

**Cow Mountain  
Recreation Area  
Implementation Plan**

**INCLUDING:  
NORTH COW MOUNTAIN RECREATION AREA  
&  
SOUTH COW MOUNTAIN OHV MANAGEMENT AREA**

BUREAU OF LAND MANAGEMENT

UKIAH FIELD OFFICE

Draft

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## **Abstract**

The Draft Cow Mountain Recreation Area Implementation Plan (IP) describes current resource management conditions, outlines management constraints, and proposes actions based on best management practices for approximately 55,000 acres of Bureau of Land Management-administered lands within the Cow Mountain Recreation Area in Mendocino and Lake Counties, California.

The proposed management actions under consideration vary by the activity designated in the Ukiah Field Office Resource Management Plan (RMP) Recreational Opportunity Spectrum (ROS) analysis (Bureau of Land Management, 2006). Each action is relative to the activity, region, and resource outlined. Management under these actions includes decisions that are a balance of multiple uses.

Major issues addressed in this Draft IP include recreation management, public access, facility development, travel management, and lands and realty management.

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## 1.0 Introduction

The U.S. Department of Interior (DOI), Bureau of Land Management (BLM) is updating its implementation management plan for the Cow Mountain Recreation Area and will include the North Cow Mountain Recreation Area and South Cow Mountain OHV Recreation Area, as described in Northern California Coastal Wild Heritage Wilderness Act (U.S. Congress, PL 109-362, 2006). Rationale in support of this endeavor is the completion of the Ukiah RMP and U.S Congress Public Law 109-362. With regard to decision making and full environmental disclosure, public involvement is a vital component of the National Environmental Policy Act (NEPA) and is a critical element of the Environmental Analysis process. Planning for this document started in 2006.

The Cow Mountain IP planning process (see Table 1) is based on the Land Use Planning Handbook (Bureau of Land Management, BLM Handbook H-1601-1, 2005) and the Planning for Recreation Handbook (Bureau of Land Management, BLM Handbook H-8320-1)

**Table 1 Cow Mountain IP Planning Process**

PLANNING PROCESS STEP	DESCRIPTION	TIMEFRAME
Prepare to plan	A preparation plan provides the foundation for the planning process by identifying the preliminary issues to be addressed, the skills needed to address them, a preliminary budget that can be used for the cost estimate, preliminary planning criteria, and data and metadata available and needed.	2007
Conduct scoping	Issues and concerns are identified through a 30 day scoping process that includes the public, tribes, other federal agencies, and state and local governments. Planning criteria are also developed to ensure decisions are made to address the issues pertinent to the planning effort. ** Two scoping meetings were held due to lapse of time in decision making	February to March 2007  **August to October 2015
Analyze the Management Situation	The Analysis of the Management Situation (AMS) describes the current condition and trends of the resources and uses / activities in the planning area.	January 2010  **October to December 2015
Develop and identify management actions	A range of reasonable management actions that address issues identified during the scoping process is developed.	April 2012  **October to December 2015
Prepare a draft EA	The Draft EA is issued and made available to the public for a review period of 30 calendar days. During this time, the BLM will hold another round of public meetings to gather comments, as well as accepting comments in writing.	October through December 2015
Prepare a proposed EA	After comments to the draft are reviewed and analyzed, the draft is modified as necessary. The Proposed EA is published and made available for public review for 30 days.	December 2015 to January 2016
Implement, monitor, and evaluate plan decisions	Management measures outlined in the approved plan are implemented on the ground, and future monitoring is conducted to test effectiveness. Changes are made as necessary to achieve desired results.	Ongoing upon approval

The Draft IP was prepared in compliance with BLM's planning regulations Title 43 Code of Federal Regulations (CFR) 1600 under the authority of the Federal Land Policy and Management Act (Bureau of Land Management, 1976). This document also meets the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality Regulations for Implementing NEPA (40 CFR 1500-1508), and requirements of BLM's NEPA Handbook H-1790-1.

## **1.1 Purpose & Need**

The purpose of the Cow Mountain IP is to guide overall recreation management within the Cow Mountain Recreation Area over the next 15 years. It will further define Cow Mountain Recreation Area management actions and objectives that were developed in the Ukiah RMP. Due to the action items of the IP, and the inclusion of issues of an important and sometimes controversial nature this document will serve as an EA and cover develop further only those decisions made in the Ukiah 2006 RMP. Additional site specific environmental analyses will be necessary for the development of recreation facilities and other management actions that are outlined in the IP. The EA in conjunction with the Travel and Transportation Management Handbook (Bureau of Land Management, BLM Handbook H-8342- 1, 2009) serves as the implementation planning document for road and trail designations that were listed in the RMP.

## **1.2 Location & Background**

The Ukiah Field Office area encompasses approximately 300,000 of BLM managed surface acres and 214,000 additional subsurface acres (mineral estate). The geographic area includes all non-contiguous BLM managed public lands within 9 counties including: Marin, Solano, Sonoma, Mendocino, Lake, Napa, Yolo, Colusa, and Glenn Lands extend from the Pacific Ocean on the west, north of San Francisco Bay, west of the Sacramento River, and south of Humboldt County. There are 11 major management areas within this region which includes the Cow Mountain Recreation Area.

There are approximately 1.5 million people living within this region. Most of the population is concentrated in the southern reaches of the Ukiah Field Office where there is the least amount of public lands. Public lands administered by the Ukiah Field Office are influenced by the visitor use from large metropolitan centers of the San Francisco Bay region and the Sacramento region.

The Cow Mountain Recreation Area is approximately 55,000 acres in the Mayacamas Mountains east of the City of Ukiah, south of Highway 20, north of Hopland (except for approximately 3,000 acres of scattered tracts), and west of Scotts Valley. While there are a

few small private in-holdings, the public lands of the entire Cow Mountain Recreation Area are generally contiguous. Based on acreage totals, approximately half of the Recreation Area is in Lake County and half is in Mendocino County.

Lands within the Cow Mountain Recreation Area were set aside by Congress in 1927 to preserve the right of the public to use for recreation. During the mid-1970s, Cow Mountain was split into two parts: The South Cow Mountain area with approximately 25,000 acres to be managed for Off-Highway Vehicles (OHV), and the North Cow Mountain area of approximately 27,000 acres to be managed for non-OHV recreation. In October of 2006, U.S. Congress Public Law 109-362 (Section 9), part of the Northern California Coastal Wild Heritage Act, congressionally designated the Cow Mountain Recreation Area (see Appendix L) to maintain and enhance the recreational use of the land including motorized recreation, hiking, camping, mountain-biking, sightseeing, and horseback riding.

Past direction for Cow Mountain had been addressed in the 1976 Cow Mountain Management Framework Plan, the 1982 Cow Mountain Recreation Area ORV (Off-Road Vehicle) Management Plan and the 1991 Recreation Area Management Plan for the North Cow Mountain Recreation Area. As with the Ukiah Resource Management Plan/EIS signed June of 2006, the Cow Mountain IP provide further direction of the 2006 Resource Management Plan.

### **1.3 Cow Mountain Recreation Area Management Objectives**

#### **Objective 1**

Provide, through facilities and management, recreation experience opportunities consistent with recreation management zone prescriptions defined in the Ukiah RMP and the Planning for Recreation Handbook (Bureau of Land Management, BLM Handbook H-8320-1, and to be consistent with Congressional intent for the Cow Mountain Recreation Area.

#### **Objective 2**

Provide, through area management and facilities maintenance, visitor safety within an inherently dangerous recreation environment and inherently dangerous recreation activities.

#### **Objective 3**

Reduce illegal activities, through law enforcement and management actions, to a level that does not affect the majority of visitors of the Cow Mountain Recreation Area.

## **Objective 4**

Provide a sustainable system of roads, trails, and support facilities for visitor access and recreation use without undue degradation of natural and cultural resources.

## **Objective 5**

Seek out new and enhance existing partnerships to maximize effectiveness of available funding and provide appropriate services that would otherwise be unavailable.

### **1.4 Conformance with Land Use Plans**

The Cow Mountain IP is in conformance with the Ukiah Field Office RMP.

#### **Ukiah Field Office RMP applicable recreation goals:**

- Develop a comprehensive travel management system that improves access and recreation opportunities, provides experiences that complement the character of each geographic zone and the surrounding regions, and minimizes impacts to the resources.
- Improve on-the-ground travel management operations and maintenance programs to sustain and enhance recreation opportunities.
- Improve signing, mapping, and travel information and education for BLM public lands visitors.
- Expand and pursue partnerships, sources of funding, and guidance for transportation and travel management.
- Provide administrative fire and emergency access for management and protection of the area visitors, resources, and facilities.
- Improve public access to trailheads, campgrounds, and other BLM managed lands and facilities.
- Fulfill legal access requirements to private landowners and other right-of-way holders and land use permittees.
- Minimize impacts to water quality, natural, and cultural resources through proper design and maintenance of trails.

#### **Ukiah Field Office RMP applicable recreation management actions:**

##### **General**

- Any future trail development will be consistent with the management zone prescriptions and recreation program goals.

- Re-routing some trail segments may be required due to excessive steepness, erosion or poorly designed trail segments. These re-routed trail segments will be closed and rehabilitated.
- The trail system will be mapped and made available to the public.
- BLM will coordinate with adjacent Federal, State, and County agencies for consistent travel management.
- BLM will coordinate with agencies, groups, tribes, and individuals to develop a trail system that is both manageable and sustainable.
- Coordinate with and assist County agencies in ensuring that the county road system complements BLM resource protection and public access needs.
- Follow the OHV Management Guidelines developed by the Northwest California Resource Advisory Council where feasible and as consistent with goals and objectives for other resources and uses as outlined in the plan.

### **North Cow Mountain**

Primarily allows non-motorized and mechanized recreation. All mechanized use will be limited to designated trails and roads. RMP authorizes development of up to 40 miles of mechanized and non-motorized use trails (see Appendix A.2 for map).

All vehicle use will be limited to street legal vehicle use only on the Mendo-Rock Road, Water Tank Spur, Willow Creek Road, Rifle Range Road, Radio Tower Road, Rifle Range Maintenance Spur, and Mayacmas Campground Road. In addition, the gate at the end of the Water Tank Spur will be opened during the general deer season (rifle) to allow street legal vehicle access to the following routes:

- Firebreak #1
- McClure Creek Ridge Spur
- McClure Creek Spur
- Sulphur Creek Spur
- Sulphur Creek Ridge Spur

### **South Cow Mountain**

Allows motorized, non-motorized, and mechanized recreation activities. All motorized and mechanized use will be limited to designated trails and roads. Although OHV trails will retain legacy numbering system, the Ukiah RMP utilized an alternative trail numbering system which will only be utilized in trail planning and maintenance (see Appendix B.10 for RAMP/RMP South Cow Mountain Trail Numbering Cross Reference). Although the area is open year

round, there is a wet weather vehicle closure policy based on rainfall. This policy has been in effect for more than two decades, with a formal policy implemented the winter of 2004-2005. This closure is subject to modification. Mountain bikers and hikers may use the area during these temporary closures.

Continue to develop a loop trail system where feasible. BLM may develop up to 40 miles of trail for new trails and reroutes, to protect erodible soils and sensitive resources, and to expand recreational opportunities.

## **1.5 ISSUES & PUBLIC SCOPING**

### **Scoping**

Five public scoping meetings were held in February, March, and April 2007 all in local communities within the planning area (see Section 3 for further details on public participation). A second meeting in Ukiah, California was associated with a Resource Advisory Council Meeting. Another public meeting held April 30, 2007 in Lakeport, California was specific for Native American tribes. These meetings were held to gather information from the public on future management of the Cow Mountain Recreation Area. Those who participated in the public meetings were given an opportunity to ask questions about the RAMP process, Ukiah Field Office, specific programs managed by BLM, partnerships, and future opportunities for involvement. Four additional scoping meetings were held between August 2015 and September 2015 due to lapse in time before decision making. Approximately 60 people attended the five 2007 meetings, and 29 people attended the four 2015 meetings. To gather written comments, an official scoping comment period was open from March 1, 2007 until May 1, 2007 and again from September 2015 to November 2015. Over 183 comments were received during the comment periods 140 in 2007 and 43 in 2015.

All comments received either in writing by email or taken at the public meetings are included in this analysis. Many of the submissions contained multiple comments on different topics. A total of 140 written comments were compiled as of June 1, 2007. Forty-three written comments were collected as of October 24<sup>th</sup>, 2015 when the process was opened back up due to delay in action. These comments were recorded and categorized according to topics of interest or location of interest (North or South Cow Mountain). The documentation of these comments and public meetings is on file with BLM and is available upon request.

Most comments received during the 2007 and 2015 scoping process were about shooting, California State Off Highway Vehicle “Green Sticker” support, probable recreation fees, trails, access, parking, events, trail maintenance, volunteer coordination, mountain biking trails, safety, fire mitigation, access, miscellaneous concerns, and what BLM can do right now. These issues will be addressed in developing the alternatives and management priorities throughout the IP/EA process.



The following organizations and agencies were represented among the people who signed in at the public meetings in both 2007 and 2015:

- California Wilderness Coalition
- California Native Plant Society
- Lake County Department of Public Works
- Lake County Air Quality and Management District
- Friends of the Eel River
- International Mountain Bike Association
- Epic
- Backcountry Horseman
- Santa Rosa 4 Wheel Drive Club
- Clear Lake Horseman
- SCSCA (Sonoma County Sport Cycle Association)
- Women of the Toll Road (Equestrian Group)
- North Bay Motorcycle Club
- Sierra Club
- Mendocino 4 Wheel Drive Club
- NRA (National Rifle Association)
- Ukiah Valley Trails Group
- Big Valley Rancheria
- Elem Indian Colony
- Robinson Rancheria Pomo Indians
- Scotts Valley Band of Pomo Indians
- Habematolel Pomo of Upper Lake
- Yokayo Tribe (Not federally recognized)

There were no Federal, State, or County elected officials or their representatives present at any of the meetings though all were contacted through direct mailings or by personal call from the Field Manager.

### **Issues Selected for Analysis**

The following issues were identified through public participation in the IP scoping and planning process and interdisciplinary teamwork.

## **Issue 1**

**More Miles of Recreational Trails:** The public is in favor of the BLM Ukiah Field Office establishing up to the limited number of trail miles of all types within the Cow Mountain Recreation Area.

## **Issue 2**

**Recreational Target Shooting:** Shooting should either be totally eliminated or be limited to designated areas identified through this planning process. If shooting is allowed, the site approved has to be designed, monitored, and maintained to meet public concerns for health and safety.

## **Issue 3**

**Improve Access:** There needs to be improved access especially to the South Cow Mountain OHV Recreation Area. Access routes need to be wide enough to accommodate trucks with trailers and RVs. There needs to be access linkages to other developed trail networks and areas such as Lake Mendocino, Blue Lakes, Clear Lake, and the Mendocino Coast.

## **Issue 4**

**Provide More Trail Maintenance:** The public would like the BLM to meet water quality objectives for Clear Lake and the Russian River drainage through better trail design and maintenance.

## **Issue 5**

**Enhance Volunteer Coordination:** There is strong volunteer support especially regarding trail maintenance and brushing. The public would like to see a list of volunteer projects provided by BLM and have the agency design a contact mechanism for agency interaction with groups and organizations.

## **Issue 6**

Create Additional Parking: The public would like to see better parking at the existing staging areas and additional parking opportunities developed at the safety/obstacle course, and Scotts Creek.

## **Issue 7**

Continue with Land Tenure: The public would like to see the agency acquire the current private inholdings, secure easements or property for trail linkage, and acquire property for better public access.

## **Issue 8**

Improve Overall Safety: The public would like to see a greater law enforcement presence and design features at Cow Mountain to improve public safety.

## **Issues Considered, but not Analyzed**

The following issues were raised during the scoping process but will not be addressed in the plan. Below is a list of these issues and a rationale of why they will not or cannot be addressed.

### **Mill Creek Road Access**

Mill Creek Road is a County Road within the jurisdiction of Mendocino County Department of Transportation. Public issues of widening the road, posting speed limits, surfacing, and traffic enforcement, are responsibilities of the County and State and fall outside of the scope of the RAMP. BLM recognizes the issues which occur on Mill Creek road and realize the attraction of going to South Cow Mountain to motorcycle enthusiasts. As a concerned interest, the Ukiah Field Office will assist and cooperate with Mendocino County to the extent possible to help eliminate the traffic concerns on Mill Creek Road.

### **Scotts Creek Road Access**

Scotts Creek Road is a County Road within the jurisdiction of the County of Lake Public Works Department. Public issues of widening the road, posting speed limits, and traffic enforcement,

are responsibilities of the County and State and fall outside of the scope of the RAMP. BLM recognizes the issues which occur on Scotts Creek Road and realize the attraction of going to South Cow Mountain to motorcycle enthusiasts. As a concerned interest, the Ukiah Field Office will assist and cooperate with Lake County to the extent possible to help eliminate the identified traffic concerns.

### **Climate Change**

The Ukiah Field Office recognizes climate change and an emerging issue of significant public concern. Analysis of climate change as a land use planning issue is beyond the scope of this IP proposed for Cow Mountain. However, potential impacts to climate change related to proposed management projects is not outside of the scope of our environmental review process and will be analyzed.

### **Visitor Fees**

The Ukiah Field Office recognizes that visitor fees would be beneficial for the area. Analysis of fee areas, cost of analysis, and sub sequential planning is beyond the scope of this IP proposed for Cow Mountain due to lack of resources within the local agency field office. When and if resources become available, fees will be reconsidered in a future management decision

## **2.0 Proposed Management Plan**

The following Management Plan actions were developed based upon National and State BLM direction and policy, existing condition and environmental issues outlined in this document and the Ukiah Field Office RMP, and public input during the scoping process. Other factors that influenced management plan development are discussed in section 1.0. During development, actions were evaluated against the purposes of the proposed IP and the Ukiah RMP.

Proposed management actions that will not make significant progress towards meeting the proposed objectives or actions not consistent with the intent of current BLM legal and regulatory requirements or policy were not considered or included. Actions proposing exclusive production or protection of one resource at the expense of other resources were not considered, except where non-renewable resources were found. FLPMA mandates the BLM to manage public lands for multiple use and sustained yield. Each action considered allows for some level of support, protection, and/or use of all resources present in the planning area.

### **2.1 Introduction**

The Cow Mountain Recreation Area was designated to maintain and enhance the recreational use of the land including motorized recreation, hiking, camping, mountain-biking, sightseeing, and horseback riding (U.S. Congress, PL 109–362, 2006). General management direction for outdoor recreation and the Cow Mountain Recreation Area was established in the Ukiah RMP (Bureau of Land Management, 2006). This Implementation Plan provides further specific management direction.

Recreation Opportunity Spectrum (ROS) Zones for the Cow Mountain Recreation Area were established in the Ukiah RMP. This plan will further explain one or more of the ROS Zone classifications within the Cow Mountain Recreation Area based on guidance from the Planning for Recreation Handbook (Bureau of Land Management, BLM Handbook H-8320-1). (see Appendix D).

Travel management is central to the management of the Cow Mountain Recreation Area. The purpose of travel management is to provide a route network for recreational use and public access to the BLM managed lands, while minimizing impacts on natural and cultural resources in the area. The existing route system (Appendix A) was established in the RMP and is within the parameters of the ROS zones involved. These linear features provide for a diversity of uses and experiences. As of March 16<sup>th</sup>, 2012 the H-8342 Travel and Transportation Handbook replaced section II. D of the Land Use Planning Handbook (H-1601-1) allowing for route designation to be defined as an implementation decision, waiving the need for a plan amendment for route designation as previously needed before 2012.

The Ukiah RMP established a limit of four (4) Special Recreation Permit (SRP) events per year that require the closure of the entire Special Recreation Management Area (SRMA) to the public,

and occur in the Front and Middle Country ROS zones of the South Cow Mountain SMRA (Appendix L of the Ukiah RMP EIS).

The RMP limited shooting to be designated shooting areas only and that such shooting areas would be designated during plan implementation. A conflict was created between this 2006 RMP decision and the subsequent 2008 shooting area policy issued by the BLM Washington Office, this IP shall rectify the existing conflict by continuing to provide recreational shooting opportunities in compliance with BLM policies and the 2006 Ukiah Field Office RMP.

### **North Cow Mountain**

The primary focus of recreation activities in North Cow Mountain is for non-motorized and mechanized recreational trail use. Mechanized recreation, such as mountain biking, is limited to existing designated roads and trails excluding trails that violate deeded existing or current trail easements. Hiking and equestrian uses are not so limited. An additional 40 miles of trails for non-motorized use may be added to the existing mileage as a result of this plan and for needs identified subsequent to this plan. Trails that are closed and rehabilitated which were identified as available for use in the RMP or were subsequently constructed as part of the additional 40 miles authorized by the RMP will be credited against the 40 mile new trail limit. Thus, if 5 miles of new trail are developed and 2 miles are closed and rehabilitated under the conditions described above, the limit of 40 miles of new trail will be reduced by 5 and increased by 2, leaving 37 miles of new trail still authorized by the RMP.

### **South Cow Mountain**

The primary focus of recreation activities in South Cow Mountain is for motorized recreational use. All motorized and mechanized use will be limited to designated roads and trails, collectively referred to as linear features. Emphasis will be on a loop trail system where the visitor can choose how far to ride and at what level of difficulty. An additional 40 miles of trail may be developed as a result of this plan and for needs identified subsequent to this plan. Trails that are closed and rehabilitated which were identified as available for use in the RMP or were subsequently constructed as part of the additional 40 miles authorized by the RMP will be credited against the 40 mile new trail limit. Although the area is open year round, there is a wet weather closure policy that has been in effect for over two decades for South Cow Mountain, with a formal policy implemented December, 2004. This closure policy is subject to modification and refinement as an ongoing management tool. This closure policy (see Appendix E) applies to motorized use. Non-motorized visitors may enter the area during the seasonal closures.

### **Lost Valley Meadow, South Cow Mountain**

The Lost Valley Meadow is an ACEC comprised of 40 acres of BLM managed lands within the Miner's Ridge watershed of the Russian River Drainage system. The primary features requiring special management considerations include the pristine meadow system with its unique assemblage on native vegetation. On the Recreation Settings Characteristics Matrix (RSCM), the

Lost Valley Meadow is designated as *Back Country* despite its proximity to travel networks and being surrounded by *Middle Country* zones. This is to provide the ACEC with a non-motorized status and reduce overall impacts. The Lost Valley Meadow does contain one support facility in the form of a camouflaged well pump designed to blend in with the natural landscape. This well was established to provide drinking water for the Red Mountain Campground.

## **Sheldon Creek Unit**

Although considered part of the South Cow Recreation Area, the primary focus of recreation activities in the Sheldon Creek Unit is for non-motorized recreational use. Mechanized recreation, such as mountain biking, is limited to existing trails marked for such use. Hiking and equestrian uses are not as limited. Any proposed Sheldon Creek Unit trails are part of the additional 40 miles of trail for South Cow Mountain. However, due to limited acreage and probability of trespass, any trails developed in the Sheldon Creek Unit will be designated for non-motorized use. There is presently one developed campground at the Sheldon Creek Unit. This receives the majority of use during deer hunting season. When initially developed, Sheldon Creek campground had plans for 12 developed sites divided into 3 sections. Each site had tent pads, picnic tables, and fire rings. Other facilities included water for animals and a vault toilet. In late 90s, the lower campsites were closed due to vandalism. Currently, only 2 of the upper sites are maintained.

## **2.2 Proposed Management Plan Outline**

This section describes the proposed management plan. The actions selected were determined through public input and internal review to allow for best management practices for resource management and resource development. Due to the Cow Mountain Recreation Area having three distinct management areas, the following proposed plan provides separate best possible actions for North Cow Recreation Area (NCRA), South Cow OHV Recreation Area (SCORA), and Sheldon Creek Unit (SCU).

The following Proposed Management Plan divides the Cow Mountain Recreation Area into three major management groups, Direct Facilities, Support Facilities, and Support Systems.

Direct facilities are those required by the visitor to participate in the activity they came for and support facilities are those that are there to facilitate their visit. Roads, trails, and vehicle routes are examples of direct facilities while campgrounds, trailheads, and staging areas are examples of support facilities. Support systems are any on or off-site mechanisms that allow or assist the Bureau of Land Management to perform its management duties for the recreation area. Examples of support systems are interpretive resources, signage, monitoring systems, and management policies.

## **Direct Facilities Management**

### **Recreational Shooting Areas**

#### ***Current Management Situation***

Recreational shooting is currently supported by the BLM by providing a rifle range in the southwest portion of the North Cow Mountain area. It was constructed prior to 1886 and allowed to operate unsupervised. Re-development began in June 2004 with installation of shooting benches, gate repair, and general clean up. None of the re-development that would involve earthwork was performed.

Also, BLM policies issued in February 2008 and November 2011 prohibit the agency from directly operating shooting ranges, or from issuing new leases of public lands for shooting ranges, principally because of the agency's potential liability related to lead contamination of the environment and public safety.

The UKFO RMP states that target shooting may only be done in designated shooting areas. Instruction Memorandum No. 2006-06 states that shooting activity must not:

*Cause a public disturbance or create risk to other persons on public lands. 43 C.F.R. § 8365.1-4(a) (Public health, safety and comfort); Deface, remove or destroy natural features, native plants, cultural resources, historic structures or government and/or private property. 43 C.F.R. § 8365.1-5(a)(1); Facilitate and create a condition of littering, refuse accumulation and abandoned personal property. 43 C.F.R. Sec. 8365.1-1; Violate existing use restriction, a closure and restriction order, or supplementary rules notice. 43 C.F.R. §§ 8365.2-5(a), 8364.1, 8365.1-6.*

Additionally, field offices can employ the patent provisions of the Recreation and Public Purposes (R&PP) Act, 43 U.S.C. § 1721, to convey ownership of lands for shooting ranges to non-profit organizations or local governments at less than fair market value (in some cases). In 2008, this option was pursued. This option failed to see fruition.

#### ***Current Constraints***

##### **Authorized Recreational Shooting Area, NCRA**

Current recreational shooting management policies have established the area known as the "Rifle Range" on North Cow Mountain. This area has been managed as an unmonitored recreation site for more than 25 years and attempts to utilize regional stakeholder partnerships have produced no significant results that would allow it to be managed by such partnerships. The site is located within a 1/4 mile of an established trailhead and 1/10 of a mile from an established horseback trail. The site is heavily impacted by illegal dumping and extreme litter via firearms use (cartridges, shot shells, targets, ammo boxes, etc.). The area is close to other recreational uses that are not considered compatible to recreational shooting; namely horseback riding, mountain biking and hiking. The site is located in an area that is difficult to monitor.



## Unauthorized Recreational Shooting Areas, NCRA, SCORA & SCU

Numerous unauthorized recreational shooting areas have developed in the South Cow Mountain, North Cow Mountain, and Sheldon Creek areas of the Cow Mountain Recreation Area. These sites are located close to private property and are located in areas that are difficult to monitor. They are heavily impacted by illegal dumping and extreme litter via extensive firearms use (cartridges, shot shells, targets, ammo boxes, etc.). They are currently located close to other recreational uses that are not considered compatible to recreational shooting; namely camping and OHV use.

### ***Proposed Management Actions***

#### Recreational Shooting Areas, NCRA

BLM policy and consistency with the current Ukiah BLM will allow The North Cow Mountain Rifle Range to remain open to recreational target shooting. BLM will identify potential mitigations to address safety and environmental impacts. Actions for mitigation include but are not limited to increased monitoring, culverts for water diversion, assessment of areas for multiple shooting activities, increased signage, increased educational materials for the public and clean ups. The Ukiah Field Office will continue to work with interested partners in all mitigation actions. All undesignated shooting areas will be decommissioned and restored to their natural state by the Ukiah Field Office staff, volunteer help and work crews.

#### Recreational Shooting Areas, SCORA

BLM policy (November 2011) prohibits the construction of new recreational shooting areas. BLM will continue to manage recreational shooting under the status quo in accordance with resource management and public safety considerations under existing authorities, including the Federal Land Policy and Management Act (FLPMA 1976), BLM implementation regulations, and Executive Order 13443. There is one known existing user unauthorized shooting area on South Cow Mtn. located on Scotts Creek. All shooting areas will comply with standard Best Management Practices to meet environmental protection requirements and safety, including but not limited to appropriate back drops, creek buffers and protection measures, managed fuels to minimize risk of wildfire, safe spacing between shooting areas, compatible with other recreational area uses nearby and safe distance from existing roads and trails.

#### Recreational Shooting Areas, SCU

Due to the proximity to private property and historical use of the site, the Sheldon Creek Unit will not be managed for recreational shooting.

## **Travel Management**

### ***Current Management Situation***

Travel management for the RAMP refers to the Linear Transportation Feature definitions as outlined in Travel and Transportation Management Handbook (Bureau of Land Management, BLM Handbook H-8342-1, 2009), namely Roads, Primitive Roads, and Trails. Roads are maintained for regular use and are accessible by low clearance vehicles. Primitive Roads are managed for use by four-wheel drive or high clearance vehicles and are not maintained under BLM road design standards. Trails are managed for human-powered, stock, or OHV transportation and are generally not managed for four-wheel drive or high clearance vehicles. All Cow Mountain Linear Transportation Features were outlined in the Ukiah RMP (see Appendix A for trail closure, reroute, redesign, and development maps and data).

All user created trails that are not maintained to a sustainable standard, shall be closed, barricaded, restored to a natural state, and rerouted if necessary. All user created trails that pass through an Area of Critical Environmental Concern or a cultural resource site, shall be closed, barricaded, restored to a natural state, and rerouted if necessary. Although OHV trails will retain legacy numbering system, the Ukiah RMP utilized an alternative trail numbering system which will only be utilized in trail planning and maintenance (see Appendix B.10 for IP/RMP South Cow Mountain Trail Numbering Cross Reference). New trails or trails without a given legacy number will be given a number during this IP.

### ***Current Constraints***

- The North Cow Mountain Recreation Area contains approximately 17 miles of trails that are managed as trails or primitive roads. There are also numerous undocumented user created paths and access trails that lead to exterior private property and interior inholdings.
- The South Cow Mountain OHV Recreation Area contains approximately 93 miles of trails that are managed trails and primitive roads. There are also numerous undocumented user created paths and access trails that lead to exterior private property and interior inholdings.
- Trail maintenance on North Cow Mountain Recreation Area is extremely infrequent and has up until now been reliant on stakeholder support.
- Total trails and primitive roads linear resource maintenance on South Cow Mountain OHV Recreation Area should occur every 2 to 3 years via maintenance by BLM staff and Cal-Fire Trail Crews. However, due to limited staff and budgets, this only occurs every 4 to 6 years.
- Road maintenance occurs annually, however due to soil, drainage, and sustainable design issues in various sections, frequent monitoring and follow-up maintenance is required.

- The Sheldon Creek Unit currently has no developed trails or inventories of existing trails that could be developed into linear resources.

### *Proposed Management Actions*

#### Trails Management, General

To ensure quality recreational experiences for public lands users, annual trail condition assessments shall be performed on all trails in the Cow Mountain Recreation Area to determine where deferred maintenance should occur during annual maintenance cycles (see Appendix C and Appendix I for Soil Conservation Plan and Trail Monitoring Protocol).

#### Trails Management, NCRA

##### *Closures*

No designated trails on North Cow Mountain shall be designated for closure as part of this RAMP. However, internal access to neighboring lands will be closed to prevent trespass onto private property at the following sites (see Appendix A.1 and A.2):

- Two access points leading to the Guidiville Reservation area.
- One access point leading down to McCluire Creek.
- Three access points leading down to Vichy Springs area.

\*Closures are subject to change given future land acquisitions by BLM or easements from private land owners.

##### *Redesigns*

The following trails will be redesigned to provide better equestrian access from Mill Creek Road up to Mayacmas Campground. Current conditions are not accessible by horse. No additional miles will be added or removed from the North Cow Mountain trail network (see Appendix A).

- Mayacmas Trail
- Valley View Trail

##### *Development*

- An approximately 5.46 mile enclosed mountain bike course with intermediate and advanced loops will be developed with a trailhead located on Scotts Valley Road.

- An approximately 1.59 mile downhill mountain bike course will be developed from Green Gate Trailhead along an existing firebreak down towards Mill Creek Road.
- An approximately 12 mile mountain bike loop with main trail heads at the Mayacmas Campground head south on the eastern ridge toward the FCC communication site traversing both the Glenn Eden Trail.
- An approximate 3.57 mile equestrian loop along the Upper Scotts Creek area.
- An approximate 2.18 mile equestrian loop along the Little Cow Mountain area.
- An approximate 8 mile multi-use loop north of the Mayacmas Campground.
- An approximate 6.45 mile multi-use connector trail leading down from Lake Mendocino to the North Mayacmas Loop Trail. If this connector is developed, a campground will be developed north of the Vichy Springs Trail, featuring loop trails.

\* Purposed trail routes are subject to change dependent upon ownership, deed restrictions, developed natural/wildlife resource issues, or cultural resource conflicts discovered during further Environmental Analysis.

Maps will be made available to the public 30 days before proposed developments are implemented.

## Trails Management, SCORA

Per 43 CFR 8342.0-5a, Off-Highway Vehicles (OHV) are referred to as Off-road vehicles (ORV) and are defined as any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding:

- (1) *Any non-amphibious registered motorboat;*
- (2) *Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes;*
- (3) *Any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved;*
- (4) *Vehicles in official use; and*
- (5) *Any combat or combat support vehicle when used in times of national defense emergencies.*

*For the purposes of conformance with California State Parks Off-Highway Motor Vehicle and regional commonplace definitions, this document shall refer to Off-road vehicles (ORV) as Off-Highway Vehicles (OHV).*

### *Closures*

#### *Shin-Skin Ridge Trail*

The side trail along the northern segment of Trail 15, also known as Shin-Skin Ridge has been designated Red Condition by the Sow Cow Mountain Trail Condition Survey. This user created single track motorcycle trail does not connect to any other motorcycle trails and was developed as an unauthorized short-cut between Trail 15 & 17. Due to its proximity to a well-established route, it is unnecessary to reroute. This trail shall be closed, barricaded, and restored to a natural state. This trail was not developed by the Ukiah Field Office, it will not be added to the South Cow Mountain Trail Bank.

#### *Bailout Trail #1 located off of Trail 14*

This bailout trail is located off of Trail 14, south of Red Mountain Campground access road. It is a heavily impacted uphill route and unnecessary because of its close proximity to another bailout trail that serves the same purpose and leads to the same point on the Mendo-Lake Road. This trail shall be closed, barricaded, and restored to a natural state. This trail was developed by the Ukiah Field Office, its approximate .3 miles will be added to the South Cow Mountain Trail Bank.

Bailout Trail #2 located off of Trail 14

This heavily impacted bailout trail is located off of Trail 14, north of Red Mountain Campground access road. This trail shall be closed, barricaded, and restored to a natural state. This trail was developed by the Ukiah Field Office, its approximate .33 miles will be added to the South Cow Mountain Trail Bank and immediately rerouted (see Reroutes).

Trail 3a, North of Oakwood Springs

This uphill climb is heavily impacted and bisects the Oakwood Springs Practice Loop in an unsafe location. This trail shall be closed, barricaded, and restored to a natural state. This trail was developed by the Ukiah Field Office, its approximate .48 miles will be added to the South Cow Mountain Trail Bank and immediately rerouted (see Reroutes).

Trail 25, Boundary Ridge Road Access

This uphill climb is heavily impacted and unsustainable. This trail shall be closed, barricaded, and restored to a natural state. This trail was developed by the Ukiah Field Office, its approximate .34 miles will be added to the South Cow Mountain Trail Bank and immediately rerouted (see Reroutes).

Trail 12 (Acupuncture Alley)

The mid-segment of Trail 12 (a.k.a. Acupuncture Alley) currently exists on private property a 1.5 mile segment shall be closed and rerouted away from Rickabaugh Glade providing an approximately 400 foot buffer around the western parcel boundary. This trail shall be closed, barricaded, and restored to a natural state. This trail was developed by the Ukiah Field Office, its approximate .37 miles of closure will be added to the South Cow Mountain Trail Bank and immediately rerouted (see Reroutes).

Southern Benmore Trail Access from Exterior

An approximately 1.51 mile access trail network exists on the southern segment of Trail 23 (Benmore Loop). To deter trespass on private property, this network shall be closed, barricaded, and restored to a natural state. This trail was not developed by the Ukiah Field Office, it will not be added to the South Cow Mountain Trail Bank.

South Boundary Ridge Trail

A segment of the Boundary Ridge Trail exists on private property. BLM will pursue an easement from willing sellers only, and only if funding is made available. If the easement cannot be acquired, this segment shall be closed and rerouted. This trail was developed by the Ukiah Field Office, its approximate 1.22 miles of closure will be added to the South Cow Mountain Trail Bank and immediately rerouted, assuming no easement is possible (see Reroutes).

*Pyramid Ridge Southeast Trail Access from Exterior*

An approximately .1 mile access trail exists on the southeastern segment of Trail 19 (Pyramid Ridge). To deter trespass on private property, this trail shall be closed, barricaded, and restored to a natural state. This trail was not developed by the Ukiah Field Office, it will not be added to the South Cow Mountain Trail Bank.

*Pyramid Ridge Southwest Trail Access from Exterior*

An approximately .55 mile access trail exists on the southwestern segment of Trail 19 (Pyramid Ridge). To deter trespass on private property, this trail shall be closed, barricaded, and restored to a natural state. This trail was not developed by the Ukiah Field Office, it will not be added to the South Cow Mountain Trail Bank.

*Pyramid Ridge West Trail Access from Exterior*

An approximately .55 mile access trail exists on the western segment of Trail 19 (Pyramid Ridge). To deter trespass on private property, this trail shall be closed, barricaded, and restored to a natural state. This trail was not developed by the Ukiah Field Office, it will not be added to the South Cow Mountain Trail Bank.

*Lost Valley West Trail Access from Exterior*

To deter trespass on private property, this western trail access shall be barricaded. This trail was previously closed, it will not be added to the South Cow Mountain Trail Bank.

*Short Ridge*

This side trail along the northeastern segment of Trail 10 to Trail 9 is unauthorized and heavily impacted. This trail shall be closed, barricaded, and restored to a natural state. This trail was not developed by the Ukiah Field Office, it will not be added to the South Cow Mountain Trail Bank.

### Benmore Creek Trail

A .2 mile segment of the Benmore Creek Trail exists on private property. As per the Lands & Acquisition segment of the Cow Mountain RAMP, an easement shall be pursued for this segment. If the easement cannot be acquired, this segment shall be closed and rerouted. This trail is not part of the official trail system and event only, it will not be added to the South Cow Mountain Trail Bank if closed.

### Eight Mile Glade NW Trail

An approximately .15 mile segment of Trail 22 exists on private property. As per the Lands & Acquisition segment of the Cow Mountain RAMP, an easement shall be pursued for this segment. If the easement cannot be acquired, this segment shall be closed and rerouted. This trail is not part of the official trail system; it will not be added to the South Cow Mountain Trail Bank.

### Trail 16 Southeast

Due to the proximity of a sensitive resource, the eastern segment of Trail 16 that meets Trail 15 (Old Road) shall be closed, barricaded, restored to a natural state and rerouted to connect with the southern segment of Trail 17 that meets Trail 15 (Old Road). This trail was developed by the Ukiah Field Office, its approximate .26 miles of closure will be added to the South Cow Mountain Trail Bank and immediately rerouted (see Reroutes).

Closures without immediate reroutes are consistent with BLM RMP 2006.

### *Reroutes*

Reroutes were determined from the South Cow Mountain Trail Condition Survey, regional user community mapping meetings, and BLM Ukiah FO observations. The following trails have been deemed unsustainable or excessively impacted and shall be rerouted:

- Bailout Trail located off of Trail 14, north of Red Mountain Campground access road. Approximate additional miles: .27 miles
- Trail 3a, will no longer lead down from Lyons Ridge through the Oakwood Springs Practice Loop down to Oakwood Springs Road. Rather, it will be extended further west to create a larger loop. Approximate additional miles: .54 miles
- Trail 25, Boundary Ridge Road Access, will be diverted to a more gradual uphill slope leading to the Mendo-Lake Road. Approximate additional miles: .55 miles
- The mid-segment of Trail 12 (a.k.a. Acupuncture Alley) currently exists on private property. This trail shall be closed and rerouted away from Rickabaugh Glade providing an approximately 400 foot buffer around the western parcel boundary. Approximate additional miles: .54 miles



- A .8 mile segment of the Boundary Ridge Trail exists on private property. As per the Lands & Acquisition segment of the Cow Mountain RAMP, an easement shall be pursued for this segment. If the easement cannot be acquired, this segment shall be closed and rerouted north of the land status boundary. Approximate additional miles: .8 miles
- A .2 mile segment of the Boundary Ridge Trail exists on private property. As per the Lands & Acquisition segment of the Cow Mountain RAMP, an easement shall be pursued for this segment. If the easement cannot be acquired, this segment shall be closed and rerouted. Approximate additional miles: .17 miles
- A segment of the Eight Mile Glade NW Trail exists on private property. As per the Lands & Acquisition segment of the Cow Mountain RAMP, an easement shall be pursued for this segment. If the easement cannot be acquired, this segment shall be closed and rerouted. Approximate additional miles: .53 miles
- Due to the proximity of a sensitive cultural site, the eastern segment of Trail 16 that meets Trail 15 (Old Road) shall be closed, barricaded, restored to a natural state and rerouted to connect with the southern segment of Trail 17 that meets Trail 15 (Old Road). Approximate additional miles: .22 miles

### *Redesign*

Many trails on the South Cow Mountain OHV Trail System require redesigned elements such as water management and slope grade. Per the Soil Conservation Plan (SCP) and Geology and Soil Plan, all trails will be annually monitored either on foot or by OHV. Any changes in trail condition will be noted, photographed, and immediately assessed via Universal Trail Assessment Protocol with industry standard trail assessment tools. Data collected shall be cataloged and then utilized in creating a maintenance action. All trail segments assigned a Yellow Condition must be repaired before the next annual trail condition monitoring cycle. All trail segments assigned a Red Condition must undergo immediate repair, or within six months be closed and rerouted. Refer to Appendix H for the South Cow Mountain 2012 Trail Condition Survey Report on extant trail conditions.

### *Development*

Per the Ukiah RMP, BLM Ukiah may develop up to 40 miles of trail to protect erodible soils, sensitive resources, and to expand recreational opportunities on South Cow Mountain. The following trails will be developed and deducted from the established 40 miles. Maps will be made available to the public approximately 30 days prior to proposed development.

- Benmore Creek Trail, this 3.73 mile user made trail has in the past been an event only trail. It will be added to the South Cow Mountain OHV trail network.
- North Fork Scotts Creek to Spruce Ridge connector trail, this 1.7 mile trail will allow trail access from the Scotts Creek Staging Area up to the eastern interior of South Cow Mountain.

- The 1.1 mile T-Rex Trail has in the past been an event only trail. It will be added to the South Cow Mountain OHV trail network.
- The .63 mile connector trail between the southwest portions of Trail 2 and Trail 4 has in the past been an event only trail. It will be added to the South Cow Mountain OHV trail network.
- The .2 mile connector trail between north Trail 2 and Oakwood Springs Road has in the past been an event only trail. It will be added to the South Cow Mountain OHV trail network.
- A 1.53 mile connector trail from Trail 21 south to Trail 16 on the west side of Eight mile Glade will be developed.
- A 1 mile connector trail from Trail 21 north to Trail 2 and 4 will be developed.

