban, broken out into physical, social, and operational components. Setting prescriptions for a unit can mix and match between the setting components. For instance, an area can have a backcountry physical setting prescription and a front country social prescription.

For purposes of consistency, USFS ROS setting descriptions will generally be used in this document, though prescriptions set forth for SRMAs in Appendix E and Recreation Area Management Plans (RAMPs) tiering to this document will use the BLM terminology.

Future recreation management and development decisions on lands managed by the BLM will be guided by both the ROS settings map and the Recreation Setting Characteristics Matrix.

Table 2.15: Bureau of Land Management Recreation Setting Characteristics Matrix

	Primitive Classification	Back Country Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
PHYSICAL COMPONENT – Qualities of the Landscape						
Remoteness (approx. distance from routes)	More than 0.5 mile from either mechanized or motorized routes.	Within 0.5 mile of mechanized routes.	Within 0.5 mile of four-wheel drive vehicle, ATV and motorcycles routes.	Within 0.5 mile of low-clearance or passenger vehicle routes (includes unpaved county roads and private land routes).	Within 0.5 mile of paved/primary roads and highways.	Within 0.5 mile of streets and roads within municipalities and along highways.
Naturalness (landscape texture form, line, color)	Undisturbed natural landscape.	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (e.g., stock ponds, trails).	Character of the natural landscape retained. A few modifications contrast with character of the landscape (e.g., fences, primitive roads).	Character of the natural landscape partially modified but none overpower natural landscape (e.g., roads, structures, utilities).	Character of the natural landscape considerably modified (agriculture, residential or industrial).	Urbanized developments dominate the landscape.
Facilities	No structures. Foot/horse and water trails only.	Developed trails made mostly of native materials such as log bridges. Structures are rare and isolated.	Maintained and marked trails, simple trailhead developments and basic toilets.	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays.	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries.
SOCIAL COMPONENT – Qualities Associated with Use						
Contacts (avg. with any other group)	Fewer than 3 encounters/day at camp sites and fewer than 6 encounters/day on travel routes.	3–6 encounters/day off travel routes (e.g., campsites) and 7–15 encounters/day on travel routes.	7–14 encounters/day off travel routes (e.g., staging areas) and 15–29 encounters/ day on travel routes.	15–29 encounters/day off travel routes (e.g., campgrounds) and 30 or more encounters/day on travel routes.	People seem to be generally everywhere.	Busy place with other people constantly in view.
Group Size (average - other than your own)	Fewer than or equal to 3 people per group.	4–6 people per group.	7–12 people per group.	13–25 people per group.	26–50 people per group.	Greater than 50 people per group.
Evidence of Use	No alteration of the natural terrain. Footprints only observed. Sounds of people rare.	Areas of alteration uncommon. Little surface vegetation wear observed. Sounds of people infrequent.	Small areas of alteration. Surface vegetation showing wear with some bare soils. Sounds of people occasionally heard.	Small areas of alteration prevalent. Surface vegetation gone with compacted soils observed. Sounds of people regularly heard.	A few large areas of alteration. Surface vegetation absent with hardened soils. Sounds of people frequently heard.	Large areas of alteration prevalent. Some erosion. Constantly hear people.

	Primitive Classification	Back Country Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
OPERATIONAL COMPONENT – Conditions Created by Management and Controls over Recreation Use						
Access (types of travel allowed)	Foot, horse, and non- motorized float boat travel.	Mountain bikes and perhaps other mechanized use, but all is non- motorized.	Four-wheel drives, all- terrain vehicles, dirt bikes, or snowmobiles in addition to non- motorized, mechanized use.	Two-wheel drive vehicles predominant, but also four wheel drives and non- motorized, mechanized use.	Ordinary highway auto and truck traffic is characteristic.	Wide variety of street vehicles and highway traffic is ever-present.
Visitor Services (and information)	No maps or brochures available on-site. Staff rarely present to provide on-site assistance.	Basic maps, staff infrequently present (e.g., seasonally, high use periods) to provide on- site assistance.	Area brochures and maps, staff occasionally (e.g., most weekends) present to provide on- site assistance.	Information materials describe recreation areas & activities, staff periodically present (e.g., weekdays and weekends).	Information described to the left, plus experience and benefit descriptions, staff regularly present (e.g. almost daily).	Information described to the left, plus regularly scheduled on-site outdoor demonstrations and clinics.
Management Controls	No on-site posting/signing of visitor regulations, interpretive information or ethics. Few use restrictions.	Basic user regulations at key access points. Minimum use restrictions.	Some regulatory and ethics signing. Moderate use restrictions. (e.g., camping, human waste).	Rules, regulations and ethics clearly posted. Use restrictions, limitations, and/or closures.	Regulations strict and ethics prominent. Use may be limited by permit, reservation, etc.	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage.
NOTE: This matrix can be customized to meet particular planning needs: 1) classes can be added, split, or merged; 2) characteristics can be added or deleted; 3) class names can be changed; and 4) the text can be modified. <u>However, the concept of a spectrum must remain intact.</u>						

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 areas 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. Until Congress acts to create wilderness or releases those lands in WSAs from consideration, the TRFO will manage the WSAs according to BLM Manual 6330 (Management of Wilderness Study Areas)

Semi-Primitive ROS Settings: Semi-primitive ROS settings are non-wilderness lands characterized by a predominantly naturally appearing landscape with significant opportunities for non-motorized, primitive forms of recreation. 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. Semi-primitive ROS settings can be motorized, mechanized, or non-motorized. Administrative actions and commercial uses (including recreation) occur; however, they are not common.

Roaded Natural ROS Settings: These settings are characterized by a higher degree of development and human “footprint” than those of primitive and semi-primitive. Sights and sounds of human activity are common, as are encounters with other recreational users. Users should also expect the presence of active management activities, areas of adjacent and/or interspersed private lands and development, an extensive trail network, intensively developed recreation sites, and abundant access points for recreational activities. Commercial uses can be common in these areas.

Rural ROS Settings: These settings are uncommon within the TRFO and are almost entirely adjacent to existing urban development. Sights and sounds of human activities dominate the setting, and visitors can expect numerous encounters with other users and types of users when in these areas. Examples of things expected to be encountered in these areas include utility lines/corridors, paved roads, nearby residential/commercial development, developed ski areas, recreation residences, and a variety of motorized and non-motorized users, among others.

Special Recreation Management Areas

There are four SRMAs within the planning area (Silverton, Dolores River Canyon, Cortez, and Durango) (Figure 2.15.1). SRMAs have been identified by the public as important places for various types of recreation within distinct landscape settings and have distinct recreation markets and recreation niches. The types of users, their activities, and specific recreation benefits are identified for each of the SRMAs, and these factors influence the management of the individual areas. BLM policy requires that each SRMA have a distinct boundary and map, that a RAMP be developed and approved for each SRMA, and furthermore that recreation management is to be the predominant focus of land management in that area. See Appendix E for a more comprehensive description, as well as management actions and implementation decisions, for each of these four areas.

Areas not identified as SRMAs are generally managed for other resource values, although recreational uses are generally allowed when they are compatible with a given area’s other resource uses.

Desired Conditions

Recreation

- 2.15.1 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.

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.

- 2.15.2 Established road and trail travel corridors offer high-quality scenery. Developed recreation facilities (including trailheads) provide relatively easy access for visitors, enabling them to enjoy a wide range of recreation experiences.
- 2.15.3 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 on public lands within the planning area.
- 2.15.4 Recreation management is guided by recreation setting prescriptions established by the ROS maps, 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.
- 2.15.5 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 TRFO-related values. The BLM collaborates 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 BLM goals.
- 2.15.6 Public access to land 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 lifestyle for people of all ages.
- 2.15.7 The TRFO offers 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.
- 2.15.8 Travel maps serve as guidelines for determining recreation travel within the planning area.
- 2.15.9 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.
- 2.15.10 Adequate maintenance and services at some sites are sustained through the collection of fees and donations, as well as through the work of volunteers and partnerships.
- 2.15.11 Trailheads only provide the minimal level of amenities, as appropriate for the setting and sufficient to protect the resources.

Recreation Opportunity Spectrum

- 2.15.12 Projects and activities are consistent with the established ROS settings.
- 2.15.13 Much of the planning area has an ROS setting of semi-primitive and roaded natural.
- 2.15.14 A network of roads maintained for low-clearance passenger vehicles provides access through roaded natural ROS settings and provide access to extensive semi-primitive ROS settings. Beyond these well-traveled road corridors, contact frequency between visitors is less, secondary roads are more rugged and challenging with numerous 4 × 4 routes, visitor facilities are rare, and the sights and sounds of nature predominate.
- 2.15.15 Primitive ROS settings are maintained at their current level of naturalness or restored, as needed.

2.15.16 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.

2.15.17 Roaded natural ROS areas provide a variety of recreational settings and activities, including:

- Motorized activities such as driving for pleasure and OHV use on designated trails and areas;
- A moderate to high degree of interaction and encounters with other users; and
- Sights and sounds of human development are evident but do not dominate users' experiences.

2.15.18 New trail construction in primitive 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.

Dispersed Recreation

2.15.19 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 enhance recreation experiences (and are compatible with established ROS settings, opportunities, and benefits). Access and parking, regulations, orientation, and safety information are provided only to the degree needed to protect resources and appropriately manage existing or anticipated uses.

2.15.20 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.

2.15.21 Dispersed camping opportunities are available for a wide variety of users. Motorized access to dispersed camping opportunities is addressed through travel management planning. Any new dispersed campsites are to be located outside 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.

2.15.22 Dispersed camping does not interfere or conflict with the operation of developed campgrounds.

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

2.15.24 Recreation is managed within the limits of ecosystem and species capacity for long term health and sustainability.

Developed Recreation

2.15.25 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. Trailheads are available in a range of ROS settings.

- 2.15.26 Developed recreation facilities are maintained to required standards. In particular, facilities that do not meet public health and safety standards are reconstructed, closed, or decommissioned in a timely manner.
- 2.15.27 In developed recreation sites, provide a wide range of visitor information, education, and interpretation consistent with their interpretive and conservation education strategy.
- 2.15.28 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).
- 2.15.29 Recreation sites and facilities are designed with an architectural theme intended to blend facilities with the natural environment. For new construction or site improvements, methods of construction use locally available resources and Leadership in Energy and Environmental Design (LEED) guidelines to the extent possible.
- 2.15.30 Developed recreation sites are withdrawn or segregated from locatable mineral entry.

Winter Recreation

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

- 2.15.31 Winter recreation access is provided via plowed roads managed as roaded natural ROS settings. Trailhead parking areas are developed at key concentration points in order to accommodate the loading and unloading of equipment and people. Safety, regulatory, and orientation information is provided at these locations.
- 2.15.32 Away from primary road access points, winter activities fall primarily within the ROS categories of semi-primitive non-motorized or semi-primitive motorized.
- 2.15.33 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 less common in areas away from the main road corridors.
- 2.15.34 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, oversnow motorized use, these areas may contain groomed trails, marked trails that are not groomed, and/or unmarked/unmaintained open trails.
- 2.15.35 Timing restrictions for motorized oversnow recreational use may be employed in wildlife habitat areas or due to ground conditions.
- 2.15.36 Motorized oversnow travel should only occur when snow levels are adequate to protect the ground surface from disturbance due to snow machine use. The BLM will use criteria found in Section 2.14, Access and Travel Management, of the RMP.
- 2.15.37 Winter motorized use is not allowed within Wilderness Study Areas (see Section 2.14).

Ski Areas

- 2.15.38 The ski area is developed, maintained, and operated by the permitted private enterprises.
- 2.15.39 The ski area (Silverton Mountain) is characterized by primarily unmodified vegetation and terrain, appear natural in appearance, and are valued for their resource-dependent recreational opportunities.

- 2.15.40 Facilities directly support recreational activities and management. New trail developments are generally for non-motorized recreation uses. Permittees are responsible for the design, construction, safety, maintenance, and management of agency-approved facilities/trails within their permit area.
- 2.15.41 Motorized travel within the permitted ski area, in both winter and summer, is generally limited to administrative or emergency purposes.
- 2.15.42 Protection of scenic values is emphasized through basic landscape design principles.
- 2.15.43 Visitors are aware, through signs and interpretive venues, that the ski area is public land.

Special Recreation Permits

Special recreation permits are issued in order to provide a variety of safe high-quality recreation opportunities to visitors and provide fair return to the United States for commercial recreation use of federal lands. Local outfitters/guides and other recreation professionals provide services to visitors who want additional knowledge, guidance, equipment, and/or support for a safe and rewarding recreational experience within the planning area.

- 2.15.44 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 SRMA direction. One time/event permits (competitive, organized group) generally occur outside high use seasons to minimize impacts to casual use visitors and their recreational experience.

Bureau of Land Management Special Recreation Management Areas

- 2.15.45 Management of SRMAs is derived first and foremost by the recreation management objectives and prescribed Recreation Settings Characteristics Matrix, and all implementation actions are guided by those prescriptions.
- 2.15.46 **Cortez SRMA:** The Cortez/Mancos/Dolores area offers a unique combination of terrain, scenery, and climate that allows for nearly year-round recreation close to towns and surrounded by panoramic backdrops. The relatively small blocks of public land are conducive to non-motorized trail use with opportunities for short motorized trails and clearly defined open play/training areas. The Cortez SRMA is comprised of two Recreation Management Zones (RMZs): 1) the Montezuma Triangle (including Phil's World, Chutes and Ladders, Summit, and Aqueduct) and 2) Mud Springs. The Montezuma Triangle RMZ is managed to primarily target local hikers, runners, and mountain bikers wanting to participate in human-powered recreation activities within a short commuting distance of town. The Mud Springs RMZ is also managed for non-motorized trails, but includes greater emphasis on motorized recreation while protecting cultural resources. Other recreation activities are allowable in the Cortez SRMA to the extent they are compatible with the primary targeted activities (see Appendix E, for area-specific management actions and implementation decisions, as well as a more extensive description of the Cortez SRMA).
- 2.15.47 **Dolores River SRMA:** The lower Dolores River winds through southwest Colorado mesa country, leaving a canyon reminiscent of the Grand Canyon, which provides a complete spectrum of recreational opportunities and settings. Between Bradfield Bridge and BLM Uncompagre Field Office/Tres Rios Field Office boundary are opportunities for primitive recreation and rugged OHV use, in settings ranging from WSAs to developed campgrounds. The Dolores River SRMA is managed to provide for a broad range of recreational benefits, primarily to river users, from the southwestern United States and local residents who participate in rafting. Within various RMZs, focus is also placed on the outcomes and benefits associated with fishing, challenging mountain biking, and OHV use. Other recreation activities are allowed when compatible with the primary targeted activities. The

area has designated routes for recreational motorized use. Motorized watercraft is prohibited from Bradfield Bridge to BLM Uncompagre Field Office/Tres Rios Field Office boundary. The Dolores River Corridor Management Plan (BLM 1990) and Dolores River OHV designation (CO-030-8601, BLM 1986a) guide management of recreation in the area until an updated RAMP and Comprehensive Travel Management Plan are completed. The area is composed of four RMZs: 1) Bradfield Ranch to Dove Creek Pump Station, 2) Dove Creek Pump Station to Disappointment Creek, 3) Disappointment Creek to Gypsum Valley Bridge, and 4) Gypsum Valley Bridge to the BLM Uncompagre Field Office/Tres Rios Field Office boundary (see Appendix E, for area-specific management actions and implementation decisions, as well as a more extensive description of the area and the RMZs that comprise the Dolores SRMA).

