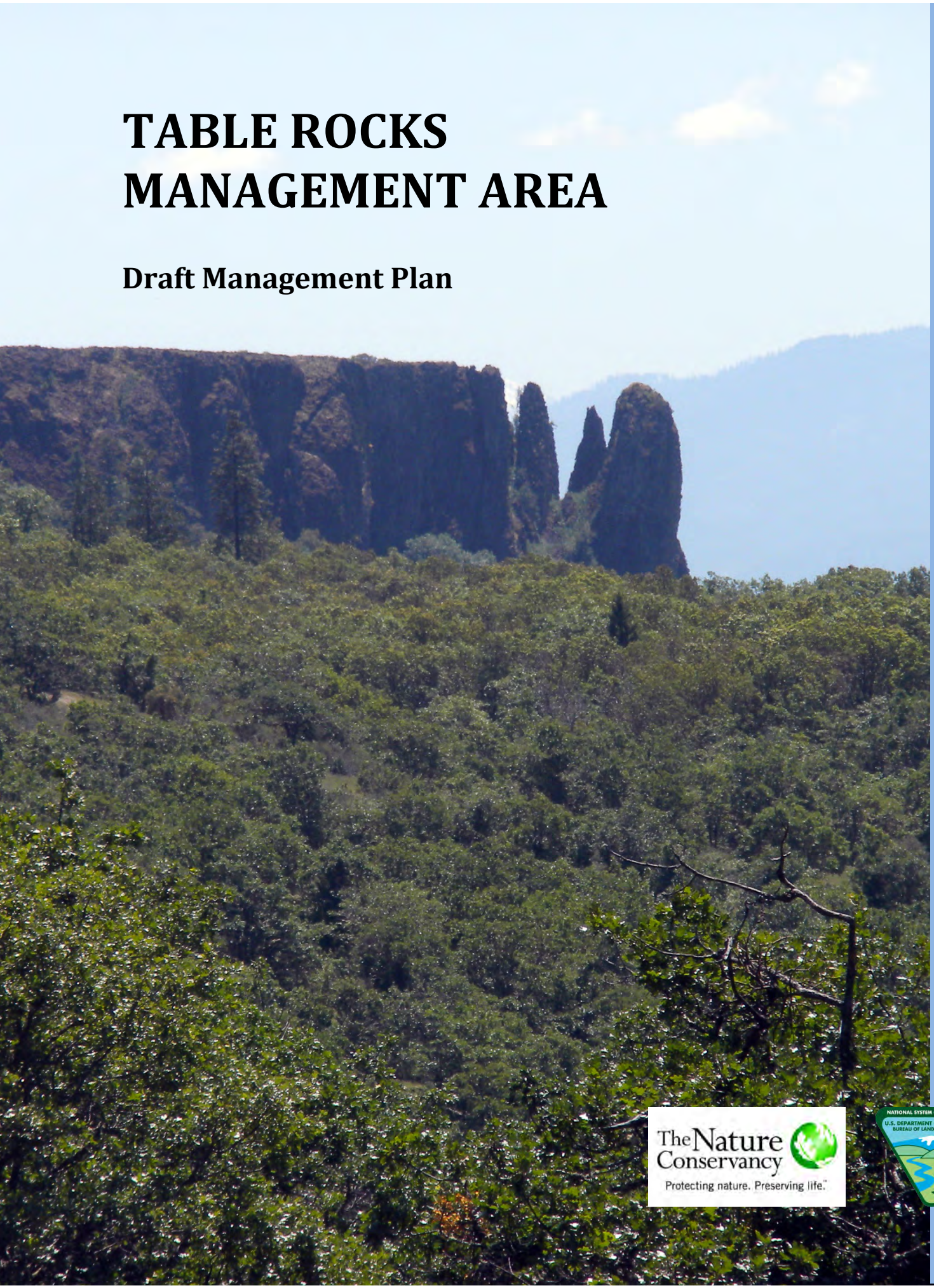
TABLE ROCKS MANAGEMENT AREA

Draft Management Plan



BLM

Butte Falls Resource Area and The Nature Conservancy

April 2012

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NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

TABLE ROCKS MANAGEMENT AREA

DRAFT MANAGEMENT PLAN

Butte Falls Resource Area
Medford District
Bureau of Land Management
U.S. Department of the Interior

Southwest Oregon Field Office
The Nature Conservancy

2012

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TABLE ROCKS MANAGEMENT PLAN

I. INTRODUCTION

The Table Rocks Management Plan will serve as the primary management guidance for the Bureau of Land Management's Table Rocks Area of Critical Environmental Concern (ACEC) and the adjoining lands managed by The Nature Conservancy. This plan is jointly prepared by the Bureau of Land Management (BLM) and The Nature Conservancy (Conservancy), and will address management over the next 10 years. The management plan discusses the significant values for which the ACEC and the Conservancy's protected lands were established, and describes the historic and current conditions of the area. Additionally, this document recommends management actions that will guide how the lands should be managed in order to protect, conserve, and enhance these values while allowing appropriate human activities. Any future additions to the Management Area would follow the guidelines of this management plan.

The Table Rocks Management Plan is a comprehensive description of the area and proposed management for the Table Rocks Management Area. The Management Area is comprised of two separate, disconnected tracts of land—Upper Table Rock and Lower Table Rock—that are owned, managed, or under easement by the BLM and the Conservancy (Map 1: Vicinity and Ownership). This management plan only pertains to these lands. A larger Project Area, which encompasses the Management Area and adjacent surrounding private lands, depicts a larger geographic area of interest with potentially similar characteristics. Private land within the Project Area is not included in the Management Area description, but represents an area of interest for potential future acquisition and management opportunities.

This management plan is consistent with the following laws, regulations, policies, guidelines, and agreements:

- Federal Land Policy Management Act (1976)
- BLM Manual 1613–Areas of Critical Environmental Concern (1988)
- BLM Manual Supplement, 1623 Supplemental; Program Guidance for Land Resources (USDI 1987)
- Conservation Easement, between the Conservancy and George and Hendrika Neary (1980)
- National Memorandum of Understanding (MOU) between the BLM and the Conservancy (1990)
- Guide for Developing Natural Area Management and Monitoring Plans (Pacific Northwest Interagency Natural Area Committee 1991)
- Medford District BLM Resource Management Plan (USDI 1995)
- Rogue River Plains Site Conservation Plan (Conservancy 2001)
- Klamath Mountains Ecoregional Conservation Assessment (Conservancy 2004)

- Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005)
- Draft Recovery Plan for Listed Species of the Rogue Valley Vernal Pool and Illinois Valley Wet Meadow Ecosystems (USFWS 2006)
- Oregon's Comprehensive Wildlife Conservation Strategy (ODFW 2006)
- Guidance to Assist in the Assessment of, and Conservation Efforts for, Vernal Pool Systems on the Agate Desert (Jackson County 2008)
- Table Rocks Conservation Easement, between the Conservancy and Oregon Watershed Enhancement Board (2010)
- Nonexclusive Road Easement, between the Conservancy and BLM (2010)
- MOU between BLM, the Conservancy, and Confederated Tribes of Grand Ronde (2011)
- MOU between BLM, the Conservancy, and the Cow Creek Band of Umpqua Tribe of Indians (2012)
- Management Plan for the OWEB Table Rock Conservation Easement (Conservancy planned 2012)
- Programmatic Formal Consultation on the USFWS' Vernal Pool Consultation Strategy for Jackson County (USDI 2011)

A. Table Rocks Designation Background

The Table Rocks have long been recognized as areas with special values worth protecting. They have received a variety of designations that have provided the means for safeguarding this area, starting in 1973 when the Rogue Group Sierra Club recognized Upper Table Rock as a unique site worthy of protection. The National Audubon Society identified the Table Rocks as an Important Bird Area based on species in rare or unique habitat. Oregon Department of Fish and Wildlife included the Table Rocks in its North Medford Conservation Opportunity Area as part of the Oregon Conservation Strategy, a long-term, statewide approach to protecting and improving fish and wildlife habitat. The Table Rocks were also named a Watchable Wildlife site in 1994 in order to enhance and promote wildlife viewing.

The Nature Conservancy and the Siskiyou Chapter of the Native Plant Society of Oregon recommended the BLM should consider the top of Upper Table Rock as a possible candidate for Research Natural Area (RNA) designation. The BLM included the recommendation for RNA status for Upper Table Rock in the 1978 Medford District Management Framework Plan (MFP). However, further study of the area's past use showed that it did not meet the criteria for an RNA and the designation was not included in the final MFP.

In 1980, the BLM proposed designating Upper Table Rock as an Outstanding Natural Area (ONA), which would allow the area to be managed for recreational use as long as

other values were not impaired. In 1986, the BLM-administered lands on Table Rocks, 1,003 acres on Upper and 240 acres on Lower, were designated as an ACEC by an amendment to the MFP. The 1,003 acres on Upper Table Rock were also designated an ONA at the same time. The ACEC and ONA designations were carried forward in the 1995 Medford District Resource Management Plan (RMP). In 2011 the Table Rocks were recognized as one of 101 sites in Presidents Obama's America's Great Outdoors Initiative (AGO) (U.S. Department of Interior 2011), and the only BLM site in Oregon. This report identified project sites where federal agencies would partner with state and local governments and other stakeholders on a shared conservation and recreation agenda. The AGO sites identified in the report aim to reconnect Americans to the natural world through parks, trails, and rivers and to conserve and restore working lands and wildlife habitat.

BLM ACEC Background

ACECs are some of the most important and sensitive publicly owned lands managed by the BLM. The Federal Land Policy Management Act (FLPMA, Public Law 94-579), enacted by Congress in 1976, requires that the BLM give priority to the designation, management, and protection of ACECs. Lands designated as ACECs require special management attention to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and safety from natural hazards (FLPMA, Sec. 103).

Congress provided specific language in FLPMA for identification and protection of areas on the public lands that have significant natural and cultural resources. FLPMA provides that ACECs be given priority in the "inventory of all public lands and their resources and other values," but that such identification shall not, of itself, change or prevent change of the management of public lands (FLPMA, Sec. 204). Under FLPMA, Congress made clear that it viewed ACECs as special places within the public lands (Callison 1984). Senate Report No. 94-583 by the Committee on Interior and Insular Affairs states, "management of public lands is to include giving special attention to the protection of ACECs for the purpose of ensuring that the most environmentally important and fragile lands will be given . . . early attention and protection." This report also states, "unlike wilderness areas . . . [ACECs] are not necessarily areas in which no development can occur." FLPMA set the foundation to prepare policy and procedures for identifying, designating, and managing ACECs. BLM regulations for land use planning (43CFR 1610.7-2) guide the ACEC designation process.

Public land designated as an ACEC must meet the criteria of "relevance" and "importance." An area meets the "relevance" criterion for ACEC designation if it has one or more of the following: significant historic, cultural, or scenic values; a fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity); a natural process or system (including but not limited to endangered, sensitive, or threatened plants species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features); or natural hazards.

The relevant values or resources identified must also have substantial significance in order to satisfy the "importance" criterion for ACEC designation. This generally means that the identified values, resources, systems, processes or hazards are characterized by one or more of the following: locally significant qualities that give it special worth, consequence, distinctiveness or cause for concern; qualities that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change; recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of FLPMA; or qualities that cause concern or pose threats to public welfare (BLM Manual 1613, 1988).

Public lands on both Upper and Lower Table Rocks were designated an ACEC for botanical, geological, special status species, and natural systems. A description of the area's outstanding characteristics in the 1986 amendment states,

> *The Table Rocks are erosional remnants of an intracanyon basaltic lava flow that filled the Rogue River Valley about five million years ago. The rocks have been a local landmark since the valley's settlement. Indians used the rocks for refuge and ceremonies. The table tops, as well as the rocks' south and western slopes, are highly scenic and sensitive visual areas. A subspecies of* Limnanthes *found here is proposed by the USFWS for listing as an endangered species. A variety of habitats from dry grassland to vernal pools exist on the mesas.*

A BLM Medford District internal review of existing ACECs documented that the Table Rocks' natural systems or processes—specifically vernal pools, ecology, *Limnanthes floccosa* ssp. *pumila*, and geology—met the criteria for relevance and importance.

Conservancy Ownership Background

In 1979, The Nature Conservancy in Oregon bought and set aside 751 acres of land on Lower Table Rock as Lower Table Rock Preserve with the intent of protecting its ecological diversity. Over the next 30 years the Conservancy acquired a total of 1,911 acres, including a 795-acre perpetual conservation easement purchased in 1980 from George and Hendrika Neary. The Conservancy purchased the Neary easement to provide a buffer for the important natural features on the top of the rock, to provide scenic and biologic continuity between Lower Table Rock and the Rogue River, and to protect the area from potential subdivision or development. In 1997, the Conservancy transferred 37 acres to the BLM to serve as a trailhead on Lower Table Rock.

In 2009, the Conservancy acquired an additional 1,710 acres from the Wood Family Trust with funding provided by the Oregon Watershed Enhancement Board (OWEB), U.S. Fish and Wildlife Service, the Doris Duke Charitable Foundation and a donation in memory of Harriet Gardener. With this purchase, the entire summits and most of the flanks of the Table Rocks are now owned either by the Conservancy or the BLM. To recognize the expanded conservation ownership and opportunities for collaborative land management with the BLM, the Conservancy now refers to their properties as the Table Rocks site.

Key biodiversity elements considered at the time of preserve designation included the following species: *Limnanthes floccosa* spp *pumila*, blue-grey gnatcatcher, California mountain kingsnake, common kingsnake, and sharp-tailed snake. The following plant communities were also considered: ponderosa pine-white oak-black oak-sticky manzanita-wedgeleaf ceanothus/California oatgrass-Idaho fescue, madrone-white oak-black oak/poison oak, white oak-black oak savanna, and Rogue River Plains mounded prairie. The discovery of new biodiversity elements, most notably the vernal pool fairy shrimp in 1998, added conservation value to the Conservancy's lands and led to the 2009 acquisitions on both Lower and Upper Table Rocks.

B. Table Rocks ACEC and Conservancy Land Management Plan History

Since 1985, the BLM has made several attempts to complete a management plan for the Table Rocks ACEC. The Conservancy's 2009 land acquisition resulted in a more continuous ownership pattern for the area, providing the opportunity to better manage and protect the area. This document culminates these multiple efforts and presents a framework to manage the Table Rocks as a whole, for both the BLM and the Conservancy.

BLM-administered land on the slopes and tops of both Upper and Lower Table Rocks totals 1,280 acres; 1,243 acres are designated as an ACEC (37 acres at the Lower Table Rock trailhead is currently not included within the BLM ACEC). Adjacent private lands owned or managed by the Conservancy total 3,584 acres (Table 1). The area addressed by this management plan, the Table Rocks Management Area, covers a total of 4,864 acres of land managed by both the BLM and the Conservancy.

Table 1: Table Rocks Land Management

	BLM Acres	TNC Acres	
		TNC	TNC Easement
Upper Table Rock	1,003	1,543	0
Lower Table Rock	277	1,246	795
Subtotal		2,789	795
	1,280	3,584	
Total	4,864		

Using the Conservancy's Conservation Action Planning (CAP) tool, the BLM and the Conservancy conducted an internal scoping process in 2010 to identify threats and develop strategies to maintain or restore the biodiversity and social values of the Table Rocks (Appendix A). In a series of meetings, Conservancy staff and BLM specialists developed a list of conservation, social, and cultural targets; assessed the health of these targets; determined key threats to viability of the targets; and created objectives and strategies to improve the target health. The CAP product has been incorporated into this

plan and is reflected in Part III, Management Recommendations. More information about the Conservancy's CAP process can be found at http://www.conservationgateway.org/topic/conservation-action-planning.

C. Native American Tribal Interest

For thousands of years, Native Americans used the Table Rocks for subsistence, prosperity, and social interaction. The usage of the Table Rocks area changed very little over time until the incursion of Euro-Americans in the 1850s, whose search for gold and subsequent settlement of the area resulted in animosity and conflicts with Native Americans, collectively referred to as the Rogue Indian Wars. The Table Rocks were a focal point during these trying times, and one of the first conferences between the Natives and the immigrants took place below Table Rock in 1852, on a large gravel bar in the Rogue River. Peace treaties signed on September 10 and 19, 1853 ceded ancestral homelands to the U.S. Government and eventually led to the forced removal in 1856 of many native groups to reservations to the north.

Since then, Table Rocks has been held as a cultural keystone by the ancestors and present-day members of The Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, and Cow Creek Band of Umpqua Tribe of Indians. These tribes maintain deep ties to their ancestry, culture, history, and natural resources of the Table Rocks. After the Conservancy's 2009 acquisition, members of the Confederated Tribes of Siletz Indians offered a native blessing ceremony at Upper Table Rock. In 2011, the BLM, Conservancy, and The Confederated Tribes of Grand Ronde signed a memorandum of understanding (MOU) that marked the beginning of a formal partnership in the management of the Table Rocks. The purpose of the MOU is to coordinate resources and opportunities among the partners and other stakeholders in protecting the values of the Table Rocks for present and future generations. A similar MOU was signed with the Cow Creek Band of Umpqua Tribe of Indians in 2012.

D. Goals and Objectives

To further the vision for the protection and conservation of the Table Rocks, while allowing appropriate human activities, the BLM and the Conservancy developed the following general management objectives for the Table Rocks Management Area:

- Preserve the Table Rocks as examples of unique ecosystem types with outstanding physical and biological diversity.
- Preserve a full range of genetic diversity for all special status plants and animals found in the area.
- Maintain and enhance natural ecosystem processes essential for the adaptation and resiliency of Table Rock plant and wildlife communities into the future.
- Provide research opportunities for observing, studying, and monitoring the natural area.

- Provide environmental education and recreation opportunities that increase awareness of the natural and cultural values of the area, and foster stewardship attitudes and behavior.
- Protect the natural, cultural, and historical values of the Table Rocks.
- Provide consistent management across ownerships.

II. AREA DESCRIPTION

This section provides a description of the physical, biological, and social resources in the Management Area. The Management Area is comprised of two separate, disconnected tracts of land – Upper Table Rock and Lower Table Rock – that are owned, managed, or under easement by the BLM and the Conservancy.

A. Location and Climate

The Table Rocks are located in southwest Oregon, approximately 10 air miles north of Medford in central Jackson County. Upper Table Rock is situated north of the Rogue River near its confluence with Little Butte Creek. Lower Table Rock is situated on the north bank of the Rogue River its confluence with Bear Creek, approximately one mile southwest and downstream from Upper Table Rock. *Upper* and *Lower* refers to their positions relative to each other along the Rogue River; Lower Table Rock is located downstream, or *lower on the river,* from Upper Table Rock.

Both plateaus rise from approximately 1,300 feet in elevation at the valley floor to an average elevation of 2,050 feet at the top of the mesas. The horseshoe-shaped Table Rocks have slopes facing in all directions, with the horseshoes, or bowls, open to the south. The Management Area is located in the Gold Hill/Rogue River and Shady Cove/Rogue River fifth field watersheds.

The BLM-administered portion of Upper Table Rock includes 1,003 acres in T35S, R2W, sections 34 and 35, and T36S, R2W, section 1, Willamette Meridian. The portion on Lower Table Rock includes 277 acres in T36S, R2W, sections 4 and 9, Willamette Meridian. These BLM lands are Public Domain and Oregon and California Lands Act lands administered by the Medford District BLM's Butte Falls Resource Area. The Conservancy managed lands on Upper Table Rock consist of 1,543 acres in T35S, R2W, sections 26, 35, and 36, and T36S, R 2W, sections 2 and 3. The lands on Lower Table Rock managed by the Conservancy consist of 2,041 acres in T36S, R2W, sections 4, 5, 6, 7, 8, 9, 16, and 17. Conservancy lands are managed by the Southwest Oregon Field Office of the Conservancy.

The climate of the Table Rocks area is mild with winter lows averaging just below freezing and summer highs around 87°F. Temperatures in excess of 100°F can be expected each summer. The exposed table lands are swept by winds much of the year. The wind, low humidity, and low average precipitation of about 20 inches, most of which falls between October and May, results in elevated evaporation. The seasonal aridity is a major factor in determining the biology of the area.

B. Access

The main transportation route to the Table Rocks area from Medford is Table Rock Road, a well-travelled north-south paved road that connects Medford to Central Point and State Highway 234, part of the Rogue Umpqua National Scenic Byway. Highway 234 to the north of the Table Rocks connects the area to the communities of Gold Hill, Sams Valley, and Shady Cove.

The Upper Table Rock portion of the Management Area is bounded on the northeast side by Antioch Road. It is accessible to the public on the east side by a trailhead located on Modoc Road, near its intersection with Antioch Road. The foot trail from the trailhead to the top of the plateau is 1.25 miles long. A small corner of the Management Area on the north side is bisected by Highway 234. From Table Rock Road to the west, a locked access road, for administrative purposes only, enters the area and climbs to the top of the plateau. This administrative road is used by personnel from the BLM, Conservancy, PacifiCorp, and Federal Aviation Administration (FAA) under an easement from the Conservancy. The road is gravel-surfaced and maintained to a navigation facility managed by the FAA. Except for Antioch Road, the remaining boundary of the Management Area is formed by private lands and is mostly fenced.

The Lower Table Rock portion of the Management Area is only accessible to the public from the trailhead located on the east side off of Wheeler Road. The foot trail from the trailhead to the top of the plateau is 1.4 miles long. The north and east boundary of the Management Area is formed by private lands. Along the north and east sides of Lower Table Rock, a rough road provides administrative access along a powerline corridor located within the Management Area. This access route is used for maintenance purposes by PacifiCorp personnel and authorized contractors. Old, unmaintained roads built in the 1940s enter the Management Area from private lands to the west and south and are not available for public use. The remaining boundary of the Management Area is formed by county and state lands along the banks of the Rogue River and is mostly fenced.

C. Visual Resources

Upper and Lower Table Rocks are unique, scenic landform features within the Rogue River Valley and the Siskiyou Mountain Physiographic Region. Their 800-foot-high rugged, lichen- and moss-covered rimrock escarpments and forest-fringed talus slopes are scenic attractions for thousands of motorists travelling Interstate 5, Crater Lake Highway (State Highway 62), and State Highway 234. The Table Rocks are visible to drivers on the Rogue Umpqua National Scenic Byway (State Highway 234), recreationists on the Rogue River and at TouVelle State Recreation Site, and residents of Central Point and Medford.

In 1976, the BLM completed visual resource inventories for the Jackson-Klamath MFP. The inventory consisted of a scenic quality evaluation (class A, B, or C), sensitivity level analysis (high, medium, or low), and delineation of distance zones (foreground/middleground, background, or seldom seen). The inventory rated the Table Rocks as having a Class B scenic value. Evaluation of the public sensitivity level for the

protection of the Table Rocks' scenic quality determined that the south-facing slopes were highly sensitive due to their location in the foreground/middleground and visibility from major highways and the greater Medford urban area. The inventory rated their north-facing slopes as having medium sensitivity. As a result, the BLM inventoried the south faces of the Table Rocks as Visual Resource Management Class II and the north faces as Class III. Based on these and other resource factors, management guidance in the 1995 Medford District RMP is to manage the Table Rocks to meet Class III visual resource management objectives, which allows resource developments to be evident to the casual observer to the extent they remain subordinate in scale with the characteristic landscape. See Appendix B for more information regarding the BLM's visual resource management guidance.

D. Geology

The Table Rocks consist of two distinct rock types: the Payne Cliff Formation and a hard andesite cap rock. The Payne Cliff Formation comprises the lower 700 feet and forms the sloped, softer sedimentary rocks. The lower portion of the Payne Cliff Formation contains river-deposited conglomerates derived from the Klamath metamorphic terrain from the south. Higher up, the rocks grade into sandstone and siltstone interbedded with mudstone. The upper portions of the Payne Cliff Formation contain the first rock fragments of volcanic origin. The volcanic material produces a clay when weathered that expands with water, becoming very wet and sticky during the rainy season. During the spring and summer the clay shrinks and cracks as it dries. Coal seams are also included in the Payne Cliff rocks. Fossil remains in the Payne Cliff Formation indicate an age of 37 million years .

The upper 100 to 200 feet of Table Rocks are made up of an andesite lava cap. The andesite of Table Rocks is a gray to black, plagioclase-speckled, glassy rock. As the flow cooled, it contracted to produce a distinct pattern of columnar jointing. These cracks are the result of the lava flow shrinking while it was cooling down. They frequently form a hexagonal pattern and are perpendicular to the direction of the flow.

About 7.5 million years ago a large shield volcano, perhaps near present day Olsen Mountain east of Lost Creek Lake, erupted and produced a lava flow approximately 44 miles long. Outcrops of the lava flow can be found from east of Prospect to Sams Valley. The maximum known thickness of the andesite flow is 730 feet near Lost Creek Lake. This lava spread out over the entire Rogue River valley, causing the valley floor to rise in elevation to the height of the present-day Table Rocks.

The ancient Rogue River was displaced as lava filled the river channel, its tributaries, and the surrounding valley. Evidence of the lava being in contact with water can be seen at Upper Table Rock where the bottom six feet of the lava is porous and soft in some places. When the molten lava flowed on top of the water, the water was instantly turned to steam, creating a scoriaceous texture, or small holes, in the rock. The lower contact or bottom of the andesite flow has up to 100 feet of undulating elevation relief, indicating the lava flowed over an uneven surface.

Over the following millions of years, the ancient Rogue River meandered back and forth across the valley, eroding or carving away most of the sheet of lava and the underlying softer Payne Cliff Formation. The power of the river can be appreciated when you realize that 7.5 million years ago, the entire valley was about 700 feet higher than it is today. For unknown reasons, the forces of nature left the Table Rocks behind when most of the remaining valley was carried off to the ocean. (Hladky, 1998).

E. Minerals and Mining

Minerals on federal lands are classified as locatable, leasable, or salable. Locatable minerals include metallic minerals, such as gold or silver, and some nonmetallic minerals. Leasable minerals include energy minerals such as coal. Salable minerals include rock and aggregate. In general, BLM-administered public lands are open to mineral entry for locatable minerals under the 1872 Mining Law unless lands are formally withdrawn from mineral entry. Leasable minerals are also available under various leasing laws of the United States. Lands acquired under section 205 and 206 of FLPMA are generally closed to mineral entry unless or until formally opened by publication in the Federal Register.

The BLM currently manages four parcels of Federal land at Table Rocks. One small 37-acre parcel containing the Lower Table Rock trailhead is an acquired parcel and has not been formally opened to mineral entry. The remaining three parcels are currently open to mineral entry.

The designation of Table Rocks as an ACEC, in addition to stipulations for its management under the RMP, imposes some additional restrictions on mining activity. BLM surface management regulations (43 CFR § 3809.11 [c][3]) require that locatable mineral mining beyond the casual use level within ACECs must be conducted under an approved Plan of Operations. The 1995 RMP states that surface occupancy is prohibited for leasable minerals. The 1995 RMP indicates that no surface disturbance would be allowed.

BLM records show that three mining claims (lode and placer) were filed on Upper Table Rock between 1955 and 2000; however, there are currently no active mining claims on either Upper or Lower Table Rock. Evidence of historic prospecting is evident on the tops and along the bases of the cliffs, primarily two adits, three shafts (two of which have been remediated), several enlarged natural fissures, and mine tailings.

Small-scale placer or lode gold mining and prospecting are the most common forms of locatable mineral mining in the region. Mining related disturbances on Table Rocks appear to be exploratory in nature and likely represent attempts to reach the sedimentary rocks at the base of the andesite cap rock in search of placer gold. The BLM is unaware of any records or other information indicating the existence of precious metals within the ACEC or the immediately adjacent area.

F. Hydrology

The tops of the Table Rocks are watershed divides, meaning that water on the tops of Table Rocks drains into different watersheds, with all water ultimately draining to the Rogue River. Although the Management Area is relatively small, portions of the Table Rocks are located within several watersheds (Table 2).

Table 2: Watersheds Within the Table Rocks Management Area

4th field subbasin	5th field watershed	6th field subwatershed
Upper Rogue	Shady Cove/Rogue River	Reese Creek-Rogue River
Middle Rogue	Gold Hill/Rogue River	Snider Creek Whetstone Creek-Rogue River Sams Creek-Rogue River

While water flows into several watersheds from the Table Rocks, the focus of this management plan will be on water and streams within the Table Rocks Management Area.

Rocky, clayey soils with a shallow depth to bedrock create low infiltration rates on top of the Table Rocks, which allows for the formation of intermittent vernal pools. Springs do not exist on top of the rocks, but water from snow and rainfall collects in the shallow depressions to form the vernal pools. These pools persist through fall, winter, and spring, but evaporate during the summer. A few small creeks, fed by underground springs and runoff, are located in the central valleys, or bowls, of both rocks.

Streams located in the Management Area have not been surveyed on the ground for functioning condition. The available data show that the Management Area contains 1 mile of perennial stream, 4 miles of intermittent streams, 21 miles of ephemeral streams, and 0.7 mile of irrigation ditch. Several natural and manmade ponds of unknown condition can also be found on Upper Table Rock (Map 2: Hydrology).

G. Soil

The primary soil types in the Table Rock Management Area are Carney-Tablerock complex and Tablerock-Rock outcrop complex (Table 3 and Map 3: Soil). The main limitations for any project development on the soils in the Management Area are the slope, basalt rock cliff faces, surface layer of cobbly clay in the Carney soil, and high content of clay, which make the soil sticky and plastic when wet and restricts trafficability. These limitations restrict the human use of this area mainly to paths and trails that should contour across the slope as much as possible. Steep slopes and Rock outcrop soils should be avoided unless they are to be highlighted in the project development (Jackson County Soil Survey).

Table 3: Soil Types in the Table Rocks Management Area					
Map Unit	Soil Type	Slope (%)	Acres		
			Lower Table Rock	Upper Table Rock	Total
127A	Medford silty clay loam	0 to 3	3	0	3
151C	Provig-Agate complex	5 to 15	1	0	1
152B	Randcore-Shoat complex	0 to 5	235	488	723
154	Riverwash	0	3	0	3
186H	Tablerock-Rock outcrop complex	35 to 110	677	503	1,180
23A	Camas-Newberg-Evans complex	0 to 3	18	0	18
27B	Carney clay	1 to 5	21	78	99
27D	Carney clay	5 to 20	430	381	811
28E	Carney cobbly clay	20 to 35	146	256	402
30E	Carney-Tablerock complex	20 to 35	783	610	1,393
33A	Coker clay	0 to 3	1	59	60
102B	Langellain-Brader loams	1 to 7	0	2	2
17C	Brader-Debenger loams	0 to 5	0	168	168

H. Botanical Resources

The Table Rocks have captured the interests of many botanists over the years. Notable references to the botanical information include Kalmiopsis article “Oregon plants, Oregon places: Upper and Lower Table Rocks” by Joan Seevers and Darren Borgias; Chris Reyes’ book “The Table Rocks of Jackson County: Islands in the Sky”; and Susan McKinnon’s book “Flowers of the Table Rocks”.

All BLM parcels in the Management Area were surveyed for vascular and nonvascular plants between 2002 and 2008. Surveys focused on detecting Special Status and Survey and Manage plants and noxious weeds, but also compiled lists of all species encountered for each survey area. Conservancy parcels at the Table Rocks were surveyed in 2010 for vascular plants only; surveyors documented Special Status species and noxious weed populations and compiled lists of all species encountered.

Geographically, the two mesas of the Table Rocks are located in the Pacific Northwest Interior Valley Vegetation Zone (Franklin and Dyrness 1988, 114), which is characterized by oak woodlands, grasslands, and chaparral. Although located in the Klamath Mountains Ecoregion, the area is a crossroads of several floristic provinces—Cascade Mountains and Great Basin to the east, moister Willamette Valley to the north,

and drier inland California region to the south. The plant communities of the Table Rocks have been influenced and formed by the unique geography, geology, climate, topography, and fire regime of the area. Occasional occurrence at the Table Rocks of plant species from neighboring regions, such as yellow bells (*Fritillaria pudica*), rabbitbrush (*Ericameria nauseosa*), and yerba santa (*Eriodictyon californicum*), more common in the western Klamath Mountains, and soil crusts more common on the east side of the Cascades illustrates the convergence of taxa from surrounding ecoregions and one reason for the Management Area's botanical diversity.

