USDA United States Department of Agriculture

Forest Service

Pacific Southwest Region and Intermountain Region

Eldorado, Stanislaus and Toiyabe National Forests

Mokelumne Wilderness Management Guidelines

Land and Resource Management Plan Amendment

March, 2000

United States Department of Agriculture
Forest Service
Eldorado National Forest
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File Code: 2320

Date: March 28, 2000

Dear Friend of the Mokelumne Wilderness,

Enclosed is a copy of the Mokelumne Wilderness Management Guidelines Decision Notice, Finding of No Significant Impact, and Response to Public Comment; and a copy of the Mokelumne Wilderness Mangement Guidelines Land and Resource Managment Plan Amendment.

The Mokelumne Wilderness is located in the Sierra Nevada, California, and is jointly managed by the Eldorado National Forest, the Stanislaus National Forest, and the Humboldt-Toiyabe National Forest. This Land and Resource Management Plan Amendment addresses numerous issues raised by the public and the Forest Service in management of this special area. The purpose of the Mokelumne Wilderness Management Guidelines is to develop and implement consistent standards and guidelines across administrative boundaries, and to preserve the area's wilderness character. Use and enjoyment by visitors will be provided for in a manner that ensures protection of the area over time.

Planning for the 104,500 acre Mokelumne Wilderness area was begun in 1987, and included a series of public meeings and comments in 1987, 1993 and 1994. The Environmental Analysis (EA) was completed and released in 1995, and public comments on the EA were accepted through December 8, 1995. The Forest Supervisors reviewed the public comments, and, based on these comments, proposed a number of changes to the proposed action in the original Environmental Analysis in their decision. Due to the variety and extent of the changes from the original proposed action, the Forest Supervisors felt it appropriate to provide the public an opportunity to review and comment upon this new proposed action. Alternative 6, the New Proposed Action, was released in November of 1997. Public comments on the New Proposed Action were accepted through January, 1998. Those public comments were reviewed and considered in formulating this Decision Notice and Finding of No Significant Impact. A response to comments section summarizing those comments and Forest Service Responses is included with the Decision Notice and Finding of No Significant Impact.

Two upcoming amendments to the Land and Resource Management Plans of the Eldorado, Stanislaus and Humboldt-Toiyabe National Forests, the *Sierra Nevada Framework Project EIS,* and the *Range Standards and Guidelines to Amend the Land and Resource Management plans of the Eldorado and Tahoe National Forest FEIS,* will supercede some of the Standards and Guidelines now being adopted with the Mokelumne Wilderness Land Management Plan Amendment where applicable.

Thank you for your interest and participation in the development of the Mokelumne Wilderness Management Guidelines.

Sincerely,

Frank E. Mosbacher

for JUDIE L. TARTAGLIA
Acting Forest Supervisor

Mokelumne Wilderness Management Guidelines

Land and Resource Management Plan Amendment

March, 2000

Pacific Southwest Region and Intermountain Regions
Eldorado, Stanislaus and Toiyabe National Forests

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United States Department of Agriculture

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FOREST PLAN CONSISTENCY

This amendment replaces the management area direction, standards and guidelines for the Mokelumne Wilderness in the Eldorado, Stanislaus and Toiyabe National Forest Land and Resource Management Plans (LMP). This amendment replaces pages 4-122 through 4-129, Management Area 1, in the Eldorado National Forest LMP for the management of the Mokelumne Wilderness only. This amendment replaces pages IV-93 through IV-97, Management Area 1, in the Stanislaus National Forest LMP for the management of the Mokelumne Wilderness only. And this amendment replaces pages IV-106 through IV-111, Management Area 5, in the Toiyabe National Forest LMP for the management of the Mokelumne Wilderness only.

MANAGEMENT EMPHASIS

The Mokelumne Wilderness will be managed according to the Wilderness Act of 1964 to ensure an enduring resource of wilderness for present and future generations. The wilderness character of the Mokelumne and its specific values of solitude, physical and mental challenge, scientific study, inspiration and primitive recreation will be protected and where necessary restored. The wilderness will be administered for public use and enjoyment as wilderness, consistent with the primitive conditions and wilderness character, in such a manner that leaves the area unimpaired for future use and enjoyment as wilderness. The area will be managed under a concept of non-degradation, to prevent further loss of naturalness or solitude, and to restore substandard settings and conditions.

The limited access and primitive quality of much of the Mokelumne Wilderness will be maintained as a finite and unique asset. Management will emphasize maintaining the relatively pristine and challenging conditions of the North Fork Mokelumne River Canyon and lower Summit City Canyon. Management will minimize the impacts to, and as needed, restore high use areas such as Carson Pass. As feasible, actions will be taken to develop and enhance primitive backcountry recreation opportunities outside the wilderness to help reduce use pressure and impacts within the wilderness, and to meet the needs of non-wilderness dependent recreational use.

Management will be consistent with the Wilderness Act of 1964, direction provided in 36 CFR 261 and 293, the Forest Service manual 2320, and the Wilderness Management Handbook (FSH 2309.19). See the Appendix C for key regulations, policies and objectives.

AREA DESCRIPTION AND CURRENT MANAGEMENT SITUATION

The 104,500 acre Mokelumne Wilderness is bordered by Highway 88 on the north and Highway 4 on the south, and extends from Salt Springs Reservoir east along the North Fork of the Mokelumne River and over the Sierra Crest. The dominant feature of the wilderness is the North Fork Mokelumne River Canyon. The canyon is 3000-4000 feet deep in places, and is primarily without system trails. The rugged nature of this canyon provides unique and outstanding opportunities for solitude among central Sierra wilderness areas. The Mokelumne is less used than the adjacent Desolation and Carson-Iceberg wilderness areas. In 1994 recreation use was estimated to be 42,000 RVD's, compared to 283,000 RVD's in the Desolation and 71,000 RVD's in the Carson-Iceberg.

Hiking, camping, viewing nature, fishing, horseback riding and cross country skiing are all popular activities within the wilderness. The proximity of the Mokelumne Wilderness to large urban areas and several highways provides a large potential visitor base for the area. However, the topography of the Mokelumne, a deep, rugged canyon with a few surrounding peaks, highlands and twenty small lakes, tends to concentrate recreational use at the lake basins along the wilderness perimeter. This concentrated use is most prevalent in the Carson Pass area.