- 2.15.48 **Durango SRMA:** Durango is a mountain community with an active population and tourist base drawn to the area due to proximity of quality recreational opportunities. The Durango SRMA is managed to provide benefits associated with quality non-motorized recreation activities within a short travel distance of the increasingly developed Durango interface area. While setting is important, it is easy access to rock climbing areas and a variety of well designed, single track trails that make this SRMA an important asset to the community and surrounding region. Specifically, this SRMA would benefit non-motorized trail users and climbers, Durango area recreational service providers (outfitters, retail stores, etc.), and open space advocates. The area comprises two RMZs: 1) Animas City Mountain, Skyline, and Grandview and 2) East Animas and Turtle Lake climbing areas (see Appendix E, for area-specific management actions and implementation decisions, as well as a more extensive description of the area and the RMZs that comprise the Durango SRMA).
- 2.15.49 **Silverton SRMA:** The Silverton area is a unique alpine landscape dominated by 13,000-foot peaks and rich in mining history. The combination of rugged, seemingly impenetrable mountain peaks with the infrastructure left by industrious miners has resulted in a recreational destination for both winter and summer enthusiasts. The Silverton SRMA provides the perfect complement of summer and winter recreation opportunities across 44,488 acres of high-elevation public lands. Management allows for a spectrum of recreational opportunities from primitive hiking, camping, and hunting in WSAs (West Needles Contiguous, Whitehead Gulch, Weminuche Contiguous, and Handies Peak) to mountain biking and extensive OHV exploration along the Alpine Loop National Backcountry Byway. During the winter months, there are similar opportunities ranging from extreme downhill skiing to snowmobiling, ice climbing, and cross-country skiing. Tying the seasons and activities together are exceptional opportunities for cultural tourism at sites such as the Animas Forks townsite and the Sound Democrat Mill. The SRMA is composed of two RMZs: 1) Summer and 2) Winter (see Appendix E for area-specific management actions and implementation decisions, as well as a more extensive description of the area and the RMZs that comprise the Silverton SRMA).

Objectives

- 2.15.50 Evaluate all developed recreation sites via a FAMS condition assessment process once every 5 years (or current standardized schedule for assessment). Any recreation sites scoring a Facilities Condition Index of greater than .70 (Poor Condition) will be brought up to standard before the next condition assessment or be prioritized for closure or deferred maintenance.
- 2.15.51 For SRMAs, achieve a mean (average) response of at least a “moderate” (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = complete/total realization) attainment of the experiences and benefits identified for each SRMA in Appendix E.

- 2.15.52 Within 5 years, limit all motorized recreation travel to designated routes and/or in designated areas, with the potential exception of small “open” areas managed in accordance with BLM Handbook 8342.
- 2.15.53 Over the life of the RMP, complete and implement the RAMPs, as necessary, in accordance with handbook 8320-1 for all SRMAs.

Guidelines

- 2.15.54 The BLM must manage SRMAs to meet their management objectives through prescribed settings activities, experiences, and benefits (outcomes) identified in Appendix E. On lands not identified as SRMAs, recreation will be managed to meet ROS prescriptions as identified on the ROS maps and described in the Recreation Setting Characteristics Matrix (see Table 2.15).
- 2.15.55 During implementation of projects, every effort should be made to keep recreation sites in the project vicinity open in order to provide for visitor safety and experiences.
- 2.15.56 Summer and winter ROS maps should guide project-specific decisions and implementation activity. These maps define broad physical, social, and administrative settings for the entire TRFO. Site-specific analysis is necessary ensure desired setting conditions are applied at the project level.
- 2.15.57 Dispersed sites should be closed, rehabilitated, or otherwise mitigated if there are social-use conflicts and/or resource impacts, or where dispersed sites conflict with the management of developed recreation sites (public or private).
- 2.15.58 The visual impacts of structures, ski lifts, roads, utilities, buildings, signs, and other built facilities should be minimized. Facilities, as seen from key viewpoints, should be architecturally designed to blend and harmonize with the surrounding land setting. Guidelines should be developed for each ski area that define the built environment (including architectural style, scale, colors, materials, and landscaping).
- 2.15.59 Revegetation in developed sites should use native plant material and be designed in a manner that maintains a natural appearance.

Special Recreation Management Areas

Tres Rios Field Office

Figure 2.15.1

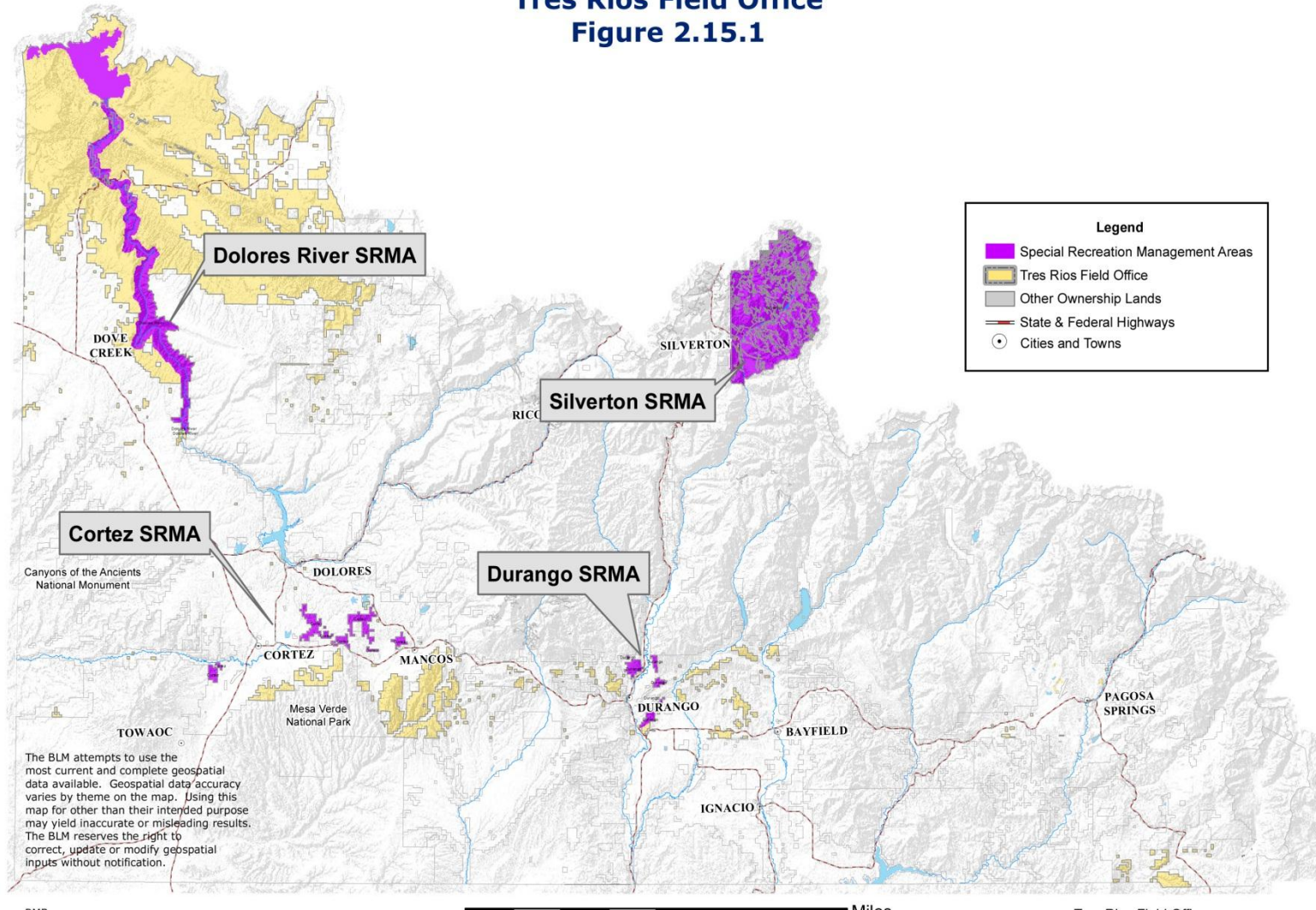


Figure 2.15.1. Special Recreation Management Areas, Tres Rios Field Office.

Summer Recreation Opportunity Spectrum **Tres Rios Field Office** **Figure 2.15.2**

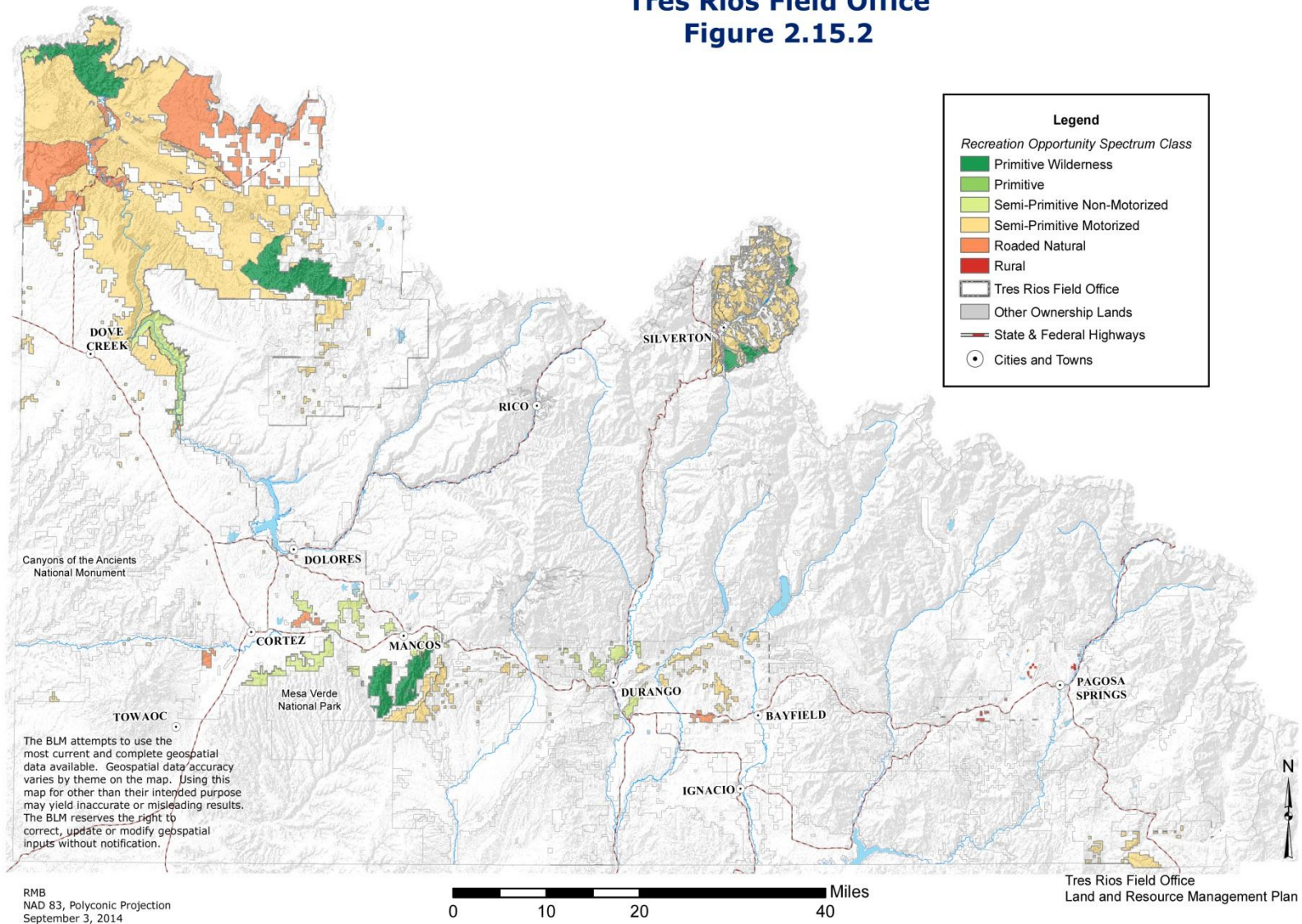


Figure 2.15.2. Summer Recreation Opportunity Spectrum.

Winter Recreation Opportunity Spectrum

Tres Rios Field Office

Figure 2.15.3

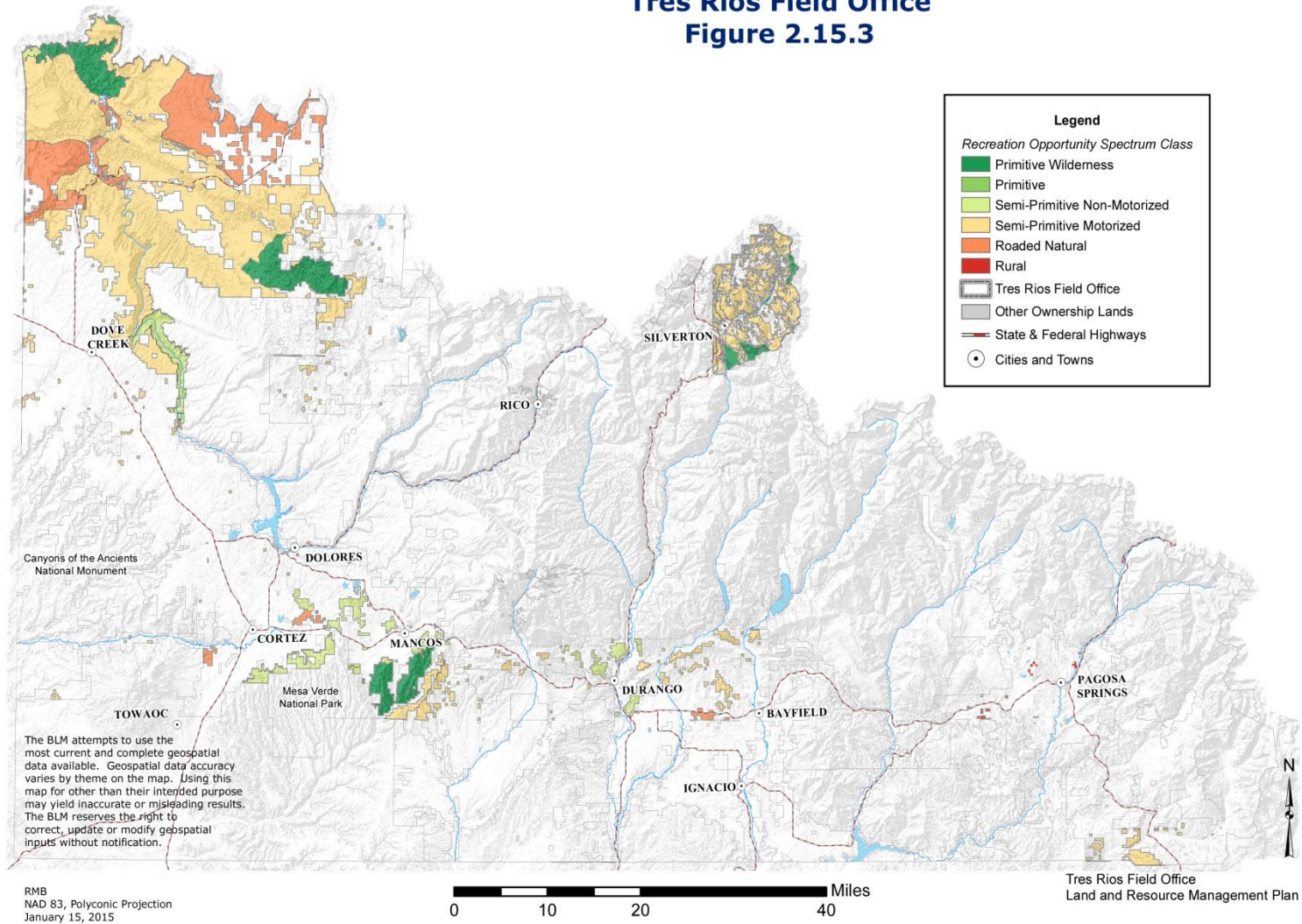
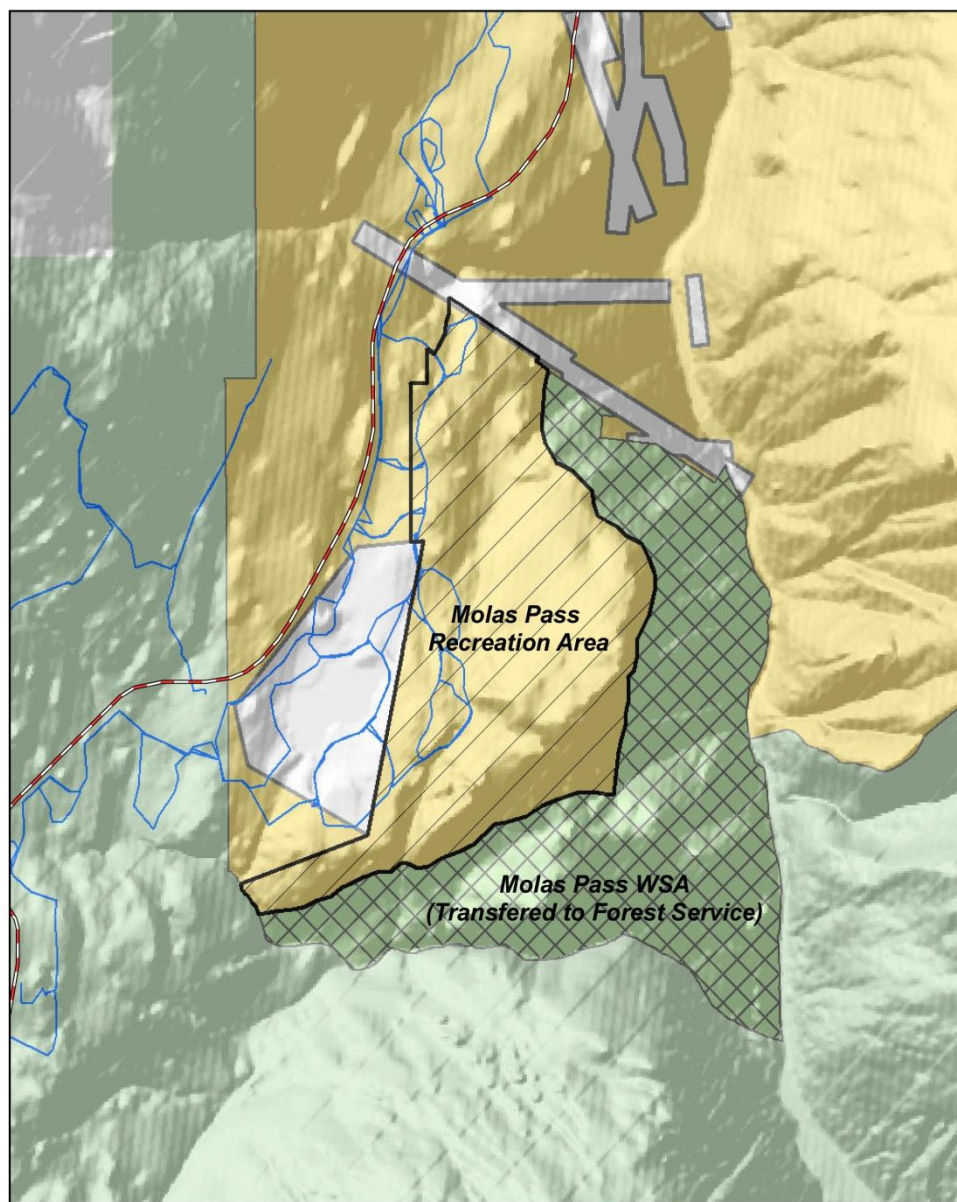