### Trails Management, SCU

#### *Development*

Approximately 7 miles of destination based loop trails will be developed around the Sheldon Creek Campgrounds. Additionally, if easements are obtained to the northern parcels of the Sheldon Creek Unit, another 5.5 miles of destination based loop trails will be developed. Sheldon Creek is administratively closed to motorized trails; trails will be exclusively non-motorized and mechanized. Maps will be made available 30 days prior to proposed development.

### Roads & Primitive Roads Management, NCRA

Both Roads and Primitive Roads exist on North Cow Mountain. The primary roads are the Mendo-Rock Road that provides the primary vehicular access to the Recreation Area, the Willow Creek trailhead road that provides trail access, the Rifle Range access road, and the Mayacmas Campground Road that provides campground and trail access.

The primary Primitive Road on North Cow Mountain is the CALFIRE Water Tank Spur that provides trail access during the general deer season (rifle).

There are no plans to develop additional Roads or Primitive Roads on North Cow Mountain.

### Roads & Primitive Roads Management, SCORA

Both Roads and Primitive Roads exist on South Cow Mountain. The primary roads are the Mendo-Lake Road that provides access to the OHV Recreation Area, the Eight Mile Valley Road that provides in-holding access and trail access, the Oakwood Springs Road that provides Staging Area access and trail access, the Red Mountain Road that provides access to the Red

Mountain Campground and 4 Wheel Drive Safety Course, and the Buckhorn Campground Road that provides access to the Buckhorn Campground and trails.

The Primitive Roads on South Cow Mountain are any trails managed for use by four-wheel drive or high clearance vehicles. They are designated as 4 Wheel Drive Short or 4 Wheel Drive Long OHV Trails. The following trails are considered Primitive Roads: Trail 13 (Brushy Ridge), Trail 15 (Old Road), Trail 17, Spruce Canyon Trail, Trail 23, Benmore Loop, Trail 25, and Trail 20 (Buckhorn Road, not leading to campground).

In addition to existing roads and primitive roads, the BLM will survey approximately 9 miles of existing single track and double track OHV trails and 1 mile of undeveloped area to determine the feasibility of designing a continuous 10 mile linear feature for OHV users, inholding partners, law enforcement and maintenance crews along the currently remote eastern and south eastern sections of South Cow Mountain. Because this linear feature will be maintained as a BLM standard road, it will not be included into the 40 miles of trail development for South Cow Mountain.

The development of this 10 mile linear feature will provide greater access for law enforcement rangers in areas that have recent history of illegal marijuana cultivation and greater access for trail maintenance crews on heavily impacted trails that are currently too distant to be reached with standard maintenance equipment or by work crews.

In addition, OHV recreation users will have more access to all linear features on South Cow Mountain. This will also allow for greater distribution of trail traffic, which will in turn disperse trail impacts over a greater area. These factors combined with more access for trail maintenance crews will allow for more agile resource management and better quality recreational experiences for OHV users on their public lands.

The creation of such a linear feature is also in response to OHV user groups' requests for 1) greater access to remote areas, 2) more maintenance on remote trails, and 3) greater law enforcement presence in more remote areas. Local and regional user groups have repeatedly requested that the BLM UKFO investigate better management access for these hard to reach trails and have also favorably responded to the idea of this 10 mile access route.

#### Roads Management, SCU

Only one Road provides access to the Sheldon Creek Unit. A camp access/turn-around loop shall be developed through the lower campsite section up to the upper campsite section. There are no plans to further develop roads or primitive roads in the Sheldon Creek Unit.

## **Support Facilities Management**

### **Campgrounds**

#### ***Current Management Situation***

##### Campgrounds, NCRA

Currently, North Cow Mountain has one campground (Mayacmas Campground) and one recreation site (Goat Rock Recreation Site). The Goat Rock Recreation Site currently provides a fire ring and picnic table. Due to its remote nature, there are no plans to further develop this site.

##### Campgrounds, SCORA

Currently, South Cow Mountain OHV Recreation Area has two campgrounds Blue Oak Campground and Red Mountain Campground. Both are well used and their designs provide ample camping opportunities and access to nearby trails.

##### Campgrounds, SCU

As stated, there is presently one developed campground at the Sheldon Creek Unit. When initially developed, Sheldon Creek campground had plans for 12 developed sites divided into 3 sections. Each site had tent pads, picnic tables, and fire rings.

#### ***Current Constraints***

##### Campgrounds, NCRA

The Mayacmas Campground is showing signs of overuse. Picnic tables and fire rings are missing at most sites. There are no trash receptacles. Also, due to poor design the campsites are becoming heavily impacted as well as the campground access loop. There is one toilet available at the entrance and campsites are located at the rear of the campground. There are no parking spots available at campsites, therefore visitors have to park on the access loop and thus creating unsafe conditions by blocking incoming traffic.

##### Campgrounds, SCORA

The Red Mountain Campground is the most popular destination for overnight use on South Cow Mountain. It sees heavy use almost every weekend and light use throughout the week. This requires the area to be frequently patrolled for trash removal and facility cleaning. Negative effects of such constant use can be found in graffiti on facilities and boulders, tread wear on

campground access loop surface, and facility vandalism. Also, due to unenforced shooting policies, all facilities and signs at this campground exhibit bullet holes in varying amounts. Additionally, trees found at this campground are nearing the end of their life span, due to unnatural or naturally occurring factors, and are slowly dying off, creating a possible fire hazard along with an unattractive atmosphere that invites unauthorized harvesting of timber.

Due to its size and remote nature, the Buckhorn Campground is used infrequently as an overnight destination on South Cow Mountain. For the same reasons, trash removal and facility cleaning require less frequency and there are fewer cases of vandalism and shooting. The major concern at Buckhorn is drainage coming from the upper campsite that comes down the access path.

#### Campgrounds, SCU

Although the Sheldon Creek Campground is the most distant (from UFO) campground, it is still easily accessible and does see frequent use from hunters and recreationists. There are currently only 2 functioning campgrounds remaining and only one of those has a picnic table and fire ring.

#### ***Proposed Management Actions***

#### Campgrounds, NCRA

The Mayacmas Campground is beginning to show signs of age and the facility requires redesign to provide better recreational opportunities with Park & Camp sites, Ride-in Equestrian Camping, and Primitive Camping with no parking (Hike & Camp). With the potential expansion of the facilities an additional toilet will need to be installed on the far end of the campground, investigations to provide water sources for water access for horses, better parking facilities at campsites, and a redeveloped loop road.

If the Lake Mendocino/North Cow Mountain Connector trail is eventually developed, the north portion of North Cow Mountain will require a facility with appropriate amenities to provide users a recreation destination. When this connector is completed or other trail equal to this connector's purpose, the Northern Cow Mountain Recreation Site will be developed with 3 campsites offering picnic tables and fire-rings, water access for horses, and a self-composting toilet.

#### Campgrounds, SCORA

Red Mountain Campground requires only a few adjustments to update the recreational opportunities: The aging vault toilets are showing signs of wear inside and out and require replacement. To provide water for visitors, the water system will be reinstated if possible. The campground loop also requires resurfacing with gravel and the implementation of shade structures.

The more remote Buckhorn Campground is a spot for visitors seeking more solitude. To ensure future sustainability of the site, better drainage from upper campsites needs to be developed.

A campground will be developed by the Scotts Creek's entrance at the site also known as the Army Corps property. This site will be hosted and provide six trailer accessible campsites with picnic tables, fire-rings, and one vault toilet. Before this exists, continued planning and an agency required business plan must be in place.

If the Eastside South Cow Mountain Access Road is developed, the southwest portion of South Cow Mountain will require a site with appropriate amenities to provide users a recreation destination. When this road is completed, the Benmore Camp Recreation Site will be developed with 3 campsites offering picnic tables and fire-rings.

#### Campgrounds, SCU

The Sheldon Creek Campground will be redesigned to better accommodate equestrian camping. The closed campground will be reinstated and all of the campground will be redeveloped to its original capacity and will also include a turnaround loop through campground for horse trailers. If plausible, per BLM regulation, water access will be reinstated.

### **Trailheads & Staging Areas**

#### ***Current Management Situation***

#### Trailheads, NCRA

Existing trailheads are located at the base of North Cow Mountain along Mill Creek Road, Willow Creek Trailhead and the Glen Eden Trailheads (on Mendo-Rock Road and Scotts Valley Road). Glenn Eden Trailhead of Scotts Valley Road and Willow Creek Trailhead provide parking. Trailheads on North Cow Mountain provide minimal trail information via signage, kiosks, or maps.

#### Staging Areas, SCORA

There are currently 2 staging areas on South Cow Mountain, Westside Staging Area and Oakwood Springs Staging Area (both located in the northwestern portion of South Cow Mountain). Both provide ample parking, resource information, maps, and access to trails. The Scotts Creek floodplain at the eastern entrance to SCORA is currently used by the public as an area unofficial staging area with no facilities.

#### Trailheads, SCU

There are currently no developed trailheads at the Sheldon Creek Unit.

## ***Current Constraints***

### **Trailheads, NCRA**

Trailheads on North Cow Mountain have minimal development. There are no established parking areas (sans Glenn Eden Trailhead off Scotts Valley Road), informational signage, or maps within the mountain. Trail access is clearly identifiable, but lacking in trail signage (carsonite markers).

### **Staging Areas, SCORA**

Westside Staging Area shows signs of age and wear; the loading ramp's retaining wall is falling apart creating a safety hazard, parking lot drainage was not adequately designed, the paved surface is beginning to deteriorate, the tot-lot was never fully developed, parking frequently becomes an issue during capacity weekends, the access gate is incorrectly placed, and the boundaries require surveying to determine if there are trespass issues. If survey confirms a trespass, an easement shall be pursued for these segments per the Lands and Acquisition segment of the Cow Mountain RAMP.

## ***Proposed Management Actions***

### **Trailheads, NCRA**

All external and internal trailheads on North Cow Mountain require significant updating and improvement.

The following internal trailheads will be improved: Willow Creek Trailhead and Mayacmas Campground Trailhead with trail signage, info kiosk, and improved parking. Glen Eden Trailhead (Scotts Valley) with improved barriers and water access for horses.

The following internal trailheads will be developed: Green Gate Trailhead, Glen Eden Trailhead (at Mendo-Rock Road), and the 'Water Tank' Trailhead with trail signage, info kiosk, and improved parking.

The following external trailheads will be developed: A Lake Mendocino Trailhead will be developed with local partners to provide trail signage, info kiosk, and parking to accommodate equestrian access. A Vichy Springs Trailhead will be developed with local partners to provide trail signage, info kiosk, and parking to accommodate equestrian access. A Scotts Valley Mountain Bike Course Trailhead will be developed with local partners to provide trail signage, info kiosk, and parking to accommodate mountain bike access.

If the acquisition of parcels along the northeast side of North Cow Mountain is successful, a trailhead near Blue Lakes along Highway 20 will be developed with local partners to provide trail signage, info kiosk, and parking to accommodate equestrian access.

## Staging Areas, SCORA

All internal staging areas on South Cow Mountain require significant updating and improvement in the following.

The Westside Staging Area requires easements for existing boundary issues and for future development of turn-around loop and access gate. A turn-around loop and access gate needs to be developed. The staging area will be redesigned and will expand into overflow parking area directly across from the staging area. As part of the redesign, the loading ramp will be rebuilt and the entire surface will require repaving and better drainage.

The Oakwood Springs Staging Area shall retain loading ramp, but redesign to be half the size and possibly relocated. The parking area requires repaving. The Tot-lot to the east requires redevelopment and the existing water system needs to be decommissioned.

The Red Mountain Campground requires an overflow staging area in existing parking area south of campground on Red Mountain Road to assist in congestion management during capacity use.

At Scotts Creek, an internal event only staging area will be officially designated. The area known as the 'Walnut Orchard' to the north will be developed as a Tot-lot. Finally, two trailheads leading up from Scotts Creek to the north and south of the paved road will provide better access to interior trails.

## Trailheads, SCU

Currently, Sheldon Creek has no developed trails or trailheads. An equestrian accessible parking area along campground road between the turn-around loop access points and a trailhead on the south side of the Toll-Road will be developed. Pending survey, a trailhead will be developed from Adobe Creek Road.

## **Entrance Gates**

### ***Current Management Situation***

Currently, there are four entrance gates (3 at Westside Staging Area and 1 at the Scotts Creek Entrance of South Cow Mountain), which are only utilized during wet weather, administrative, and event closures.

### ***Current Constraints***

## Entrance Gates, NCRA & SCORA



Lack of continuous controlled access on Cow Mountain Recreation Area has created numerous constraints such as illegal dumping, illegal shooting, illegal marijuana cultivation and other negative effects associated with such activities.

### ***Proposed Management Actions***

#### **Entrance Gates, NCRA**

Pending the development of a business plan and recreation user fee structure for the Cow Mountain Recreation Area or the inclusion of North Cow Mountain in the wet weather closure policy, an entrance gate will be installed at along the Mendo-Rock Road (in an area that will allow visitors to have sufficient space to back vehicles up). Above mentioned improvements rely heavily on extended planning and public input.

#### **Entrance Gates SCORA**

Although the Westside Staging Area's gate placement on the Mendo-Lake Road does provide the necessary restriction of access during wet weather, administrative, and event closures, it has been determined that vandalism increases at the Westside Staging Area facilities (which are not behind the gate) during such closures. However, due to a lack of geographic space and the proximity of private land, the entrance gate cannot be currently relocated. Pending easement on or acquisition of the neighboring parcel, the entrance gate will be relocated 565 feet northwest of its current position on the Mendo-Lake Road. Upon relocation, a turn-around loop will be developed large enough to allow trailered vehicles to circle around. Additionally, the two entrance gates barring entrance to the tot-lot and Trail 1 shall be removed.

The entrance gate at the Scotts Creek Entrance of South Cow Mountain will likely retain its location. However, during the potential development of the Scotts Creek area, if it has been determined that the gate would function more efficiently elsewhere at the site, it shall be relocated.

#### **Entrance Gates SCU**

There are no plans to install entrance gates at the Sheldon Creek Unit.

### **SAR Helipads**

#### ***Current Management Situation***

Search and Rescue (SAR) is provided through the counties of Lake and Mendocino in coordination with BLM UKFO. Due to the nature of off-road vehicle use, particularly motorcycle use, injury can occur in remote locations on trails inaccessible to land-based rescue vehicles and the injury can be severe enough to prohibit overland transport for any appreciable distance.

Currently the local sheriff's Offices are the lead agencies for all search and rescues within their counties. Ukiah Field Office (UFO) staff will be available to assist in any and all search and rescues when requested by the Sheriff's Office. Aerial medical evacuations are currently handled by CalStar and Reach Air Medical Services.

### ***Current Constraints***

Although regional SAR providers and the UFO have developed a limited inventory of preferred landing areas, there are no maintained SAR landing sites throughout Cow Mountain Recreation Area.

### ***Proposed Management Actions***

A network of remote site helispots will be created and maintained so injured visitors can be evacuated with the least amount of time and additional transport trauma possible. The helipads will be cleared of brush and, if necessary, the surface smoothed. Optimal landing site specifications range from a 75' x 75' clearing for daytime landing and a 125' x 125' area to land at nighttime. However, due to variegated topography and limited available space in remote areas, such specifications will be difficult to achieve.

Sites will be maintained routinely by clearing the brush and eradication of invasive plant species, such as medusa head and yellow star thistle. These helispot locations will be mapped in decimal *dmm* (degrees.minutes.minutes) coordinates and provided to the local Sheriff's offices, search and rescue teams, and helicopter companies who respond to medical evacuations. Efforts will be made to improve communication and coordination between BLM Ukiah and regional emergency services and law enforcement (see Appendix A).

## **Visitor Data Collection**

### ***Current Management Situation***

Visitor use data is currently collected via two traffic counters placed at the west and east gates of South Cow Mountain. The data is collected every four months, analyzed and entered into the Recreation Management Information System (RMIS).

### ***Current Constraints***

Although traffic counts can provide useful data per peak usage and capacity, it cannot provide activity type, demographics, or facility usage.

### ***Proposed Management Actions***

As the recreation area is further developed, more visitor use data will be required. The following management actions will be enacted to improve visitor data collection:

- Traffic counters will be installed at all public vehicular access points.
- Further data will be collected via stratified random sampling in the following:
  - Sites with remote viewing capabilities will be monitored for observational data per activity type, peak usage, and capacity.
  - Sites that provide vehicle parking will be monitored during peak usage time for observational data per demographics.

No personal data or identifying information will be collected. All data will be annually statistically analyzed and included in relevant reports.

## **Support Systems Management**

### **Interpretation & Education**

#### ***Current Management Situation***

Currently, Cow Mountain Recreation Area is not managed for interpretive development and educational outreach is limited through public contact per CA State OHV regulations.

#### ***Current Constraints***

Interpretive and educational development is currently limited by a lack of interpretive development and an educational outreach plans and the staff and funding to develop the necessary materials or programs.

#### ***Proposed Management Actions***

On-site and off-site interpretation and education will be utilized. Both printed and electronic media will be employed. Interpretive messages will be generally of the environment, cultural and natural resources. Focused targets are along access roads and trails where the experience opportunity includes stopping at viewpoints or other points of interest. The medium will include display panels, interpretive trail brochures, and internet-based self-guided tours available to cell phones with data access. Interpretive staff will pursue communication technologies and methods as they become available to further enhance interpretive access for resource users.

Tread-lightly, Leave No Trace, and other soft impact techniques will be encouraged as part of the education message. Interpretive or educational text will be included as part of maps and brochures produced for the Cow Mountain Recreation Area. Such text will also be incorporated into interpretive panels and information kiosks displaying area maps and the rules and regulations. Internet-based virtual tours and webcams will also be employed as part of the education program. Tour topics would include soft impact use, respect of property and others, safety, facilities available, the trail numbering system, and what the South Cow Mountain trail ratings mean. Webcams would provide real-time web-based information so visitors can plan their trips, know the weather and crowding conditions in the area, and know if the area is open or closed.

The Cow Mountain Recreation Area website will be maintained as current by the Ukiah Field Office as an interpretive and educational resource. It will provide printable maps for the public as well as all information needed to plan a trip to Cow Mountain. Information will be provided for items such as: projects and proposals being considered, description of the wet weather closure policy, applications for permits, notices of events and scheduled closures and restrictions, tip line, virtual tours, interactive maps, interpretive and educational areas, and feedback features will be on the website. Interactive areas of the website may be created as time and staffing allow. Pending the development of a Cow Mountain Recreation Area business plan, the website will also include information on the recreation fee structure, electronic payment options, and security access information for the Cow Mountain Recreation Area.

### ***Interpretation & Education, NCRA***

Interpretive and educational development on North Cow Mountain will include, but not be limited to:

- Informational kiosks at trail heads and campgrounds
- Interpretive panels at vista points along Mendo-Rock road
- Self-guided interpretive presentations along trails
- Virtual tours on website
- Website showing conditions on the mountain & at support facilities

### ***Interpretation & Education, SCORA***

Interpretive and educational development on South Cow Mountain will include, but not be limited to:

- Informational kiosks at staging areas and campgrounds
- Interpretive panels at vista points along trails
- Safety and Education panels at the Safety Course and staging areas
- Virtual rides on website
- Website showing conditions on the mountain & at support facilities

### ***Interpretation & Education, SCU***

Interpretive and educational development at the Sheldon Creek Unit will include, but not be limited to:

- Informational kiosks at trail heads and campgrounds

- Self-guided interpretive presentations along trails
- Virtual tours on website

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## **Signage**

This section establishes policy, assigns responsibilities, and provides direction for the use of signs on the Cow Mountain Recreation Area. The BLM Ukiah Field Office will develop a signage plan to be utilized for the entire Cow Mountain Recreation Area to identify the public lands, to promote the safety and convenience of visitors to the public lands, to meet visitor needs for information and direction, to communicate to visitors, to enhance visitor experience, and to mitigate user impacts.

Signs will be placed and maintained to provide visitors with the information they need for information, directions, and locations. The entry points into the Cow Mountain Recreation Area and developed support facilities will have entrance signs. Signs will be placed at each end of a trail and intermediately at the intersections with other trails. These signs will have the trail's number and the GPS coordinates of the sign's location. Signs will be placed at road intersections and major trail intersections which will give directional and distance information to facilities or points of interest. Sign numbers will be minimized by combining information on to a single sign where multiple purposes are being served.

Signs will be consistent with Bureau Standards. An inventory of signs will be maintained with a GIS coverage showing locations of all signs in the Recreation Area. Signs will be inspected and maintained on an as-needed basis, but no less than once per year (see Appendix B.9).

### ***Trail Signage***

#### **Current Management Situation, CMRA**

Trail signage for the entire Cow Mountain Recreation Area has yet to be managed via a comprehensive and consistent signage plan. Intersections, trailheads and waypoints are inconsistently marked, incorrectly numbered, and improperly installed. Due to lack of monitoring and vandalism, many signs have either been misallocated or destroyed.

#### **Current Constraints, CMRA**

Due to the time and manpower, intensive nature of a signage monitoring plan, such policies are difficult to maintain outside of contracted or seasonal labor.

#### **Proposed Management Actions, CMRA**

The BLM Ukiah Field Office will develop a trail signage plan to be utilized for the entire Cow Mountain Recreation Area to identify the public lands, to promote safety and convenience, to meet visitor needs for information and direction, to communicate to visitors, to enhance visitor experience, and to mitigate user impacts.

Trail signage will utilize the theme and design for its primary use. Trail signage at trailheads and staging areas will indicate such information as distance, recommended vehicle type, degree of difficulty, and elevation changes along the route. Locations of all trail signs will be inventoried in GIS.

See Appendix B for Trail Signage Plan

## ***Facility Signage***

### **Current Management Situation, CMRA**

Facility signage for the entire Cow Mountain Recreation Area has yet to be managed via a comprehensive and consistent signage plan. Due to lack of monitoring and vandalism, many facility signs have either been misallocated or destroyed.

### **Current Constraints, CMRA**

Due to the time and manpower intensive nature of a signage monitoring plan, such policies are difficult to maintain outside of contracted or seasonal labor.

### **Proposed Management Actions, CMRA**

The BLM Ukiah Field Office will develop a facility signage plan to be utilized for the entire Cow Mountain Recreation Area to identify the public lands, to promote the safety and convenience of visitors to the public lands, to meet visitor needs for information and direction, to communicate to visitors, to enhance visitor experience, and to mitigate user impacts.

Facility signage shall utilize the theme and design for the facility's primary use. Locations of all facility signs will be inventoried in GIS.

## **Recreation Area Maps**

### ***Current Management Situation***

The BLM Ukiah Field Office offers maps of the Cow Mountain Recreation Area free of charge to the public. They are available at the Field Office, in staging areas and campgrounds on South Cow Mountain, or mailed per request by the public. Electronic printable versions are also available on the BLM Ukiah Field Office website for download.

### ***Current Constraints***

The creation of Cow Mountain Recreation Area maps have been limited by several factors in the past:

- Inconsistent and/or inaccurate GIS data per the resource
- Inconsistent trail numbering/naming between planning and public use maps
- Inconsistent and/or inaccurate representation of assigned trail use
- Incomplete maps
- Exclusion of the Sheldon Creek Unit

### ***Proposed Management Actions***

Maps will be updated every five years. Cow Mountain Recreation Area maps will continue to be given to the public at no cost if financially feasible for UFO. If the Cow Mountain Recreation Area map becomes too dense with features and information, it will be split into two maps; one for North Cow Mountain and one for South Cow Mountain. The Sheldon Creek Unit map will be provided separately. Maps for specific themes, such as self-guided interpretive trails, will be produced separately.

All trails as designated in the Ukiah Field Office RMP for North Cow Mountain, South Cow Mountain, and the Sheldon Creek Unit will be mapped via GPS technology and made available to the public. The route map will be incorporated into the overall recreation area map with facilities, access, and boundaries shown. The route map will have pertinent rules and regulations printed on it as well as information about facilities, safety, and the Tread Lightly and Leave No Trace program. All maps will be available online in electronic formats.

### **Visitor Contact**

#### ***Current Management Situation***

Current face-to-face visitor contact for Cow Mountain Recreation Area visitors occurs via field office contact, direct visitor contact by park rangers, seasonal park rangers, and law enforcement rangers.

#### ***Current Constraints***

Due to the geographic size of the Ukiah Field Office and limited staffing, available visitor contact on Cow Mountain Recreation Area is often limited.

### ***Proposed Management Actions***



## Field Office Contact

Field office contact will continue to be provided in the Ukiah Field Office by a visitor contact representative who will be available during normal office hours to answer questions and provide assistance in person or on the phone, direct inquiries to the correct agencies or staff specialists, review and respond to e-mails and phone messages related to the Cow Mountain Recreation Area, and send out information requested or permits when fees have been paid.

Visitors who are lost on site can call in and can tell the visitor contact specialist the GPS coordinates on an intermediate trail sign they are by, give the mile marker and trail name/number, or read the GPS coordinates directly off their cell phone (if they have that capability) and be directed to the shortest way back to their vehicle or to a road.

## Direct Visitor Contact

Additional non-enforcement visitor contact will continue to be provided by one or more law enforcement officers on patrol, Park Rangers or Seasonal Park Rangers (non-enforcement staff) on patrol, and by maintenance and operations staff. The types of assistance provided will include information and directions, first aid and emergency services contact, taking and transmitting reports of problems or incidents, reminding visitors of rules and regulations, and contacting towing services.

## Law Enforcement

Law enforcement will continue to be provided by BLM law enforcement officers (Rangers and Special Agents) and peace officers from the Sheriff's offices in Lake and Mendocino Counties. BLM law enforcement rangers regularly patrol the Cow Mountain Recreation Area. Sheriffs' offices deputies patrol less frequently and assist when needed due to either the number of individuals involved or the nature of the infraction. Video surveillance techniques are employed as well as a tip line where visitors can call in and report problems requiring a law enforcement response.

### *Sheriff's Offices Jurisdictions*

The Lake County Sheriff's Office (LCSO) and the Mendocino County Sheriff's Office (MCSO) have met and agreed to allow each other to provide law enforcement in adjacent counties. MCSO deputies can issue citations in Lake county and prosecute those violations in the Lake County court system if they so choose. LCSO deputies can also issue citations in Mendocino County and prosecute those violations in the Mendocino County court system if they so choose. The California Penal Code (*Penal Code: 783.5*) offers another solution which allows the following:

*When a public offense is committed in a park situated in more than one county, the jurisdiction over such an offense is in any competent court in any county in which any part of the park is situated. "Park," as used in this section means any area of land or water which has been designated as a park or recreation area by any public agency or political subdivision of this state. This Penal Code statute allows the deputies the flexibility to work outside of their county and continue to use their own judicial system that they are familiar with when issuing citations or arrests.*

## **Visitor Capacity Management**

Visitor management will be accomplished both actively and passively. Education of the visitors in outdoor etiquette and respect for others and for property will be augmented by informational and educational signage as well as physical barriers to direct use and contain vehicles to areas where they are allowed. Management beyond the use of barriers will be accomplished by limiting the numbers of visitors if overcrowding becomes a safety or experiential issue and by enforcement actions if voluntary visitor compliance is not achieved.

Current ROS zone goals for North Cow Mountain are:

Front Country: Fewer than 25 people per group and 30 encounters per day  
Middle Country: Fewer than 12 people per group and 29 encounters per day  
Back Country: Fewer than 6 people per group and 6 encounters per day

Current ROS zone goals for South Cow Mountain are:

Front Country: Fewer than 13 people per group and 15-29 encounters per day  
Middle Country: Fewer than 13 people per group and 15-29 encounters per day  
Back Country: Fewer than 3 people per group and 3 encounters per day

These goals are approximations and will be used as use level benchmarks to determine if recreational experiences are being negatively impacted. If these experiences are being negatively impacted, management actions incorporating public participation will be considered to correct the overcrowding or to reconsider the applicability of the goals at that time.

During the Cow Mountain RAMP internal and public scoping processes, the following significant problems were identified:

- Illegal dumping of household trash, particularly in North Cow Mountain
- Indiscriminate target shooting, leaving trash and damaging facilities
- Homeless camps being established within and outside of developed campgrounds
- Illegal marijuana cultivation activity
- Large parties being held at the staging areas and campgrounds, particularly Westside Staging Area and Red Mountain Campground
- Damage and destruction to Westside Staging Area when the mountain is closed.

### ***Special Recreation Permits***

Special Recreation Permits will be issued as required by law, regulation, and policy. The mountain may be closed for special events if in the best interest of the public.

Permit applications for both commercial and non-commercial activities and for motorized and non-motorized recreational activities will be accepted.

Permit applications for competitive, commercial, organized group, and vending recreational activities are reviewed on the case-by-case basis and must be consistent with the goals, objectives, and allowable uses for the area RMP (Appendix M of the RMP EIS). A detailed NEPA analysis may be necessary.

### ***Special Recreation Permits, SCORA***

The Ukiah RMP (Appendix L of the Ukiah RMP EIS) established a limit of four (4) Special Recreation Permit (SRP) events per year that require the closure of the entire Special Recreation Management Area (SRMA) to the public, and occur in the Front and Middle Country ROS zones of the South Cow Mountain SMRA.

### ***Recreation Area Access***

#### Current Management Situation

The Cow Mountain Recreation Area has in the past, and up until the present, remained open public lands with no cost to use. Aside from wet weather and special recreation permitted events, access to the area has not been restricted.

#### Current Constraints

Although, access to Cow Mountain Recreation Area has not been restricted, except for wet weather and special recreation permitted events, the Cow Mountain RAMP internal and public scoping brought to light numerous negative impacts to resources and recreational opportunities (see above for details). The described illicit and illegal activities have brought the entire Cow Mountain Recreation Area into a financially and managerially unsustainable state to where it shall, if allowed to remain as is, further deteriorate into an unsafe and undesirable state.

#### Proposed Management Plan

The Ukiah Field Office, to meet objectives outlined in the Ukiah RMP (2006) and resolve issues identified during the public scoping process for this RAMP, shall strive to:

- To increase the sustainability of the recreational, environmental, and cultural resources found in the Cow Mountain Recreation Area.
- To protect the health and safety of the resource users.
- To provide recreational opportunities consistent recreation management zone prescriptions defined in the Ukiah RMP and consistent with Congressional intent for the Cow Mountain Recreation Area.
- To reduce illegal activities, through law enforcement and management actions, to a level that does not affect the majority of legitimate visitors of the Cow Mountain Recreation Area.

To achieve these objectives, the Ukiah Field Office shall, under the authority of the Federal Lands Recreation Enhancement Act (REA), develop a business plan and management model to collect fees through the issuance of recreation use permits as outlined in the BLM's Recreation Permits and Fees Manual (2930) while adhering to BLM Recreation Fee/Permit Policy and Instruction Memoranda outlined for the development of such fees.

#### *Cow Mountain Recreation Area Business Plan*

To provide a more attractive and sustainable recreation resource, the Cow Mountain Recreation Area will move towards a fee based business model to incorporate Recreation Use Permits that will collect fees to sustain amenities provided and provide opportunities for future recreational development. Prior to the implementation of such a model, the BLM Ukiah Field Office will develop, through public input, a business plan and fee structure that will outline:

- The purpose of managing business on public lands
- Critical functions that are not fully met due to lack of funding
- How much funding is required to operate at appropriate standards
- The fees associated with a Recreation Use Permit
- The use of funds collected from Recreation Use Permits

#### *Recreation Use Permits*

Recreation Use Permits (RUPs) are authorizations for the use of developed facilities which meet the fee criteria established by the FLREA (Federal Lands Recreation Enhancement Act) of 2004. RUPs are issued to ensure that the people of the United States receive a fair and equitable return for the use of these facilities to help recover the cost of construction, operation, maintenance, administration, and management of the permits. RUPs are issued for the short-term recreational use of specialized sites, facilities, equipment, or services furnished at Federal expense. The BLM most often uses RUPs to authorize individual and group recreational use of recreation facilities, commonly known as "fee sites" (such as campgrounds).

Controlling access to the Cow Mountain Recreation Area will help to eliminate several of the most significant issues currently on the mountain. The greatest impact will be in reductions of illegal dumping, indiscriminate target shooting, and homeless camps.

Permits will be required for entrance and use of the North Cow Mountain Recreation Area and the South Cow OHV Recreation Area. The Sheldon Creek Unit will not require permits for recreational use.

Permanent access will be granted to current inholding properties, law enforcement agencies with agreements in place, California State agencies, ambulance and other emergency services, towing and vehicle recovery services, and to search and rescue operations for their official activities.

## **Wet Weather Closure Policy**

### Current Management Situation

During periods of seasonal and severe storms (beginning October 1st until the end of seasonal precipitation) the Cow Mountain Recreation Area's roads and trail become unsafe and extremely sensitive to trail use impacts. During wet seasons, the Ukiah Field Office implements a temporary closure on South Cow Mountain to all motorized vehicles. Exceptions to this policy are granted to private land owners who need to access their property. However, these private land owners are only allowed to access their property via the most direct route possible, and are not allowed to use a motorized vehicle on any other part of the South Cow Mountain OHV Area during closures. Initially, no closures occur until the total rainfall for the season reaches 4 inches. Once 4 inches of precipitation is exceeded, the following criteria apply:

*1/2" in 24 hours = 3-day closure*

*1" in 72 hours = 3-day closure*

Reopening of the area to motorized vehicles occurs 3 days (72 hours) after no measurable precipitation is recorded, not after the initial closure of the area. It is possible that the area could be opened prior to the full 3-day (72 hours) drying period has elapsed. Either possibility can only occur, however, after a thorough inspection of the mountain has been completed by qualified personnel. This policy is subject to modification by BLM due to changing resource conditions.

### Current Constraints

Since the implementation of the current rain closure policy, it has also been determined that the North Cow Recreation Area roads and trails suffer from similar trail impacts and safety issues.

### Proposed Management Actions

### *Wet Weather Closure Policy, NCRA*

There is currently no temporary wet weather closure policy for North Cow Mountain. However, North Cow Mountain suffers from similar road and trail conditions during the wet weather season. After the inclusion of a possible gate, a wet weather closure will be considered through the public process, on North Cow Mountain.

### *Wet Weather Closure Policy, SCORA*

The wet weather closure policy established by the Ukiah RMP (Bureau of Land Management, 2006) has been determined to be successful in maintaining trail quality and safety and shall remain in place. During periods of seasonal and severe storms (beginning approximately October 1st and includes heavy rain and snow) the Bureau of Land Management – Ukiah Field Office currently implements a temporary closure on South Cow Mountain to all motorized vehicles. Exceptions to this policy are granted to private land owners who need to access their property. However, these private land owners are only be allowed to access their property via the most direct route possible, and are not allowed to use a motorized vehicle on any other part of the South Cow Mountain OHV Area during closures (see Appendix D).

### *Wet Weather Policy, SCU*

Due to lower visitor use and limited recreational opportunities, there are currently no plans to develop a wet weather closure policy for the Sheldon Creek Unit. However, if in the future, it is determined that wet weather trail conditions have become an issue of trail sustainability, adverse soil conditions, or visitor safety, the possibility of implementing wet weather closure policy will be considered.

## **Maintenance Support**

The following support systems exist either on or off site to provide BLM staff with facility, material, or informational support and shall be sustained until determined that they no longer provide necessary support.

### ***General Maintenance Support***

#### Maintenance Support Installations

Maintenance Support Installations are any installed object that assists in the sustainable management of the resource (i.e. restricts access to a sensitive area, provides transportation safety, or defines the boundaries of a managed facility). These objects can be man-made (wooden fences, post & cable fences, etc.) or natural (boulders, logs, etc.). They are fixed and meant to be relatively durable and immovable.

#### *Current Management Situation*

For several years, the management of barriers, bridges, and culverts has been in reaction to needs on the ground. Their locations, conditions, and numbers have not been documented.

#### *Current Constraints*

As the organization of these installations becomes more database oriented, the Ukiah Field Office finds their administration becoming more laborious and requiring systematic management methods.

#### *Proposed Management Actions*

All barriers, bridges, culverts and any other maintenance support installation shall be geo-located via GPS devices and their locations shall be entered into a GIS inventory

#### ***Maintenance Support Installations, NCRA***

- Mayacmas Campground Water source
- Glen Eden (Scotts Creek) Trailhead Water source
- Trail Bridges, Barriers, and Culverts

#### ***Maintenance Support Installations, SCORA***

- Gravel Pit
- Web-cameras
- Sediment Pond
- Lost Valley Well
- Trail Bridges, Barriers, and Culverts

#### ***Maintenance Support Installations, SCU***

- Sheldon Creek Campground water source
- Trail Bridges, Barriers, and Culverts

## **2.3 Multi-use Resource Management**

### **Geology and Soil Resources**

See Appendix C

### **Water Resources**

The Clean Water Act (CWA) requires each state to identify streams, rivers, and lakes that do not meet water quality standards after the implementation of technology-based controls. Both the CWA and the State Water Code (Porter-Cologne Water Quality Act) require identification and protection of beneficial uses. The 24 categories of beneficial uses include but are not limited to domestic and municipal water supply, preservation and enhancement of fish and wildlife, and recreation. Water quality protection efforts are based on preserving these uses and are identified in the RWQCB Basin Plans (Mendocino 1992). Within the Cow Mountain Recreation Area, there are no streams that are listed as impaired water bodies on the 303(d) list (Ukiah RMP 3.2.4.2).

The Cow Mountain Recreation Area is located within two watersheds, Cache Creek to the east, and Russian River to the west. A total of 31 miles of major streams are located throughout Cow Mountain. Major streams within North Cow Mountain include Cold, Howard, Sulphur, McClure, Mill, and Scotts Creeks. Streams contained within South Cow Mountain include Benmore, Panther, Willow, Lyons, and Morrison Creeks. In addition, both areas have numerous smaller intermittent streams and meadow areas that provide important wildlife habitat.

The recreation area receives approximately 40 inches of rain per year with the heaviest rainfall occurring in the winter months. The steep and rugged terrain of the recreation area allows for erosion in steeply graded creeks during heavy rain events. However, in intensively used recreation areas, landscape characteristics and land use may influence soil disturbance most of all.

#### ***Management Goals:***

The primary water quality objective is to prevent the degradation of water quality within the Russian River and Cache Creek watersheds. As stated in Section 4.16.1 Ukiah Resource Management Plan, “the designation of routes of travel for motorized use has a number of impacts to water quality. Travel management decisions would continue to impact water quality through sedimentation and potential stream crossings. Motorized use of routes increases erosion rates and reduces water quality. The quantity of miles of routes also has the potential to change natural drainage patterns by increasing overland flow and increasing erosion.” In order to minimize impacts to water quality and natural drainage patterns from motorized use, the construction of new motorized routes will utilize Best Management Practices (BMPs) in trail design and construction. These include but are not limited to the use of water bars, sediment basins, or catchments off trails. Trails that are identified to be closed will be rehabilitated to prevent erosion once closed. If trails are found to be in poor shape and are contributing excess sediment to the watershed, they will be redesigned or re-routed to meet water quality standards. Regular maintenance and surveys of OHV trails are crucial in order to maintain the integrity of trails and reduce sediment loads into the streams.



## **Air Quality**

See Ukiah RMP section 3.2.3 for a description of air quality standards within the Ukiah Field Office boundaries and section 4.17 for a discussion on impacts to air quality.

## **Wastes, Hazardous and Solid**

The presence of hazardous materials on Cow Mountain occurs mainly through illegal activities occurring on the mountain. Recreational OHV use can also contribute to the discharge of hazardous substances through accidental spilling of motor fluids. The current main sources of wastes are the rifle range on North Cow Mountain and the multiple unauthorized shooting areas throughout North and South Cow Mountain. Many large household items are brought onto public lands to be used as targets and are left on site. Shells casings are scattered throughout the shooting areas with the possibility lead being added to the soils. At the shooting range, material is prevented from moving off site, however, in the unauthorized shooting areas, nothing is inhibiting materials from migrating off site and into drainages and streams.

Other illegal activities that contribute to this problem include illegal dumping and marijuana grows. Illegal dumping is a long-standing problem on public lands with dump sites often promoting even more dumping in the same area. Solid debris such as appliances, household trash and chemicals, vehicles, furniture, and construction materials are typical; however, extremely hazardous wastes from clandestine drug labs are increasingly common. Illegal marijuana growing operations on public lands not only present a physical safety hazard to recreationists who wander too close to a site; they also pose a danger to water sources and natural resources. Marijuana gardens contain herbicides, fertilizers, and insecticides along with rodent fences, human waste, garbage, plastic pipe, camping gear, gardening tools, fuels for gas cooking stoves and gas lanterns, weapons, etc. All of these are deleterious to wildlife and to the safe enjoyment of our public lands by the public. In addition, marijuana growers clear the underbrush to utilize tree canopy to hide the plants from air surveillance and cut trails and terraces into the slopes.

### ***Management Goals***

The primary goals for hazardous and solids wastes are to reduce the amount of material being illegally deposited on public lands and to inform visitors about the Cow Mountain regulations and proper waste disposal.

### **Rifle Range – North Cow**

In the rifle range, increased signage, education, and waste removal will be key in order to prevent and hazardous or solid wastes from entering the watershed. This will be accomplished by ensuring the signage placed at the rifle range is not vandalized. Regular cleaning of the rifle range will limit the accumulation of materials. Closing of the rifle range will be needed to clean the site. In addition to these tasks, a culvert will be placed in a creek west of the parking area to prevent any shooting related wastes and dumped material from entering the water.

### Illegal Dumping and Unauthorized Shooting

An increased BLM presence throughout both North and South Cow Mountain will help to limit the amount of illegal dumping that occurs. In addition, education and outreach to inform the public about proper disposal of wastes will help to minimize trash as well. Informing target shooters that the only place to legally target shoot is at the rifle range will help to limit the amount of people who target shoot in unauthorized areas. Regular cleaning of these areas will also help to limit the amount of shooting as it will not be as obvious that these areas are known yet unauthorized shooting areas.

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## **Abandoned Mine Lands**

Abandoned mines are located throughout the Myacamas Range, presenting both physical and environmental hazards. Abandoned mine lands (AML) are those that were abandoned prior to January 1, 1981. A majority of mining activities that occurred in this region were for the mining of cinnabar, which when processed, volatilizes mercury that is collected into its elemental, liquid state. A majority of the mercury produced was used for gold mining operations in the Sierra Nevada foothills in which it was used to separate metallic gold from the rock ore. There are several known AML sites located on Cow Mountain; however, the hazards of these sites are unknown. Some sites are being used by OHV recreationists due to the lack of vegetation at the already disturbed sites. This could cause soils to erode into the watershed, impairing water quality. Sediments can become air borne through OHV use creating potential exposure pathways (via inhalation) of mine waste or sediment materials to recreational visitors.

### *Proposed Management Actions*

For Cow Mountain Recreation Area, AML sites not located on designates trail routes will be closed to motorized use. All AML sites will be inventoried to assess the presence of any physical or environmental hazards. Best Management Practices (BMPs) will be utilized to prevent migration of impacted soils into the watershed.

## **Cultural & Historic Resources**

Cultural resources on BLM public land must be in managed in compliance with federal laws, these include the Antiquities Act of 1906; the NHPA of 1966, as amended; the NEPA of 1969; EO 11593—*Protection and Enhancement of the Cultural Environment*; FLPMA of 1976; the American Indian Religious Freedom Act of 1978; the Religious Freedom Restoration Act of 1993; the Archaeological Resource Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; EO 13007—*Indian Sacred Sites*; and EO 13287—*Preserve America*. The BLM also manages cultural resources in accordance with the National Programmatic Agreement (Among the Bureau of Land Management Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers Regarding the Manner in Which the BLM will Meet Its Responsibilities under the National Historic Preservation Act) of 1997. In addition, the BLM manages its cultural resources according to BLM manuals 8100 through 8170, and in accordance with the BLM-California SHPO Protocol Agreement of 2007, as amended. Locations of cultural resource sites are to be kept confidential (US-BLM 2010:36).