The Carson Pass area, including Emigrant, Round Top, Winnemucca, 4th of July and Frog Lakes, was one of the most highly used Rare II areas in California prior to inclusion in the Mokelumne Wilderness in 1984. The area continues to present a challenge for management as wilderness. Many factors contribute to the popularity of the area, easy access from Highway 88, high quality scenery, three lakes within 2 miles of several trailheads, articles in prominent magazines promoting the scenery, historical interest, nearby campgrounds, parking and other recreational facilities. In 1993, over half of the visitors with overnight permits entered the wilderness at the trailheads in the Carson Pass area. The area is extremely popular with day users, with hundreds of visitors per day using the area on peak season weekends.

Special features of the wilderness include the variety of geologic features and diversity of plant communities in the Round Top Geological and Botanical Special Interest Area. The North Fork Mokelumne River within the wilderness has been recommended for Wild River status. The Snow Canyon Research Natural Area was recognized to promote the protection and study of the outstanding western white pine community found there.

The wilderness is jointly administered by the Eldorado and Stanislaus National Forests in Region 5; and the Toiyabe National Forest in Region 4. The Mokelumne Wilderness (50,000 acres) was designated as part of the original Wilderness Act of 1964. The California Wilderness Act of 1984 added approximately 54,500 acres to the Mokelumne Wilderness. The acreage of the Mokelumne Wilderness is divided between the three Forests as follows:

- Eldorado NF, Amador Ranger District 60,700 acres
- Stanislaus NF, Calaveras Ranger District 23,600 acres
- Toiyabe NF, Carson Ranger District 20,200 acres

Rapidly growing populations of the foothill communities and regional urban areas are anticipated to cause increased demand for recreational opportunities on the three Forests which administer the Mokelumne Wilderness. Dispersed recreational use, which includes wilderness, on the Eldorado NF is expected to increase from an estimated 2 million RVD's in 1994, to 2.5 million RVD's in the year 2000, and 2.75 million RVD's in the year 2010. Applying this same trend to the Mokelumne Wilderness, use would be expected to increase (without use limits) from an estimated 42,000 RVD's in 1994, to 52,500 RVD's in the year 2000, and 57,750 RVD's in the year 2010.

DESIRED FUTURE CONDITIONS - OPPORTUNITY CLASSES

Opportunity Classes describe the range of desired conditions to be maintained or restored in the wilderness area. Opportunity Classes are similar to the Recreational Opportunity Spectrum (ROS) used in the National Forest system. Within the ROS system only two classes, Primitive and Semi-primitive Non-motorized, apply to wilderness areas. Opportunity Classes allow managers to develop a range of desired conditions which are specific and acceptable within a particular wilderness and determine appropriate management activities within these areas. Four Opportunity Classes have been described for the Mokelumne Wilderness. They have been numbered and named:

Class I - Pristine, Class II - Primitive, Class III - Remote, Class IV - Portal

<----------most primitive----------least primitive---------->

In choosing these classes, both the existing range of conditions and achievable conditions were considered. These narrative descriptions constitute the management objectives and desired conditions for particular parts of the Mokelumne. The conditions described in the Opportunity Classes primarily relate to the recreation experience and recreation impacts. Some resources and uses within the Mokelumne Wilderness are not effectively described and differentiated by Opportunity Classes. For these other resources, such as Air and Watershed Condition/Water Quality, the desired conditions and management objectives are described for the entire wilderness. These wilderness-wide desired conditions are incorporated into the management direction, standards and guidelines.

The Opportunity Classes have been allocated to 42 management areas, defined within the Mokelumne (See the Opportunity Class Allocation Map). Indicators, or specific variables which can be measured to assess the conditions described in the Opportunity Classes have been developed. Standards have been established for these indicators to achieve the desired conditions in each Opportunity Class. These standards appear in the Direction, Standards and Guidelines. A range of actions which could be taken if a standard is exceeded is included in Appendix C.

ACRES BY OPPORTUNITY CLASS

Opportunity Class 1 (Pristine)	20,355
Opportunity Class 2 (Primitive)	42,648
Opportunity Class 3 (Remote)	39,966
Opportunity Class 4 (Portal)	1,511

OPPORTUNITY CLASS I - (Pristine)

The area is characterized by a natural environment predominantly unmodified by human activity.

Resource Conditions

Soils: Soil displacement and erosion resulting from human activity does not measurably differ from naturally occurring rates. Soil compaction and loss of organic soil horizons at camping areas are minimal and do not exceed limits which prevent natural plant establishment and growth.

Vegetation: Vegetation loss at camping areas and along travel routes is very minor and temporary. Impacts recover annually and are not apparent to most visitors.

Fish and Wildlife: Habitat and species diversity is governed by environmental variation (climate, elevation) and natural forces such as fire, succession and drought. Wildlife behavior and use patterns show no noticeable alteration. Visitor use rarely, and only temporarily, displaces wildlife.

Trails: There are no mapped or maintained system trails. Travel is cross-country or along unmaintained and unmapped paths. Few user-created trails exist, and no new ones are allowed to form.

Campsites: Very few established campsites are evident. Where camping occurs there is little noticeable loss of vegetation, increase in bare mineral soil or disturbance of duff, litter or woody debris. Fire rings are not present. Impacts recover annually.

Social Conditions

This area provides an outstanding opportunity for isolation, solitude and freedom from evidence of human activities. The environment offers excellent opportunities to experience a high degree of challenge, risk and self-reliance. Travel is cross-country or on unmaintained travel routes, requiring a high level of outdoor skills. Encounters with other parties are rare to non-existent, whether traveling or camping. Established campsites are out of sight and sound of one another.

Management

Management emphasizes sustaining and restoring the natural ecosystem. On-site contact with visitors by Forest Service personnel is rare, and usually in response to a problem or by invitation. Information on leave no trace techniques, wilderness rules and regulations are communicated to the visitor outside the area, at trailheads, visitor information centers or ranger stations. Infrequent patrols and monitoring of conditions are conducted only as is necessary to achieve management objectives. New trails will not be constructed, and existing trails will not be maintained. Abandoned trails may be rehabilitated to natural conditions. No signs, administrative structures or facilities are present.

OPPORTUNITY CLASS II - (Primitive)

The area is characterized by a natural environment predominantly unmodified by human activity.

Resource Conditions

Soils: Soil displacement and erosion resulting from human activities are not measurably different from naturally occurring rates. Minimal soil compaction and disturbance of duff, litter and dead woody debris may occur in camping areas. This disturbance of organic soil horizons will not exceed limits which prevent natural re-vegetation.

Vegetation: Impacts from recreational use are limited to localized, minor loss of vegetation. In many areas these impacts recover annually and are apparent to few visitors.