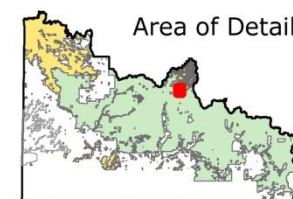
Figure 2.15.3. Winter Recreation Opportunity Spectrum.



Molas Pass Recreation Area Tres Rios Field Office Figure 2.15.4



0 0.125 0.25 0.5 Miles



The BLM attempts 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 BLM reserves the right to correct, update or modify geospatial inputs without notification.

RMB
Polyconic projection, NAD 83
January 15, 2015

Tres Rios Field Office
Land and Resource Management Plan

Figure 2.15.4. Molas Pass Recreation Area.

2.16 Scenery and Visual Resource Management

Introduction

The BLM uses a Visual Resource Management (VRM) system to manage the visual resources on public lands. This system addresses three key scenic values: public visual sensitivities, visibility, and scenic quality. It is geared to provide appropriate levels of protection for scenic values that:

1. Range from preservation (Class I) to retention (Class II), partial retention (Class III) and major modification (Class IV) of the characteristic landscape; and
2. Are based on visual resource inventories and other resource management considerations and are determined through the land use planning process at the manager's discretion.

On BLM-administered lands, visual resource inventories establish a baseline for evaluating and contrasting RMP alternatives and impacts of VRM classes which are assigned during the land management planning process. During project planning, visual design considerations are required to be evaluated and incorporated for all surface-disturbing projects through the visual contrast rating process. The contrast rating process is used as a visual design tool in project design and as a project assessment tool during environmental review. Contrast ratings are required for proposed projects in highly sensitive areas or high impact projects, but may also be used for other projects where it would appear to be the most effective design or assessment tool. A brief narrative visual assessment is completed for all other projects that require an environmental assessment or EIS.

Desired Conditions

- 2.16.1 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 to the extent possible through project-specific mitigation measures.
- 2.16.2 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.
- 2.16.3 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.).
- 2.16.4 Scenic and historic byways are recognized as needing to support scenic viewing and interpretation as a primary visitor activity.
- 2.16.5 Vegetation composition and structure valued for scenic character (including landscapes with a predominance of aspen and ponderosa pine) are showcased along scenic routes and at key viewpoints.
- 2.16.6 Conservation of significant cultural and natural viewsheds is established through strong partnerships between the BLM, state and local agencies, tribal governments, land trusts, and other interested individuals and organizations.
- 2.16.7 The built environment (including recreation facilities, utilities, and resource management structures, such as those constructed and/or maintained by permittees) reflects and complements the architectural character of the landscape, 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 using efficient energy sources.

- 2.16.8 Vegetation valued for its scenic character is sustainable and consistent with the inherent landscape character.
- 2.16.9 Public lands scenery is maintained in a condition that meets the minimum established scenic objectives as established in Figure 2.16.

Objectives

2.16.10 The following objectives will be met for all VRM Class allocations:

- 2.16.10a Class I Objective. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- 2.16.10b Class II Objective. The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- 2.16.10c Class III Objective. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- 2.16.10d Class IV Objectives. The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Standards

- 2.16.11 All resource management activities must be consistent with the prescribed VRM Class map (see Figure 2.16). A project that does not meet the objectives for the VRM Class in which the project is located must either be redesigned to meet those objectives, denied, or a plan amendment must be completed to alter the VRM Class.

Guidelines

- 2.16.12 The built environment (structures), including non-recreational structures, should conform to the Guidelines for a Quality Built Environment (BLM 2010a) that apply to that location.
- 2.16.13 The quality of the built environment should benefit from sound site planning, as well as from LEED principles.
- 2.16.14 Straight line-of-sight road construction should be avoided. Roads through wooded areas should be designed in order to follow a curvilinear path using natural topography. Road construction across ridge tops should be avoided where it may cause a visual contrast in the landscape or where it may add skyline alterations that are visually obvious.
- 2.16.15 Interim reclamation should be maximized so that supplemental/natural revegetation is facilitated to stabilize soils and reduce visual impacts.
- 2.16.16 All permanent structures (on-site for more than 6 months) should be painted in a flat, non-reflective, earth-tone color.

- 2.16.17 The number and size of long-term traffic, regulatory, and site identification signs should be minimized. All such sign backs and posts should be painted a flat, non-reflective color.
- 2.16.18 Landscaping should blend site developments into the surrounding landscape. Native tree, shrub, and grass species should be employed in landscaping in order to lessen the contrast between a clearing and the adjacent natural environment.
- 2.16.19 Linear utility corridors and pipeline installations should employ vegetative edge feathering in sloped areas that may be visible from sensitive areas (including roads, use areas, and residences). Vegetation should be cleared, where necessary and appropriate, in a non-linear fashion in order to avoid a visually dominant straight line.
- 2.16.20 The minimum amount of permanent lighting needed should be installed. Light-sensitive, motion-activated lighting systems that are illuminated only when needed for security and/or for maintenance should be used. Light fixtures should be hooded in order to prevent horizontal and upward light pollution.
- 2.16.21 For fuels treatment activities:
- 2.16.21a Treatment units should be designed to minimize visual contrasts. Design features could include leaving large clumps of residual trees or shrubs located within a treatment unit, eliminating straight lines along treatment boundaries and facilitating the re-establishment of native species, as well as other similar actions.
 - 2.16.21b Within immediate foreground of recreation sites such as campgrounds, picnic areas, and trailheads:
 - Slash, if chipped, should be substantially disposed of unless used as mulch, mud control, or path/pad surfacing;
 - stumps should be low cut or flush-ground;
 - slash should be substantially reduced; and
 - treatment units should be designed to enhance scenic qualities within the viewshed.
 - 2.16.21c Fire control lines should be restored to a natural appearance in areas within view of roads, trails, or recreation sites. Work should be accomplished within 3 years of completion of burn. When opportunity allows, and when it meets the recreation objectives prescribed for an area, fire control lines may be designed for long-term use as recreational trails and left in place.
 - 2.16.21d Design of thinning units should avoid visual uniformity as viewed from roads, trails, and recreation sites.
 - 2.16.21e Temporary slash or chip piles, log decks, or landings in VRM Classes I–III should:
 - be located to facilitate future removal without the development of new ground disturbance (placed adjacent to pre-existing roads or primitive roads); and
 - be disposed of within 3 years.
 - 2.16.21f In sensitive foreground areas (as viewed from system roads, trails and/or developed recreation sites), unit boundaries and tree marking should be accomplished with temporary flagging and removed once need is fulfilled.

Scenic Integrity Objective and Visual Resource Management Tres Rios Field Office Figure 2.16

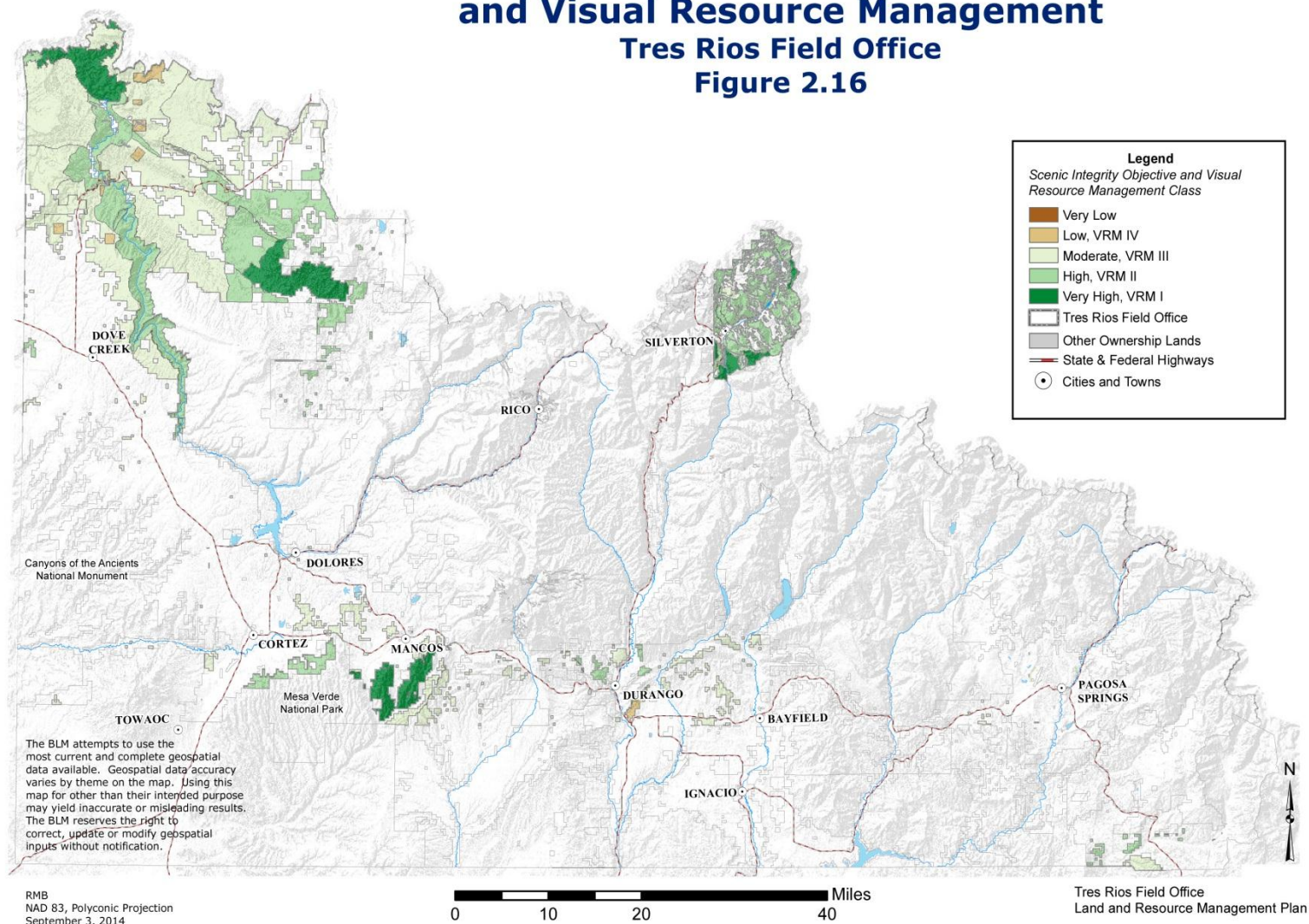


Figure 2.16. Scenic Integrity Objective and Visual Resource Management

2.17 Heritage and Cultural Resources

Introduction

The TRFO has a long and rich prehistoric and historic record, with human settlement of the area spanning approximately 12,000 years. The archeological record within 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.

Under the direction of the RMP, the heritage and cultural resources programs will be focused on three main areas of cultural resource management:

- Protecting archeological, historical, cultural, and traditional resources: this includes both proactive and reactive efforts, as well as offering support to other resource programs. Efforts and support activities include Section 106 of the National Historic Preservation Act (NHPA) for federal undertakings and NHPA Section 110 efforts that implement proactive cultural resource management. Implementation of both Sections 106 and 110 of the NHPA can involve inventories, identification, documentation, evaluation, monitoring, consultation, nomination, preservation, site protection, mitigation, stabilization, and/or restoration of heritage and cultural resources.
- Providing research, education, and interpretive opportunities: Support research is provided by qualified permitted individuals, organizations, colleges and universities. On- and off-site educational and interpretive opportunities can be provided through a wide variety of materials and media (including signage, brochures, publications, presentations, DVDs, and websites).
- Working collaboratively with partners: This includes site stewards, volunteers, state and other federal agencies, local and tribal governments, schools and universities, and non-profit groups. It includes funding organizations in order to provide site protection, research, educational, and interpretive opportunities.

Desired Conditions

- 2.17.1 Significant heritage and cultural resources, such as sites on the NRHP, are maintained in good to excellent physical condition. Significant cultural values are protected and 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.
- 2.17.2 Significant heritage and cultural resources are listed on the NRHP.
- 2.17.3 The visual and aesthetic setting and physical associations of significant sites are protected so that the visitor experience of the historical/cultural landscape and setting is maintained.
- 2.17.4 Activities are compatible with management objectives for significant sites or are temporary in their impact to the site and its viewshed, as well as to the overall visitor experience.
- 2.17.5 A management presence at key heritage and cultural resource sites is provided to protect sensitive or heavily visited sites from inappropriate use or vandalism.