## **Goals and Objectives**

To satisfy the requirements of the above mentioned acts, executive orders, and programmatic agreements, the BLM has identified the following goals and objectives (US-BLM 2010:36), these include but are not limited to the following:

- Identify, preserve, and protect significant cultural resources, districts, and landscapes and ensure that they are available for appropriate uses by present and future generations.
- Identify priority geographic areas for new field inventory. Create a prioritized list (high/medium/low sensitivity) of areas for future inventory based on sensitivity and the likelihood for significant unrecorded sites.
- Enhance the public's understanding of and appreciation for cultural resources through educational outreach; this may include the promotion and enhancement of public education, including outreach, and stewardship programs, as well as working with communities, tribes, interested individuals, and other agencies to promote public understanding, appreciation, and enjoyment of cultural resources.
- Evaluate cultural resources under the criteria for the National Register of Historic Places (NRHP) and nominate those significant sites to the NRHP, as appropriate.
- Provide and encourage research opportunities that contribute to understanding human use and manipulation of landscapes. This may include collaborating with local / nearby universities.
- Seek to reduce imminent threats; these may include direct / indirect impacts to cultural resources; resolve potential conflicts from natural or human-caused deterioration, as well as potential conflict with other resource uses. This may include the implementation of protection measures (BLM Manual 8140) to stop, limit, and or repair damage to sites that are on or eligible to the National Register of Historic Places (NRHP); examples include the placement of signage, fences or barriers, trash removal, erosion control, backfilling, repairing, shoring-up or the stabilization of structures, restricting uses and access, and closures.
- Develop and deepen BLM consultation, coordination, and general communication with Native American tribes.
- Maintain a geographic information system (GIS) with cultural resource data.

## Prehistoric Context

The Cow Mountain Recreation Area lies on the ethnographic boundary of three Pomoan groups, the Central Pomo, Eastern Pomo, and Northern Pomo; however the Cow Mountain area was most likely within the territory controlled by the Northern Pomo. The tribelet of the *Yō'kaia* people controlled the Ukiah Valley, while the *Boalke* controlled the headwaters of Scotts Creek within Eight Mile Valley to the east. The *Komli* people occupied the southern portions of Scotts Valley after their migration from the northern Ukiah Valley (DeGeorgey, 2005). Samuel Barrett conducted the first extensive ethnographic study of the Northern Pomo. His 1908 *Ethno-Geography of the Pomo and Neighboring Indians* provided the first descriptions of the Northern Pomo and their villages and campsites.

Through his extensive studies, Samuel Barrett determined that there were seven Pomoan languages: Southwestern, Southern, Central, Northern, Northeastern, Eastern, and Southeastern Pomo. Within each of these larger delineations were smaller autonomous groups known as tribelets. These groups had slight variations in their language, known as dialects (Gifford, 1937). According to Barrett (Barrett, 1908) each linguistic group was culturally distinct. Barrett created

discrete boundaries to delineate different linguistic groups. All seven Pomo divisions were located immediately adjacent to one another. To the north of this area were the Coast Yuki, the Yuki, the Huchnom, and Cahto. The Wintun were located to the east, the Wappo to the southeast, and the Coast Miwok to the south.

The Pomoan language is derived from a proposed Hokan language group, thought to be the oldest linguistic relationship in western North America, roughly 8,000 years old. Isolated pockets of Hokan speakers within California suggest the Pomoan languages are eroded remnants of formerly widespread language groups” (Golla, 2007). The split between the Eastern and Southern Pomo languages, thought to be roughly 2,000 years ago and predates the split between the Western Pomo group (roughly 1,500 years ago). The Pomo occupation of the Clear Lake Basin is thought to be older than their occupation of the Russian River Valley.

Gifford and Kroeber (Gifford, 1937) make the important point that the word “Pomo” is terminology created by ethnographers and outsiders. The groups that we refer to today as Pomo never thought of themselves as such; there was no such thing as a Pan-Pomoan identity. However, for the sake of clarity Barrett and others have lumped those with similar linguistic attributes together.

*...what we call Pomo-the Indian had no word for it-refers to no definable cultural identity, but only to a sort of nationality expressed in speech varying around a basic type... There was no Pomo culture except as an abstraction made by ethnographers and other white men. There was a series of highly similar but never quite identical Pomo cultures, each carried by one of the independent communities or tribelets. (Gifford, 1937).*

Relations between neighbors were generally friendly and inter-village festivities facilitated alliance building (Loeb, 1926). Conflicts occurred from trespass, disregarding boundaries, and the poaching of another tribelet’s resources. Tensions were smoothed over with negotiations and or the exchange of goods (Kroeber, 1925). When conflict did arise, involved tribelets might fight but individuals often remained friendly. Marriage was sometimes used to bond communities to one-another and build relationships (Loeb, 1926). Despite the relatively good natured relationships between the Pomo, their relationships with the Yuki were much more contentious; infractions such as trespass would result in violent and deadly conflict.

Networks of trade were well developed within the North Coast Ranges. The routes facilitated the movement of goods for ceremonial, religious, economic, political, and subsistence needs within Pomo Society (DeGeorgey, 2005). Trade beyond the Pomo region occurred via a larger interrelated economic system which included northern groups and made possible the exchange of goods, services, ceremonies and marriage partners over a wide area.

## Periods

David Fredrickson's (Fredrickson, 1974) cultural sequence is the framework for understanding occupation sequences of the Prehistoric North Coast Ranges. Fredrickson's cultural sequence divides human history in California into three discrete periods: the Paleo-Indian, the Archaic period, and the Emergent period.

Throughout north-central California, the coarse chronological periods described below are associated with cultural manifestations (patterns) distinguished by variations in tool types, burial patterns, and other material culture. They occur in local variants over time, with outside influences moving in and out of the North Coast Ranges.

The cultural chronology in the North Coast Ranges is categorized into patterns, aspects, and phases. Patterns are the most basic traits shared by a number of cultures through both space and time (Fredrickson, 1974) (Hildebrandt, 2007). Aspects are culturally specific and locally adapted patterns. Phases are even more nuanced than aspects and as Fredrickson (Fredrickson, 1974) explains are the "smallest cultural unit recognizable in space and time... and are identifiable on the district level."

California archaeology is broken into several large temporal periods, the Paleo-Indian (12000-8000 B.P.), Lower Archaic (8000-5000 B.P.), Middle Archaic (5000-2500 B.P.), Upper Archaic (2500-1000 B.P.), and the Emergent (1000-200B.P.) (Fredrickson, 1974). However, within each of these broad temporal and spatial divisions are embedded patterns. Many of these patterns are unique to the North Coast Ranges and consist of the Post (12000-8000 B.P.), Borax Lake (8500-6000 B.P.), Mendocino (5000-2500 B.P.), Berkeley (6000-1500 B.P.), and Augustine patterns (1500-1000 B.P.) (Hildebrandt, 2007).

### PaleoIndian Period

The Paleoindian (11,550-8,550 B.P.) period has been designated as the earliest human occupation within California. It was a time of variable climate, rising sea levels, and large-scale environmental change. Groups were small and highly mobile, moving through vast geographic areas; material cultural from this time period is scant. In the mid-1980s a fluted point was recovered from a shell midden near Casper on the Mendocino Coast (Simons, 1985). The Borax Lake site located along the southeastern periphery of Clear Lake is the oldest known site in the North Coast Ranges with occupation dating to around 12,000 years B.P., this date has been corroborated with obsidian hydration analyses conducted by Meighan and Hayes in the 1970s. The site was initially excavated by Chester Post circa 1938 and subsequently by M.R. Harrington. Recovered artifacts included fluted points and crescents.

## Archaic Period

The Archaic Period (8,550-1,100 B.P) was more climatically stable, possibly, as a result people gradually became increasingly sedentary, new groups entered into the area, and groups became culturally distinct. The Archaic period is generally broken into the “Lower” (8,000 to 5,000 B.P), “Middle” (5,000 to 3,000 B.P), and the “Upper” (3,000 to 1,500 B.P) sub periods. These distinctions are based on changes in sociopolitical complexity, trade networks, populations, and the introduction of new, previously unseen, artifact types (Fredrickson, 1974). The appearance of different tools such as milling tools, and the occurrence of sites in a wider range of environments, suggests an expanding economic base. By the Upper Archaic it’s believed that increased sedentism resulted in intensive acorn processing and storage (Fredrickson, 1974) (Hildebrandt, 2007).

## Emergent Period

The Emergent Period (1,000 B.P. to 150 B.P) is characterized by increased social complexity with a drive towards contact-period settlements consisting of centralized villages with ancillary hamlets and specialized activity areas. Emergent period artifacts include the bow and arrow, corner-notched points, mortars and pestles, and an assortment of beads and ornaments (Fredrickson, 1974).

Emergent Period sites are common throughout the North Coast Ranges and include ritual sites, rock art, resource processing sites (lithics, bone, shell, and food), midden soils, and a general diversity of artifacts.

However, recent research is beginning to reveal setbacks in cultural complexity. This has been attributed to population increases at the end of the Archaic period which may have resulted in resource depletion, as a result the model of more centralized village sites may have reverted back to smaller, more mobile communities (Hildebrandt, 2007).

## **Historic Context**

Mendocino County is one of California's original counties and is named after Cape Mendocino. In 1542 Juan Rodriquez Cabrillo was the first European to explore the coast of what is now California; before his death on the Channel Islands, Cabrillo appointed Bartolome Ferrer command. Ferrer explored as far north as Vancouver before turning south. In fact, Ferrelo may have been the first non-Native American individual to see the cape (Theodoratus, 1971). In 1579, Sir Francis Drake sailed along the California coast anchoring in what is now believed to be Drake’s Bay at the Point Reyes National Sea Shore.

In 1769 Father Junipero Serra of the Dominican order established the first of the Alta-California missions in present day San Diego. By 1776 the Spanish influence had reached San Francisco,

both a presidio and mission were established here. The mission system was intended to help secure Northern California for Spain and protect against foreign incursions. However, the Spanish had competition; in 1809 the Russians sailed into Bodega Bay, and soon after, in 1811 they established the permanent settlement of Ross on the Sonoma Coast (Theodoratus, 1971).

Mission San Rafael (1817) and Sonoma (1823) were the most northerly of California's missions. They were used with the same purpose as the southern missions, to quell and assimilate the aboriginal population. The native way of life was disrupted in many ways. They were made to toil on the large tracts of mission land and to live in cramped quarters where virulent diseases quickly spread. Compared to other aboriginal groups, the Central Pomo were located far enough outside the grasp of the mission system that they were left relatively intact (Theodoratus, 1971).

Mexico gained its independence from Spain in 1821, after which time California became a Mexican territory. Not soon after, Mexico secularized the mission system and gave land away in the form of land grants to prominent Californians. The land was supposed to be distributed among the Native American neophytes. Rancho Yokaya and Sanel both located in the inland valleys along the present-day Highway 101 corridor were Mendocino County's only Mexican land grants, two neighboring land grants to the south of Vallejo's Rancho Lupyomi were the Guenoc and the Callayomi.

In 1836 brother to General Vallejo, Salvador Vallejo marched from Mission Sonoma to the modern day locale of Lower Lake to suppress several Native American uprisings. During this expedition Vallejo became enamored with the Clear Lake area and asked his brother for the land grant to the area. In 1839, Vallejo took possession of the *Rancho Lupyomi* and subsequently started ranching long horn cattle using their hides and fat for tallow (Mauldin).

Vallejo's stock business was established on Kelsey Creek and was one of the first European structures constructed within the Clear Lake Basin. Vallejo hired 10 Mexican vaqueros, a foreman, and a local Pomo Indian chief. In 1847, tired of ranching, Vallejo drove most of his cattle to market and sold the rancho to Ben and Andrew Kelsey. The Kelseys partnered with Charles Stone and continued to operate the cattle ranch with the help of Indian slave labor. The forced labor rebelled resulting in the Bloody Island massacre and the death of Kelsey and Stone.

With the signing of the Treaty of Guadalupe Hidalgo in 1848 Mexico relinquished California and New Mexico to the United States. That same year gold was discovered at Sutter's Mill located 110-miles east of the study area along the American River. Over the next several years hundreds of thousands of people flooded California.

As a result of both Vallejo and Kelsey's Long Horn cattle ranching, many rogue cattle were left to wander the country-side. The majority of the cattle had been rounded up and sold at market in Sonoma and Sacramento, however, there were still remnant populations roaming the rugged backcountry. J. Broome Smith assembled a group of men to round-up the loose cattle. Each man was guaranteed his share. Smith and his men rode into Scotts Valley only to discover that Spanish vaqueros had beaten them to the cattle. Under the cover of night Smith and his men rode through Scotts Valley to Hopland and abducted the cattle and brought them back to the Clear Lake area again passing through Scotts Valley.



One of Smith's entourage was the locally infamous cattle rustler Ben Moore whose name appears on many USGS quadrangles. While selling his cattle in Sonoma, Moore had a dispute with a military man; the dispute was resolved via sword fight and Moore prevailed. For the remainder of his life he remained in hiding living in the hinterlands of Lake, Mendocino, and Colusa counties rustling cattle (Mauldin).

Circa 1853, as settlers and ranchers moved into the surrounding land adjacent to Clear Lake they grew worried that their exotic cattle meant for meat production would interbreed with the remnant populations of long horn cattle still roaming the countryside. The protocol was to shoot the long horn cattle on site. Remnant populations subsisted in only two locations, near Big Falls on Kelsey Creek and Cow Mountain. It's believed that by the 1870s, the last of the Cow Mountain cattle had been removed by the Hurt family of Scotts Valley (Mauldin).

Mendocino County was settled by Americans in the 1850s. The presence of timber resources was the catalyst for the development of many small towns along the coast. The immense timber resources of the county were first identified by a salvage party sent to rescue a vessel stuck in the mouth of the Noyo River. Mendocino's lumber industry soon became its largest source of income and by 1872, 19 sawmills had been established (Palais, 1958). The first settled towns were located at the mouths of the Noyo, Navarro, and Albion Rivers. These waterways provided important access to timber lands located in the interior. Many of the craggy bays became docking areas in which logging vessels anchored to receive the valuable commodity which was then loaded via chute and shipped to larger ports for use and redistribution.

In the 1860s, the more interior towns of Ukiah, Hopland, Willits, Boonville, Comptche, Branscomb, Philo, and Yorkville sprang to life, also fueled by the timber industry and the fertile valleys that provided excellent land for agricultural pursuits. Hops were one of Mendocino County's earliest crops. Pear, apple, and vineyard cultivation soon followed (Palais, 1958). In 1889 the Northern Pacific Railroad was brought north from Cloverdale to Ukiah, primarily to support the lumber industry but also to serve the growing agricultural market of hops and fruit to Bay area markets. A side effect of the railroad was the increase in population and land prices.

Lakeport originally known as Forbstown was established circa 1859 (Gudde, 1969). Prior to the establishment of the town many men traveling to the gold fields passed through the area as early as 1847. By 1888 the town had grown to more than 700 people with an additional 500 living in the outlying areas. Lakeport's first real industry was cattle ranching which by the 1870s were replaced by vineyards and then walnut orchards. Today, remnant walnut orchards are still visible in Lake County; however, these orchards are now being replaced by vineyards. Mining was also an early industry in Lake County with boom and bust cycles generally linked to larger world events such as the World Wars and Vietnam where mercury was necessary in the production of switches and munitions. Within the Mayacmas Mountain range chromite was mined and refined. However the production was generally low and much punctuated.

## ***Cow Mountain History***

Cow Mountain is nestled in-between the towns of Lakeport and Ukiah and is believed to have been relatively uninhabited during both prehistoric times as well as historic times. This is not to say that there weren't rugged individuals that decided to live here. However, compared to the Ukiah Valley through which the Russian River flows and the Clear Lake basin, Cow Mountain is relatively marginal environment.

The Norris Trail known by the local Pomo as the *Nóboral-Cókadjal* is an aboriginal foot trail that ran up and over Cow Mountain from Lakeport to Ukiah. Before 1867, the Norris trail was one of the main routes for anyone needing to traverse the area. The Blue Lakes toll road was not constructed until 1867. However, even then the trail was still used for the transportation of goods or visiting others on the other side of Cow Mountain. The first hops brought to Lake County travelled in gunny sacks on horseback over the trail (Mauldin) and homesteaders used the trail to settle portions of Cow Mountain. In the 1890s Robert Morrison homesteaded Eight Mile Glade, in order to get materials to the glade; he had to transport them via horseback and homemade wheelbarrow including a cast-iron stove.

*“loaded the stove on it and with the help of his partner to pull the front with a rope, he pushed the wheelbarrow and stove up the trail over the mountains and through the canyons to his cabin”* (Deacon, 1948).

Into the 20<sup>th</sup> century the Pomo continued to use the trail to seek employment in the agricultural fields and for attending trade feasts and dance gatherings (DeGeorgey, 2005). Additionally, the trail was used to hunt deer, elk, and grizzly bear which were all found within the confines of Cow Mountain (DeGeorgey, 2005).

## **Previous Research**

The Cow Mountain management area has been the subject of 18 archaeological investigations over the last 38 years. Thirty-three cultural resources have been identified within the South Cow Mountain OHV Recreation Area. The sites are sparsely scattered throughout the Cow Mountain Recreation Area, most are located near a water source or within the glades and valleys and include everything from prehistoric-era hunting debris to early 20<sup>th</sup> century homesteading activities.

## Cultural Resources

Both prehistoric and historic-era cultural resources exist within the Planning Area. Present prehistoric sites include lithic scatters, temporary encampments (habitation sites), a prehistoric trail, and quarry. Lithic scatters are generally sites containing more than three artifacts of human modified / flaked rock. A habitation site or temporary camp consists of a wide range of artifact types and or features. Such constituents may include anthropogenic (culturally modified) soils, flaked lithics, faunal bone, milling implements, bed-rock mortars, amongst other things. A prehistoric trail is a linear feature formed through repetitive use. A quarry consists of lithic source material with evidence of human use.

Historic period sites documented within the Planning Area include foundations, privies, landscaping, water related features such as dams and water conveyance features, roads, evidence of mining activity such as the presence of adits and tailings, boundary delineating features such as walls and fences.

Thirty-three cultural resources have been recorded within the Planning Area. Most of these are historic-era archaeological sites are related to mining, residential, and hunting activities. Prehistoric use of the planning area was believed to have been partially stymied by general inaccessibility and the relative lack of resources compared to the surrounding valley bottoms and lacustrine shores. To the east of the planning area is the Clear Lake Basin which prehistorically offered vast aquatic resources and to the west is the Ukiah Valley through which the Russian River drains. Comparatively speaking, life in the hinterlands of the Planning Area would have proved more difficult.

### Site Significance

The management of cultural resources on BLM land must be in compliance with several federal laws, including the Antiquities Act of 1906; the NHPA of 1966, as amended; the NEPA of 1969; EO 11593—*Protection and Enhancement of the Cultural Environment*; the Federal Land Policy and Management Act of 1976; the American Indian Religious Freedom Act of 1978; the Religious Freedom Restoration Act of 1993; the Archaeological Resource Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; EO 13007—*Indian Sacred Sites*; and EO 13287—*Preserve America*.

The NHPA of 1966 requires that federal agencies take into account the effects of their actions on the nation's historic properties (Section 106) and instructs federal agencies to assume responsibility for the preservation of historic properties that are owned or controlled by such agencies (Section 110).

Sites identified on BLM-administered lands within the Planning Area should be evaluated for eligibility for inclusion to the NRHP. Eligibility is based on the following:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and:

- A) that are associated with events that have made a significant contribution to the Broad patterns of our history; or
- B) that are associated with the lives of persons significant in our past; or
- C) that embody the distinctive characteristics of a type, period, or method of construction, or representation of the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D) that have yielded, or may be likely to yield, information important in prehistory or history. (36 CFR 60.4)

A NRHP-eligible site must meet one or more of the above criteria and have integrity appropriate to the criteria. Prehistoric sites often qualify under criterion D; historic-era properties often qualify under criterion A, B, or C.

Under special consideration, some heritage resources not otherwise eligible may be considered eligible. These include religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties less than 50 years old.

All prehistoric and historic resources on BLM-administered lands should be managed under the assumption they are eligible for the NRHP until site significance is determined. A preliminary level of significance may be assigned for a site based on surface observations. Level of significance is assigned when the appropriate evaluation program has been completed; often this consists of subsurface testing. Evaluation of historic structures and historic archaeological sites typically requires archival research at the very least a literature review and historic maps (Parker, 1976, 1977).

This review of existing site records revealed that the vast majority of sites on BLM-administered lands within the Cow Mountain Recreation Area have not been evaluated for significance. None of the cultural resources within the Planning Area are listed on the NRHP.

## **Recommendations**

The most severe and widespread observed impacts are occurring from the operation of off-highway vehicles (OHV) (Erickson, 2010). Additionally, camping outside of designated areas often results in improper trash disposal, construction of fire pits, shooting, intensified use of OHVs, and increased exposure of artifacts. These activities may impact cultural resources in a number of ways: resetting obsidian hydration rinds, historic resources becoming targets for shooting, encouraging continual use and as a result potentially greater physical impact. Shooting in undesignated areas may result in signage being obliterated and as a result OHV enthusiasts riding in undesignated areas impacting numerous resources (Erickson, 2010).

These impacts can be attributed to the proliferation of OHV use in the late 1960s through present day. In an OHV management publication, Kockelman (1983), makes several recommendations on how to more effectively manage for historic resources in regards to OHV use. The strongest recommendation is to close trails that are impacting sites. Sites that are traversed by OHV trails are subject to direct mechanical erosion and compaction. Indirect effects include increased erosion and exposure to possible looting.

## **Climate**

The Cow Mountain Recreation Area is part of the Mediterranean eco-region which is typified by alternate wet winters and dry summers. Mild temperatures dominate, with the coldest average monthly temperatures between 25 and 27 degrees Fahrenheit. Most precipitation occurs in winter, with the wettest month receiving nearly 3 times the precipitation of the driest summer month. Climate is hot summers and mild winters. Elevations vary from less than 1,000 feet to 4,000 feet. Mean annual precipitation is 40 inches.

## **Wildlife, Fish & TES**

Year round wildlife residents of the Cow Mountain Recreation Area include principle mammal species such as Columbian black-tail deer, feral pig, western gray squirrel, brush rabbit, coyote, bobcat, mountain lion and raccoon. Avian species include wild turkey, California quail, mourning dove, California thrasher, several species of woodpeckers, raven, scrub jay, turkey vulture, red-tailed hawk, kestrel, and various species of songbirds. Three special status species, two of which are BLM sensitive species-Foothill Yellow-legged frog (*Rana boylei*), and Fisher (*Martes pennati pacifica*)-and one California state species of concern-Western pond turtle (*Emys marmorata*)-is found in the Cow Mountain Recreation Area. The majority of Cow Mountain Recreation Area is located in the Scotts Creek Drainage to the east and flows into Clear Lake. The Russian River Drainage comprises the west side of the mountain and is an anadromous fish watershed containing the Central California Coast Coho Evolutionary Significance Unit (ESU) and Central California Steelhead ESU which are federally listed and threatened.

A complete list of Special Status Species and Communities of Interest in Cow Mountain Recreation Area is found in Appendix I.

## **Management Goals**

### ***Migratory Birds***

Guidelines for the management of migratory birds are in the *Executive Order (13186) for Conservation of Migratory Birds* (January 11, 2001). There are eight Migratory bird species documented within the Ukiah FO lands that are considered Birds of Conservation Concern

(BCC). The Birds of Conservation Concern are a subset of a larger list known as the Birds of Management Concern (BMC). The BMC is a subset of all species protected by the Migratory Bird Treaty Act (MBTA, see 50 CFR 10.13). The documented BCC within the Ukiah FO include peregrine falcon (*Falco peregrinus*), prairie falcon (*Falco mexicanus*), burrowing owl (*Athene cunicularia*), long-billed curlew (*Numenius americanus*), rufous hummingbird (*Selasphorus rufus*), Lewis's woodpecker (*Melanerpes lewis*), olive-sided flycatcher (*Contopus borealis*) and Lawrence's goldfinch (*Carduelis lawrencei*). The management goals for these species will generally be achieved by habitat protection and enhancement through vegetation management methods including prescribed burning; mechanical methods such as mowing, plowing, and mastication; livestock grazing; and the use of pesticides.

Management of migratory birds specifically at Cow Mountain would be guided by recommendations included in several bird conservation plans prepared by the California Partners in Flight program. These plans include the Oak Woodlands, Riparian, and Coastal Scrub & Chaparral Plans and were written for land managers' use in improving habitat for land birds. Focal species are identified for each plan. Focal species are species from the BMC list that meet at least one of the following five characteristics: 1) high conservation need, 2) representative of a broader group of species sharing the same or similar conservation needs, 3) high level of current Program effort, 4) potential to stimulate partnerships, and 5) high likelihood that factors affecting status can realistically be addressed. Focal species occurring at Cow Mountain that are included within the Cal-PIF Oak Woodlands Conservation Plan include acorn woodpecker (*Melanerpes formicivorus*), blue-gray gnatcatcher (*Poliopitila caerulea*), lark sparrow (*Chondestes grammacus*), Nuttall's woodpecker (*Picoides nuttalli*), oak titmouse (*Baeolophus inornatus*), western bluebird (*Sialia mexicana*), and western scrub jay (*Aphelocoma californica*).

Focal species occurring at Cow Mountain that are included within the Cal-PIF Riparian Conservation Plan include black-headed grosbeak (*Pheucticus melanocephalus*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), Swainson's thrush (*Catharus ustulatus*), tree swallow (*Tachycineta bicolor*), warbling vireo (*Vireo gilvus*), Wilson's warbler (*Wilsonia pusilla*) (Cow Mountain only), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia*).

Focal species occurring at Cow Mountain and that are included within the Cal-PIF Coastal Scrub/ Chaparral Conservation Plan include greater roadrunner (*Geococcyx californianus*), rufous-crowned sparrow (*Aimophila ruficeps*), sage sparrow (*Amphispiza belli*), and wrentit (*Chamaea fasciata*).

Specific management actions include avoiding and minimizing adverse impacts on migratory bird resources when conducting any project work, including habitat restoration activities; restoring and enhancing habitat for migratory birds in riparian and native oak habitats; and designing a monitoring plan to provide long term data regarding bird populations and their habitats. Appropriate management will be implemented to protect these species from habitat loss and impacts to the population.

## ***Game Species***

The two key game species on lands managed by the UFO for which the majority of habitat development projects are initiated include black-tail deer and tule elk. The overall objective for game species management will be to provide a mix of habitats necessary to support diverse and appropriate population levels of wildlife and fish game species. These habitats are intended to host a natural complement of species at population levels consistent with CDFG regulations. Specific management actions include reintroduction and augmentation of species to maintain, restore, or enhance historic levels of wildlife species native to lands managed by the Ukiah FO.

## ***Threatened & Endangered Species (TES)***

Wildlife and fisheries program guidance throughout the Ukiah Field Office (FO) lands will provide the framework to manage habitat and forage to maintain or enhance populations of special status species (including species listed under the Endangered Species Act), native species, and to support the goals and management strategies in California Department of Fish and Game (CDFG) cooperative management plans.

The objective for TES in the Cow Mountain Recreation Area will be to maintain current levels and quality of fish habitat for the Central California Coast steelhead ecologically significant unit (ESU) and to evaluate all maintenance work for impacts with steelhead prior to project commencement. The direction for wildlife and fish habitat will be to minimize any disturbances to wildlife and fisheries habitat from proposed projects on public lands, especially in riparian habitat such as Scotts Creek.

Protection of priority habitats will include active measures such as increasing the amount of priority vegetative species in the riparian areas such as Scotts Creek and other drainages on the west side of Cow Mountain, as well as native oak habitats found primarily near the boundaries with private lands. Adverse impacts to fisheries will be avoided and minimized when conducting any project work, including habitat restoration activities.

The management will be accomplished in cooperation with California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) to achieve stated goals and objectives. Management will include a range of specific actions for special status species with habitat occurring throughout the Ukiah FO lands, as well as other issues involving management and monitoring of wildlife and fish populations and their habitats.

The Ukiah FO will implement measures to promote the recovery and conservation of all TES on lands managed by the FO. This will occur in accordance with applicable Endangered Species Act of 1973 regulations (50 CFR 402) and BLM policy (6840 Manual, IM UT No. 97-66). Specific actions would include monitoring of listed species and their habitats on a regularly-scheduled basis. If any impacts are documented, immediate steps would be taken to prevent or mitigate these impacts, as applicable. If any projects are proposed by BLM or any other proponent where a listed species may be affected, the BLM will initiate consultation with the USFWS and/or

National Oceanic and Atmospheric Administration (NOAA) to ascertain that such projects do not jeopardize the continued existence of a listed species or adversely modify designated critical habitat.

## **Vegetation & TES**

The Cow Mountain Recreation Area is part of the Mayacmas Mountain Range and is characteristic of the interior coastal mountain range. The project area is steep and mountainous, vegetated primarily with chemise on south and west facing slopes while mixed chaparral and trees such as blue and black oaks, Douglas fir, California nutmeg (*torreya*) and California bay laurel are found on the more mesic northern exposures and in ravines. Stands of knob-cone and foothill gray pines are found throughout the area. MacNab cypresses are found on serpentine soils on Red Mountain and other small sites. Three large valleys on public land within Cow Mountain Recreation Area include Eightmile Valley (160 acres), Fourmile Glade (50 acres) and Lost Valley (40 acres). Of these, a botanical survey was conducted in Lost Valley (Baad, 1998) located one mile southeast of Eightmile Valley and no sensitive species were identified. Additionally, four vegetation transects were established in 2000 by Kerry Heise, Botanist, UC Integrated Hardwood Range Management Program, in Eightmile Valley to establish baseline native vegetation for a restoration project and no sensitive species were inventoried. Sonoma manzanita (*Arctostaphylos canescens sonomensis*) a BLM sensitive species, is known to the Mayacmas Range.

There are noxious weeds throughout the area with major stands in the Eightmile Valley (Scotts Valley drainage), Four Mile Glade, Lost Valley, and Sheldon Creek areas. These are components within the Scotts Valley and Russian River drainages. At this time, the non-native invasive species within the Cow Mountain Recreation Area include yellow starthistle (*Centaurea solstitialis*), medusahead (*Taeniatherum caput-medusae*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), arundo (*Arundo donax*), jubata grass (*Cortaderia jubata*), scotch broom (*Cytisus scoparius*) and Harding grass (*Phalaris aquatica*). Barbed goatgrass (*Aegilops triuncialis*) is found on the UC Hopland Field Station (adjacent southern property) and has the potential to migrate onto public lands on Red Mountain. The interconnecting roads such as the Mendo-Lake Road, Oakwood Springs Road, and Mendo-Rock Road (North Cow Mountain) have small populations of weeds on the road edges.

The most recent weed management projects within the Cow Mountain Recreation Area occurred within portions of Eightmile Valley and have included mowing, planting native vegetation, and prescribed burning. This project implemented several methods in an effort to reduce seed and the dense layer of medusahead thatch buildup (EA-CA-340-01-031). Another project within Eightmile Valley was a native species planting that began in 2003. At the southern end of the valley, an enclosed area was established and Yellow starthistle and medusa were removed by hand. The enclosure area was planted with California brome (*Bromus carinatus*), blue wild rye (*Elymus glaucus*) and Lemmon's needlegrass (*Achnatherum lemmoni*). In addition, willows were planted along the stream channels in 2005.



## ***Management Goals:***

### Vegetation

The primary vegetative objectives for the Cow Mountain Recreation Area are to produce and/or maintain a mosaic of compositionally and structurally diverse habitat types and plant communities; and to prevent the spread of noxious weeds. This is achieved by treating annually up to fifty acres of yellow starthistle, medusahead, Italian thistle, and Harding grass. Upcoming weed management projects will occur on up to 400 acres of infested federal lands within Eightmile Valley, Lost Valley, Four Mile Glade, OHV Staging Areas (West Side and Oakwood Springs), Sheldon Creek, South Fork of Hendricks Creek, South Fork of Scotts Creek, and various road edges. The method of implementation will include a combination of Integrated Management tools such as prescribed fire, mechanical, chemical, and manual approaches.

Augmentation of existing native species will also be considered where appropriate. Exceptions may be made for insects, plant pathogens, or other approved bio-control agents used to complete a specific resource objective such as noxious weed control. Species introductions will emphasize native species historically occurring on lands within the Cow Mountain geographic zone. Vegetation management includes different levels of prescribed burning and various methods for eradicating or reducing exotic or noxious weeds. The primary methods of vegetation management include prescribed burning; mechanical methods such as mowing, plowing, hand brushing, and the use of pesticides.

In June, 2012, members of the local chapter of the California Native Plant Society approached the Ukiah Field Office with concerns about the California Flannel-bush (*fremontodendron californicum californicum*) adjacent to an OHV trail on South Cow Mountain. BLM staff followed up with a site inspection and although this California Flannel-bush subspecies is not threatened or endangered; the location's flora, geological characteristics, and soil types are considered to be environmentally and ecologically valuable. To preserve this habitat and its other characteristics, a cable barrier shall be placed along the adjacent trail to prevent OHV trespass.

### Threatened & Endangered Species (TES)

BLM Sensitive species are generally afforded the same protections under BLM policy as species listed as threatened or endangered through the Endangered Species Act. If the potential for TES environmental impacts has been determined, the BLM Ukiah FO shall mitigate environmental impacts.

## ACEC's

ACECs are areas of public land where special management attention is required to protect relevant and important natural and/or cultural resource values. The ACEC designation indicates that the BLM recognizes these significant values and has established special management measures to protect them. There is one ACEC (Area of Critical Environmental Concern), Lost Valley, within the Cow Mountain Recreation Area. Lost Valley was designated as an ACEC in the Ukiah FO Resource Management Plan (RMP), 2006 by including 40 acres of BLM managed lands within the Miner's Ridge watershed of the Russian River Drainage system. The primary features requiring special management considerations in Lost Valley include the pristine meadow system with its unique assemblage on native vegetation. Populations of native bunchgrasses abound within the ACEC, including the following three bunchgrass species of special interest: California brome (*Bromus carinatus*), California oatgrass (*Danthonia californica americana*), and Lemmon's needlegrass (*Achnatherum lemmonii*). Special management will better protect these populations of California native bunchgrass species and their associated pristine meadow habitat. A botanical survey was conducted in Lost Valley (Baad, 1998) and no sensitive species were identified (see Appendix I).

### **Management Goals**

Off-highway vehicle roads to Lost Valley were closed in the Ukiah RMP (2006). Special management of Lost Valley will better protect the populations of California native bunchgrass species and their associated pristine meadow habitat. Lands acquired adjacent to or sharing attributes of ACECs will be incorporated into that ACEC provided they have the same relevant and important values.

### **Lands & Acquisition**

Purchase and donations of lands are a key mechanism for land acquisition. Lands or interest in lands (including easements) may be acquired by BLM through purchase, exchange, or donation. Section 205 of FLPMA authorizes the Secretary of the Interior (delegated to BLM) to acquire non-federal lands or interests in lands pursuant to FLPMA by purchase, exchange, or donation. Acquisitions of inholdings or easements could enhance public access within the Planning Area, resulting in a beneficial impact.

Lands or interest in lands (including easements) to be acquired must either:

- Facilitate access to public lands and resources
- Maintain or enhance public uses and values
- Facilitate implementation of this RAMP
- Provide for a more manageable land ownership pattern

The Ukiah Field Office shall examine potential acquisitions and or easements from willing sellers only, where and when possible or feasible within in the following areas (see Appendix J for relevant maps and APN designations):

- Easement on or acquisition of land at the Westside Staging Area on South Cow Mountain for existing structures and expansion of Staging Area
- Acquisition of the Rickabaugh Glade
- Acquisition of several parcels on North Cow Mountain
- Acquisition or additional easements on land along north side of Mill Creek Road adjoining the southern boundary of North Cow Mountain

Additionally, BLM Ukiah shall work with regional groups and governing bodies, such as Ukiah Valley Trails Group, U.S. Army Corps of Engineers, the City of Ukiah, Mendocino County, and the State of California to develop or improve non-mechanized recreational access from Lake Mendocino to North Cow Mountain, Mill Creek Road Trailheads to North Cow Mountain, and the Vichy Springs area to North Cow Mountain (see Appendix B for recreational development maps).

Current inholdings, leases, and mineral rights on Cow Mountain:

#### North Cow

- There are currently 15 existing rights of way consisting primarily of access roads, transmission lines, telephone cables, and communication equipment associated to the North Peak of Cow Mountain for the North Cow Mountain Communication Site Area. Two of the existing rights of way are for access roads to individuals located on the east side of North Cow Mountain.
- There are currently 3 deeded trail easements to the BLM located on the east side of North Cow Mountain identified as the Glen Eden Trail.

#### South Cow

- There are currently 21 active mining claims (with no plans of operation filed), located within the SW $\frac{1}{4}$  of Section 17, T. 14 N., R. 11 W., M.D.M.
- No other leases existing.
- There are currently 8 existing rights of way consisting of access roads, power lines, buried fiber optic lines, and communications equipment located within the South Cow Mountain Area.

## Cow Mountain Recreation Area Fire Prevention

Recreation areas are designed for public enjoyment. The result is an increase in use which results in an increased potential for wildfire resulting in damage to natural resources, loss of improvements and risk to life. This section considers the following to assist in development of a fire safe recreation area:

### Developed Recreation Sites

A recreation site is developed primarily to accommodate specific use activities or groupings of activities such as camping, picnicking, boating, swimming, day use, etc. These sites include permanent facilities such as roads, trails, toilets and other facilities needed to accommodate recreation use over the long term and require continuing commitment and regular maintenance.

#### Potential Ignition Risks at Developed Recreation Sites

Maintenance Projects	OHV Use	Trash Burning
Construction Projects	Party Areas	Vehicle Fire
Fireworks	Cultural Activities	Exhaust/Catalytic Converter
Shooting Areas/Hunting	Drug Labs/Cultivation	Burning Building
Children Caused fires	Cooking/Warming Fire	
Incendiary	Smoking	

### Dispersed / Undeveloped Recreation Areas

Dispersed/undeveloped Recreation Areas are used for activities such as camping, day use, etc., but not specifically developed for that purpose. Facilities are usually temporary in nature, designed to minimize resource damage and provided for short-term use. Although little or no investment may have been made at these areas, they are periodically monitored and maintained.

#### Potential Ignition Risks at Dispersed/Undeveloped Areas

Transportation Corridors	Party Areas	Incendiary
Fireworks	Trails/Hikers	Chainsaws
Shooting Areas/Hunting	Cultural Activities	OHV Use
Children Caused fires	Drug Labs/Cultivation	

## **Backcountry**

Backcountry, in contrast with those areas where human activity dominates the landscape, is recognized as an area where the earth and its community of life are largely untrammelled by humans, where humans are visitors who do not remain for extended periods of time.

### **Potential Ignition Risks in Backcountry Areas**

Fireworks	Party Areas	Incendiary
Shooting Areas/Hunting	Trails/Hikers	Dispersed Recreation
Children Caused fires	Cultural Activities	Fishermen
Incendiary	Drug Labs/Cultivation	

### **Recreation Area Prevention Activities**

Areas to consider can cover the following:

- Recreation Area Site Evaluations
- Signing
- Public Contacts
- Patrol
- Law Enforcement
- Enforcement—Permits
- Equipment Inspections—Spark Arresters, Mufflers & Power Lines

### *Recreation Area Fire Safe Evaluations*

A planned site evaluation should be established for all public and private recreation facilities to determine if the operation is maintained in a fire safe manner. These evaluations should focus on hazard fuel conditions, fire safe structures and risk of ignitions by any area projects or operations.

### *Signing*

A Sign Plan should exist and include fire prevention components. Carefully located signs in recreation areas with selected messages are effective tools in preventing damage and losses due to wildfire. Prevention signing can be:

- Informational — Advising the public of ways to prevent fires (example: “Completely extinguish smoking materials.”).
- Regulatory — Keeping the public informed of what they must do to prevent fires (example: “Campfires permitted only in developed camping areas.”).

- Prohibitive — Emphatically stating what fires or acts are prohibited (example: “Fire restrictions currently in effect; campfire permits required.”).

### *Public Contacts*

Agency personnel should communicate with recreation area users as much as possible. One-on-one contact to inform people of the need to be fire safe while using the wildlands is one of the most effective means of wildfire prevention. Contacts could include:

- Individuals, campers, hikers, hunters, etc.
- Groups - Boy/Girl Scouts, church camp, etc.
- Camps
- Permittees

### *Patrol*

There are many types of patrol activities appropriate to recreation areas. The following describes the most common types of patrol that can be utilized in recreation areas.

- Ground Patrol (motorized) - The most common type of patrol.
- Foot Patrol - A patrol method for inaccessible areas and/or making one-on-one contacts.
- Mounted Horse Patrol - An effective method of trail, back country or off-road patrol.
- Motorcycle & All-Terrain Vehicle Patrol - An effective method of trail or off-road patrol, especially in areas of off-road vehicle use.

### *Campfire Permits*

Issuing campfire permits is an effective means of making personal fire educational contacts prior to the public’s use of campfires. The permit specifies the elements of when, where and how the public may have cooking or warming fires.

### *Spark Arresters & Mufflers*

Mechanical equipment must comply with fire prevention regulations. All internal combustion engines used on public land must be equipped with approved spark arresters or mufflers in working order. A current list of approved spark arresters for general purpose, locomotive and multiposition small engines can be found in the Spark Arrester Guide:

<http://www.fs.fed.us/eng/pubs/html/03511307/03511307.htm#Guide>

Examples of spark arrester/muffler activities:

- On-site vehicle inspections.
- On-site stationary equipment inspections.
- Public contract with off highway vehicle users/groups.
- Provide inspection checks for the public, i.e., woodcutters.

## *Recreation Area Fire Safe Practices*

The mitigation of potential ignitions in recreation areas can be effective by conducting and implementing the following fire safe practices:

- Fires and Fire Devices
- Evaluating Site Condition
- Treating Special Problem Areas
- Reducing the Recreation Area Fuels Hazard

### *Open Fires*

This type of campfire is the most hazardous and should receive high priority. Campfires of this type are dangerous and should be confined to specific locations or designed fire pits.

### *Stoves*

All camp stoves used in recreation areas should be in a fire safe condition.

### *Barbecue Devices*

Barbecue devices should be considered the same as campfires. The disposal of coals before they are completely extinguished is a serious problem. Persons using barbecue devices should be warned to be absolutely sure the coals are extinguished before they are removed.

## **Site Conditions**

### *Camp Sites*

An inspection will be done for general fire safe measures for the camp. The camp site should be cleared of flammable material. The amount of clearing will depend on the size of the camp. It will normally be the area receiving the most use. Dead and dying limbs should be removed from trees and brush for a height of 10 feet from the ground.

### *Parking Areas*

Campers should be required to park in these areas. Dry grass or other flammable vegetation should be removed or cut to such a level that it cannot come into contact with the exhaust systems of vehicles parked in the area.

### *Perimeter Firebreaks*

The location of the firebreaks will depend on the size of the facility and the location of the individual camp sites. It might be practical to construct a firebreak around groups of camp sites,

or it might be better to construct a firebreak around the entire facility. Terrain, fuels and effectiveness should dictate proper procedures. The firebreak should be clear of all flammable material. The width will depend on the terrain and fuels in the area; however, the minimum width should be 10 feet.