The unique geology of the Table Rocks with its different rock and soil types has influenced what plants grow there. Soil depth also helps determine which plants can survive in a specific area. Soils at the base and foothills of the mesas are sticky clay with little organic matter and generally shallow depth. They support grasses, chaparral shrubs, and oaks. Clay soils are easily compacted and once disturbed cannot easily be restored to their previous condition. Soils further up the slopes are deeper, contain more organic matter, and support more trees and shrubs. Soils on the tops of the Table Rocks are too shallow to support trees and shrubs, except for scattered islands of Oregon white oak savannah and chaparral where soils are deeper.

The upper 180 feet of the mesas are capped with an andesite lava flow. As the lava cap decomposed over the last 7 million years, a unique geological feature, patterned ground (or mounded prairie), developed on the flat tops of the mesas. Patterned ground consists of small mounds of deeper soils, shallow pool-shaped depressions and channels, and flat, rocky areas between the mounds and pools. Because the underlying andesite rock is impermeable, rainfall remains in the depressions and crevices until it either evaporates or flows over the edges of the mesas in small rivulets. Why the decomposed lava developed into this patterned ground configuration is not known for sure.

The Mediterranean climate of the Rogue Valley also influences what plant species grow in this region. Precipitation averages around 18 inches per year at the Table Rocks and comes mainly in the form of rainfall between November and April. Summer temperatures can reach into the 100s and precipitation between June and September averages 0.3 to 0.9 inches per month. Plants that grow on the Table Rocks, especially those on the tops where there is no shade, have adapted to survive hot, droughty summers.

Topography and aspect influence where plants grow, even at the microsite level. The open grasslands receive direct sunlight for the majority of the day. Most plant species are annuals that germinate, produce flowers, and set seed during or after the spring rains and before the hot, dry months of summer. Aspect (the direction a slope faces) and variations in topography (e.g., draws, concave or convex ground, location on slope) also create microsites with slightly different environmental conditions that support different plants. North-facing slopes are shaded from direct sunlight. The soils and plants growing there retain moisture longer than on south-facing slopes that are exposed to direct sunlight for much of the day.

Delineation of plant communities at the Table Rocks is not clearcut. They intergrade and overlap each other and it is not always possible to recognize distinct boundaries between them. Current conditions in some of the plant communities at the Table Rocks also differ from historic conditions due to their conversion to agriculture and residential development beginning with European settlement in the mid-1800s and continuing today. The exclusion of natural ignition fires and aboriginal burning and the invasion of nonnative species have also altered plant species composition and stand structure in these vegetative communities.

The main plant communities around the foothills and slopes of the Table Rocks include open grasslands, Oregon white oak savanna, pine-oak woodland, chaparral, and mixed oak-madrone-conifer woodland. The main plant community on the tops of the Table Rocks is the vernal pool-mounded prairie complex, although there are scattered islands of Oregon white oak savanna and chaparral where soils are deeper. These plant communities contain a number of unique habitats that support endemic or rare plants adapted to their special conditions. The plant communities are grouped and described more broadly than what is displayed in Table 4 and Map 4: Plant Communities.

Table 4: Plant Communities in the Table Rocks Management Area

	Acres		
	Lower Table Rock	Upper Table Rock	Total
Agricultural	4	0	4
Open Grasslands			
California Oatgrass Valley Grassland	23	151	174
Rogue-Umpqua Upland Grassland	45	156	201
Oregon White Oak Savanna	728	481	1,209
Chaparral			
Ceanothus Chaparral	48	255	303
Oak-Ceanothus Chaparral	121	235	356
Mixed Oak-Madrone-Conifer Woodland (includes pine-oak woodland)	1,088	788	1,876
Bottomland Oak-Pine or Riparian Woodland	31	0	31
Vernal Pool-Mounded Prairie			
Vernal Pool-Mounded Prairie	165	373	538
Vernally Wet Scabland/rocky intermounds	64	107	171

Open grasslands (California oatgrass valley grassland; Rogue-Umpqua upland grassland)

Open grasslands occur around the bases of Upper and Lower Table Rocks. The greatest extent of these grasslands is on the north side of Upper Table Rock in sections 25 and 26, along Antioch Road and Highway 234. The grasslands have been grazed in the past and are now dominated by nonnative grasses, including medusahead rye (noxious weed), nonnative bromes, bulbous bluegrass, and yellow starthistle (noxious weed). Along with oak savannas, these grasslands are the most altered plant community on the Table Rocks because of the dominance of nonnative versus native species.

The grasslands are bisected by seasonally wet, low-gradient drainages with slow-draining clay soils. In spite of the altered nature of these grasslands and the dominance of nonnative grasses and yellow starthistle, they also contain the second highest density of Special Status plants at the Table Rocks. Most of these Special Status plants are annuals that grow along drainages or in vernally wet depressions and germinate and bloom early in the spring before the nonnative grasses and starthistle mature and flower. Greene's popcorn flower (*Plagiobothrys greenei*), sculptured popcorn flower (*Plagiobothrys figuratus* ssp. *corallicarpus*), American pillwort (*Pilularia americana*), white fairypoppy (*Meconella oregana*), and slender-flowered evening primrose (*Camissonia graciliflora*) are each associated with very specific hydrological regimes and soils in this habitat. Their persistence in this degraded environment may be because they occupy the vernally wet, concave areas with shallow soils, while the nonnative grasses and starthistle occupy the convex, drier upland areas of the grasslands.

There are no records of plant species composition or structure in the plant communities here prior to European settlement. However, remnant native annual and perennial grasses in the grasslands, including California oatgrass (*Danthonia californica*), annual and slender hairgrasses (*Deschampsia danthonioides*, *Deschampsia elongata*), northwestern mannagrass (*Glyceria occidentalis*), Lemmon's needlegrass (*Achnatherum lemmonii*), foxtail species (*Alopecurus* spp.), prairie Junegrass (*Koeleria macrantha*), and bottlebrush squirreltail (*Elymus elymoides* ssp. *elymoides*), provide clues to historical conditions. These grasslands likely consisted of perennial bunchgrasses, with annual grasses and forbs interspersed. Many native annual and some perennial herbaceous species also grow in the meadows today, although likely in smaller numbers than historically due to the influx of nonnative invasive species. The vernally wet areas in these grasslands are potential habitat for Henderson's bentgrass (*Agrostis hendersonii*), which was collected in 1930 in Sams Valley near the school house in a vernally wet flat. It is now believed to be extirpated in Oregon, but grows in vernal pools in California.

Major threats to the open grasslands plant community are increases in nonnative plants from natural processes (wind, water, wildlife) or human activities, and ground disturbance that alters soil structure and hydrology.

Oregon white oak savanna

Oregon white oak (*Quercus garryana*) savanna surrounds the lower flanks of the Table Rocks on heavy clay soils. The shallow clay soils lack organic matter and are too poorly drained to support the root systems of many trees and shrubs, so the oak savanna is characterized by sparse, scattered oaks with an understory of grasses and annual and perennial forbs (Figure 1). Additionally, the heavy clay soils hold tightly onto water during the summer, which creates drought-like conditions and limits the variety of plants.

Figure 1: Oregon white oak savanna plant community.

Savannas in the Pacific Northwest have been defined as shrub/grassland communities with less than 30 percent tree cover and fewer than 125 trees per acre or 50 feet spacing between trees (Griffin 1977). Savannas are similar to grasslands with the dominance of grass and forb species; the species at the Table Rocks savannas are similar to those growing in the grasslands.

Nonnative grasses have replaced native bunchgrasses that used to dominate the understory of this plant community. Remnant patches of Roemer's fescue (*Festuca roemeri*), Lemmon's needlegrass (*Achnatherum lemmonii*), prairie Junegrass, and California oatgrass can be found in openings with the heaviest clay soils. But the nonnative invasive grasses, medusahead (*Taeniatherum caput-medusae*), downy brome (*Bromus hordeaceus*), and bulbous bluegrass (*Poa bulbosa*), are now the most common grasses in the openings, while hedgehog dogtail (*Cynosurus echinatus*) has infiltrated areas with slightly deeper soils where the oaks grow. The preponderance of nonnative annual grasses has reduced the diversity and abundance of native grasses and annual and perennial flowers that bloom in the spring and summer in the savanna. Native species still represented include desert parsley (*Lomatium utriculatum*), miniature lupine (*Lupinus bicolor*), common camas (*Camassia quamash*) and giant camas (*Camassia leichtlinii*) in concave vernally wet areas, harvest brodiaea (*Brodiaea elegans*), and western buttercup (*Ranunculus occidentalis*). Wedgeleaf ceanothus

(*Ceanothus cuneatus*) is sometimes scattered as individuals or in patches within the oak savanna.

Special Status plants that grow in the oak savannas are southern Oregon buttercup (*Ranunculus austrooreganus*), an endemic species of Jackson County found in open, grassy areas, and the federally endangered Gentner's fritillary (*Fritillaria gentneri*). Gentner's fritillary grows in several habitats, including oak savanna, chaparral, and the edges between these communities and dry forested stands.

Historically, the oak savanna plant community was more widespread across the Rogue River Valley, including the Table Rocks. It has been reduced through urbanization and agricultural development beginning with European settlement in the mid-1800s. Encroachment of conifers into oak savannas has reduced the extent of this plant community. In the past, fires would have burned quickly through the grass understory of the oak savanna, killing encroaching conifer and oak seedlings and shrubs and removing dead grass thatch. The natural and human-caused historic fire regime of oak savannas is not definitely known, but return intervals have been estimated as at least every 25 years (Agee 1993, 13).

Major threats to the Oregon white oak savanna plant community are conifer encroachment, nonnative plant invasion, and clay soil disturbance and compaction.

Chaparral (ceanothus chaparral; oak-ceanothus chaparral)

Chaparral is a popular term used to designate a vegetation type made up of shrubs that tend to grow in dense stands (Detling 1961, 348). Chaparral communities are more common in California, but they extend into the Rogue and Umpqua River Valleys where they occur in the low- to mid-elevation interior valleys. Chaparral occurs in the most xeric conditions. This community is considered the historically dominant plant community of the interior southwestern Oregon valleys and subclimax to oak woodlands or ponderosa pine forest (Detling 1961, 356). Chaparral shrubs are mostly evergreen and drought-tolerant. On the Table Rocks, white-leaf manzanita (*Arctostaphylos viscida*), wedgeleaf ceanothus, Klamath plum (*Prunus subcordata*), and sometimes mountain mahogany (*Cercocarpus betuloides*) form discrete dense chaparral stands or inclusions within oak savanna or oak woodlands (Figure 2).

Figure 2: Chaparral plant community.

At the Table Rocks, chaparral occurs on shallow, rocky soils. Shrubs may form a continuous layer or be scattered throughout grasslands. Grasses and herbaceous plants are similar to species that occur in the surrounding oak savanna and grasslands, but occur at lower densities in dense chaparral stands. Nonnative grasses have replaced native perennial bunchgrasses. The majority of herbaceous plants are spring-blooming species. The Special Status species white fairypoppy grows in chaparral habitat near drainages where spring rains create seeps or on saturated soils where the slope breaks. The diminutive white poppies are often found underneath wedgeleaf ceanothus shrubs where there is little other competing vegetation.

Wedgeleaf ceanothus and manzanita typically are easily killed by fire, do not resprout after fire, and are considered obligate seeders, meaning their seeds require fire to germinate. Shrubs germinate abundantly after fire from a long-lived seed bank. Although chaparral stands in California are composed of even aged shrubs that regenerated after the last fire, recent studies in southwestern Oregon indicate historic fires may have been of moderate frequency and high intensity (Duren and Muir 2010). Ceanothus, in particular, is observed to germinate without fire. Current stands contain multi-age shrubs, some which generated after the last fire event, some over time in fire-free periods, and some even surviving the last fire event (Duren and Muir 2010, pp 87-88). These studies concluded that fire suppression may have had little effect on fire behavior or stand structure in Oregon's interior valley chaparral (Duren and Muir 2010, p. 89, 90). However, dense thickets of chaparral at the Table Rocks lack age class diversity, and suppress grasses and forbs.

Pine-oak woodland

The pine-oak woodland plant community is located between the oak savanna and mixed hardwood-conifer woodland communities where the soils are deeper and more trees and shrubs are able to survive. Woodlands have greater than 30 percent canopy cover and 375 to 750 trees per acre or 20- to 26-foot spacing between trees (Griffin 1977). In Table

4 and Map 4, this plant community is included within the mixed oak-madrone-conifer woodland community.

In addition to Oregon white oak, California black oak (*Quercus kelloggii*), mountain mahogany, and ponderosa pine (*Pinus ponderosa*) trees create a semiopen to closed overstory. Understory shrubs include white-leaf manzanita, wedgeleaf ceanothus, poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus*), and trailing honeysuckle (*Lonicera hispidula*). In the absence of fire, Douglas-fir (*Pseudotsuga menziesii*) and incense cedar (*Calocedrus decurrens*) saplings have become established. Native grasses have fared better in this plant community than in more open canopy conditions, with Roemer's fescue (*Festuca roemeri*) found under Oregon white oak, California oatgrass (*Danthonia californica*) in concavities and on benches, and blue wildrye (*Elymus glaucus*) and brome (*Bromus laevipes*) under the shade of larger trees. Some of the showier native wildflowers in this plant community include red bells (*Fritillaria recurva*), delphinium (*Delphinium menziesii*), fawn lily (*Erythronium hendersonii*), cat's ear (*Calochortus tolmiei*), and hound's tongue (*Cynoglossum grande*).

It is estimated this plant community historically burned under a natural fire regime every 25 years (Agee 1993, 13). The lack of frequent fire has left these stands dense with many smaller oaks and shrubs. Douglas-fir and incense cedar have grown up in the understory. There is high mortality of ponderosa pines, which require open growing conditions and space. Dense growing conditions create stress on the pines, leaving them vulnerable to damage during drought or from insects. In the event of a wildfire, there would be high mortality of all trees, shrubs, and herbaceous vegetation due to the high fuel loads and continuous fire ladders. The lack of fire will eventually result in the conversion of these more open oak/pine-dominated woodlands to conifer-dominated woodlands.

Major threats to the pine-oak woodland community are the absence of fire and conifer and shrub encroachment.

Mixed oak-madrone-conifer woodland

A dense woodland of hardwoods and conifers surrounds the base of the andesite cliffs on both Upper and Lower Table Rocks. Rocks that have broken off from the cliffs have formed talus fields along the base of the cliffs. As these rocks decompose, they create rocky, well-drained loam soils that support madrone (*Arbutus menziesii*) and California black oak hardwoods and Douglas-fir, ponderosa pine, and incense cedar conifers. Dominant understory shrubs include deerbrush (*Ceanothus integerrimus*), poison oak, snowberry, and trailing honeysuckle. Fremont's silktassel (*Garrya fremontii*) occurs sporadically in this plant community. Understory herbaceous vegetation is sparser than in more open canopy plant communities. California fescue (*Festuca californica*) and blue wildrye are frequent grasses; forbs include false Solomon seal (*Maianthemum racemosum*), red bells, and broadleaf arnica (*Arnica latifolia*).

Stands on BLM-managed lands are estimated to be 60 to 70 years old (MicroStorms). This is a dry forest/woodland plant community with an estimated historic fire return

interval of 25 years (Agee 1993, 13). Madrone trees resprout from an underground burl after fire, resulting in multiple stems replacing the original single trunk. The majority of madrone trees at the Table Rocks have multiple stems, indicating past fire events. Fire suppression over the last 100 years has resulted in dense stands with many smaller conifers and shrubs. If fires historically burned frequently through these woodlands, the vegetation would have been more open with fewer shrubs and tree seedlings. There is currently high mortality of ponderosa pine in this plant community, probably as a result of fire suppression and encroachment by Douglas-fir and other vegetation that compete with ponderosa pine for resources. Trees in overstocked stands are stressed from competition and sometimes drought, leaving them vulnerable to damage from insects. Dense stands also have reduced tree growth and vigor and are more susceptible to high intensity fire resulting in total consumption of vegetation.

This plant community contains relatively few nonnative plants or noxious weeds, probably because most noxious weeds require more open canopy conditions. A few populations of Himalayan blackberry occur in riparian areas in this plant community.

Major threats to the mixed hardwood-oak woodland plant community are wildfire resulting in stand-replacement and overstocked stands.

Vernal pool-mounded prairie (vernal pool-mounded prairie; vernally wet scablands/rocky intermounds)

The tops of Upper and Lower Table Rocks are flat with little change in gradient. The major plant community is mounded prairie, with small patches of oak savanna and chaparral. Mounded prairie actually includes three distinct microhabitats—mounds, vernal pools, and rocky intermounds—that are distinguished by variations in soil depth, topography, and hydrology (Figure 3).

Figure 3: Vernal pool-mounded prairie plant community.

There is some overlap in species, but each microhabitat also supports plants unique to that habitat. Recent habitat studies (Newton, et al. 2011, 17-21) across all three microhabitats discovered that 65 percent of plant species are natives, 20 percent are

nonnatives, and the nativity of 15 percent were not determined. However, nonnatives exceed natives in abundance on the mounds and intermounds, while natives exceed nonnatives in the pools. Native perennial grasses are uncommon and represent less than 1 percent cover in all habitats.

Deeper soils on the mounds support annual grasses and forbs that typically grow in dry conditions. Nonnative grasses and annual forbs are the dominant plants. Medusahead, downy brome, and bulbous bluegrass (Lower Table Rock only) have outcompeted most native perennial grasses, although remnant native grasses such as Lemmon's needlegrass, Sandberg's bluegrass (*Poa secunda*), California oatgrass, bottlebrush squirreltail, and Idaho fescue (*Festuca idahoensis*) are occasionally seen in scattered, isolated clumps. Typical spring blooming native annuals that cover the mounds are desert parsley, spring-gold (*Crocidium multicaule*), California goldfields (*Lasthenia californica*), miniature lupine, large flowered blue-eyed Mary (*Collinsia grandiflora*), and seablush (*Plectritis congesta*).

Vernal pools are a perfect example of a specialized habitat that supports very specific plant species. Rainfall is a key component of vernal pools. Rainfall and temperature in the Rogue River Valley vary widely from year to year and affect both plants and wildlife that depend on the pools to complete their brief life cycles. In years of high rainfall, the pools retain water through the end of May or first part of June. Other years have low rainfall and the pools dry up by March or April. In order for plants to persist over time under these variable conditions, they have adapted mechanisms that allow their seeds to survive hot, dry summers and germinate when conditions are favorable.

Vernal pools contain the highest abundance of native plant species (Newton, et al. 2010, iii) in the vernal pool-mounded prairie plant community. Camas and Nuttall's quillwort (*Isoetes nuttallii*) grow in standing water in the vernal pools and have underground bulbs that store energy during their growing season. The leaves and flowers of the Sensitive species winged water-starwort (*Callitriche marginata*) float on the surface of the pools, while the roots reach below to anchor in the soil. As the water in the pools evaporates in the spring, different wildflowers bloom around the edges of the receding water, creating a "bathtub ring" effect. Some species, like the State Threatened dwarf woolly meadowfoam (*Limnanthes floccosa* ssp. *pumila*), which grows only on the tops of Upper and Lower Table Rock, bloom when their roots are wet. Others like the popcorn flowers (*Plagiobothrys* spp.), Cascade downingia (*Downingia yina*), and the Special Status white pincushionplant (*Navarretia leucocephala* ssp. *leucocephala*) wait for the water to dry up before germinating and blooming. Each species is dependent on its particular environmental conditions to germinate, produce flowers, and set seed.

Vernally wet scablands or rocky intermounds are flat areas between the vernal pools and mounds with shallow soils overlaying volcanic bedrock and scattered loose cobbles. Lichens and bryophytes dominate this scabland microhabitat because soils are not deep enough to support many plants except sparse and delicate annuals with shallow root systems and wispy stems and flowers. In the spring, the perennial grass, bulbous bluegrass, is widespread on the shallow soils of the intermounds. Other plants that survive in this harsh habitat include Piper's lomatium (*Lomatium piperi*) and magenta grass widows (*Sisyrinchium douglasii*), both of which bloom in January or February,

and small onion (*Allium parvum)*. Later in the spring, the native pine bluegrass (*Poa secunda* ssp. *secunda*) can occasionally be seen.

The plants on the tops of the Table Rocks are mostly fragile annuals that are easily damaged if trampled. As annuals, their persistence depends on blooming and seeding every year. Studies by the Institute for Applied Ecology at the Table Rocks have documented that trampling activity of 50 to 100 foot-passes during the flowering period of dwarf woolly meadowofoam in an area results in a decrease in the number of plants the next year (Newton, et al. 2010, iii). A visit to either Upper or Lower Table Rock between March and June shows the effects of foot traffic on the fragile plant communities on the tops of the Table Rocks. In areas along existing or newly created trails and at congregating areas, such as where the trail first reaches the top and at popular overlook sites, vegetation has been completely denuded and soils compacted. Soil compaction from trampling, resulting in minor changes to hydrology around vernal pool margins, also threatens the persistence of plants growing there.

Major threats to the vernal pool-mounded prairie plant community are nonnative plant invasion, changes in hydrology that impact rare plant species, off-trail foot traffic that changes soil structure or compacts soil, and wildflower gathering.

Special Habitats

In addition to the major plant communities described above, the lava cap and riparian areas are distinctive habitats at the Table Rocks that support unique flora or vegetative communities.

The andesite lava that caps the tops of the two mesas continues to weather and decompose over time. The rock breaks apart into columns, some leaning at an angle from the main formation, and large house-sized boulders, while others decompose into rubble that forms talus fields below the cliff walls. The vascular plants chickweed monkey flower (*Mimulus alsinoides*), licorice fern (*Polypodium glycyrrhiza*), silverleaf phacelia (*Phacelia hastata*), and Oregon and Brewer's rockcresses (*Arabis oregana* and *Arabis breweri*) grow where soil and rainfall accumulate in the crevices of these rock formations, but the rocks are mostly colonized by a rich flora of mosses and lichens.

In addition to the vernal pools on the top of the Table Rocks and the seasonally wet grasslands on the lower slopes, riparian areas on the flanks and bases include drainages and ponds. Drainages flow in all directions from the tops of the Table Rocks. The most developed riparian zone is along the drainage in the bowl of Lower Table Rock that flows into the Rogue River. Vegetation along the 30- to 40-foot-wide riparian zone includes an overstory of black oak, Oregon ash (*Fraxinus latifolia*), cottonwood (*Populus balsamifera* ssp. *trichocarpa*), and big leaf maple (*Acer macrophyllum*), and an understory of snowberry, mock orange (*Philadelphus lewisii*), and willow (*Salix* sp.). Some draws have seasonal flows that support rushes, camas, and common woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*), as well as weedy, nonnative species frequently associated with wetter areas such as common teasel (*Dipsacus fullonum*), bull thistle (*Cirsium vulgare*), and dog rose (*Rosa canina*).

Numerous ponds are scattered throughout Conservancy lands surrounding the Table Rock mesas. These ponds were constructed by the previous landowner to capture spring water or rain runoff and have served as watering holes for wildlife and livestock. A population of the Bureau Sensitive vascular plant, American pillwort (*Pillularia americana*), is located around the edge of one of the ponds on the north side of Upper Table Rock. This is the only documented population of this species in the Medford District.

Nonvascular plants

Some plant communities at the Table Rocks support a diversity of lichens and bryophytes while others do not. Lichen and bryophyte species diversity and abundance are low in the grasslands, oak savanna, oak woodlands, and chaparral on the lower slopes of the Table Rocks. The lichens occurring there, especially those growing on trees and shrubs, are indicative of elevated nitrogen levels and are dominated by pollution-tolerant species—*Evernia prunastri, Parmelia sulcata, Ramalina farinacea, Xanthoria hasseana*, and *Physcia aipolia*. This is evident on the east-facing slopes that are more exposed to pollution from White City and east Medford than the west-facing slopes.

The mixed hardwood-conifer woodlands around the base of the Table Rocks, especially on the north-facing slopes, contain more abundant and diverse species that grow on trees and shrubs and the many rock boulders and outcrops present there. The former Special Status lichen, *Parmelina quercina*, grows on Douglas-fir and California black oak in this plant community.

The tops of the Table Rocks and rock surfaces possess the most diverse and unusual nonvascular plant species. The large white oaks and mountain mahogany in the oak savanna complex on the top of Lower Table Rocks contain a fairly rich and complex community of lichens and bryophytes. These lichens are less tolerant of pollution than those found on the lower slopes.

Rock surfaces at the Table Rocks include the lava caps, talus fields, large and small rock boulders, and rock outcrops. Great variations in aspect, gradient, texture, and exposure of these rock features create microhabitats that support a diversity of lichens and bryophytes. In some moist, shady places they grow to 6 inches deep, which is a stark contrast to the rocks where only crustose or umbillicate lichens lying flat against the rock faces can survive. As with the vascular plants, nonvascular species are adapted to specific environmental conditions. The larger rocks have higher species' richness. The sheer cliffs are colonized by crustose lichens, including the Special Status lichens Pringle's rim lichen (*Lecanora pringlei*), which has been documented at one location on Lower Table Rock, and *Peltula euploca*. The Pringle's rim lichen population may actually be a new, rarer species. Dr. Daphne Stone is currently comparing its DNA and morphology with other populations of *Lecanora pringlei* that occur at higher elevations to determine if they are two separate species.

The talus fields below the cliffs are mostly unvegetated except for thick mats of mosses in shady sites and sparser cushions of mosses and crustose lichens in south-facing, more exposed sites. Several uncommon nonvascular species grow on these rocks surrounding

the bases of the Table Rocks, including the mosses *Tripterocladium leucocladulum, Hedwigia detonsa, Funaria muhlenbergii,* and *Fabronia pusilla*.

The vernal pool-mounded prairie complex on the tops of the Table Rocks also supports unusual nonvascular communities. Different lichens and bryophytes are associated with each microhabitat. The mounds generally contain too many vascular plants to allow occupation by lichens or mosses, except for soil that is newly disturbed by gopher diggings. The common bryophyte *Funaria hygrometrica*, the uncommon bryophyte *Pleuridium subulatum*, and the uncommon and ephemeral liverwort *Sphaerocarpos texanus* are found on these fine textured soils. The ground disturbance on the mounds from gopher activity is widespread and ongoing.

Because the shallow soils in the intermound areas do not support vascular plants, they are almost completely covered with a complex community of nonvasculars: species of the bryophytes *Racomitrium*, *Grimmia*, *Dicranum,* and *Polytrichum,* and *Pseudobraunia californica;* the vascular cone-bearing Wallace's spike-moss (*Selaginella wallacei*); liverwort species of *Fossombronia*; and a variety of foliose and crustose lichens that often completely cover exposed rocks. On soil between the rocks and in the wet edges around the vernal pools, the common moss, *Pleuridium subulatum*, and the Special Status mosses, *Campylopus subulatus* and *Entosthodon californicus*, create large patches. During the wet months, these moss cushions and lichen rosettes are actively growing and create a vibrant patchwork of color in an otherwise drab winter landscape. During the hot, dry summer months they shut down and become brittle and fragile.

Biological soil crusts were discovered during nonvascular surveys at several sites in the rocky intermounds on the top of Upper and Lower Table Rock, and in several small grass openings on the slopes. Soil crusts are a mosaic of cyanobacteria, algae, lichens, liverworts, mosses, fungi, and other bacteria. They are indicative of healthy landscapes and are more common on the east side of the Cascade Mountains where they occur on soil between native perennial bunch grasses. They provide a critical function in the grassland or scabland communities because they protect against wind or water erosion by acting like a blanket over the soil. Biological soil crusts in the Agate Desert in critical habitat of the vernal pool fairy shrimp, Cook's lomatium, and large-flowered meadowfoam are believed to be a critical factor in maintaining habitat viability for those listed species (USFWS 2011, 40).

Soil crusts occur on both Upper and Lower Table Rock, but are more extensive and intact on Lower. On Upper Table Rock they appear to be losing ground to nonnative grasses and mechanical disturbance such as past grazing and off-trail foot traffic. Some species making up the soil crusts on the Table Rocks include the lichens *Diploschistes muscorum*, species of *Psora* and *Cladonia*, and gelatinous lichen species of *Leptogium* and *Collema;* liverwort species of *Cepaloziella* and *Riccia;* and the cyanobacteria *Nostoc*. When the soils are wet, the soil crust forms an elastic and strong surface. However, during the dry season, the crust is brittle and extremely fragile (Stone 2005).

Vernal pools support yet a different suite of lichens able to survive periods of inundation and parched dryness. *Dermatocarpon miniatum* and the Special Status *Peltula euploca*

are two lichens found growing on small boulders or bedrock around the edges of the pools. The cyanobacteria *Nostoc* fixes nitrogen and the liverwort *Riccia* colonizes soils in the basins of the pools.

Special Status Plants

To date, 16 Special Status vascular or nonvascular plants have been documented at the Table Rocks (Appendix C) on BLM and Conservancy lands, including one Federal Endangered, one State Threatened, 9 Bureau Sensitive, and 4 Bureau Strategic species. Six of the Special Status species are associated with grassland, chaparral, and oak savanna or woodland habitats; eight species are associated with vernal pools, vernally wet areas, or ponds; two species are associated with the rocky scablands of the intermound areas on the mesa tops; and one species is restricted to cliff walls. The table tops of both Upper and Lower Table Rocks and the wetlands/grasslands north of Upper Table Rock in section 26 contain roughly 90 percent of the Special Status populations. The other populations are scattered around the flanks of both rocks.

Some Table Rock Special Status species are endemic (restricted in range to a particular area) or just have populations at the Table Rocks within the Medford District, but also occur elsewhere. The dwarf wooly meadowfoam is the most notable endemic because it occurs only on the tops of the two Table Rocks (Figure 4).

Figure 4: Dwarf wooly meadowfoam.

Long-stemmed androsace (*Androsace elongata* ssp. *acuta*) is known from populations in California, but the recent discovery of a site at Lower Table Rock is the only known population in Oregon. It was thought to be extirpated from Oregon before it was rediscovered in 2010. Winged water-starwort's range includes western North America and Wisconsin, but in the Medford District it is known only from the vernal pools on the Table Rocks, and one other population in the Applegate River valley area. The moss *Entosthodon californicus* has populations in California, but is known in Oregon only

from the tops of the Table Rocks. White flowered navarretia is also known in California and Oregon, but all the populations in the Medford District are in vernally wet areas on the tops of the Table Rocks. American pillwort is rare in five counties in Oregon, in central California, and in southeastern U.S., but the only known population in the Medford District is in a pond on the north side of the Table Rocks. Other Table Rock Special Status species endemic to Jackson and Josephine Counties are southern Oregon buttercup, Gentner's fritillary, and coral seeded allocarya. The presence of so many rare species at the Table Rocks, and rare species that are unique to the area, affirms its designation as a special botanical area.

Some Table Rock Special Status species have many populations with many plants, such as the three popcorn flowers and the dwarf woolly meadowfoam. Other species have only one to few populations with one to few plants, such as Gentner's fritillary, slender-flowered evening primrose, and long-stemmed androsace. The habitat for some species is very narrow and may also be very restricted, for example, vernal pools. Many of the Special Status species associated with this unique habitat have many populations and plants. On the other hand, the Management Area contains many acres of suitable habitat for Gentner's fritillary, but only one population with two plants has been documented so far. Due to its irregular blooming, there are likely more populations, but there is not a direct link between available habitat and frequency or abundance of rare plants. Species with few plants and few populations or species with very limited ranges or habitats are at the greatest risk from negative impacts.

Major threats to special status species are the invasion of nonnative plants, off-trail foot traffic, expansion of user-created trails, picking or collecting plants, and ground disturbance that alters hydrology.

Noxious Weeds and Nonnative Invasive Plants

Populations of noxious weeds and nonnative invasive plants are documented during rare plant surveys or from casual observations. Four priority noxious weeds species have been reported on the Table Rocks: yellow starthistle, rush skeletonweed, Himalayan blackberry, and medusahead rye grass. It is possible more occur that have not been detected because the rare plant surveys occur in the spring months when the rare plants bloom and many noxious weeds bloom later in the summer.

Yellow starthistle (*Centaurea solstitialis*) is the most prevalent noxious weed on both Upper and Lower Table Rock. It invades open, dry grasslands and is found around the bases, on the slopes, and on the tops of the two mesas in grassland, oak savanna, vernal pool, and, to a lesser extent, chaparral and oak woodlands habitats. Over 120 populations have been officially documented on the Table Rocks. Some populations contain scattered individuals and others are extensive with thousands of plants across 20 to 30 acres. Yellow starthistle invasions on the Table Rocks originated in areas of human disturbance, such as roads, powerlines, and trails, or in areas that were once heavily grazed by livestock.