Fish and Wildlife: Habitat and species diversity is governed by environmental variation and natural forces such as fire, succession and disease, except where fish stocking is allowed to occur. Temporary displacement of wildlife may occur with no cumulative negative effect on population viability. Uses are managed to prevent displacement of threatened, endangered or sensitive species.

Trails: Few system trails exist. There are few user-created trails, and new ones are not allowed to form.

Campsites: There are few established campsites, and campsite density is low. Established campsites may exhibit a minor loss of vegetation and/or a small area of bare mineral soil which may persist year to year.

Social Conditions

There is a high probability of experiencing isolation and solitude, with little evidence of recent human activity. The environment offers visitors good opportunities to experience risk, challenge and self-reliance through the utilization of outdoor skills. Off of trails, this area presents the same challenging opportunities and conditions as Class 1. Encounters with other parties are infrequent, whether along travel routes or at campsites. Campsites are predominantly out of sight and sound of others.

Management

Management emphasizes sustaining and restoring the natural ecosystem. Direct on-site management involves minimal visitor contacts. Information on leave no trace techniques and wilderness rules and regulations is primarily communicated to the visitor outside the area. Patrols and monitoring of conditions are conducted as needed to achieve management objectives. Trails are maintained for light use. Only minimal directional signing is provided at major trail junctions. Temporary signing may be used for resource protection only when other less obtrusive measures have been exhausted.

OPPORTUNITY CLASS III - (Remote)

The area is characterized by a natural environment predominantly unmodified by human activity.

Resource Conditions

Soils: Soil disturbance and erosion resulting from human activities occurs at a rate similar to the natural process. Some localized soil compaction and disturbance of duff, litter and dead woody debris occurs in camping areas and holding areas for recreational stock.

Vegetation: Localized moderate loss of vegetation may occur in camping areas and where stock are held.

Fish and Wildlife: Habitat and species diversity is governed by environmental variation and natural forces such as fire, succession and drought, except where fish stocking is allowed to occur. Temporary displacement of wildlife may occur with no cumulative negative effect on population viability. Uses are managed to prevent displacement of threatened, endangered or sensitive species.

Trails: A moderately developed system of constructed trails exists. Some user-created trails exist, however, no new user created trails are allowed to form.

Campsites: Established campsites are present. Campsite density is low to moderate. The number of established sites accommodates use within acceptable limits, preventing the formation of new sites. Some campsites may exhibit a moderate area of vegetation loss, bare mineral soil in center of campsite and tenting areas, or disturbance of duff, litter and woody debris. These impacts can be expected to persist year to year and are apparent to many visitors.

Social Conditions

There is a moderate probability of experiencing, isolation, solitude and freedom from the sights and sounds of humans. The area provides visitors the opportunity to interact with the natural environment with a moderate degree of challenge, risk and self-reliance through the utilization of outdoor skills. There is a moderate probability of encountering other users on the trail and at the campsite. Established campsites may be within sight and sound of others.

Management

Management will emphasize protecting and restoring the natural ecosystem while accommodating primitive recreational use and enjoyment. This area is regularly patrolled, and there is a moderate chance of encountering wilderness rangers. Contact is initiated by Forest Service personnel as part of their routine duties, and includes checking visitor permits, addressing unacceptable impacts and providing information on leave no trace techniques, wilderness regulations and restrictions. Trails are regularly maintained for moderate levels of use. Trails are reconstructed only as necessary for resource protection. Signing is limited to directional signs at major trail junctions. Temporary signs may be used for resource protection only after other less obtrusive measures have been exhausted.

OPPORTUNITY CLASS IV - (Portal)

The area is characterized by a natural landscape primarily unmodified by human activity. Conditions in some localized areas may show substantial evidence of visitor use.

Resource Conditions

Soils: Disturbance and erosion of soils occurs at a rate similar to the natural process. Localized soil compaction and disturbance of duff and litter occurs in camping areas and areas used by stock.

Vegetation: There may be localized moderate loss of vegetation in camping areas.

Fish and Wildlife: Habitat and species diversity is governed by environmental variation and natural forces such as fire, succession and drought, except where fish stocking is allowed to occur. Displacement of wildlife may occur adjacent to trail systems and near camping areas during high use season. Uses are managed to prevent displacement of threatened, endangered or sensitive species.

Trails: There is a well developed system of constructed trails. User-created trails exist, however, no new user-created are allowed to form.

Campsites: Where camping is allowed, there is a moderate density of established campsites at popular destinations. The number of established sites accommodates use within acceptable limits to prevent formation of new sites. Many campsites may exhibit a moderate area of vegetation loss and/or bare mineral soil which persists from year to year and is apparent to most visitors.

Social Conditions

Opportunities to experience isolation, solitude and freedom from the sights and sound of man are generally moderate, but may be low at peak season. The visitor has the opportunity to interact with the natural environment with a relatively low degree of challenge or risk. The probability of encountering other parties is relatively high along trails or at established campsites during peak season. Many campsites are within sight and sound of others. The area typically receives a high percentage of day users, with overnight visitors moving through the area.

Management

Management will emphasize protecting and restoring natural ecosystems while accommodating primitive recreational use and enjoyment. The area will be frequently patrolled by Forest Service personnel. On-site management involves actively contacting visitors to check visitor permits, providing information about leave no trace techniques, wilderness rules and regulations and addressing unacceptable impacts. Trails are regularly maintained for moderate to heavy use. Signing consists of wilderness boundary signs, trailhead signs with destinations, trailhead information boards with leave no trace messages and wilderness regulations, and directional signs at major trail junctions. Temporary signs may be used for resource protection only when other less obtrusive measures have been exhausted.

SUMMARY TABLE OF MOKELUMNE WILDERNESS

	Standards (see referenced pages)	Opportunity Class 1	Opportunity Class 2
Resource Conditions		Area is characterized by natural environment predominantly unmodified by human activity and influences.	Area is characterized by natural environment primarily unmodified by human activity and influences.
Air	16, 55, 56	--	--
Watershed	50, 51	--	--
Soils	30, 34, 35, 37-39, 43	Soil displacement and erosion from human activity is not measurably different from naturally occurring areas. Human caused compaction does not prevent natural plant establishment and growth.	Soil displacement and erosion from human activity is not measurably different from naturally occurring areas. Minor localized compaction and disturbance of duff may occur in camping areas.
Riparian Areas	31, 43	--	--
Vegetation	29, 30, 34, 35, 37-40, 48, 49	Vegetation loss at campsites and travel routes is minor, temporary, recovers annually and is not apparent to most visitors.	Minor localized loss of vegetation may occur, most impacts recover annually and are apparent to few visitors.
Fish and Wildlife	22-24	Visitor use may rarely, and only temporarily, displaces wildlife.	Temporary displacement of wildlife may occur with no cumulative negative effect on population viability.
Campsites	36-39	Very few campsites are evident.	There are few established campsites, and campsite density is low.
Trails	17-20, 31	No system trails, travel is cross-country or by unmaintained route.	Few system trails and few user created trails.