- 2.17.6 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- and off-site) are available for visitor enjoyment and education. Off-site activities include museum displays, brochures, audio programs, classroom presentations, and field trips. Public access and interpretive efforts are compatible with the physical, cultural, and recreational settings and values of the resources.
- 2.17.7 Select historic cabins are restored and adaptively reused for appropriate recreation and/or for interpretive use.
- 2.17.8 Partnerships are encouraged and expanded in order to provide identification, documentation, monitoring, protection, preservation, education, research, and interpretation.
- 2.17.9 Looting of sites is reduced through increased public awareness and education related to cultural resources. Vandalism at sites is promptly remedied to prevent recurrence.
- 2.17.10 Heritage and cultural resource databases are managed for efficient and accurate management and research, in cooperation with the Colorado Office of Archaeology and Historic Preservation.
- 2.17.11 Restrictions through the use of permits and/or visitation controls are implemented when necessary to protect sites from physical damage and excessive wear and tear from visitation.

Objectives

- 2.17.12 Over the implementation life of the RMP, protect/preserve/stabilize at least 7 significant heritage/cultural resources that have identified deferred maintenance needs that if not addressed will result in loss of the resource.
- 2.17.13 Annually post protective signage and/or surveillance cameras on at least one heritage and cultural resources sites that are at-risk for vandalism.
- 2.17.14 Over the implementation life of the RMP, list three sites and/or districts on the NRHP.
- 2.17.15 Over the implementation life of the RMP, implement the Anasazi National Register District Monitoring Plan.
- 2.17.16 Over the life of the RMP, partner with the Old Spanish Trail Association to ground-truth the location of at least two segments of the Old Spanish National Historic Trail.
- 2.17.17 Over the life of the RMP, develop at least one interpretive product in partnership with the Old Spanish Trail Association that interprets the Old Spanish National Historic Trail within the planning area, once ground-truthing has occurred to confirm that the Trail passes through TRFO lands.
- 2.17.18 Over the life of the RMP, inventory high potential historic sites and trail routes of the Old Spanish Trail, develop a national trail management corridor, and establish goals and objectives for national trails in accordance with BLM Manuals 6250 (BLM 2012c) and 6280 (BLM 2012d).

Standards

- 2.17.19 No camping must be allowed within 300 feet of the Animas Forks and Gold Prince Mill National Register Districts.

Guidelines

- 2.17.20 Activities that could adversely affect sites eligible or potentially eligible for the NRHP should avoid these sites by a minimum of 300 feet, unless otherwise specified by the Authorized Officer, and/or unless other mitigating measures are developed. If a project is specified by the Authorized Officer to be within 100 feet of an eligible or unevaluated site, all ground-disturbing activity should be monitored by a qualified archaeologist.
- 2.17.21 **Old Spanish National Historic Trail:** A literature search and/or Class III cultural resources survey should be conducted within 0.5 mile of either side of the centerline of the Congressionally designated Old Spanish National Historic Trail in high potential segments, prior to authorization of ground-disturbing activities, or activities that could substantially interfere with the nature and purposes of the trail.

2.18 Paleontological Resources

Introduction

Paleontological resources (fossils) constitute a scientific record of the history of life on earth. Management requirements related to ground-disturbing activities are applied in order to protect paleontological resources and the scientific values they contain. Avoidance and collection are the preferred mitigations for the preservation of paleontological resources.

Within the planning area, the BLM identified the Morrison Formation as having the potential for vertebrate fossil occurrences. 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

- 2.18.1 Acquiring better knowledge of paleontological resources is emphasized.
- 2.18.2 Paleontological resources are available for appropriate scientific, educational, and, where appropriate, recreational uses by present and future generations.
- 2.18.3 Known dinosaur localities are actively managed for the relevance and importance of significant fossils, including those from the Jurassic period.

Objectives

- 2.18.4 Over the life of the RMP, identify and document paleontological sites and resources.
- 2.18.5 Monitor known paleontological localities in accordance with the Paleontological Resources Protection Act of 2009 and subsequent promulgated regulations. .
- 2.18.6 Where feasible, conduct fossil resource inventories in areas where they are needed on a project basis over the life of the RMP.
- 2.18.7 Increase opportunities for outdoor recreational and educational experiences and volunteer projects focused on fossil resource management, and increase the number of partnerships with educational and research institutions.

Standards

There are no standards for paleontological resources.

Guidelines

- 2.18.8 Known paleontological localities should be managed to:

- a. Allow collection of paleontological resources with authorization for educational and scientific purposes;
- b. Monitor casual collection of common invertebrate and plant paleontological resources localities, and institute local area closure if necessary;
- c. Evaluate known localities for potential interpretive use by the public; and
- d. Input known locality information into a protected database for further paleontological resources management needs.

2.19 Lands and Special Uses

Introduction

Occupancy of public lands by private individuals or interests, or by local, state, tribal, and other federal agencies, 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) is authorized by ROW grants, easements, and leases. The lands and special uses programs include activities such as land ownership adjustments, land use and access, and land withdrawals. Program emphasis includes:

- facilitating the efficient and effective acquisition, disposal, and management of the public lands;
- ensuring that the wide and growing variety of demands by the public, commercial interests, state and other federal agencies, and tribal and local governments are compatible with environmental protection;
- managing the legitimate needs for access to public and private lands; and
- meeting legal requirements for specific resource protection.

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 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, and clean air and water. Under the direction of the RMP, on a case-by-case basis, the TRFO would acquire lands and/or mineral estates that enhance this vision. The agency would dispose of lands that do not meet these needs or are interspersed with expanding communities where the agency mission can no longer be met. In all such cases, the primary guiding principle would be the greater public benefit.

Land Use and Access Authorizations

The BLM issues authorizations for occupancy and use for a variety of private and commercial entities; as well as for local, state, tribal, and other federal agencies. This is accomplished through easements, ROWs, leases, and other instruments. Trespasses and encroachment issues are resolved through removal, remediation, or authorization. The BLM maintains and enhances public access to the lands identified for retention, as well as to other public lands where improved access meets resource and/or management needs. The BLM engages in cooperative management of private and commercial access needs (with private individuals, federal, state, and local agencies, and tribal governments) and encourage 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, prepared by the applicant, is required and is subject to full public environmental analysis, review, and, when necessary, appropriate monitoring.

Land Withdrawals

Formal withdrawal of land from specific land uses is a tool designed to ensure the reservation of the land or resource for a dominant use. 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.

Acquisition and Disposal of Lands

The planning area contains numerous parcels of enclosed private land (in-holdings) that are undeveloped. The BLM's land acquisition policies recognize the value of acquiring such parcels, especially where the affected private lands contain unique or special values or benefits. Acquisition of these parcels would protect such values for the future and contribute to the mission of the BLM. See Guidelines below for a list of criteria that would be used to identify and prioritize parcels for possible acquisition.

The vast majority of BLM-administered lands within the planning area will be retained in federal ownership for a wide variety of resource uses that are best served by long-term federal ownership and management. Retention would support effective administration and resource protection. This RMP identifies other BLM-administered lands that would be available for disposal through sales, exchanges, or other authorized transfer of ownership (Figure 2.18.1, see Volume III Appendix A). These lands are not suitable for long-term retention under federal ownership due to a lack of substantial public or resource values, the high cost or the inability of the BLM to manage the land, or the potential for greater public value under non-federal ownership. Disposal can provide trading stock and/or contribute funds toward acquisition of land with greater public values and benefits. Under the Recreation and Public Purposes Act or other legislative actions, some lands may be suitable for transfer of ownership to local governments in order to meet community expansion needs (including expansion of facilities, infrastructure, open space and parks, etc.). See Guidelines below for a list of criteria that would be used to identify and prioritize additional lands for disposal.

Designated Energy Corridors and Linear Energy Transmission Authorizations

Designated energy corridors are intended to support different types of compatible energy-transport systems. Energy corridors on federal lands provide pathways for future pipelines and long-distance electrical transmission lines that are expected to help relieve congestion, improve reliability, and enhance the national electric grid. Future use of the corridors should reduce the proliferation of ROWs across the landscape and minimize the environmental footprint from development. These corridors are defined by a centerline and a stated width that can be used for energy transmission projects. Within these areas, energy transmission projects would be an appropriate (suitable) use of land allocated to energy corridors. Project applicants would not be constrained to use an approved energy corridor, but would be encouraged to do so in order to streamline the regulatory process and/or reduce the time frames that would be required in order to develop alternative alignment site proposals. Designation of corridors does not authorize any projects, mandate that future projects be confined to the corridors, or preclude agencies from denying a project in a designated corridor. Energy projects to be located within designated corridors will require a formal, agency-approved project ROW that will contain site-specific requirements. A ROW would occupy a smaller portion of any designated energy corridor, and the granting of a ROW would require site-specific environmental and engineering information and analysis. Energy corridors, as designated, should be suitable for interstate and intrastate ROW distribution and energy-producing facilities, as required, in order to meet current and 10- to 15-year demand forecasts. Designated energy corridors differ from separate energy transmission ROWs/special use authorizations in that these types of authorizations are project-specific assignments of a relatively narrow strip of land permitted and limited to a single energy transmission project.

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. Based on consideration of the effects of corridor designation described in the Final Programmatic Environmental Impact Statement (PEIS), Designation of Energy Corridors on Federal Land in the 11 Western States (DOE/EIS-0386) (U.S. Department of Energy [DOE] and BLM 2008), the BLM issued the

Record of Decision for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States (BLM 2009) designating one new Section 368 corridor (No. 130-131) that is partially located on lands administered by the TRFO (this corridor will be jointly managed by the BLM Uncompahgre Field Office). This corridor was designated with a default width of 3,500 feet and for electric transmission only with the centerline following the Montrose/San Miguel County Line from the Tri-State Generation and Transmission Association, Inc., Gas and Electric Nucla-Cahone 245 115-kV Electric Transmission Line to the Trans-Colorado Natural Gas Pipeline Corridor. Interagency operating procedures (IOPs) developed and evaluated in the Energy Corridors EIS and adopted in the BLM ROD amending land use plans are expected to foster long-term, systematic planning for energy transport development in the West, provide industry with a coordinated and consistent interagency permitting process, and provide practicable measures to avoid or minimize environmental harm from future development within the corridors. IOPs are incorporated here by reference and are mandatory, as appropriate, for projects proposed within the Section 368 corridors. These IOPs are also suggested guidance for all energy pipelines and electric transmission lines within designated energy corridors that were not designated through the Section 368 process.

Table 2.19.1 shows a listing of designated corridors and existing linear energy transmission authorizations in which future facilities would be encouraged to locate. Figure 2.18.2 illustrates the approximate location of corridors and existing transmission facilities across the planning area. Transmission facilities include 69-kV and greater transmission lines and ancillary facilities (USDA et al. 2005). Oil and gas interstate pipelines identified as locally designated corridors are those that do not require Congressional notification (as required by the Mineral Leasing Act of 1920, as amended, in accordance with 30 USC 185(w)) and are between 16 and 24 inches in diameter. The Trans-Colorado Natural Gas Pipeline route is designated a Section 368 Energy Corridor under the Energy Policy Act of 2005.

Table 2.19.1: Designated Energy Corridors and Energy Transmission Facilities on the Tres Rios Field Office

Corridors and Transmission Lines	Size	Potential Uses
Western Area Power Administration – Lost Canyon to Shiprock	230 kV	Upgrade existing facilities; additional facilities considered on a case-by-case basis
Western Area Power Administration – Montrose to Hesperus	345 kV	Upgrade existing facilities; additional facilities considered on a case-by-case basis
Tri-State Generation and Transmission Association, Inc. – Burro Bridge to Cascade	115 kV	Upgrade existing facilities; additional facilities considered on a case-by-case basis
Tri-State Generation and Transmission Association, Inc. – Cahone to Empire	115 kV	Upgrade existing facilities; additional facilities considered on a case-by-case basis
Tri-State Generation and Transmission Association, Inc. – Nucla to Cahone	115 kV	Upgrade existing facilities; additional facilities considered on a case-by-case basis
Tri-State Generation and Transmission Association, Inc. – Durango to Bayfield	115 kV	Upgrade existing facilities; additional facilities considered on a case-by-case basis
Northwest Pipeline Corridor – (includes MapCO and Kinder Morgan)	Multiple pipelines	Upgrade existing facilities

Communication Sites

Within the planning area, proposals for communication and electronic sites are encouraged to use existing sites, within capacity and compatibility limits. Communication site development is generally suitable at designated communication sites when it is compatible with existing uses. Table 2.19.2 lists the location of current communication sites and suitable uses for each site. Figure 2.18.2 locates the sites geographically.

Table 2.19.2: Communication Sites, Locations, and Suitable Uses

Communication Site	Geographic Location			Suitable Uses
	Latitude*	Longitude	Elevation (feet)	
Kendall	37.7956	-107.6434	13,400	Low-power; non-broadcast
Menefee	37.3262	-108.2489	8,823	Low-power; broadcast and non-broadcast
Smelter	37.2619	-107.9065	7,725	Government use; low-power; broadcast
Storm Peak	37.8675	-107.6548	13,053	Passive-reflector
* These latitude/longitude coordinates do not delineate the boundaries of the ROW use areas; rather, they give approximate locations. Boundaries of the use areas would be defined in individual site plans.				
**Smelter is located on land that the BLM leases from the state. The BLM does administer the communication site.				

Desired Conditions

- 2.19.1 Public land ownership boundaries are clearly marked on the ground, and land ownership information is easily accessible to the public.
- 2.19.2 Surface and mineral ownership within the planning area is consolidated in order to meet resource and community needs and to facilitate efficient land management.
- 2.19.3 Retains and/or acquire 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.
- 2.19.4 Acquire adequate access to isolated lands for resource or management needs.
- 2.19.5 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.
- 2.19.6 Energy corridors throughout the planning area improve the delivery of electricity, oil, and gas and enhance the western electric transmission grid by improving reliability, reducing congestion, and contributing to the national electrical grid.
- 2.19.7 Future linear transmission uses are encouraged to occur adjacent to existing authorized routes for transmission lines over 69 kV 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 where possible.

Objectives

- 2.19.8 Annually, survey and post 3 miles of property line adjacent to private land and boundaries where trespass or encroachment is most likely.
- 2.19.9 Annually, over the life of the RMP, acquire an average of two new road and trail easements for high-priority access or to fill gaps in existing access to public lands.
- 2.19.10 Annually inspect at least 5% of existing ROW grants and land leases to ensure that all relevant desired conditions are being met or trending toward being met.

Standards

- 2.19.11 No new Desert Land Entry or Carey Act applications will be accepted.
- 2.19.12 Any land acquired by the BLM over the life of the RMP will be managed under the limited classification criteria as identified in 43 CFR 8342.1. The limited classification criteria

specifies that travel will be limited to existing roads and trails until a site determination and travel management plan is completed for the acquisition (43 CFR 8342.2).

Guidelines

2.19.13 Land boundary lines should be surveyed, posted, marked and maintained according to these priorities: 1) lines needed to meet planned activities, 2) lines needed to protect TRFO lands and special areas from encroachment, 3) lines where trespass or encroachment are most likely or are suspected, and 4) all other land boundary lines.

2.19.14 BLM land ownership adjustments should meet the recommendations and priorities of the specific BLM land classification category (see Figure 2.18.1).

2.19.15 Acquire or retain lands, interest in lands, or ROWs or easements:

- within designated wilderness areas and other Congressionally classified areas, such as the wild and scenic rivers (WSR) and WSAs;
- that provide habitat for animal and plant species designated as threatened or endangered, and/or for other species identified for special protection;
- that contain wetlands and/or floodplains and associated riparian ecosystems, or enhance watershed protection;
- with historical or important heritage resources;
- where resource management or values are threatened by change of use or may be enhanced by public ownership;
- that enhance resource management and values, improve production of goods and services, or are needed to meet resource management goals and objectives;
- that contain resources or values of local importance such as water frontage, outstanding scenery, and outdoor recreation, or that maintain or stabilize local economies;
- that consolidate federal lands or reduce the miles of interior boundaries and number of interior corners;
- where the entire mineral estate is acquired with the surface estate or where acquisition will not include lands likely to go to patent under the 1872 Mining Law; and
- where needed to enhance public and administrative access to federal lands or to enhance recreation opportunities.