Yellow starthistle is a threat to healthy native grasslands because it competes with native bunchgrasses and forbs for space, nutrients, light, and water. It can negatively impact

populations of the Special Status species southern Oregon buttercup and Gentner's fritillary by occupying their habitat in oak savannas and woodlands. The BLM has sprayed yellow starthistle at the trailheads on both Upper and Lower Table Rock for at least 5 years. Populations on the tops of the mesas have been hand-pulled by the BLM and volunteers. Both treatments have been effective at reducing the extent of this noxious weed in those areas. The Conservancy's newly acquired lands contain more and denser populations that have not been treated. One area located on the north side flatlands of Upper Table Rock, which consists of open grasslands, seasonal wetlands, and many Special Status plants, is in particular need of treatment.

Rush skeletonweed (*Chondrilla juncea*) has been found in several small populations on the tops of Upper and Lower Table Rock. Additional populations may exist that have not been detected because it is an easy plant to miss. Its only leaves are a rosette that is withered by the time the leafless stems grow. It also blooms late in the summer after botanical surveys have been conducted. Rush skeletonweed produces thousands of seeds per year, which allows it to spread rapidly. Once established, it forms dense patches that exclude other vegetation. Because it crowds out other vegetation it is a threat to healthy native ecosystems and to rare plants.

On the tops of the Table Rocks, rush skeletonweed grows on the mounds, which are already mostly occupied by another noxious weed, medusahead. It blooms at the same time and in the same habitat as some late-blooming native plants such as Idaho gumweed (*Grindelia nana*), hayfield tarweed (*Hemizonia congesta*), and showy tarweed (*Madia elegans* ssp. *densifolia*). Although rush skeletonweed currently occupies the mounds, if it continues to spread, it will invade the margins of the vernal pools and displace Special Status plants, including dwarf woolly meadowfoam, winged water-starwort, Greene's and Austin's popcornflower, and white pincushionplant. Hand-pulling this weed is not effective after its first year because it is a perennial that produces a long taproot that resprouts if not completely removed.

The Programmatic Formal Consultation on the U.S. Fish and Wildlife Service's Vernal Pool Conservation Strategy for Jackson County, Oregon (DOI, FWS, ODFW 2011) lists the invasion of nonnative species as a threat to vernal pool critical habitat because they alter soil chemistry and hydrology and compete with natives for nutrients, water, and space (p. 56). USFWS also lists herbicides as a potential threat to the federally Threatened vernal pool fairy shrimp (p. 55). The Best Management Practices for herbicide use states that most treatments for noxious and invasive weeds would be by manual or mechanical means. "However, in some situations such methods may not be effective and limited herbicide use may be appropriate. This will occur only following concurrence from the Service and subject to practices that minimize adverse impacts, including distance thresholds from pools or certain native or listed species, spot spray application, consideration of weather conditions, etc." (p. 68).

Himalayan or Armenian blackberry (*Rubus armeniacus*) has been reported at 17 patches on Upper and Lower Table Rocks. The sites are in various locations such as along main drainages, irrigation canals, roads, and power line corridors; at a pond outlet and an old house pad; in chaparral; and on an upland slope. Blackberry displaces all other vegetation and forms dense, extensive thickets, particularly near riparian zones. It

is difficult to eradicate and requires proactive methods to restore an area that has been occupied by blackberry bushes.

Medusahead rye grass (*Taeniatherum caput-medusa)* occupies sites with clay soils and no canopy cover. Its presence is so extensive in the open, dry grasslands at the Table Rocks that it has not been officially mapped or quantified. Botanical survey reports describe it as the dominant vegetation in the oak savannas, chaparral, and oak woodlands and in the open grasslands around the bases and on the tops of the Table Rocks.

Medusahead outcompetes native vegetation, especially native bunchgrasses, by extracting the majority of the soil moisture well before perennial grasses begin to grow. Medusahead contains silica, which makes the grass unpalatable to livestock and wildlife, and has stiff bristles and hard florets that harm the eyes and mouths of animals. When medusahead rye takes over grasslands, it not only changes the natural species composition from natives to nonnatives, it also changes the structure. As an annual grass, it grows and produces seeds each year, then dies and leaves a thatch that takes a long time to decompose. This thatch changes the temperature and moisture dynamics of the soil, greatly reducing seed germination of other species, and creating fuel for wildfires.

Garlic mustard (*Alliaria petiolata*) is a relatively new invader to Jackson and Josephine County. In the Portland area and other parts of the country, garlic mustard has formed monocultures in moist woodland understories, eliminating native vegetation. Locally garlic mustard is mostly restricted to riparian areas along the Rogue River, with the largest infestation occurring in Kelly Slough, below Lower Table Rock. The Jackson and Josephine Cooperative Weed Management Areas (CWMAs) have prioritized garlic mustard for early detection and control efforts, and are currently treating all known garlic mustard locations with cooperative funding from the Oregon Department of Agriculture. One garlic mustard site is known from the TRMA on the Neary conservation easement along the Rogue River. The Conservancy and the Jackson CWMA are working towards eradication at this site.

Puncturevine (*Tribulus terrestris*), is aptly named for its sharp spined seeds that can painfully lodge in feet or deflate tires. This sprawling, low growing plant can withstand poor soils and drought conditions, and is often found in disturbed areas like road shoulders, agricultural fields and dirt lots. The spiny, hard seeds are easily transported by people, cars and animals, and once established, plants can be difficult to control. Only one site is known in the TRMA at the Lower Table Rock Trailhead parking lot. The plants were eliminated by hand-pulling, and the area is routinely monitored. Due to the amount of visitation at the Table Rocks, the threat of introduction is high at all public access points, and early detection is key to preventing puncturevine from becoming a problem in the TRMA.

Nonnative grasses have contributed to the conversion of grasslands from native perennial bunchgrasses to nonnative grasses. Bulbous bluegrass, hedgehog dogtail, cheat grass (*Bromus tectorum*), and downy brome, along with medusahead, are the

main nonnative grasses that threaten to displace Special Status vascular and nonvascular plants that occur in grass-dominated habitats.

Restoring the native grasslands requires multiple strategies. Burning, applying specific herbicides, and seeding with native grasses are several methods that can be used. However, successful restoration requires specific timing windows, a combination of methods, and multiple year efforts. Because these grasses are widespread in the Rogue Valley and are present on adjacent lands, there would be an ongoing threat of reinvasion of sites after restoration.

I. Wildlife

The wildlife habitat resources on the Table Rocks are diverse and plentiful. Four overlapping ecological regions are found in the Table Rocks: oak savanna, chaparral, mixed woodland, and mounded prairie. At least 70 wildlife species are known to occupy these regions. The moderate climate and lower elevations make wildlife viewing a year-round activity.

A mosaic of pine-oak-madrone woodlands, oak savanna, and chaparral habitats line the flanks of the Table Rocks. Rare or uncommon bird species using these habitat types are the Lewis's woodpecker, western meadowlark, grasshopper sparrow, blue-gray gnatcatcher, and peregrine falcon. Talus slopes and basalt cliffs provide habitat for species such as bats, violet green swallows, snakes, lizards, peregrine falcons, and small mammals. Wildlife populations on the Table Rocks are becoming more isolated as the human population in the Rogue Valley continues to increase. New homes and ranches are being constructed on private lands around the Management Area.

While the wildlife habitat on the Table Rocks is not unusual, the habitat itself is more unique to this region. The Table Rocks offer an island of native plant communities, endemic wildflowers, unusual geology, vernal pools, and interesting animal communities. For example, a population of California kangaroo rats, native to California, is found here. The Table Rocks are the northernmost range of the common and California mountain kingsnakes and the blue-gray gnatcatcher.

Table Rocks is a Watchable Wildlife viewing site (Yuskavitch 1994) with viewing opportunities for red-tailed hawks, deer, elk, osprey, great blue heron, swallows, blue-gray gnatcatcher, and California kangaroo rat. The Table Rocks are also identified by the Audubon Society as an Important Bird Area, and as a Conservation Opportunity Area by the Oregon Department of Fish and Wildlife (ODFW). Important Bird Areas are areas of outstanding importance to bird conservation and have been designated in Europe, Asia, and North America. Conservation Opportunity Areas were developed for ODFW's Oregon Conservation Strategy to help identify priority areas for conservation actions that directly benefit wildlife and habitats. Their purpose is to show areas in which conservation actions would best meet the needs of Strategy species and habitats. These areas are generally either areas of high biodiversity or areas with unique habitat values. The Table Rocks Conservation Opportunity Area supports a remarkable diversity of wildlife species, including 5 imperiled ODFW Conservation Strategy bird species

(western meadowlark, streaked horned lark, grasshopper sparrow, Lewis's woodpecker, and blue-gray gnatcatcher).

Special Status Wildlife Species

Special status species are those species designated as Bureau Sensitive by the BLM or listed as federally threatened or endangered. The list of special status species known to be present in the Medford District BLM was updated in January 2008 with the latest information from the Oregon Natural Heritage Program. For a list of BLM Special Status Species (including Survey and Manage) known or suspected in the vicinity of the Table Rocks, see Appendix D.

Bureau Sensitive Species

Peregrine falcons nest along the cliffs of the Table Rocks and are vulnerable to human disturbance during the nesting season from February through June. Activities such as tree trimming along power line corridors, helicopter use, hiking, and rock climbing that occur during nesting season have the potential to cause nests to fail if they occur within sight or hearing of peregrine nest ledges. The great gray owl and terrestrial mollusk species were included in the updated list by the January 2001 S&M (Survey and Manage) Record of Decision and the 2003 Annual Species Review. Surveys for these species are conducted prior to a project being implemented, if it is determined that the project will have an adverse effect on the species.

Threatened or Endangered Species

The mounded prairie region on top of the Table Rocks provides unique vernal pool habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*). These tiny crustaceans belong to an ancient order of branchiopods, the Anostraca, and are ecologically dependent on seasonal fluctuations in their vernal pool habitat. They lie dormant in the soil until fall and winter when rainwater collects in shallow depressions (vernal pools) allowing them to hatch and reproduce. The ability of fairy shrimp to persist in this environment is based on water temperature and quality, pool depth, and integrity of native plant communities surrounding the vernal pools. These pools have to retain enough water during the adult life cycle of these shrimp for them to reproduce. Once they reproduce, the adult females form cysts, which fall to the bottom of the pool and lie in the substrate until the return of winter rains. Many species of insects, amphibians, and waterfowl prey on fairy shrimp, making this species an important link in the food web, particularly as a supply of energy for migratory birds.

Fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs (Figure 5). They swim or glide upside down by beating movements of the legs that pass in a wavelike, anterior-to-posterior direction. Nearly all fairy shrimp feed on algae, bacteria, protozoa, rotifers, and bits of detritus.

Figure 5: Vernal pool fairy shrimp.

The females carry eggs in an oval or elongate ventral brood sac until the female dies and sinks. The "resting" or "summer" eggs are known as cysts. They are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch; some hatch after drying and getting wet again, while others may go through several wet/dry cycles before they hatch. The cyst bank in the soil may therefore contain cysts from several years of breeding. The cysts hatch at the bottom of the pools when they fill with rainwater and when water temperatures reach 50°F (10°C). On average, they reach maturity in about 22 weeks, and have been reported to live anywhere from 2 to 42 months, depending on environmental factors (Eriksen and Belk 1999). They are sensitive to water quality and temperature, pool depth, and integrity of the vegetation surrounding the vernal pools.

Fairy shrimp are restricted to vernal pools, swales, and other seasonal pools in California and Jackson County, Oregon. The range of the species extends from disjunct locations in Riverside County and the Coast Ranges, north through Central Valley grasslands to Tehama County in California. A disjunct area of remnant vernal pool habitat exists in the Agate Desert of Oregon, just south of the Table Rocks. The vernal pools on the Table Rocks differ from those of the Agate Desert, in that they are formed over an impervious layer of bedrock. The Table Rocks represent a unique habitat for vernal pool fairy shrimp in Oregon, as well as being the most northerly population, which makes this location a high priority for protection. The fairy shrimp are imperiled by habitat loss caused by a variety of human-caused activities, primarily urban, commercial, and industrial development; utility and water supply/flood control projects; and land conversion to agriculture use. Over 40 percent of the vernal pool habitats remaining in Oregon have been degraded (Borgias and Patterson 1999).

The U.S. Fish and Wildlife Service (Service) listed this species as threatened under the Endangered Species Act on September 19, 1994 (59 FR 48136). Critical habitat was originally designated in a final rule published in 68 FR 46683 on August 6, 2003. A revised final rule for critical habitat, with a reevaluation of noneconomical exclusions, was published in 70 FR 11140 on March 8, 2005. The *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* is the only recovery plan that provides for recovery criteria for the vernal pool fairy shrimp; however, two other recovery plans provide information pertaining to the shrimp. The *Draft Recovery Plan for Listed*

Species of the Rogue Valley Vernal Pool and Illinois Valley Wet Meadow Ecosystems (Service 2006a) provides recovery actions specific to the Oregon range of the vernal pool fairy shrimp. The recovery actions in the draft recovery plan for Oregon occurrences respond to the recovery criteria identified in the broader *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005a) by providing site-specific recovery actions for the shrimp within the Klamath Mountains Recovery Unit; they are not, however, "recovery criteria" required to delist the species.

The Service designated critical habitat for 15 vernal pool species, including fairy shrimp. Four critical habitat units in Oregon and 29 units in California are designated as essential to the conservation of fairy shrimp. The Oregon units are comprised of 7,574 acres in Jackson County. The tops of Upper and Lower Table Rocks contain 892 acres of vernal pool fairy shrimp critical habitat (Units 4A and 4B, Map 5: Fairy Shrimp Critical Habitat).

The *Draft Recovery Plan for Listed Species of the Rogue Valley Vernal Pool and Illinois Valley Wet Meadow Ecosystems* states that some of the vernal pool fairy shrimp populations in the Table Rocks area are threatened by indirect influences of incompatible land uses. Because the Table Rock pools are located on Conservancy lands and within an ACEC, the vernal pool habitat is protected from the larger threats of timber harvest, land development and conversion, and off-road vehicle use. As stated in the *Draft Recovery Plan*, threats to the Table Rock vernal pools are primarily a result of recreation use: human trampling in the wet areas near pools and potential change in subsurface or surface flow runoff patterns due to trail construction or improvement. The recovery plan states that the current trend for vernal pool fairy shrimp on Table Rocks is believed to be stable, and there has been no major change to habitat.

The BLM conducted a baseline vernal pool survey of Upper and Lower Table Rocks during the wet winter seasons from December 2004 to January of 2006 (ESA 2006). The purpose of the study was to determine the presence or absence of vernal pool fairy shrimp. Data collected from 38 pools included environmental and habitat conditions, observations, photo documentation, GPS locations, and approximate vernal pool boundaries. The presence of vernal pool fairy shrimp was recorded in eight of the pools. The survey noted that the area received minimal disturbance year-round from hikers and dogs on Lower Table Rock, and from vehicles, hikers, dogs, elk, and cattle on Upper Table Rock.

J. Fire and Fuels

Fire has been a frequent occurrence and has played a key role as a natural disturbance agent throughout southwestern Oregon including the Table Rocks area. The fire return interval for the area before Euro-Americans arrived ranged from 5 to 25 years. Frequent fire occurrence helped prevent the accumulation of vegetation (fuels) and favored fire-adapted plant species such as Oregon white oak. However, during the last century the plant communities on the Table Rocks have been influenced by fire suppression and other human activities such as livestock grazing and agricultural practices. In general, the vegetation has become uncharacteristically dense, and less fire-resistant species have encroached into areas that were historically maintained in a more open condition

by frequent fire. Dense vegetation and increased fuel loads promote increased fire behavior.

Fire History and Risk

The entire Management Area is within the Wildland Urban Interface (WUI). Wildland fires in and adjacent to the Management Area predominately occur from mid-July through mid-October, due to low relative humidity, low precipitation, and high ambient temperatures. Fire history analysis shows 20 wildland fires burned a total of 887 acres within the Management Area from 1960 to 2009 (Map 6: Fire History). Of the 20 wildland fires, 70 percent (14 fires) were human-caused and generally started along roads or agricultural areas, while 30 percent (6 fires) were started by lightning. Nearly 98 percent of the past wildland fires were suppressed at less than 10 acres. The 2 percent of the fires that were greater than 10 acres charred over 85 percent of the total acres burned. The large high intensity, high severity wildland fires include the 1955 Blackwell Hill Fire that burned 3,496 acres (cause unknown) and the 1980 Upper Table Rock Fire that burned 944 acres (cause unknown).

Fire Regime and Condition Class

Climate and topography combine to create the fire regime found throughout the Management Area. Fire regime is derived from the natural frequency, severity, and extent of fires occurring in an area. The five natural (historical) fire regime classes are based on the average number of years between fires (fire frequency) combined with the severity (amount of stand replacement) of the fire on the dominant overstory vegetation.

- **Fire Regime 1:** 0- to 35-year frequency; low severity to mixed severity. Frequent low intensity surface fires are the norm. Typical climax plant communities include ponderosa pine, dry-site Douglas-fir, mixed conifer, and oak woodlands.
- **Fire Regime 2:** 0- to 35-year frequency; moderate to high severity. Typical plant communities include true grasslands and savannahs, ceanothus, and Oregon chaparral.
- **Fire Regime 3:** 35- to 200-year frequency; low to mixed severity. This regime usually results in a mixed landscape. Lower severity fire tends to predominate in many events. Typical plant community is mixed conifer.
- **Fire Regime 4:** 35- to 200-year frequency; replacement severity. Plant communities arise from or are maintained by stand-replacement fires. Typical plant communities include lodgepole pine, aspen, western larch, and western white pine.
- **Fire Regime 5:** 200+ year frequency; any severity. Natural ignitions are very rare or virtually nonexistent; environmental conditions rarely result in large fires. Typical plant communities include Douglas-fir, noble fir, and mountain hemlock.

Research suggests that variable fire history, complex geology, land use history, and steep environmental gradients in the Douglas-fir/hardwood forests of the southwest Oregon

and northern California Siskiyou Mountains prevent generalizations about fire and its ecological effects (Agee 1993). However, plant association groups are a credible link to historical ecological processes, including fire regimes that occurred on sites in the past (Agee and Franklin 2003). Historical fire regimes and the subsequent departure from them are correlated with the change from historical to current vegetative structure. The change in vegetation also helps to describe the difference in fuel loading from historical to current conditions.

One main historic fire regime dominates the Table Rocks Management Area. According to LANDFIRE data, 97 percent of the Management Area is Fire Regime 1, while 2 percent is Fire Regime 2, and only trace acres are Fire Regimes 3 and 4. This data suggests that historically the majority of the Table Rocks Management Area burned with frequent low- to mixed-intensity surface fires (Map 7: Fire Regime Condition Class).

Condition classes are a function of how much the current fire regimes have departed from historical fire regimes, resulting in alterations of components such as species composition, structural stage, stand age, and canopy cover. There are three condition classes:

- **Condition Class 1** — Fire regimes are within or near an historical range. The risk of losing key ecosystem components is low. Vegetation species composition and structure are intact and functioning within an historical range.
- **Condition Class 2** — Fire regimes have been moderately altered from their historical range (more than one return interval). This change results in moderate changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns.
- **Condition Class 3** — Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. This change results in dramatic changes to fire size, frequency, severity, or landscape patterns.

Within the Table Rocks Management Area, 64 percent of BLM land falls into fire regime condition classes 2 and 3 (Figure 6).

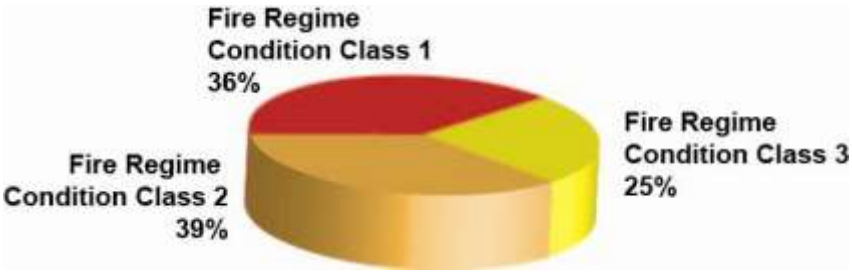

Figure 6: Fire regime condition classes in the Table Rocks Management Area.

This departure from the historic fire regime is often attributed to fire exclusion, but also includes all human practices that would affect the extent, severity, or frequency of fires

compared to historical accounts. These human practices include road building, livestock grazing, forest management practices, and fire suppression.

Changes in vegetation and fuel conditions help to determine the expected change in fire behavior and its effects. This data suggests that fires (which would have historically burned with low to moderate severity) would now burn with higher intensities and greater severities. These numbers indicate the area could benefit from treatment to reestablish the historical fire regime.

Fire Hazard

Fire hazard assesses vegetation by type, arrangement, volume, condition, and location. These characteristics combine to determine the threat of fire ignition, the spread of a fire, and the difficulty of fire control. Fire hazard is a useful tool in the planning process because it helps in the identification of broad areas within a watershed or project area that could benefit from fuels management treatment. Hazard ratings were developed for the Management Area using data from the 2009 Jackson County Fire Risk Analysis and FLAMMAP. Hazard ratings were assigned by combining the predicted attributes of flame length, rate of spread, and crown fire activity. In general, the existing fuel profile within the Management Area represents a moderate fire hazard under average climatic conditions (Figure 7 and Map 8: Fire Hazard).

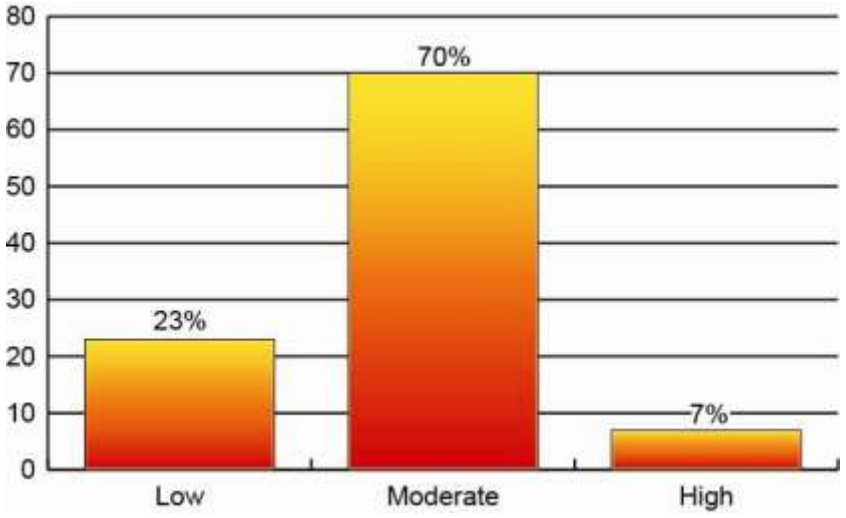

Figure 7: Fire hazard ratings in the Table Rocks Management Area.

Fire Suppression

Wildfire suppression on BLM lands are contracted with the Oregon Department of Forestry (ODF) through a master cooperative fire protection agreement. This agreement gives ODF the responsibility for fire protection of all BLM lands within the Management Area. This contract directs ODF to take immediate action to control and suppress all fires. Their primary objective is to minimize total acres burned while providing for fire fighter safety. The agreement requires ODF to control 94 percent of all fires before they exceed 10 acres in size.

During suppression activities on BLM lands the following guidelines would be followed:

- BLM resource advisors would be dispatched to fires that occur on BLM lands. These resource advisors are used to ensure that suppression forces are aware of all sensitive areas and to ensure damage to resources is minimized from suppression efforts.
- When feasible, existing roads or trails would be used as a starting point for burn-out or backfire operations designed to stop fire spread. Backfires would be designed to minimize fire effects on habitat. Natural barriers would be used whenever possible and fires would be allowed to burn to them.
- In the construction of fire lines, minimum width and depth would be used to stop the spread of fire. The use of dozers should be minimized and resource advisors would be consulted when appropriate. Live fuels would be cut or limbed only to the extent needed to stop fire spread. Rehabilitation of fire lines would be considered.
- The felling of snags and live trees would only occur when they pose a safety hazard or would cause a fire to spread across the fire line.
- The construction of helispots should be minimized. Existing helispots or natural openings should be used when possible. Helispots would not be constructed within Riparian Reserves, or areas of special concern.
- Retardant or foam would not be dropped on surface water.
- Resource advisors would determine rehabilitation needs and standards in order to reduce the impacts associated with fire suppression efforts.

Stipulations within the protection agreement allow the BLM to designate Special Protection Areas that require special fire management activities during suppression efforts in order to ensure impacts to resources are minimized. The Table Rocks are designated as a Special Protection Area with the following protection measures for fire suppression tactics:

- Dispatch Project Inspector and Environmental Specialist immediately
- Very limited use of tractors and dozers with concurrence of resource advisor.
- Use tractor only when private lands are threatened.
- Dozer or tractor fireline construction would be limited to surface blading only, no road construction.
- Preferred tactics would include use of burnout, natural firebreaks, water drops, and existing roads and hand lines.
- Avoid dropping fire retardant or foam on vernal pools.

The Conservancy lands in the Management Area are protected by Jackson County Fire Department District 3 and ODF (under a mutual aid agreement with the county) with similar direction in their Wildfire Response Plan.

K. Timber Harvest and Special Forest Products

Timber harvest is not allowed within the BLM-administered lands of Table Rocks, in conformance with the Medford District 1995 RMP (page 58).

The special forest products program on BLM-administered lands includes the harvest of certain vegetative material such as plants, seeds, cones, trees and tree parts, boughs, fruits, roots, flowers and stems, mushrooms, edible plants, medicinal plants, floral greens, decorative woods, ornamental plants, and more. Harvest of special forest products is prohibited on BLM-administered lands of Table Rocks, in conformance with the Medford District 1995 RMP (page 58) and the 2008 RMP (page 76). However, the Federal government recognizes that Tribes have sovereign rights to access Federal lands to hunt, fish, and continue other traditional practices. The gathering of plant materials by federally recognized tribes for traditional uses such as dyes, cordage, medicines, food, or ceremonial uses, is allowed on BLM-administered lands in the Table Rocks Management Area.

On Conservancy lands on Lower Table Rocks, conditions of the Neary easement prohibit timber harvest or brush removal or control, except as necessary for fire control (Jackson County 1980). Conditions of the OWEB easement on both Upper and Lower Table Rocks prohibit the cutting or removing trees or vegetation, except for the purpose of noxious or invasive weed control, removing danger trees, or removing obstructions to permitted roads (Multnomah County 2010). Collecting or gathering plant materials by the public is not allowed on Conservancy land, the Neary easement, or the OWEB easement. Traditional tribal use of plant materials on Conservancy lands and lands under the OWEB easement would only be allowed upon approval of a human use compatibility assessment by the Conservancy.

L. Site History

Prehistoric and Ethnographic

For thousands of years the Takelma Indians of southwestern Oregon occupied the land around the Table Rocks. These landforms played a significant role in their spiritual, cultural, and geographical worldview and still serve as an important link in their cultural history. Although historic ethnographic literature places the Table Rocks within Upland Takelma territory, boundaries were by no means impermeable or fixed. The traditional political and social relations of the Indian people created a fluidity of movement between the different tribes and their respective territories. The location of the Table Rocks was likely one of these areas where boundaries overlapped peripherally (Figure 8).

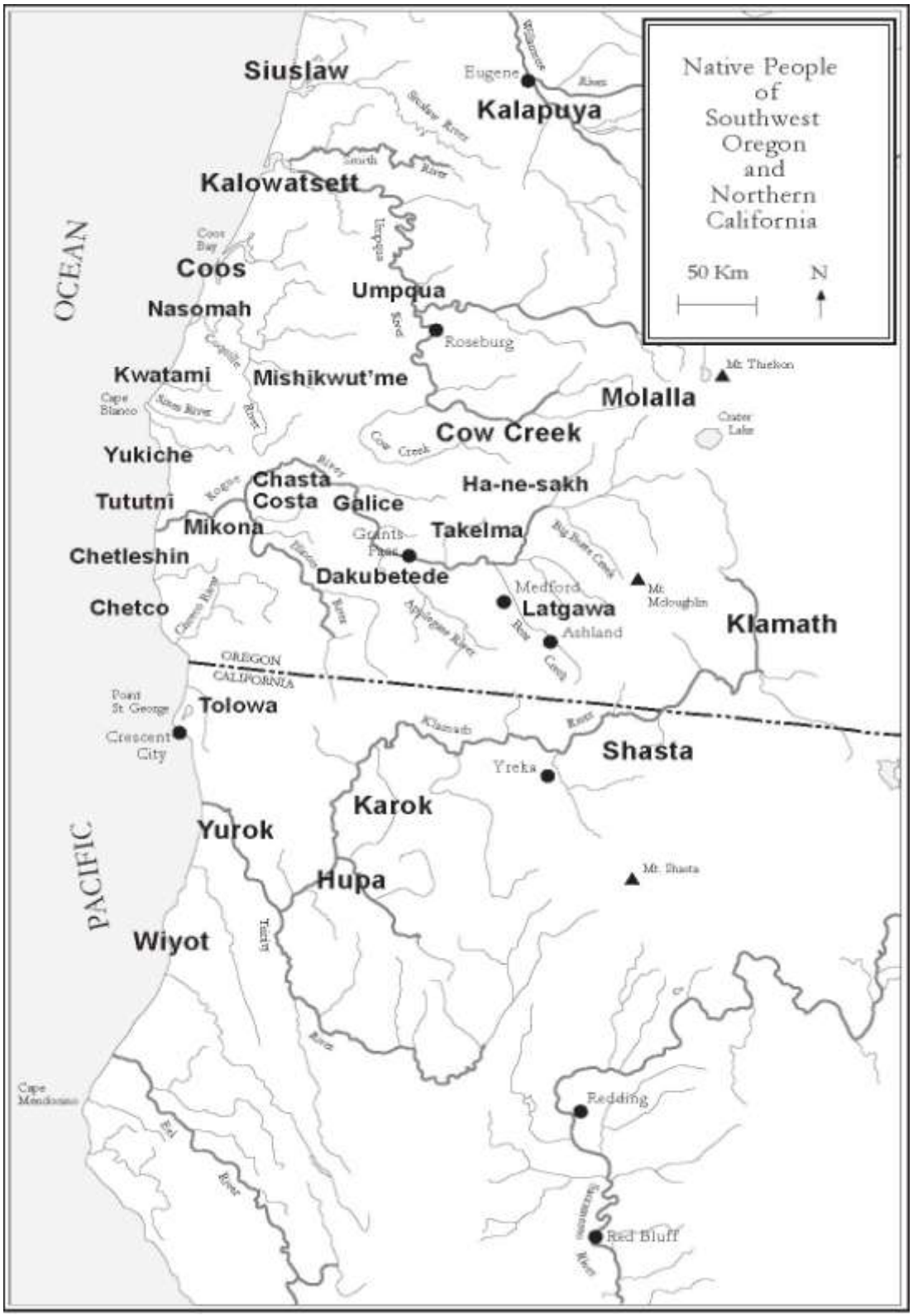

Figure 8: Cultural geography of Native Americans in southwest Oregon and northern California (Tveskov, et al. 2002, 35).

The Table Rocks and nearby Rogue River provided easy access to a variety of resources for food and other necessities: salmon from the river and acorns and camas from nearby gathering grounds. Klamath plum, common chokecherry, and wild rose provided fruits for drying. The Takelma also gathered medicines and materials for tools and basketry at the Table Rocks. The Takelma generally followed a subsistence pattern referred to as the seasonal round—hunting, fishing, and gathering where the resources were most abundant at any particular time of the year. Primary food sources included acorns, camas, deer, fish, berries, insects, and various seeds (Figure 9). The people would leave their lower elevation villages in the summer and early fall to harvest edible plants and game at higher elevations as they became available. They would then return to their villages by mid-autumn.

Figure 9: Processing acorns.

Today, descendants of the Upland Takelma are members of the Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, and Cow Creek Band of Umpqua Tribe of Indians. All of these tribes take an active interest in the management of their native lands and in promoting the welfare of their members. While archeological and historic preservation laws address archaeological concerns, until recent years, the laws did not adequately protect or address other cultural values or traditions being practiced in modern times. The American Indian Religious Freedom Act of 1978, Native American Graves Protection and Repatriation Act of 1990, Executive Order 13084 of May 14, 1998, and Executive Order 13007 of 1996 define and strengthen the rights of Native

Americans and clarify responsibilities of Federal agencies regarding these additional cultural values.