-- Desired Condition is consistent across all Opportunity Classes for these resources.

OPPORTUNITY CLASS OBJECTIVES AND DESIRED CONDITIONS

Opportunity Class 3	Opportunity Class 4	Desired Conditions Common to all Classes
Area is characterized by natural environment primarily unmodified by human activity and influences.	Area is characterized by natural environment primarily unmodified by human activity and influences.	Ecosystems unaffected by human manipulation and influences, plants and animals develop and respond to natural forces. (FSM 2320.02)
--	--	Class 1 air quality standards are met. AQRVs are protected while allowing ecological processes (fire) to function.
--	--	Watershed conditions are primarily a result of ecological processes and not human caused impacts and influences.
Soil disturbance and erosion resulting from human activities occurs at a rate similar to natural processes. Localized compaction and disturbance of duff may occur in camping and stock use areas.	Soil disturbance and erosion resulting from human activities occurs at a rate similar to natural processes. Localized compaction and disturbance of duff may occur in camping and stock use areas.	Soil conditions are primarily a result of ecological processes and not human caused impacts and influences.
--	--	Condition of riparian areas is the result of natural ecological processes and not human caused impacts and influences.
Localized moderate loss of vegetation may occur in camping areas and where stock are held.	Localized moderate loss of vegetation may occur in camping areas and where stock are held.	Natural ecological processes, not human caused impacts and influences, determine the composition and distribution of plant communities.
Temporary displacement of wildlife may occur with no cumulative negative effect on population viability.	Displacement of wildlife may occur adjacent to trail systems and near camping areas during high use season.	Natural ecological processes, rather than human actions and influences, determine the presence, abundance, distribution and behavior of wildlife species.
Established campsites are present. Campsite density is low to moderate.	Where camping is allowed, there is a moderate density of established campsites. The number of sites accommodates use within acceptable limits to prevent formation of new sites.	Prevent new campsites from becoming established. Where available encourage visitors to use established acceptable campsites. In low use areas encourage visitors to disperse use to prevent new site formation.
A moderate system of developed trails.	A well developed system of trails.	No new trails will be developed inside the wilderness except as a resource protection measure.

-- Desired Condition is consistent across all Opportunity Classes for these resources.

SUMMARY TABLE OF MOKELUMNE WILDERNESS

	Standards (see referenced pages)	Opportunity Class 1	Opportunity Class 2
Social Conditions			
Solitude	33, 34, 36, 52	Outstanding opportunities for isolation, solitude and freedom from evidence of human activities. Encounters with others are rare.	High probability of experiencing isolation, solitude and freedom from evidence of human activities. Encounters with others are infrequent. Other campsites predominantly out of sight and sound.
Challenge	18	Outstanding opportunities to experience a high degree of challenge, risk and self-reliance.	Good opportunities to experience a high degree of challenge, risk and self-reliance.
Manage-ment			
Facilities, Signs and Trails	17-21	No signs, administrative structures or facilities are present.	Minimal directional signing may be provided at primary system trail junctions. System trails are managed primarily for a "most difficult" experience and light use.
Education/ Patrol	42, 53	Infrequent patrol and monitoring of area, as needed to achieve management objectives. On site contact with visitors is rare.	Regular but infrequent patrol and monitoring of area occurs, as needed to achieve management objectives. Education of LNT information and regulations primarily occurs outside the area.

OPPORTUNITY CLASS OBJECTIVES AND DESIRED CONDITIONS

Opportunity Class 3	Opportunity Class 4	Desired Conditions Common to all Classes
		Protect and perpetuate wilderness character and public values including solitude, physical and mental challenge and stimulation, inspiration and primitive recreation experiences. (FSM 2320.02)
Moderate probability of experiencing isolation and solitude. Moderate probability of encounters on trail or at camping area. Other established campsites may be within sight and sound.	Opportunities to experience isolation, solitude and freedom from sights and sound of humans are generally moderate, but may be low at peak use periods. Most campsites are within sight and sound.	
Moderate degree of challenge, risk and self-reliance.	Visitor has the opportunity to interact with the wilderness environment with a relatively low degree of risk and challenge.	
		Management will be limited to the minimum requirement to administer the area as wilderness.
Directional signs at primary system trail junctions. System trails are managed primarily for a "more difficult" experience and moderate use.	Wilderness portal signs and TH signs with trail destinations may be present. Directional signs at primary system trail junctions. Some system trails may be managed primarily for an "easiest" experience and heavy use.	
Area regularly patrolled, checking wilderness permits, providing LNT information, and ensuring compliance with regulations.	Area frequently patrolled by FS personnel, actively checking visitor permits, providing LNT information and ensuring compliance with regulations.	

OPPORTUNITY CLASS ALLOCATIONS

#	Management Zone	Acres	Opportunity Class	
			Present Condition (1995)	Desired condition
1.	Salt Springs Reservoir	2299	4	3
2.	Mokelumne Peak	6782	2	1
3.	Tanglefoot Canyon	2595	3	3
4.	Shriner Lake	408	3	3
5.	Cole Creek Canyon	4768	2	2
6.	Mosquito Lake	659	2	2
7.	Munson Meadow	2105	3	3
8.	Camp Irene	1152	2	2
9.	Lower Summit City Creek	1112	2	2
10.	Lower Beebe Lake	4227	2	2
11.	Three Lakes Plateau	1833	3	3
12.	Pardoe Lake	413	3	3
13.	Beebe Lake	1352	3	3
14.	Martell Flat	706	3	3
15.	Upper Summit City Creek	4230	3	3
16.	Corrie Lochan	919	2	2
17.	Fourth of July Lake	475	4	3
18.	Emigrant Lake	2416	4	3
19.	Carson Pass	1511	4	4
20.	Forestdale Basin	1358	3	3
21.	Devils Corral	2033	2	2
22.	Granite Lake	1194	3	3
23.	Snow Canyon	1059	2	2
24.	Grouse Lake	834	3	2
25.	Middle North Fork Mokelumne	12461	1	1
26.	Stevenot Camp	2256	2	2
27.	Upper North Fork Mokelumne	943	3	3
28.	Jackson Canyon	2761	2	2
29.	Sandy Meadow	2429	3	3
30.	Wheeler Lake	1096	3	3
31.	Frog Lake	1014	3	2
32.	Underwood Valley	2214	2	2
33.	Lake Valley	883	3	2
34.	Lower North Fork Mokelumne	5270	2	2
35.	Sheep Meadow	2967	3	3
36.	Indian Valley	4898	3	2
37.	Reynolds Peak	1022	3	3
38.	Raymond Peak	921	2	2
39.	Raymond Lake	3058	3	3
40.	Raymond Creek Canyon	2197	2	2
41.	Jeff Davis Peak	5466	3	2
42.	Thornburg Canyon	6184	2	3