2.19.16 Convey title in lands or interest in lands:

- to states, counties, cities, or other federal agencies when a greater public interest exists;
- where small parcels intermingle with mineral or agricultural patents or are isolated physically and/or legally from other federal lands;
- where development by the private sector is in the greater public interest and does not adversely affect management of adjoining public lands;
- where exchange of lands brings into federal ownership higher critical resources or values;
- where reservation of interest mitigates (e.g., ROW for access road) the effects of disposal;
- in developed areas that have lost or are losing their public lands character;
- to expanding local communities where requested or where a greater public interest exists, such as lands surrounding the municipalities of Durango, Cortez, Silverton, Bayfield, Pagosa Springs, Mancos, Dolores, and other communities; and
- that are encumbered by authorized, substantial structural improvements, or occupancy trespass where a greater public need for the land no longer exists.

2.19.17 For roads, where private use substantially dominates public use, maintenance should be authorized to the appropriate local government jurisdiction.

- 2.19.18 Cost effectiveness of invasive species management and hazardous material remediation must be evaluated when contemplating exchange or acquisition of lands or easements.
- 2.19.19 Jurisdictional transfers between agencies should be prioritized as follows: 1) to reduce duplication of effort, time, cost, or coordination by users and agencies; 2) to maintain or improve user access; 3) to decrease travel and enhance management; 4) to improve public understanding of management policy; and 5) to develop more effective and efficient work units.
- 2.19.20 Land use authorizations should avoid developed sites, unless the proposed use or occupancy is compatible with the purpose and use of the developed site.
- 2.19.21 ROW applications that can be reasonably met on private lands should not be approved unless it is clearly in the public interest.
- 2.19.22 Access to public lands should be acquired through:
- reciprocal grants, where available, from grantees receiving federal easements and ROWs;
 - reservations (e.g., roads, trails, easements) in land disposals; or
 - purchase or donation from willing landowners.
- 2.19.23 Existing trespass and encroachments should be resolved according to the following priorities: 1) where public safety is threatened, 2) where damage to resources and/or resource values is occurring, 3) where public access is interfered with, 4) where the encroachment is unintentional, and 5) where no substantial damage or management concern exists.
- 2.19.24 New or replacement telephone lines and electrical utility lines of 33 kV or less should be buried unless:
- visual quality objectives of the area can be met using an overhead line;
 - burial is not feasible due to geologic hazard or unfavorable geologic conditions; or
 - greater long-term site disturbance would result.
- 2.19.25 Overhead electric lines should use non-specular or “dulled” wire. All utility poles and hardware should be designed to blend in with the surrounding environment, as needed, in order to meet scenic quality objectives.
- 2.19.26 Vegetation treatments within corridors and along linear transmission facilities should meet facility safety requirements, provide for control of invasive species, and provide for revegetation in order to reduce visual impacts.
- 2.19.27 The following areas are identified as avoidance areas for ROW, communications sites, and other land use authorizations: all areas having VRM Class I or II, lands managed for wilderness characteristics, Dolores River Canyon, Mesa Verde Escarpment, Perins Peak Wildlife Management Area, Anasazi Archeological Area, and special botanical areas.
- 2.19.28 The following areas are identified as exclusion areas for ROWs, communications sites, and other land use authorizations: wilderness areas, WSAs, RNAs, and wild segments of eligible WSR.
- 2.19.29 Energy transmission facilities should be consolidated within existing corridors and along existing linear energy transmission facilities in order to reduce habitat loss, degradation, and fragmentation resulting from new construction.

- 2.19.30 Communication sites should be designed to minimize the visual appearance of structures. Communication antennas should use non-reflective surfaces or be painted, where possible, to minimize visual impacts.

Lands Available for Disposal Tres Rios Field Office Figure 2.19.1

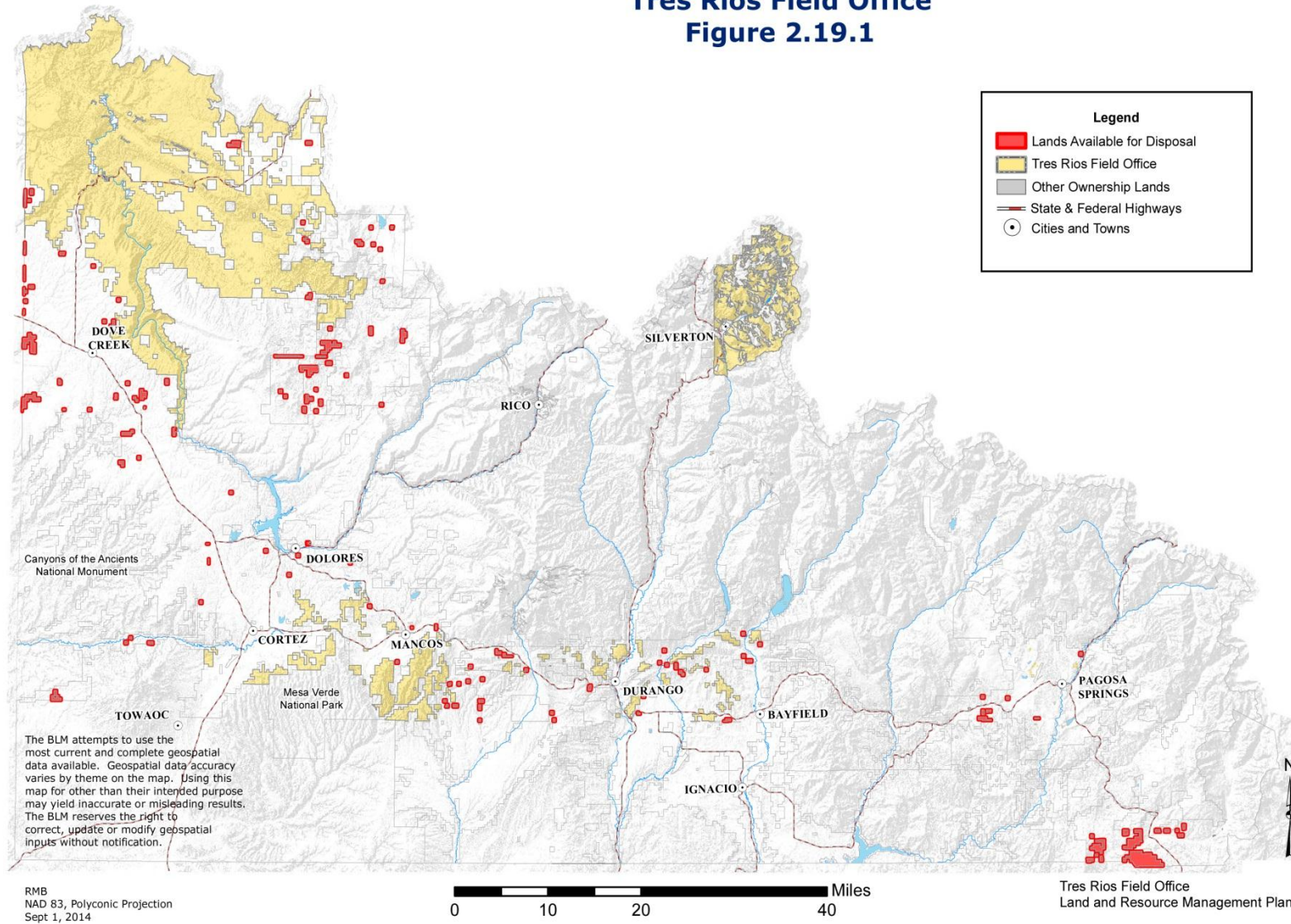


Figure 2.19.1. Lands Available for Disposal.

Designated Utility Corridors, Communication Sites, and Transmission Lines

Tres Rios Field Office

Figure 2.19.2

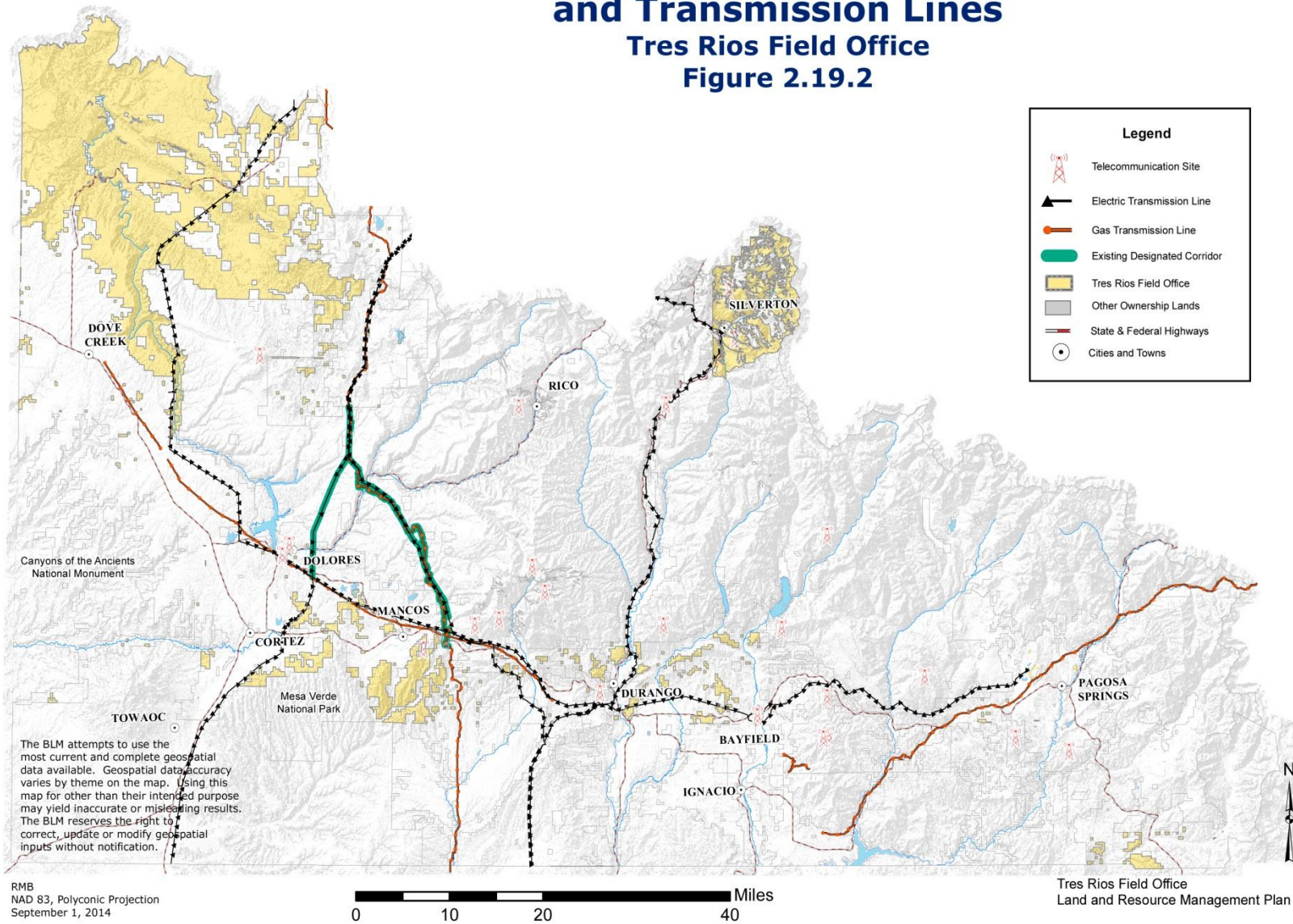


Figure 2.19.2. Designated Utility Corridors, Communication Sites, and Transmission Lines

2.20 Minerals and Energy

Introduction

Federal mineral resources are managed under three categories with differing sets of laws and regulations. The three categories are locatable, saleable, and leasable minerals. In all cases, any activities related to the exploration or development of any kind of mineral on public lands must comply with other federal and state laws where applicable. The rights to access, explore, and develop locatable minerals, where open to the public, are guaranteed by the Mining Law of 1872. Rights to leasable and saleable minerals are granted through a process of leases, permits, and contracts.

Ownership of surface estate does not always coincide with the ownership of mineral estate. There may be cases where the surface was patented into private ownership, but all or part of the mineral estate remains in federal ownership (e.g., the Stock-Raising/Homesteading Act), or there may be cases where minerals are privately owned but the surface is federal. These instances are known as “split estate”. In general, federal mineral estate is open to mineral entry unless it is withdrawn for specific reasons (e.g., wilderness areas, specified developed recreation sites). In some instances, minerals on federal lands acquired under certain authorities are only available for lease and are not subject to location under the Mining Law of 1872. Disposal of federal minerals by lease or sale is considered to be a discretionary federal action, whereas location of minerals by claimants under the Mining Law of 1872 is not discretionary. This means that in some cases, lands may be open to mining claims but administratively unavailable for leasing or mineral sale. BLM is responsible for administering the mineral estate not just on BLM managed lands, but also on split estate lands, and also lands open to mineral entry on lands administered by other agencies such as the USFS

Federally owned mineral resources are managed under three categories with differing sets of laws and regulations:

- **Locatable Minerals:** These are subject to claim under the Mining Law of 1872, as amended.
- **Saleable Minerals:** These are defined as “common varieties” of mineral. They are disposed of under a sale contract or free use permit under the Mineral Materials Act of 1947.
- **Leasable Minerals:** These minerals are subject to lease under the Mineral Leasing Act of 1920, as amended.

For the purposes of this document, locatable minerals (including precious and base metals, as well as uranium and vanadium), saleable mineral materials (including sand, gravel, and construction stone), and some leasable minerals (including coal, potash, and sodium) are discussed as “solid minerals.” Oil and natural gas (including carbon dioxide [CO₂]) are discussed together as “fluid leasable minerals.”

Locatable Minerals

Locatable minerals include precious metals such as gold and silver, base metals such as lead, zinc, and copper, as well as uranium and vanadium, and certain uncommon varieties of mineral materials and industrial minerals.

Solid Leasable Minerals

The planning area holds potential for a variety of solid leasable minerals (see Figure 2.19.2), particularly. These are subject to lease under the Mineral Leasing Act of 1920, as amended. They include most chlorides, sulfates, carbonates, borates, silicates, or nitrates of sodium or potassium and related products, phosphate and related minerals, and vein-type solid hydrocarbons (gilsonite, etc.). Hard rock minerals (i.e., minerals that would otherwise be locatable: gold, silver, copper, uranium, etc.) on acquired lands (lands acquired by the federal government, rather than typical public domain lands) may also be subject to leasing.

Coal

Coalbeds outcrop along the margins of the Paradox and San Juan Basins in the planning area. These outcrops are of late Cretaceous and early Tertiary age and have historically produced small quantities of coal.

Coal Unsuitability Assessments

Under the terms of the Surface Mining Control and Reclamation Act of 1977, the BLM conducted coal unsuitability assessments to determine the suitability of lands for surface coal mining, leasing and development operations. Twenty unsuitability criteria from 43 CFR 3461 and appropriate exceptions and exemptions were applied to the Durango, East Cortez and Menefee Known Recoverable Coal Resource Areas (KRCRAs) as identified by the USGS. In summary, 13,400 acres (9%) of the Durango KRCRA, 720 acres (25%) of the East Cortez KRCRA, and 80 acres (100%) of the Menefee KRCRA were identified as unsuitable for surface coal mining operations. Based on the unsuitability assessments (BLM 1985; SJNF 1983), 46,000 acres (31%) of the Durango KRCRA are identified as acceptable for further consideration for coal leasing, with an estimated reserve of 1.5 billion tons. One existing surface coal mine in the Durango KRCRA (Chimney Rock Coal Mine) with operations on BLM lands was already in the lease extension application process during the unsuitability assessments. This application was denied for environmental reasons in 1985. Operations at the mine were terminated and the mine site has been reclaimed. The existing BLM coal unsuitability assessments for this RMP revision found that the need does not exist to revise the assessments (Van Loenen and Gibbons 1997).