The BLM continues to work with individual federally recognized Tribal governments to further identify and address Native American concerns and traditional uses of BLM land. These tribes maintain deep ties to their ancestry, culture, history, and natural resources of the Table Rocks. Communications with the tribes about the Table Rock Management Plan has generated increased awareness in their ancestral lands, and greater interest in how the Table Rocks are managed. In 2011 the BLM, the Conservancy, and the Grand Ronde signed a memorandum of understanding, forming a partnership to manage the Table Rocks. A similar MOU was signed with the Cow Creek Band of Umpqua Tribe of Indians in 2012.

Historic

In the early 1800s, explorers and trappers began passing through southern Oregon. Peter Skene Ogden and his fur trapping brigade (Hudson Bay Company) traveled through the Rogue Valley in 1827, camping in the vicinity of Table Rock and noting a Takelma village with six large houses, sufficient to house 100 Indians.

In 1846, Jesse and Lindsay Applegate left the Willamette Valley to pioneer a road across the southern Cascades that would intercept the Oregon Trail in southern Idaho. This route, known as the Applegate Trail, opened the Rogue River valley to settlement. The miners and settlers who poured into southern Oregon in the early 1850s were intent on obtaining gold and land; settlement of southern Oregon by Euro-Americans increased substantially after gold was discovered in Jacksonville in 1852. Newcomers settled throughout the Rogue River Valley, using the open savannas and grasslands for agriculture and livestock ranching.

The ensuing struggles between the Natives and the immigrants were termed the “Rogue Indian Wars” and lasted from 1851 to 1856. The Table Rocks provided a focal point during these times. One of the first conferences between the Natives and the immigrants took place on a large gravel bar in the Rogue River below Table Rock in 1852. The 1853 Council of Table Rock negotiated a peace treaty between representatives of the American government and the Takelma, Shasta, and Dakubetede Indians of the Rogue River Valley. This brought a temporary respite to the ongoing conflict in southwestern Oregon between Native people and the ever-growing number of white settlers and miners.

On September 10, 1853, Takelma leader Apserkahar (Chief Joe) and former Oregon territorial Governor Joseph Lane faced each other again near Lower Table Rock, having met in 1850 to call a halt to fighting that year. Lane’s fellow negotiators included U.S. Army Captain A. J. Smith, Oregon Superintendent of Indian Affairs Joel Palmer, local militia “Colonel” John Ross, Lafayette Grover (later governor of the state), and translator James Nesmith (who subsequently succeeded Lane in the U.S. Senate). The group went unarmed into the Takelma camp, and the parlaying lasted for much of the day (Nesmith claimed the party came close to being ‘killed to a man’ when news of the latest murder of an innocent Native angered the Takelma leaders). The meeting resulted

in the Treaty of Table Rock, which was ratified by Congress as a stop-gap measure, and a temporary 100 square mile reservation on the north side of the Rogue River (including the two Table Rocks, Sams Valley, and the entire Sardine Creek and Evans Creek watersheds) (Map 9: 1853 Table Rock Reservation). The Treaty promised various goods and services to enable the Indians to farm and ranch. It also established Fort Lane to protect the reservation's inhabitants from land-hungry settlers. Fort Lane, located about 1.5 miles south of Lower Table Rock on the south side of the Rogue River, was part of a 640-acre military reserve set aside by the U.S. government in 1853.

Despite the agreements made on Table Rock, broken promises and scattered fighting persisted. In October 1855, the "Lupton Massacre" ended the Treaty's peace and precipitated the final Rogue River war. The massacre was perpetrated by the self-described "Exterminators" (a band of white settlers and miners from Jacksonville) on a band of Takelma camped near Upper Table Rock. The Takelma, who had remained on the reservation and at peace throughout 1855 to 1856, were removed from their Rogue River valley home and endured a grueling 33-day journey to a newly established Grand Ronde reservation west of Salem. Other bands were removed to Siletz, while others took refuge and stayed hidden in the Umpqua headwaters.

Shortly after the removal of the remaining Indians, Fort Lane was abandoned and the buildings were allowed to decay. The lands surrounding the Table Rocks were opened to settlement and quickly taken up by farmers and ranchers. In 1872, a Table Rock Post Office opened, followed by a school district in 1879. Recreational hikers began to enjoy the Table Rocks during the late 1800s and early 1900s (Figure 10). Development ensued as lands were cleared for grazing and dirt roads were built. In the late 1940s, John Day purchased land in the Lower Table Rock area, including a portion of the summit. In addition to domestic livestock, Day grazed exotic animals such as yak, llama, white fallow deer, bison, and wild Russian boar. Grazing occurred year-round on this property up until 1985.

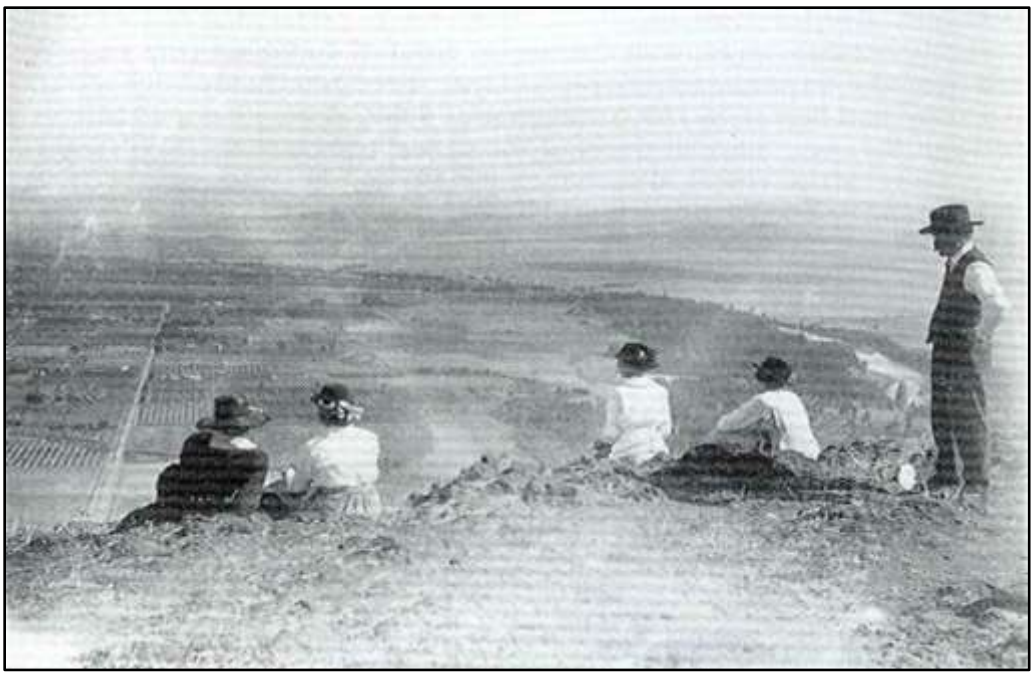

Figure 10: Table Rock hikers in the early 1900s.

During World War II, a portion of Upper Table Rock was part of 43,000-acre Camp George A. White, known as the "Alcatraz of Boot Camps" for its tough conditions. In 1941, Camp White occupied nearly 50,000 acres and contained nearly 40,000 people at its peak, more than 16 times the area and 3 times the population of nearby Medford. At its height, Camp White was the second largest city in the State of Oregon.

By October 1942, Camp White was ready to serve as the training center for the U.S. Army's 91st "Powder River" Infantry Division (and later the 96th "Deadeye" Infantry Division), with two ranges at the heart of the action (Figure 11). The Beagle Range (Map 10: 1943 Camp White Beagle Range) encompassed the east and north sides of Upper Table Rock and was used to practice infantry drills such as taking enemy strongholds. It included concrete pillboxes designed to simulate Nazi fortified coastal regions of Europe. Troops practiced manning and capturing the pillboxes, often with live ammunition. Tanks were used to fire on the pillboxes, and men inside were given the task of repelling their attack. Training in the Fortified Zone also included flame throwers, 105-millimeter artillery, simulated TNT, and electrically fired explosions. The Antelope Range to the east of Medford (located outside the Management Area) included existing farm buildings and other specially constructed buildings to form a "Nazi Village." Troops would practice their combat skills in a realistic setting as they stormed the town. According to military officials, "Realistic training means that a man who may soon face death in combat comes as close to it as he dares in training so that he may know what death looks like, how it sounds, how it smells." (Kramer 1992)

Figure 11: Military training at Camp White.

In addition to serving as a training center for the 91st and 96th Infantry Divisions, Camp White also functioned as a training camp for engineer, medical, and artillery units. In late 1943, it housed German prisoners of war. After the conclusion of World War II, the U.S. Army dismantled Camp White in 1946 and all the property that comprised the former training base was sold to local residents.

M. Rights-of-Way, Easements, and Leases

Since the early 1950s, the Table Rocks have been used for utility corridors, easements, and rights-of-way (Map 11: Rights-of-Way, Easements, and Leases). BLM land at the top of the northwesterly side of Upper Table Rock contains a Federal Aviation Administration's (FAA) 80-acre air navigation withdrawal for communication purposes, which dates from 1950. A 25-foot-tall VOR (very-high-frequency omnidirectional radio range) aviation tower broadcasts coordinates to aircraft to assist in navigation. A small power line servicing the VOR tower enters the Management Area from the south. In 2010, the Conservancy granted a perpetual nonexclusive road easement to the BLM for use and maintenance of the road on Upper Table Rock that leads to the VOR tower. The easement is 30 feet wide, 3.3 miles long, and covers approximately 11 acres. The Conservancy also granted easements to FAA and PacifiCorp for access and road maintenance in order to maintain the VOR tower and powerline.

An irrigation ditch on the north slope of Upper Table Rock was constructed on BLM land in the late 1950s to gather winter runoff and fill a reservoir located on private land below in the southwest corner of Section 26. The right-of-way for this ditch is 2,940 feet long, 100 feet wide and covers 6.75 acres; however, the actual ditch disturbance is approximately 10 feet wide. This ditch is now mostly overgrown, although it appears to run water during high runoff.

On Lower Table Rock, a Pacific Power and Light 500 kV (kilovolt) overhead power transmission line is located in the Management Area running west to east across the northern flank of the rock, then turning south and running down the east side of the area. The right-of-way width for this line is generally 200 feet. Two smaller lines, a 230

kV line and a 115 kV line, run adjacent to the larger transmission line. An access road for transmission line maintenance runs under the lines. The road is periodically accessed by authorized personnel in vehicles and ATVs for brushing, mowing, trimming tree limbs, and felling trees. The easements for these three transmission lines were acquired generally from 1954 to 1990 and include segments from both private parties and the BLM. These lines are identified by PacifiCorp as Lines 40, 71, and 91.

In 1980, George and Hendrika Neary granted a perpetual conservation easement on Lower Table Rock to the Conservancy, with the intent of preserving the natural values of the land and protecting the native plant and animal life, while reserving the right for the Nearys to pursue certain activities on the land. The easement covers 795 acres on Lower Table Rock, located primarily in the bowl and on the south and west sides of the rock. Prohibited uses in the easement area include hunting, trapping, killing, or removing animals (except for predator control); off-road vehicle use; and public access for recreational or other purposes (Jackson County 1980).

In 1997, the Conservancy transferred 37 acres to the BLM on Lower Table Rock so that the BLM could construct a formal trailhead to replace an inadequate user-created parking area. This parcel meets the same relevance and importance criteria of the adjacent ACEC, and although not yet designated as an ACEC, is being managed as such. The Conservancy also donated a trail easement to BLM that allowed BLM to locate, construct, use, maintain, relocate, and repair the hiking trail across Conservancy lands to the top of the plateau. This trail easement is 1.4 miles long and 20 feet wide and totals 2.85 acres.

The Conservancy's 2009 land acquisition was purchased with funds provided, in part, by the Oregon Watershed Enhancement Board (OWEB). In 2010, the Conservancy, as a condition of the OWEB award, granted OWEB a perpetual easement on 898 acres of the purchased lands on both Upper and Lower Table Rocks. Prohibited activities in the OWEB easement areas include commercial activities; new construction; vehicle use off of existing roads; discharge of firearms, guns, or rifles; and general public access not related to recreational activity (Multnomah County 2010).

Numerous unmarked small reservations for ditches and canals, utility lines, easements, licenses and permits for roads are listed in the owner's policy of title insurance for the parcels acquired in 2009 by the Conservancy. These reservations date from 1894 to 1951, or are undated; it is unknown at this time what their status is, their exact locations, or if anything was constructed (Commonwealth 2010).

Since the Camp White years, the Table Rocks area has been used for rural-residential, agricultural, and cattle grazing purposes. In the late 1940s, John Day purchased land in the Lower Table Rock area, including a portion of the summit. In addition to domestic livestock, Day grazed exotic animals such as yak, llama, white fallow deer, bison, and wild Russian boar. Grazing occurred year-round on this property up until 1985, when grazing was phased out under conditions of the Neary conservation easement (Jackson County 1980).

The BLM-administered lands on Upper Table Rock in sections 34 and 35 and the surrounding private land on top were historically grazed for up to 30 days in the spring by 65 cow/calf pairs by the previously adjacent private landowner, Rogue River Ranch. The last time active authorized grazing took place on the allotment was in 2007. Grazing Nonuse was taken in 2008 and 2009 and ownership of the base lands was sold to the Conservancy in May 2009. Since the 2009 acquisition, the Conservancy has not applied for the grazing lease and all time-frames allowed for initiating a transfer have elapsed. In 2011, the grazing allotment is vacant and no approved base land controls the authorized animal units per month assigned to the allotment under lease. Grazing activities on the allotment will remain in inactive status pending adjustment to the Medford Resource Management Plan.

N. Manmade Features

Lower Table Rock

The history of land ownership and human use on the Table Rocks has influenced the development of manmade features on Lower Table Rock (Map 12: Manmade Features on Lower Table Rock). In the 1940s and 50s, John Day constructed 50 miles of jeep roads on his property, some of which are still in evidence on the west and south sides of the rock, on top, and in the bowl (Map 13: Roads and Trails on Lower Table Rock).

A deactivated airstrip is located on top of Lower Table Rock on BLM and Conservancy land (Figure 12). The 3,000-foot-long by 100-foot-wide grass strip was originally built by John Day in 1948, in hopes of impressing visiting Hollywood celebrities. The runway was used extensively for 35 years by local pilots for recreational and training purposes. At one time, the Experimental Aircraft Association had a use permit for the strip. In 1989 the airstrip was deactivated by the FAA at the request of BLM. The airstrip is still visible due to the berm of displaced dirt and rock along its entire length, and is now used primarily as a 6- to 8-foot-wide trail by hikers heading to the southern point of the plateau. Because the strip is still very visible from the air, it is occasionally used by small aircraft for unauthorized ‘touch and goes’ and landings.

Figure 12: Hikers on deactivated airstrip on Lower Table Rock.

Three overhead power lines (500 kV, 230 kV, and 115kV) run west to east across the northern flank of the rock, then turn south and run down the east side of the project area. Unmaintained access routes underneath and parallel to the lines are used for routine brushing, mowing, and tree trimming along the power line rights-of-way.

There are no records of mining claims on Lower Table Rock, but three mining shafts, an adit, and their tailings are in evidence; two shafts have been reclaimed and filled in, but one remains open and will be remediated in 2012.

A trailhead is located on the east side of Lower Table Rock, off of Wheeler Road, on what was originally a homesite. The BLM acquired this 37-acre parcel from the Conservancy in 1997 in order to develop a trailhead to accommodate increasing recreational use. The trailhead is the beginning of a 1.4-mile trail that starts on BLM-administered land, crosses the Conservancy's property, then reenters BLM land on top of the plateau. The BLM acquired an easement from the Conservancy for the trail in order to secure public access and perform trail maintenance. Trailhead facilities were installed in 1999 and consist of rail fencing surrounding a paved parking lot with 43 marked parking spaces (including 3 handicapped accessible spaces) and bus parking, a concrete double vault-style toilet, trash can, signs, bulletin board, and concrete benches. In 2012, the BLM is updating the trailhead by installing a kiosk with improved interpretive information, landscaping with native plants, hardening the site, and adding benches to accommodate school groups (Figure 13). The BLM generally maintains the trailhead facilities twice a week from April through October, and once a week during the winter. During the busy spring months, portable toilets are placed at the trailhead in order to accommodate school groups.

Figure 13: Lower Table Rock trailhead.

The 1.4-mile trail to the top of the plateau receives yearly routine maintenance (e.g., trimming vegetation, cleaning water bars, removing hazard trees), as well as more extensive repairs that may be needed after heavy precipitation events. The trail averages 5 feet wide, with small culverts and constructed rolling waterdips to assist with removing water from the trail (Figure 14). Due to the heavy recreational use it receives and the slick nature of the area's clay soil when wet, the trail is surfaced with gravel. In 2007, the lower mile of trail was completely reconstructed and surfaced with gravel. In 2010, the remaining upper part of the trail was surfaced with gravel. Trail grade in some places exceeds 30%.

Seven interpretive signs were installed in 2003 along the first 0.25 mile of the main trail to the top. An additional interpretive panel is located where the trail accesses the top of Lower Table Rock.

In 2005, a handicapped accessible 0.5-mile loop trail—Oak Savannah Loop—was constructed using the same trailhead. Benches and 5 interpretive signs describing the natural resources found in the area are located along this loop trail.

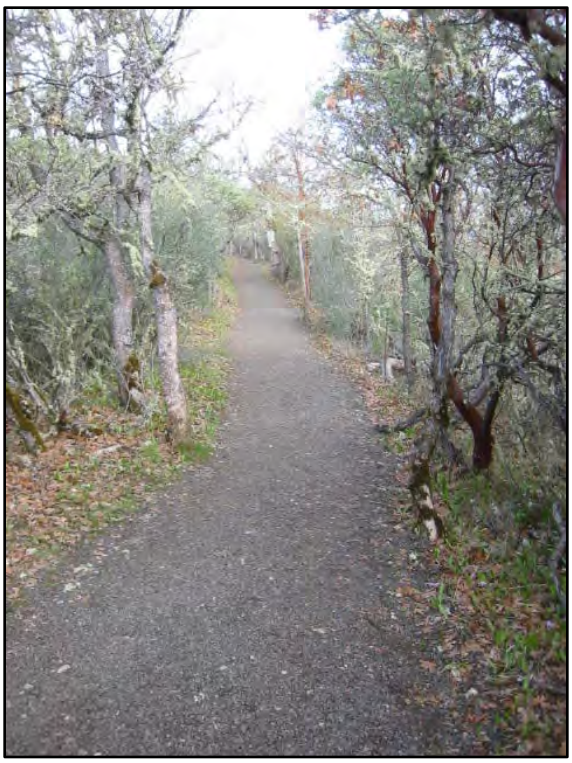

Figure 14: Maintained trail.

In addition to the abandoned airstrip, the top of the plateau contains old unmaintained roads and 2.5 miles of user-created foot trails, primarily leading to and following along the edge of the rim (Figure 15). These trails are usually 1 to 2 feet wide. Some portions of the trails skirt vernal pools, and when these pools dry out every summer, they are used as de facto hiking trails. At several areas where the trails reach scenic viewpoints, hikers have trampled vegetation and denuded small areas where they spend time enjoying the view of the valley below.

The man-made features on Lower Table Rock cover a total of 67 acres.

Figure 15: User-created trail.

Upper Table Rock

During World War II, training activities associated with Camp White left their mark in the Agate Desert flats northeast of Upper Table Rock. The Army used two training ranges and one of them, Beagle Range, is partially located in the Management Area (Map 10: 1943 Camp White Beagle Range). Beagle Range was used to practice infantry drills such as taking enemy strongholds. It included concrete pillboxes designed to simulate Nazi fortified coastal regions of Europe. Remnants of 14 of these pillboxes dot the landscape of the Conservancy's property along Antioch Road; another 11 pillboxes are located on private lands outside the project area. The pillboxes generally measure 19 by 26 feet, and show varying degrees of damage, mostly on the exterior walls (Figure 16). A Phase II Environmental Site Assessment of the former training grounds, conducted in 2010 as part of due diligence efforts relating to the Conservancy property transfer, revealed no evidence of unexploded ordnance in the Management Area. Soil samples taken near five of the most damaged pillboxes contained lead, but at concentrations that do not present an unacceptable risk and that are not leachable, according to standards set by Oregon Department of Environmental Quality (DEQ) and U.S. Environmental Protection Agency (EPA) (Hahn and Associates 2010).

Figure 16: Concrete pillbox used in Camp White training activities.

The FAA has an 80-acre navigation withdrawal for a 25-foot-tall VOR tower at the north end on top of Upper Table Rock. Although the withdrawal for this tower is 80 acres, the footprint of the building and fenced area is less than 0.25 acre. Vehicle access to the site is via a maintained 3.3-mile road from the west, for administrative use only for BLM, Conservancy, PacifiCorp, and FAA personnel. Before this road reaches the FAA tower, an unmaintained abandoned spur road heads downhill into the 'bowl' and is still visible, but is only lightly used by hikers. Another unmaintained spur leads to private property to the south. Past the FAA site, evidence of the road continues southeast and connects to the hiking trail where it tops out on the plateau. Although this portion of the road received occasional vehicle and off-highway vehicle (OHV) use by the previous landowner, it is barely recognizable as a road and is now used primarily by hikers who start at the designated trailhead below. The road becomes more evident where it ties into the hiking trail and continues to the southern tip of the plateau. Because of the heavy hiking use it receives, this section of the old road averages 6 feet wide.

To the northeast and downslope of the VOR tower, a 0.6-mile irrigation ditch was constructed in the late 1950s. Its purpose was to gather winter runoff and fill a reservoir located on private land below in the southwest corner of Section 26. This ditch is now mostly overgrown, although it appears to run water during high precipitation runoff. An active irrigation ditch 0.1 mile long cuts across the southwest corner of the Management Area on Conservancy lands.

The Rogue River Ranch land acquired by the Conservancy along Antioch Road, part of Camp White's Beagle Range, was extensively used for grazing livestock, as evidenced by the remaining fencing, water troughs, small well house, and small ditches and waterholes. Since the acquisition, the Conservancy has been removing the interior

fencing. The BLM-administered lands in sections 34 and 35 and the surrounding private land on top were historically grazed for up to 30 days in the spring by 65 cow/calf pairs owned by the Rogue River Ranch. No BLM-owned range improvements are listed in the allotment's files. However, a series of privately owned fences surround approximately three-quarters of the allotment. Most of these fences occur on property lines on the sides and slopes of the allotment. The condition of these fences has been declining since the cessation of grazing activities by the former lessee except where the Conservancy and other private land owners have done maintenance to control private livestock use, maintain property boundaries, or control other uses and trespasses (Map 14: Manmade Features on Upper Table Rock).

Three mining claims were filed on Upper Table Rock between 1955 and 1986, but those claims are now closed and no active mining claims currently exist. Some attempts at mining are evident along the base of the cliffs, primarily one adit, several enlarged natural fissures, and tailings, but there are no records indicating any success in these ventures. For safety reasons, the adit was remediated and blocked in 2011.

A 1.2-mile hiking trail, starting near the corner of Modoc and Antioch roads, leads to the top of Upper Table Rock on the east side of the rock. The maintained trail generally follows or switchbacks across an old jeep road that originally climbed up the east side of the rock, and was later used as the main trail to the top. The relocated and maintained foot trail is located on BLM-administered land until it reaches the top, where it enters the Conservancy's property. The lower mile of trail averages 5 feet wide, has approximately 50 rock water bars to help divert water off the trail, and has been surfaced with gravel in order to offset slick, muddy spring conditions. The remaining 0.25 mile to the top is narrower and steeper, mostly unsurfaced, with no water bars. The trail to the top of the plateau receives yearly routine maintenance (e.g., trimming vegetation, cleaning water bars, removing hazard trees), as well as more extensive repairs after heavy precipitation events. Trail grade in some places exceeds 30%.

Trailhead facilities have been improved over the years as visitation has increased and currently include a paved parking lot with 31 marked parking spaces (including 2 handicapped accessible spaces) and parking for 3 buses, a concrete double vault-style toilet, 2 trash cans, 2 environmental education gathering areas with wooden benches, a bulletin board, and rail fencing delineating the parking lot and the beginning of the trail area. In 2012, the BLM is updating the trailhead by installing a kiosk with improved interpretive information, landscaping with native plants, hardening the site, and adding benches.

In addition to the old road from the VOR tower, 2.5 miles of user-created foot trails are present on the top of the plateau, primarily leading to and following along the edge of the rim. These trails are usually 1 to 2 feet wide. Some portions of the trails skirt vernal pools, and when these pools dry out every summer, they are used as de facto hiking trails. At several areas where the trails reach scenic viewpoints, hikers have trampled vegetation and denuded small areas where hikers congregate to enjoy the view of the valley below. Another 0.4 mile of the original jeep road that climbed to the top is crossed by the maintained hiking trail. Despite repeated efforts to disguise the route or sign it to

discourage use, portions of this steep route continue to be used by hikers (Map 15: Roads and Trails on Upper Table Rock).

Across Modoc Road from the trailhead is a 0.6-acre partially graveled and agricultural area that is used informally as overflow parking for the trailhead parking lot. This area provides access to a private gated driveway, the gated TouVelle Road leading to Denman Wildlife Area, and a power substation. This area is located within the ACEC, but does not meet the relevance and importance criteria for ACECs.

The total acreage of man-made features on Upper Table Rock is 67 acres.

O. Recreational Use/Environmental Education/Safety

Recreational Use

BLM lands are designated as either a special recreation management area (SRMA) or an extensive recreation management area (ERMA). SRMA units are recognized for their unique value, importance, or distinctiveness, especially as compared to other areas used for recreation. They are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation activities and associated qualities and conditions of the ERMA. Management of ERMA areas is commensurate with the management of other resources and uses. The Table Rocks are located within the Butte Falls ERMA, which encompasses the entire Butte Falls Resource Area.

Recreational use of the Table Rocks has steadily increased over the years because of their visibility from, and proximity to, the growing Rogue River Valley and Medford urban area. From 1985 to 2010, the populations of Jackson County and Medford increased 47 percent and 44 percent, respectively. In comparison, visitor use for both rocks increased 317%, from 10,800 in 1984 to a 2010 estimate of 45,000 (Figure 17).

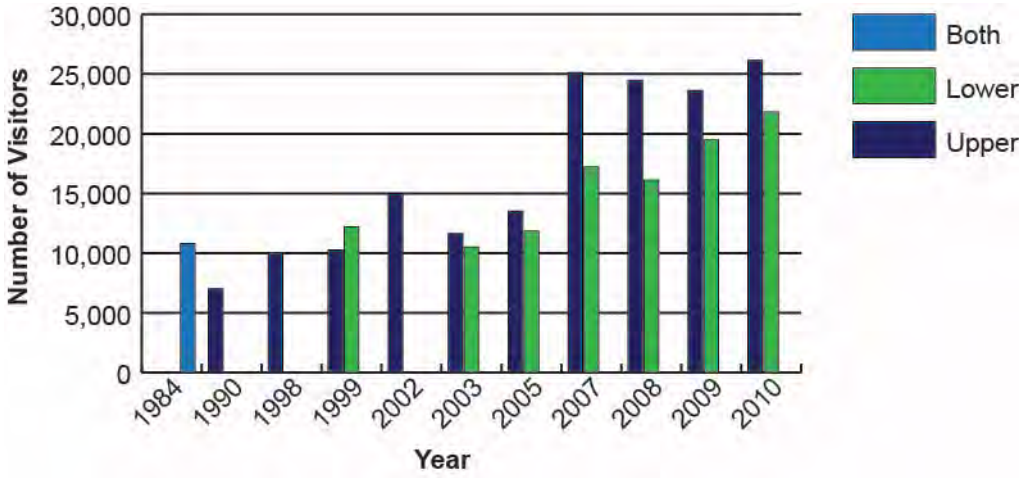

Figure 17: Table Rocks visitation from 1984 to 2010.

Historically, the bulk of visitation occurred on weekends during the spring months, when spectacular wildflower displays draw hikers to the top of the rocks, but use now

occurs year round every day of the week. Although it is possible to encounter no one else on the trails, particularly on a cold rainy day or in the heat of the summer, interactions with other visitors are now quite common. On a weekday during spring break in 2010, for example, the trailhead parking lot at Upper Table Rock was filled to capacity and vehicles overflowed across the road. Approximately 200 people were observed in a 2-hour period either entering or leaving the area. Similar use is common on spring weekends with good weather, when both parking lots fill and vehicles park along the shoulders of Wheeler and Modoc roads. Use at Upper Table Rock is somewhat higher than at Lower Table Rock, likely because the Upper Table Rock trail is slightly shorter and not as steep, and is the first trailhead reached from Medford. There is no charge for the use of the trails and trailhead facilities at Upper or Lower Table Rock.

Authorized commercial use at Table Rocks is currently nonexistent. Generally, when any person, group, or organization makes or attempts to make a profit as compensation for recreational activities on public lands, the use is considered commercial and the BLM requires a Special Recreation Permit (SRP). The BLM considers requests for organized group events or commercial, competitive, or vending services on a case-by-case basis. Only one SRP for commercial use has been issued in the past but the BLM suspects unauthorized use occurs. Tour buses have been observed in the parking lots during the summer months. No organized group activities or events have been authorized, although these are also suspected to occur. Because of the intermingled ownership, similar commercial and organized group activities are assumed to be taking place on Conservancy lands, which would only be allowed upon approval of a human use compatibility assessment by the Conservancy.

Hiking the trails to the top is the primary reason for visiting Table Rocks, but other activities include trail running/physical fitness, wildflower observation/study, sightseeing, photography, bird watching, and geocaching. The average length of stay for visitors varies by activity; someone running the trail to the top and back may spend less than an hour, while those interested in wildflower viewing or photography may spend over 4 hours on Table Rocks. No camping is allowed in the area, but some evening and night hiking takes place, particularly during full moons. Motorized use is prohibited on both BLM and Conservancy lands; BLM-administered lands have been closed to off-highway vehicles since 1985.

Management of the area has generally followed the Conservancy's guidelines that discourage camping, hunting, dogs, horses, and mountain bikes (Figure 18). Conditions of the Neary and OWEB easements further restrict public access and uses of the lands covered by those easements. Both trailheads have signage prohibiting dogs, horses, bikes, and hunting in keeping with the Conservancy's guidelines; however, BLM lands are open to hunting activities, which are regulated by ODFW. Because the Conservancy lands acquired along Antioch Road were in private ownership, these lands have only recently been open to use by the general public, and have received little to no recreational use. These lands have been posted by the Conservancy.

Figure 18: Conservancy sign.

Increasing recreational use on the existing trails to the top of both plateaus over the years has impacted the Management Area in several ways. Dogs are increasingly reported and observed on the trails, many times off-leash and splashing in the sensitive vernal pools on top. Bicycles are also occasionally seen on the trails, which are too steep and not suitably engineered for biking use. Geocaching activity has resulted in the formation of new user-created side trails to some of the cache sites. Geocachers overturn rocks on top of the plateaus while looking for the geocaches, or create piles of rocks to hide the caches; there are currently 27 geocache sites within the Management Area. Some hikers who reach the top also dislodge rocks and stack them to create cairns, which over time can grow into piles of rocks several feet across and high as more people add to them (Figure 19). Dislodging rocks on top of the plateaus disrupts sensitive biological soil crusts and unusual vascular plant communities. It exposes bare soil, which encourages off-trail hiking by making it easier to walk across the areas cleared of rock. Studies by the Institute for Applied Ecology and Southern Oregon University Research Center both noted that over half of visitors who reach the top of the Table Rocks hike off the existing trails (ESA Biological Resources 2006; Skuratowicz 2011).

Figure 19: Rock cairn created by Table Rocks visitors.

User-created trails—routes that develop through repeated foot traffic—have developed over the years on top of both rocks. The expansion of trails is most evident on Upper Table Rock. The aerial photos in Figure 20 show the growth of hiking trails on Upper Table Rock between 1980 and 2009. Some trail sections pass through or are adjacent to sensitive vernal pool habitat. When the vernal pools are full, visitors walk to the side of the pools to avoid the water, which tramples the vegetation and widens the trail further. This is also true of the old roadbed from the VOR tower that is immediately adjacent to the largest vernal pool. At several areas where the trails reach scenic viewpoints, hikers have trampled vegetation and denuded small areas where hikers congregate and spend time enjoying the view of the valley below. All of these impacts detract from the perceived naturalness of the Management Area, as well as potentially affect several sensitive or threatened plant and wildlife species.

Figure 20: Comparison of hiking trail impacts on Upper Table Rock from 1980 to 2011.