MOKELUMNE WILDERNESS MANAGEMENT AREA DIRECTION, STANDARDS AND GUIDELINES

The direction standards and guidelines for the Mokelumne Wilderness are formatted as follows:

I. RESOURCE AREA

A. Management Practice

1. Sub-heading of Management Practice

a. Specific Management Element

General Direction

Standards and Guidelines

- specific standard or guideline

I. ADMINISTRATIVE ACTIVITIES

General Direction

Limit administrative activities to the minimum requirement necessary for the administration of the area as wilderness and the purposes of wilderness. Accomplish management activities with non-motorized equipment and non-mechanical transport of supplies and personnel. The sight, sound and other tangible evidence of motorized equipment and mechanical transport will be excluded within wilderness except where needed and justified. (FSM 2326.02 [2]).

A. Closed OHV, OSV and Mountain Bike Management

Standards and Guidelines

Unless specifically authorized, motorized or mechanical vehicles are prohibited in wilderness, including over snow vehicles (OSV), off highway vehicles (OHV), mountain bikes and hang gliders (36 CFR 261.16). The use of wheelchairs in wilderness is allowed for individuals whose disability requires use of a wheelchair (see Trails - Accessibility). Prevent trespass of motorized or mechanized vehicles (including off-road vehicles, snowmobiles and mountain bikes) into the wilderness. Problems with OSV trespass have occurred at Indian Valley, Blue Lakes, Squaw Ridge and Forestdale Divide. A problem with mountain bike trespass has been identified at the spur trail from the Kirkwood ski lift service road (10N10) to the Emigrant Lake Trail. Work with Kirkwood Ski Area to prevent mountain bike trespass. Where problems exist:

- Post wilderness boundary signs, motorized/mechanical vehicle closure signs and other necessary information at points of trespass and at key access areas (parking lots, trailheads). At specific problem areas install large 4' X 4' sign boards at wilderness boundary specifically warning trespassers of prohibition of this use in wilderness, potential fines and that the area is being patrolled. Signs need to be clearly visible (i.e.: above snow level if needed) at critical points of trespass.
- Conduct winter patrols to enforce regulations on weekends and holidays in known areas of trespass.
- Initiate educational programs and efforts for motorized user groups which access areas adjacent to the wilderness. Emphasize wilderness values and regulations, problems with motorized/mechanized trespass, and work with user groups to develop solutions to problems.
- Where significant trespass problems persist, an environmental analysis will be completed to determine if closing the OHV or OSV routes in the problem area is appropriate.

B. Use of Motorized Equipment or Mechanized Transport

General Direction

Follow the direction in FSM 2326 regarding the use of motorized or mechanized equipment and transport in wilderness. The objectives are to accomplish management activities with non-motorized equipment and non-mechanized transport and to exclude the sight, sound, and other tangible evidence of motorized equipment or mechanized transport except where they are needed and justified. Forest Supervisors can approve the use of motorized equipment or mechanized travel when situation involves an inescapable urgency and temporary need for speed beyond that available by primitive means and for exploration and for development of valid existing mineral rights. Emergency categories include, including fire suppression, health and safety, law enforcement

involving serious crimes or fugitive pursuit, removal of deceased persons and aircraft accident investigations. The Regional Forester can approve motorized or mechanized uses for other administrative purposes.

Standards and Guidelines

- Document each incident where motorized use is approved in the wilderness. Complete a minimum tool analysis prior to seeking Regional Forester approval for non-emergency administrative use of mechanized transport or motorized equipment.

1. Search and Rescue

General Direction

Develop consistent policies and procedures for the wilderness, across the three Forests and in coordination with the county law enforcement agencies and emergency services for the use of aircraft and other motorized equipment in search and rescue, law enforcement and other emergencies in the wilderness.

2. Aircraft Overflights

General Direction

The goal is to limit the impacts of overflights on wilderness visitors and resources. Current FAA recommended flight level over wilderness areas is 2000' above ground level (AGL). Assess and evaluate if low-flying aircraft are adversely impacting the wilderness experience.

Standards and Guidelines

- Wilderness rangers to monitor low overflights. Monitoring should identify type of aircraft (military, private, commercial) so any future actions can be targeted to specific groups.
- If significant problem exists with military aircraft, implement an educational effort with nearby military airbases about the impacts of overflights on wilderness experience.
- Wilderness managers contact FAA to ensure current wilderness boundary is on aeronautical charts.

C. Research

General Direction

Follow the direction in FSM 2324.41 regarding approval of research in the wilderness. Limit research to those activities which are dependent on the wilderness environment.

Standards and Guidelines

- Review research proposals with the wilderness manager, Forest Supervisor and an appropriate research scientist from one of the Forest Service Research Stations (i.e. PSW or Leopold Institute).

D. Water Quantity Management - Snow Survey Sites, Weather Modification

General Direction

Follow the direction in FSM 2323.44a regarding snow survey sites within the wilderness, and the direction in FSM 2323.45 regarding weather modification programs which target the wilderness.
Do not permit long term weather modification programs that produce a repeated or prolonged change in weather directly affecting the wilderness. Do not permit weather modification activities which target the wilderness unless: 1) the proponent can provide scientifically supportable evidence that the activities will not produce permanent, substantial changes in natural conditions; 2.) the proposal includes no feature that will visibly alter or otherwise impact the wilderness; 3.) and the proposal will not reduce the value of the wilderness for recreation, scenic, scientific, educational, conservation or historic use.

II. AIR RESOURCES

A. Air Quality Management

General Direction

Protect air quality related values (AQRV) in the Mokelumne Wilderness, including visibility, while allowing natural forces, such as fire, to assume their natural ecological role. Achieve the air quality goals established in the Clean Air Act and meet Federal and State air quality standards for Class I airsheds. To fulfill the intent of the Clean Air Act, adequate information regarding the condition of air quality related values in the Mokelumne Wilderness is needed. Initial research indicates that visibility, ambient air quality (ozone levels and SO2, NO2 and NOx), lichen plots, and lake water chemistry (pH, ANC and clarity) are key AQRV's to monitor in the Mokelumne.