U.S. Department of Energy Uranium Lease Tracts

After World War II, the Atomic Energy commission was given the authority to withdraw federal lands for uranium leasing and development through a variety of Congressional Acts and secretarial orders. Now known as DOE's Uranium Lease Program (ULP), the program covers an aggregate of approximately 25,000 acres of the Uravan Belt in Mesa, Montrose, and San Miguel counties on BLM lands administered by the Tres Rios and Uncompahgre Field Offices. These segments of land have been withdrawn from locatable mineral entry, but may be leased by the DOE for uranium and vanadium development (Final Uranium Leasing Program Programmatic Environmental Impact Statement (DOE/EIS-0472)). Of 31 lease tracts, the DOE has leased 29 throughout previous leasing periods. The surface resources continue to be managed by the BLM, and the lands remain open to mineral leasing and mineral material sales, so long as they do not interfere substantially with uranium leases and/or development. The DOE is the authorized agency responsible for uranium leasing within the ULP areas, with the BLM acting as a cooperating agency.

Common Varieties of Mineral Materials

Disposal of common varieties of mineral materials is discretionary and may occur under a sale contract or free use permit. Common varieties of mineral materials are often called "saleable minerals. In general saleable minerals include deposits of sand, clay, and stone used for building materials, aggregate, bulk fill, riprap, road surfacing, decoration, and landscaping.

Fluid Leasable Minerals

Oil and Gas

This program emphasizes the orderly and environmentally responsible development of oil and gas (natural gas and CO₂) deposits. These minerals are subject to disposal by lease under the Mineral Leasing Act of 1920, as amended. On USFS lands, mineral leases for federally owned minerals are issued by the BLM, after consent to lease by the USFS. This RMP implements direction (under the Energy Policy Act of 2005 and the Federal Onshore Oil and Gas Leasing Reform Act of 1987) for leasing of public lands.

The FEIS that accompanies this RMP includes analysis necessary for offering specific lands for lease. The analysis discusses the availability of the TRFO for oil and gas leases. In addition, it describes necessary protective stipulations to be attached to leases on SJNF surface lands, TRFO surface lands, and non-federal surface where the oil and gas estate is owned by the BLM. The RMP does not authorize surface disturbance for oil and gas exploration or development. Surface-disturbing activities on leases will require additional environmental analysis and decisions. The oil and gas leasing decision in this RMP will not apply to existing oil and gas leases. When those existing leases expire or terminate, the leasing decision in this RMP will apply to any new leases issued.

Oil and Gas Stipulations

All TRFO oil and gas leases are subject to standard lease terms. These are the least restrictive terms under which an oil and gas lessee may operate. They meet Energy Policy Act of 2005 direction to encourage development of federal energy resources. They require operators of oil and gas leases to minimize adverse impacts to air, water, land, visual, cultural, and biological resources and to other land uses and users, and to comply with all applicable laws, regulations, and formal orders of the agency managing the leased lands. With the exceptions noted below, leases with standard lease terms allow year-round occupancy and use of leased lands. These leases provide full access and the highest potential for discovery and development of oil and gas resources. Lease notices may be included to warn a potential lessee of the likelihood of such conditions, but the extent and restrictive nature of the conditions is still not known at the lease issuance stage. Operations may be prohibited on the affected parts of the lease, or costs may substantially increase due to protective measures required to protect certain identified resources.

Special Lease Stipulations

Special lease stipulations are applied to new offerings of oil and gas leases where additional restrictions are required to protect environmental resources. Stipulations applied to new oil and gas leases under this RMP are described in Appendix H. Areas included within the various stipulations are shown on Figures 2.19.3 through 2.19.5.

Special lease stipulations apply only to new leases (issued after adoption of this RMP). Pre-existing leases are subject to the stipulations attached to them under the previous San Juan/San Miguel Resource Management Plan (BLM 1985) or the Colorado Oil and Gas Leasing EIS (BLM 1991a). However, new development on existing leases must also comply with the current RMP management direction. This direction is consistent with Interior Board of Land Appeals decisions (*Yates Petroleum Corp.*, 176 IBLA 144 (2008) and *William P. Maycock*, 180 IBLA 1 (2010)) findings that BLM has discretion to modify surface operations to add specific mitigation measures supported by site-specific NEPA analysis undertaken during the development phase on existing leases (CO-2010-028). Any additional mitigation measures would need to be justifiable, still provide for lease development and would be incorporated in a site-specific document.

Special lease stipulations for oil and gas operations are imposed at the time of lease issuance. Three general restrictive surface occupancy categories may also be used for oil and gas leases within the planning area, where justified for resource protection:

- **No Surface Occupancy (NSO):** Use or occupancy of the land surface for fluid mineral (oil and gas) exploration or development is prohibited to protect identified resource values. However, oil and gas under lands affected by NSO stipulation are legally available for extraction if extraction can be accomplished without occupying the surface (such as through directional drilling or otherwise accessing the reservoir from adjacent lands). Technological limitations and higher cost will affect the recovery of these resources, but they are available.

The NSO stipulation is intended for application only where the TRFO determines that the standard lease terms are insufficient to provide the level of resource protection necessary to protect the public interest. An NSO stipulation is not needed if the desired

level of protection can be accomplished by relocating a proposed facility or activity within the lease area or by avoiding that activity for a specified period.

- **Controlled Surface Use (CSU):** Use or occupancy of the land surface for fluid mineral (oil and gas) exploration or development is allowed but identified resource values require special operational constraints that may modify lease rights. A CSU stipulation allows the TRFO to require that a proposed facility or activity be relocated from the proposed location, or otherwise modified if necessary to achieve the desired level of protection. CSU provides operating guidance, but does not substitute for NSO or TL stipulations. CSU allows year-round occupancy and accessibility to leased lands while providing mitigation of effects on other resources.
- **Timing Limitation (TL):** Use or occupancy of the land surface for fluid mineral (oil and gas) exploration or development is prohibited during a specified period of the year. The scope of the TL stipulation goes beyond ground-disturbing activities to encompass any source of protracted or high-intensity disturbance that could interfere with normal wildlife behavior and adversely affect habitat use. The limitation is applied annually for a specified period. The TL stipulation does not apply to the operation and maintenance of production facilities unless the analysis demonstrates the continued need for such mitigation and that less stringent project-specific mitigation measures (such as Conditions of Approval) would not be sufficient. The TL stipulation provides for partial accessibility for a portion of the year and maintains the potential for extraction of oil and gas, but may increase costs due to timing constraints (such as a short operating season).
- **Not Available for Lease:** The following resources and areas are not available for lease—WSAs; wild segments of suitable WSR, and the Anasazi National Registered District, and the Snaggletooth unit to be managed as lands with wilderness characteristics.

Table 2.20 displays the availability of acres of land for leasing and application of stipulations to leases. BLM acres are listed separately for BLM surface ownership and non-federal surface ownership.

Table 2.20: Acres Available for Leasing and Lease Stipulations

Federal Mineral Status	Acres
TRFO Lands (BLM surface and mineral estate)	
Total BLM Mineral Estate	503,466
Administratively Not Available for Lease	62,516
Total BLM Surface and Mineral Public Lands Available for Leasing	440,896
Available for leasing with No Surface Occupancy Stipulation	194,290
Available for leasing with CSU stipulation	401,232
Available for leasing with TL stipulation	321,435
Available for leasing with standard lease terms	22,734
TRFO Lands (BLM mineral estate only; non-federal surface)	
Total BLM Mineral Estate/Non-federal Surface	319,957
Administratively Not Available for Lease	0
Total BLM Mineral Estate/Non-federal Surface Available for Leasing	319,957
Available for leasing with NSO stipulation	88,548
Available for leasing with CSU stipulation	214,839
Available for leasing with TL stipulation	161,301
Available for leasing with standard lease terms	82,233

Desired Conditions

- 2.20.1 The planning area supports the exploration, production, and development of energy and mineral resources in a multiple use context, as is consistent with all applicable laws.
- 2.20.2 Mineral materials (including gravel and decorative stone) are available to support resource management needs, personal and hobby use, and commercial pursuits. Aggregate materials in the Grandview area will continue to be developed as needed.
- 2.20.3 Ground disturbance from development of oil and gas fields is minimized by centralizing facilities, requiring multiple wells per pad, and minimizing the road system required to access facilities.
- 2.20.4 Reclamation of mineral exploration, development, and production activities is stable, long term, and implemented as soon as is reasonably possible in order to minimize impacts to other resources.
- 2.20.5 All oil and gas well fields starting at the field development stage and all other established well fields where practicable maximize the collocation of facilities to minimize construction footprints and reduce tailpipe emissions.

Objectives

- 2.20.6 Over the next 20 years, centralize facilities and engines to minimize the number of well head engines and optimize well engines so they use the minimum cumulative horsepower to obtain the maximum efficiency for all well fields beginning at the field development stage and all other established well fields where practicable.
- 2.20.7 Process requests for mineral materials in a timely manner consistent with RMP direction and applicable laws. Identify areas suitable for and establish common use area(s) and/or community pits to provide sources of mineral materials to the public.

Prospective Hydrocarbon Basins and Hydrocarbon Occurrence Potential

Tres Rios Field Office

Figure 2.20.1

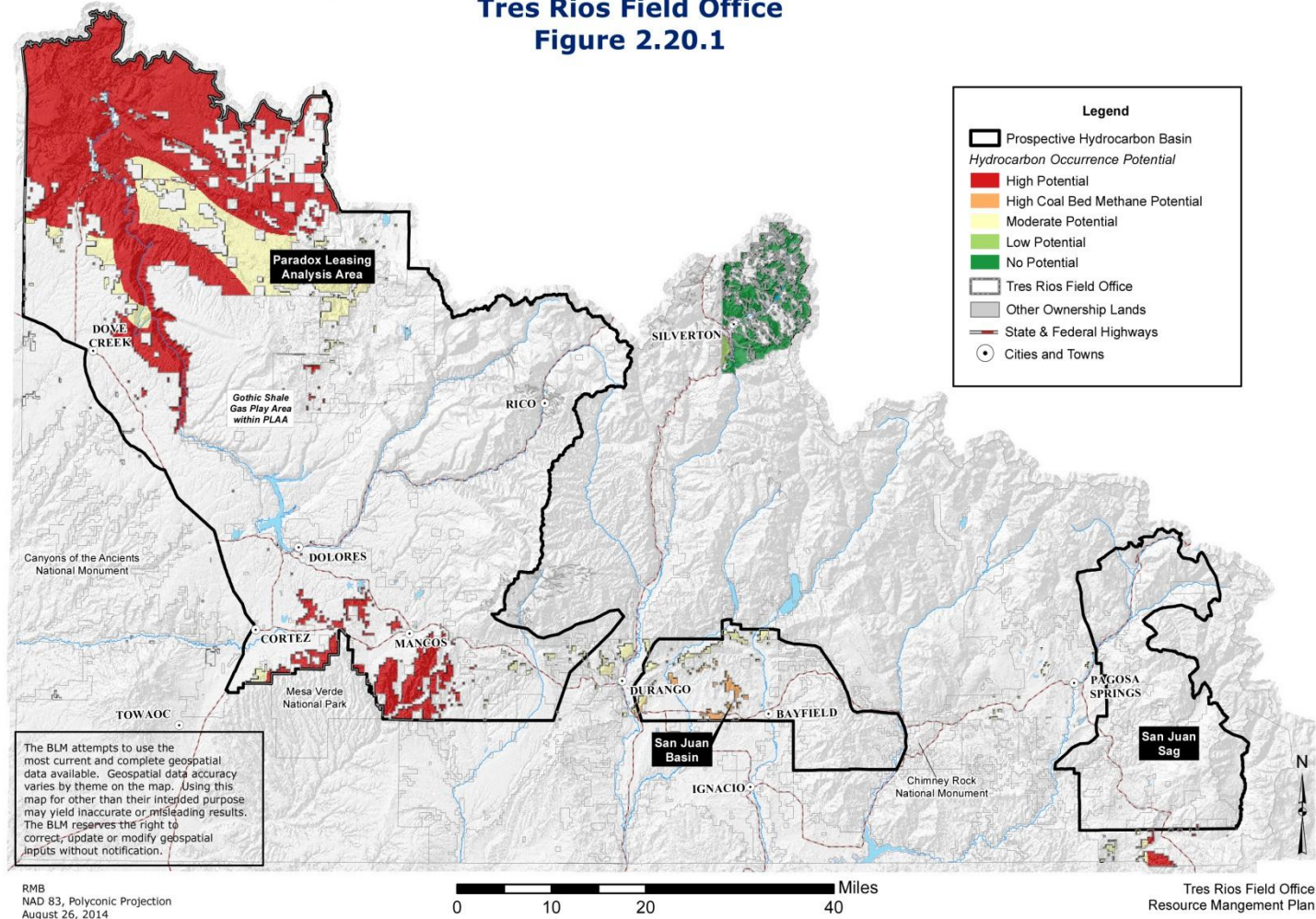


Figure 2.20.1. Prospective Hydrocarbon Basins and Hydrocarbon Occurrence Potential