Other impacts associated with recreational use on the lower slopes include switchback cutting along the trails to the top, user-created trails through sensitive areas, occasional vandalism, spread of noxious weeds such as medusahead and yellow starthistle, and

litter. Neighbors adjacent to BLM parcels have complained about hunters trespassing across their lands in order to hunt on BLM land. Cars parked at the trailheads are occasionally broken into. On busy days, the parking lots of both trailheads are completely full. At Lower Table Rock, excess vehicles park along both sides of Wheeler Road, which does not have shoulders wide enough to safely accommodate vehicles. At Upper Table Rock, excess vehicles and large tour buses that are unable to negotiate the parking lot park across the road from the trailhead in a partially graveled area that accesses a gated private drive, a power substation, and a gated access road to ODFW's Denman Wildlife Area. A parking fee was initiated in 2012 by ODFW for parking at all of their trailheads.

Environmental Education

After the ACEC was established in 1986, the Conservancy started an environmental education program, leading school-age children and the general public on springtime hikes (Figure 21). In 1992, the BLM assumed responsibility for the day-to-day operations of the environmental education program, which now includes prehike classroom presentations. In 2010, the BLM began publishing an on-line Table Rocks curriculum that is based on State of Oregon school standards. Teachers and students can easily access the interactive Web site to learn about topics such as botany, geology, and ecology.

Figure 21: BLM environmental education hike.

Students participating in the guided interpretive walks explore natural history, wildlife, geology, fire ecology, botany, noxious weeds, and the historical and cultural significance of the Table Rocks to Native American tribes. The program has grown from 170 students in 1986 to almost 3,500 students in 2010, with a high of 4,541 students in 2007. School hikes occur four days a week from the first week of April through the first week of June,

with one or two school groups on each Table Rock from mid-morning through early afternoon. Generally, there are 10 to 12 guided school hikes per week, each led by a BLM hike leader with up to 40 children plus adults. The program also offers a Spanish/English bilingual guide for groups upon request. The majority of the participants in the environmental education program are fourth to sixth graders, but the program accommodates any interested group of 10 or more. In recent years, there has been an increase in preschool groups using the 0.5-mile Oak Savanna Trail at Lower Table Rock for a shorter visit. The program is currently at maximum capacity because the out-and-back nature of the trails limits the number of people and groups that can safely negotiate the trail at the same time. School participation has dropped slightly in recent years due to school budget constraints, reduced number of school days, decreased number of field trips allowed per year, and school bus transportation costs.

Approximately 15 weekend guided hikes are offered every spring for the general public, with 250 to 300 total participants each year. The Conservancy and the BLM work in partnership to plan and schedule the Weekend Hike Series. Hikes are led by the BLM and Conservancy employees, as well as specialists from universities, other agencies, and local interest groups. These hikes are advertised in local newspapers and on the BLM and Conservancy Web sites. They are usually limited to 15 to 30 people and fill quickly. Each hike focuses on a particular topic or issue such as geology, nature sketching, wildflowers, and wildlife. The number of weekend hikes offered is directly dependent on finding knowledgeable specialists to lead the hikes.

In spring 2011, the BLM contracted with Southern Oregon University Research Center (SOURC) to conduct visitor use surveys on the Upper and Lower Table Rocks trails (Skuratowicz 2011). Interviews were collected from 330 trail users over a period of three months, primarily on weekends and holidays. One of the most surprising trends discovered during the survey is that 37% of the respondents do not hike anywhere else in the Rogue Valley. Additionally, this group is divided into infrequent users who visit once a year or less for their singular hiking experience in the area, and the very frequent users who run or hike the Table Rocks once a week or more for exercise. For both of these groups, the Table Rocks figures significantly in their recreational experience in the Rogue Valley, yet they differ in utilization patterns and attitudes regarding the Table Rocks. Infrequent users (once a year or less) were also the largest group represented in this study, accounting for over half of the survey respondents (first time visitors alone accounted for 25% of the total respondents). Infrequent users visit the Table Rocks once a year or less, typically treat their hike as an event, are more likely to stay for two to three hours, and viewed their Table Rocks hike as a way to enjoy nature. The very frequent users—those on the Table Rocks once a week or more—made up only 6% of the respondents. They are dedicated hikers and runners who use the trails as a workout, and characterized their visit as primarily motivated by health and fitness. They spend the least amount of time on the Table Rocks per visit. Perceptions of crowdedness among trail users were mixed. Among the infrequent users, 63% thought the trails were either somewhat or very crowded. Among users who visit the trails weekly or more, this number declined to about 36%. However, 89% of users don't schedule their visit based on how crowded they think it might be, and 70% say that the activities or behaviors of others have no impact on their experience. The complete SOURC survey report can be

found on the SOURC Web site at
http://www.sou.edu/research/Sourceprojectreports.html, or from the BLM Web site at http://www.blm.gov/or/districts/medford/plans/table/index.php.

Safety

Accidents and fatalities on both rocks occasionally occur when people venture too close to the rim and fall, or attempt to climb on the upper cliff faces, which tend to crumble and break off under a person's weight. Jackson County Search and Rescue and Jackson County Fire District #3 average at least one emergency response to the Table Rocks each year. Both agencies are authorized to use OHVs on the trails in order to quickly access accident scenes. Due to the steepness of the trails, OHVs are normally used to reach and stabilize the victim as soon as possible, with retrieval performed by helicopter for serious injuries or fatalities. OHVs cannot access the top of Upper Table Rock by trail in emergencies because of the narrowness of the upper 0.25 mile of trail. Although the maintained road to the VOR tower is available for emergency access, particularly for incidents that occur on the north or west sides of Upper Table Rock, the abandoned road bed between the VOR tower and the top of the trail is too rough for emergency vehicles to traverse. Most of the recreational use and subsequent accidents to date occur along the south and east faces of the rims of both Rocks, which are closer to where the trails are located.

P. Surrounding Land Use

The land surrounding Table Rocks is mostly privately owned. It is a mixture of small acreages with homes, commercial orchards, and land used for livestock production. Jackson County zoning of the area is primarily exclusive farm use, open space reserve, aggregate resource, and rural residential 5-acre. The south side of Lower Table Rock is immediately adjacent to undeveloped lands administered by ODFW, State of Oregon, and Jackson County. The "bowl" area of Lower Table Rock is privately owned, with a 795-acre conservation easement granted from the landowner to the Conservancy. TouVelle State Recreation Site, a day-use fee site located on both sides of the Rogue River, is approximately 1 mile south of Upper Table Rock, and provides a boat ramp, rest rooms, reservable picnic areas, and walking trails. A parking fee is charged to enter the park ($5 daily, $30 for 12 months, or $50 for 24 months). Its trails connect immediately upstream to the 1,858-acre Kenneth Denman Wildlife Area, administered by ODFW, which has 22 miles of trails open to hikers, horses, and mountain bikes; a dog training area; and opportunities for hunting, fishing, and trapping along the Rogue River and Little Butte Creek. In 2012, ODFW implemented a parking fee ($7 daily or $22 annually) at all Denman trailheads, one of which is located across the road from the Upper Table Rock trailhead. World War II ammunition storage buildings, evidence of Camp White activities, can also be found in the wildlife area.

III. MANAGEMENT RECOMMENDATIONS

A. Introduction

This section describes the management recommendations for the BLM ACEC and Conservancy lands within the Table Rocks Management Area for the next ten years. These recommendations were primarily developed using the Conservancy's Conservation Action Plan process and public comments.

The CAP identified 8 conservation targets, identified and assessed the critical threats to those targets, and developed strategies to reduce threats to each target (Appendix A). This process led to the finding that the highest ranking threat to the health of the vernal pool-mounded prairie, Oregon oak savannah, and open grassland plant communities, as well as to traditional uses by federally recognized tribes, is the encroachment of non-native species. The exclusion of fire poses a medium threat to traditional uses by federally recognized tribes, and to all plant communities except for the vernal pool-mounded prairie community. Recreation activities pose a medium threat to the vernal pool-mounded prairie community. Medium threats to compatible recreational activities and environmental education are the degradation of facilities, density of recreational users, limited staff capacity, and non-compliant uses. The remaining threats were found to be low. The management recommendations in this section propose actions to take that would reduce the threat level to the 8 conservation targets, and improve the health of the biological and social values of the Table Rocks.

These recommendations are not designed to be fully developed project proposals, but are intended to guide future management of the BLM's ACEC and the Conservancy's lands. Implementation of recommended actions is dependent on funding, and may require additional environmental analysis or administrative processes such as publication in the Federal Register or amendment of the BLM's Medford District RMP. Some proposed actions on Conservancy-administered lands may require prior approval by the Conservancy before implementing. Activities or projects proposed in future planning efforts by the BLM or the Conservancy that are not covered in these recommendations, but which are developed through additional partner and public input, would supplement and amend this plan. This includes both site-specific projects and larger planning efforts such as a resource management plan.

A larger Project Area, which encompasses the Management Area and adjacent surrounding private lands, depicts a larger geographic area of interest with potentially similar characteristics. Private land within the Project Area is not included in the Management Area analysis and recommendations, but represents an area of interest for future management opportunities. Any future land additions from within the Project Area to the Management Area would follow the recommendations in this management plan.

Map 16 shows locations of proposed boundary changes, fuel treatments, and recreation projects. Boundary changes would become effective with this planning document. Vegetation treatments and recreation projects would be completed in phases, depending

on funding and additional NEPA analysis. Project locations are approximate and may change to reflect resource concerns. Project Design Features would be developed for each project. It is anticipated that similar projects would be performed in the future in other portions of the Management Area. Some projects may require formal or informal Section 7 consultation with the U.S. Fish and Wildlife Service.

B. Boundary

Objective: Adjust the boundaries of the Management Area, ACEC and ONA to facilitate better administration of the area.

1. Add a 37-acre acquired parcel (Lower Table Rock trailhead) to the ACEC
2. Remove a 0.6-acre area across from Upper Table Rock trailhead from the ACEC, ONA and the Management Area
3. Remove a 2.4-acre area on the north side of Highway 234 from the Management Area
4. Within the larger Project Area, include any future adjacent land acquisitions in the Management Area, and manage as per this plan. Acquisitions could include lands added to the BLM, the Conservancy, or future partners of the Management Area. Lands acquired by the BLM that meet ACEC and ONA criteria would be designated and managed as such.
5. Amend the next BLM Medford District RMP to reflect changes to the ACEC and ONA boundary
6. Sign Management Area with readily identifiable boundary markers.

C. Visual Resources

Objective: Protect the scenic values of the Table Rocks

1. Manage area to retain the existing character of the landscape (VRM Class III).
2. Keep signage and manmade features on top of the Rocks to the minimum necessary to educate and gain compliance.
3. Inventory and remove or rehabilitate unnecessary man-made features (e.g., interior fencing, well house, pipelines, troughs, user-created trails, rock cairns).

D. Minerals and Mining

Objective: Protect the designated values of the Table Rocks from damage incurred by mining or resource extraction activities

1. Pursue withdrawal from mineral entry for all minerals under the mining laws (locatable and leasable) for all BLM-administered land
2. Pursue classification of Table Rocks in the land use plan as *unsuitable for mineral materials disposal*
3. Close to recreational rock collecting in accordance with 43 CFR 8365.1-5(b).

E. Hydrology and Soil

Objective 1: Maintain and improve water quality in local streams

1. Reduce or prevent erosion from existing and new projects and activities by implementing riparian Project Design Features (PDFs)
2. Survey vernal pools, streams, and springs for baseline information, and to determine duration and riparian functioning condition
3. Minimize surface erosion from trails by designing new trails with proper drainage, and upgrading old trails to improve drainage and maintain water quality
4. Decommission or restore trails and roads that are unauthorized or no longer needed for access

Objective 2: Protect, enhance, and restore natural riparian and wetland ecosystems

1. Educate the public to stay on trails to prevent compaction in riparian areas and vernal pools.

F. Botanical Resources

Objective 1: Preserve and enhance the integrity of native plant communities and ecosystems represented in the Table Rocks.

1. Maintain or restore natural ecosystem processes and functions in plant communities (fire, succession, hydrology, structure, species diversity) by planning and implementing vegetation treatments, including prescribed burning.
    a. Conduct prescribed burns in 10 percent of the following plant communities within 10 years; increase fire frequency over time to burn approximately 3% each year to achieve a 25-30 year fire return interval:
        - Oak savanna and grassland communities
        - Mixed oak-madrone-conifer woodland
        - Chaparral
    b. Apply fire surrogate treatments including manual and mechanical thinning, to supplement prescribed burning in the following plant communities:
        - Oak savanna: thin overdense stands to 30 percent or less canopy cover
        - Mixed oak-madrone-conifer woodland: thin to achieve Fire Regime Condition Class 1 structure (1% mid-seral closed, 20% mid-seral open, 64% seral open, 5% late seral closed)
        - Chaparral: create a mosaic of age classes, with emphasis on young age classes, over 10% of the system in 10 years
2. Maintain or restore the full range of native species representative of each plant community by controlling noxious weeds, sowing or outplanting native

vegetation, monitoring visitor use and impacts, and planning implementing vegetation treatments noted for Objective 1.

a. Vernal Pools and Mounded Prairie
   - Attain 25 percent native bunchgrass cover for 50 acres of mounded prairie on each of Lower and Upper Table Rocks in 10 years.
   - Attain greater than 50% native relative cover on 50 acres of mounded prairie on each of Lower and Upper Table Rocks in 10 years.
   - Maintain 70% relative native cover for vernal pools.

b. Oak Savanna and Grassland Communities
   - Attain 25 percent native bunchgrass cover for 100 acres of oak savanna and grassland communities in 10 years.
   - Attain >50% native relative cover on 100 acres of savanna/upland prairie in 10 years.

c. Mixed Oak-Madrone-Conifer Woodland
   - Maintain 70-90% native relative cover in understory

d. Chaparral
   - Maintain >50% native relative cover in understory

3. Develop environmental education methods to increase awareness of the value of native plant communities and what practices/behaviors will perpetuate them—develop stewardship attitudes and behavior.

Objective 2: Ensure the persistence of Special Status plant populations occurring on the Table Rocks and prevent them from being federally listed.

1. Determine threats to Special Status plant species or specific populations, develop protection measures, and perform periodic monitoring.
2. Preserve genetic diversity of Special Status plant species of the Table Rocks. Ensure scattered Special Status plant populations are secure across the Management Area.
3. Maintain or enhance habitats containing Special Status plants. Ensure habitat structure or ecosystem processes are functioning properly to continue to support Special Status plant species.
4. Develop environmental education methods to increase awareness about the value of Special Status plants and how the public can protect them—develop stewardship attitudes and behavior

Objective 3: Reduce the extent of noxious weeds and nonnative plants on the Table Rocks.

1. Use Integrated Weed Management principles and methods to treat noxious

weeds and nonnative plants on the Table Rocks.

- Coordinate with USFWS on a strategy to treat noxious weeds by spraying on the tops of the Table Rocks

2. Develop environmental education methods to increase the public's awareness of the threats of noxious weeds and how to prevent their introduction or spread at the Table Rocks—develop stewardship attitudes and behavior.

G. Wildlife

Objective 1: Protect or enhance diverse wildlife communities and their habitat

1. Conduct wildlife surveys to determine site-specific impacts and possible mitigation measures before implementing habitat-disturbing projects.
2. Conduct inventories to identify wildlife species in areas that have not been previously surveyed.
3. Design projects to restore natural ecosystem processes where feasible.
4. Map each habitat type for survey and analysis efforts.
5. Monitor peregrine nest sites and develop protection measures if needed.

Objective 2: Maintain or enhance the integrity of wildlife habitat for Special Status Species to ensure they do not become federally listed.

1. Design projects to enhance habitat for Special Status Species.
2. Install bat-friendly gates on mine and cave entrances where necessary
3. Restrict public access in the vicinity of occupied caves during maternity and hibernating periods for bats

Objective 3: Preserve or enhance the vernal pool habitat for the recovery of the federally listed fairy shrimp.

1. Monitor vernal pools and associated flora and fauna species in coordination with the Conservancy and US Fish and Wildlife Service.
2. Restrict foot traffic to existing or "hard surfaced" trails to reduce impacts to vernal pool systems and fairy shrimp.
3. Decrease the amount of bare soil created by human disturbance to improve habitat quality for fairy shrimp.

Objective 4: Increase public awareness on potential impacts to sensitive wildlife habitat associated with recreational use in the Table Rocks ACEC.

1. Design education materials to promote responsible recreation in sensitive areas.

H. Fire and Fuels

Objective 1: Protect, enhance, and restore natural resources using prescribed fire as a tool to achieve specific objectives. Map 16 shows locations of potential treatment areas that would focus on WUI and habitat restoration. These treatments would be completed in phases dependent on funding and timing of burning conditions. Similar treatments in other portions of the Management Area would also be performed in the future.

1. Implement prescribed fire to achieve objectives identified by other disciplines such as Botany or Wildlife, i.e., to eradicate noxious weeds or improve native bunchgrass dominance.
2. Reduce fuel hazard through mechanical means in areas where resources and private improvements are at risk.
3. Burn 10% of oak savanna and grassland, mixed oak-madrone-conifer woodland, and chaparral every 10 years.
4. Restore mixed oak-madrone-conifer woodland to near historic Fire Regime Condition Class I using prescribed fire and vegetation treatments as tools.

Objective 2: Coordinate with the Oregon Department of Forestry and Jackson County Fire District 3 to minimize the environmental effects of wildland fire and associated fire suppression activities.

1. Use burnout, natural firebreaks, water or retardant drops, existing roads, and handline construction as preferred suppression tactics.
2. Use tractors and dozers only when private lands are threatened, and only with concurrence of BLM fire resource advisor
3. Limit dozer or tractor fireline construction to surface blading only—no road construction
4. Avoid dropping fire retardant or foam on vernal pools.

I. Cultural Resources and Uses

Objective 1: Protect and maintain the integrity of the relic features of Camp White and provide for their use as an interpretive resource.

1. Develop a hiking trail with interpretive signs to tell the Camp White story

Objective 2: Protect areas and resources of interest to local, federally recognized tribal communities.

1. Map locations of ethnobotanically important species
2. Improve habitat of important species through prescribed burning and invasive weed control
3. Allow for sustainable limited traditional uses of special forest products for medicinal, religious, or ceremonial use by local federally recognized tribes.
4. Provide interpretive opportunities for local federally recognized tribes to tell their

story

5. Allow for traditional ceremonial uses by local, federally recognized tribes (via permit)

Objective 3: Locate, protect, and preserve the integrity of significant cultural resources.

1. Conduct cultural resource inventories to identify cultural sites in areas not previously surveyed.
2. Evaluate recorded sites for inclusion on the National Register of Historic Places.

J. Rights-of-way, Easements, and Leases

Objective 1: Provide needed rights-of-way and withdrawals while protecting resource values.

1. Continue existing rights-of-way and withdrawals
2. Avoid locating new rights-of-way and withdrawals except when no feasible alternatives are available; use existing corridors/footprints where feasible
3. Limit withdrawals to minimum area needed
4. Terminate rights-of-way and withdrawals no longer needed

Objective 2: Pursue easements and land acquisitions from willing landowners to benefit management of area

1. Obtain easements as needed for public and administrative uses
2. Pursue acquisition of adjacent lands through exchange or transfer

Objective 3: Place grazing allotment in inactive status at the time of the next RMP amendment or revision.

K. Recreational Use, Environmental Education, and Safety

Objective 1: Provide for recreational opportunities that are compatible with the area's designated values and conservation easement terms.

1. Achieve compliance and eliminate activities that are not compatible
    a. Establish and enforce supplemental rules to be published in the Federal Register, in accordance with 43 CFR 8365.1-6.
        - Prohibit the following activities: overnight camping; mountain biking; OHVs; horses/packstock; rock hounding; hang gliding; discharge of firearms, gas or air powered weapons, or simulated weapons (including paintball guns); guided hunting, trapping, the use of metal detectors; and landing of aircraft

- Allow geocaching and archery hunting only in signed, designated areas Allow leashed dogs, on a trial basis, only on signed, newly constructed trails on the lower slopes. Dogs would continue to be prohibited on the existing trails leading to the tops of both Lower and Upper Table Rocks

b. Install interpretive and regulatory signage at trailheads, along trails, and at property boundaries to educate and inform the public of regulations and allowable uses, interpretive messages, and conservation easement guidelines.

c. Provide more BLM presence on trails to educate users and discourage noncompatible uses

2. Design and provide facilities and trails that protect sensitive resources

a. Close or relocate trails to avoid sensitive areas and resources

- Closed trails would be obliterated and disguised to discourage use
- Fencing and signing may be necessary in some places to gain compliance

b. In the vernal pool areas restrict hiking to the existing trails

- Signing, fencing, and/or trail hardening may be necessary to gain compliance. Signs would be small and fencing would be low to the ground. Trail hardening would be done using stepping stones or boardwalks. Type and placement of protective measures would be dependent on coordination with USFWS.
- Educate visitors to hike single file on trails near vernal pools

c. Reroute segments of the existing trails to reduce grade, and design new trails to keep average grades less than 10%

d. Perform routine facility and trail maintenance. Facility maintenance includes repairing and replacing fencing, signs, toilets, benches, and parking areas. Trail maintenance includes brushing, waterbar and water dip cleaning, removing fallen trees, repairing and replacing culverts, cleaning ditches, and resurfacing.

3. Develop additional trail and educational opportunities on lower slopes

a. Provide trail area for leashed dogs, on trial basis

b. Invite tribal input for interpretation of cultural/Native American history and resources

c. Provide interpretation of Camp White and its footprint on the Table Rocks

4. Ensure level of use is compatible with ecological systems and recreational expectations of visitors

a. Monitor impacts of visitor use on conservation targets

b. Implement site/parking fee in future, dependent on OR/WA Recreation Resource Advisory Council approval

c. Implement seasonal area/trail closures when necessary to protect resources

   d. Consider Special Recreation Permits on a case-by-case basis for any commercial, competitive, or vending services, and for any organized events

Objective 2: Provide a quality interpretive and environmental education program that interprets the natural and cultural resources of the area and promotes responsible use.

1. Develop an interpretive plan that establishes the major stories to be communicated in order to increase understanding, appreciation, and protection of the resources and values of the Table Rocks.
2. Maintain current level of high quality school program
3. Keep school curriculum up-to-date with changing state standards
4. Reduce student/leader ratio
5. Continue BLM/Conservancy partnership to provide public weekend hike series
6. Incorporate new/additional mediums of environmental education as needed
   a. Increase bilingual capacity
   b. Develop new mediums such as an audio tour or computer or social network applications
   c. Provide Camp White and Native American interpretive opportunities
   d. Involve local schools in long-term restoration projects

Objective 3: Provide for visitor safety

1. Educate visitors on natural hazards
   a. Provide written or visual information at trailheads
   b. Inform work party and guided hike participants of possible hazards
2. Provide adequate access for search and rescue, fire, and emergency services
   a. Ensure County and State agencies have key or combinations to trailhead padlocks
   b. Ensure trails are off-highway vehicle accessible for emergency purposes
3. Identify and correct hazards
   a. Coordinate with Jackson County Road Department and ODFW to address trailhead overflow parking
   b. Gate or block hazardous mine adits and shafts

IV. MONITORING AND EVALUATION

Essential to implementing management recommendations is an adequate system of long-term monitoring tailored to the specific character of the area to determine if management objectives are being accomplished. A relatively simple, systematic form of baseline sampling should be developed and implemented to document trends and conditions of relevant area characteristics.

Monitoring and evaluation are needed to determine change within the Table Rocks Management Area. Special areas like Table Rocks face many threats due to its proximity to the growing urban area of Medford, Oregon. Evaluation is not simply a way of looking for problems, it is also important in determining when things are going well. Evaluation results should (1) promote adaptive management by identifying when plan changes are needed to meet the goals and objectives of the area, (2) improve project planning, (3) promote accountability, and (4) identify research needs and lead to research opportunities. Information can be used by managers and staff to track changes and effectively manage the area.

Monitoring should be implemented and assessed at four levels—Defensibility, Ecological, Compliance, and Management Treatment.

Defensibility Monitoring—Monitor the Table Rocks and surrounding area for potentially degrading uses.		
Monitoring Element	**Frequency**	**Objective**
Trail Condition	Multiple visits/year	Ensure no new user-created trails develop. Remedy problems on existing trails.
Roads, Gates, Easements	Multiple visits/year	Secure existing gates and locks (authorized access to BLM, TNC, FAA, PacifiCorp, Jackson County SAR, and Fire Department #3). Ensure easement conditions are being met.
Cultural Resources	Yearly	Detect vandalism or disturbance to known archeological, cultural, or historical sites.
Fences	Yearly	Ensure boundary fencing is in place and in good condition.
Signs (boundary, regulatory, interpretive)	Multiple visits/year	Ensure signs are in place; in good condition; and appropriate, accurate, and up-to-date.
Recreation Activities	Multiple visits/year	Detect unauthorized uses. Continue gathering visitation data from trail and parking lot counters.

Defensibility Monitoring—Monitor the Table Rocks and surrounding area for potentially degrading uses.		
Monitoring Element	**Frequency**	**Objective**
Biological Values	Multiple visits/year	Detect disturbance or impacts to vernal pools or Special Status species sites.

Ecological Monitoring—Monitor the natural values of the Table Rocks.		
Monitoring Element	**Frequency**	**Objective**
Special Status Plants	As needed As needed	Track the occurrence and condition of Special Status plants to maintain or enhance populations and associated habitats. Add new Special Status plant species identified in future inventories.
Plant Communities	Every 5 years or as needed	Track changes in key plant associations or communities to determine if native species are adequately protected, if ecological processes are properly functioning, and if management actions are achieving desired outcomes: • Extent of inundated vernal pools, wet margins, and vernally wet flats. • Amount of cryptogamic crust. • Native bunchgrass dominance. • Age structure classes
Invasive Species	Annually Every 5 years or as funding allows	Monitor for new invasive or noxious weed infestations at public access points. Track native to nonnative species ratio.
Hydrology	Every 10 years	Evaluate hydrological conditions and riparian vegetation on all streams and vernal pools to determine the functional condition baseline, and need for habitat improvement or restoration activities.
Threatened Wildlife Species	Every 5 years	Track the occurrence and pool occupancy rate of vernal pool fairy shrimp in coordination with Conservancy and USFWS.
Bureau Sensitive Wildlife	Every 5 years	Monitor peregrine aerie for occupancy and human disturbance. Monitor caves and mines for bat

Ecological Monitoring—Monitor the natural values of the Table Rocks.		
Monitoring Element	**Frequency**	**Objective**
		occupancy and human disturbance.

Compliance Monitoring—Coordinate or communicate with key individuals, agencies, and groups to share information on the importance of the natural values of the Table Rocks.		
Monitoring Element	**Frequency**	**Objective**
Fire Plans	Yearly	Review fire plans with ODF and Jackson County Fire District #3.
Easement Holders and Surrounding Landowners	As needed	Ensure that surrounding landowners are informed of the values and restrictions within the TRMA.
Conservancy and Federally Recognized Tribes	Quarterly	Coordinate management efforts and resources.
Special Interest Groups (i.e., area educators, geocachers, hang glider pilots)	As needed	Notify groups and individuals about the TRMA values.

Management Treatment Monitoring—Projects that focus on vegetation manipulation should be monitored to determine if desired effects are achieved, including but not limited to

- Invasive plant and noxious weed control projects
- Prescribed burning
- Plant community or Special Status plant restoration/enhancement projects
- Wildlife habitat components enhancement projects
- Trail and road decommissioning

Where appropriate, develop restoration goals and quantifiable monitoring objectives.

Appendix A:
Conservation Action Planning Process

Conservation Action Planning

Conservation Action Planning (CAP) is a powerful process to guide conservation teams to develop focused strategies and measures of success. CAP is The Nature Conservancy's version of the "Open Standards for Conservation". It has been utilized with hundreds of diverse projects at multiple scales from different parts of the world and is supported by a network of trained professionals that make up the Conservation Coaches Network.

The CAP process guides project teams to identify effective conservation strategies. It provides an objective, consistent and transparent accounting of conservation actions and the intended and actual outcomes of conservation projects. It enables project staff to responsively adapt their actions to improve strategy effectiveness and achieve greater conservation impact.

A brief summary of the CAP Process is provided below. For a full set of CAP and Open Standards information, visit http://conserveonline.org/workspaces/cbdgateway/cap/index_html.