Standards and Guidelines

- Complete and implement an air resources monitoring schedule and program for the Mokelumne Wilderness (see Appendix B).
- Identify appropriate sensitive receptors of key AQRVs to monitor and determine the existing condition of each sensitive receptor.
- Establish baseline information useful to the regulatory process in predicting the effects of air pollution sources on the identified sensitive receptors.
- Determine if existing air pollution is resulting in man-caused change in the conditions of identified sensitive receptors.
- Review and respond to operational permits for new or modified point sources (Prevention of Significant Deterioration review), which have the potential to threaten the air quality in the Class I airshed.
- Work with air resource agencies if mobile or area-wide sources are causing significant adverse effects on the Class I airshed.

- Manage smoke from wildland fire in or near the Mokelumne Wilderness in a manner that causes the least impact to the natural range of variability AQRVs within wilderness.

III. FACILITIES

A. Trail Management

General Direction

Develop trails outside the wilderness, and make improvements to signing and parking at non-wilderness trailheads, as opportunities become available, to help disperse visitors from high use wilderness areas. Examples of areas where these improvements of new developments might be made include: the Coast to Crest Trail, Red Lake Peak Trail, Meiss Lake Trailhead, Devils Lake, Hidden Lake, Devils Hole Lake, and Summit Meadow Lake. Some trails within the Mokelumne Wilderness may need to be managed for a more challenging experience than currently exists to meet the Opportunity Class objectives. Trail improvements will be constructed to blend into natural landscape as unobtrusively as possible.

Standards and Guidelines

- Do not develop new system trails inside the wilderness except as a resource protection measure, where no other management options are available.
- Materials used in trail maintenance and construction (if ever required) will harmonize with the natural environment. Use native materials unless collection of these materials will create unacceptable impacts. Otherwise use natural materials, unless alternate materials are required to protect resources.
- Relocate trails away from meadow and riparian areas where possible.
- Fords to be used in preference to bridges at stream crossings.
- Provide the minimal tread needed for the designated trail experience level and types of use.
- Naturalize and rehabilitate abandoned trails and old jeep roads in wilderness as feasible and needed.
- No trails will be constructed in the Musser-Jarvis watershed, the water supply for Markleeville.
- Evaluate the user created route to the summit of Round Top to determine future actions to prevent resource damage and minimize the visual impacts of this route.
- Improvement or relocation of the Woods Lake, Carson Pass or Lost Cabin Trailheads might be made to resolve traffic problems or to prevent resource damage. To prevent increased use in the Carson Pass area, no net gain in parking facilities will be allowed in these areas.
- Two areas of gully erosion associated with old roadways at Ladeaux Meadow will be treated to prevent further erosion and sedimentation. Restoration involves: 1.) restoring flow to natural channel and stabilizing gully with native materials; and 2.) and raking a portion of roadway to encourage natural re-vegetation.

- Trail construction and maintenance will follow guidelines in Trails Management Handbook. (FSH 2309.18) Trails will be managed to meet Opportunity Class objectives for each management area. Trails will be designated with specific difficulty levels and management prescriptions, using the following guidelines:

Opportunity Class	Trail Experience/ Condition		
	Most Difficult	More Difficult	Easiest
1. Pristine	No system trails would be constructed or maintained.		
2. Primitive	X	x	--
3. Remote	x	X	x
4. Portal	--	X	x*

X - Trails in these areas would primarily be managed for this experience level and prescription.
x - Some trails in these areas may be managed for this experience level and prescription.
* - FSM 2311.11 Exhibit 2 indicates trails designated as "easy" are generally inappropriate for areas managed as an ROS class of primitive. Managing trails for an "easiest" classification may be appropriate in some cases to meet management objectives for Opportunity Class 4 areas.

Below are the trail management prescriptions. In addition to this scheduled maintenance, routine maintenance, such as cleaning water bars and logging out will be performed annually or as appropriate given the management prescription.

- **Most Difficult** - Maintained for primitive experience. No tread maintenance. Drainage is functional and not likely to fail. Trail sides not brushed, but tread kept passable. Tread may be rough, but provisions are made for resource protection. Expected use level is less than 30 users annually. Condition surveys and maintenance performed every 3-5 years.

- **More Difficult** - Maintained for near primitive experience. Tread maintained for resource protection. Drainage performance is the same as Most Difficult. Limited brushing, slide removal and drainage maintenance. Logs or similar rustic structures may be used at stream crossings. Expected use level is 30-600 users annually. Condition survey and maintenance performed every 2-3 years.

- **Easiest** - Maintained for intermediate level experience. Tread surface is relatively smooth. Tread and backslopes groomed, rocks removed, structures maintained. The drainage specifications are the same as Most Difficult. Trail sides brushed out to Trail Handbook standards. Expected use level is 600 plus users annually. Condition survey and maintenance performed every 1-2 years. Logged out annually.

Number of User-Created Trails

- The number of user-created trails will not exceed the existing number of acceptable user created trails along a given segment of system trail.

The number of user-created trails will serve as an indicator of impacts in high use areas. Monitoring will occur along trails in selected Class 3 and Class 4 areas where current use is at or near social

standards. Unwanted user-created trails will be obliterated or blocked. The number of user-created trails will be counted, mapped and photographed along a given segment of trail. This would establish a baseline of the acceptable number trails. Monitor to determine if user-created trails are increasing.

Range of Actions if Standard is Exceeded. **(Actions in bold may require further analysis)**

- Obliterate or discourage use of unwanted user-created trails.
- Educate visitors to disperse when traveling off-trail and to avoid trampling plants, walking in wet areas and other fragile areas.
- Increase wilderness patrols.
- Prohibit off-trail use in sensitive areas where resource damage is occurring.
- Reduce group size limit in a specific area.
- Restrict off-trail travel where significant resource problems are occurring.
- **Implement a quota system to limit use.**

Changes in Trail Width

- An increase of 50% in trail width of will serve as a yellow flag to analyze the situation and initiate appropriate actions.

Changes in trail width can be caused by heavy recreational use and by grazing operations. Monitoring points would be established in known problem areas to assess the extent of problem.