### *Equipment*

Most recreational areas will have some type of mechanical equipment on the premises. Fire prevention inspections should include the fire safe operation of all equipment on site.

### *Safety Islands*

If the campground is located in an area of hazardous fuels and access roads are limited, encourage establishment of “fire safety” zones. Publish and post evacuation routes to these areas in the event of a fire.

### *Fuel Projects (Prescribed Fires)*

Fuel treatment projects properly implemented and maintained in specific areas can effectively reduce fire hazards. Hazard reduction plans and projects are outlined in the local fire management, fuels and fire prevention plan.

During prescribed or wild fire operations, closure of the recreation area may be needed. Coordination with the recreation, information staff and management will take prior to starting operations on prescribed fires. Emergency closures during wildfires will be done by the field office manager and implemented by staff.

## **Recreational Opportunity Management**

As identified in the RMP, a number of opportunities are available in each of the ROS Zones in the Cow Mountain Recreation Area. The quality of opportunities and compatibility of uses varies between North Cow Mountain, South Cow Mountain, and the Sheldon Creek Unit. Management direction is therefore different for the three parts of the Cow Mountain Recreation Area and is defined in this plan as emphasized, allowed, or not allowed and further refined as supported or not supported. The primary recreation opportunities and experience opportunities being managed for in each area are termed emphasized. Emphasizing an activity is done by directing visitors to that area for those specific opportunities and is developed in support of emphasized opportunities. Where an activity is allowed but not emphasized, the BLM would inform visitors of that opportunity in that ROS zone, but may or may not have support facilities developed for that activity. If an activity is allowed but not supported, visitors may engage in that activity in that ROS zone, but BLM does not actively inform visitors of that opportunity or provide support facilities for it.



## **Camping**

### ***Camping, NCRA***

Camping will be encouraged or allowed throughout North Cow Mountain, but facilities typical of developed campgrounds will only be provided for that purpose in the Frontcountry and Middlecountry ROS zones. Developed campgrounds will have vault toilet facilities, an informational kiosk, and one-way loop roads connecting individual camp sites. Water will be provided where possible and feasible. Individual campsites will provide vehicle parking, tables, and fire pits. Additional facilities, such as bicycle racks will be added if there is sufficient need. A group site will be developed and available on a reservation basis. Camping in the Backcountry ROS zone may have primitive facilities requiring little to no maintenance and for the purpose of maintaining site conditions within acceptable limits.

There are presently two developed campgrounds on North Cow Mountain. These receive the majority of their use during deer hunting season. Mayacmas campground is in the Middlecountry and has 8 developed sites with tent pads, picnic tables, and fire rings. Other facilities include water for animals and a vault toilet. Goat Rock is in the Backcountry and has no vehicular access. It has two primitive camp sites, a picnic table, and a watering trough for equestrian use.

### ***Camping, SCORA***

Camping will be encouraged or allowed throughout South Cow Mountain, but support facilities will only be provided for that purpose in the Frontcountry and Middlecountry ROS zones. Developed campgrounds will have vault toilet facilities, an informational kiosk, and one-way loop roads connecting individual camp sites. Water will be provided where possible and feasible. Individual campsites will provide vehicle parking, tables, and fire pits. A group site will be developed and available on a reservation basis.

There are presently two developed campgrounds on South Cow Mountain. These receive use throughout the year. The heaviest use is at Red Mountain Campground. Use is generally of three types: 1) in support of OHV use, 2) in support of hunting, and 3) recreational parties. Red Mountain Campground is in the Frontcountry and has 10 developed sites with tent pads, picnic tables, and fire rings. Other facilities include a water system, which is currently not functional, and three vault toilets. Buckhorn Campground is in the Middlecountry and has 4 developed sites with the same amenities as Red Mountain Campground. It has a single vault toilet, but there is no water system, but a small spring-fed pond is adjacent to the site.

### ***Camping, SCU***

Sheldon Creek Campground is located south of Highway 175 and receives light use, primarily by hunters during hunting season.

Camping will be encouraged or allowed at the Sheldon Creek Unit, but facilities typical of developed campgrounds will only be provided for that purpose in the Frontcountry and Middlecountry ROS zones. The developed campground will have vault toilet facilities, an informational kiosk, and one-way loop roads connecting individual camp sites. Water will be provided where possible and feasible. Individual campsites will provide vehicle parking, tables, and fire pits.

## **Equestrian**

### ***Equestrian, NCRA***

Equestrian use is encouraged in all ROS Zones, but access points and facilities are very limited at this time. Use is almost entirely on the Glen Eden Trail, which has a trail head on Scotts Creek Road and runs for about 6.5 miles to its terminus at Mendo-Rock Road. The Clearlake Horsemen's Association assisted with the construction and maintenance of the trail. The trail is usually brushed by hand, using inmate crews or volunteers.

### ***Equestrian, SCORA***

Equestrian use is allowed but not encouraged north of Benmore Creek due to the high potential for collisions with vehicles on the South Cow Mountain trails. Although there are no present trails or support facilities, equestrian use is encouraged from the ridge line immediately south of Benmore Creek to the southern end of the South Cow Mountain area.

### ***Equestrian, SCU***

Equestrian use is encouraged, but access points and facilities are limited at this time. See Appendix A for proposed development.

## **Hiking**

### ***Hiking, NCRA***

Hiking use is encouraged in all ROS Zones, but access points and facilities are limited at this time. Use is centralized on three developed trails: Glen Eden Trail (about 6.5 miles), Mayacmas Trail (about 3 miles) and Valley View Trail (about 3 miles). Valley View trail head is in the Mill Creek County Park in Mendocino County. It is an outlying access point to the Cow Mountain Recreation Area. The Mayacmas Trail is accessed by the Willow Creek trail head on BLM

managed land within the North Cow Mountain area. The Ukiah Valley Trails Group assists in the brushing and trail maintenance of the Valley View and Mayacmas Trails.

### ***Hiking, SCORA***

Hiking use is allowed but not encouraged north of Benmore Creek due to the high potential for collisions with vehicles on the South Cow Mountain trails. Although there are no present trails or support facilities, hiking use is encouraged from the ridge line immediately south of Benmore Creek to the southern end of the South Cow Mountain area.

### ***Hiking, SCU***

Hiking use is encouraged, but access points and facilities are very limited at this time. Hiking opportunities will be developed in the Sheldon with the inclusion of 12.37 non-motorized multi-use trails.

## **Hunting & Fishing**

### ***Hunting & Fishing, NCRA***

Game hunting is a popular and encouraged activity in the North Cow Mountain area. The majority of hunting occurs during the rifle season for deer; however, other game is pursued during other open seasons. Hounds are trained and run in the North Cow Mountain area throughout the year. Camping is encouraged or allowed in all ROS Zones, affording hunters the opportunity to camp within a developed site or with no facilities. Access is temporarily increased during rifle season for deer by opening the gate across the north end of Mendo-Rock Road. Adjacent land owners' access these routed directly from the northwest during that time. All vehicles must be street-legal. Linear Features with vehicular use limited to hunting season are Firebreak #1, McClure Creek Ridge Spur, McClure Creek Ridge, Sulphur Creek Ridge, and Sulphur Creek Spur.

Fishing is less common in the area. North Cow Mountain area has several ephemeral and perennial creeks. There is a pond just west of the Willow Creek trailhead that is fished and has stocked sun fish in it, as well as non-native goldfish. The adjacent Mill Creek County Park is popular for fishing.

### ***Hunting & Fishing, SCORA***

Game hunting is allowed and the same facilities available for OHV use are available for hunters. Fishing is less common in the area, but allowed.

### ***Hunting & Fishing, SCU***

Game hunting is a popular and encouraged activity in the Sheldon Creek Unit. The majority of hunting occurs during the rifle season for deer; however, other game is pursued during other open seasons. Fishing is less common in the area, but allowed.

### **Mountain Biking**

#### ***Mountain Biking, NCRA***

Mountain bicycle use is encouraged, but access points and facilities are very limited at this time and trails are shared with horse and foot traffic. Trail heads are the same as for equestrian and hiking use opportunities.

#### ***Mountain Biking, SCORA***

Mountain bike use is allowed but not encouraged north of Benmore Creek due to the high potential for collisions with vehicles on the South Cow Mountain trails. Although there are no present trails or support facilities, mountain bike use is encouraged from the ridge line immediately south of Benmore Creek to the southern end of the South Cow Mountain area.

#### ***Mountain Biking, SCU***

Mountain bicycle use is encouraged, but access points and facilities are very limited at this time and trails are shared with horse and foot traffic.

## **Nature Study & Wildlife Viewing**

### ***Nature Study & Wildlife Viewing, NCRA***

Although encouraged, there are no facilities in place that specifically target nature study. Occasional field trips are taken into the area by local schools. Occasional field trips are taken into the areas by California Native Plant Society.

### ***Nature Study & Wildlife Viewing, SCORA***

Although allowed, there are no facilities in place that specifically target nature study. At present, field trips are not taken into the area by local schools.

### ***Nature Study & Wildlife Viewing, SCU***

Although allowed, there are no facilities in place that specifically target nature study. At present, field trips are not taken into the area by local schools.

## **Off Highway Vehicle Use**

### ***Off Highway Vehicle Use, NCRA***

This activity is not allowed in North Cow Mountain. Only street legal vehicles may be operated on designated roads in the North Cow Recreation Area. Some use occurs in spite of the street legal and limited route requirements, however, particularly during hunting season or when South Cow Mountain is closed under the wet weather policy.

### ***Off Highway Vehicle, SCORA***

This is the primary activity encouraged in South Cow Mountain north of the southern ridgeline along Benmore Creek. Facilities include trails designed and maintained specifically for motorcycle, ATV, and four-wheel drive vehicles. Approximately 93 miles of trail are available for OHV use.

### ***Off Highway Vehicle Use, SCU***

Off Highway Vehicle use is not managed for in the Sheldon Creek Unit or supported by any facilities. Only street legal vehicles may be operated on designated roads in the Sheldon Creek Unit.

### **Pleasure Driving, NCRA, SCORA, & SCU**

This use is allowed in the Frontcountry Zone only and is not supported by any facilities. It is assumed to be a small amount of the total visitor use of North Cow Mountain, South Cow Mountain, and the Sheldon Creek Unit.

### **Geocaching**

Per IM 2005-092, Geocaching is an outdoor adventure game for global positioning system (GPS) users. Participating in a cache hunt is an activity designed to take advantage of the features and capability of a GPS unit and enjoy the freedom of access to public land. Individuals and organizations set up caches all over the world and share the locations of these caches on the internet. GPS users use the location coordinates to find the caches. Once found, a cache may provide the visitor with a variety of awards. The visitor is asked to sign a logbook and to leave or replace items they find in the cache. The cache itself is a small waterproof box.

The general website for geocaching is *www.geocaching.com* (although others are used). When you enter this website you can type in your zip code and see all the cache sites in your area along with the site's latitude, longitude, a narrative description of the site location, the contents of the cache, and sometimes a map. Geocaching provides an opportunity to hone orienteering skills and the opportunity to get outdoors. It can also be conducted with minimal impact to the environment when conscientious land use ethics are followed.

A special recreation permit (SRP) is currently not required if the geocaching activity complies with casual use conditions. The following conditions apply to casual use:

- The activity is not a commercial endeavor
- The activity complies with land use decisions and designations, (i.e., special area designations and wilderness interim management policy)
- It does not award cash prizes
- Is not publicly advertised
- Poses minimal risk for damage to public land or related water resource values
- Generally requires no monitoring.

If use is casual, but concerns about the use develop, such as, placing the caches in Congressionally designated wilderness or wilderness study areas, at cultural resource sites, at

areas with threatened or endangered species, or any other special fragile area, it would be appropriate to issue a “letter of agreement” with special stipulations attached that would address those concerns.

If the geocaching activity or event does not meet the above conditions, the event should be treated as any other organized recreational group or competitive activity or event for which BLM would require the event organizer to obtain an SRP. The BLM believes that geocaching is an appropriate casual use of public land, but, as use increases or becomes a management issue in a particular area, the following minimum steps should be taken:

1. Try to locate a person or group that is responsible for the cache and have them register the cache with the BLM. Make sure the cache is safe and environmentally sound.
2. Prepare an environmental assessment or other appropriate National Environmental Protection Act document.
3. Issue a letter of agreement or SRP with special stipulations to mitigate concerns.
4. If sites are not registered within a reasonable amount of time after notification, then the cache should be removed from public land, normally, the cache would be determined to be abandoned property after 10 days unless the appropriate authorization has been obtained.
5. Monitor the use to assess public health and safety and environmental protection issues.
6. If the activity/sport becomes too large and begins to conflict with other authorized use, appropriate steps should be taken to properly manage the activity.

**Table 2 - North Cow Mountain Recreational Opportunities**

Opportunities Supported by ROS Zone	Camping	Equestrian	Hiking	Hunting	Mountain Biking	Nature Study	Off-Road Vehicle	Pleasure Driving	Target Shooting
Frontcountry	E	E	E	E	E	E		A	*
Middlecountry	E	E	E	E	E	E			*
Backcountry	A	E	E	E	E	E			

E – Emphasized

A – Allowed but not Emphasized

\* – Allowed only at areas designated by this plan

Not supported

or not allowed

**Table 3 - South Cow Mountain Recreational Opportunities**

Opportunities Supported by ROS Zone	Camping	Equestrian	Hiking	Hunting	Mountain Biking	Nature Study	Off-Road Vehicle	Pleasure Driving	Target Shooting
Frontcountry	E	A	A	A	A	A	E	A	*
Middlecountry	E	E	E	A	E	A	E	A	*
Backcountry	A	A	A	A	A	A			

E – Emphasized

A – Allowed but not Emphasized.

\* – Allowed only at areas designated by this plan

Not supported or not allowed



### **3.0 Public Participation**

The following are dates and attendance for Public Input Meetings

#### **BLM Tribal Scoping, Cow Mountain Revisions,**

##### **April 30, 2007**

Stan Schubert, Lake Co. Dept. of Public Works  
Carolyn Ruttan, Lake Co. Dept. of Public Works  
Wanda Quitiquit, Friends of Eel River  
Sarah Ryan, Big Valley Rancheria Pomo Indians  
Mike Schaver, Elem Indian Colony Pomo Tribe  
Betsy Carson, Epi Center (Visitors Center)Meyo Marrufo, Robinson Rancheria Pomo Indians  
Irenia Quitiquit, Robinson Rancheria Pomo Indians  
Anthony Duncan, Robinson Rancheria Pomo Indians  
Jody Larson, Scotts Valley Band of Pomo Indians  
Shannon Ford, Scotts Valley Band of Pomo Indians.  
Crista Ray, Scotts Valley Band of Pomo Indians  
Brooke Brown, BLM Ukiah Field Office  
Rich Burns, BLM Ukiah Field Office

#### **Tribal Meetings 2015**

Date: August 19<sup>th</sup>, 2015, Location: Ukiah Field Office Attendance: 4

Date: August 20<sup>th</sup>, 2015, Location: Lake County, CA Attendance: 5

#### **OHV Grants Applications meeting, Ukiah Field Office, March 27, 2009**

North Bay Motorcycle Club / Ross Liberty, Don Amador  
Ukiah Valley Trail Group / Bill Radkey  
International Mountain Bike Association  
Women of the Toll Road (Equestrian Group)

#### **OHV Planning Grant Scoping Meetings**

Date: October 27, 2011, Organization: North Bay Motorcycle Club: Ross Liberty, Curtis Dupuis,  
Location: South Cow Mountain OHV Recreation Area, Westside Staging Area

Date: January 16, 2012, Organization: Wine Country Rock Crawlers, Location: Round Table  
Pizza in Santa Rosa

#### **Public Scoping Meetings 2015**

Date: October 22, 2015, Location: Ukiah Field Office, Attendance: 27

Date October 24, 2015, Location: Lake County Court House, Attendance: 7

## 4.0 References

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## 5.0 Glossary

**Non-motorized** – Non-motorized recreation includes hiking, backpacking, bird and wildlife viewing, equestrian use, environmental education, sightseeing, picnicking and photography. Non-motorized recreation does not include activities listed as motorized or mechanized recreation.

**Mechanized** – Mechanized recreation includes cycling, mountain biking, hang-gliding, and rock-climbing using assistive devices.

**Motorized** – Motorized recreation includes the use of OHVs and car touring.

**Shooting** – Shooting, for purposes of this document, includes all non-hunting discharge of firearms and use of paintball devices.

**Official use** - Use by an employee, agent, or designated representative of the Federal Government or one of its contractors, in the course of his employment, agency or representation.

**Open area** - An area where all types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342.

**Limited area** - An area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following type of categories; numbers of vehicles; types of vehicles; time or season of vehicle use; permitted or licensed use only; use on existing roads and trails; use on designated roads and trails; and other restrictions.

**Closed area** - An area where off-road vehicle use is prohibited. Use of off-road vehicles in closed areas may be allowed for certain reasons; however, such use shall be made only with the approval of the authorized officer.

**Off-road vehicle** - Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: any non-amphibious registered motorboat; any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; any vehicle whose use is expressly authorized officer, or otherwise officially approved; vehicles in official use; and any combat or combat support vehicle when used in times of national defense emergencies.

**Area of Critical Environmental Concern (ACEC)** - An area of BLM administered lands where special management attention is needed to protect important historic, cultural or scenic values, fish and wildlife resources, or other natural systems or processes; or to protect human life and provide safety from natural hazards.

**All-Terrain Vehicle (ATV)** - A wheeled or tracked vehicle, other than a snowmobile or work vehicle, designed primarily for recreational use or for the transport of property or equipment exclusively on undeveloped road rights-of-way, marshland, open country, or other unprepared surfaces.

**Code of Federal Regulations (CFR)** - The official, legal tabulation of regulations directing federal government activities.

**Critical habitat** - (1) Specific areas within the habitat occupied by a species at the time it is listed under the Endangered Species Act where there are physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the habitat occupied by the species at the time it is listed upon the determination by the Secretary of the Interior that such areas are essential for the conservation of the species.

**Cumulative Effects** - Impacts on the environment resulting from the incremental effect of the action when added to effects of past, present, and reasonably foreseeable future actions regardless of the agency (federal or nonfederal) or person undertaking such other actions. Cumulative effects can result from individually minor, but collectively similar, actions occurring over a period of time

**Cultural Resources** - The physical remains of human activity (such as artifacts, ruins, burial mounds, petroglyphs) having scientific, prehistoric, or social values.

**Day Use Area** - An area primarily set aside for use between sunrise and sunset that may include picnicking, wildlife viewing, or access to a variety of other day-use recreation activities.

**Designated Roads and Trails** - Specific roads and trails identified by the BLM where some type of motorized vehicle use is appropriate and allowed either seasonally or year-long.

**Endangered Species** - A species defined in accordance with the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range.

**Environmental Assessment (EA)** - A systematic analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment; and whether a formal Environmental Impact Statement is required; and to aid an agency's compliance with NEPA when no EIS is necessary

**Environmental Impact Statement (EIS)** - A formal document to be filed with the Environmental Protection Agency that considers significant environmental impacts expected from the implementation of a major action.

**General Forest Management Area (GFMA)** - Forest land managed on a regeneration harvest cycle of 70-110 years. A biological legacy of six to eight green trees per acre would be retained to assure forest health. Commercial thinning would be applied where practicable and where research indicates there would be gains in timber production.

**Habitat** - The area where a plant or animal lives and grows under natural conditions. Habitat consists of living and nonliving attributes and provides all requirements for food and shelter.

**Interdisciplinary Team** - A group of BLM resource professionals with different expertise who collaborate, develop, and evaluate resource management decisions.

**Issue** - A subject or question, widespread public discussion, or interest, regarding management of a geographic area, which has been identified through public participation.

**Land Use Allocation** - Commitment of a given area of land or a resource to one or more specific uses (such as campgrounds). In the Northwest Forest Plan, one of the seven allocations of Congressionally Withdrawn Areas, Late-Successional Reserves, Adaptive Management Areas, Managed Late-Successional Areas, Administratively Withdrawn Areas, Riparian Reserves, or Matrix.

**Late-Successional Reserves** - A forest in its mature and/or old growth stages that have been reserved on Federal land that are managed to protect or enhance old growth forest conditions.

**Mitigation Measures** - Modifications of actions taken to: (1) avoid impacts by not taking a certain action or parts of an action; (2) minimize impacts by limiting the degree or magnitude of the action and its implementation; (3) rectify impacts by repairing, rehabilitating, or restoring the affected environment; (4) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or, (5) compensate for impacts by replacing or providing substitute resources or environments.

**National Environmental Policy Act (NEPA)** - An Act which encourages productive and enjoyable harmony between man and his environment; promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches

the understanding of the ecological systems and natural resources important to the Nation; and established a Council on Environmental Quality.

**Noxious Weed** - A plant specified by law as being especially undesirable, troublesome, and difficult to control.

**Off-Highway Vehicle (OHV)** – A term often used interchangeably with off-road vehicle. This term is the official term for such vehicles in the State of California’s laws, regulations, and grants and has the same functional definition as OHV, which is the official Federal term.

**Off-Road Vehicle (OHV)** – As defined in 43 CFR, Sec. 8340.0-5: “Off-road vehicle means any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) Any non-amphibious registered motorboat; (2) Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) Any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) Vehicles in official use; and (5) Any combat or combat support vehicle when used in times of national defense emergencies.” The term “Off-Road Vehicle” is often used interchangeably with the term “Off-Road Vehicle”, however all Federal laws and regulations, define such vehicles as “Off-Road Vehicles”.

**Off-Road Vehicle Designations Open** -Designated areas and trails where Off-Road Vehicles may be operated subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343.

**Limited** -Designated Areas and trails where Off-Road Vehicles are subject to restrictions and vehicle standards set forth in BLM Manual 8341 and 8343.

**Closed** -Areas and trails where the use of Off-Road Vehicles is permanently or temporarily prohibited. Emergency use is allowed.

**Public Lands** - Any land and interest in land (outside of Alaska) managed by the United States Government and administered by the Secretary of the Interior through the BLM.

**Recreation Area Management Plan (RAMP)** - An officially approved document for a specific geographical area of public land which identifies the management actions to be implemented to achieve recreation related decisions made in a management framework of a resource management plan. The Recreation Area Management Plan is the link between the allocation of land for recreation uses in the multiple-use planning process and the actions necessary to implement such allocations.

**Recreation Opportunity Spectrum (ROS)** - A fundamental recreation planning tool that recognizes the critical link between the setting of an activity and the subsequent experience it provides. The ROS provides a framework for defining the types of outdoor recreation opportunities the public might desire, and identifies that portion of the spectrum a given agency might be able to provide. The spectrum contains six classes: *Primitive, Semi-Primitive Non-motorized, Semi-Primitive Motorized, Roded Natural, Rural, and Modern-Urban* (see BLM Manual Part 8320).

**Roded Natural (RN)** - The RN class on the ROS describes an environment where natural characteristics remain dominant, but there is moderate evidence of human development, and moderate amounts of contact with other people are expected during recreation

**Semi-Primitive Non-motorized (SPNM)** - The SPM class on the ROS describes an area that is predominantly unmodified natural environment with some isolation from human contact.

**Street Legal Vehicle** – Any vehicle equipped and licensed to be operated on public roads and highways in the State of California.

**Rural (R)** - The R class on the ROS describes an environment where natural characteristics are modified, human interaction is readily evident, and resource modification and utilization practices are designed to enhance specific recreation activities and maintain vegetative cover and soil.

**Resource Management Plan (RMP)** - A BLM planning document, prepared in accordance with Section 202 of the Federal Land Policy and Management Act that presents systematic guidelines for making resource management decisions for a planning area.

**Scenic Quality** - The relative worth of a landscape from a visual perception point of view.

**Special Recreation Management Area (SRMA)** - Recreation management areas where recognized recreation values exist or where significant public recreation issues or management concerns occur. Special or more intensive types of management are typically needed. Detailed recreation planning is required in these areas and greater managerial investment (e.g. facilities, supervision, etc.). They include recreation sites but recreation sites alone do not constitute SRMAs. Detailed recreation planning is required for these areas and greater managerial investment. The size of these management units is typically over 1,000 acres, but exceptions can occur for smaller sites such as very large campground units, linear feature segments, and specialized day-use areas.

**Statewide Comprehensive Outdoor Recreation Plan** - A plan prepared by the State of Oregon that describes and analyzes the organization and function of the outdoor recreation system of the state. The plan provides an analysis of the roles and responsibilities of major outdoor recreation suppliers; an analysis of demand, supply and needs; issue discussions; an action program to address the issues; and a projected selection process.

**Threatened Species** - A species defined in accordance with the Endangered Species Act as being likely to become endangered throughout all or a significant portion of its range within the foreseeable future

**Timber Production Capability Classification (TPCC)** - The process of partitioning forest land into major classes indicating relative suitability to produce timber on a sustained yield basis.

**Transportation System** - Network of roads used to manage BLM administered lands. Includes BLM controlled roads and some privately controlled roads. It does not include Oregon Department of Transportation, County and municipal roads.

**Transportation Management Plan (TMP)** - The TMP contains transportation objectives for 231 miles of BLM controlled roads in the Eugene District. A BLM interdisciplinary team analyzed roads and made detailed recommendations on roads that would be open or closed to motorized vehicles, as well as the level of maintenance of open roads. The process involved three phases: (1) mapping and inventory; (2) risk assessments; and (3) transportation management objectives.

**Visual Resources** - The visible features on a landscape, (e.g.: land, water, vegetation, structures, and other features).

**Visual Resource Management Classes** - Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective that prescribes the amount of modification allowed within the landscape.

**Water Quality** - The chemical, physical, and biological characteristics of water.

**Wetlands or Wetland Habitat** - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for living in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, bogs and similar areas.

## 6.0 Acronyms

ACEC	Area of Critical Environmental Concern	R	Rural
ACS	Aquatic Conservation Strategy	RMP	Resource Management Plan
ATV	All-Terrain Vehicle	RN	Roaded Natural
BLM	Bureau of Land Management	RAMP	Recreation Area Management Plan
CFR	Code of Federal Regulations	ROD	Record of Decision
CMA	Cooperative Management Agreement	ROS	Recreation Opportunity Spectrum
EA	Environmental Assessment	RV	Recreational Vehicle
EIS	Environmental Impact Statement	SCORP	Statewide Comprehensive Outdoor Recreation Plan
FGNW	Fragile Gradient Non-suitable Woodland	SPM	Semi-Primitive Motorized
FLPMA	Federal Land Policy and Management Act	SPNM	Semi-Primitive Non-motorized
FONSI	Finding of No Significant Impact	SRMA	Special Recreation Management Area
GFMA	General Forest Management Area	SRP	Special Recreation Permit
IP	Implementation Plan		
LSR	Late-Successional Reserves	SUV	Sport Utility Vehicle
NEPA	National Environmental Policy Act	T&E	Threatened and Endangered (species)
OHV	Off-Highway Vehicle	TMP	Transportation Management Plan
P	Primitive	U	Urban
		VRM	Visual Resource Management



## Appendix A: Cow Mountain Maps

### A.1 Cow Mountain Recreation Area

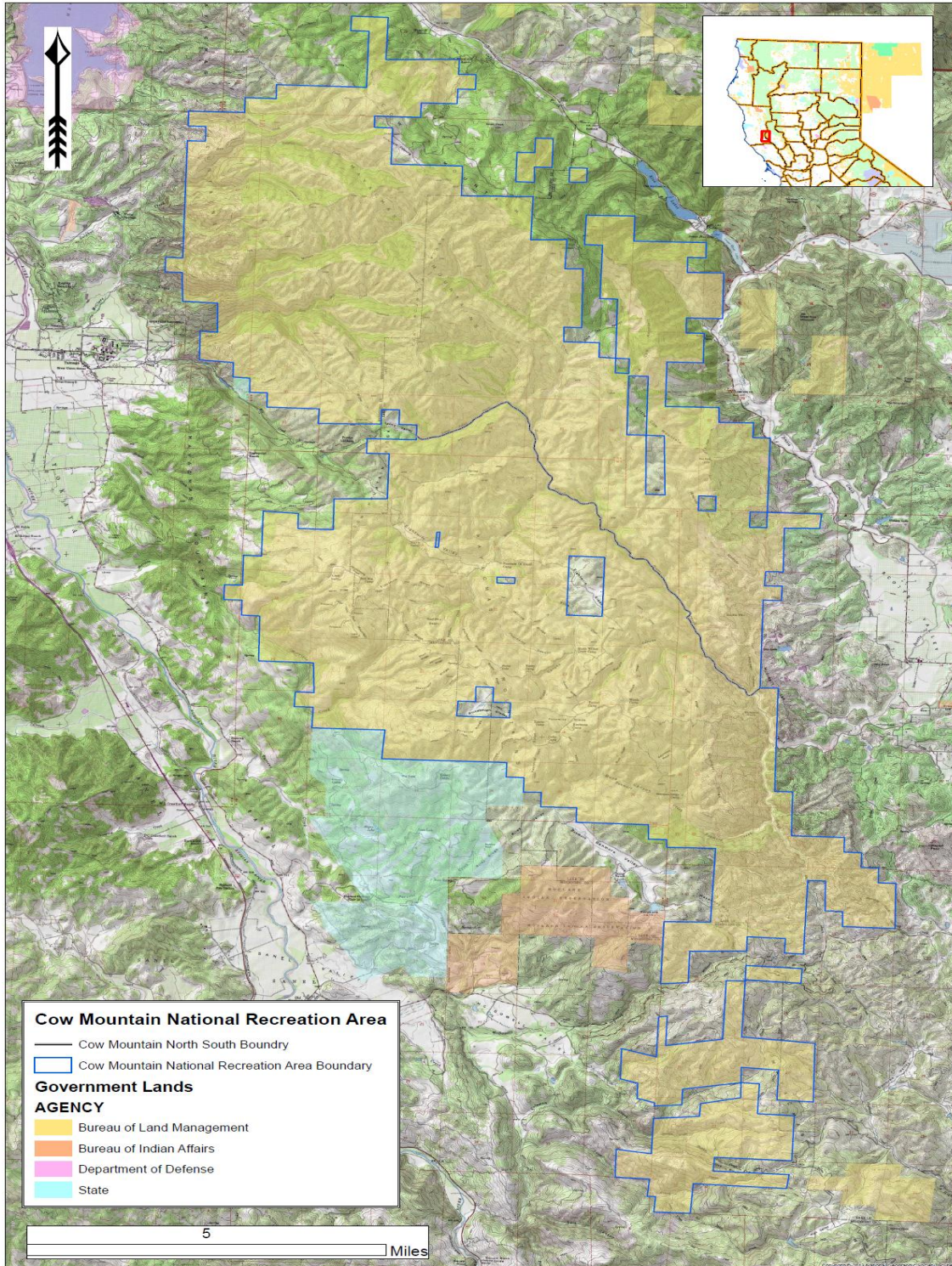


Figure 1 Cow Mountain Recreation Area General Map



## A.2 North Cow Mountain Recreation Area

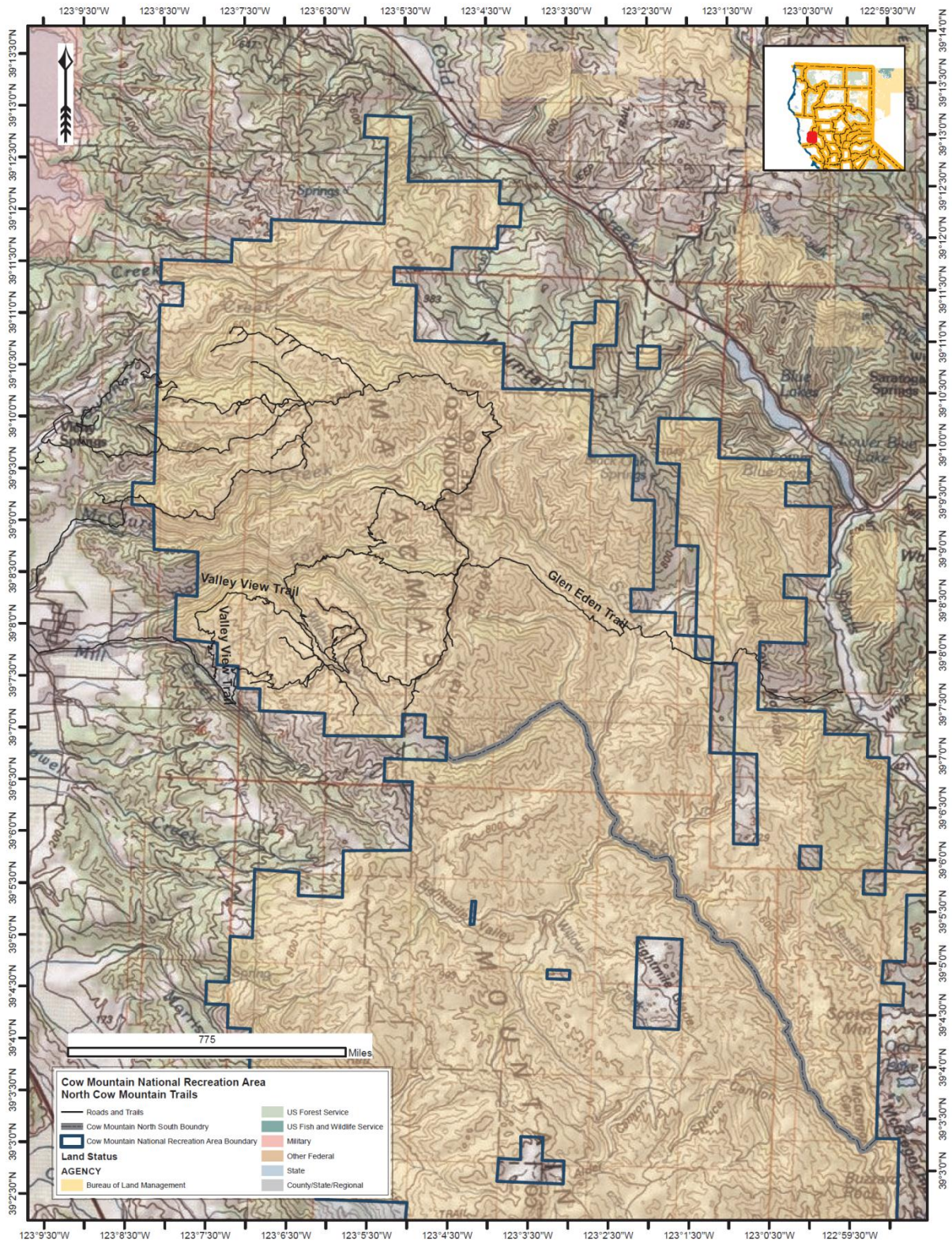


Figure 2 Cow Mountain National Recreation Area North Cow Mountain Trails

**Image to be  
inserted**

**Figure 3 North Cow Mountain Trails Development**

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**Figure 4 North Cow Mountain Facilities Development**

**Image to be  
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Figure 5 North Cow Mountain SAR sites

**Image to be  
inserted**

Figure 6 North Cow Mountain Access Closures

### A.3 South Cow Mountain Recreation Area

**Image to be  
inserted**

**Figure 7 South Cow Mountain Trails**

**Image to be  
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**Figure 8 South Cow Mountain Trails Development**



**Image to be  
inserted**

**Figure 9 South Cow Mountain Facilities Development**

**Image to be  
inserted**

**Figure 10 South Cow Mountain Trail Reroutes**

**Image to be  
inserted**

Figure 11 South Cow Mountain Trail Closures

**Image to be  
inserted**

**Figure 12 South Cow Mountain Road Development**

## A.4 Sheldon Creek Unit

**Image to be  
inserted**

Figure 13 Sheldon Creek General Map

**Image to be  
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**Figure 14 Sheldon Creek Facilities Development**

**Image to be  
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Figure 15 Sheldon Creek Trails Development

## Appendix B: Cow Mountain Travel Management

### B.1 Cow Mountain Linear Feature Designations

#### North Cow Mountain Linear Features Currently Open to Remain Open

Linear Feature	Mileage	Types of Use	Types of vehicles & season
Mayacmas Campground Road	0.95 miles	Street legal vehicles, mechanized and non-motorized	Open year round for street legal 2-wheel and 4-wheel drive access to the campground
Mendo-Rock Road	7.8 miles	Street legal vehicles, mechanized and non-motorized	Open year round for street legal 2-wheel and 4-wheel drive access to the area
Rifle Range Road	0.35 miles	Street legal vehicles, mechanized and non-motorized	Open year round for street legal 2-wheel and 4-wheel drive access to the rifle range
Water Tank Spur	3.4 miles	Road not maintained	Open for 4-wheel drive street legal vehicles; Open to mechanized use year round
Willow Creek Road	0.31 miles	Street legal vehicles, mechanized and non-motorized	Open year round for street legal 2-wheel and 4-wheel drive access to the trailhead
Firebreak #1	0.76 miles	Gate in place	Open for general deer season only to street legal vehicles; Open to mechanized use year round
McClure Creek Ridge Spur	2.04 miles	Gate in place	Open for general deer season only to street legal vehicles; Open to mechanized use year round
McClure Creek Ridge	4.17 miles	Gate in place	Open for general deer season only to street legal vehicles; Open to mechanized use year round
Sulphur Creek Ridge	3.72 miles	Gate in place	Open for general deer season only to street legal vehicles; Open to mechanized year round
Sulphur Creek Spur	3.17 miles	Barriers in place	Open for general deer season only to street legal vehicles; Open to mechanized use year round
Total	26.67 miles		

#### North Cow Mountain Linear Features Currently Closed to Remain Closed

Linear Feature	Mileage	Current Status	Types of Use
Glen Eden Trail	4.9 miles	All mechanized and non-motorized	Open year round to mechanized use
Glen Eden Trail (easement segment of trail) <sup>1</sup>	1.5 miles	All non-motorized and non-mechanized	Open year round to non-motorized and non-mechanized use
Mayacmas Trail	5.27 miles	All mechanized and non-motorized	Open year round to mechanized vehicles
Rock Trail	0.16 miles	All mechanized and non-motorized	Open year round to mechanized use
Valley View Trail	3.61 miles	All mechanized and non-motorized	Open year round to mechanized use
Cutoff #1	0.17 miles	Illegal dumping	Rehabilitate and non-motorized use
MR Firebreak #1	0.20 miles	Barriers in place	Rehabilitate and non-motorized use
MR Firebreak #2	0.06 miles	Illegal dumping	Rehabilitate and non-motorized use
MR Firebreak #3	1.89 miles	Barriers and gate in place - Illegal	Rehabilitate and non-motorized use



		dumping/shooting	
MR Firebreak #4	0.85 miles	Barriers damaged - Illegal dumping	Rehabilitate and non-motorized use
MR Firebreak #5	0.56 miles	Barriers in place - Illegal dumping	Rehabilitate and non-motorized use
Radio Tower Road	0.18 miles	Street legal vehicles	Official use only
Rifle Range Road – Maintenance	0.08 miles	Street legal vehicles	Official use only
WC Firebreak # 1	0.13 miles	Barriers in place	Rehabilitate and non-motorized use
WC Firebreak #2	1.80 miles	Barriers in place	Rehabilitate and non-motorized use
Total	21.36 miles		

<sup>1</sup> BLM may reconsider allowable uses should the easement change in the future.

#### South Cow Mountain Linear Features (per Ukiah RMP) Currently Open to Remain Open

Linear Feature	Mileage	Types of Use	Types of vehicles & season
# 1	3.51 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 2	1.28 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 3	0.42 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 4	0.33 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 5	0.56 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle use subject to seasonal closure
# 6	2.30 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 7	0.37 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 8	2.37 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 9	0.75 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 10	0.72 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 11	1.77 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 12	0.42 miles	Motorized, non-motorized and	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject

Linear Feature	Mileage	Types of Use	Types of vehicles & season
		mechanized	to seasonal closure
# 13	0.28 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 14	2.83 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 15	4.34 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 16	0.66 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 17	0.58 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 18	1.60 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 19	1.80 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 20	2.32 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 21	0.67 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 22	1.44 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 23- 4 Wheel Drive Safety Course network	1.89 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and 4 Wheel Drive (short) subject to seasonal closure
# 24	1.40 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 25	0.86 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 26	2.88 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 27	4.91 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 28	3.66 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 29	2.33 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 30	0.50 miles	Motorized, non-motorized and	Motorcycle and ATV Open year round to mechanized and motorcycle and ATV use subject

Linear Feature	Mileage	Types of Use	Types of vehicles & season
		mechanized	to seasonal closure
# 31	5.69 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short) subject to seasonal closure
# 32	0.73 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short) subject to seasonal closure
# 33	5.69 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short) subject to seasonal closure
# 34	4.01 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
# 35	3.01 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
# 36	5.48 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short) subject to seasonal closure
# 37	1.64 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
#40 Fountain of Youth Campsite	0.38 miles	Not maintained	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short) subject to seasonal closure
# 43	0.39 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle and ATV use subject to seasonal closure
Buckhorn Campground Road	0.53 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
Bushy Camp Road	0.12 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
Mendo-Lake Road	11.85 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
Oakwood Spring Road	1.74 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
Red Mountain Campground Road and Loop	1.37 miles	Motorized, non-motorized and mechanized	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
Eight Mile Valley Road	0.49 miles	Maintained	Open year round to mechanized and motorcycle, ATV and 4 Wheel Drive (short and long) subject to seasonal closure
Total	92.87 miles		

**South Cow Mountain Linear Features Currently Closed to Remain Closed**

Linear Feature	Mileage	Current Status	Types of Use
# 39	0.53	Gate in place	Official use only
Old Barn Road	1.06	Gate in place	Official use only
Lost Valley Road	0.04	Gate in place	Official use only
Lost Valley Trail	5.05	Gate in place	Rehabilitated and non-motorized
Rickabaugh Trespass Complex	2.03	Gate in place	Rehabilitate
Total	8.71		

**B.2 North Cow Mountain Linear Features: Development**

Linear Feature	add. Mileage	Types of Use
Scotts Valley Mt. Bike Course	5.46	Mountain Bike Only
Green Gate Downhill Mt. Bike Course	1.59	Mountain Bike Only
Mayacmas/Glen Eden Loop	12	Mountain Bike Only
Upper Scotts Creek Loop	3.57	Equestrian Only
Little Cow Mt. Loop	2.18	Equestrian Only
North Mayacmas Loop	8	Non-Motorized Multi-use
Lake Mendocino Connector	6.45	Non-Motorized Multi-use
Total	39.25	

**B.3 North Cow Mountain Trail Bank**

Linear Feature	Mileage
Permissible Miles of Development (PMD)	40
Total Closures	0
Total Reroutes	0
Total Development	39.25
Total Remaining PMD	0.75

**B.4 South Cow Mountain Linear Features: Applicable Closures**

Linear Feature	Sub. Mileage
Bailout Trail located off of Trail 14 (North)	.3
Bailout Trail located off of Trail 14 (South)	.33
Trail 3a, North of Oakwood Springs	.48
Trail 25, Boundary Ridge Road Access	.34
Trail 12 (Acupuncture Alley)	.37

Linear Feature	Sub. Mileage
South Boundary Ridge Trail	1.22
Trail 16 Southeast	.26
Miscellaneous Spurs	11.61
Tucker Camp Road	0.17
Total	15.08

### B.5 South Cow Mountain Linear Features: Reroute

Linear Feature	Add. Mileage	Types of Use
Bailout Trail located off of Trail 14 (North)	.27	Motorcycle
Trail 3a, North of Oakwood Springs	.54	Motorcycle
Trail 25, Boundary Ridge Road Access	.55	Motorcycle
Trail 12 (Acupuncture Alley)	.54	Motorcycle
South Boundary Ridge Trail	.8	Motorcycle
South Boundary Ridge Trail	.17	Motorcycle
Trail 16 Southeast	.22	Motorcycle
Eight Mile Glade NW Trail	.53	Motorcycle
Total	3.62	

### B.6 South Cow Mountain Linear Features: Trails Development

Linear Feature	add. Mileage	Types of Use
Benmore Creek Trail	3.73	Motorcycle
North Fork Scotts Creek to Spruce Ridge Connector	1.7	Motorcycle
T-Rex Trail	1.1	Motorcycle
Trail 2/4 Connector	.63	Motorcycle
Trail 2 / Oakwood Springs Road Connector	.2	Motorcycle
Trail 21 south to Trail 16	1.53	Motorcycle
Trail 21 north to Trail 2 / 4	1	Motorcycle
Total	9.89	

### B.7 Sheldon Creek Unit Linear Features: Trails Development

Linear Feature	add. Mileage	Types of Use
Campground Loop	.24	Non-Motorized Multi-use
Pond Trail	1.17	Non-Motorized Multi-use
Highland Trail	1.64	Non-Motorized Multi-use
Meadow Loop	1.1	Non-Motorized Multi-use
Vaster Creek Vista Loop	1.99	Non-Motorized Multi-use
Ridgeline Trail	.69	Non-Motorized Multi-use
Contingent Loop & Vista Trail	5.54	Non-Motorized Multi-use
Total	12.37	

## B.8 South Cow Mountain Trail Bank

Linear Feature	Mileage
Permissible Miles of Development (PMD)	40
Total Closures	15.08
Total Reroutes	3.62
Total Development	22.26
Total Remaining PMD	29.2

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## B.9 Cow Mountain Recreation Area Trail Signage

Trail signage will be placed at the following locations:

- Trailheads at START
- Trailheads at END
- Trail halfway points
- Trail access points
- Intersections & merges
- Areas that need directional signs

An inventory of signs will be maintained with a GIS coverage showing locations of all signs in the Recreation Area. Signs will be inspected and maintained on an as-needed basis, but no less than once per year.