THE 10 STEPS OF THE CAP PROCESS

1. Identify People Involved In Your Project

This step asks you to identify your most valuable resource – the people who will be involved in designing and implementing your project. Addresses questions like: ♦ *"Who will design our project?* ♦ *"Who will be responsible for ensuring the plan goes forward?, " "Who can give us advice?,* ♦ *"Who will help us through this process?"*

2. Define Project Scope & Focal Conservation Targets

With this step you define the extent of your project and select the specific species and natural systems that your project will focus on as being representative of the overall biodiversity of the project area. This step helps your project team come to consensus on the overall goal and scale of the project and your ultimate measures of success. Addresses questions like: ♦*"Where is our project?"* ♦ *"What are we trying to conserve or restore?"*

3. Assess Viability of Focal Conservation Targets

This step asks you to look at each of your focal targets carefully to determine how to measure its "health" over time. And then to identify how the target is doing today and what a "healthy state" might look like. This step is the key to knowing which of your targets are most in need of immediate attention, and to measuring success over time. Addresses questions like: ♦ *'How do we define 'health' (viability) for each of our targets?"* ♦ *"What is the current status of each of our targets?"* ♦ *"What is our desired status for each of our targets?"*

4. Identify Critical Threats

This step helps you to identify the various factors that immediately affect your project's focal targets and then rank them so that you can concentrate your conservation actions where they are most needed. Addresses questions like: ♦ *"What threats are affecting our targets?"* ♦ *"Which threats are more of a problem?"*

5. Conduct Situation Analysis

This step asks you to describe your current understanding of your project situation – both the biological issues and the human context in which your project occurs. This step is not meant to be an unbounded analysis, but instead probes more deeply into the conditions surrounding your critical threats and degraded targets to bring explicit attention/consideration to causal factors, key actors, and opportunities for successful action. Addresses questions like: ♦ *"What factors positively & negatively affect our targets?"* ♦ *"Who are the key stakeholders linked to each of these factors?"*

6. Develop Strategies: Objectives and Actions

This step asks you to specifically and measurably describe what success looks like and to develop practical and *strategic* actions you and your partners will undertake to achieve it. In particular, you want to try to find the actions that will enable you to get the most impact for the resources you have. Addresses questions like: ♦ *"What do we need to accomplish?"* ♦ *"What is the most effective way to achieve these results?"*

7. Establish Measures

This step involves deciding how your project team will measure your results. This step is needed to help your team see whether its strategies are working as planned and thus whether adjustments will be needed. It is also needed to keep an eye on those targets and threats that you are not acting on at the moment, but may need to consider in the future. Addresses questions like: ♦ *"What do we need to measure to see if we are making progress towards our objectives and whether our actions are making a difference?"* ♦ *"Are there other targets or threats that we need to pay attention to?"*

8. Develop Work Plans

This step asks you to take your strategic actions and measures and develop specific plans for doing this work as your project goes forward. Addresses questions like: ♦ *"What do we specifically need to do?"* ♦ *"Who will be responsible for each task?"* ♦ *"What resources do we need?"*

9. Implement

Action and monitoring plans won't do any good sitting on the shelf – your challenge here is to trust the hard work you have done and implement your plans to the best of your ability. Implementation is the most important step in this entire process; however, given the diversity of project needs and situations, the only requirement is: ♦ *Put your plans into action*

10. Analyze, Learn, Adapt, & Share

This step first asks you to systematically take the time to evaluate the actions you have implemented, to update and refine your knowledge of your targets, and to review the results available from your monitoring data. This reflection provides insight on how your actions are working, what may need to change, and what to emphasize next. This step then asks you to document what you have learned and to share it with other people so they can benefit from your successes and failures. Addresses questions like: ♦ *"What are our monitoring data telling us about our project?"* ♦ *"What should we be doing differently?"* ♦ *"How will we capture what we have learned?"* ♦ *"How can we make sure other people benefit from what we have learned?"*

Summary of Threats: Table Rocks Conservation Action Planning									
Project-specific Threats Across Targets	Vernal Pools and Mounded Prairie	Oak Savanna and Prairie Communities	Mixed Oak-Madrone-Conifer Woodland	Chaparral	Caves and Cliffs	Compatible Recreation Uses	Education/ Interpretation	American Indian Uses	Overall Threat Rank
Invasive nonnative/ alien species	High	High	Medium	Medium				High	**High**
Fire exclusion	Medium	Medium	Medium	Medium				Medium	**Medium**
Recreational development/ activities	Medium	Low	Low	Low	Low			Low	**Low**
Degradation of facilities						Medium			**Low**
Density of recreational users						Medium			**Low**
Limited staff capacity							Medium		**Low**
Noncompliant uses (horses, bikes, dogs, trail cutting, etc.)						Medium			**Low**
Fire suppression operations	Low	Low	Low	Low				Low	**Low**
Climate change	Low	Low	Low	Low					**Low**
Existing withdrawals, rights-of-way, and grazing permits	Low	Low	Low	Low					**Low**
Limited facility capacity							Low		**Low**
Threat Status for Targets and Project	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Vernal Pools and Mounded Prairie					
Hydrologic regime (timing, duration, frequency, extent)	Extent of inundated vernal pools, wet margins, and vernally wet flats	**GOOD:** the current extent is altered by the LTR airstrip, current dirt roads, trails, and off-trail use	**VERY GOOD:** additional extent from restoration of user trails, and visitor compliance with use guidelines	Maintain or decrease square feet of bare soil created by human disturbance in mounded prairie-vernal pool habitat through 2020	• Create a designated trail system that protects vernal pools and cryptogamic crusts
Presence/abundance of keystone species	Vernal pool fairy shrimp pool occupancy rate	**GOOD:** >40% of pools with 2" of water at peak inundation occupied	**GOOD**	Maintain occupancy rate	• Monitor vernal pool fairy shrimp occupancy rate every 5 years
Species composition/ dominance	Native to nonnative cover ratio in vernal pools	**GOOD:** >70% relative native cover	**GOOD**	Maintain 70% relative native cover for vernal pools.	• Control targeted weeds with IPM • Monitor on 5 year interval
	Native to nonnative cover ratio on mounds	**FAIR:** <50% native relative cover	**GOOD:** >50% native relative cover	>50% native relative cover on 50 acres of mounded prairie on LTR and UTR by 2020	• Control targeted weeds with IPM • Plan and implement prescribed burns • Sow or outplant native grasses and forbs
Community architecture	Native bunchgrass dominance on mounds	**POOR:** <5% native bunchgrass cover	**GOOD:** >25% native bunchgrass cover	Attain 25% native bunchgrass cover for 50 acres of mounded prairie on each of LTR and UTR by 2020.	• Control targeted weeds with IPM • Plan and implement prescribed burns • Sow or outplant native grasses

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
	Cryptogamic crust: % cover on scablands	**GOOD:** appropriate amount of crust to be determined	**GOOD**	Maintain or decrease square feet of bare soil created by human disturbance in mounded prairie-vernal pool habitat through 2020	• Create a designated trail system that protects vernal pools and cryptogamic crusts
Oak Savanna and Prairie Communities					
Fire regime (timing, frequency, intensity, extent)	% of prairie and oak savanna that has burned within 20 years	**FAIR:** <25% burned within 20 years	**GOOD:** >25% burned within 20 years	Burn 10% of oak savanna/upland prairie by 2020	• Plan and implement prescribed burns
Community architecture	% of savanna 2.5-acre grid cells with less than 30% Oregon white oak cover	**FAIR:** To be determined	**GOOD:** >50% of savanna 2.5-acre grid cells have <30% cover	Thin all overdense oak savanna 2.5-acre grid cells to 30% or less cover by 2020	• Assess and map oak and chaparral cover • Plan and implement thinning and activity fuel management
Species composition/ dominance	Native bunchgrass dominance	**POOR:** <5% native bunchgrass cover	**GOOD:** >25% native bunchgrass cover	Attain 25% native bunchgrass cover for 100 acres of oak savanna/upland prairie by 2020.	• Control targeted weeds with Integrated Pest Management • Plan and implement prescribed burns • Sow or outplant native grasses
Native species diversity in understory	Presence of characteristic native species in 2.5 acre blocks	**GOOD:** To be determined	**GOOD**	Attain >50% native relative cover on 100 acres of savanna/upland prairie by 2020	• Control targeted weeds with Integrated Pest Management • Assess native relative cover and presence of characteristic native species • Plan and implement prescribed burns • Sow or outplant native grasses and forbs

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Presence/abundance of ESA-listed species	# flowering plants and locations of *Fritillaria gentneri*	**POOR:** 2 plants at one site	**GOOD:** To be determined	Maintain or increase population size by 2020	• Conduct surveys of potential habitat • Monitor populations and habitat conditions at known sites • Map and control targeted weeds with Integrated Pest Management
Mixed Oak/Madrone/Conifer Woodland					
Fire regime (timing, frequency, intensity, extent)	% of mixed oak-madrone-conifer woodland that has experienced fire within 15 years	**POOR:** <5% burned in last 15 years	**FAIR:** 5–50% burned in last 15 years	Burn 10% of mixed oak-madrone-conifer woodland by 2020	• Plan and implement prescribed burns
Community architecture	Fire regime condition class	**FAIR:** FRCC 2	**GOOD:** FRCC 1	Restore structure mosaic that is informed by FRCC 1 Goal is 10% early development, 1% mid-seral closed, 20% mid-seral open, 64% late seral open, 5% late seral closed (Landfire Biophysical Model, mediterranean mixed oak woodland)	• Assess and map stand structure • Plan and implement fire surrogate treatments as necessary to augment prescribed burns
Native species diversity in understory	Native to non-native cover ratio in understory	**GOOD:** 70–90% native relative cover	**GOOD**	Maintain 70–90% native relative cover	• Control targeted weeds with Integrated Pest Management

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Chaparral					
Fire regime (timing, frequency, intensity, extent)	% of chaparral that has experienced fire within 15 years	**POOR:** <5% burned in last 15 years	**FAIR:** 5–50% burned in last 15 years	Burn 10% of chaparral by 2020	• Plan and implement prescribed burns
Community architecture	Mosaic of chaparral age structure classes	**FAIR:** To be determined	**GOOD:** To be determined	Restore a mosaic of age classes by increasing the young age class of chaparral over 10% of system by 2020	• Assess and map stand structure • Plan and implement fire surrogate treatments as necessary to augment prescribed burns
All Plant Communities					
Fire regime (timing, frequency, intensity, extent)	See plant communities above	See plant communities above	See plant communities above	Institute cooperative fire management program for the Table Rocks by 2012	• Write BLM and TNC coordinated Wildfire Response Plan • Write Table Rocks Applied Fire Plan • Pursue funding sources for applied fire • Write agreement/MOU for BLM burns on TNC with exchange of funds • Develop public outreach plan to educate and obtain support for use of fire at the Table Rocks
Species composition/ dominance Native species diversity in understory	See plant communities above	See plant communities above	See plant communities above	No new establishment of Jackson County Cooperative Weed Management Area Early Detection invasive species established through 2020	• Train staff to identify early detection weeds • Develop weed education plan for public and adjacent landowners

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Species composition/ dominance Native species diversity in understory	See plant communities above	See plant communities above	See plant communities above	Weed prevention areas maintained free of priority weeds through 2020	• Establish weed prevention areas • Prevent weed invasion into weed prevention areas through annual monitoring
Caves and Cliffs					
Quality of habitat	% undisturbed cave/cliff area	**GOOD:** >90% undisturbed	**GOOD**	Eliminate disturbance to caves, mines, cliffs, and talus during times used for maternity and hibernating sites	• Inventory and map cave/mine locations with signs of human activity • Evaluate need for protection of caves/mines • Implement appropriate protection measures for caves/mines
Compatible Recreation Uses					
Quality of experience	Overall visitor satisfaction	**GOOD:** 70–90% visitors satisfied	**VERY GOOD:** >90% visitors satisfied	Ensure level of use is compatible with ecological systems and social values by 2015	• Conduct visitor use survey • Monitor impacts of visitor use on conservation targets
Recreational facilities (trailheads, information, trails, etc.)	Signage	**GOOD:** Signs are occasionally monitored and maintained, information updated yearly, compliance signage present	**VERY GOOD:** Signs are frequently monitored and maintained, information is updated seasonally, messages are clear, and compliance signs are located for maximum impact	Install and maintain signage at trailheads, trails, and property boundaries to educate and inform public of regulations and allowable uses, interpretive messages, and conservation easement guidelines and values by 2013	• Determine locations, design and install signs acknowledging Oregon Watershed Enhancement Board (OWEB) funding at Upper and Lower Table Rock • Add compliance, interpretive, ownership, or conservation easement signage as needed at public access points • Monitor signs annually

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
	Trail location and condition	**FAIR:** Frequent maintenance needs (eroded trail conditions, active side trails, overgrown conditions). Portion of trail system is >30% grade.	**GOOD:** Occasional maintenance needs to keep trail brushed and water bars cleaned out and side trails effectively closed. Entire trail system is <20% grade.	Provide and maintain a trail system that addresses ecological concerns, and that meets trail guidelines and conservation easement guidance, by 2020	• Conduct visitor use survey • Establish allowable recreation uses through a management plan • Monitor trail conditions and locations • Locate trails and associated facilities to avoid sensitive areas/resources • Consult with OWEB on any new trail proposals that cross OWEB conservation easement properties
	Trailhead (restrooms, parking, etc.) location and condition	**GOOD:** biweekly maintenance during peak season (facilities are functional, clean, in good repair)	**VERY GOOD:** biweekly facility maintenance year-round	Provide and maintain trailhead facilities that accommodate existing and growing recreational use, while addressing ecological concerns , by 2020	• Conduct visitor use survey • Establish allowable recreation uses through a management plan • Monitor facility conditions • Locate recreational facilities to avoid sensitive areas/resources • Consult with Jackson County on any new trailhead proposals on County roads

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Visitor compliance with guidelines	Number of prohibited use incidences other than hunting	**FAIR:** common (daily) occurrences	**GOOD:** occasional (monthly) occurrences	Allow passive recreation and education uses that do not impair OWEB conservation easement values by 2012	• Establish allowable recreation uses through a management plan
				Achieve 90% compliance with use guidelines by 2015	• Write and codify regulations (supplemental rules) to facilitate enforcement • Provide appropriate signage • Educate adjacent landowners on allowable uses
				Ensure level of use is compatible with ecological systems and social values by 2015	• Conduct visitor use survey • Monitor impacts of visitor use on conservation targets
	Number of incidences of hunting trespass on TNC conservation easements	**FAIR:** <3 reports of hunting on easement property received annually	**VERY GOOD:** No reports or evidence of hunting trespass	Eliminate all hunting from conservation easement properties	• Coordinate with Oregon State Police Fish and Wildlife trooper, Jackson County Sheriff, ODFW, and BLM to educate public on property ownership and hunting restrictions • Post "No Hunting" signs and easement guidelines and values signs in appropriate locations

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Education and Interpretation					
Type and quality of educational experience	Diversity of education and interpretation delivery methods	**GOOD:** current variety of delivery methods	**VERY GOOD:** offering additional methods	Develop a minimum of 5 new methods of environmental education/interpretation by 2015 to reach people with diverse interests and reasons for visiting	• Develop an interpretive plan • Develop social media opportunities • Increase bilingual capacity • Develop audio tour • Develop computer application (app) • Provide roaming interpreters on trails during peak season weekends • Increase historical interpretive opportunities • Increase American Indian interpretive opportunities
				Provide one permanent staff leadership position to EE program by 2013	• Obtain support and funding from management for permanent staff
	Organized hike participant satisfaction	**VERY GOOD:** 80% of hikes are full	**VERY GOOD**	Maintain a diverse and informative hike schedule that results in full capacity hikes through 2020	• Maintain collaboration between BLM and TNC
	School curriculum benchmark/ standards	**VERY GOOD:** 100% of environmental education program content meets curriculum standards	**VERY GOOD**	Maintain school curriculum standards for environmental education program through 2020	• Review standards annually and update as needed

Conservation Action Planning Management Objectives and Actions					
Key Attribute	**Viability Indicator**	**Current Condition**	**Desired Condition**	**Management Objectives**	**Management Actions**
Species composition/ dominance	Healthy populations of culturally important species	**GOOD:** To be determined	**GOOD:** To be determined	Maintain self-sustaining populations of ethnobotanically important species (based on tribal input) through 2020	• Map areas with key ethnobotanical resources
The table rates the current condition, or health, of each viability indicator, as well as the desired condition of each indicator. Colors in the table highlight current conditions ranked as poor (red) or fair (yellow) with the desired future condition highlighted as fair, good (green), or very good (dark green).					

Conservation Action Plan Terms:

Critical Threats—Direct threats that are most problematic. Most often, Very high and High rated threats based on the rating criteria of their impact on the focal targets

Focal Conservation Targets—A limited suite of species, communities, and ecological systems that are chosen to represent and encompass the full array of biodiversity found in a project area. They are the basis for setting goals, carrying out conservation actions, and measuring conservation effectiveness. In theory, conservation of the focal targets will ensure the conservation of all native biodiversity within functional landscapes. Often referred to as *focal targets*, *biodiversity features*, or *focal biodiversity*.

Indicators—Used to measure the status of key ecological attributes.

Key Ecological Attribute (KEAs)—Aspects of a target's biology or ecology that, if missing or altered, would lead to the loss of that target over time.

Nested Targets—Species, ecological communities, or ecological system targets whose conservation needs are subsumed by one or more focal conservation targets. Often includes targets identified as ecoregional targets.

Objectives—Specific statements detailing the desired accomplishments or outcomes of a particular set of activities within a project. A typical project will have multiple objectives. Objectives are typically set for abatement of critical threats and for restoration of degraded key ecological attributes. They can also be set, however, for the outcomes of specific conservation actions, or the acquisition of project resources. If the project is well conceptualized and designed, realization of all the project's objectives should lead to the fulfillment of the project's vision. A good objective meets the criteria of being specific, measurable, achievable, relevant, and time limited.

Strategic Actions—Interventions undertaken by project staff and/or partners designed to reach the project's objectives. A good action meets the criteria of being: linked to objectives, focused, strategic, feasible, and appropriate.

Viability—The status or "health" of a population of a specific plant or animal species. More generally, viability indicates the ability of a conservation target to withstand or recover from most natural or anthropogenic disturbances and, thus, to persist for many generations or over long time periods.

APPENDIX B:
BLM VISUAL RESOURCE MANAGEMENT

Visual Resource Management

BLM's visual resource management (VRM) system provides a way to identify and evaluate scenic values to determine the appropriate levels of management. It also provides a way to analyze potential visual impacts and apply visual design techniques to ensure surface-disturbing activities are in harmony with their surroundings.

The inventory stage involves identifying the visual resources of an area and assigning them to inventory classes using BLM's visual resource inventory process. The process includes rating the visual appeal of a tract of land (scenic quality evaluation), measuring public concern for scenic quality (sensitivity level analysis), and determining whether the tract of land is visible from travel routes or observation points (distance zones).

Scenic Quality Evaluation

Scenic quality is a measure of the visual appeal of a tract of land. In the visual resource inventory process, public lands are given an A, B, or C rating based on the apparent scenic quality that is determined using the following seven key factors:

- Landform
- Vegetation
- Water
- Color
- Adjacent scenery
- Scarcity
- Cultural modifications

Sensitivity Level Analysis

Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern. The following factors are considered:

- Types of users
- Amount of use
- Public interest
- Adjacent land uses
- Special areas

Distance Zones

Landscapes are subdivided into the following three distance zones based on relative visibility from travel routes or observation points:

- Foreground/Middleground: 0 to 5 miles

- Background: 6 to 15 miles
- Seldom seen: areas beyond Background, and areas within the Foreground/Middleground that cannot be seen

Based on these three factors, BLM-administered lands are placed into one of four visual classes. These inventory classes represent the relative value of the visual resources. The results of the visual resource inventory become an important component of BLM's Resource Management Plan (RMP) for the area. The RMP establishes how the public lands will be used and allocated for different purposes, and it is developed through public participation and collaboration. Visual values are considered throughout the RMP process, and the area's visual resources are then assigned to management classes with established objectives.

VRM Classes

Class I

Objective: 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.

Class II

Objective: 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.

Class III

Objective: 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.

Class IV

Objective: To provide for management activities which require major modification 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.

APPENDIX C:
SPECIAL STATUS PLANT SPECIES IN THE TABLE ROCKS MANAGEMENT AREA

VASCULAR PLANTS

Androsace elongata ssp. *acuta* (Long-stemmed androsace)—Annual

Status: Bureau Sensitive, ORBIC 2

Sites: 1 on Lower Table Rock/1 in Medford District (Table Rocks only)

Range: Originally collected in Rogue River Valley in 1887; believed extirpated until discovered in 2010 on Lower Table Rock. Found in San Francisco Bay Area, San Joaquin Valley, and South Coast in California.

Plant Community/Habitat: Dry, grassy, usually north-facing slopes. Collected from either table top or talus slopes on Lower Table Rock.

Threats: Collecting, trail development, trampling, fire, nonnative invasive plants.

Callitriche marginata (Winged water-starwort)—Annual

Status: Bureau Sensitive; ORBIC 2

Sites: 6 on Lower Table Rock, 15 on Upper Table Rock/25 in Medford District (all except 1 are at Table Rocks)

Range: Western North America and Wisconsin.

Plant Community/Habitat: Vernal pools/Moist depressions and vernal pools; tops of Table Rocks

Threats: Changes in hydrology, trampling.

Camissonia graciliflora (Slender-flowered evening primrose)—Annual

Status: Bureau Sensitive; ORBIC 2

Sites: 2 on Upper Table Rock/50 in Medford District

Range: Jackson and Josephine Counties, Oregon; western California to Baja California.

Plant Community/Habitat: Annual grasslands; Chaparral/Skeletal soils on bedrock on stream bank, exposed rock next to streams.

Threats: Trampling, recreational development, noxious weeds and nonnative invasions.

Fritillaria gentneri (Gentner's fritillary)—Perennial

Status: Federal Endangered; State Endangered; Bureau Sensitive; ORBIC 1

Sites: 1 on Upper Table Rock/176 in Medford District

Range: Jackson and Josephine Counties, Oregon; one site just south of Oregon/California border.

Plant Community/Habitat: Chaparral/oak woodland.

Threats: Invasion of nonnative grasses or noxious weeds.

Limnanthes flocossa ssp. *pumila* (Dwarf woolly meadowfoam)—Annual

Status: Federal Species of Concern; State Threatened; Bureau Sensitive; ORBIC 1

Sites: 5 on Lower Table Rock, 18 on Upper Table Rock/23 in Medford District (all located on Table Rocks)

Range: Tops of Upper and Lower Table Rocks, Jackson County, Oregon.

Plant Community/Habitat: Vernal pool complex/edges of vernal pools, road ruts, small depressions, fissures, basalt intermounds.

Threats: Changes in hydrology, nonnative grasses, trampling during flowering, grazing during flowering, trail development, rock turning.

Meconella oregano (Oregon meconella; white fairy poppy)—Annual

Status: Federal Species of Concern; State Candidate; Bureau Sensitive; ORBIC 1

Sites: 3 on Lower Table Rock, 6 on Upper Table Rock/18 in Medford District

Range: Rare from Victoria, B.C.; Douglas, Hood River, Jackson, Josephine, and Wasco Counties, Oregon; Contra Costa and Santa Clara Counties, California.

Plant Community/Habitat: Ceanothus/oak woodland, moist to dry rocky sites under ceanothus and out in small openings between shrubs.

Threats: Recreation development, trail maintenance, soil disturbance, fuels reduction.

Navarretia heterandra (Tehama navarretia)—Annual

Status: ORBIC 4

Sites: Reported on Lower and Upper Table Rocks, /133 in Medford District

Range: Northern and western borders of the Sacramento Valley, California and central Jackson County, Oregon.

Plant Community/Habitat: Dry vernal pools.

Threats: Soil disturbance, changes in hydrology, trampling.

Navarretia leucocephala ssp. *leucocephala* (White flowered navarretia; white flowered pincushion plant)—Annual

Status: Bureau Sensitive; ORBIC 4

Sites: 1 on Lower Table Rock, 13 on Upper Table Rock/14 in Medford District (all located at Table Rocks)

Range: Oregon; California.

Plant Community/Habitat: Vernal pool complex/vernally wet areas and gravelly bottoms of dried up pools.

Threats: Nonnative grasses, changes in hydrology, trampling, grazing.

Pillularia americana (American pillwort)—Quillwort

Status: Bureau Sensitive; ORBIC 2

Sites: 1 on Upper Table Rock/1 in Medford District (Table Rocks only)

Range: Rare in Crook, Deschutes, Jackson, Lake, and Klamath Counties, Oregon; scattered in central California and southeastern United States.

Plant Community/Habitat: Annual grasslands/Mud on edge of pond.

Threats: Changes in hydrology, trampling, trail development.

Plagiobothrys austiniae (Austin's popcorn flower)—Annual

Status: Bureau Sensitive; ORBIC 2

Sites: 5 on Lower Table Rock, 4 on Upper Table Rock/33 in Medford District

Range: Jackson County, Oregon; east side of Central Valley from Shasta County to Stanislaus Mountains, California.

Plant Community/Habitat: Vernal pool complex/Grasslands/vernally wet areas around pools and along drainages.

Threats: Changes in hydrology, trampling, trail development, noxious weeds.

Plagiobothrys figuratus ssp. *corallicarpus* (Coral seeded allocarya)—Annual

Status: Federal Species of Concern; State Candidate; Bureau Sensitive; ORBIC 1

Sites: 10 on Upper Table Rock/21 in Medford District

Range: Jackson and Josephine Counties, Oregon.

Plant Community/Habitat: Annual grasslands/Margins of streambeds in low gradient drainages, quiet spots and side channels, rocky seasonal wet drainages, edges of reservoirs.

Threats: Changes in hydrology, trail development, noxious weeds, grazing.

Plagiobothrys greenei (Green's popcorn flower)—Annual

Status: Bureau Sensitive; ORBIC 2

Sites: 3 on Lower Table Rock, 56 on Upper Table Rock/49 in Medford District

Range: Jackson and Josephine Counties, Oregon; California.

Plant Community/Habitat: Annual grasslands/Vernal pool complex. Moist depressions and swales within annual grasslands; gravelly, vernally wet edges between grasslands and ceanothus patches; margins of vernal pools.

Threats: Changes in hydrology, trampling, trail development, nonnatives, grazing.

Ranunculus austro-oreganus (Southern Oregon buttercup)—Perennial

Status: State Candidate; Bureau Sensitive; ORBIC 1

Sites: 7 on Lower Table Rock, 2 on Upper Table Rock/81 in Medford District

Range: Central Jackson County, Oregon.

Plant Community/Habitat: Chaparral, grasslands, oak savanna, oak woodlands. On slopes and some on tops of Table Rocks.

Threats: Nonnative grasses and yellow starthistle, hybridization with western buttercup (*Ranunculus occidentalis)*, trampling, trail or recreational facilities development, trail maintenance.

Bryophytes

Campylopus subulatus—Perennial

Status: Bureau Strategic; ORBIC 3

Sites: 1 on Lower Table Rock, 4 on Upper Table Rock/14 in Medford District

Range: Douglas, Jackson, Josephine Counties, Oregon; California; Europe; Asia.

Plant Community/Habitat: Mounded prairie/Intermounds on shallow soils between rocks.

Threats: Noxious weeds and nonnative plants, trampling, trail development, rock turning.

Entosthodon californicus—Perennial

Status: Bureau Strategic; ORBIC 3

Sites: 1 on Lower Table Rock, 3 on Upper Table Rock/4 in Medford District (all located on Table Rocks)

Range: Jackson County, Oregon; California.

Plant Community/Habitat: Mounded prairie vernal pool complex. On low mounds or edges of vernal pools among short annual grasses where soils have been disturbed by gopher activity.

Threats: Noxious weeds and nonnative plants, trampling, trail development, rock turning, cessation of gopher activity, vascular plant succession.

Lichens

Lecanora pringlei (Pringle's rim lichen)

Status: Bureau Strategic; ORBIC 3

Sites: 1 on Lower Table Rock /55 in Medford District

Range: Deschutes, Hood, Jackson, Klamath, Wallowa Counties, Oregon; California; Washington.

Plant Community/Habitat: Cliff wall.

Threats: Rock climbing, fire, air pollution, rock turning.

Peltula euploca

Status: Bureau Strategic; ORBIC 3

Sites: Unknown on Lower Table Rock /3 in Medford District

Range: Jackson, Jefferson, Klamath Counties, Oregon; California.

Plant Community/Habitat: Rock cliffs, boulders, and bedrock around the edges of vernal pools.

Threats: Rock turning.

APPENDIX D:
SPECIAL STATUS WILDLIFE SPECIES IN THE TABLE ROCKS MANAGEMENT AREA

Special Status Species Assessment

This table provides information on special status species known or suspected to occur within the Table Rocks Management Area, based on the current Bureau of Land Management OR/WA Special Status Species List. Each of these species was considered and evaluated for this project. The methods used to assess and review the potential effects to these species followed the techniques described in the OR/WA Special Status Species Policy (IM OR-2003-054).

Special Status Wildlife Species in the Table Rock Management Area				
Species	**Status**	**Range ?**	**Presence**	**Project Specific Comments / Basic Conclusions**
Branchiopods				
Vernal pool fairy shrimp	Federal Threatened	Yes	Present	Habitat is in vernal pools on the tops of the Table Rocks. Seasonal restrictions on prescribed burning and trail maintenance.
Birds				
American peregrine falcon	Bureau Sensitive; ONHP 2	Yes	Present	There is nesting habitat within the TRMA, and they forage within the project area.
Bald eagle	Bureau Sensitive; State Threatened; ONHP 4	Yes	Present	No project activities would adversely affect individuals.
Tricolored blackbird	Bureau Sensitive	Yes	Present	Habitat exists in marshes and large riverine systems within the Rogue Valley.
Lewis' woodpecker	Bureau Sensitive; State Critical; ONHP 2	Yes	Transitory	Adequate levels of snags would be retained. Adequate potential habitat exists within and adjacent to the project area. Proposed activities' impacts are inconsequential to the species or habitat at the watershed scale.
Great gray owl	State Vulnerable; Survey and Manage	Yes	Suspected	TRMA contains some suitable habitat.

Special Status Wildlife Species in the Table Rock Management Area				
Species	**Status**	**Range ?**	**Presence**	**Project Specific Comments / Basic Conclusions**
Mammals				
Fringed myotis	Bureau Sensitive; State Vulnerable; ONHP 2	Yes	Suspected	Adequate levels of snags would be retained. Adequate potential habitat exists within and adjacent to TRMA. Proposed activities' impacts are inconsequential to the species or habitat at the watershed scale.
Pacific pallid bat	Bureau Sensitive; State Vulnerable; ONHP 2	Yes	Uncertain	Adequate potential habitat exists within and adjacent to TRMA. Proposed activities impacts are inconsequential to the species or habitat at the watershed scale.
Townsend's big-eared bat	Bureau Sensitive; State Critical; ONHP 2	Yes	Suspected	Mine adits will be protected with bat gates. Seasonal restrictions for gate installations will further protect maternity and hibernating colonies from disturbance.
Invertebrates				
Chase sideband snail	Bureau Sensitive; ONHP 1; Survey and Manage	Yes	Uncertain	Coarse woody debris will be retained. Adequate potential habitat exists within and adjacent to TRMA. Proposed activities impacts are inconsequential to the species or habitat at the watershed scale.
Oregon shoulderband snail	Bureau Sensitive; ONHP 1	Yes	Uncertain	Coarse woody debris will be retained. Adequate potential habitat exists within and adjacent to TRMA. Proposed activities impacts are inconsequential to the species or habitat at the watershed scale.
Siskiyou hesperian snail	Bureau Sensitive; ONHP 1	Yes	Uncertain	Habitat occurs within the project area. No surveys have been conducted.
Travelling sideband snail	Bureau Sensitive; ONHP 1	Yes	Uncertain	Coarse woody debris will be retained. Adequate potential habitat exists within and adjacent to TRMA. Proposed activities impacts are inconsequential to the species or habitat at the watershed scale.

Special Status Wildlife Species Terms

Bureau (BLM) Sensitive—a special status species category established by the BLM that includes those plant and animal species eligible for status as federally listed, federal candidate, state listed, or state candidate (plant) species; on List 1 of the Oregon Natural Heritage Database or approved for this category by the BLM state director; or included under agency species conservation policies.

Federal Threatened—plant or animal species, identified and defined in accordance with the Endangered Species Act, that is likely to become endangered throughout all or a significant portion of their range within the foreseeable future.

Oregon Natural Heritage Program (ONHP)(now part of Oregon Biodiversity Information Center)—a cooperative interagency effort to identify the plant, animal, and plant community resources of Oregon. Animals, plants, and fungi that are or may become rare in Oregon are assigned to the ONHP's list as follows:

ONHP 1—species that are threatened with extinction or presumed to be extinct throughout their entire range.

ONHP 2—species that are threatened with extirpation or presumed to be extirpated from the state of Oregon.

ONHP 3—species for which more information is needed before status can be determined, but may be threatened or endangered in Oregon or throughout their range.

ONHP 4—species that are of conservation concern but currently do not meet the criteria for being considered threatened or endangered. May be rare, but are currently secure. May be declining in numbers or habitat but still too common to be considered as threatened or endangered. May need monitoring.

State Threatened—listed as likely to become endangered by the state of Oregon.

State Critical—listing is pending, or appropriate, if immediate conservation action not taken.

State Vulnerable—listing not imminent, and can be avoided through continued or expanded use of adequate protective measures and monitoring.

Survey and Manage—standards and guidelines intended to mitigate impacts of land management efforts on those species that are closely associated with late-successional or old-growth forests whose long-term persistence is a concern. These measures apply to all land allocations and require land managers to take certain actions relative to species of plants and animals that are rare or about which little is known. These actions include (1) manage known sites; (2) survey prior to ground-disturbing activities; and (3) conduct extensive and general regional surveys.