Range of Actions if Standard is Exceeded. **(Actions in bold may require further analysis)**

- Educate visitor to walk single file along trails.
- Use rocks and other natural barriers to contain use within existing trail tread and prevent increases in tread width.
- Enhance or develop trails in non-wilderness areas, and redirect use.
- Change access conditions, reduce parking and road access signs, move trailhead further from boundary.
- If caused by grazing operations, work with permittee to reduce impacts. Require permittee to contribute to trail maintenance commensurate with damage caused by livestock.
- **Require day use permits to provide greater opportunity to educate visitors.**
- **Reduce group size or the number of animals per group for a specific area.**
- **Implement a quota system to limit use.**

B. Accessibility

General Direction

In accordance with Section 507 of the Americans with Disabilities Act (ADA) of 1990, those persons whose disability requires the use of a wheelchair can use either motorized or non-motorized wheelchairs in the wilderness. Wheelchairs are defined in Section 507 (c) (2) of the ADA as "a device designed solely for use by a mobility-impaired person for locomotion, that is suitable for use in an indoor pedestrian area." For situations and requests where there are questions regarding the appropriateness of the use of a device, use the Wilderness Access Decision Tool to assist in evaluating the situation and reaching a decision.

Access sites outside the wilderness will conform to the ADA Access Guidelines. When provided, information will be in a format available to persons with disabilities. Trails within the wilderness are not required to be designed to accommodate wheelchair use. Improving trails to accommodate wheelchairs may be considered when not in conflict with wilderness values. Wilderness managers analyzed the potential to improve trails

within the Mokelumne Wilderness to specifically accommodate wheelchairs. Better options to provide trails designed specifically for wheelchairs exist in non-wilderness areas. Equestrian outfitter/guide services provide an option to increase wilderness accessibility for disabled visitors.

C. Sign Management

General Direction

Provide sufficient signing at trailhead to convey all important wilderness education and regulation information. Provide minimal signing within wilderness; directional signing at major system trail junctions and signing for resource protection as needed. Survey and sign wilderness boundary as needed and feasible. Conduct inventory of existing wilderness trailhead and trail junction signing to determine signing needs. Below are sign standards to be used at trailheads and along trails.

Standards and Guidelines

- All signing within the wilderness to be constructed of unfinished natural wood. Letters will be routed and left unpainted.

1. Wilderness Boundary Survey and Signing

Prioritize boundary survey and signing needs. Identify areas where motorized or mechanical vehicle trespass has been a problem, or other threats to wilderness necessitate survey and signing of wilderness boundary. Coordinate with engineering staff on each forest to accomplish survey and signing.

2. Trailhead Sign Boards

- Purpose: Identify the trailhead and provide board space for a map, forest orders, educational material and wilderness regulations. Could also be used for trailhead self-registration boxes.
- Location: This sign is placed at every trailhead with trails leading into the wilderness.
- Design Recommendations: A 3'X 3' sign board (plywood or boards) attached to two 4"X4" or 6"X6" posts for lightly used trailheads. A 4' X 8' sign board for heavily used trailheads to better convey "leave no trace" information and regulations. The larger sign board is recommended for the following trailheads: Carson Pass, Woods Lake, Lost Cabin, Emigrant Lake, Tanglefoot, Salt Springs, Woodchuck Basin, Kinney Meadows. Signs may either be a bulletin board format as indicated in Appendix C, or a well designed sign panel incorporating a map and other information to fulfill the Purpose described above.

3. Wilderness Portal Sign

- Purpose: Indicates entrance into wilderness area along main travel routes.
- Location: At or near wilderness boundary on major system trail or waterway.
- Specifications: Five-sided routed wood wilderness signs, as in FSH 7109.11 (5-46,47). Two sizes: 5' horizontal sign or 3' vertical sign. (See Appendix C)

Recommend large horizontal portal sign for the eastern end of Salt Springs Reservoir to inform visitors arriving in boats that they are entering the wilderness. Recommend replacing portal signs at the following trails: Lost Cabin, Woods Lake, Beebe Lake, and elsewhere as needed.

4. Trail Name and Destination Sign

- Purpose: Identifies trail name and major destinations (mileage and directional arrows optional).
- Location: Along trails leading into wilderness, within 1/4 mile of trailhead.
- Design Recommendations: Same as Standard Trail Directional Signs found in FSH 7109.11 (5-41). Sign board is natural wood 1", size variable depending on number and length of lines. Letters routed 1" high. Trail name at top underlined. Sign mounted on 4"X4" or 6"X6"post the top of which is approx. 3 1/2' above ground. National Trail symbol can be mounted on post below sign where applicable. (See Appendix C)

5. Interior Trail Junction Sign

- Purpose: Provides destination direction at major system trail junctions within wilderness.
- Location: At major system trail junctions.
- Design Recommendations: Sign consists of a single unfinished wood 4"X4" or 6"X6" post, the top of which is chamfered. Top of post is approximately 3 1/2' above ground. Trail destination is routed in 1" (unpainted) letters vertically on post with vertically-oriented arrow. Destinations are routed on as many sides as needed. Post is oriented so visitor reads correct destination as she/he faces trail leading to this destination. National Trail markers can be placed on post below lettering as needed. (See Appendix C)

IV. FIRE MANAGEMENT

General Direction

The management of fire for the Mokelumne Wilderness will be outlined in specific Forest Fire Management Plans prepared by each Forest. The Fire Management Plans will develop prescriptions for where and when lightning fires will be allowed to burn in the Mokelumne Wilderness, address the need for planned ignitions to remove unnaturally high accumulations of fuel, and identify areas that need protection from fire. When fire suppression strategies are employed, fires will be controlled with a minimum impact to wilderness resources.

Standards and Guidelines

- The objectives for Mokelumne Wilderness in the Fire Management Plans are:
  - To allow lightning fires to assume, as nearly as possible, their natural ecological role in wilderness.
  - To reduce, to an acceptable level, the risks and consequences of wildfire within wilderness or escaping from wilderness. (FSM 2324.2).
  - To provide a coordinated Wilderness Fire Management Strategy for all three Forests that manage the Mokelumne Wilderness.
- When the Fire Management Plans are completed, monitor fire regime (including frequency, intensity and acres) and compare to historic range of variability.
- Use planned ignitions only to remove any unnaturally high accumulations of fuel.
- Use the appropriate management response, considering least cost, to meet resource objectives.

- Minimum impact suppression tactics and guidelines (such as the MIST guidelines developed in Region 1 and the Light hand Tactics developed in Region 6) will be developed and used in management actions for wilderness fires. Appropriate fire personnel will be trained in these fire management concepts and strategies.
- The responsible line officer will inform wilderness managers of all wilderness fires and appoint a wilderness resource advisor for all Class C fires, or larger (>10 acres), in the wilderness. This advisor will be responsible for ensuring fire management activities have minimum impact on resources and are compatible with wilderness management objectives.
- The emergency use of motorized equipment such as chain saws, portable pumps, helicopters and aircraft (including the use of fire retardant) will be made by the Forest Supervisor or District Ranger on a case by case basis.