Trail START signs will be installed at the trailhead nearest to roads. If trailhead is not located near a road, the START will be installed at the trailhead closest to the nearest road.

Halfway signs will be installed along trails at halfway point with standard trail labeling. Both sides of all signs will be utilized; one route side and one information side. Halfway signs will be located on both sides of the trail across from each other. Halfway signs will face the viewer with the route side towards them and be located on the right hand side of trail, the opposite sign will face information side towards them and be located on the left hand side of trail.

Signs installed at trail heads, trail ends, and access points will face the viewer with the route side as if they were looking onto the trail. Only one sign shall be installed at trail heads, trail ends, and access points.

The route side of carsonite route signs will provide the following information from top to bottom via signage labels:

- Trail Number
- Recommended vehicle type(s)
- Degree of difficulty
- Trail start signs will indicate “START”
- Trail ending signs will indicate “END”
- Access trails will indicate “ACCESS”
- Directional signs will have an arrow pointing up
- Halfway signs will only provide a Trail Number, Recommended vehicle type(s), and Degree of difficulty. If a halfway sign is within .1 mile radius of any ACCESS or Directional signs, no halfway sign will be placed. If a trail is less than 1 mile long, no halfway signs will be installed.

The information side of carsonite signs will provide the following information from top to bottom via signage labels and QR Codes:

- Printed label with GPS Coordinates in *dmm*
- Instructions in case of emergency stating:  
*In case of emergency, proceed to location with access to outside communication. Contact emergency services via 911, provide them with your location of emergency utilizing distance to emergency from above GPS coordinates and mile marker location. Follow instructions of 911 operator.*
- If data signal is present, a scanable QR code containing the GPS *geo URL* of sign location

### **Route Closure Signs**

Trails not included in the Ukiah Field Office RMP (2006) but still accessible shall be marked CLOSED with carsonite signs at trailheads and anywhere they can be accessed by other trails. Signs shall be lettered on one side “TRAIL CLOSED”. Lettered side shall face traffic flow and be placed where they cannot be run over.

### **Enclosed Loop Signs**

Enclosed loop trails will have their trailheads signed as ACCESS points. Mile markers shall not be placed on enclosed loops, unless loop is a single trail with no spurs or branches. Loop trails with no spurs or branches will be signed as if they were a linear trail with a beginning and end. Loop trails with spurs, branches, and internal networks shall have each section numbered as the indicated trail along with an alphabetical letter indicator (i.e. – 3a, 3b, 3c, etc.).





**Examples of sign placement:**



**Figure 16- Trailhead Signing**



**Figure 17- Halfway Signing**



**Figure 18- Access Point Along Road or Other Trail**



**Figure 19- Access Points Intersected by Road or Other Trail**

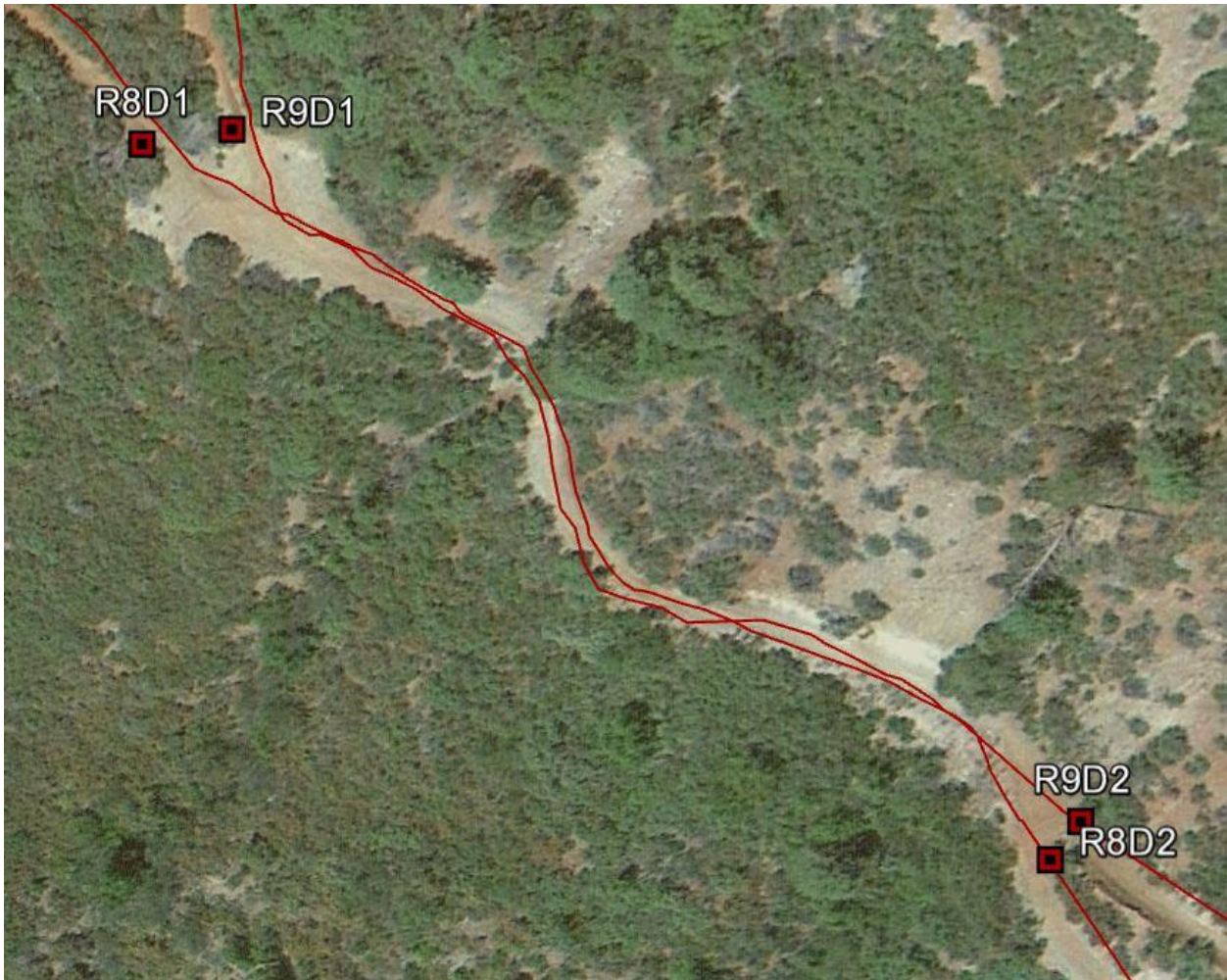


**Figure 20- End of Trail Signing**



**Figure 21- Trail Signing at Trail Intersection**





**Figure 22- Directional Signage**

## B.10 RAMP/RMP South Cow Mountain Trail Numbering Cross Reference

During the development of the Ukiah RMP (2006) a trail designation map for the South Cow Recreation Area was created to provide designations for each individual trail segment. While this system has proved useful for planning and inventories, it is significantly different from the commonly use historical trail designations. To provide consistency, improved communication, and greater comprehension of the recreational resource, the Cow Mountain Recreation Area Management Plan shall continue to use the commonly used historical trail designations. To assist in this, a RAMP/RMP South Cow Mountain Trail Numbering Cross Reference list is provided below to understand the relationship between the two numbering systems.

RMP Designation	RAMP Designation
Trail 1	Trail 1
Trail 2	Portions of Trail A
Trail 3	Trail 3 (Closed in RMP)
Trail 4	Portions of Trail A
Trail 5	Portions of Trail A
Trail 6	Trail 2 and portions of Trail 6
Trail 7	Spur off of Trail 2 that will be incorporated into RAMP as an addition
Trail 8	Trail 4
Trail 9	Trail 5
Trail 10	A portion of Trail 10
Trail 11	A portion of 11 and the Trail 3 Lyons Ridge Loop System
Trail 12	A portion of the Trail 3 Lyons Ridge Loop System
Trail 13	A portion of the Trail 3 Lyons Ridge Loop System
Trail 14	Portions of Trail 14
Trail 15	Portions of Trail 14
Trail 16	Portions of Trail 14
Trail 17	Portions of Trail 14
Trail 18	Portions of Trail 7, 8
Trail 19	Portions of Trail 8
Trail 20	Portions of Trail 9

RMP Designation	RAMP Designation
Trail 21	Portions of Trail 8
Trail 22	Portions of Red Mountain Campground Road
Trail 23- 4 Wheel Drive Safety Course network	4 Wheel Drive Safety Course network
Trail 24	Portions of Trail 9
Trail 25	Portions of Trail 11
Trail 26	Portions of Trail 11
Trail 27	Trail 19 and Trail 12
Trail 28	Portions of Trail 19
Trail 29	Portion of Trail 20
Trail 30	Portions of Buckhorn Campground Road and Trail 20
Trail 31	Trail 23
Trail 32	Portions of Trail 23
Trail 33	Trail 25
Trail 34	Trail 15
Trail 35	Trail 16
Trail 36	Trail 17
Trail 37	Trail 21
Trail 38	Portions of Trail 6 and Trail 24
Trail 40 Fountain of Youth Campsite	Fountain of Youth Campsite
Trail 43	A portion of the Trail 3 Lyons Ridge Loop System

RMP Designation	RAMP Designation
Oakwood Spring Road	Oakwood Spring Road
Red Mountain Campground Road and Loop	Red Mountain Campground Road and Loop
Eight Mile Valley Road	Eight Mile Valley Road

RMP Designation	RAMP Designation
Buckhorn Campground Road	Buckhorn Campground Road
Bushy Camp Road	Trail 15 or The Old Road
Mendo-Lake Road	Mendo-Lake Road

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## Appendix C: Geology and Soil Plan

### Tectonics

The geologic history of the northern Coastal Range is complex, reflecting the interactions between two major pieces of the earth's crust (tectonic plates). These two tectonic plates, the North American and Pacific plates, slide against each other along a major plate boundary known as the San Andreas Fault system. The San Andreas Fault system extends from the Gulf of California in the south to offshore of Point Arena in the North and continues to the northeast and terminating at the Mendocino Triple Junction off Cape Mendocino. The Mendocino Triple Junction is where the North American, Pacific, and Juan de Fuca Plates meet. It is one of the locations on the Earth's surface with one of the highest rate of uplift or crustal deformation.

The San Andreas Fault system is a complex plate boundary that includes the main fault line of the San Andreas fault and other 'sympathetic faults' that generally runs parallel to the main fault line such as the San Gregorio, Hayward, Calaveras, Greenville, and Concord-Green Valley faults in the southern San Francisco Bay Area, and the Napa, Rodger's Creek, and Maacama faults in the northern San Francisco Bay Area. Several smaller faults are associated with these main fault lines. Tectonic earthquakes, a number of which are major, were generated along a number of these fault lines. These faults also contributed to the shaping and sculpting of the landscape along the western section of California.

Movement along the San Andreas Fault system is generally characterized as right-lateral strike-slip motion where the Pacific Plate is moving to the northwest relative to the North American Plate at a rate of approximately 1.3-1.5 inches/year. The current San Andreas fault system developed sometime around 30 million years before present when the plate boundary changed from subduction to a strike-slip movement.

Volcanism along the northwestern United States is related to the subduction earlier of the Farallon Plate, and later, of the Pacific and Juan de Fuca Plates beneath the North American Plate. The Farallon Plate is almost completely subducted. The Juan de Fuca Plate in the north and the Rivera-Cocos Plate in the south are the remnants of the Farallon Plate that are still being subducted beneath North America.

### Regional Geology

The Federal lands that are managed by the Bureau of Land Management (BLM) within the jurisdiction of the Ukiah Field Office are within the California Coast Range, a series of North-South trending valleys and ridges that lie along the western half of the state of California and continue to the Northwest towards the western part of Oregon and Washington. The Coast Range developed as a result of the subduction initially of the Farallon Plate, and later the Pacific and Juan de Fuca Plates beneath the North American Plate. This plate-to-plate interaction caused the rocks to be folded, thrust, and faulted. Volcanism within the Coast Range and northward towards the Cascades is also the result of this subduction.

The general geology of the California Coast Range is a mix of folded and faulted sedimentary and volcanic rocks with ages ranging from Jurassic (approx. 200 million years old) to Holocene (<10,000 years old). These rocks are grouped into major divisions, namely, the Coast Range Ophiolite sequence, the Franciscan Assemblage, the Great Valley Sequence. The younger Cache



Formation and Clear Lakes Volcanics either unconformably overlie or intrude the older rock units. Melange assemblage is present along fault zones while younger alluvial deposits and landslide deposits are present along valley floors or along slopes.

The Coast Range Ophiolite of Middle to Late Jurassic age (145-174 million years before present, MYbp) consists of serpentinite, gabbro, diabase, basalt flows and breccias, and radiolarian chert. This sequence represents the ancient oceanic crust that may have been uplifted as a result of subduction along the western margin of North America. The serpentinite was formed when the ultramafic rocks dunite and peridotite were partly to completely altered to the mineral assemblage consisting of lizardite, chrysotile, and clinochrysotile. Chrysotile is a naturally occurring asbestos.

The Great Valley Sequence, of Late Jurassic to Early Cretaceous age (approx. 134-152 mybp), consists largely of mudstone and shale, with carbonate concretions and minor lenses of chert and quartz-bearing cobble conglomerate at the lower part. Minor limestone and breccia are also present. Lenses of detrital or fragmental serpentinite are also present at different stratigraphic horizons within the formation.

The Franciscan Assemblage, of Late Jurassic to Late Cretaceous age (approx. 100-164 mybp), is composed of ultramafic rocks, metamorphosed volcanic rocks (basaltic flows and tuffs), metasandstone, metachert, and argillite. Greenstone, limestone, basalt, and glaucophane schist may also be present in areas of small or limited extent. Altered or metamorphosed intrusives composed of ultrabasic rocks, serpentinite, and serpentinized peridotite.

The Melange of Grizzly Creek, possibly of Early to Late Cretaceous age (approx. 65-145 mybp), consists of sheared or chaotic mix of rocks derived from the Coast Range Ophiolite, the Great Valley Sequence, and the Franciscan Assemblage.

The Cache Formation, of Pleistocene to Holocene age (approx. 0.01-5.3 MYbp), consists of semi-consolidated to consolidated pebble- to boulder-conglomerate, sandstone, and siltstone.

The Clear Lake Volcanics, of Pleistocene to Holocene age (<10,000 years old) consists of olivine basalt, basaltic andesite, and dacite flows and intrusives. These rocks have been erupted from volcanic centers in the area, one of which is Mount Konocti.

Recent deposits of alluvium in the form of alluvial fans, valley fill, and terrace deposits overlie the older rocks. Landslide deposits are also present occasionally on slopes that are unstable.

The area is also transected by numerous faults that generally trend Northwest-Southeast, with a number of faults trending either North-South or Northeast. These faults are related to the San Andreas Fault System that is a major geologic feature along the western coast of the United States. Movements along these faults are characterized either as strike-slip or thrust faulting. Movements along these faults also resulted in the juxtaposition of rocks of different ages, types, and depositional environments.

#### Local Geology in the Cow Mountain Area and Vicinity

**Figure –** shows the geology in the immediate vicinity of the Cow Mountain Area. The oldest rock unit in the area is the ultrabasic rocks (ub) composed of serpentinite and peridotite. These rocks are related to the assemblage of the Coast Range Ophiolite sequences described above,

with possible age of Middle to Upper Jurassic (approx. 145-174 MYbp). The exposures of these rock units within the Cow Mountain area are very limited.

Marine deposits (K) consisting of sandstone, siltstone, shale, and conglomerate of Lower Cretaceous age (approx. 100-145 MYbp) underlie the area west of US Highway 101. These units are probably related to the Great Valley Sequence described above.

The predominant unit underlying the Cow Mountain area is the Franciscan formation (KJf) or Franciscan Assemblage of Late Jurassic to Late Cretaceous age (approx. 100-164 MYbp). This is composed of sandstone, shale, chert, conglomerate, and limestone at different degrees of metamorphism. Belonging to the Franciscan formation is the Franciscan metavolcanic and volcanic rocks (KJfv) that has been altered to greenstone.

The younger deposits in the vicinity of the Cow Mountain area are generally limited to flat-lying areas along the valleys or lake shores. Non-marine fluvial and lacustrine deposits (QP) of Plio-Pleistocene age (approx. 0.1 - 5.3 MYbp) are present along the western foothills of Cow Mountain. Non-marine terrace deposits (Qc and Qt) of Pleistocene age (approx. 0.1 MYbp) consisting of gravels, clays, and sand are exposed along the banks of rivers and streams. These are related to the Cache formation described above. The most recent deposits of alluvium (Qal) composed of recent breccias, conglomerates, and sand are deposited as valley fill.

### Soils and Geomorphology

The underlying geology and geomorphology are major underlying factors in the evolution of soil types because rocks and geological processes provide the basic components needed for soil development. Soils provide the interface between the physical and biological components of an ecosystem. Soil also provides an anchor for the root systems of plants, a means of supplying and storing water and nutrients, and habitat for an entire soil-based ecology. The intricate soil mixture of minerals, water, air, and organic matter is the product of the complex interaction of geology, climate, topography, ecology, and time. These factors, along with human influences and fire history, have produced the soils and the vegetation types that exist in the Ukiah Planning area today.

Soil characteristics are commonly described in terms of soil texture, structure, porosity, organic matter, and bulk density. These characteristics describe the quality and function of soil types that directly influence infiltration and percolation rates, nutrient availability, and water storage capacity. Soil texture and structure are the most common characteristics used to classify soils. Soil texture is the percentage of sand, silt, and clay in a soil, while soil structure refers to how the soil particles are grouped or arranged within the soil profile, which is crucial to maintaining soil porosity and the connectivity of the soil pores.

Soil porosity is the percentage of the soil profile composed of pore or air space, while soil bulk density is related to porosity (total potential air space) and hydrologic condition (the amount of water that occupies the potential air space). Bulk density is often used to assess how compacted a soil has become as a result of land use or other disturbances. Soil bulk density is determined by taking a soil sample of known volume, then drying, and weighing the sample. A soil with low

bulk density will generally have greater porosity and ability to hold water than a soil with a high bulk density. Soil organic matter is considered instrumental in building and maintaining soil structure which, in turn, improves infiltration. In general, as organic content increases, infiltration rate increases. Organic matter is also critical for soil fertility because organic acids provide greater “cation exchange capacity”.

Soils within the Ukiah planning area are categorized by their soil texture. The region includes numerous soil texture types, including but not limited to clay, loam, clay loam, gravelly loam, and fine sand loam. Soil textures range from well-drained loam and fine sandy loam to poorly-drained gravelly loam and clay.

#### North Cow Mountain Soil Types and Suitability of Use

The North Cow Mountain Recreational Area covers approximately 27,000 acres that is managed by the Bureau of Land Management. The following soil types and taxonomy descriptions are from the soil surveys conducted by the National Resource Conservation Service (NRCS) of the Department of Agriculture (DA) and available on their website. The soil that are included in this section are those that make up more than one percent (>1%) of the area of interest in North Cow Mountain.

Because the soils in the North Cow Mountain area are essentially mixtures or combinations of different soil types, it is simpler to describe these soil types individually. Table 4, Appendix C.2 shows the soil associations that are present in the area, their components, relative area percent, characteristics, and suitability for use.

#### Argixerolls

This soil is alluvium. Typical profile: 0-11 inches loam; 11-22 inches clay loam, gravelly clay loam; 22-37 inches clay. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately low to moderately high (Ksat: 0.06 to 0.20 in/hr).

#### Bearwallow

This soil is colluvium derived from sandstone and shale and/or residuum weathered from sandstone and shale. Typical profile: 0-35 inches loam; 35-39 inches bedrock. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

#### Bressa

This soil is the residuum of weathering of sedimentary rocks. Typical profile: 0-12 inches loam; 12-26 inches clay loam; 26-36 inches weathered bedrock. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

#### Etsel

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-8 inches very gravelly loam; 8-18 inches unweathered bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Haploxeralfs

This soil is alluvium. Typical profile: 0-3 inches sandy loam; 3-30 inches loam; 30-37 inches gravelly sandy loam; 37-60 inches very gravelly sandy loam. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.57 to 1.98 in/hr).

### Hellman

This soil is colluvium derived from sandstone and shale and/or residuum weathered from sandstone and shale. Typical profile: 0-14 inches loam; 14-51 inches gravelly clay loam, clay loam, gravelly clay; 51-72 inches bedrock. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately low to moderately high (Ksat: 0.06 to 0.20 in/hr).

### Hopland

This soil is colluvium derived from sandstone and shale and/or residuum of weathering of sandstone and shale. Typical profile: 0-6 inches loam; 6-34 inches clay loam; 34-60 inches weathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Kekawaka

This soil is the residuum of weathering of sandstone and siltstone. Typical profile: 0-4 inches loam; 4-35 inches clay loam; 35-61 inches clay; >61 inches bedrock. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Maymen

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-12 inches loam; 12-22 inches lithic bedrock. Soil is excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Mayacama

This soil is the residuum of weathering of sandstone. Typical profile: 0-5 inches very gravelly sandy loam; 5-31 inches very gravelly loam; 31-41 inches unweathered bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Millsholm

This soil is the residuum of weathering of sedimentary rocks. Typical profile: 0-3 inches loam; 3-11 inches clay loam; 11-21 inches unweathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Pinole Gravelly Loam

This soil is alluvium derived from sedimentary rocks. Typical profile: 0-10 inches gravelly loam; 10-37 inches gravelly clay loam, clay loam, sandy clay loam, gravelly sandy clay loam. Soil is well drained and has medium runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Redvine Sandy Clay Loam

This soil is alluvium derived from sedimentary rocks. Typical profile: 0-8 inches sandy clay loam; 8-14 inches clay loam; 14-60 inches clay. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately low to moderately high (Ksat: 0.06 to 0.20 in/hr).

### Sanhedrin

This soil is the residuum of weathering of sandstone. Typical profile: 0-8 inches gravelly loam; 8-57 inches gravelly clay loam; 57-67 inches unweathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Snook

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-5 inches very gravelly loam; 5-15 inches unweathered bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Speaker

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-8 inches gravelly loam; 8-27 inches gravelly clay loam; 27-60 inches weathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Witherell

This soil is colluvium derived from sandstone and shale and/or residuum weathered from sandstone and shale. Typical profile: 0-7 inches sandy loam; 7-12 inches gravelly sandy loam; 12-79 gravel; 10-79 inches bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately low to moderately high (Ksat: 0.14 to 1.42 in/hr).

### Woodin

This soil is colluvium derived from sandstone or residuum from weathered sandstone. Typical profile: 0-7 inches gravelly sandy clay loam; 7-15 inches very gravelly sandy clay loam; 15-23 inches very cobbly sandy clay; 23-27 inches bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.26 to 1.98 in/hr).

### Xerochrepts

This soil is alluvium. Typical profile: 0-12 inches gravelly loam; 12-36 inches very gravelly loam; 36-72 inches gravelly sandy clay loam. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.57 to 1.98 in/hr).

### Yokayo Sandy Loam

This soil is alluvium derived from sedimentary rocks. Typical profile: 0-8 inches sandy loam; 8-32 inches clay; 32-60 inches clay loam. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is very low to moderately low (Ksat: 0.00 to 0.06 in/hr).

### Yorktree

This soil is colluvium derived from shale and/or greywacke and/or sandstone and siltstone or residuum of weathering of these rocks. Typical profile: 0-12 inches loam; 12-24 inches gravelly clay loam; 24-42 inches clay; 42-51 inches gravelly clay; 51-55 inches bedrock. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately low to moderately high (Ksat: 0.06 to 0.20 in/hr).

### Yorkville

This soil is colluvium derived from greywacke, schist, or shale. Typical profile: 0-15 inches loam; 15-41 inches clay; 41-60 inches gravelly clay loam, clay loam. Soil is moderately well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is very low to moderately low (Ksat: 0.00 to 0.06 in/hr).

### South Cow Mountain Soil Types and Suitability of Use

The South Cow Mountain Recreational Area, covering approximately 25,000 acres, is adjacent and south of the North Cow Mountain Recreational Area that is also managed by the Bureau of Land Management. The following soil types and taxonomy descriptions are from the soil surveys conducted by the National Resource Conservation Service (NRCS) of the Department of Agriculture (DA) and available on their website. AECOM conducted a Trail Condition Survey (TCS) between February 27 and May 8, 2012 and submitted their report on May 17, 2012. The soils that are included in this section are those that were identified from the AECOM survey. Appendix H is a compilation of AECOM's Trail Segment Summary Forms and a summary of the result of AECOM's trail survey.

Because the soils in the South Cow Mountain area are essentially mixtures or combinations of different soil types as in North Cow Mountain, it is simpler to describe these soil types individually. Appendix C.1 shows the soil associations that are present in the area, their components, relative area percent, characteristics, and suitability for use.

### Bressa

This soil is the residuum of weathering of sandstone. Typical profile: 0-12 inches loam; 12-26 inches clay loam; 26-36 inches weathered bedrock. Soil is well drained and has medium runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Etsel

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-3 inches gravelly loam; 3-10 inches very gravelly loam; 10-20 inches unweathered bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Henneke

This soil is residuum weathered from serpentinite. Typical profile: 0-4 inches gravelly loam; 4-19 inches very gravelly clay; 19-23 inches unweathered bedrock. Soil is well-drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is low to moderately high (Ksat: 0.01-0.57 in/hr).

### Hopland

This soil is colluvium derived from sandstone and shale and/or residuum of weathering of sandstone and shale. Typical profile: 0-6 inches loam; 6-34 inches clay loam; 34-60 inches weathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Kekawaka

This soil is the residuum of weathering of sandstone and siltstone. Typical profile: 0-4 inches loam; 4-35 inches clay loam; 35-61 inches clay; >61 inches bedrock. Soil is well drained and has very high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Mayacama

This soil is the residuum of weathering of sandstone. Typical profile: 0-5 inches very gravelly sandy loam; 5-31 inches very gravelly loam; 31-41 inches unweathered bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Maymen

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-12 inches loam; 12-22 inches lithic bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

### Millsholm

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-9 inches loam; 9-18 inches clay loam; 18-28 inches unweathered bedrock. Soil is well drained and has medium runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

### Montara

This soil is residuum weathered from serpentinite. Typical profile: 0-13 inches loam; 13-17 unweathered bedrock. Soil is well-drained and has very high runoff. The capacity of limiting

layer to transmit water (permeability of soil-rock contact) is low to moderately high (Ksat: 0.01-0.57 in/hr).

#### Sanhedrin

This soil is the residuum of weathering of sandstone. Typical profile: 0-8 inches gravelly loam; 8-57 inches gravelly clay loam; 57-67 inches unweathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).

#### Snook

This soil is the residuum of weathering of sandstone and shale. Typical profile: 0-12 inches gravelly loam; 12-22 inches unweathered bedrock. Soil is somewhat excessively drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high to high (Ksat: 0.20 to 1.98 in/hr).

#### Speaker

This soil is the residuum of weathering of sandstone. Typical profile: 0-8 inches gravelly loam; 8-27 inches gravelly clay loam; 27-60 inches weathered bedrock. Soil is well drained and has high runoff. The capacity of limiting layer to transmit water (permeability of soil-rock contact) is moderately high (Ksat: 0.20 to 0.57 in/hr).



### Erosion Mitigation and Slope Stabilization

Erosion is the process of transporting debris from its source to a depositional location. The debris may be as fine as clay particles to as huge as a boulder. The transporting medium may be wind, water, gravity, ice, ocean waves, or human or biological action. Erosion, therefore, may be caused by both natural processes and man-made activities. Debris transport is not a result of one exclusive mode of transport (i. e. only water flow is involved, etc.), but a combination of different modes of transport. Erosion can cause problems downstream from the source when it results in siltation of the main waterways and/or contamination by transporting unwanted materials that may adversely affect the downstream habitat and eco-system.

Generally, the dominant erosion transporting medium is water flow, possibly followed by gravity through mass wasting (i. e. landslides, rock falls, etc.), human action, glacial action, wind erosion, and biological action. For the purpose of this document, three modes of erosion mechanism will be discussed: water or hydraulic erosion, man-made erosion, and mass wasting. These processes are likely to be dominantly occurring and are responsible for much of the erosion in the Cow Mountain area.

The proposed erosion mitigation measures outlined here are by no means solutions to every situation. Each situation is unique to itself; the solution therefore is also site-specific. Some measures may not be fully implemented because of the constraints of terrain and accessibility, availability of materials, equipment, manpower, funding, and biological restrictions (e. g. area may have sensitive habitat or species that may be affected).

Other erosion mitigation measures that are not mentioned in this document are described in **Weaver, Weppner, and Hagens; Handbook for Forest, Ranch, and Rural Roads**; Pacific Watersheds Associates (April 2015). Some of these measures may also require the expertise of civil engineers and engineering geologists to properly evaluate the situation and design the appropriate solution.

#### Mass Wasting

Mass wasting processes include landslides, debris flow, rock falls, and other similar processes. Water may or may not be involved with these processes. These processes may be triggered by factors such as over-saturation of the slope, presence of subsurface artesian condition, and presence of steep slopes (especially in poorly consolidated or highly fractured ground). Some slopes may be in an equilibrium condition such that the forces that causes slope movement is balanced by the forces resisting slope movement. External factors such as large earthquakes, slope undercutting, and/or upper slope loading may cause the slope to become unstable and trigger a landslide, rock fall, slump, or debris flow.

Mass wasting may be called ‘erosion-in-bulk’ because of the relatively large volume of materials that are mobilized and dumped at the base of a slope. Subsequent processes of wash-out by flowing water on the slide mass and human action of clearing the slide mass using equipment continue the process of slope erosion.

To prevent or minimize mass wasting, several measures may be implemented to improve the stability of the slope. These measures may involve the following: adding support to the toe or

base of the slope, unburden the top of the slope, improve the cohesion or shear-strength of the slope, properly designed cut-and-fill road or trail construction, proper drainage to minimize or prevent the saturation of the slope, and other slope stabilization measures. These measures may be implemented on existing slopes or new slope cuts (for new roads or repair of damaged roads). Depending on the need, these measures may be implemented individually or in conjunction with the other measures.

### Hydraulic Erosion

The degree or severity of water erosion is a function of several factors: cohesion or hardness of the exposed surface, surface slope, channel or surface area where flow is occurring, water volume, water flow velocity, and flow duration. These factors interact with each other, and their interaction may determine the severity or degree of erosion. The hardness of the exposed surface determines how much material can be removed by flowing water in a given period of time. The slope of a surface or grade of a road or trail affects the velocity of water that flows over it. The channel or surface area determines how concentrated the flow is. The volume of available water for erosion and duration of flow is determined by the amount of rainfall at a given period of time. The amount and duration of rainfall is beyond human control. Mitigating the effects of hydraulic erosion may be undertaken by designing an erosion control system that balances the individual effects of the other factors so as to minimize the severity of the erosional process. Several measures are available to improve the cohesion of the ground surface, dissipate the flow energy, and distributing the flow over a wider area or into several channels so as to minimize sediment transport further downstream and limit water infiltration into the ground. These measures will cause the carried sediments to be deposited closer to their source instead of being carried further downstream to impact a major waterway.

The cohesion of the ground surface, especially on roadbed or trails, can be improved by compaction using tracked equipment (e. g. Bobcat tractor) or normal 4x4 vehicle and should be performed when the ground has optimum moisture content (can be field-checked a few days after a rain).

The flow velocity may be increased or reduced depending on the need and location. Flow velocity should be maximized to limit water infiltration into the ground especially on trails or roads that are located on high or steep slopes. Inboard channels or ditches adjacent to these roads should be lined with impermeable material to minimize gullying.

On the other hand, flow velocity must be reduced from channel outflow locations on the slope face to prevent slope wash-out or undercutting. An energy dissipater system consisting of geofabric and cobble-sized rocks may be placed on these outflow locations to spread-out the flow and deposit sediments.

Roads and trails must be designed and constructed incorporating features such as rolling dips, culverts, critical dips, inboard or outboard slopes, waterbars, and ditches (depending on the location and need) with the view of limiting erosion, water infiltration, and waterway contamination and/or siltation.

Depending on the need, these measures may be implemented individually or in conjunction with the other measures.

#### Man-made Erosion (OHV, Road Construction, Slope Cutting)

Any human activity that transforms the landscape contributes to erosion. Activities such as road and bridge construction, buildings and infrastructure construction, mining, and certain recreational activities such as using Off-Highway Vehicles (OHV) and similar equipment on unpaved roads and trails contribute to erosion.

OHV activities occur within the Cow Mountain recreational area and will be dealt with in this section. The tires of these vehicles can rip up the road or trail surface, cause gully formation and development, and kick up loose materials that will be washed out eventually by flowing water. Erosion may be minimized by implementing access and use restrictions during rainy periods, implementing speed limits, restricting certain sites and trails to specific types of vehicles or activities, implementing one-way traffic directions on certain trails (e. g. only downslope directions on moderately steep to steep trails), and other measures that may be applicable.

Trail and road gullying may be addressed by periodic backfilling with on-site material that must be compacted sufficiently. This will prevent the trail gullies from becoming too deep which may result to more severe conditions. In conjunction with the other erosion mitigating measures outlined in the previous sections, site and trail erosion may be minimized.

#### Periodic Monitoring Program

A monitoring program may be formulated following the guidelines set forth in the California State Parks' **2008 Soil Conservation Standard and Guidelines**. An initial field investigation may be conducted to identify critical areas that require mitigation and document the current conditions. Periodic field surveys may be concentrated on observing and documenting changes in the identified critical areas and other non-critical areas. Casual observations may be performed whenever site visits are conducted. The frequency of the monitoring program will depend on the prevailing weather conditions and/or season (i. e. period with high number of campers or OHV users). More information can be found in Appendix I of this document.

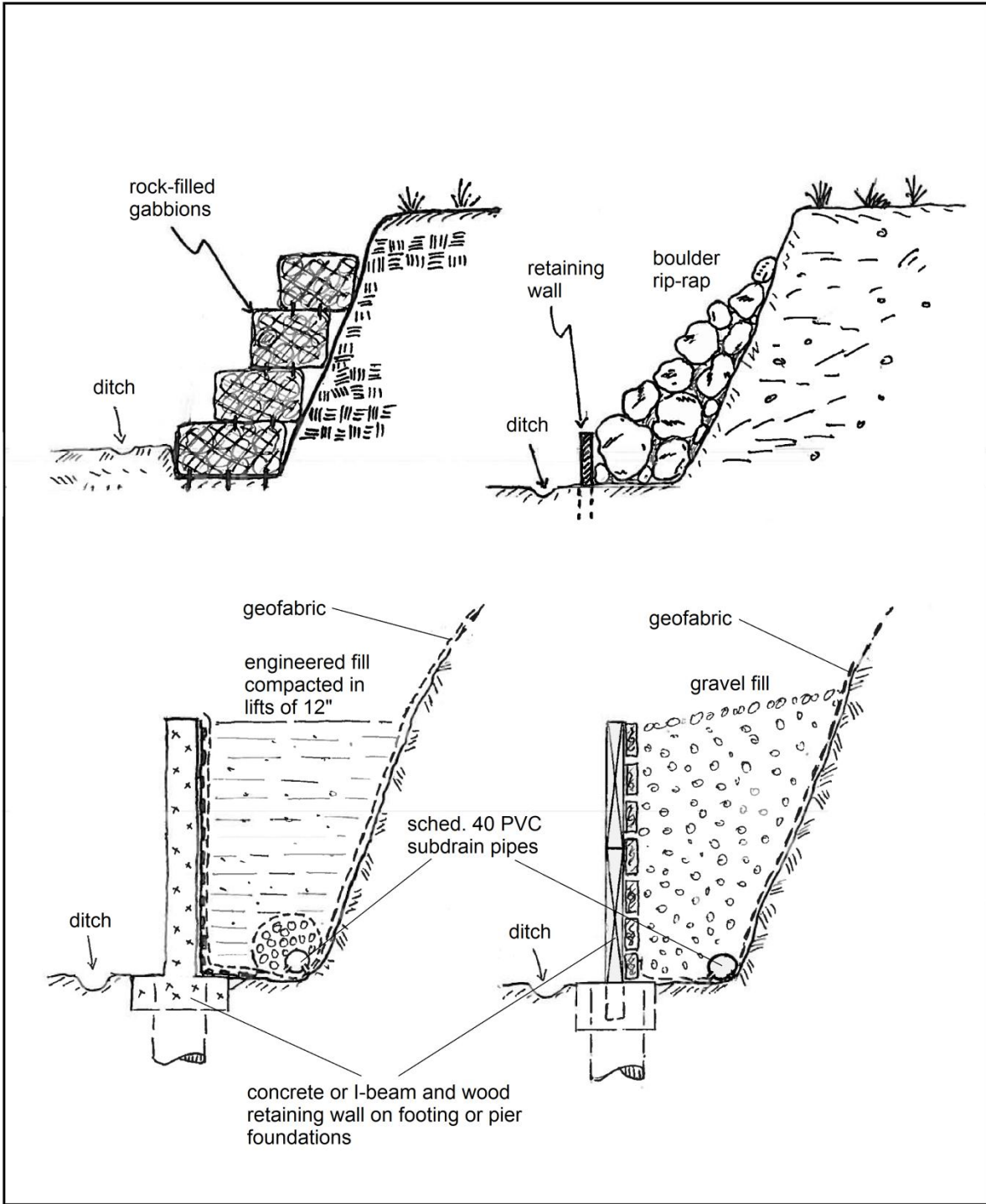


Figure 1. Slope Stabilization Measures Using Gabion Baskets, Boulder Rip-Rap, and Retaining Walls.

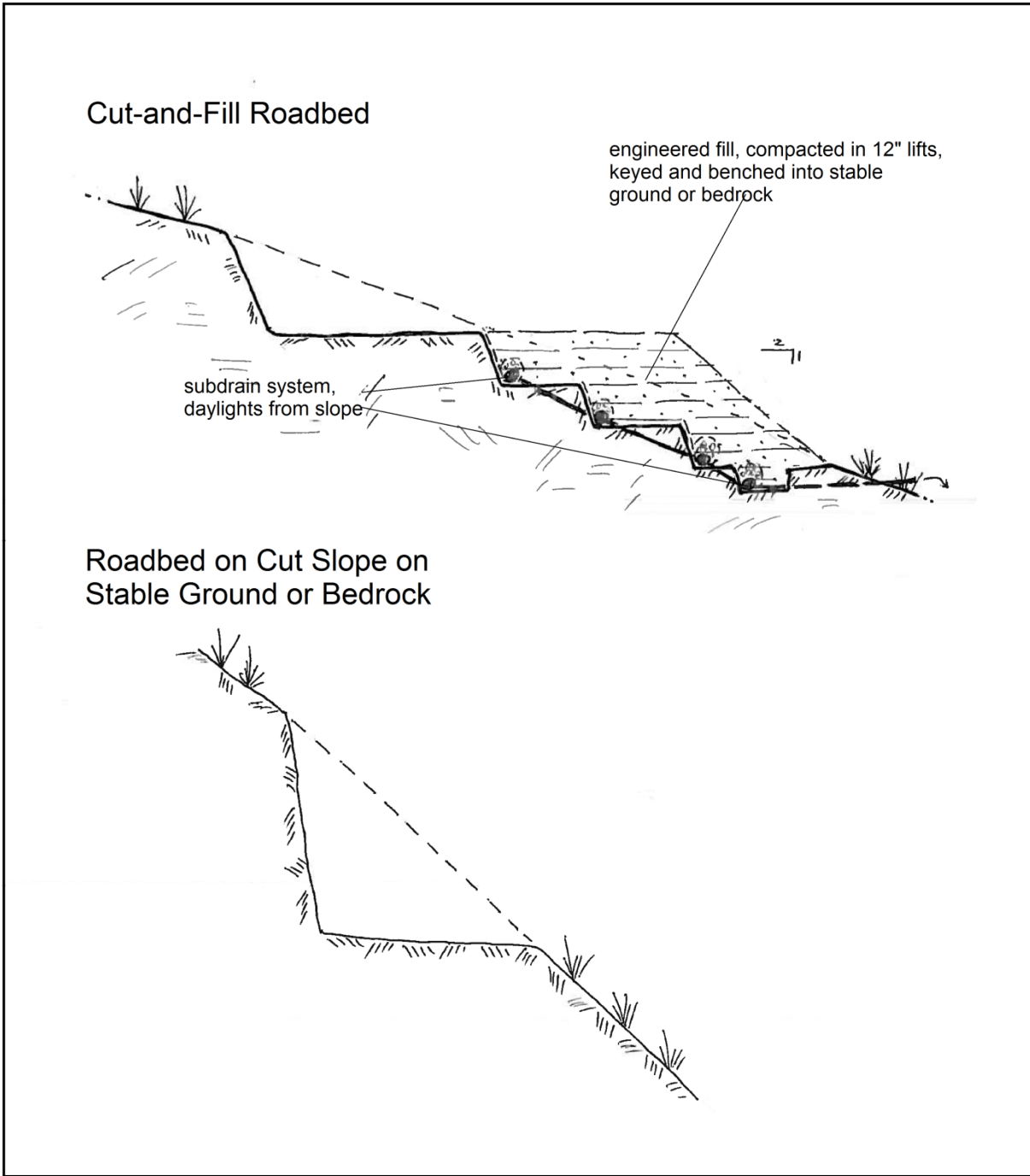


Figure 2. Stabilization of Existing or Proposed Roadbed or Trail.