GLOSSARY

Bureau Sensitive Species—A special status species category established by the BLM that includes those plant and animal species eligible for status as federally listed, federal candidate, state listed, or state candidate (plant) species; on List 1 of the Oregon natural Heritage Database or approved for this category by the BLM state director; or included under agency species conservation policies. (WOPR glossary)

Bureau Strategic Species—A special status species category established by the Oregon/Washington BLM that includes animal, plant, and fungi species that are of concern in the two states. The special status species policy (BLM 6840) does not apply to these species, and no analysis of them is required in NEPA documents. Field units are required to collect occurrence field data and maintain records. (WOPR glossary)

Critical Habitat—An Endangered Species Act term denoting a specified geographic area occupied by a federally listed species, and on which the physical and biological features are found that are essential to the conservation and recovery of that species and that may require special management or protection. (WOPR glossary)

Leasable Minerals—Generally found in bedded deposits and include oil, gas, coal, chlorides, sulfates, carbonates, borates, silicates, and nitrates of potassium (potash) or sodium and related products; sulfur; phosphate and its associated and related minerals; asphalt; and gilsonite. (WOPR glossary)

Locatable Minerals—Metallic minerals (gold, silver, lead, copper, zinc, nickel, etc.) and nonmetallic minerals (fluorspar, mica, certain limestone and gypsum, tantalum, heavy minerals in placer form, and gemstones) in land belonging to the United States that are open to citizens of the U.S. for exploration, discovery, and location, which conveys the exclusive right to extract the locatable minerals upon receiving all required authorizations in accordance with regulations. (WOPR glossary)

Salable Minerals—Includes, but is not limited to, petrified wood and common varieties of sand, stone, gravel, pumice, pumicite, cinder, clay, and rock. (WOPR)

Special Status Species—Species that are listed under the Endangered Species Act as threatened or endangered (including proposed and candidate species); listed by a state as threatened, endangered or candidate species; and listed by the BLM as sensitive species. (WOPR glossary)

Wildland Urban Interface (WUI)—The area in which structures and other human development meet or intermingle with undeveloped wildland. (WOPR glossary)

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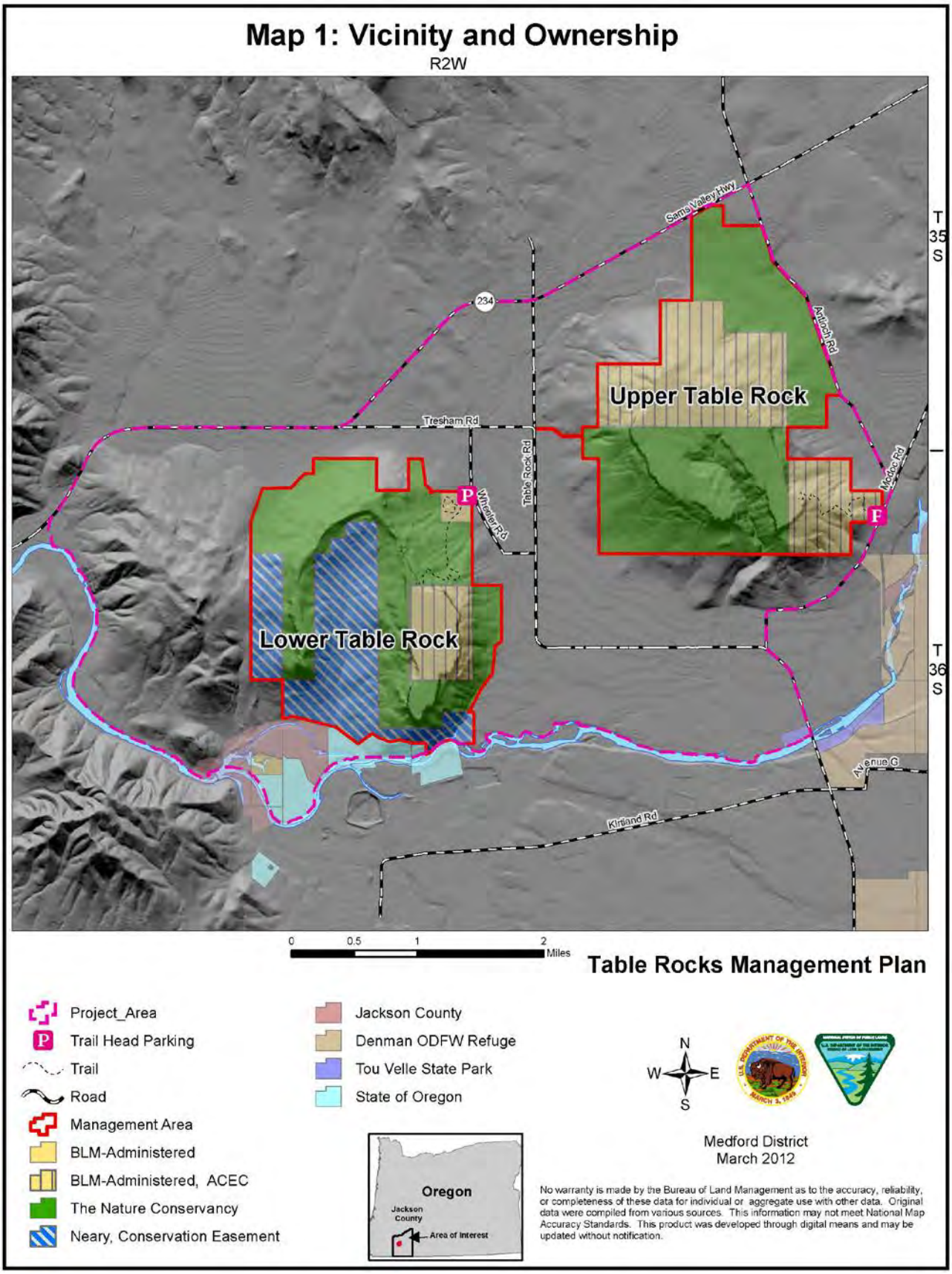
Maps


Map 1: Vicinity and Ownership
R2W
Sams Valley Hwy
234
Tresham Rd
Table Rock Rd
Antioch Rd
Modoc Rd
Wheeler Rd
Upper Table Rock
Lower Table Rock
P
F
T 35 S
T 36 S
Avenue G
Kirtland Rd
0 0.5 1 2 Miles
Table Rocks Management Plan
Project_Area
Trail Head Parking
Trail
Road
Management Area
BLM-Administered
BLM-Administered, ACEC
The Nature Conservancy
Neary, Conservation Easement
Jackson County
Denman ODFW Refuge
Tou Velle State Park
State of Oregon
N
W
E
S
Oregon
Jackson County
Area of Interest
Medford District
March 2012
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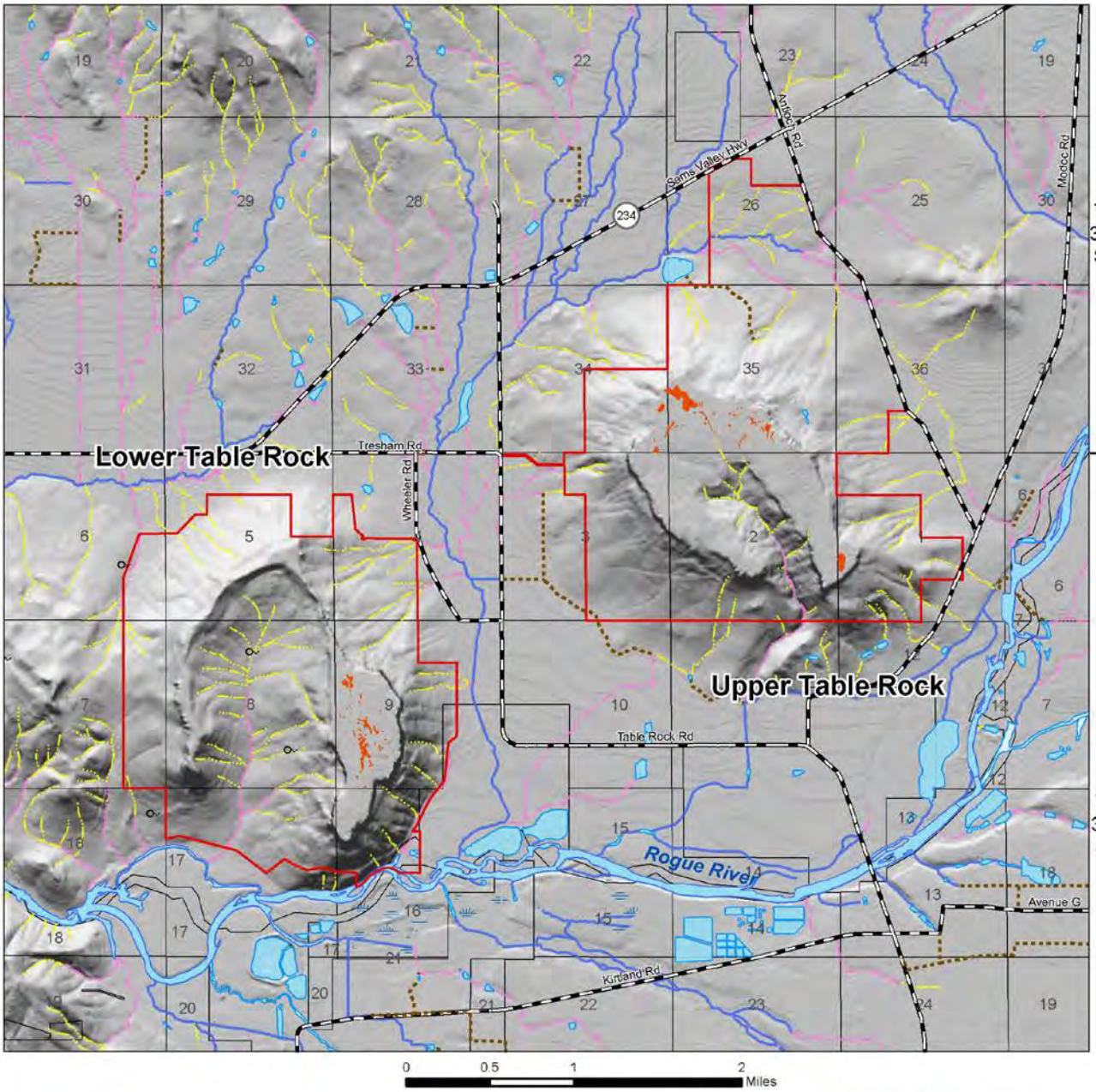
Map 2: Hydrology

R2W



Spring
Ditch
Road
Vernal Pools On BLM Only*
Management Area
Perennial Lake / Reservoir
Swamp / Marsh
Perennial
Intermittant
Ephermal

N W E S

Table Rocks Management Plan

Medford District
March 2012

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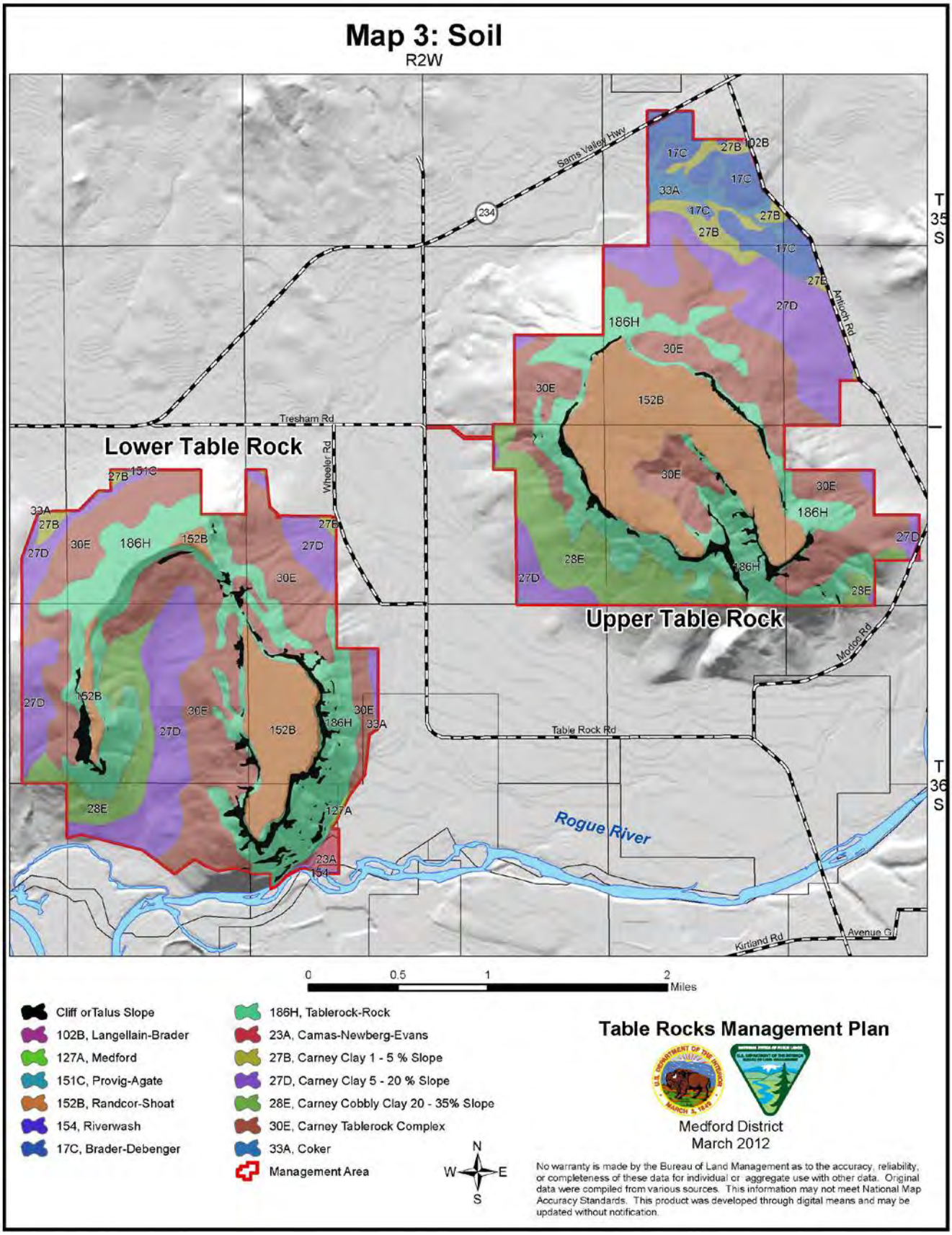
* No updates available for TNC as of 04 Aug 2011


Map 3: Soil
R2W
Sams Valley Hwy
234
Tresham Rd
Lower Table Rock
Wheeler Rd
Upper Table Rock
Antioch Rd
Modoc Rd
Table Rock Rd
Rogue River
Kirtland Rd
Avenue G
T 35 S
T 36 S
0 0.5 1 2 Miles
Cliff orTalus Slope
102B, Langellain-Brader
127A, Medford
151C, Provig-Agate
152B, Randcor-Shoat
154, Riverwash
17C, Brader-Debenger
186H, Tablerock-Rock
23A, Camas-Newberg-Evans
27B, Carney Clay 1 - 5 % Slope
27D, Carney Clay 5 - 20 % Slope
28E, Carney Cobbly Clay 20 - 35% Slope
30E, Carney Tablerock Complex
33A, Coker
Management Area
N
W
E
S
Table Rocks Management Plan
Medford District
March 2012
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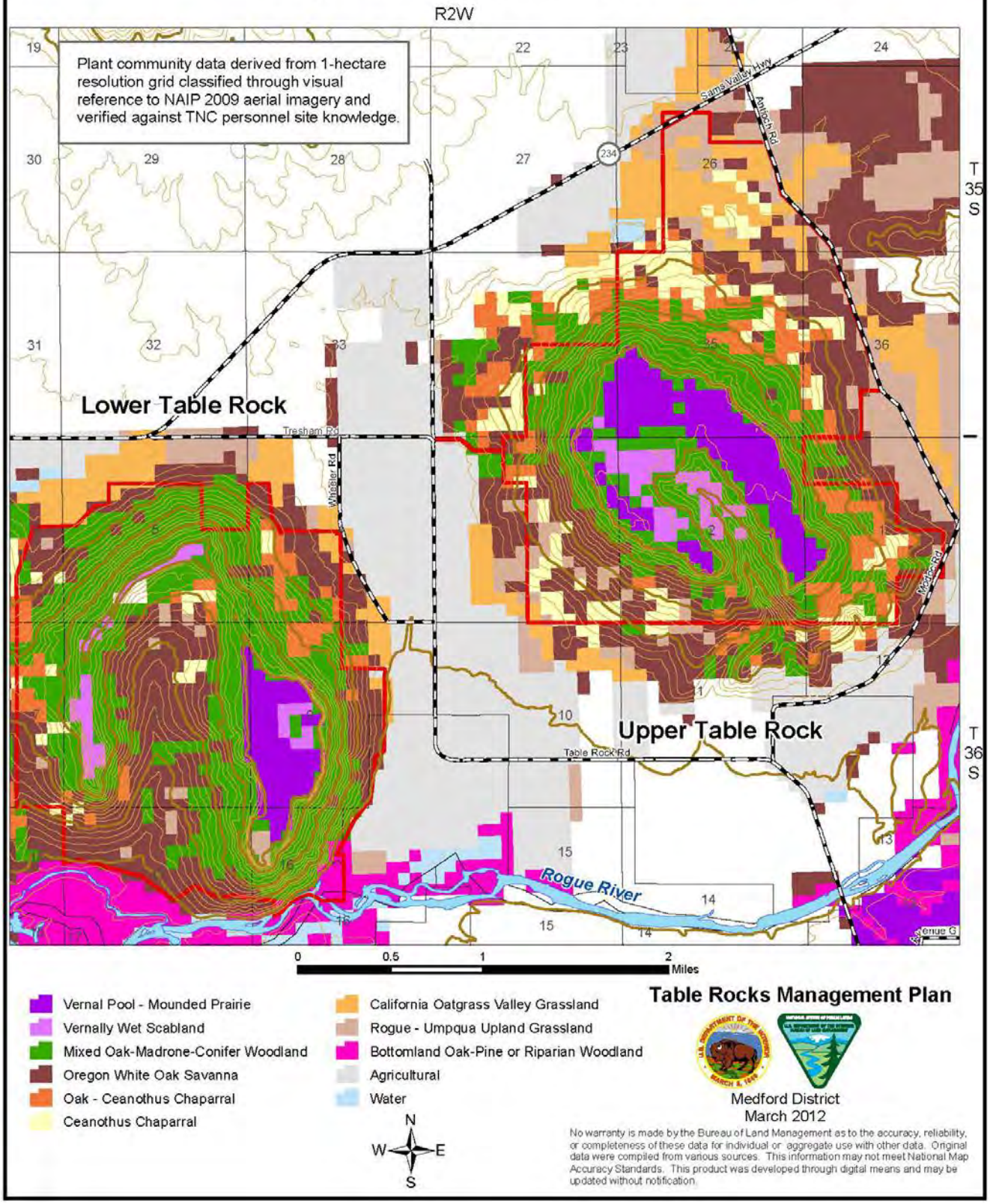
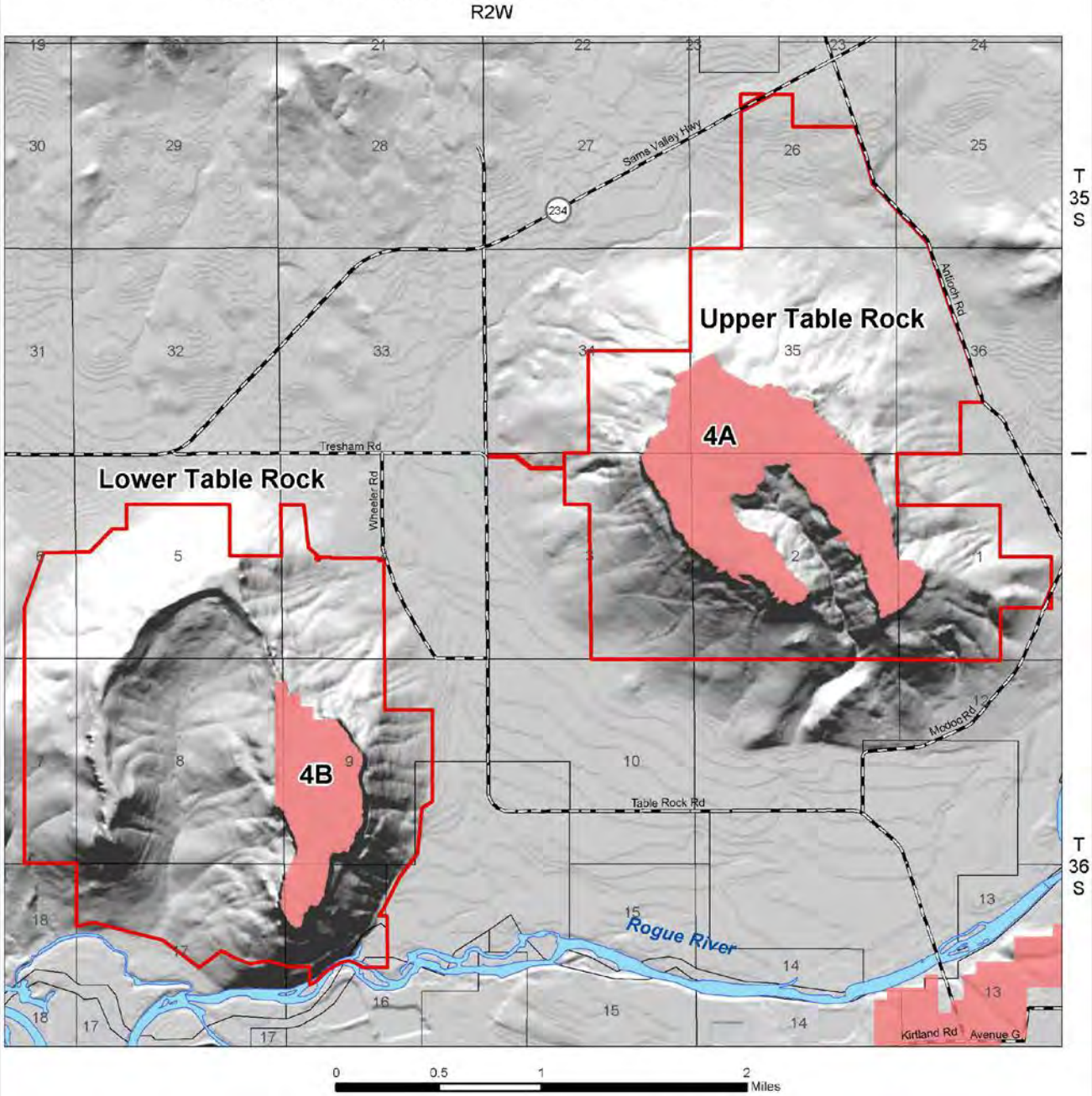
Map 4: Plant Communities



Map 5: Fairy Shrimp Critical Habitat



Fairy Shrimp Critical Habitat Units

Road

Management Area

N
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Table Rocks Management Plan

Medford District
March 2012

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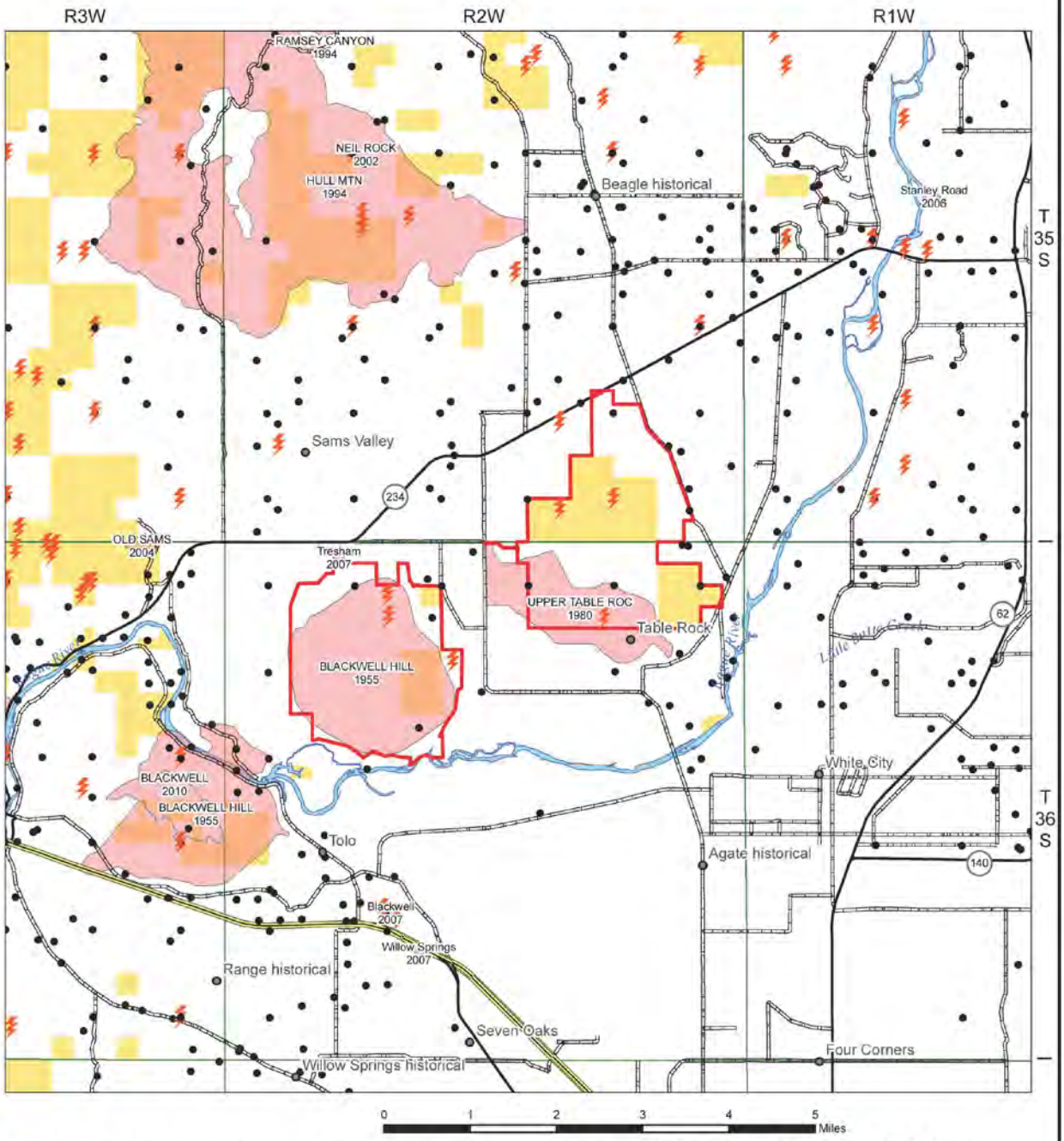
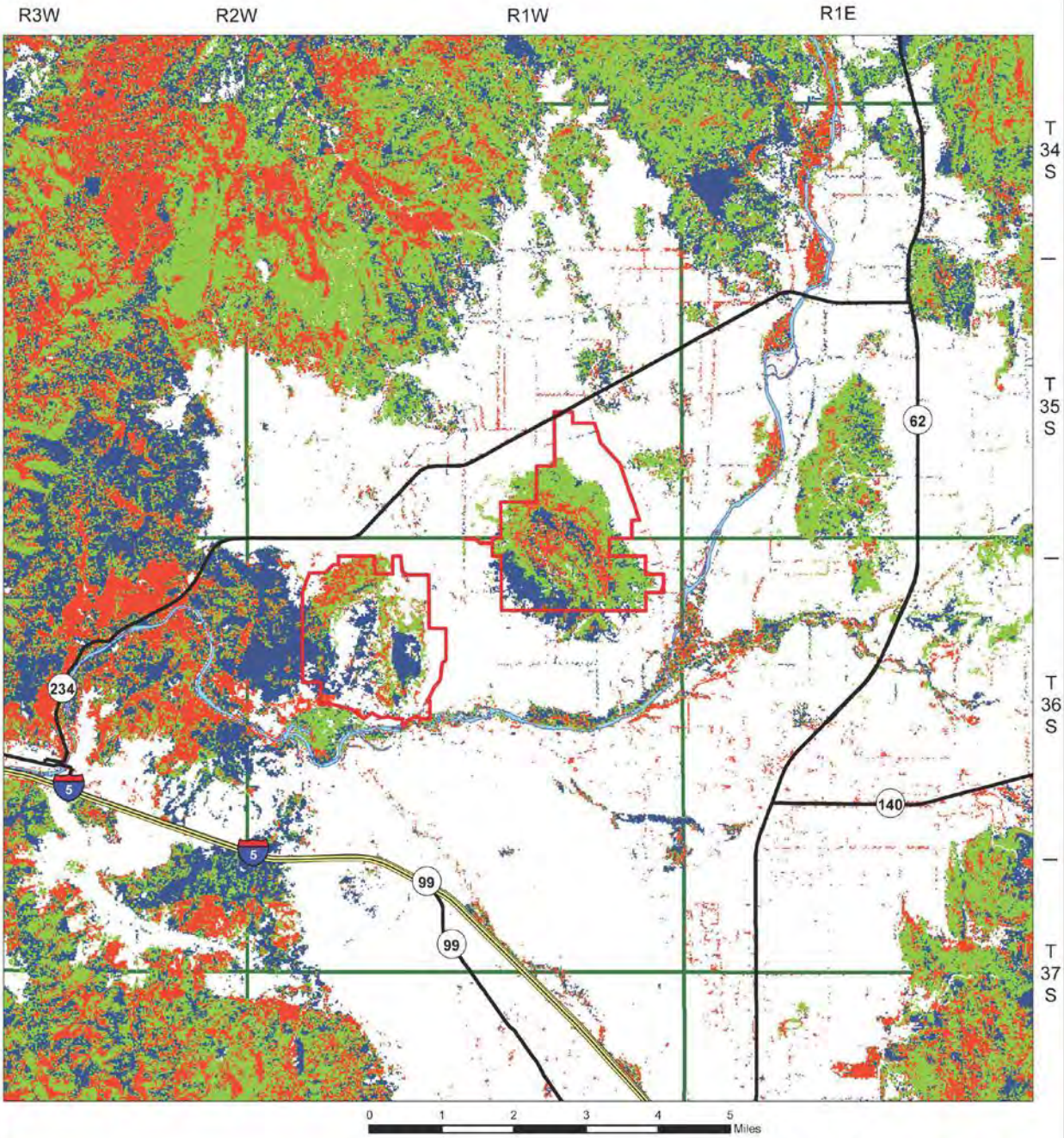
Map 6: Fire History



Map 7: Fire Regime Condition Class



Interstate Highway
US Highway
State Highway
Management Area

Condition Class 1
Condition Class 2
Condition Class 3

N
W E
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Table Rocks Management Plan

Medford District
March 2012

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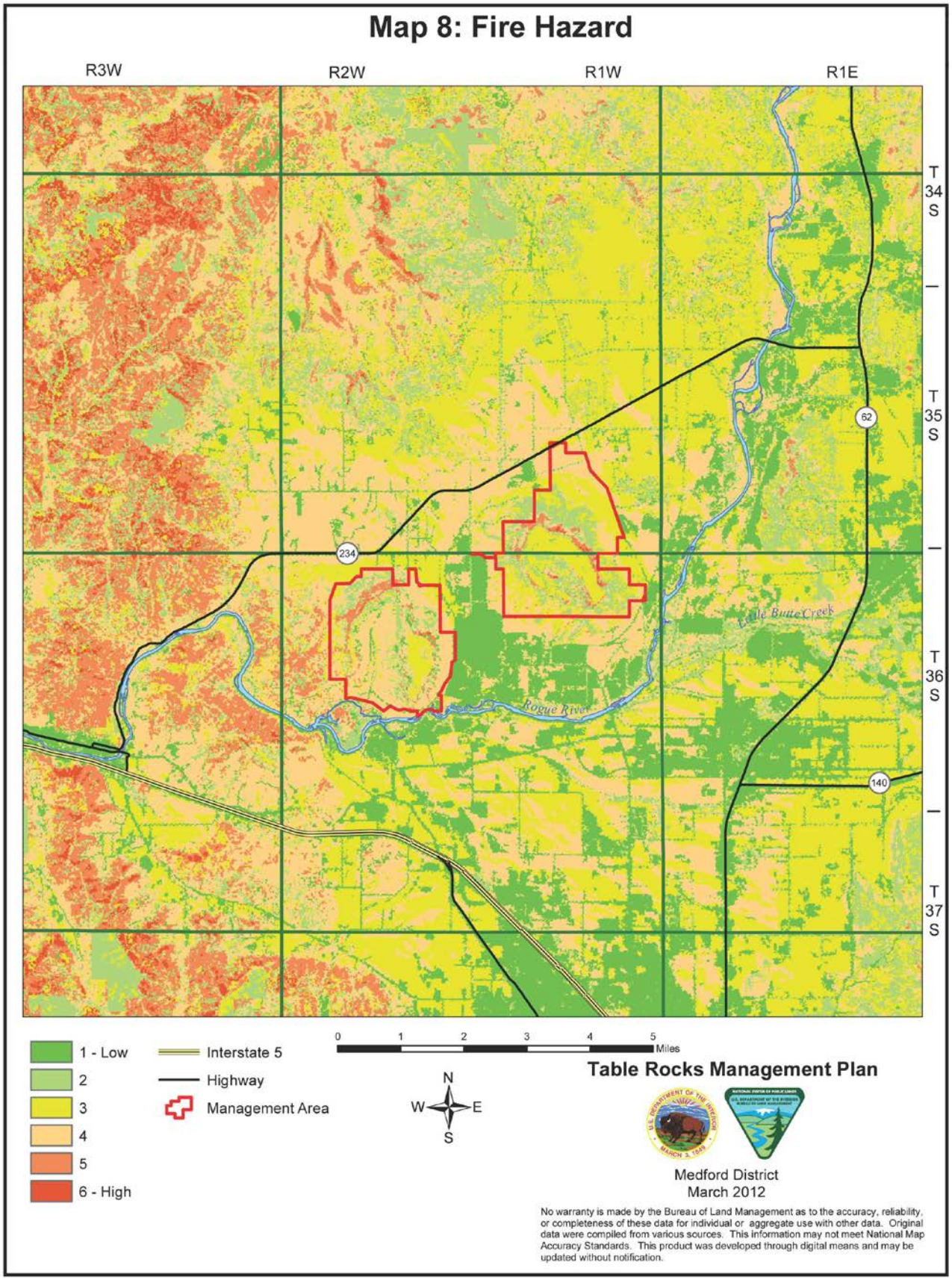
Map 8: Fire Hazard
R3W
R2W
R1W
R1E
T 34 S
T 35 S
T 36 S
T 37 S
62
234
140
Little Butte Creek
Rogue River
1 - Low
2
3
4
5
6 - High
Interstate 5
Highway
Management Area
0 1 2 3 4 5 Miles
N
W
E
S
Table Rocks Management Plan
Medford District
March 2012
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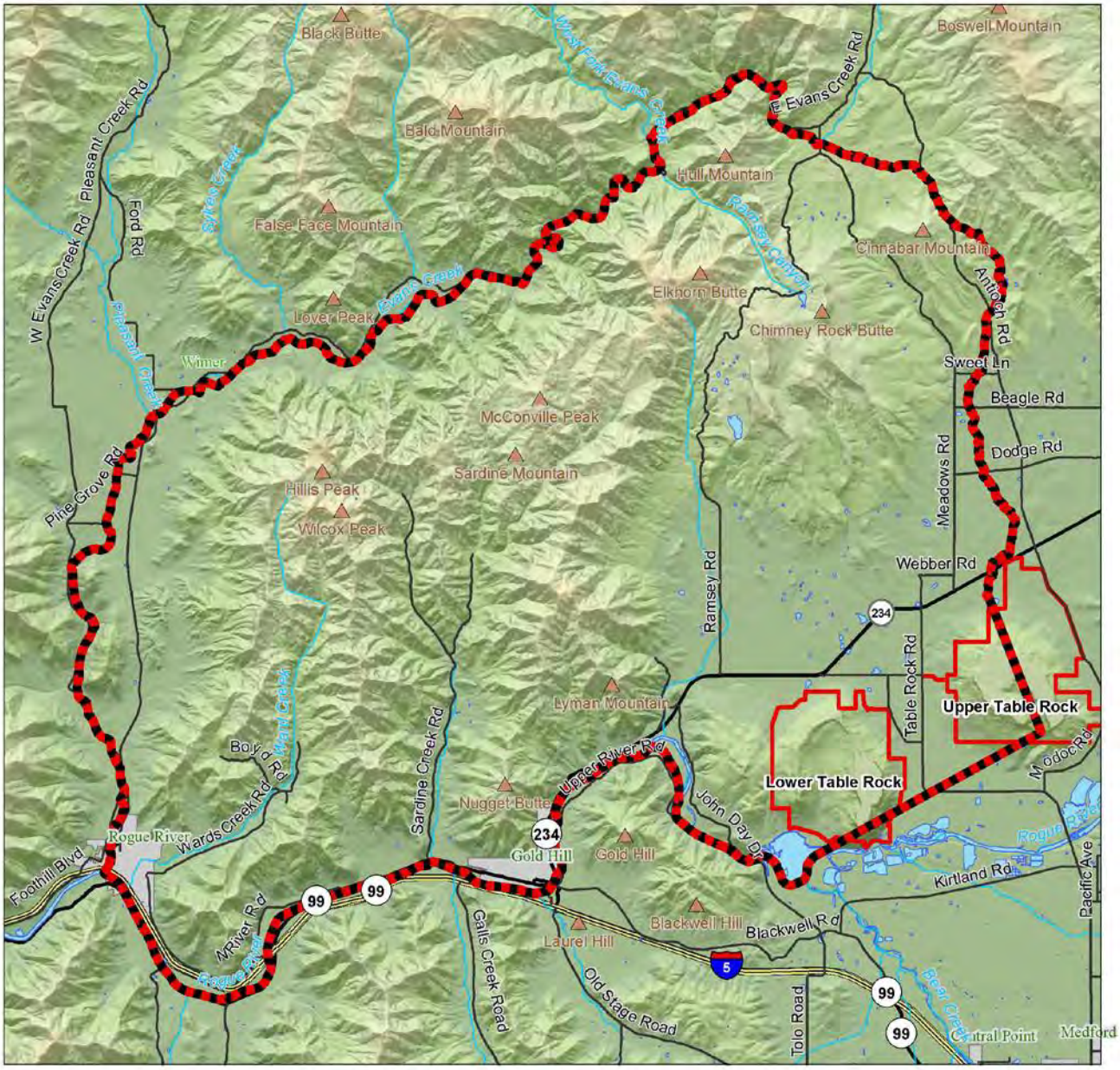
Map 9: 1853 Table Rock Reservation