Areas of Locatable Mineral Potential Tres Rios Field Office Figure 2.20.2

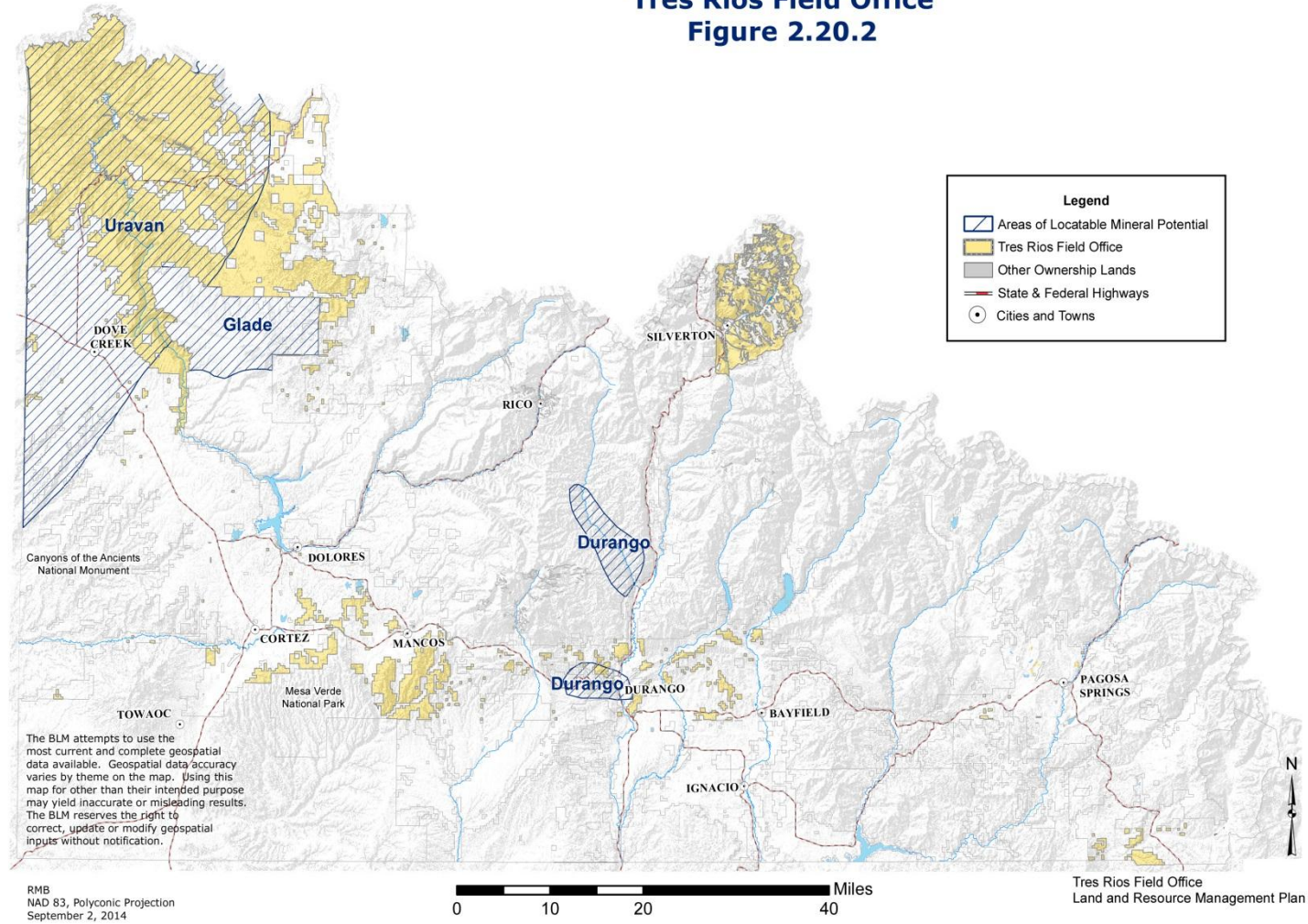


Figure 2.20.2. Areas of Locatable Mineral Potential

Solid Leasable Minerals Tres Rios Field Office Figure 2.20.3

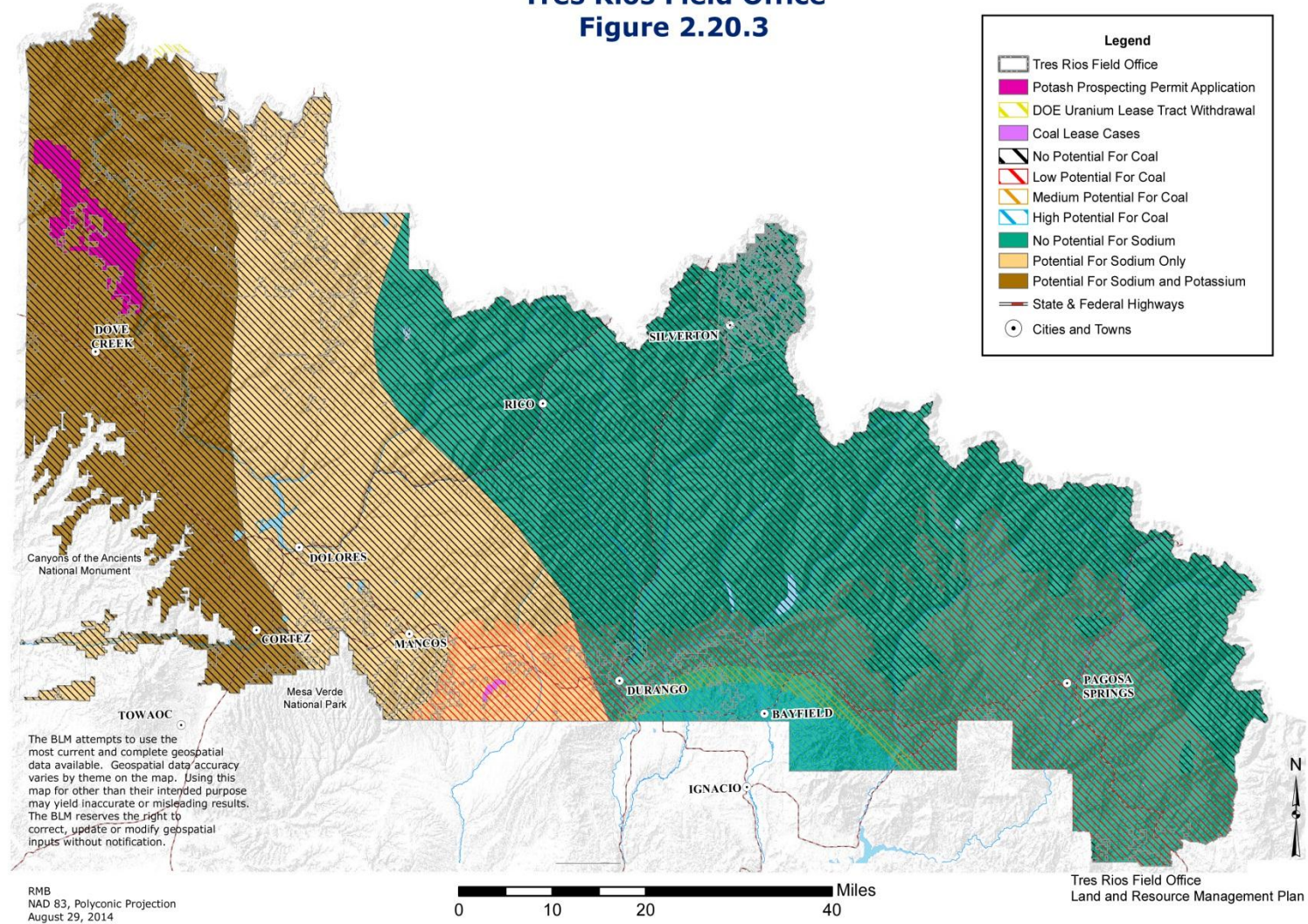


Figure 2.20.3. Solid Leasable Minerals.

Oil and Gas Leasing Availability and No Surface Occupancy Stipulations

Tres Rios Field Office

Figure 2.20.4

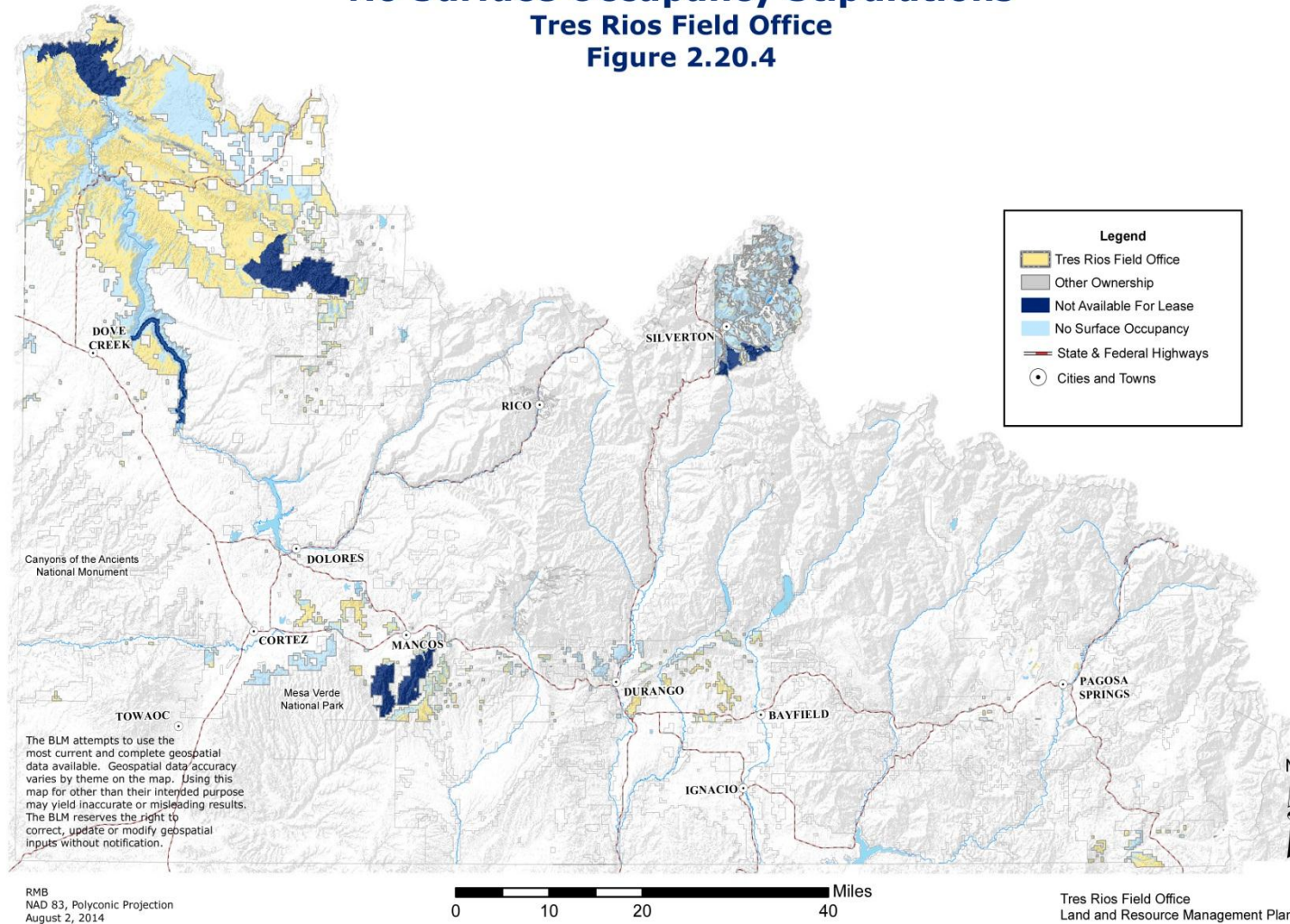


Figure 2.20.4. Oil and Gas Leasing Availability and No Surface Occupancy Stipulations.

Oil and Gas Leasing Availability and Controlled Surface Use Stipulations

Tres Rios Field Office

Figure 2.20.5

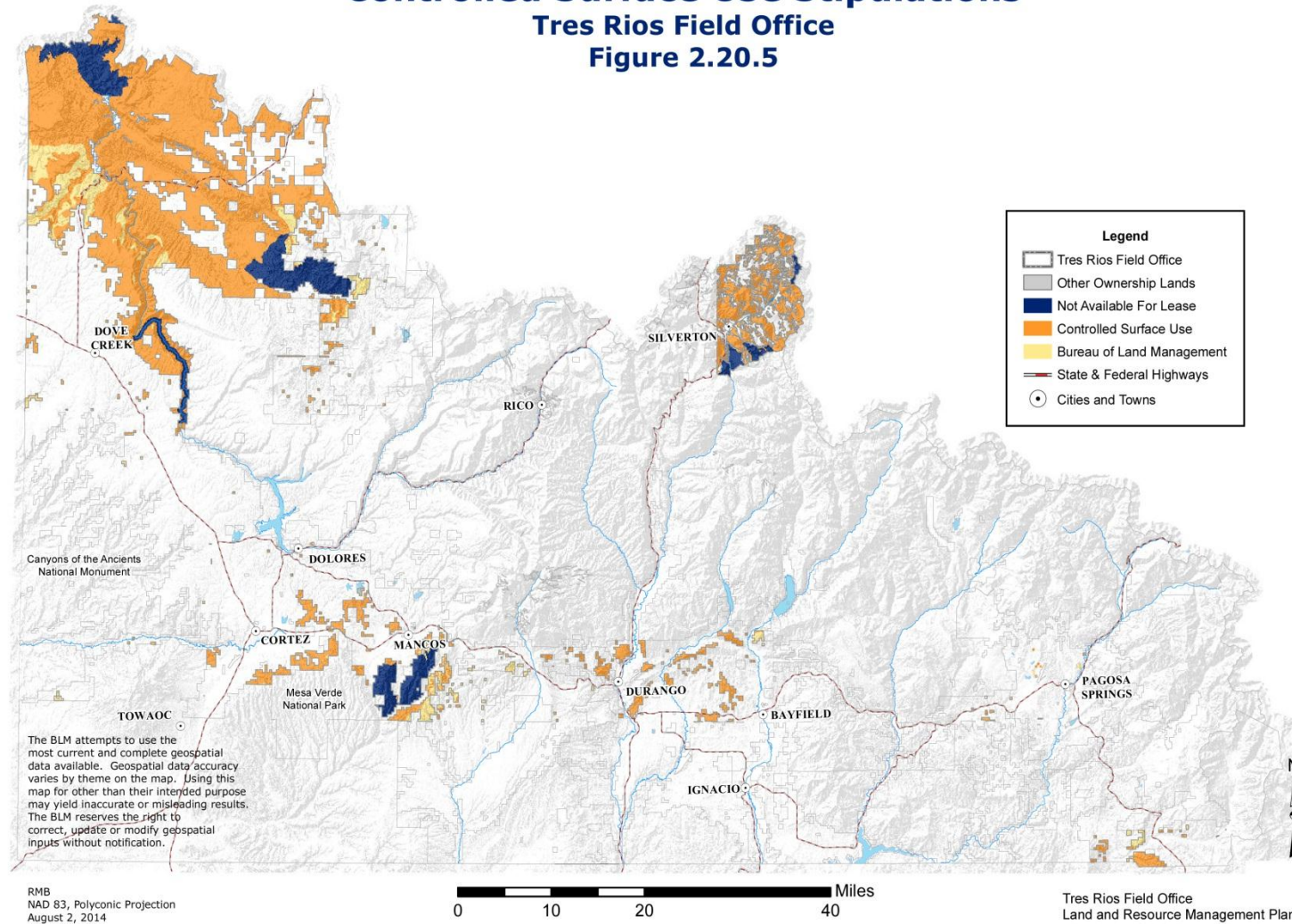


Figure 2.20.5. Oil and Gas Leasing Availability and Controlled Surface Use Stipulations.