### Waterbars and Ditches on Ridge Road or Trail

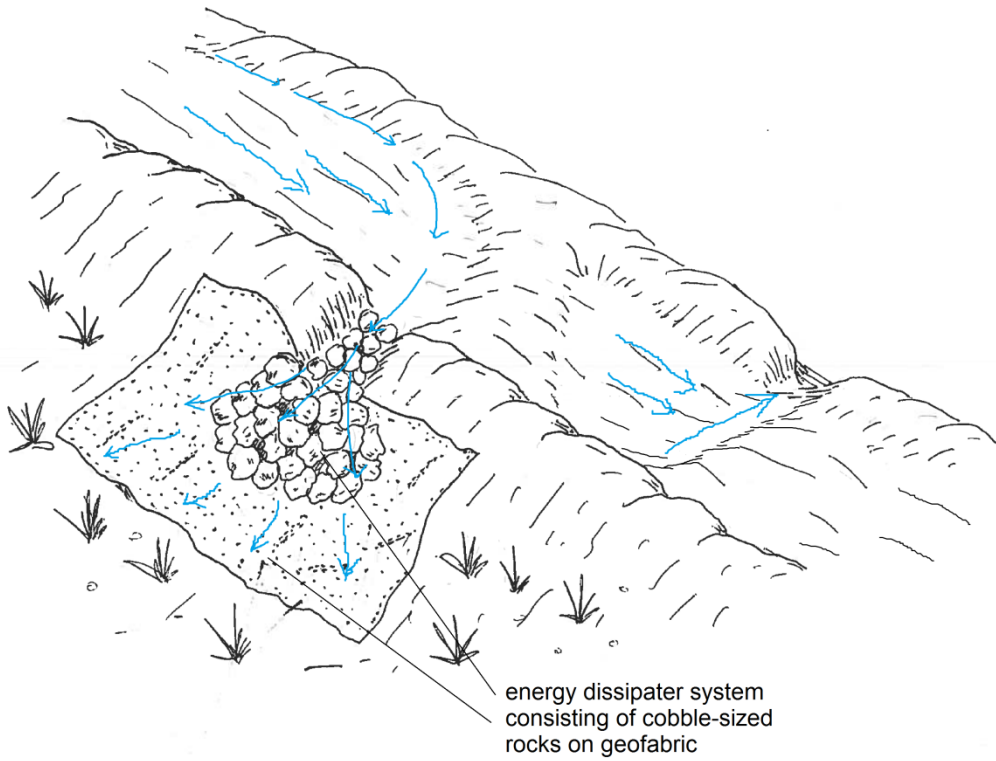


Figure 3. Drainage on Road or Trail Running Along a Ridge Crest.

## Waterbars and Ditches on Road/Trail Cut Into Slope

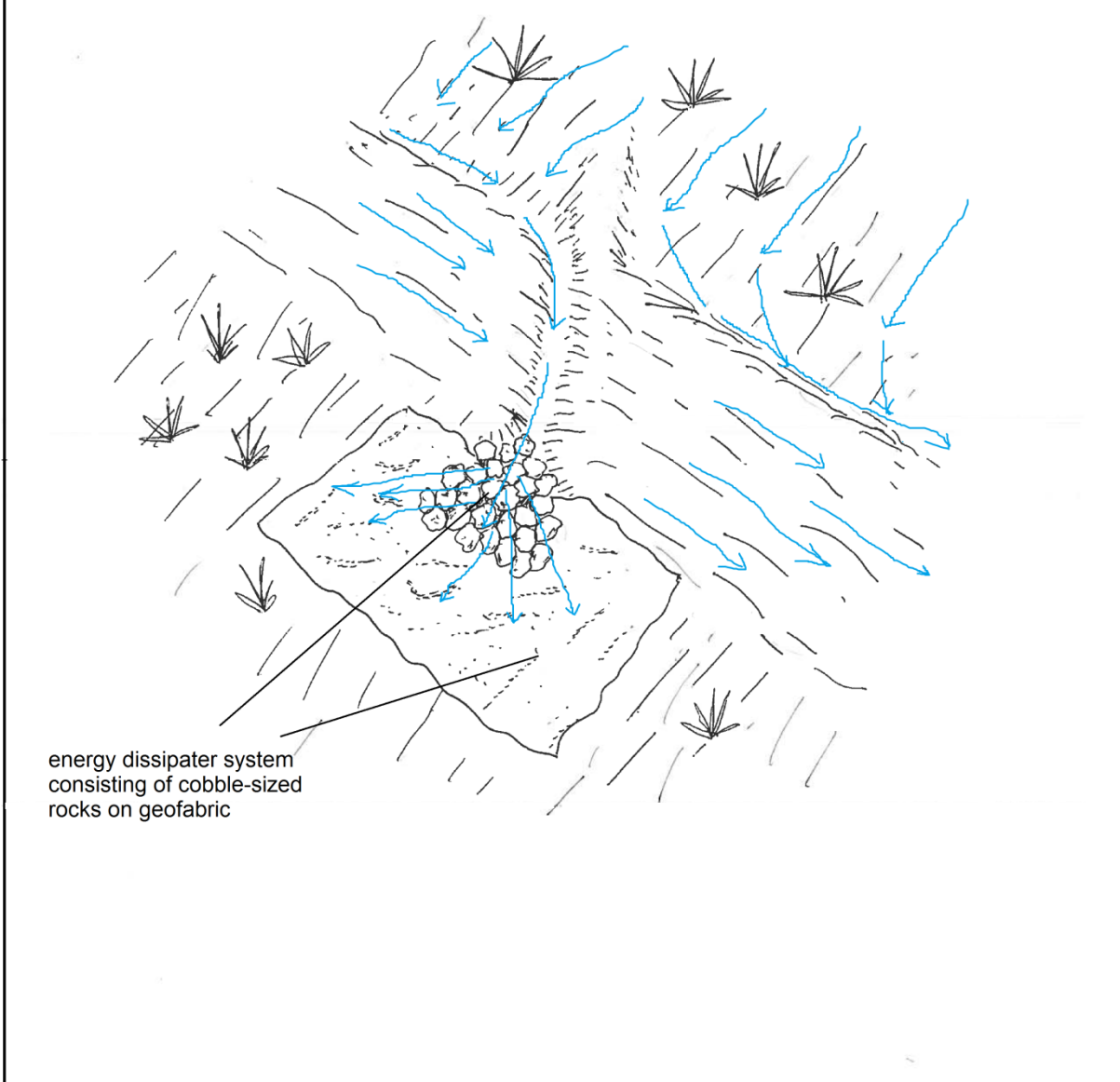


Figure 4. Drainage on Road or Trail Along Hillsides.

## C.1 North Cow Mountain Soil Suitability

<b>NORTH COW MOUNTAIN SOIL USE SUITABILITY (at Natural Condition)</b>						
<b>Soil Association</b>	<b>Percent Soil Components</b>	<b>Percent in Area</b>	<b>Soil Rutting Hazard</b>	<b>Road Suitability</b>	<b>Off-Road and Motorcycle Suitability</b>	<b>Path and Trails Suitability</b>
Bearwallow-Hellman-Witherell Complex	Bearwallow: 35; Hellman: 25; Witherell: 15; Other: 20	1.5	Severe	Poor	Very Limited	Very Limited
Hopland Loam	Hopland: 85; Other: 15	1.0	Severe	Poor	Very Limited	Very Limited
Hopland-Sanhedrin-Kekawaka Complex	Hopland: 45; Sanhedrin: 20; Kekawaka: 15; Other: 20	7.8	Severe	Poor	Very Limited to Somewhat Limited	Very Limited to Somewhat Limited
Hopland-Witherell-Squawrock Complex	Hopland: 35; Witherell: 30; Squawrock: 20; Other: 15	1.3	Moderate	Poor	Very Limited	Very Limited
Maymen-Etsel-Mayacama Complex	Maymen: 35; Etsel: 25; Mayacama: 20; Other: 20	32.4	Slight	Poor	Very Limited	Very Limited
Maymen-Etsel-Snook Complex	Maymen: 35-45; Etsel: 20-25; Snook: 20-25; Other: 15	17.7	Slight	Poor	Very Limited to Somewhat Limited	Very Limited to Somewhat Limited
Maymen-Hopland-Mayacama Association	Maymen: 40; Hopland: 20; Mayacama: 20; Other: 20	7.5	Slight	Poor	Very Limited to Somewhat Limited	Very Limited
Maymen-Millsholm-Bressa Complex	Maymen: 30; Millsholm: 20; Bressa: 15; Other: 35	1.0	Severe	Poor	Very Limited	Very Limited
Millsholm-Bressa Loams	Millsholm: 45; Bressa: 35; Other: 20	1.0	Severe	Poor	Very Limited	Very Limited
Pinole Gravelly Loam	Pinole: 85; Other: 15	1.7	Slight	Good	Somewhat Limited	Somewhat Limited
Redvine Sandy Clay	Redvine: 85; Other: 15	1.1	Moderate	Good to Moderate (2-15 % slope);	Somewhat Limited	Somewhat Limited



Loam				Poor (15-30% slope)		
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### C.2 South Cow Mountain Soil Suitability

<b>SOUTH COW MOUNTAIN SOIL USE SUITABILITY (at Natural Condition)</b>						
<b>Soil Association</b>	<b>Percent Soil Components</b>	<b>Percent in Area</b>	<b>Soil Rutting Hazard</b>	<b>Road Suitability</b>	<b>Off-Road and Motorcycle Suitability</b>	<b>Path and Trails Suitability</b>
Bressa-Millsholm Loams	Bressa: 50; Millsholm: 30; Other: 20	0.3	Severe	Poor (15-30% slope); Moderate (8-15% slope)	Very Limited	Very Limited
Henneke-Montara Complex	Henneke: 35; Montara: 30; Other: 35	2.3	Moderate	Poor	Somewhat Limited	Very Limited
Hopland-Sanhedrin-Kekawaka Complex	Hopland: 45; Sanhedrin: 20; Kekawaka: 15; Other: 20	1.9	Severe	Poor	Very Limited	Very Limited
Maymen-Etsel-Mayacama Complex	Maymen: 35; Etsel: 25; Mayacama: 20; Other: 20	56.0	Slight	Poor	Very Limited	Very Limited
Maymen-Etsel-Snook Complex	Maymen: 35-45; Etsel: 20-25; Snook: 20; Other: 10-25	26.6	Slight	Poor	Very Limited to Somewhat Limited	Very Limited to Somewhat Limited
Maymen-Etsel-Speaker Association	Maymen: 35; Etsel: 30; Speaker: 20; Other 15	2.6	Slight	Poor	Very Limited	Very Limited
Maymen-Hopland-Mayacama Complex	Maymen: 40; Hopland: 30; Mayacama: 15; Other: 15	5.6	Slight	Poor	Somewhat Limited	Very Limited to Somewhat Limited
Speaker-Sanhedrin-Maymen Association	Speaker: 30; Sanhedrin: 30; Maymen: 20; Other: 20	4.9	Slight	Poor	Very Limited	Very Limited

### C.3 South Cow Trail Condition Summary

## Appendix D: Recreation Opportunity Spectrum

For the Ukiah Field Office RMP (2006) a Recreation Opportunity Spectrum (ROS) analysis performed during its development. This analysis is a modified based on the ROS commonly used by the National Forest Service, adjusted to reflect the unique characteristics of public lands management.

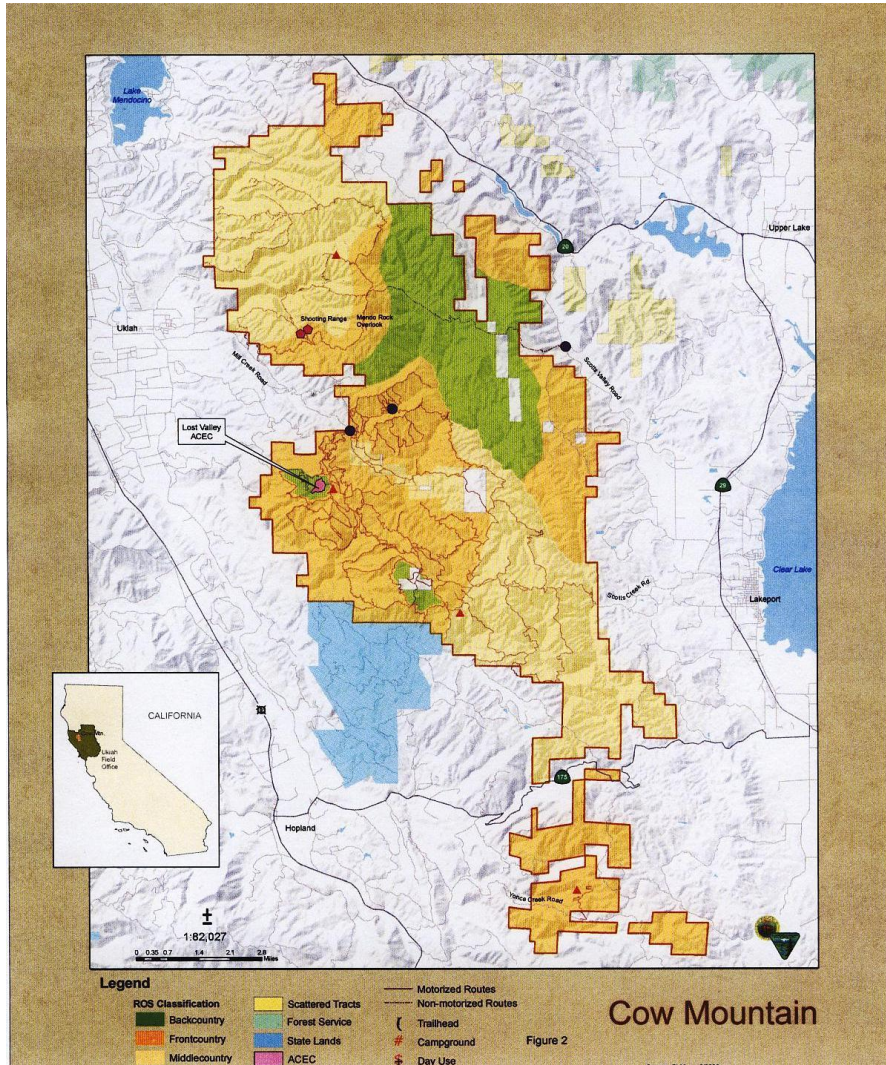
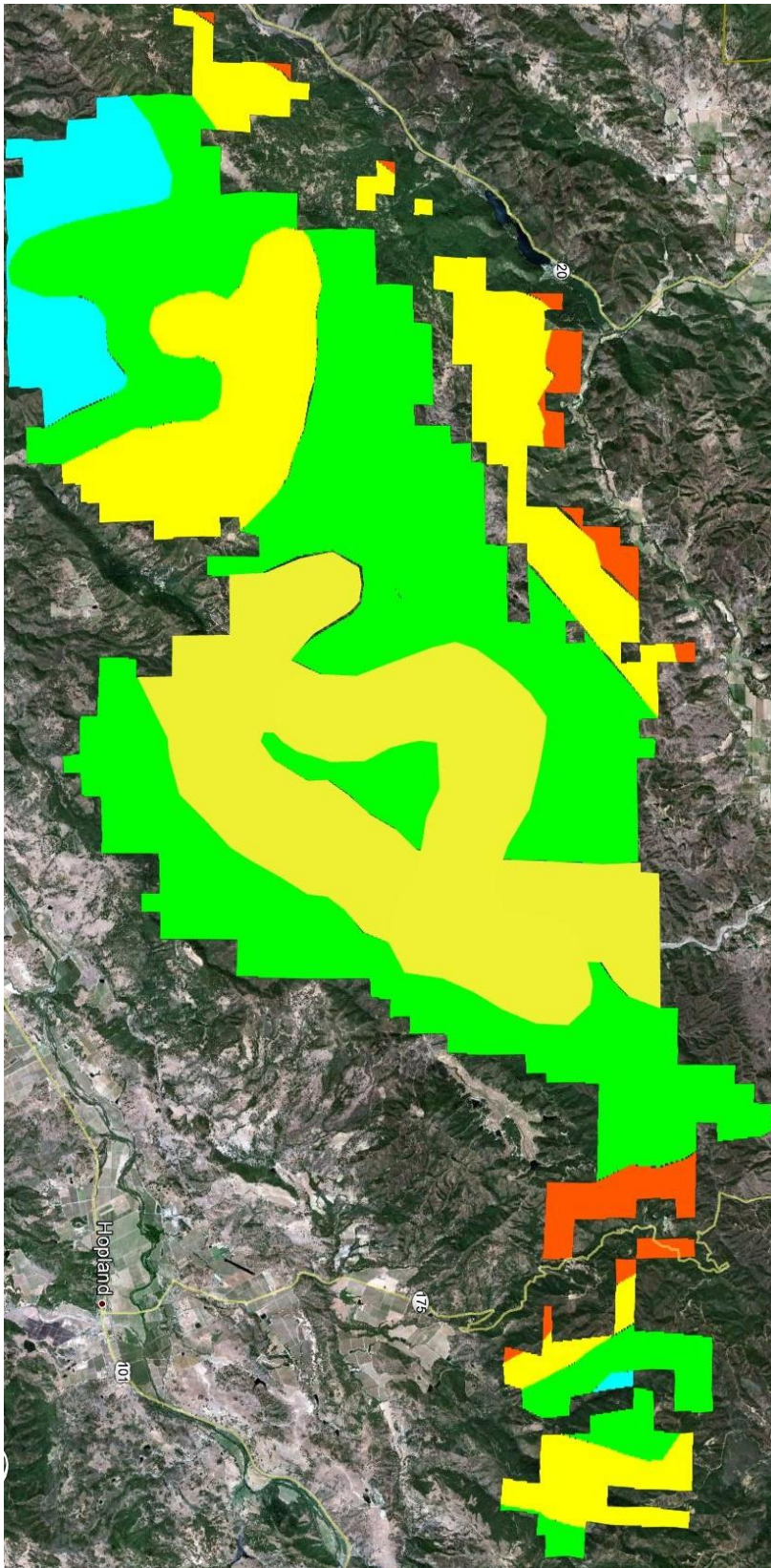


Figure 23 Cow Mountain Recreation Opportunity Spectrum from Ukiah RMP (2006)





**D.1 North Cow SRMA ROS Designations per Ukiah RMP (2006)**

**North Cow SRMA - (Zone 1), Rural**

<b>Management Objectives</b>	By the year 2010, manage this zone to improve recreational opportunities, create an additional access point and expand partnerships, providing no less than 75% of responding visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)		
<b>Outcomes</b>			
<b>Primary Activities</b> - Wildlife Viewing - Hiking - Nature Study - Mtn. biking	<b>Experiences</b> - Enjoy Nature - Short or long distance recreational opportunities - Education - Enjoy access to diverse Back Country - Impressive viewshed - Enjoy Access to Blue Lakes	<b>Benefits</b> - Personal Exercise, skills in natural areas, improved outdoor knowledge - Environmental increased stewardship and protection of natural resources, greater protection of natural resources	
<b>Setting Prescriptions</b>			
<b>Physical</b> Rural setting on the perimeter with access to back and middle country	<b>Social</b> Fewer than 50 people per group and 30 encounters per day	<b>Administrative</b> Identify on area brochure and map with signs and direction Identify as a non-motorized area Periodic LE presence	

**North Cow SRMA - (Zone 2), Front Country**

<b>Management Objectives</b>	By the year 2010, manage this zone to improve and maintain recreational opportunities and facilities that support the back country experience, providing no less than 75% of responding visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)		
<b>Outcomes</b>			
<b>Primary Activities</b> - Wildlife Viewing - Hiking - Nature Study - Hunting - Mtn. biking - Shooting - Equestrian - Pleasure Driving	<b>Experiences</b> - Enjoy Nature - Short or long distance recreational opportunities - Education - Enjoy access to diverse Back Country - Enjoy viewshed	<b>Benefits</b> - Personal Exercise, skills in natural areas, improved outdoor knowledge, stress reduction - Environmental increased stewardship and protection of natural resources, greater protection of natural resources - Interpretive/Educational Outreach	
<b>Setting Prescriptions</b>			
<b>Physical</b> Valued open space surrounded by developed and populated rural areas	<b>Social</b> Fewer than 25 people per group and 30 encounters per day	<b>Administrative</b> Identify on area brochure and map with signs and direction Identify as a non-motorized area Periodic LE presence Collaborate with County tourism entities Personal contacts Continue dispersal of area map Continue information of website	

**North Cow SRMA - (Zone 3), Back Country**

<b>Management Objectives</b>	By the year 2010, manage this zone to preserve and improve resource values that provide for the back country recreation experience, providing no less than 75% of responding visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)	
<b>Outcomes</b>		
<b>Primary Activities</b> - Wildlife Viewing - Hiking - Nature Study - Hunting - Mtn. biking - Shooting - Equestrian	<b>Experiences</b> - Enjoy Nature - Short or long distance recreational opportunities - Education - Enjoy access to diverse Back Country - Enjoy viewshed	<b>Benefits</b> - Personal Exercise, skills in natural areas, improved outdoor knowledge, stress reduction - Environmental increased stewardship and protection of natural resources, greater protection of natural resources
<b>Setting Prescriptions</b>		
<b>Physical</b> Valued open space that is easily accessible	<b>Social</b> Fewer than 6 people per group and 6 encounters per day	<b>Administrative</b> Identify on area brochure and map with signs and direction Identify as a non-motorized area Periodic LE presence Collaborate with County tourism entities Personal contacts Continue dispersal of area map Continue information of website

**North Cow SRMA - (Zone 4), Middle Country**

<b>Management Objectives</b>	By the year 2010, manage this zone to improve and maintain recreational opportunities and facilities that support the back country experience, providing no less than 75% of responding visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)	
<b>Outcomes</b>		
<b>Primary Activities</b> - Wildlife Viewing - Hiking - Nature Study - Hunting - Mtn. biking - Shooting - Equestrian - Pleasure Driving	<b>Experiences</b> - Enjoy Nature - Short or long distance recreational opportunities - Education - Enjoy access to diverse Back Country - Enjoy viewshed	<b>Benefits</b> - Personal Exercise, skills in natural areas, improved outdoor knowledge, stress reduction - Environmental increased stewardship and protection of natural resources, greater protection of natural resources
<b>Setting Prescriptions</b>		
<b>Physical</b> Valued open space surrounded by developed and populated rural areas	<b>Social</b> Fewer than 12 people per group and 29 encounters per day	<b>Administrative</b> Identify on area brochure and map with signs and direction Identify as a non-motorized area Periodic LE presence Collaborate with County tourism entities Personal contacts Continue dispersal of area map

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## D.2 South Cow SRMA ROS Designations per Ukiah RMP (2006)

### South Cow SRMA - Lost Valley/Rickabaugh Glade (Zone 1), Back Country

<b>Management Objectives</b>	By the year 2010, manage this zone to preserve and improve natural resource values while providing opportunities for visitors to engage in back country recreation, providing no less than 75% of responding visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)	
<b>Outcomes</b>		
<b>Primary Activities</b> - Wildlife Viewing - Hiking - Nature Study - Hunting - Equestrian	<b>Experiences</b> - Enjoy Nature - Solitude - Education - Enjoy access to diverse Back Country	<b>Benefits</b> - Personal Exercise, skills in natural areas, improved outdoor knowledge - Environmental increased stewardship and protection of natural resources, greater protection of natural resources Educational Outreach
<b>Setting Prescriptions</b>		
<b>Physical</b> Primarily front country setting with islands of sensitive resources	<b>Social</b> Fewer than 3 people per group and 3 encounters per day	<b>Administrative</b> Identify on area brochure and map with signs and direction Identify as a non-motorized area Periodic LE presence
<b>Management and Marketing Actions</b>		
<b>Management Actions:</b> Roads and Trails Assess needs of all acquired roads/trails Implement wildlife habitat and/or cultural improvement projects Installation of interpretive kiosks for meadow areas Visually blend the well pump structure into natural landscape		<b>Marketing Actions:</b> Develop an interpretive plan Identify on the area brochure/map

### South Cow SRMA - (Zone 2), Front Country

<b>Management Objectives</b>	By the year 2010, manage this zone to maintain and improve front country recreational opportunities for visitors to engage in primarily casual use but open for a maximum of 4 events (SRP's) that require the closure of the entire SRMA, providing no less than 75% of responding visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)	
<b>Outcomes</b>		
<b>Primary Activities</b> - Motorcycle (single tracks & loops) - ATV Touring - 4 Wheel Drive Touring - Camping - Hunting - Hiking/Mtn	<b>Experiences</b> - Enjoy Nature - Solitude - Education - Enjoy access to diverse Back Country - Enjoy easy access to trail system from campground -Intermediate and advanced riding skills necessary	<b>Benefits</b> - Personal Exercise, physically challenging, sense of adventure, sense of accomplishment/improvement, risk - Economic Increased local & regional tax revenue - Environmental Improved sense of importance for management concerns

Biking (occasional)		
Setting Prescriptions		
Physical Front country surrounding 3 islands of unique natural resources	Social Fewer than 13 people per group and 15-29 encounters per day	Administrative Provide map that identifies infrastructure (trails, campgrounds, etc.) Routine LE Presence Linear Features designated (trails, barriers, signs, etc.)
Management and Marketing Actions		
Management Actions: Roads and Trails All motorized use is limited to designated roads and trails Modify roads and trails as needed to mitigate impacts Rehabilitate non-designated roads and trails that area closed Continue facility maintenance (campgrounds, restrooms, etc.) Maintain signs and trail marking system Implement development and re-development of staging areas and campgrounds (Westside Staging, Eastside, Oakwood Springs, replace bathrooms, etc.) Explore acquisition opportunities to accommodate and develop access from Highway 175 Explore inholding acquisition opportunities Close dead end trails that lead to private property encouraging trespass Annual evaluation of bridge structures (capacity and structural integrity)		Marketing Actions: Personal contacts Continue dispersal of area map Continue information of website Update information at the kiosks in the staging and campground areas

**South Cow SRMA - (Zone 3), Middle Country**

Management Objectives	By the year 2010, manage this zone to maintain and improve middle country recreational opportunities for visitors to engage in primarily casual use but open for a maximum of 4 events (SRP's) that require the closure of the entire SRMA, providing no less than 75% of responding visitors and affected community residents at least a "moderate" realization of these benefits (i.e., 3.0 on a probability scale where 1=not at all, 2=somewhat, 3=moderate, 4=total realization)	
Outcomes		
Primary Activities - Motorcycle (single tracks & loops) - ATV Touring - 4 Wheel Drive Touring - Camping - Hunting - Hiking/Mtn Biking (occasional)	Experiences - Enjoy Nature - Solitude - Education - Enjoy access to diverse Back Country - Enjoy easy access to trail system from campground -Intermediate and advanced riding skills necessary	Benefits - Personal Exercise, physically challenging, sense of adventure, sense of accomplishment/improvement, risk - Economic Increased local & regional tax revenue - Environmental Improved sense of importance for management concerns



Setting Prescriptions		
<b>Physical</b> Middle country bordering 3 zones of front country and 1 zone of unique natural resources	<b>Social</b> Fewer than 13 people per group and 15-29 encounters per day	<b>Administrative</b> Provide map that identifies infrastructure (trails, campgrounds, etc.) Routine LE Presence Linear Features designated (trails, barriers, signs, etc.)
Management and Marketing Actions		
<b>Management Actions:</b> <b>Roads and Trails</b> All motorized use is limited to designated roads and trails Modify roads and trails as needed to mitigate impacts Rehabilitate non-designated roads and trails that area closed Continue facility maintenance (campgrounds, restrooms, etc.) Maintain signs and trail marking system Implement development and re-development of staging areas and campgrounds (Westside Staging, Eastside, Oakwood Springs, replace bathrooms, etc.) Explore acquisition opportunities to accommodate and develop access from Highway 175 Explore inholding acquisition opportunities Close dead end trails that lead to private property encouraging trespass Annual evaluation of bridge structures (capacity and structural integrity)		<b>Marketing Actions:</b> Personal contacts Continue dispersal of area map Continue information of website Update information at the kiosks in the staging and campground areas

## **Appendix E: South Cow Mountain Recreation Area Wet Weather Closure Policy**

During periods of seasonal and severe storms (beginning October 1st and includes heavy rain and snow) the Bureau of Land Management – Ukiah Field Office will implement a temporary closure on South Cow Mountain Recreation Area to all motorized vehicles. Exceptions to this policy will only be granted to private land owners who need to access their property. However, these private land owners will only be allowed to access their property via the most direct route possible, and are not allowed to use a motorized vehicle on any other part of South Cow Mountain OHV Area during closures. Initially, no closures will occur until the total rainfall for the season reaches 4 inches. Once 4 inches of precipitation has been exceeded, the following criteria apply:

*1/2" in 24 hours = 3-day closure*

*1" in 72 hours = 3-day closure*

Reopening of the area to motorized vehicles will occur 3 days (72 hours) after no measurable precipitation is recorded, not after the initial closure of the area. It is possible that the area could be opened prior to the full 3-day (72 hours) drying period has elapsed. This possibility can only occur, however, after a thorough inspection of the mountain has been completed by qualified personnel. This policy is subject to modification by BLM due to changing resource conditions.

## Appendix F: Recreational Shooting

### F.1 Bureau of Land Management Recreational Shooting IM



THE SECRETARY OF THE INTERIOR  
WASHINGTON

NOV 23 2011

#### Memorandum

**To:** Director, Bureau of Land Management  
**From:** Secretary *Ken Salazar*  
**Subject:** Protecting Recreational Shooting Opportunities on Public Lands

It is a priority of the Department of the Interior to support opportunities for hunting, fishing, and recreational shooting on America's public lands. By facilitating access, multiple use, and safe activities on public lands, the Bureau of Land Management helps ensure that the vast majority of the 245 million acres it oversees are open and remain open to recreational shooting.

In 2007, President George W. Bush issued Executive Order 13443, *Facilitation of Hunting Heritage and Wildlife Conservation*, which directed the Department "to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat." In 2008, the Departments of the Interior and Agriculture adopted a comprehensive 10-year *Recreational Hunting and Wildlife Conservation Plan*, which recommended that BLM and the Forest Service "incorporate hunting and recreational shooting into Federal agency's planning processes" and revise their land management plans "to designate shooting areas." To implement this recommendation, the BLM began drafting policy guidance to help field managers provide target shooting opportunities while ensuring resource conservation and public safety.

In June 2011, BLM requested input from the Wildlife and Hunting and Heritage Conservation Council (WHHCC) on the draft policy guidance. The WHHCC is an official advisory group that the Secretary of Agriculture and I established in 2010 to provide advice about wildlife and habitat conservation endeavors that (a) benefit recreational hunting; (b) benefit wildlife resources; and (c) encourage partnership among the public, the sporting conservation community, the shooting and hunting sports industry, wildlife conservation organizations, the states, Native American tribes, and the Federal Government.

Based on feedback that members of the WHHCC have provided the BLM on the draft policy guidance, I am directing that the BLM take no further action to develop or implement the policy. The BLM shall continue to manage recreational shooting on public lands under the status quo in accordance with resource management and public safety considerations under existing authorities, including the Federal Land Policy and Management Act, BLM implementing regulations, and Executive Order 13443.

Figure 24 Bureau of Land Management Recreational Shooting Policies (Scan)

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
WASHINGTON, D.C. 20240-0036  
<http://www.blm.gov>

September 29, 2015

In Reply Refer To:  
8300 (250) P

EMS TRANSMISSION 09/30/2015  
Instruction Memorandum No. 2015-157  
Expires: 09/30/2018

To: All Field Office Officials

From: Assistant Director, Resources and Planning

Subject: Advanced Congressional Notification for Proposed Closures Related to Recreational Shooting, Hunting, or Fishing

**Program Areas:** Recreation and Visitor Services, Land Use Planning, Fish and Wildlife Conservation, and National Conservation Lands.

**Purpose:** The purpose of this Instruction Memorandum (IM) is to outline the procedures and steps that Bureau of Land Management (BLM) offices must follow in order to comply with congressional direction contained in the Consolidated and Further Continuing Appropriations Act 2015 (P.L. -113-235) related to reporting proposed closures of public lands to recreational shooting, hunting, or fishing on a non-emergency basis for more than 30 days.

**Policy/Action:** In the event that a BLM Field (FO) or District Office (DO) is proposing an action specifically intending to close an area of the public lands to recreational shooting, hunting, or fishing on a non-emergency basis for more than 30 days in land use plans, activity plans or through a temporary closure notice, the FO or DO must complete and submit the attached closure notification form to their state director for transmittal to the Washington Office. The timeframe and process for completing this notification is as follows:

If the proposed closure is part of an effort accompanied by an **Environmental Impact Statement (EIS)**, the FO or DO must:

1. For a draft EIS, the field or district manager will submit the closure notification form for closures identified in the preferred alternative to the state director at the same point in time as the Notice of Availability packet for the draft Resource Management Plan (RMP) Draft EIS (or RMP Amendment, if applicable) is submitted to the Washington Office of Regulatory Affairs (WO-630).
2. For a final EIS, or the Notice of Availability for a draft EIS published prior to release of this IM, the field or district manager will submit the closure notification form for closures identified in the proposed plan alternative to the state director at the same point in time as the Notice of Availability packet for the Proposed RMP Final EIS (or RMP Amendment, if applicable) is submitted to the Washington Office of Regulatory Affairs (WO-630).

If the proposed closure, including temporary closures, is accompanied by an **Environmental Assessment or relies on existing National Environmental Policy Act (NEPA) documents through a Determination of NEPA Adequacy**, the field or district manager must submit the closure notification form to the state director 30 days prior to signing the Finding of No Significant Impact (FONSI) and Decision Record.

This notification to Congress is not required when proposing to close an area of public lands to recreational shooting, hunting, or fishing on an emergency basis, common examples are wild-land fires and hazardous material spills or for 30 days or less. Typical closures and restrictions imposed in

Figure 25 Bureau of Land Management Recreational Shooting Policies (Scan)

response to known or planned events occurring on public lands, or long-occurring activities such as recreational shooting, hunting, or fishing are not usually considered emergencies. Upon receipt of a closure notification from a FO or DO, the state director will sign their approval of the notification form and submit the form to the Division Chief, Recreation and Visitor Services (WO-250) within 10 business days. The WO-250 will input the information into the Data Tracking System and submit it to the Division of Budget (WO-880). Upon receipt, WO-880 will take responsibility of the notification process; assuring proper procedures, internal reviews, and tracking are followed in preparing the transmittal Memorandum and Letters through the BLM and Department of the Interior to the House and Senate Committees on Appropriations.

**Time Frame:** This guidance is effective immediately.

**Budget Impact:** Providing routine notifications to the Washington Office is currently within the scope of workload for BLM Offices.

**Manual/ Handbooks Affected:** None.

**Coordination:** This IM was coordinated among the Recreation and Visitor Services Division, Decision Support, Planning and NEPA Division, Budget Division, Legislative Affairs Division, and the National Conservation Lands Division.

**Contact:** If you have any questions concerning this IM, please contact Andy Tenney, Division Chief, Recreation and Visitor Services by email at [atenney@blm.gov](mailto:atenney@blm.gov), or by telephone at 202-912-7094, or Phil Walker, National Shooting Sports Program Manager, by email at [epwalker@blm.gov](mailto:epwalker@blm.gov) or by telephone at 202-912-7294.

Signed by: Authenticated by:  
Brian Amme Robert M. Williams  
Acting, Assistant Director Division of IRM Governance, WO-860  
Resources and Planning

Figure 26 Bureau of Land Management Recreational Shooting Policies (Scan)

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
WASHINGTON, D.C. 20240  
<http://www.blm.gov>

December 2, 2008

In Reply Refer To:  
1760 (350/250) I

EMS TRANSMISSION 12/16/2008  
Instruction Memorandum No. 2008-074, Change 1  
Expires: 09/30/2009

**To:** All Field Officials

**From:** Assistant Director, Minerals and Realty Management

**Subject:** Methods for Authorizing Shooting Range Areas on Public Lands

**Program Areas:** Lands and Realty – Authorizations and Disposals  
Recreation and Visitor Services – Shooting Sports

**Purpose:** The purpose of this Change 1 is to (1) clarify the proper authority used for one of the alternatives, (2) clarify the use of the limited reverter provision under this authority, (3) encourage the conversion of existing leases to patent, and (4) provide additional guidance on alternative methods for authorizing proposed shooting sports areas on public lands. All other program policies and procedures detailed in the original Instruction Memorandum (IM) are still in effect.

**Policy/Action:** The R&PP Act provides for the patenting of public lands for recreational and public purposes to States or their political subdivisions and to non-profit corporations and associations.

**New Sites:** Patents for new sites must contain a limited reverter provision that may cause the land to revert to the United States if, at the end of 5 years after the date of conveyance, the land is not being used in accordance with the approved plan of development. However, no portion of the land shall, under any circumstances, revert to the United States if any such portion has been used for solid waste disposal or for any other purpose which may result in the disposal, placement, or release of any hazardous substance. Under no circumstance should new shooting range sites be authorized by any type of lease or other land use authorization that does not transfer fee title to the applicant.

Figure 26 Bureau of Land Management Recreational Shooting Policies (Scan)

**Previously Leased Sites:** Lessees of existing R&PP leases that were authorized for shooting range facilities prior to the 1988 Amendment Act may be encouraged to convert them to patent utilizing the procedures in Chapter X (D.1) of H-2740-1. Previously leased sites with existing facilities may be patented with no reverter provision.

Patents for new and previously leased shooting sports facilities may be issued under the 1988 R&PP Amendment Act referring to the procedures in Chapter VII, part C, 1988 Amendment Act Patents, of H-2740-1 and follow guidance provided in 43 CFR 2743.2-1.

**Timeframe:** This IM is effective upon receipt.

**Budget Impact:** This is a clarification of existing policy and suggestions for use of alternative methods to authorize shooting sports facilities. The result should have minimal impact on the budget and may possibly save costs by transferring monitoring, compliance, and remedial actions to the patentee.

**Background:** The 1988 Recreation and Public Purpose Amendment Act (R&PP) (November 9, 1988) allows for the disposal of public land for solid waste or for any other purpose that the authorized officer determines and may include the disposal, placement, or release of any hazardous substance. Shooting range sports areas would fall under this category.

**Coordination:** This guidance was coordinated with the Division of Environmental Quality, field and state office staffs involved in the Lands and Realty, and the Division of Recreation and Visitor Services.

**Contact:** Please contact me at 202-208-4201 if you have any questions regarding this policy, or contact Ed Ruda of my staff at Division of Lands, Realty and Cadastral Survey (WO-350) at 202-452-7778.

Signed by:  
Michael D. Nedd  
Assistant Director  
Minerals and Realty Management

Authenticated by:  
Robert M. Williams  
Division of IRM Governance, WO-560

Figure 26 Bureau of Land Management Recreational Shooting Policies (Scan)

## Appendix G: List of Preparers

NAME	TITLE	RESPONSIBILITY
Ames, Larry	Park Ranger, Interpretation	Recreation, Editing
Arriaza, Frank	Soil Scientist	Soils, Water, Air
Bardwell, Pardee	Natural Area Manager	Fish & Wildlife, T&E, ACEC
Burns, Rich	Field Manager	Human Dimensions
Hildenbrand, Jonna	Planning & Env. Coordinator	NEPA Documentation
Lefebvre, Beth	Contact Representative	Human Dimensions
Lloyd, Chris	Archaeologist	Cultural Resources
Mathews, Sarah	Outdoor Recreation Planner	Write, Editor, Recreation
Milam, Trent	OHV Park Ranger	Writer, Recreation
Myers, Steve	Engineering Equipment Operator	Recreation
Parker, Valerie	IT Specialist	IT Coordination, Editing
Potts, Brianna	Natural Resources Specialist	Fish & Wildlife, T&E, ACEC
Prado, Doug	Law Enforcement Ranger	Law Enforcement
Sharpe, Gary	Supv. Multi-Resources Specialist	Writer, Recreation, Wilderness
Simmons, Erin	GIS Specialist	GIS, Maps
Tunnell, Jeff	Fire Management Specialist	Fire Management
Vigil, Alice	Realty Specialist	Lands & Realty



## Appendix H: South Cow Mountain Trail Condition Survey

As per California State Parks OHMV Recreation Division's grants requirements, a trail condition survey of the South Cow Mountain OHV Recreation Area was required as part of the South Cow Mountain Planning Grant. Working with independent contractors, the Ukiah Field Office was able to conduct a survey of current trail conditions for the entire 93 mile trail system per the California State Parks OHMV Recreation Division's 2008 Soil Conservation Standards and Guidelines.

Project objectives were:

1. Collect data for two additional South Cow Mountain OHV trail segments that were developed by BLM but have yet to be included in the current trail inventory.
2. Utilize GIS data collected in the field and GIS data provided by BLM, as well as soil erodibility data to provide an Erosion Potential Assessment for South Cow Mountain OHV trail segments specified by BLM in the project work plan.
3. Outline trail condition factors for all South Cow Mountain OHV trail segments per California State Parks Trail Condition Assessment protocol.
4. Recommend trail condition designations for all South Cow Mountain OHV trail segments per California State Parks Trail Condition Assessment protocol.
5. Create a GIS Trail Condition Data Layer for the South Cow Mountain OHV Recreation Area, to include:
  - a. Trail Segment Slope Percentages for all South Cow Mountain OHV trail segments, highlighting critical trail segments
  - b. Soil Erodibility Factors for all South Cow Mountain OHV trail segments
  - c. Trail Condition Factors for all South Cow Mountain OHV trail segments per California State Parks Trail Condition Assessment protocol.
  - d. Recommended Trail Condition Designations for all South Cow Mountain OHV trail segments per California State Parks Trail Condition Assessment protocol.
6. Compile findings in a report, along with recommended best practices for Assessment, Monitoring and Maintenance of South Cow Mountain OHV trail segments.

The trail condition survey methodology developed by California State Parks Off-Highway Motor Vehicle Recreation Division was used to assess trail conditions in the study area. The Division's 2008 Soil Conservation Standard and Guidelines provide documentation on what trail conditions to assess using criteria provided in the Standard. A trail conditions survey is required for BLM to continue to be eligible for grants provided by California State Parks. The methodology is based on an assessment of a series of trail condition factors and the causes of these conditions. The following recommendations are provided by the protocol:

- Prior to conducting fieldwork using the form, information on management of the OHV facility, history of the facility and trail network, current trail maintenance schedule and type of maintenance conducted, trail usage, skill rating assignments, existence of multiple-use roads, etc., should be obtained and reviewed.
- Trails are evaluated in segments. A trail segment is defined by the survey team as any length that is practical and meaningful for monitoring. The South Cow project created

trail segments between one trail intersection to the next trail intersection. Site-specific conditions were recorded using attributed and geotagged digital photography, which was then converted to GIS points.

- Criteria for making trail segments should be applied consistently over the entire trail network.
- The primary purpose of the TCS is to identify trail segments that need more focused maintenance or reconditioning. Data collected from the form also provides the basis for a monitoring program. At failed drainage structures, the cause of failure should be determined before repairs are initiated. This may require input from qualified experts.
- Ideally, maintenance that entails compaction of soil should not be conducted if soil moisture is too wet or too dry.
- Sediment that has accumulated in water break (e.g., rolling dip) outlets should be removed and used for trail structure needs, such as rebuilding the crests between rolling dip troughs.
- Outside berms should be minimized or eliminated. However, they should not be “bladed” off the trail as sidecast. Berm materials should be pulled back and graded into the trail tread.
- Rills and gullies in trail treads should be repaired with soil reclaimed from water break outlets and outside berms. Soil should not be scraped from the trail tread to fill rills and gullies.
- Soil and rock that may have sloughed onto a road or trail from a roadcut should be graded smooth to make a
- safe trail. The earth materials should not necessarily be removed because they may be providing a stabilizing buttress to the trail cut. In some cases, analysis by a qualified expert may be needed.
- Repair of “whoops” or “stutter” bumps should be conducted by ripping the trail tread and regrading. Earth materials should be graded and compacted back into the trail tread when the moisture content of the materials is at or near optimal to allow for proper compaction. Consider adding curves to these sections of trails to reduce speeds and continue establishment of “whoops.”
- Any road or trail maintenance actions should be conducted by moving the smallest amount of soil necessary to meet the objective.
- The need for maintenance with mechanical equipment should be evaluated before equipment is mobilized to the maintenance site.
- Maintenance equipment should be transported across sections of trail that do not need maintenance without impacting those sections.
- Consider relocating or realigning trail segments that require an ongoing, high level of maintenance due to their soil erodibility potential, steep slope, and level of use.