0 2.5 5
Miles

Table Rock Reservation *
Management Area
Mountain Peaks

* Table Rock Reservation data provided by The Confederated Tribes of Grand Ronde

Streams
Lake
Interstate Highway
State Highway
County Roads
Cities

Table Rocks Management Plan

N
W E
S

MEDFORD DISTRICT
March 2012

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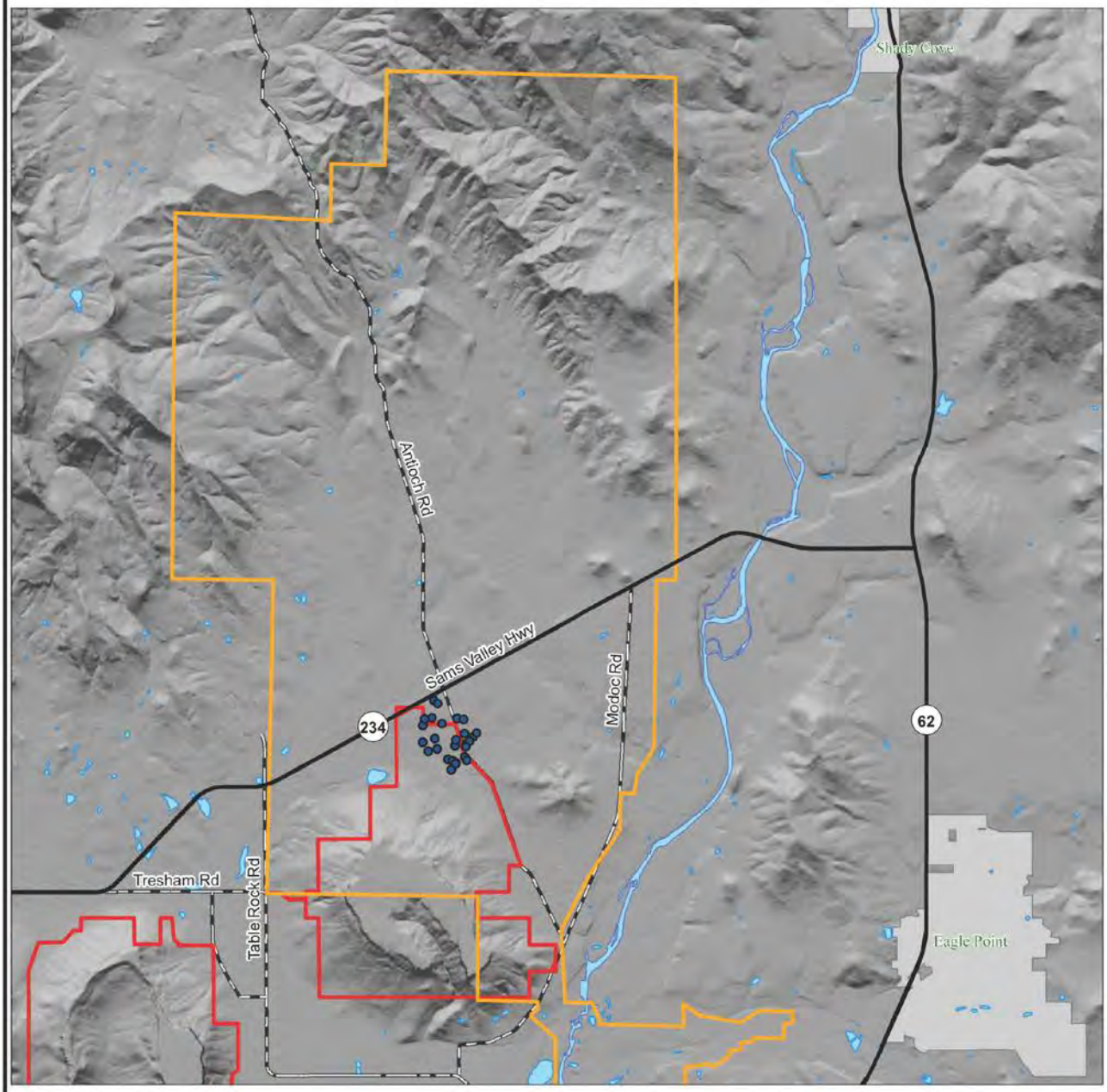
Map 10: 1943 Camp White
Beagle Range



PillBox
Camp White
Management Area
Road

0 0.5 1
Miles

N
W E
S

Table Rocks Management Plan

Medford District
March 2012

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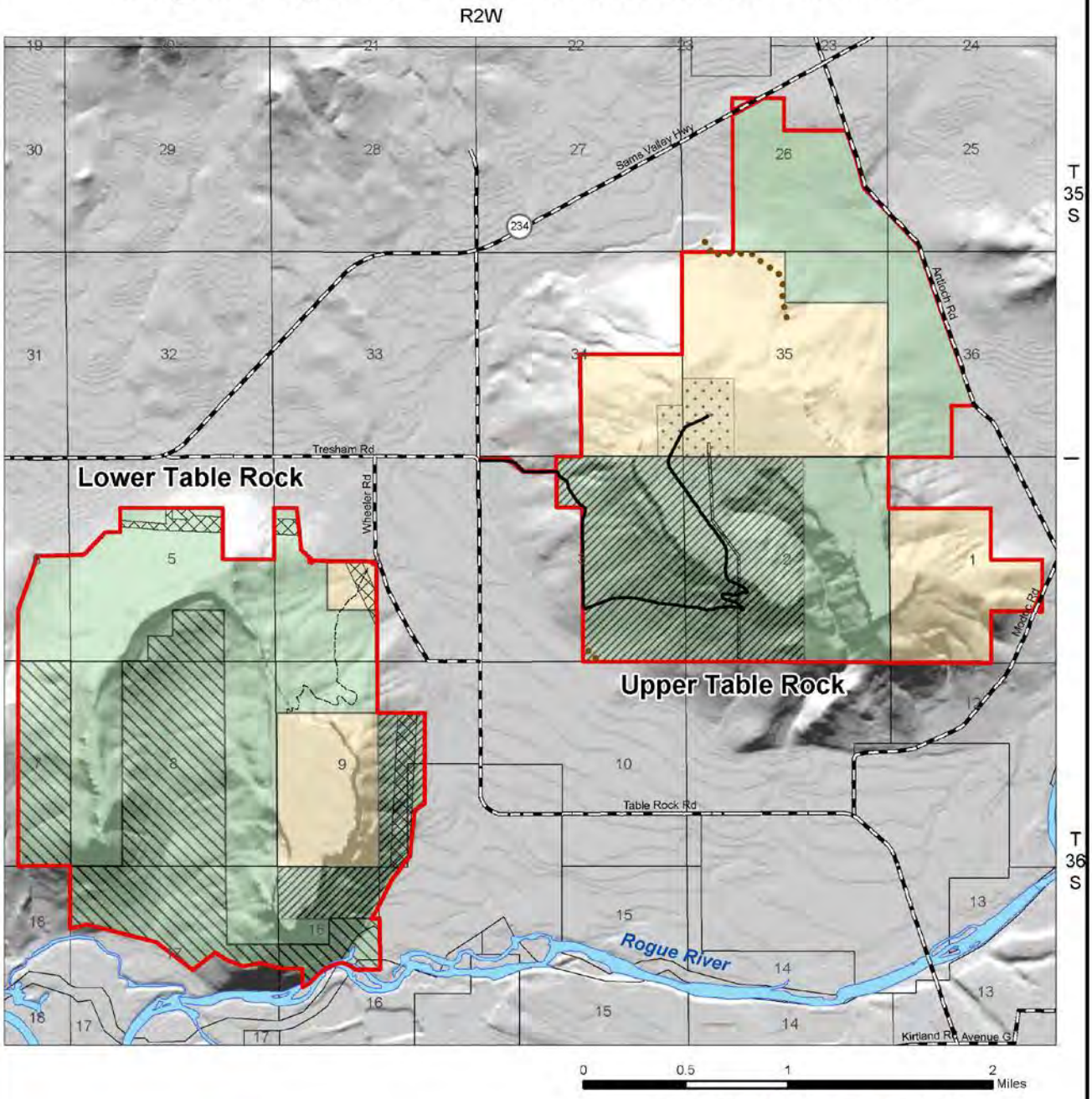
Map 11: Rights-of-Way, Easements, and Leases



Ditch
Road
Trail
Powerline Right-of-Way
VORTAC Withdrawl
Neary Conservation Easement
OWEB Conservation Easement
The Nature Conservancy
BLM Administered
Management Area

N
W
E
S

Table Rocks Management Plan

Medford District
March 2012

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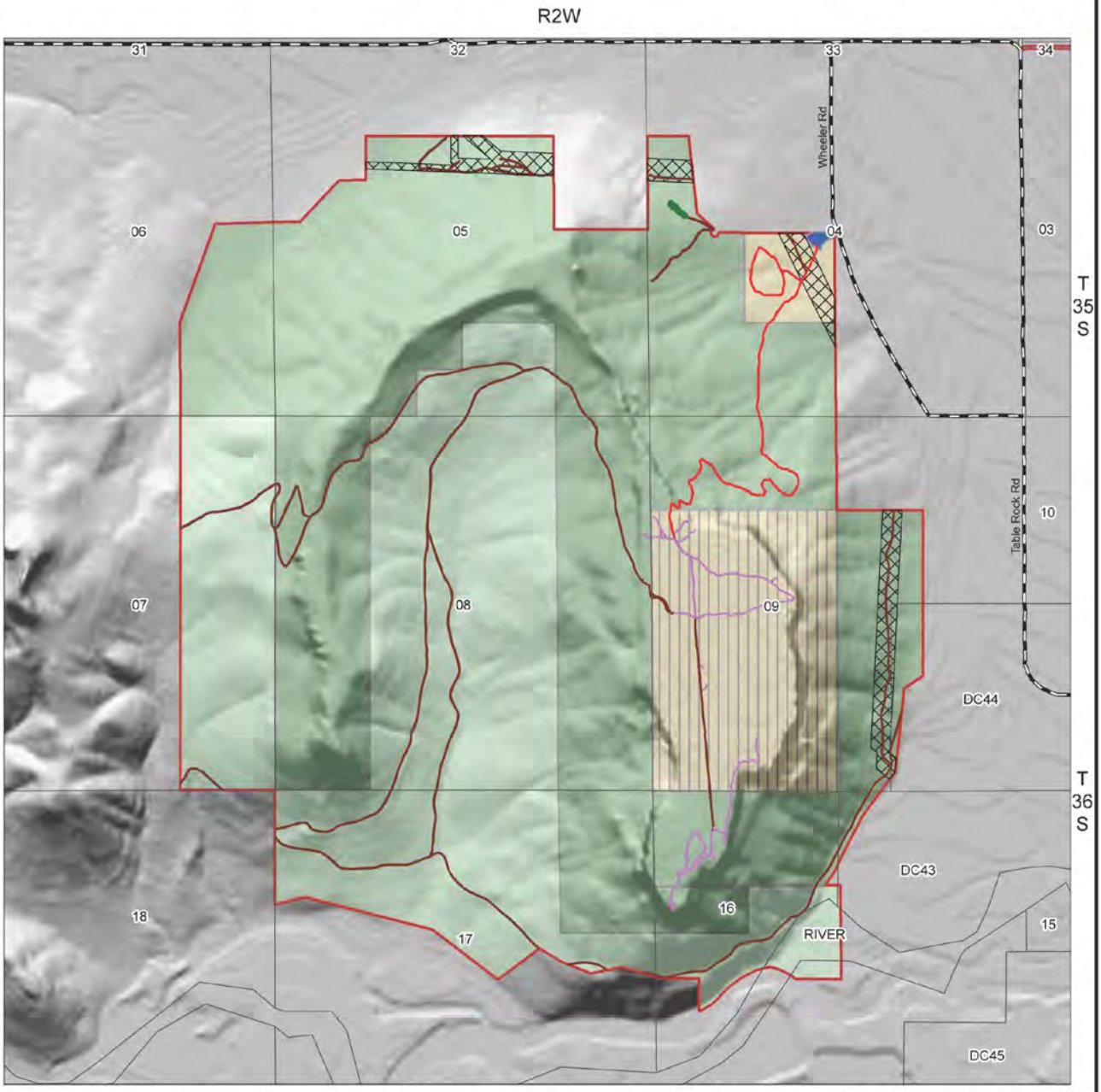
Map 12: Manmade Features on Lower Table Rock



0 0.5 1
Miles

Table Rocks Management Plan

- Agriculture
- Maintained Trail
- Powerline Right-of-Way
- Trail Head Facility
- Unmaintained Road or Airstrip
- User Created Trail
- BLM-Administered, ACEC
- BLM-Administered
- The Nature Conservancy
- Neary Conservation Easement
- Management Area

N
W E
S

Medford District
March 2012

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Map 13: Roads and Trails on Lower Table Rock

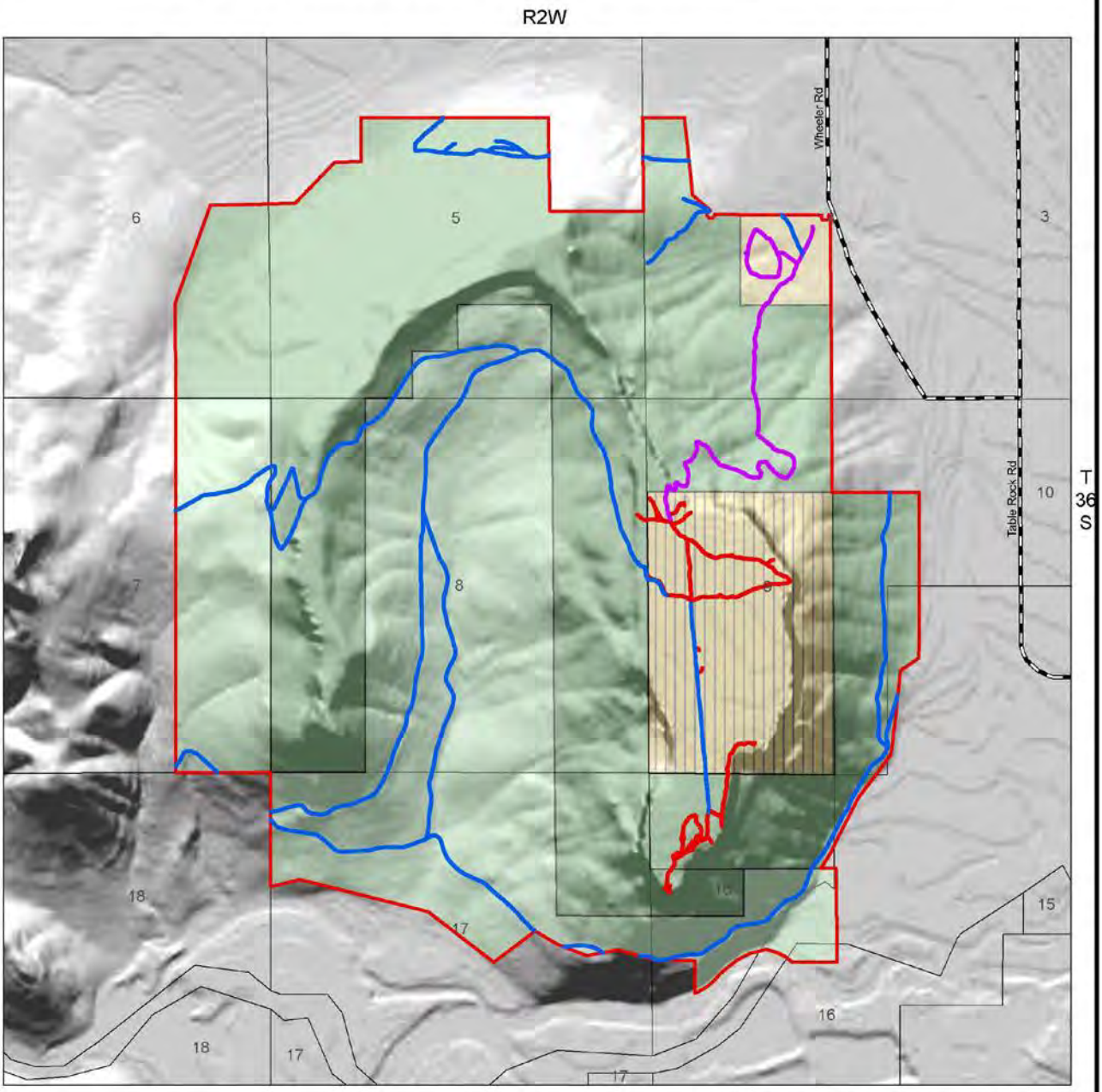

Table Rocks Management Plan

Maintained Trail
User Created Trail
Unmaintained Road *

BLM-Administered, ACEC
BLM-Administered
The Nature Conservancy
Neary Conservation Easement
Management Area

* Roads closed to Public Vehicle use

N
W E
S

Medford District
March 2012

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Map 14: Manmade Features on Upper Table Rock

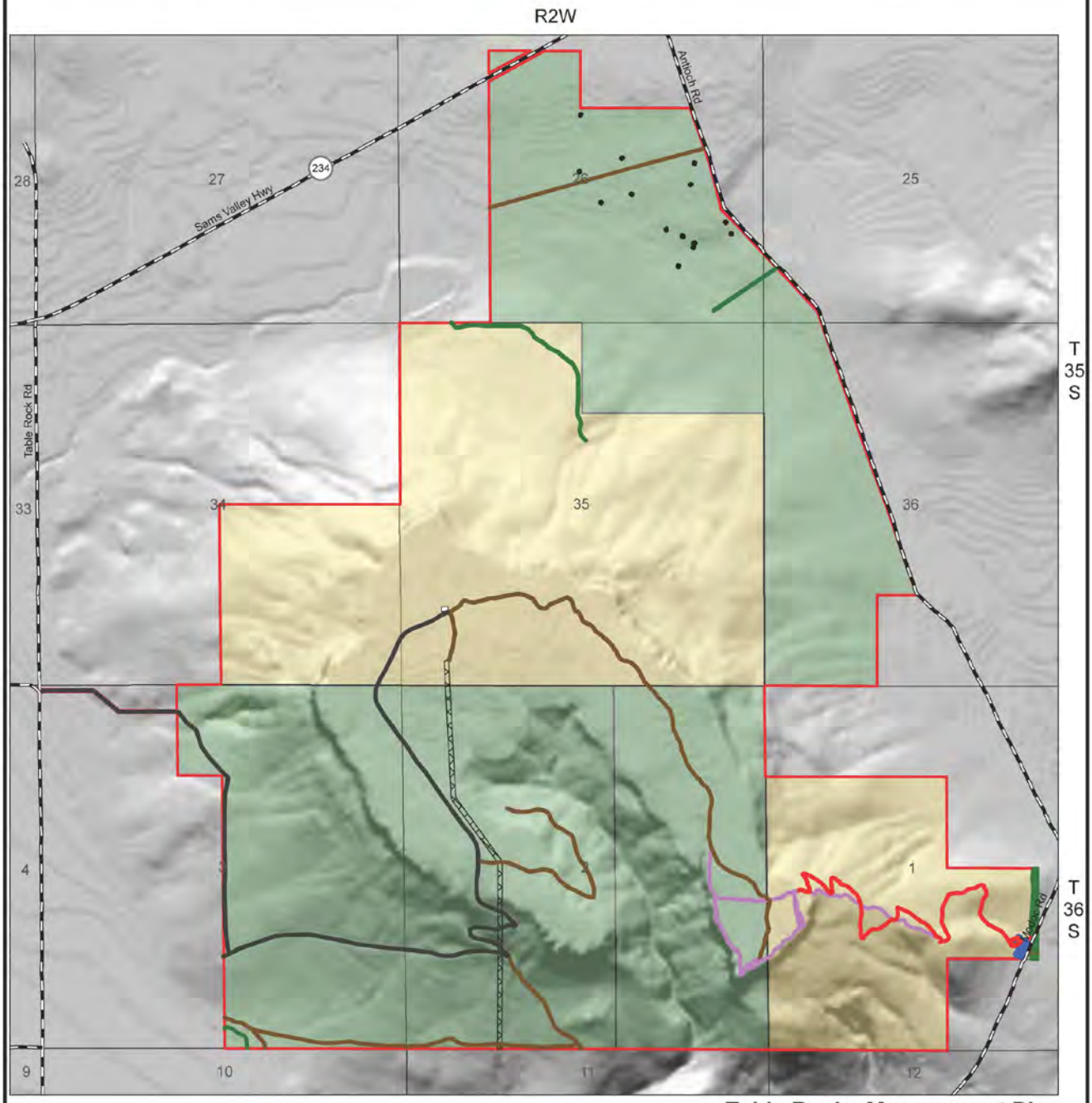

Table Rocks Management Plan

0 0.5 1
Miles

N
W E
S

Agriculture
Maintained Road
Maintained Trail
Pill Box
Trail Head Facility
Unmaintained Road
User Created Trail
VOR Equipment
Powerline Rights-of-Way
Management Area
The Nature Conservancy
BLM-Administered

Medford District
March 2012

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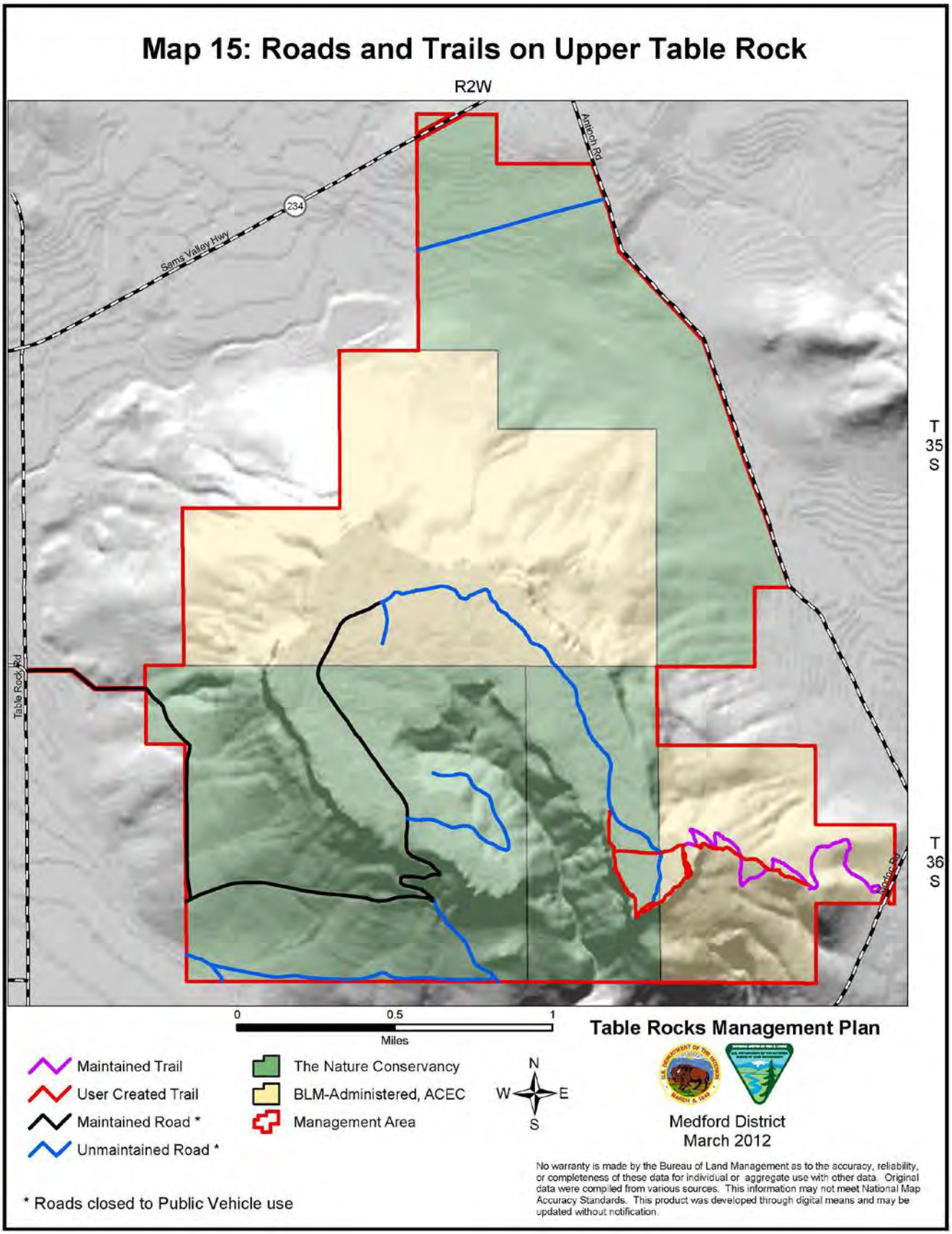
Map 15: Roads and Trails on Upper Table Rock
R2W
Antioch Rd
234
Sams Valley Hwy
T 35 S
Table Rock Rd
T 36 S
Modoc Rd
0
0.5
1
Miles
Table Rocks Management Plan
Maintained Trail
User Created Trail
Maintained Road *
Unmaintained Road *
The Nature Conservancy
BLM-Administered, ACEC
Management Area
N
W
E
S
Medford District
March 2012
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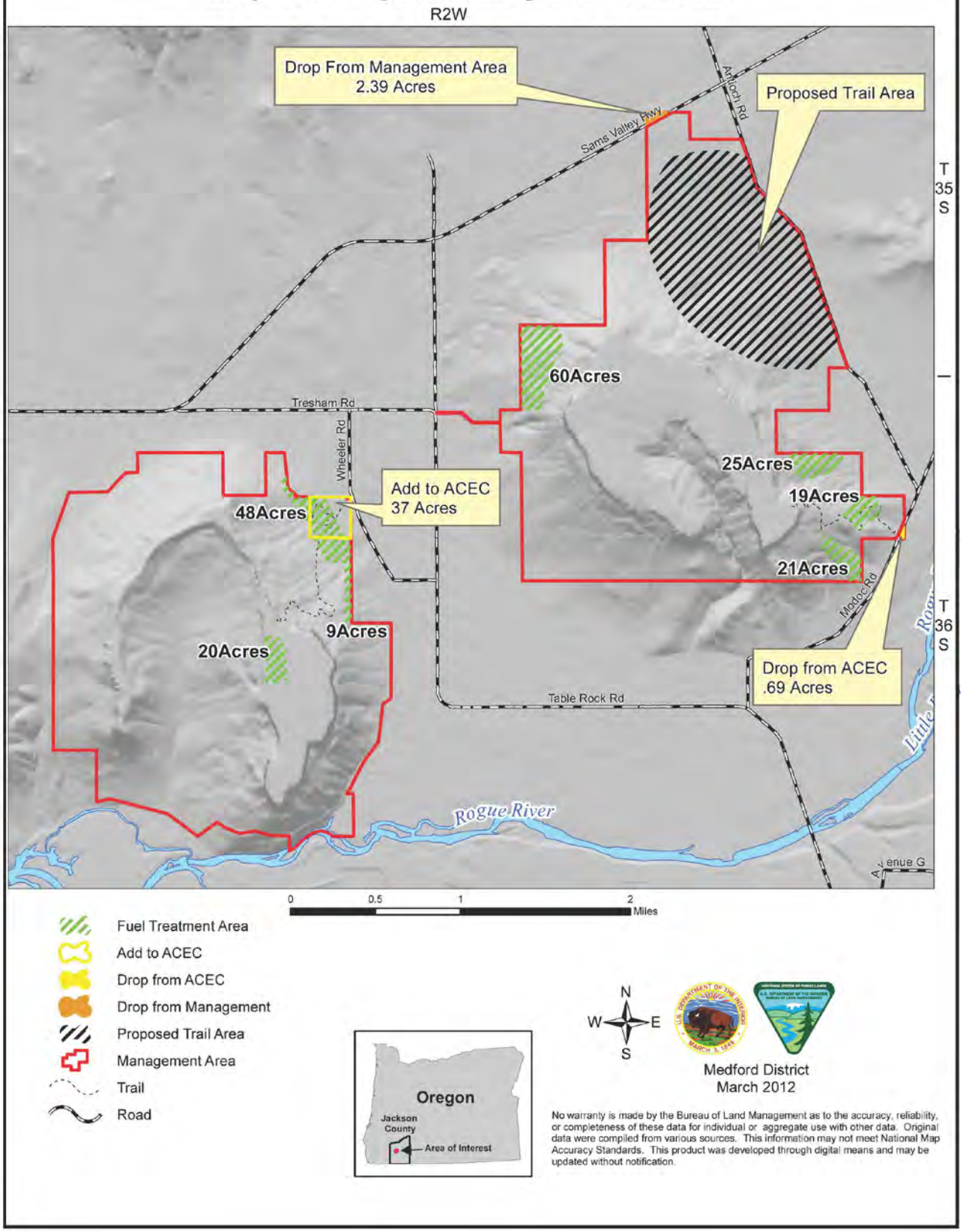
* Roads closed to Public Vehicle use

Map 16: Proposed Project Locations