Oil and Gas Leasing Availability and Timing Limitation Stipulations

Tres Rios Field Office

Figure 2.20.6

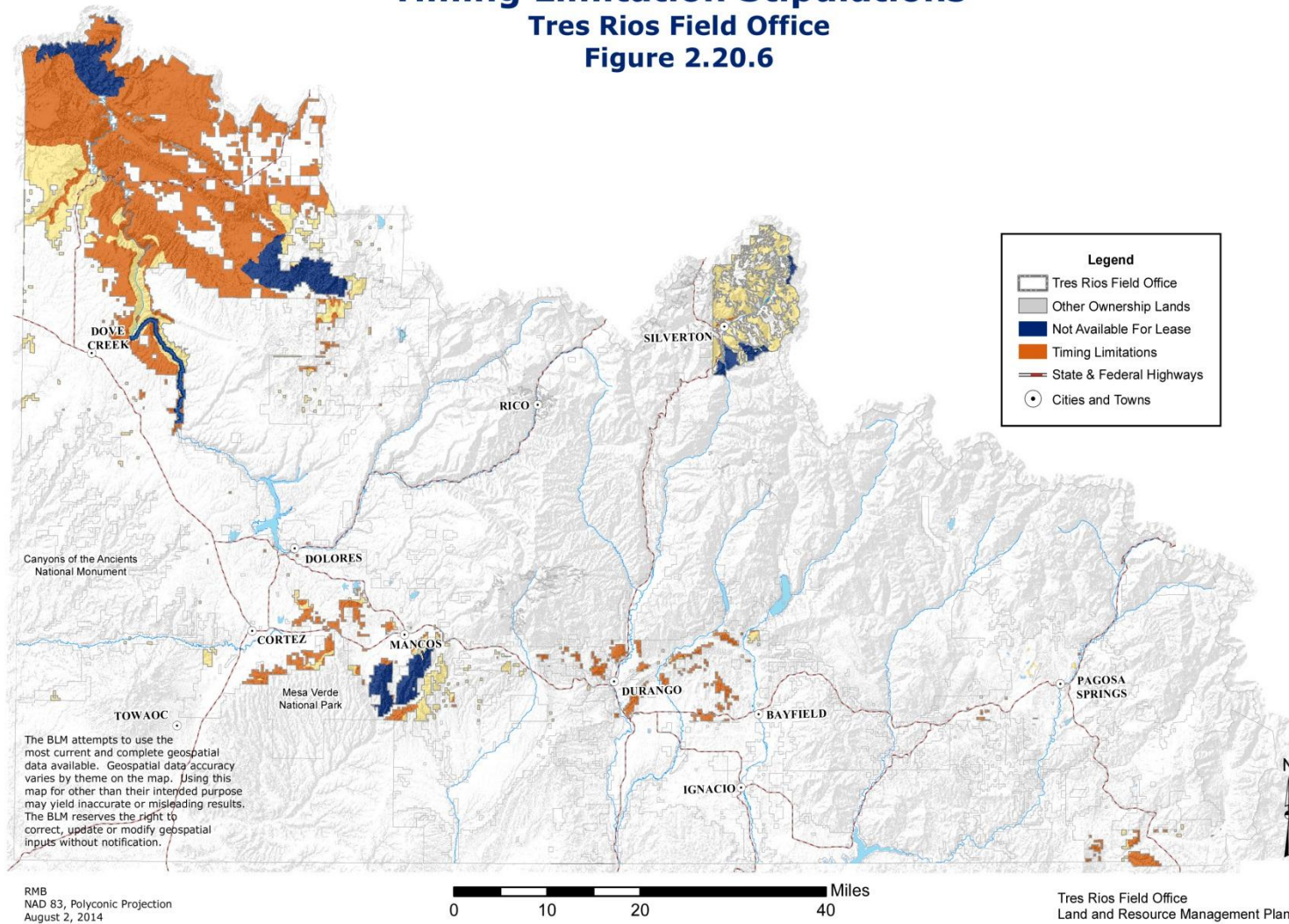
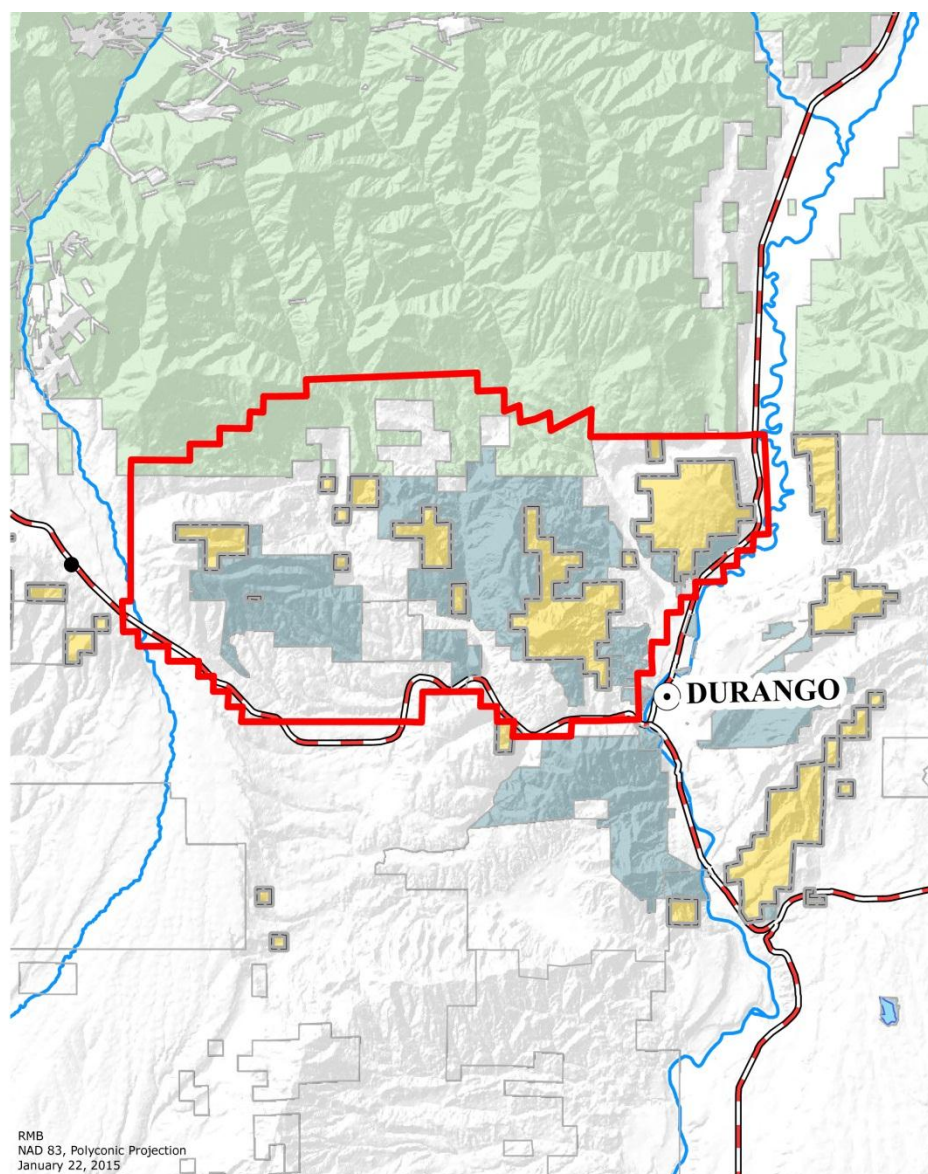
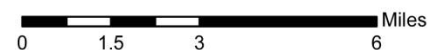


Figure 2.20.6. Oil and Gas Leasing Availability and Timing Limitation Stipulations.



**Perin's Peak and Animas City Mountain
Mineral Withdrawal
Tres Rios Field Office
Figure 2.20.7**



The BLM attempts 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 BLM reserves the right to correct, update or modify geospatial inputs without notification.



Tres Rios Field Office
Land and Resource Management Plan

Figure 2.20.7. Perin's Peak and Animas City Mountain Mineral Withdrawal.

2.21 Alternative Energy: Geothermal, Wind, Solar, Biomass

Geothermal

This Approved RMP carried forward decisions from the following: The BLM and USFS, in cooperation with the DOE, jointly prepared a PEIS for Geothermal Resource Leasing (BLM and USFS 2008) pursuant to Section 225 of Public Law 109-58 (Energy Policy Act of 2005). Decisions included in the Record of Decision for this PEIS:

- Allocated BLM lands as open to be considered for geothermal leasing or closed for geothermal leasing, and identified those National Forest System lands that are legally open or closed to leasing;
- Developed a reasonably foreseeable development scenario that indicated a potential for 12,210 megawatts (MW) of electrical generating capacity from 244 power plants by 2025, plus additional direct uses of geothermal resources in the western states; and
- Adopted stipulations, BMPs, and procedures for geothermal leasing and development.

These actions were implemented as BLM resource management plan amendments for 114 land use plans. The ROD amended the San Juan/San Miguel Resource Management Plan (BLM 1985) to show 496,439 acres open and 146,597 acres closed to geothermal leasing within the TRFO's jurisdiction. The amendments adopted the stipulations and leasing procedures provided in Chapter 2 and the BMPs provided in Appendix B of the PEIS. Specific areas of BLM-administered lands have not been identified for utility-scale electrical production from geothermal sources in Colorado.

Solar

BLM land use plans analyze and consider the potential for solar energy development and the local environmental or community issues related to making lands available (or not available) for commercial solar energy development.

This Approved RMP carried forward decisions from the Solar Energy Development PEIS and ROD of October 12, 2012 (BLM and DOE 2012), signed by the BLM in cooperation with the DOE. The ROD excluded all lands within the planning area for solar development for projects 20 MW or greater, except for 12,105 acres of variance areas within the TRFO's jurisdiction. Solar applications for projects 20 MW or greater filed within the variance areas are subject to the requirements in the ROD, including required design features.

Desired Conditions

Geothermal

- 2.21.1 Stipulations included in the Geothermal Resource Leasing PEIS and ROD (BLM and USFS 2008) serve as the minimal level of protection and are adopted as applicable to this RMP. The Authorized Officer retains the discretion to issue stipulations in order to mitigate the impacts on other land uses or resource objectives. In general, oil and gas lease stipulations identified in Appendix H of this RMP would be applied as appropriate.
- 2.21.2 **Suggested BMPs:** Mitigation measures included in Appendix B of the Geothermal Resource Leasing ROD (BLM and USFS 2008) would be applied to the development of geothermal resources on federal lands.

Solar

- 2.21.3 Project planning and design incorporate an appropriate analysis to determine the feasibility, cost and benefits of using photovoltaic systems on administrative facilities, range improvements, resource monitoring, public safety, and recreation projects.
- 2.21.4 ROW applications for solar energy development incorporate BMPs and provisions contained in the Solar Energy Development PEIS. Solar energy development is authorized by ROW grants.

2.22 Abandoned Mine Lands and Hazardous Materials

Introduction

The Abandoned Mine Lands (AML) program is concerned with mitigating the effects of abandoned mines.

The TRFO will continue to update the inventory of abandoned mine sites within the planning area in order to identify, prioritize, and track reclamation needs and progress. Reclamation of abandoned mine lands will continue and will be prioritized based on the degree of threat to human health, the environment (especially to water quality), and public safety. Known hazards at AML sites will be remediated, with the highest priority given to sites near high visitor use areas (including developed campgrounds and recreation areas), sites located near residences on adjacent private property, sites impacting water quality, and sites close to frequently traveled roads in the planning area.

All mine reclamation and emergency response actions for releases of hazardous substances will be conducted in accordance with CERCLA. Closure actions related to physical hazards will be conducted under NEPA. Precautionary measures will be taken in order to guard against releases and/or spills into the environment for all BLM-authorized management activities that involve hazardous materials. Hazardous materials and waste management policies and controls will be integrated into all TRFO programs.

Desired Conditions

- 2.22.1 Abandoned mine reclamation within the planning area does not negatively impact water quality and historic resource protection.
- 2.22.2 Abandoned mines do not endanger the environment, wildlife, the public, or employees.
- 2.22.3 Mine waste repositories are protected and physical safety closures are protected or replaced during any BLM-authorized actions.
- 2.22.4 BLM-authorized actions occur without causing hazardous material spills or waste contamination.
- 2.22.5 Over the life of the RMP, AML closures for human safety at sites supporting bat populations include structures (such as bat gates) designed to provide for continued use as bat habitat.
- 2.22.6 The AML program coordinates with affected parties, partners, and stakeholder groups on AML projects.

Objectives

- 2.22.7 Stabilize, rehabilitate, or restore AML on priority sites on an annual basis in order to improve water quality and watershed condition.

- 2.22.8 Annually close or mitigate 10 abandoned mine features that pose a high safety hazard to the visiting public and/or to employees, until all high-priority sites have been addressed.
- 2.22.9 Close or mitigate high-priority sites over the life of the RMP.

Abandoned Mine Lands Repositories

Tres Rios Field Office

Figure 2.22

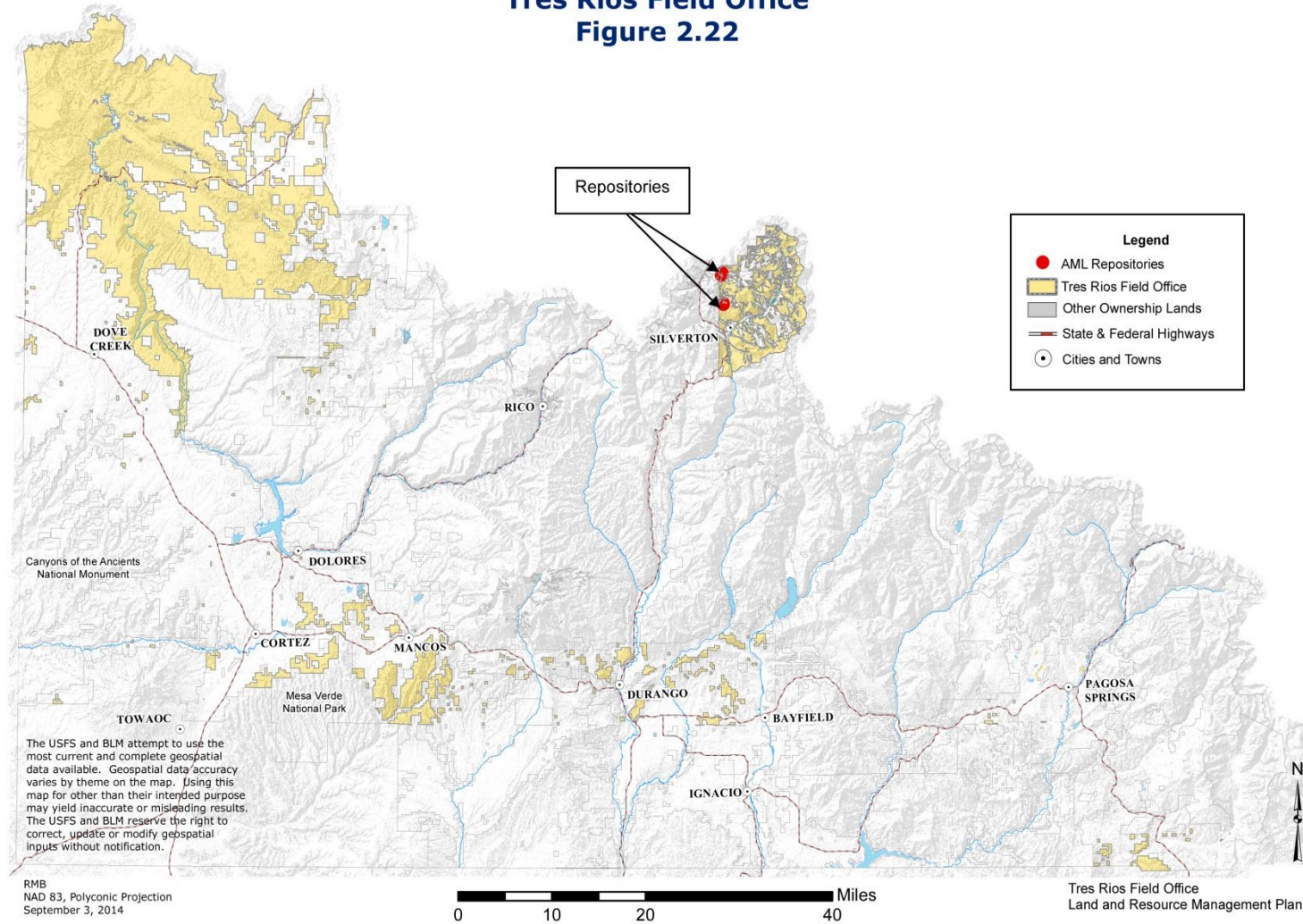


Figure 2.22. Abandoned Mine Lands Repositories.

2.23 Interpretation and Conservation Education

Introduction

An important goal of the 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. The interpretive and conservation education program plays a critical role in effective resource management and public appreciation of natural and cultural resources. A very dynamic interpretive and conservation/education program will offer a venue designed to create emotional and intellectual connections between people and the nature and culture of the planning area.

Desired Conditions

- 2.23.1 The public benefits from a public lands interpretive and education strategy that reflects BLM priorities and key public information needs. The public understands the mission of the BLM and its diverse cultural and natural resource management priorities and exhibits effective stewardship behavior.
- 2.23.2 Messages are consistent and effectively delivered to the public, reaching a wide variety of age, gender, class, ethnic, and cultural groups.
- 2.23.3 Resource management messages are articulated in all education and interpretive products, programs, and public contacts.
- 2.23.4 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.
- 2.23.5 All visitor information services, public affairs, interpretation, and conservation education functions have a unified and clear communication strategy.
- 2.23.6 Personnel play a role in public communications, in terms of offering conservation education, interpretation, public affairs, and visitor information services.
- 2.23.7 Foster research, education, and interpretation of the area's rich natural and cultural heritage.
- 2.23.8 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, tribal, and other federal agencies; interested individuals and organizations, etc.).
- 2.23.9 Public education opportunities, through interpretation and conservation education programs, promote ethical and non-limiting use of wildlife resources within the planning area.