The following criteria were identified by the project team to determine what routes and conditions would be assessed in the South Cow Mountain study area.

- Survey OHV system trails, but not primary roads in the area. The roads will be assessed using different criteria and processes by BLM. It was also decided to assess the Red Mountain 4x4 challenge course as part of a separate process. BLM provided a list (in GIS data) of all the trails to be assessed.

- Non-system, visitor-created trails and administrative roads were not surveyed as part of this process. The intersection with these routes was recorded with a geotagged photo.

During the initial site visit, it was decided to capture new trail centerlines using GPS units. The new data captured during the project is based on current trail alignments and trail types. Trail centerlines were generally recorded with GPS from one trail intersection to the next one.

- Each trail segment was attributed for the seven condition factors that were selected by BLM. Attributes are an average of the conditions found along each trail segment.
- A “Not Applicable” (NA) value was attributed to a trail segment when a condition factor was not found along the trail (i.e., watercourse crossing).
- Geotagged and attributed photos were taken to record site-specific conditions and features.

### Trail Condition Factors

Trail condition factors from the 2008 Soil Conservation Standard and Guidelines were assessed for OHV trails in the study area. Each factor shown in the following table was rated as green, yellow, red, or not applicable (NA) for each trail segment. The table also describes the differences in condition by color. In addition to averaging conditions for each factor for each trail segment, geotagged digital photos were also taken of each site-specific condition in order to record more specific information. The site-specific conditions recorded along the trail were used to rate the average condition of the whole trail segment for each condition factor. So the trail segment line has averaged ratings and the photo points have site-specific ratings. These series of lines and points provide an averaged and detailed assessment for all OHV trails located in the project area.

### Combined Trail Condition

A combined trail condition was determined for each trail segment, which is based on the worst condition for one or more of the factors that were assessed. This attribute provides a rating of the overall condition of each trail segment, which can be used to identify which trails are most in need of maintenance or other management actions. For example, if a trail segment was rated as red condition for tread wear, the combined condition would also be rated as red. If a trail segment has several conditions rated as yellow and other conditions rated as green, the combined condition would be yellow.

### Condition Codes

Cause codes were assigned to each trail segment to document the cause of the conditions shown in the table above. Cause conditions were all documented using attributed and geotagged digital photos taken of each site-specific cause. These cause codes can be accessed using the GIS photo point dataset and are also summarized by type and quantity for each trail segment in the GIS line dataset. The summarized cause codes are also shown on each trail segment summary form. The cause codes used to assess trails in the study area are listed below:

- C0 - No negative condition (this attribute was created for this project to validate a green condition and to avoid misinterpretation as a false-positive)

- C1 - Water breaks not constructed to design standards
- C2 - Water break spacing is too wide for conditions
- C3 - Cascading runoff from a trail or road upslope
- C4 - Cascading runoff from an impervious surface upslope
- C5 - Wet area caused by a seep or spring
- C6 - Excess soil moisture at time of use
- C7 - Trail section is poorly located (describe)
- C8 - Trail gradient is too steep for the type and/or amount of use occurring
- C9 - Segment is not designated or designed for the type or amount of use occurring
- C10 - Trail blockage, e.g., brush, logs, rockfall, landslide
- C11 - Rocks or roots exposed in tread
- C12 - Barriers (natural or constructed) to control traffic are lacking
- C13 - Mechanical erosion makes maintenance ineffective
- C14 - Storm intensity unusual or unique for the area
- C15 - Design / layout /construction prevents effective drainage
- C16- Uncompacted sidecast on outboard slope
- C17 - Berms, whoops, and stutter bumps
- C18 - Crossing alters channel dimensions and/or stream gradient
- C19 - Rutting or vegetation damage to meadow, spring, wet area, riparian area
- C20 - Segment is not designed for the type and amount of use occurring

#### Other Documented Data and Features

In addition to the conditions and causes listed above, the following features were also recorded using the GPS units (lines) and cameras (points) in the field.

#### Lines

- Trail difficulty (a subjective criteria based on maximum width of vehicle that can use the trail and in comparison with other trails in the study area)
  1. Easy
  2. Moderate
  3. Difficult
  4. Very Difficult
- Average trail slope
- 0-10%
- 10-20%
- 20%+
- GPS time and date
- Comments
- ID number of the GPS unit/person completing the trail segment assessment

#### Points

- Non-system route (intersection point)
- Trail number sign
- Route (a representative photo)

- Culvert
- Information kiosk
- Other sign
- Barrier sign
- Barriers that have been removed or damaged
- Other features such as scenic view, trash, etc.

## Protocols and Standards

Protocols and standards for the project were created from the 2008 Soil Conservation Standard and Guidelines and BLM standards for GIS and GPS data. Trimble Juno GPS units with ArcPad software were used to digitally record trail centerlines and trail conditions. Data input forms (data dictionaries) were customized for use in ArcPad software to document trail conditions. These forms and deployment files are included on the project DVD. To use the deployment files, just simply copy them onto a GPS unit that is running Arcpad 10.0 and then open the Arcpad map file to capture new trail data. Ricoh 500SE GPS digital cameras and customized camera attribute lists were used to record site-specific conditions, causes, and other trail related features. The camera data dictionary that was created for the project is included on the project DVD. This dictionary is a simple text file that can be copied onto a Ricoh camera and then the attribute list appears as a list of memos that can be assigned to each photo.

## Fieldwork

Fieldwork was accomplished from a base camp set up in the Red Mountain campground in the study area. The following steps were used to document conditions along each trail segment and the overall trail system.

1. Each day a plan was established to efficiently survey trails while keeping staff relatively close to each other for safety and coordination.
2. Operate GPS units and GPS cameras for 10 minutes before capturing data to improve horizontal accuracy of the GPS units.
3. Record a new track-log (crumb trail) for each person for each day. The track-log is used as back-up data and to improve horizontal accuracy of geotagged photos.
4. Use laminated note cards to keep trail conditions and cause code attributes convenient during fieldwork
5. At each trail intersection, start a new GPS line using an interval of 5 meters between vertices (using vertices streaming).
6. Take photos of all trail conditions and other trail features. For example, a photo was captured of each water control structure on all trails. The Ricoh camera allows the operator to assign up to four attributes to each photo (e.g., condition factor: water control; condition code: yellow; cause code: C2; trail: culvert).
7. End the collection of the GPS trail segment line and attribute the line using the customized data dictionary form.
8. The GPS and camera automatically saves data to disk as each feature is finalized.
9. At the end of each day, back up the data and photos from each person's hardware and check the data for completeness and accuracy.

10. Compare data recorded by each person to ensure attributes are being assigned consistently.
11. Check the compiled data to ensure that all trails have been assessed.

## Data Processing

The following data post-processing steps were used to improve data captured in the field, add additional attributes, and ensure consistency between data collected by each person. Processing and cleanup are essential for data collected with GPS units and cameras.

1. Check trail attributes for completeness and accuracy
2. Correct GPS lines for topology, including:
  - Dangles
  - Overlaps
  - Duplicate lines
  - Self-intersections (i.e., loops)
3. Add additional attributes to trail GIS lines, including:
  - Trail number/ name (from BLM data)
  - Trail segment number (i.e., 25.1)
  - Trail width in feet (from BLM and new GPS data)
  - Surface type (from BLM data)
  - Vegetation types the trail crosses
  - Soil type
  - Erodibility factor (k factor) of the soil
  - Average side slope
  - USGS quad name and number
  - Watershed
  - Coordinates for the beginning and end of each trail line (nodes) in both UTM and Lat-Long
  - Rated by: initials of field staff
  - Reviewed by: initials of project manager who completed the data review
  - Type and number of cause codes (i.e., C1-2) – these attributes come from the photo points
  - Length of each trail segment in meters and miles
  - Combined average trail condition (green, yellow, red) for each trail segment
4. Process geotagged photos using GPS Photolink Software:
  - Verify attribute accuracy and completeness for each photo
  - Adjust light and contrast of the photo
  - Improve the horizontal accuracy of the geotagged photos using the track-log from the Juno GPS units. While the horizontal accuracy of the camera GPS units is adequate, the data from the Juno GPS units is more accurate.
  - Attribute each photo point with the following:
    - o Project title: Trail Condition Survey
    - o Study area name: S Cow Mountain OHV Rec. Area
    - o Trail and trail segment number
    - o Photo date and time (automated)

- Export the following products from the GPS photolink software:
    - o GIS point shapefile with the location of each photo and TCS attributes
    - o Processed jpeg files include an original version and a watermarked version. The watermarked versions have the project title, study area name, Lat-Long coordinate of the photo, and the date the photo was taken.
5. Prepare metadata for line and point datasets using ESRI ArcCatalog software.

## Summary of Trail Condition Survey

A total of 80 miles of OHV system trails were surveyed and 2,192 photos of these trails were collected during fieldwork. Maps illustrating the TCS data are provided on the following pages. Geotagged photos were processed to create a GIS point dataset that is attributed with photographic information, TCS attributes, photo subject (i.e., sign), geographic coordinates, and compass direction. The geotagged photos and resulting GIS points represent site-specific resources and conditions. A preliminary list of the geotagged photos is provided below. Geotagged photos can be opened directly from ArcMap or ArcReader using GIS hyperlink tool (lightning bolt).

Overall, the area has a good diversity of motorized roads and trails. The dense scrub vegetation found on South Cow Mountain helps to greatly reduce the amount of sediment reaching streams or covering vegetation. The dense vegetation also limits the establishment of user-created trails. The most significant issue related to the trail system is tread depth and soil erosion on single-track motorcycle trails due to a lack of water control and maintenance. Motorcycle trails tend to be more remote and difficult to maintain. Sediment traps are generally lacking on the trail system. Some sediment is captured from water bars and pulled back onto the trails during maintenance. Many trails are located on moderate to steep ridgelines, which creates the need for many water control structures that often fail. Trails located on side slopes of hills can provide better trail slopes and shed water continuously.

## Description of Trail Conditions by Factor

### Water Control

Overall, water is not controlled well on the trail system. Most rainwater is controlled with water bars or rolling dips that are partially functioning or have failed. Many trails are located on ridgelines and travel straight up and down the hills, which creates steep trails that require many water bars to control quantity and speed of runoff. Trails that are located on ridges become cupped over time, which makes water control more difficult; and the quantity of water bars on the trail system makes them difficult to maintain. Water bars are failing due to sediment buildup on the uphill side of the water bar or fast-flowing water that erodes through the water bar. Water bars generally seem to be underbuilt (lacking height and mass), which leads to more failures. Water control is generally lacking on single-track motorcycle trails as these trails cannot be easily maintained with Sweco bulldozers. While OHVs contribute to the breakdown of water control structures, most water control problems stem from poorly designed trails (too steep) that require each water bar to function properly or there is a domino effect of one after another water bar failing downhill.

## Erosion Off-Trail

Failure of water control on poorly designed trails directly leads to erosion and sediment off-trail. A significant amount of sediment is being carried off-trail to adjacent hillsides and, in some cases, directly into streams. Some sediment is captured by water bars and then pulled back onto the trails using Sweco bulldozers during maintenance. The majority of sediment is collecting on hillsides adjacent to the trails. The dense scrub vegetation is efficient at slowing and stabilizing sediment that leaves the trails. Little evidence of extensive off-trail sediment was observed that would lead to displacing adjacent vegetation. Little evidence was found of additional erosion occurring off-trail on adjacent hillsides in the form of gullies.

## Sediment Traps

Most sediment from trails accumulates in water bars, at flat sections of trail, or on adjacent hillsides. While water bars partially function as sediment traps, most sediment is not trapped on the trail system. There is one detention basin located downhill from Oakwood Springs Staging Area. This basin captures sediment from Mill Creek Road and the trails located northwest of the staging area. No other constructed sediment traps were found in the study area. Most sediment does not enter streams or leave the OHV recreation area. Streams do not appear to have heavy amounts of sediment in them.

## Tread-Wear

The depth of trail tread is significant on most trails. Tread depth exceeds 6 inches and is often more than 12 inches, with the most extreme locations having depths up to 7 feet. Tread wear is mostly caused by a lack of water control, but is also caused by mechanical maintenance with Swecos and erosion caused by OHVs. Most soils in the area have a fairly good composite of clay, gravel, and rock. The natural gravel found in the soil helps to limit soil erosion, but the clay also leads to erosion. The heavy clay found in the soils makes the trails particularly susceptible to erosion when the soil is saturated with rainwater. There are isolated areas with soils lacking gravel that are more erodible. The location of trails on ridges and fall lines leads to accelerated tread wear through soil erosion. BLM regularly closes the trail system during rainy periods, which greatly decreases the potential tread wear during wet soil periods.

## Off-Trail Travel

There is little off-trail travel in the study area, largely due to the dense scrub vegetation found throughout the area. There are several isolated sites where riders have created alternative routes around obstacles or more difficult sections of trail. The area with the most off-trail travel is located in the vicinity of the Red Mountain 4x4 challenge area. There are also non-system and administrative roads and trails found throughout the study area. Some of these roads and trails were created for other reasons over time and have not been properly restored or gated, which leads to their continued use. Many of the short, non-system trails lead to overlooks adjacent to ridge trails. There is little evidence of visitors creating non-system routes as hill climbs or more challenge routes.



## Approach to Water Crossings

The approach to most stream crossings is well designed. Trails usually cross streams at a right angle, which prevents establishment of OHV-created berms in the stream channel. In most cases, the trail's approach to streams has a moderate slope (0-20%), which limits soil erosion close to the stream. There are several approaches to stream crossings that are too steep (20%+) and have failed water bars, causing sediment to transfer directly into the stream. There is one water crossing where sediment is being deposited directly onto a wood bridge and is then carried into the stream.

## Watercourse Channel Section

Most stream channel crossings are well designed. There is very little evidence of the stream channel changing due to trail crossings. There is no evidence of streams diverting down the trail. There is one section of trail that uses a short section of a stream bed as the trail tread. This section of trail should be relocated.

## Outboard Fill

There is little evidence of the trail tread sloughing onto the adjacent hillsides. Stable soils and dense vegetation contributes to stable outboard fill. Many trails are located on ridges, which makes these trails more stable but also causes erosion issues. There are a few locations where the trail bench needs to be stabilized or relocated.

## Recommendations

The results of this trail condition survey identify priority actions as part of an overall RAMP and an annual maintenance/ monitoring plan. A trail condition survey should be completed for the South Cow Mountain OHV Recreation Area at least every two years in order to compare findings and identify ongoing issues that require a different approach to maintenance or a different trail design solution. It is more cost effective to perform routine maintenance and monitoring than to let trails deteriorate to the point of needing major reconstruction, restoration, or closure. Lessons learned from each year's maintenance plan should be used to improve the subsequent year's maintenance plan, making the maintenance process more cost effective each year.

The products and trail segment data forms developed as part of this study can be used to monitor conditions in future years, update data, and maps. All of the data and custom applications used to prepare this TCS have been included on the project DVD.

The public would benefit from improved and more accurate information about the South Cow Mountain OHV Recreation Area. Existing maps and signs are inconsistent and incomplete, which can lead to a lower satisfaction level for the visitor and use of unauthorized routes by the public. Information about trail type, width, and relative difficulty would also help visitors better plan their experience on the trail network. As visitors become more accustomed to accessing

recreation information from computers and smart phones, there is high value in providing geo-maps and data from QR codes posted on web sites and information signs at staging areas. GPS data of the trails could also be provided as a resource for visitors. Trail routes and rides could be promoted for the area, providing a series of challenges, experiences, or interesting interpretive facts.

Many trails in the study area were constructed on ridges due to the relatively steep side slopes and the ease of trail construction on ridges. The problem with ridge trails is that they can become cupped fairly quickly and tend to carry water down the trail, which further deepens the tread depth. Most of the ridge trails found in the study area have many water control structures, such as water bars and rolling dips. While these water control structures do help shed water off the trails, they require constant maintenance. Ridge trails on steep slopes carry water at faster rates, which makes water control structures fail from the force of the water. The steepest sections of ridge trails should be relocated to adjacent hillsides where feasible. It takes more effort to build a trail with a bench on a side hill, but water can be controlled more effectively in this position. Width restrictors would help limit the size of vehicles traveling down the different trail types. Many of the motorcycle trails have been widened at their ends by ATVs (and sometimes 4x4s) attempting to travel down them. This causes a large impact on the trail, vegetation, and subsequently the visitor's experience. Motorcycle and ATV riders would benefit by having long-distance trail loops that are connected. The existing road and trails in the study area are not well organized from the standpoint of continuity by trail type. The Westside Staging Area would benefit from a new design to improve safety, circulation (especially for trailers), and the visitor's experience. Visitors would benefit from providing a youth riding track and safety training area.

## Recommendations by Condition Factor

### Water Control

Water control is better managed through the establishment of trails on side slopes of hills. A well-designed bench trail allows water to be constantly shed off the side of the trail and through the use of grade changes. Where rolling dips are needed, they should be constructed with adequate height and mass to make them more stable and require less frequent maintenance. Climbing turns need to be well designed to control water without allowing the water to cross the trail. Climbing turns are usually steep and cannot sustain water flow across the trail.

### Erosion Off-Trail

The dense scrub vegetation in the study area helps to limit off-trail soil erosion. The most important method to control off-trail erosion is to limit the volume and speed of water shed off-trails. This is best accomplished through continuous water control along the length of the trails. Limiting the slope of the trails also limits the speed of the water runoff.

### Sediment Traps

The need for sediment traps would be greatly reduced if the amount of sediment that is generated is also reduced. The scrub vegetation will always limit the amount of sediment entering streams

in the area. Special attention should be focused on reducing sediment that occurs near streams. If the amount of sediment near the streams cannot be reduced through improved trail design, sediment traps should be installed. Where water bars are needed, they should be constructed to allow Sweco bulldozers to pull sediment back out of the water bar channel and back onto the trail.

### Tread Wear

Most of the tread depth issues on the trails stems from a lack of water control. If water control is effective, the tread depth will remain constant. There are many short sections of trails located in trenches that are as much as 7 feet deep and can be very narrow. These sections should be relocated and the existing trail section should be recontoured and restored. Narrow and deep trail tread sections are not enjoyable to ride and can also be a safety issue.

### Off-Trail Travel

Short off-trail routes that provide access to scenic overlooks and appropriate gathering locations should be designated as system trails and marked with an appropriate end point. Administrative roads should be signed and/or gated to discourage their use by visitors. Other existing trails that are not part of the system should be closed and restored to a natural condition. These unauthorized routes lead to the establishment of more trails and often carry heavy sediment and water onto system trails. Use the dense scrub vegetation of the area to establish a more permanent solution for closure of trails. If visitors continue to create and use unauthorized trails, consider the reason why and determine if additional trails would meet their desired recreational experience.

### Approach to Water Crossings

As mentioned above, special attention should be paid to stream water crossings that are too steep and sediment issues. Improving problematic water crossings should be a priority for improving the trail system in the study area.

### Watercourse Channel Section

Additional culverts could be installed at minor stream crossings to reduce erosion and prevent vertical drops as the stream erodes its bank. Swift and high water warning signs should be placed at Benmore and Willow Creeks to prevent a potential injury.

### Outboard Fill

Stability of trails in the study area seems to be a minor issue due to the soils and vegetation. As trails are relocated to hillsides, it will be important to establish a well-constructed bench until the soil stabilizes and the vegetation re-establishes. Replanting scrub vegetation on the downhill side of new trail benches will help to quickly stabilize new trails.

The final products were:

1. A baseline survey of all trail conditions in GIS format with every point-file associated with a geo-tagged photograph accessible by clicking on the point-file in ArcGIS.
2. A series of digital and hardcopy maps that depicted the entire transportation network's attributes in a quickly comprehensible format.
3. Trail condition reference manuals for Ukiah Field Office staff that provide greater statistical data per each trail segment.
4. Digital and hard copies of documents, maps, and photographs.

The following maps depict overall conditions for the South Cow Mountain OHV Recreation Area in combined trail conditions, water control, off-trail erosion, sediment traps, tread wear, off-trail travel, approach to water crossings, and outboard fill.

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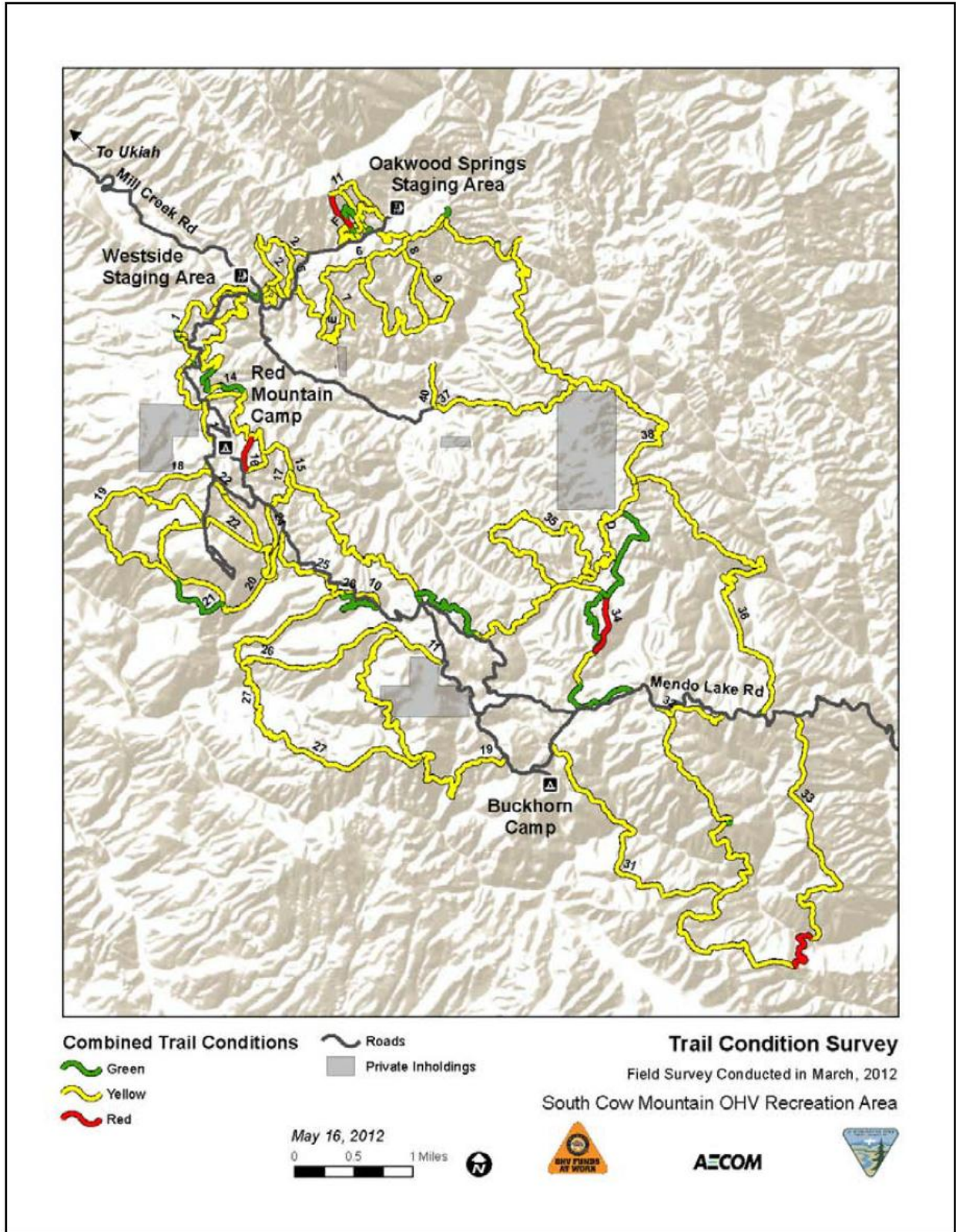


Figure 26 South Cow Mountain Trail Condition Survey Combined Trail Conditions



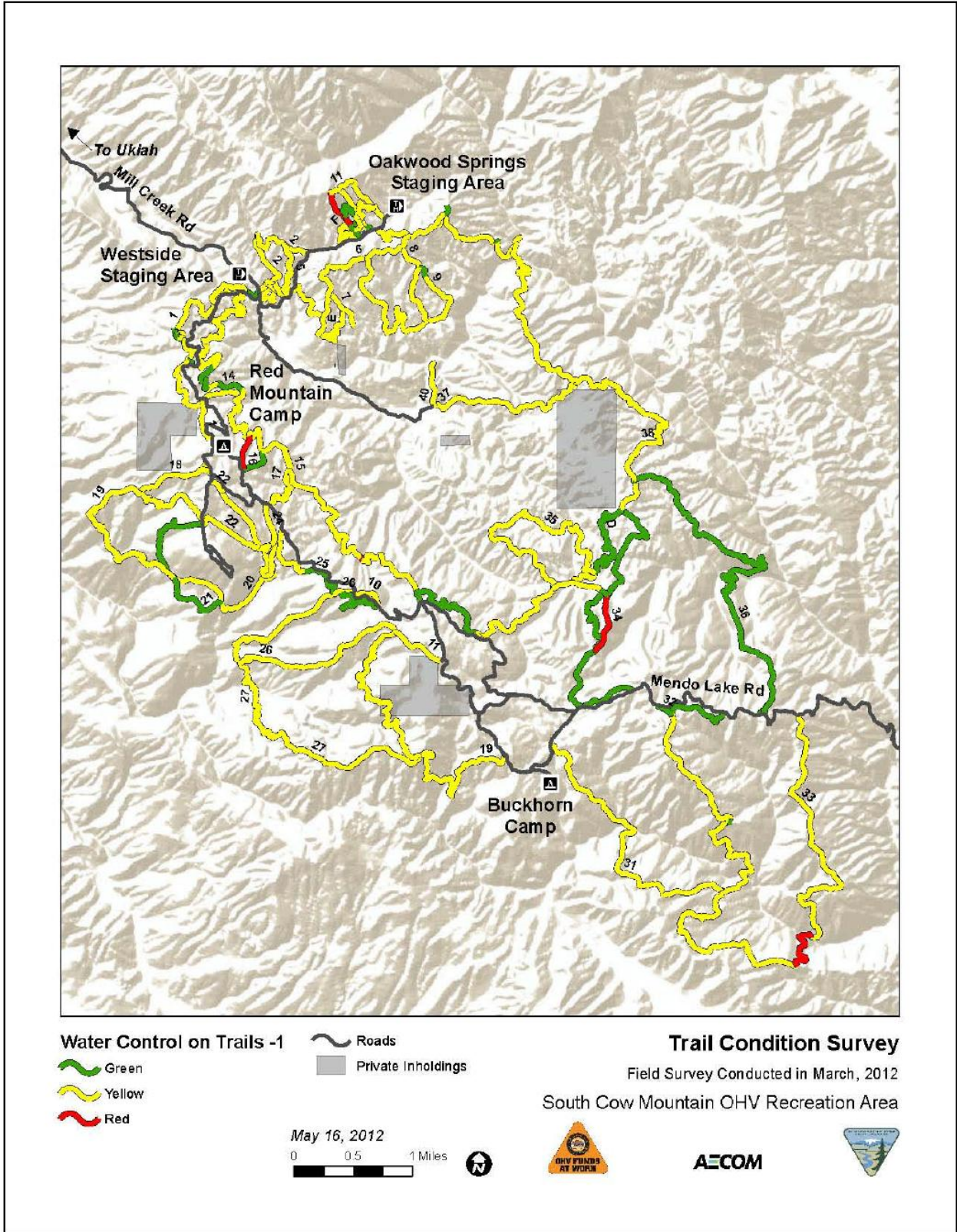


Figure 27 South Cow Mountain Trail Condition Survey Water Control on Trails



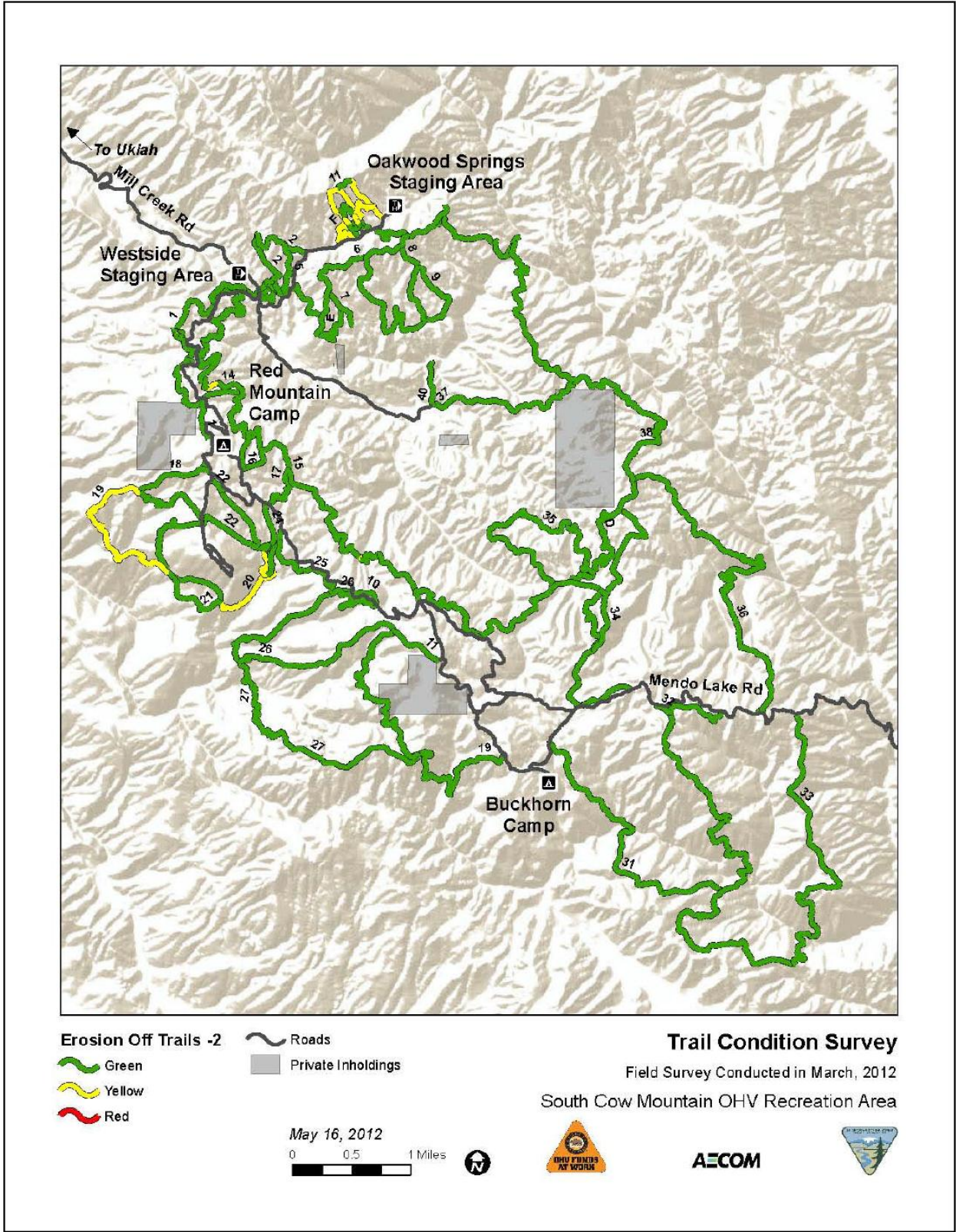


Figure 28 South Cow Mountain Trail Condition Survey Erosion Off-Trail



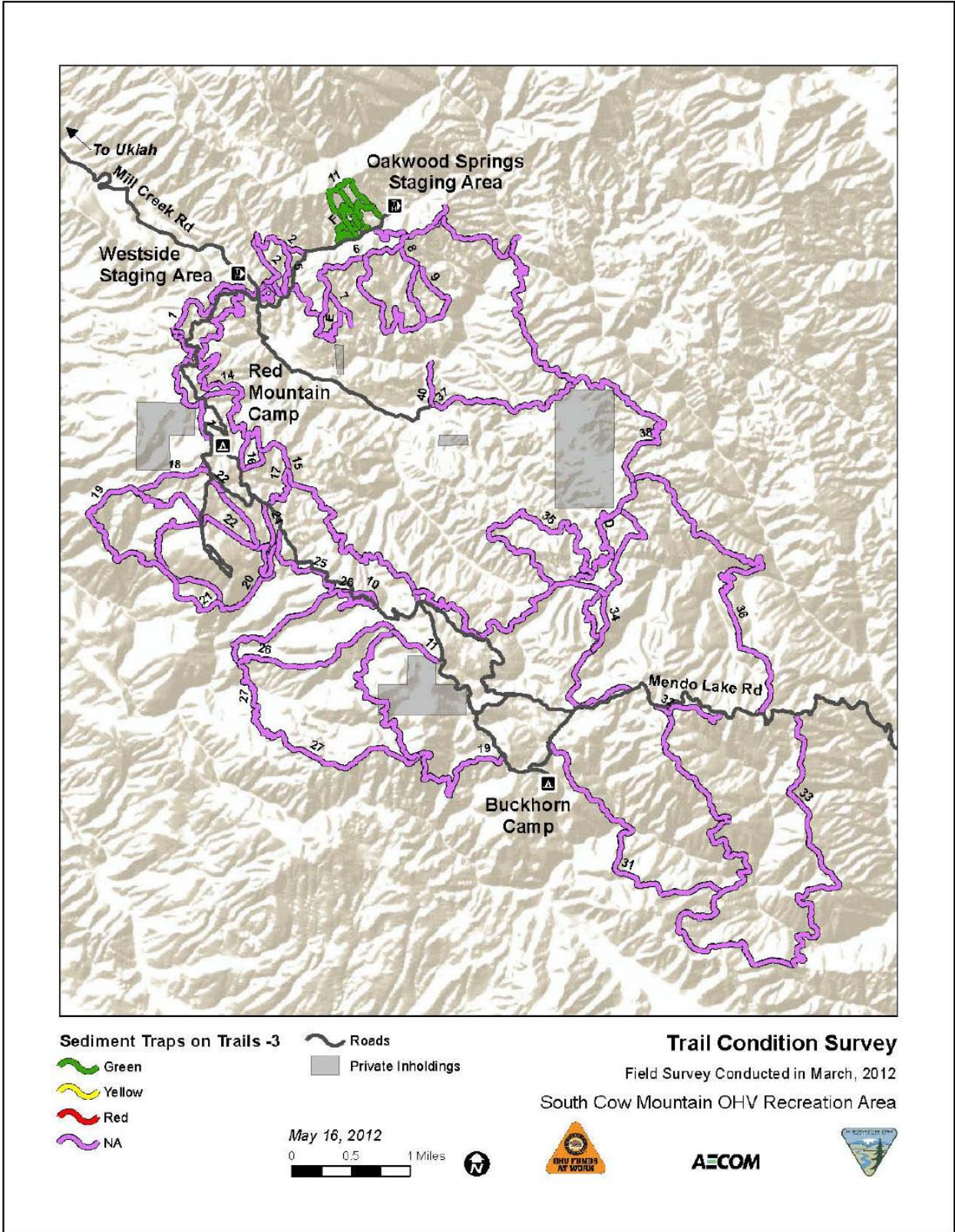


Figure 29 South Cow Mountain Trail Condition Survey Sediment Traps



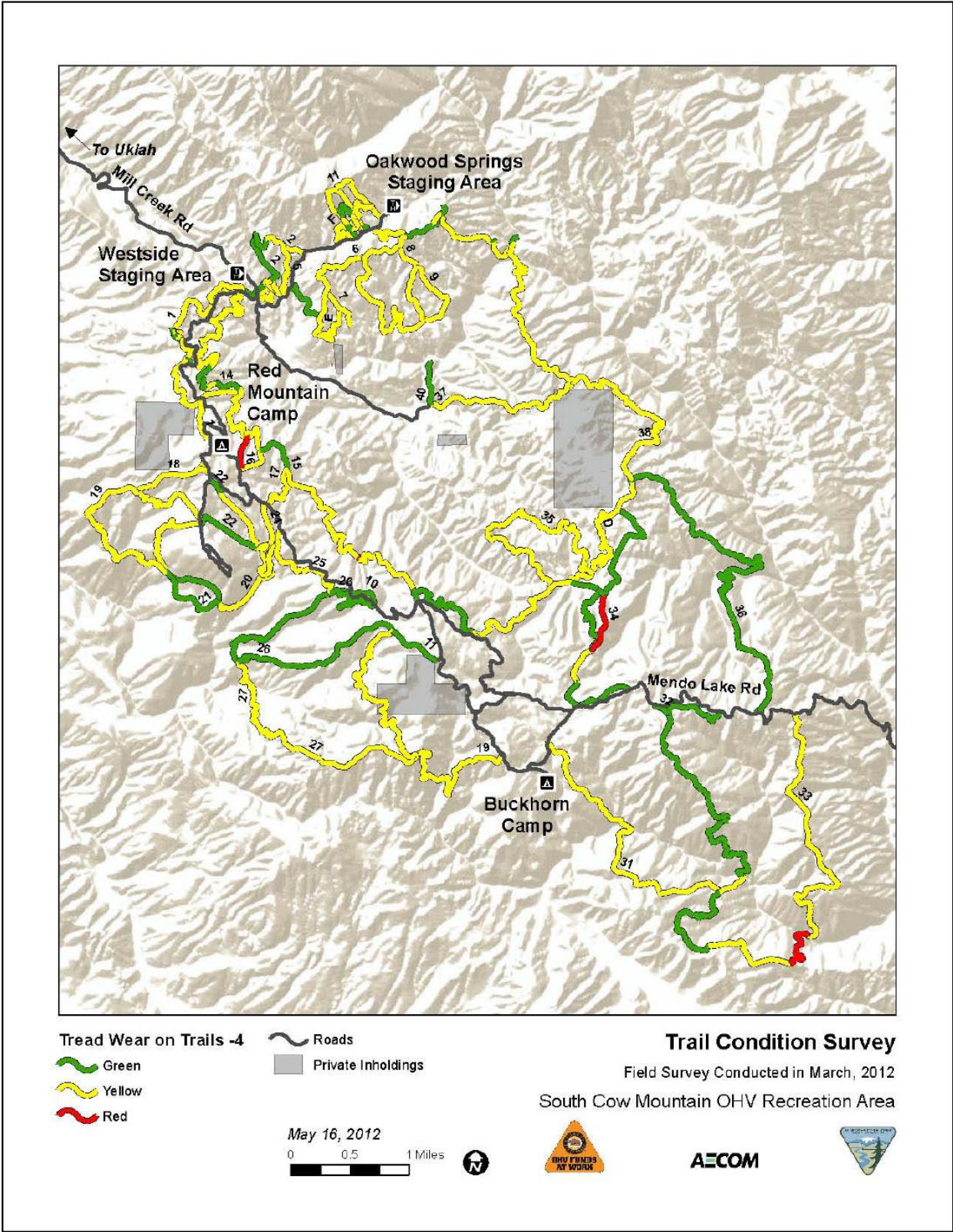


Figure 30 South Cow Mountain Trail Condition Survey Tread Wear on Trails



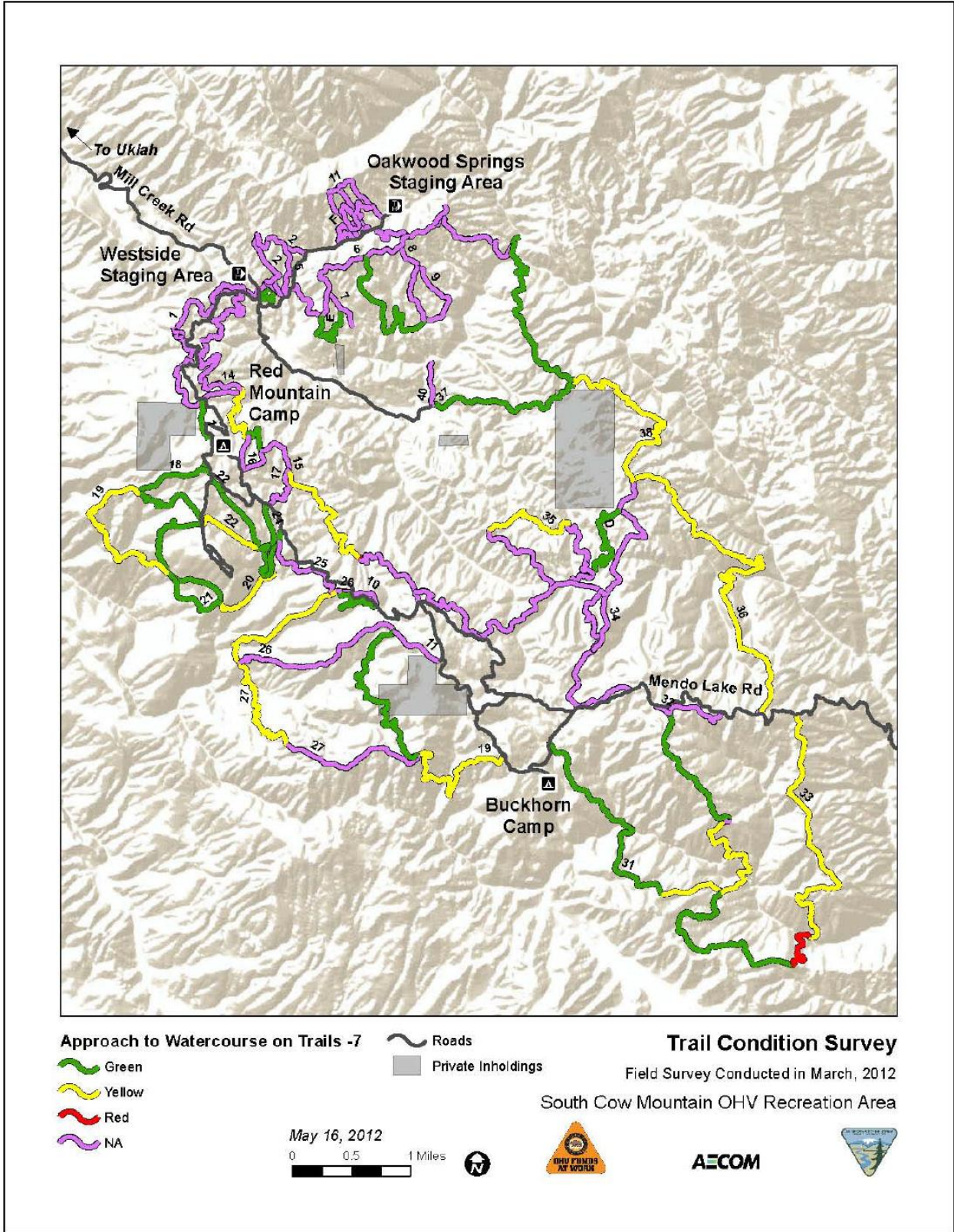
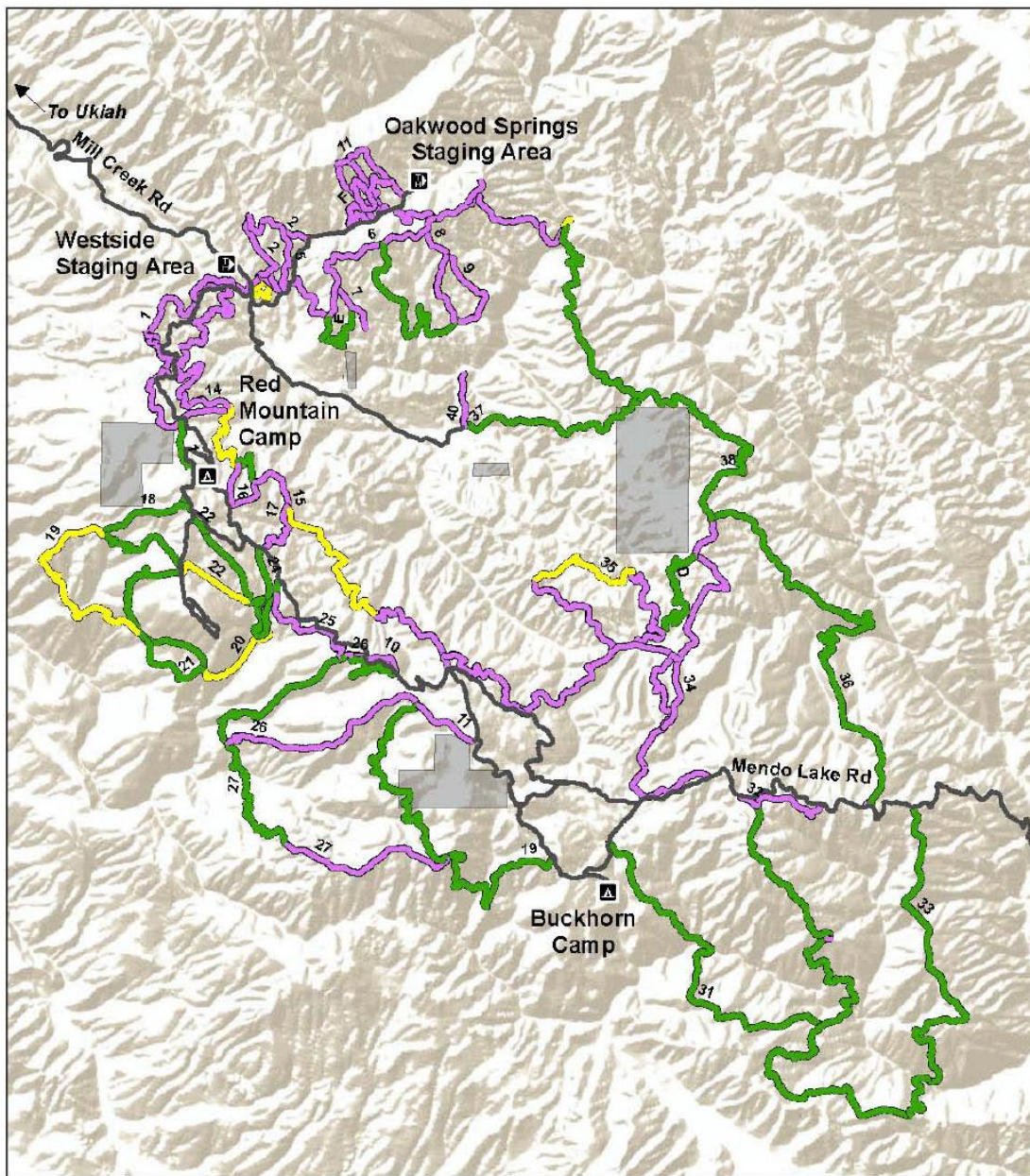






Figure 31 South Cow Mountain Trail Condition Survey Approaches to Watercourses






Stream Channel on Trails -8

-  Green
-  Yellow
-  Red
-  NA

 Roads

 Private Inholdings

May 16, 2012

0 0.5 1 Miles



### Trail Condition Survey

Field Survey Conducted in March, 2012

South Cow Mountain OHV Recreation Area



AECOM



Figure 32 South Cow Mountain Trail Condition Survey Stream Channel on Trails



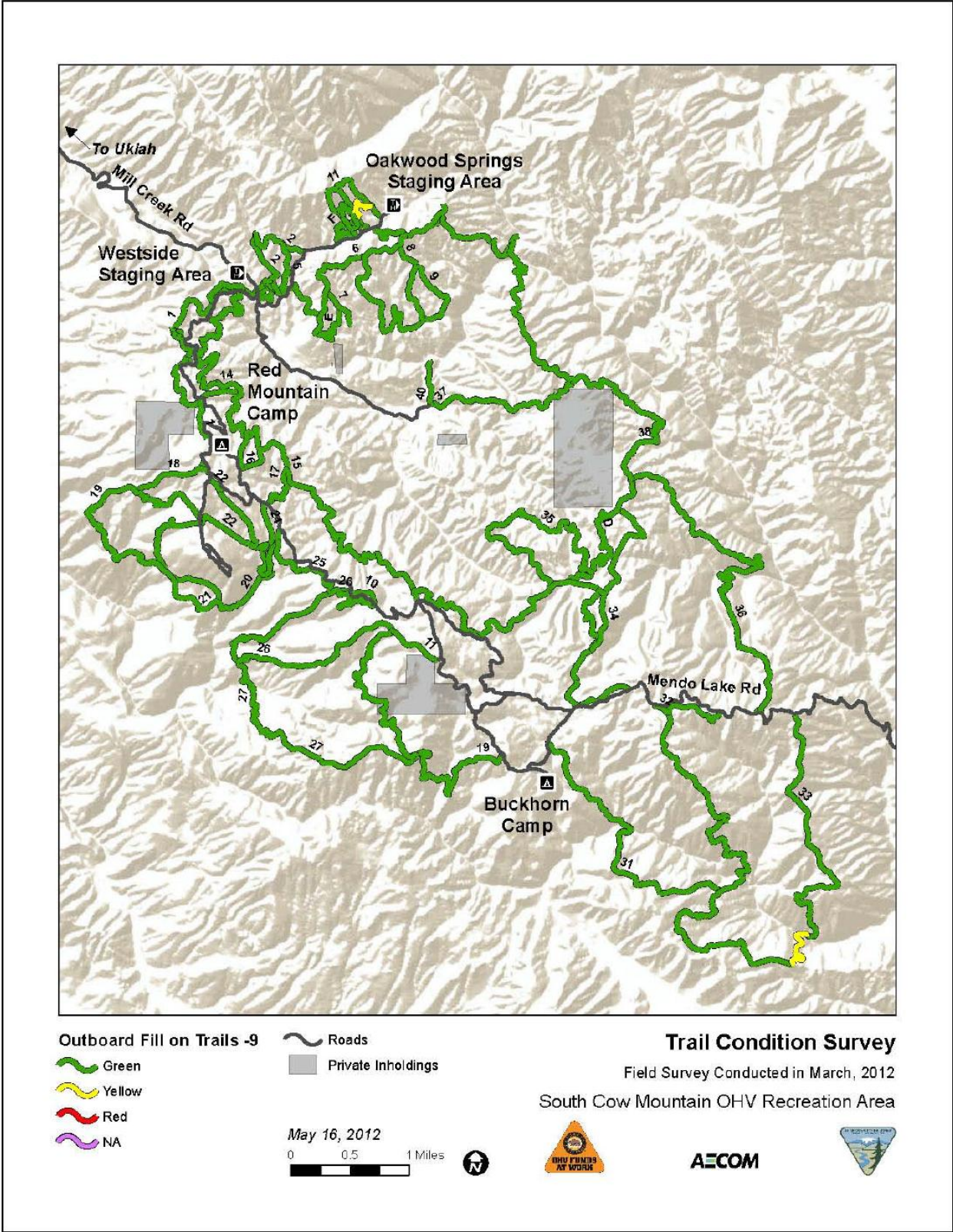


Figure 33 South Cow Mountain Trail Condition Survey Outboard Fill



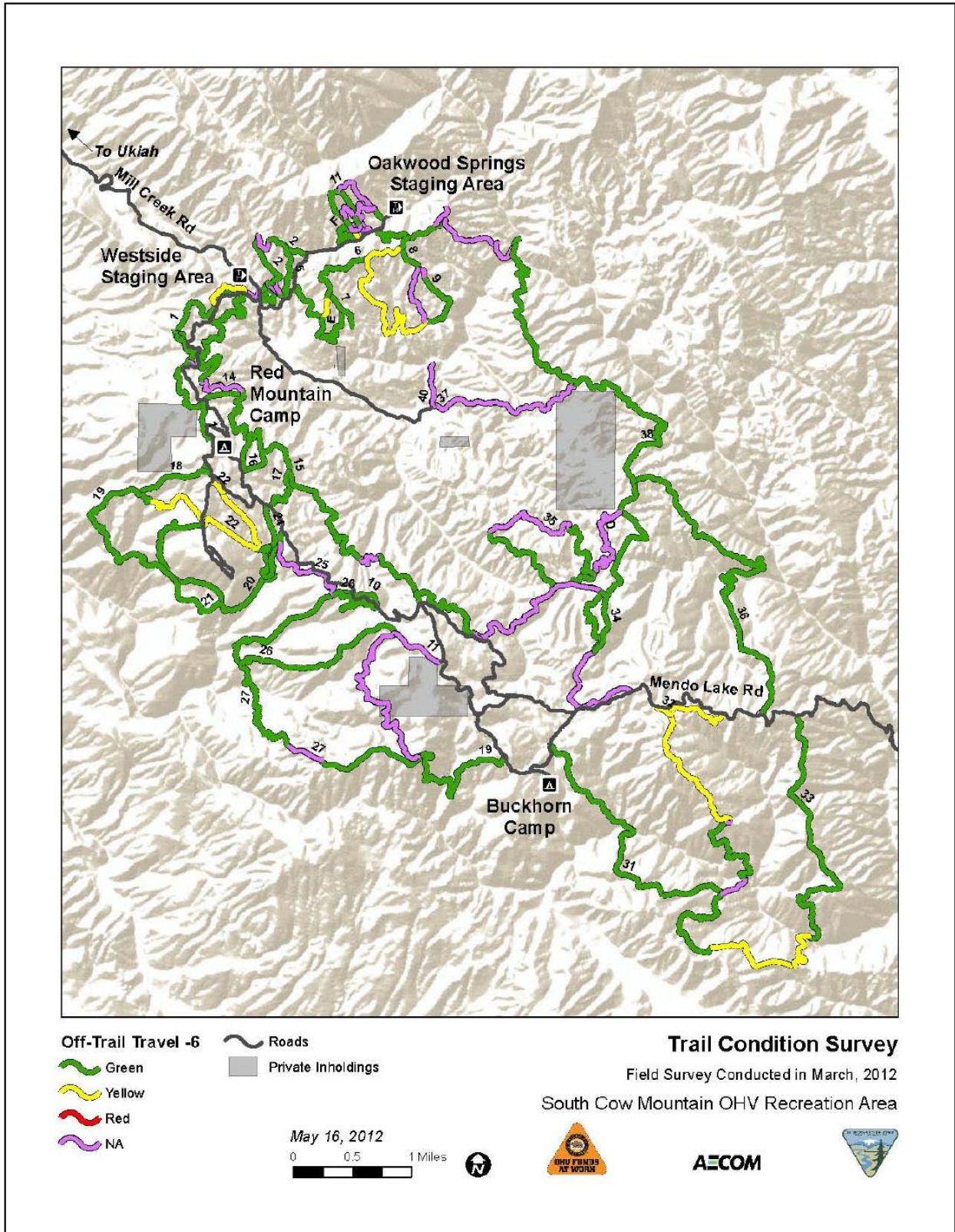


Figure 34 South Cow Mountain Trail Condition Survey Off-trail Travel

## **Appendix I: Soil Conservation Plan & Trail Monitoring Protocol**

The goal of the Bureau of Land Management (BLM), Ukiah Field Soil Conservation Plan is to set forth guidance for assessing, monitoring and maintaining the trail system within the Cow Mountain Recreation Area. Monitoring efforts and reporting should discern if the features of the Cow Mountain Recreation Area are functioning properly and, if not, where and why problems are occurring. Protocol for assessment, maintenance and monitoring are identified below.

Implementation of projects will include guidance from the California State Parks 2008 Soil Conservation Guidelines, PRC 5090.02, 5090.35, and 5090.53, the Ukiah Field Office Recreation Management Plan (RMP) and approved September 2006 Record of Decision (ROD), specific project NEPA documentation and trails training courses.

### **Assessment Protocol**

To determine the current condition of OHV trails, all trails require a consistent base-line and trail inventory that will outline the following trail condition factors: GPS data, trail segment erodibility, trail segment slope, water control, off trail erosion, tread wear, sediment trap conditions, water crossing conditions, and user created trails. Using the California State Parks OHV Trail Condition Evaluation Form, each trail segment shall be assigned a Red, Yellow or Green condition. Data shall be compiled in a Trail Reference Catalog, ArcGIS, and on Google Earth. Once initial assessment is conducted, future assessment will be performed during soil monitoring process.

### **Maintenance Protocol**

All trails will undergo annual brushing and surface maintenance. All trail segments assessed as Yellow Condition must be repaired before the next annual trail condition monitoring cycle. All trail segments assessed as Red Condition must undergo immediate repair, or within six months be closed and rerouted.

Work will be completed on trails larger than single track by mechanized methods where needed. Hand crews will be used for signing, brushing, and tree removal on all trails. Maintenance work will be done in accordance with best management practices. Maintenance schedules will be established as a result of informal quarterly monitoring reports, the annual monitoring report and the compliance action plan.

### **Monitoring Protocol**

- A. The objectives for monitoring are:

- a. To determine the extent of erosion occurring.
  - b. What conditions or combination of conditions is causing accelerated erosion?
  - c. Where is it occurring?
  - d. What is the extent?
- B. Monitoring parameters include:
- a. Informal monitoring of conditions by volunteers, visitors, and staff.
  - b. Formal monitoring by trained staff during annual trail condition evaluations.
  - c. Formal monitoring of open water crossings after significant after significant weather events and after any permitted events.
  - d. Informal monitoring after significant weather events and after any permitted events.
- C. Monitoring site selection will be determined by:
- a. Past monitoring results.
  - b. Erosion hazard assessment using past maintenance records and institutional knowledge of past practices and occurrences.
  - c. Erosion hazard assessment using evaluations for terrain, soil type, weather patterns, and use patterns.
- D. Monitoring schedules will be determined by:
- a. Known historic weather patterns.
  - b. Visitor use patterns.
  - c. Accessibility to trails by trained staff.
- E. Data collection will be performed by staff that has been trained by the BLM, UKIAH Field Office OHV Park Ranger to ensure quality assurance/quality control.
- F. Data management will be performed by the BLM, Ukiah Field Office OHV Park Ranger, Seasonal Park Rangers, or other qualified staff or volunteers.
- G. The monitoring methods will consist of:
- a. Establishing and documenting photo points.
  - b. Completing OHV Trail Condition Evaluation Forms for all BLM managed trails within the South Cow Mountain and Knoxville OHV Area.

Data collected will be used to determine facility needs, prioritize maintenance, and facilitate management. All trails will be annually monitored either on foot or by OHV. Any changes in trail condition will be noted, photographed, and immediately assessed via UTAP with industry standard trail assessment tools. Data collected shall be cataloged and then utilized in creating a maintenance action. All trail segments assigned a Yellow Condition must be repaired before the next annual trail condition monitoring cycle. All trail segments assigned a Red Condition must undergo immediate repair, or within six months be closed and rerouted

***Monitoring parameters*** – Trail segment parameters measured will include:

- Change in trail segment slope (due to erosion or impact)
- Allowable tread width
- Condition of water control
- Evidence of on or off trail erosion

- Tread wear condition & causes
- Sediment trap conditions
- Evidence of user created trails
- Obstacles
- Water crossing conditions (where applicable)
- Signage (where applicable)

### Change Analysis

- Since the 1980's all trails have received mechanical maintenance using a 450 and a 480 Sutter Equipment SWECO type trail tractor, or grader, depending on individual trail width and maintenance needs. Tread surfaces have been repaired, increased the amount of water diversion features and recovered soil from drain outlets on trails where necessary.
- Trail maintenance needs have been completed on an annual basis. Maintenance scheduling has been driven by annual monitoring results, use patterns and weather conditions.
- In the future, detection, description and analysis of change will be based on changes in historical conditions identified during informal and formal annual monitoring using the protocol outlined in the Soil Conservation Plan.

### Findings

- Performing routine annual mechanized maintenance on trails has resulted in better tread conditions, less soil loss due to rills and gullies and more easily recoverable sediment.
- Performing routine annual mechanized maintenance on trails has also increased the overall quality of the trails and provided a more enjoyable riding experience to users. This has decreased the tendency of users to ride off-route and create their own trails.
- Future Annual Monitoring Reports will address changes and additional findings by identifying and documenting them during monitoring and determining appropriate measures to be taken to correct any deficiencies. These measures will be set forth in the Compliance Action Plan.

### Conclusions

- Annual mechanized and hand trail maintenance needs will continue to be implemented.
- It is more cost effective to perform routine maintenance and monitoring, to keep trails in good condition than to let trails deteriorate to the point of needing major reconstruction or closure and restoration.
- Conclusions based on detected changes and additional information will be addressed in future Annual Monitoring Reports and incorporated into the Compliance Action Plan.



## Appendix J: Special Status Species and Communities of Interest in CMRA

### Weed Species and Proposed Methods of Management in Cow Mountain Recreation Area (EA CA-340-08-009)

Species	Primary Treatment Method Proposed	Secondary Treatment Methods Proposed	Acres <sup>1</sup>	Location <sup>2</sup>
Scotch Broom ( <i>Cytisus scoparius</i> )	Grubbing/Hand pulling	Cut stump Herbicide (Garlon 4)	<5	Vicinity of Westside Staging Area <sup>3</sup> & 2 miles south of Staging Area <sup>3</sup>
Italian Thistle ( <i>Carduus pycnocephalus</i> )	Grubbing/Hand pulling	Herbicide (Transline)	<5	South Fork Scotts Creek (¼ mile south of the confluence of the Main Fork Scotts Cr.) <sup>4</sup>
Bull Thistle ( <i>Cirsium vulgare</i> )	Grubbing/Hand pulling	Herbicide (Transline)	<5	Eightmile Valley <sup>3</sup> ; Road Edges (throughout So. Cow Mtn)
Yellow Starthistle ( <i>Centaurea solstitialis</i> )	Herbicide (Transline)	Prescribed Burning Grubbing Mowing Prescription Grazing Biological Control Waipuna/Flamer	100	Eightmile Valley <sup>3</sup> ; Four Mile Glade <sup>4&amp;5</sup> ; Lost Valley <sup>3</sup> ; Road Edges (throughout So. Cow Mtn); OHV Facilities (Westside & Oakwood Springs) <sup>3</sup>
Harding Grass ( <i>Phalaris aquatic</i> )	Herbicide (Roundup Pro)	Grubbing	<10	Eightmile Valley <sup>3</sup> ; Lost Valley <sup>3</sup> ; Road Edges (throughout So. Cow Mtn)
Medusahead [Grass] ( <i>Taeniatherum caput-medusae</i> )	Herbicide (Roundup Pro)	Prescribed Burning Mowing Prescription Grazing Waipuna/Flamer	250	Eightmile Valley <sup>3</sup> ; Four Mile Glade; Lost Valley <sup>3</sup> ; Sheldon Creek <sup>5&amp;6</sup> ; Road Edges (throughout So. Cow Mtn); OHV Facilities (Westside & Oakwood Springs) <sup>3</sup>
Barbed Goatgrass ( <i>Aegilops triuncialis</i> )	Herbicide (Roundup Pro)	Grubbing/Hand pulling	0	Adjoining UC Hopland Field Station Lands infested. <sup>4&amp;5</sup> <i>Currently not found in the project area.</i>
Arundo ( <i>Arundo donax</i> )	Manual Cutting, Herbicide (Aquamaster & Habitat), and Hand pulling	Manual Cutting, Herbicide (Aquamaster & Habitat), and Hand pulling	5	So. Fork Hendricks Cr. <sup>4&amp;5</sup>
Jubata Grass ( <i>Cortaderia jubata</i> )	Manual Cutting, Herbicide (Aquamaster & Habitat), and Hand pulling	Manual Cutting, Herbicide (Aquamaster & Habitat), and Hand pulling	5	So. Fork Hendricks Cr. <sup>4&amp;5</sup>

1/ Currently known infestations

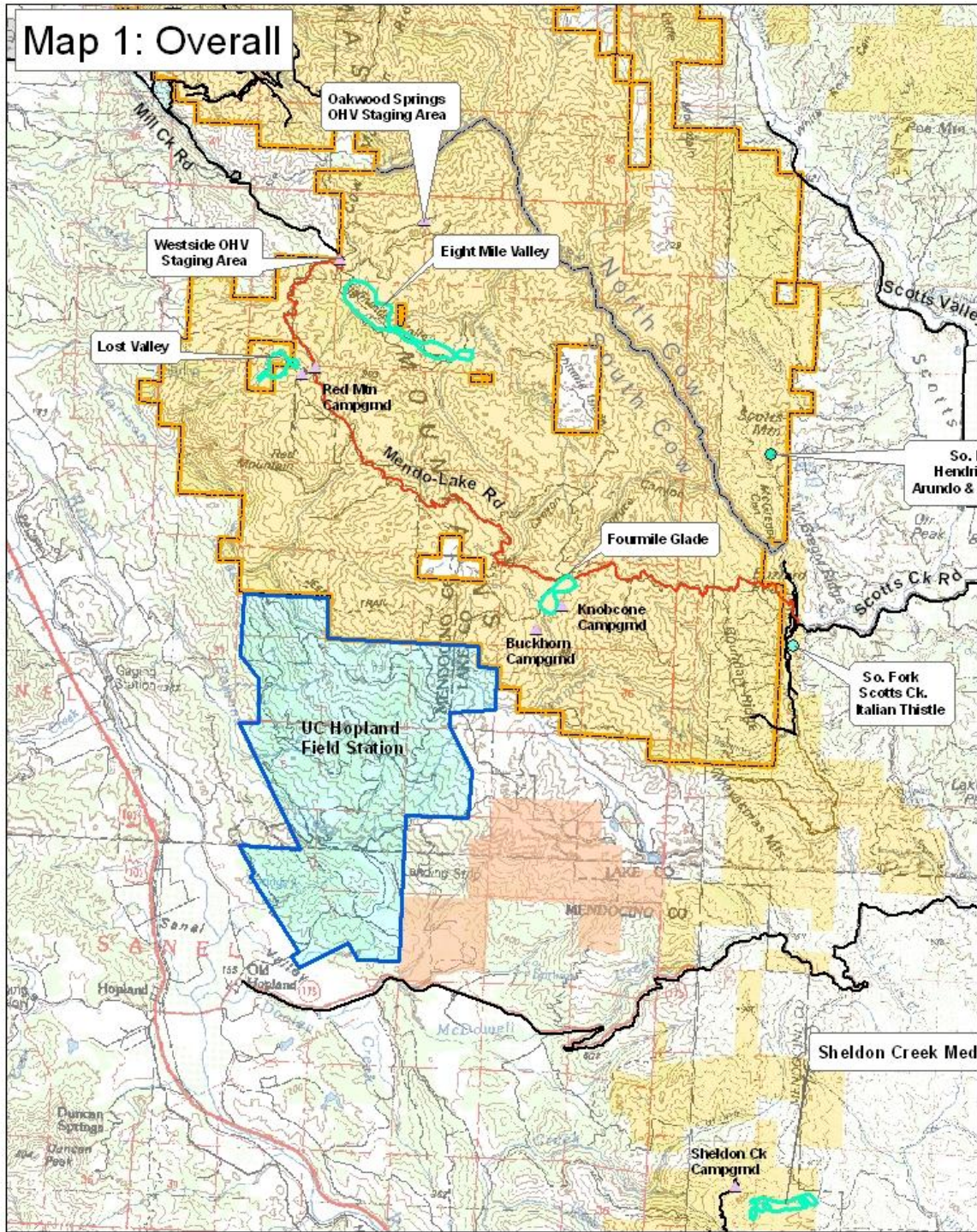
*2/ See Map 1 – Overall Map*

*3/ See Map 2 – OHV Staging Areas, Eight Mile Valley, & Lost Valley*

*4/ See Map 3 – So. Fork Scotts Ck., So. Fork Hendricks Ck., Fourmile Glade, and UC Hopland Field Station.*

*5/ See Map 4 – Sheldon Ck., So. Fork Hendricks Ck., Fourmile Glade, and UC Hopland Field Station.*

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**Cow Mountain Weed Management**

0 0.45 0.9 1.8 2.7 3.6 Miles



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 Utah Field Office  
 Utah, California  
 (707) 468-4000  
 www.blm.gov/utah  
 Date Prepared: 06/15/2011

Figure 35 Cow Mountain Weed Management Map, Overall



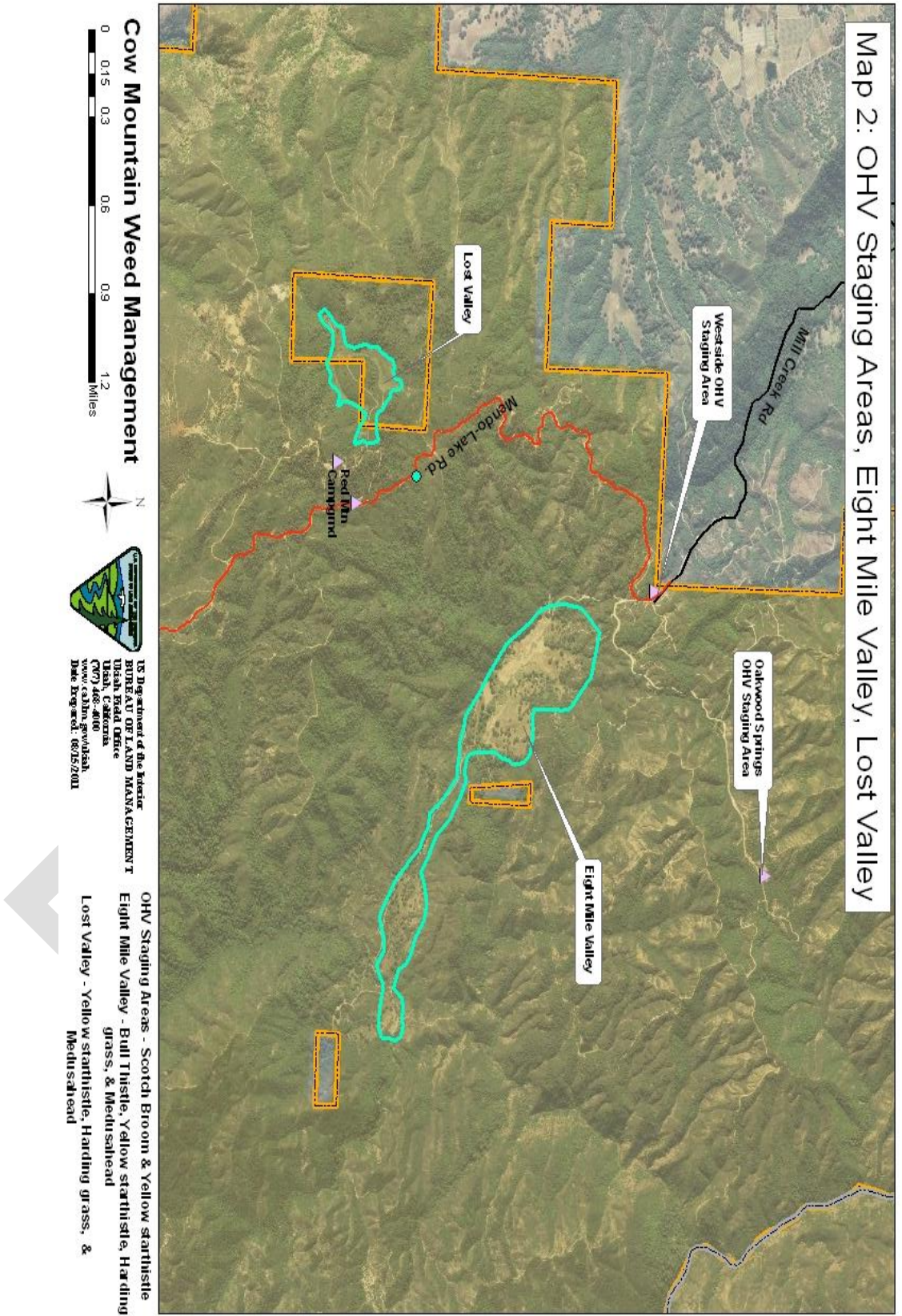


Figure 36 Cow Mountain Weed Management Map, OHV Staging Areas, Eight Mile Valley, Lost Valley



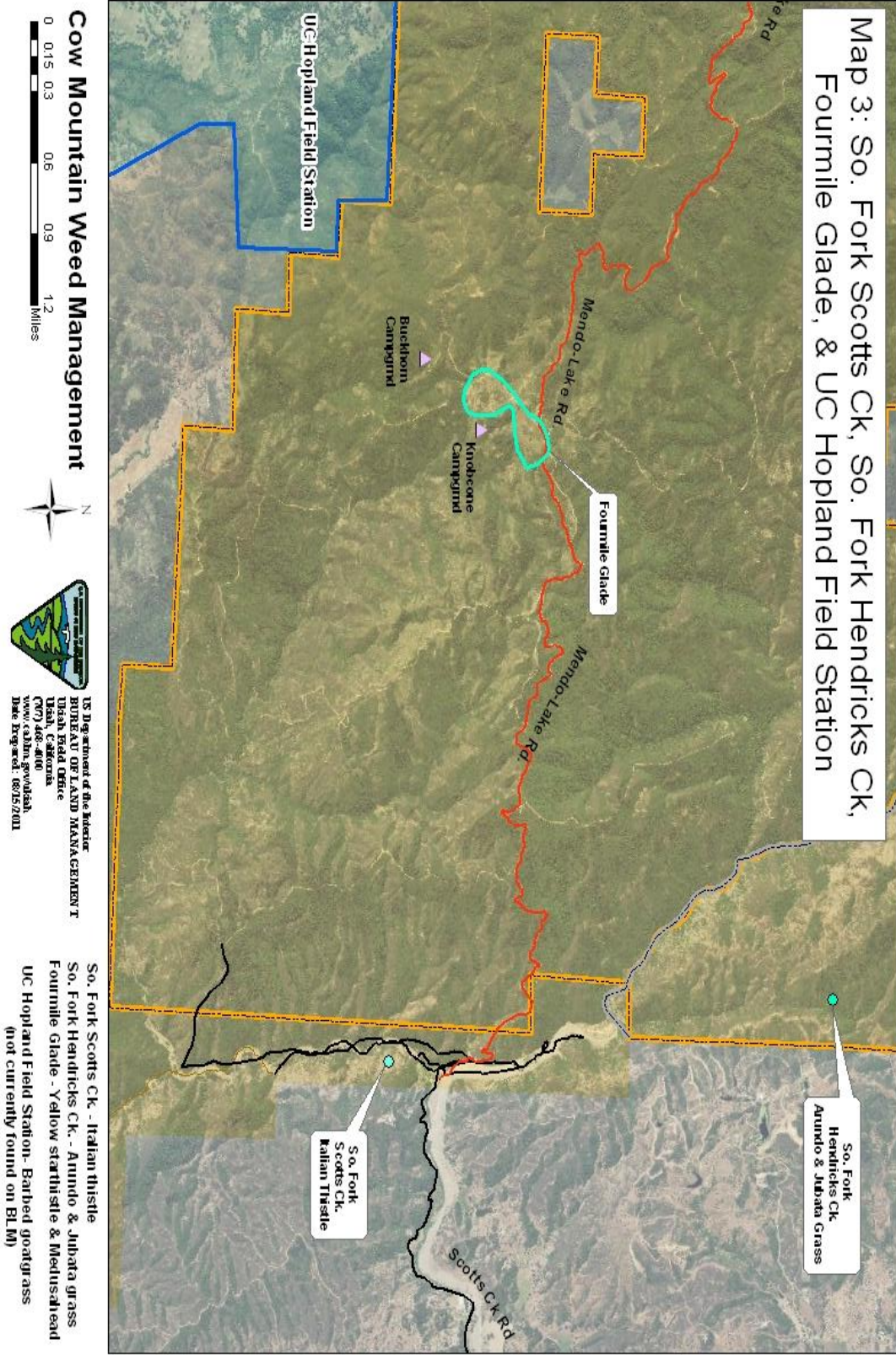


Figure 37 Cow Mountain Weed Management Map, Scotts Creek, Hendricks Creek Fourmile Glade, Hopland Field Station (1)



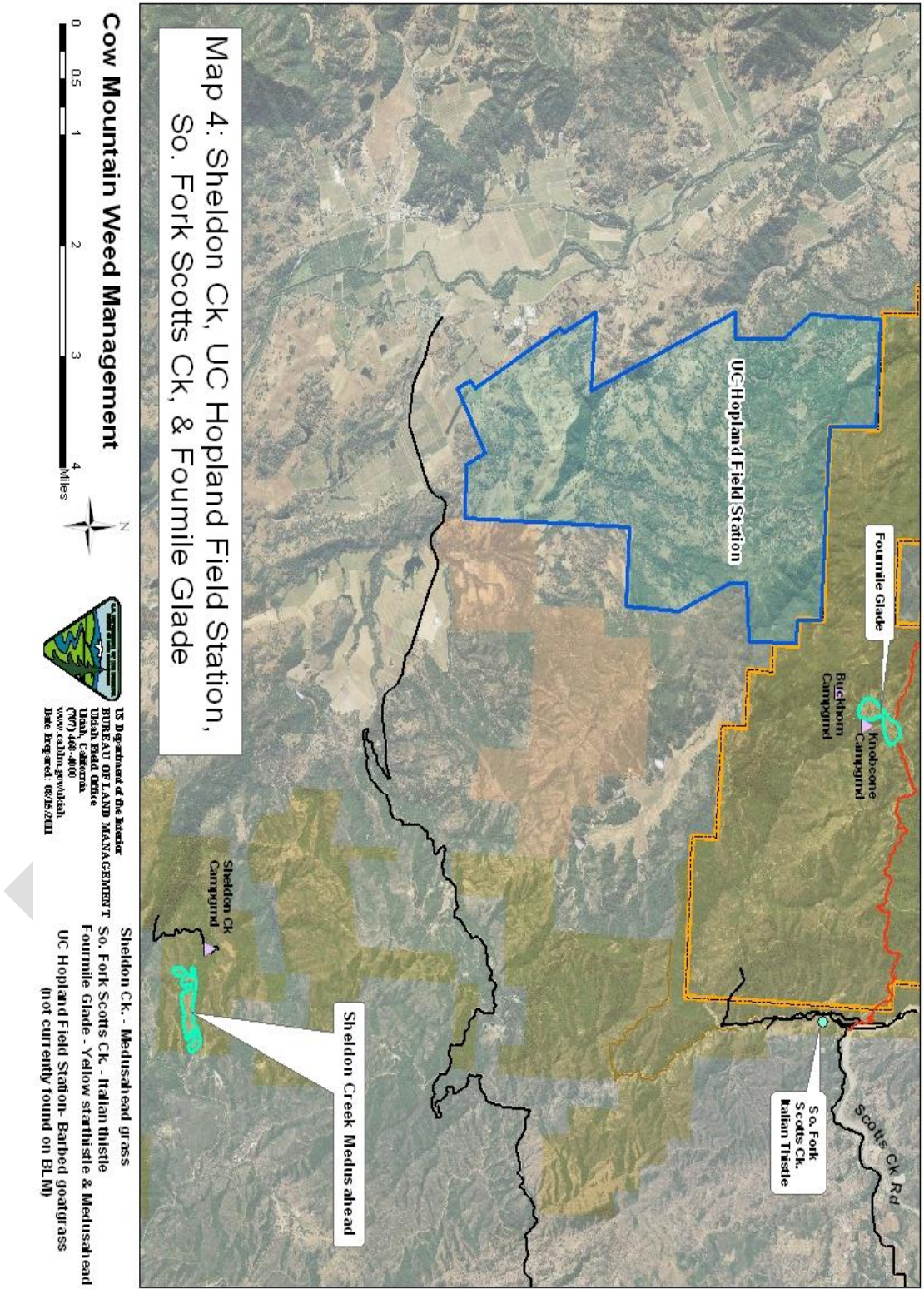


Figure 38 Cow Mountain Weed Management Map, Scotts Creek, Hendricks Creek Fournmile Glade, Hopland Field Station (2)

**Appendix K: U.S. Congress Public Law 109-362 (Northern California Coastal Wild Heritage Act)**

PUBLIC LAW 109-362—OCT. 17, 2006

120 STAT. 2071

“( ) BLACK BUTTE RIVER, CALIFORNIA.—The following segments of the Black Butte River in the State of California, to be administered by the Secretary of Agriculture:

“(A) The 16 miles of Black Butte River, from the Mendocino County Line to its confluence with Jumpoff Creek, as a wild river.

“(B) The 3.5 miles of Black Butte River from its confluence with Jumpoff Creek to its confluence with Middle Eel River, as a scenic river.

“(C) The 1.5 miles of Cold Creek from the Mendocino County Line to its confluence with Black Butte River, as a wild river.”

(b) PLAN; REPORT.—

Deadline.

(1) IN GENERAL.—Not later than 18 months after the date of enactment of this Act, the Secretary of Agriculture shall submit to Congress—

(A) a fire management plan for the Black Butte River segments designated by the amendment made by subsection (a); and

(B) a report on the cultural and historic resources within those segments.

(2) TRANSMITTAL TO COUNTY.—The Secretary of Agriculture shall transmit to the Board of Supervisors of Mendocino County, California, a copy of the plan and report submitted under paragraph (1).

**SEC. 8. KING RANGE NATIONAL CONSERVATION AREA BOUNDARY ADJUSTMENT.**

Section 9 of Public Law 91-476 (16 U.S.C. 460y-8) is amended by adding at the end the following:

“(d) In addition to the land described in subsections (a) and (c), the land identified as the King Range National Conservation Area Additions on the map entitled ‘King Range Wilderness’ and dated November 12, 2004, is included in the Area.”

**SEC. 9. COW MOUNTAIN RECREATION AREA, LAKE AND MENDOCINO COUNTIES, CALIFORNIA.**

16 USC 460sss.

(a) ESTABLISHMENT.—In order to enhance the recreational and scenic values of the Cow Mountain area in Lake and Mendocino Counties, California, while conserving the wildlife and other natural resource values of the area, there is hereby established the Cow Mountain Recreation Area (in this section referred to as the “recreation area”) consisting of approximately 51,513 acres of land in such counties, as generally depicted on the map entitled “Cow Mountain Recreation Area” and dated July 22, 2006, including the following:

(1) The “South Cow Mountain OHV Management Area”, as generally depicted on the map.

(2) The “North Cow Mountain Recreation Area”, as generally depicted on the map.

(b) LEGAL DESCRIPTIONS; CORRECTION OF ERRORS.—

(1) PREPARATION AND SUBMISSION.—As soon as practicable after the date of the enactment of this Act, the Secretary of the Interior shall prepare a map and legal descriptions of the boundaries of the recreation area. The Secretary shall submit the map and legal descriptions to the Committee on Resources of the House of Representatives and to the Committee on Energy and Natural Resources of the Senate.

Figure 39 U.S. Congress Public Law 109-362 (Scan)



(2) **LEGAL EFFECT.**—The map and legal descriptions of the recreation area shall have the same force and effect as if included in this Act, except that the Secretary may correct clerical and typographical errors in the map and legal descriptions. The map shall be on file and available for public inspection in appropriate offices of the Bureau of Land Management.

(c) **ADMINISTRATION.**—

(1) **IN GENERAL.**—The Secretary of the Interior shall administer the recreation area in accordance with this section and the laws and regulations generally applicable to the public lands, including the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.).

(2) **EXISTING RIGHTS.**—The establishment of the recreation area shall be subject to all valid existing rights.

(d) **RECREATIONAL ACTIVITIES.**—

(1) **IN GENERAL.**—The Secretary of the Interior shall continue to authorize, maintain, and enhance the recreational use of the land included in the recreation area, including motorized recreation, hiking, camping, mountain biking, sightseeing, and horseback riding, as long as such recreational use is consistent with this section and other applicable law.

(2) **OFF-ROAD AND MOTORIZED RECREATION.**—Motorized recreation shall be a prescribed use within the South Cow Mountain OHV Management Area, occurring only on roads and trails designated by the Secretary for such use, except as needed for administrative purposes or to respond to an emergency. Nothing in this paragraph shall be construed as precluding the Secretary from closing any trail or route from use for purposes of resource protection or public safety.

(3) **MOUNTAIN BIKING.**—Mountain biking shall be a prescribed use within the recreation area, occurring only on roads and trails designated by the Secretary for such use. Nothing in this paragraph shall be construed as precluding the Secretary from closing any trail or route from use for purposes of resource protection or public safety.

(e) **ACCESS TO PRIVATE PROPERTY.**—The Secretary of the Interior shall provide any owner of private property within the boundaries of the recreation area adequate access to the property to ensure the reasonable use and enjoyment of the property by the owner.

(f) **LAND ACQUISITION.**—

(1) **ACQUISITION FROM WILLING PERSONS ONLY.**—The Secretary of the Interior may acquire lands or interests in lands in the recreation area only by—

(A) donation;

(B) exchange with a willing party, as expressed in a written agreement between the Secretary and the party;  
or

(C) purchase from a willing seller, as expressed in a written agreement between the Secretary and the seller.

(2) **ADMINISTRATION OF ACQUIRED LANDS.**—Lands or interests in lands within or adjacent to the boundaries of the recreation area that are acquired by the Bureau of Land Management, and title or possession of which is vested in the United States after the date of the enactment of this Act, shall be managed by the Secretary as part of the recreation area.

Figure 40 U.S. Congress Public Law 109-362 (Scan)



(g) **ADJACENT MANAGEMENT.**—Nothing in this section creates protective perimeters or buffer zones around the recreation area.

**SEC. 10. CONTINUATION OF TRADITIONAL COMMERCIAL SURF FISHING, REDWOOD NATIONAL AND STATE PARKS.**

(a) **AVAILABILITY OF LIMITED NUMBER OF PERMITS.**—For the sole purpose of continuing traditional commercial surf fishing, the Secretary of the Interior shall permit the right of entry for authorized vehicle access onto the wave slope area at that area known as Gold Bluffs Beach, Prairie Creek Redwoods State Park, and that portion of the beach north and south of Redwood Creek in Redwood National and State Parks. The number of permits issued under the authority of this section shall be limited to the number of valid permits that were held on the date of enactment of this Act. The permits so issued shall be perpetual and subject to the same conditions as the permits held on the date of the enactment of this Act.

(b) **WAVE SLOPE AREA DEFINED.**—In this section, the term “wave slope area” refers to the area that has been wet by the wave action of the previous high tide, but does not include any vegetated areas.

Approved October 17, 2006.

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**LEGISLATIVE HISTORY—H.R. 233 (S. 128):**

**SENATE REPORTS:** No. 109-47 accompanying S. 128 (Comm. on Energy and Natural Resources).

**CONGRESSIONAL RECORD,** Vol. 152 (2006):

July 24, considered and passed House.

Sept. 29, considered and passed Senate.

**WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS,** Vol. 42 (2006):

Oct. 17, Presidential statement.