V. FISH AND WILDLIFE

General Direction

Natural ecological processes, rather than human actions and influences, determine the presence, abundance, distribution and behavior of wildlife species. The vertical and horizontal diversity of habitats and habitat requirements of indigenous species (including cover, breeding sites, migration routes, and food sources) are protected or restored from human caused impacts and influences. Viable populations of all indigenous species are protected, and management practices are developed and implemented to ensure sensitive species do not become threatened or endangered because of Forest Service actions (FSM 2670).

Standards and Guidelines

- Habitat alteration and disruption of wildlife due to recreation use is limited to the extent described in the Opportunity Class objectives.
- At capable sites, the structure of grass/forb habitat in meadows is sufficient to maintain populations of both predator and prey, such as great gray owl and their prey.
- Habitat of sensitive species, such as mountain yellow-legged frog and Yosemite toad (including breeding sites and movement corridors) is protected or restored from human caused impacts, including impacts from livestock grazing and fish stocking.
- Forests will assess achievement of these desired conditions and objectives by determining presence, condition and trend of habitat, and assessments of animal populations.

A. Fish and Wildlife Habitat Coordination

General Direction

Direction for the management of fish and wildlife in Wilderness is provided in an agreement, "Policies and Guidelines for Fish and Wildlife Management in National Forest and Bureau of Land Management Wilderness" (in FSH 2309.19). Further direction is provided in a Memorandum of Understanding (MOU) between Region 5 of the Forest Service and the California Department of Fish and Game (CDFG). The IAFWA agreement states that different applications of the IAFWA guidelines will be spelled out in National Forest Plans or wilderness management plans.

Standards and Guidelines

Finalize, document and implement the decisions and agreements for fisheries management, including specific fish stocking decisions and future management of lake level dams, in the Mokelumne Wilderness reached between Region 2 of the California Department of Fish and Game and the Eldorado, Stanislaus and Toiyabe National Forests.

B. Fisheries Habitat Improvement - Non-structural

General Direction

Fish-stocking is permitted only on waters previously stocked, to maintain an indigenous species (in this case, species of fish traditionally stocked prior to designation may be considered indigenous) which is likely to survive and has been depleted by human influences, or to aid in the recovery of an indigenous threatened or endangered species (FSH 2309.19). Management of wilderness fisheries will emphasize quality and naturalness (FSM 2323.34).

C. Fisheries Habitat Improvements - Structural

General Direction

Existing streamflow maintenance and lake level enhancement dams will be managed according to FSM 2323.35b and the agreement developed with Region 2 of the California Department of Fish And Game regarding the management of fisheries in the Mokelumne Wilderness. Lake level dams which no longer meet CDFG and Forest Service management objectives will be removed from the CDFG special use permit and allowed to disintegrate over time. A decision to repair a dam or allow a dam to disintegrate may require further site-specific analysis.

Standards and Guidelines

- Safety hazards, such as sharp pieces of steel or concrete, would be treated or removed.
- Those dams which are to be retained would continue to be operated, restored, and maintained by CDFG under the existing special use permit.
- Any repair work would be completed by non-motorized means, and using native rock where possible.

D. Recovery Species Administration and Management

General Direction

Populations of federally listed threatened and endangered (T&E) species and Forest Service sensitive species will be protected and where needed, restored. Priorities for inventory of wildlife species in the wilderness will be based on known or potential T&E or sensitive species habitat and where wilderness uses are a potential conflict with these resources.

- Campsites and trails will be relocated as required to protect T&E and sensitive species.

Through formal consultation with the U.S. Fish and Wildlife Service (USFWS), specific range standards were adopted by the Stanislaus and Toiyabe National Forests for areas which have Lahontan cutthroat trout (LCT). These standards were developed in a multi-Forest programmatic biological assessment, and accepted by USFWS with minor changes in a biological opinion on July, 15, 1994 (USFWS 1994a). These standards would be applicable to those streams in the Mokelumne Wilderness which have been identified as existing or potential recovery habitat for Lahontan cutthroat trout. Raymond Meadows Creek was identified as existing LCT habitat, and Jeff Davis Creek and Forestdale Creek were identified as potential recovery habitat in the recovery plan developed by USFWS for this species.

VI. HERITAGE RESOURCES

A. Heritage Resource Inventory and Evaluation

General Direction

Heritage resources would be identified, evaluated and protected as required by federal laws and regulations, and managed in a manner compatible with wilderness character and Opportunity Class objectives. To address the effects of wilderness use on heritage resources, these resources will be inventoried, any damage assessed and mitigation measures developed according to the following schedule. Inventories will start with the highest use areas in each forest and continue until all use areas are surveyed.

Standards and Guidelines

Forest or District Archaeologist will survey areas prior to trail reconstruction, campsite rehabilitation or other ground disturbing activities occur.

1. Schedule to Address Effects to Heritage Resources

FOREST	Priority	Complete inventory, develop and implement treatment plans for sites with effects.
Eldorado NF	1	Carson Pass area, including: Emigrant, Round Top, Frog and Winnemucca Lakes.
	2	Plateau area, including: Black Rock, Cole Creek, Long and Beebe Lakes.
	2	Granite Lake to Grouse Lake area.
	2	Shriner Lake to Moraine Lake area.
	3	Other high use or known sensitive areas, or at least 5 miles of trails per year until complete.
Stanislaus NF	1	Blue Hole area.
	2	Wheeler Lake area.
	3	Other high use or known sensitive areas, or at least 5 miles of trails per year until complete.
Toiyabe NF	1	Raymond Lake area.
	2	Jeff Davis Creek area.
	2	Raymond Meadows area.
	3	Other high use or known sensitive areas and at least 5 miles of trails per year until complete.

B. Heritage Resource Management

General Direction

Heritage resources will be managed in a manner compatible with wilderness management objectives.

1. Monte Wolfe Cabin

Standards and Guidelines

- Complete evaluation to determine if the Monte Wolfe Cabin is eligible for the National Register of Historic Places, including developments in the surrounding area such as the outhouse. If the cabin is eligible, and restoration or maintenance of the cabin is determined essential to heritage resource management in the wilderness, seek approval will be from the Regional Forester to maintain the structure (as required by FSM 2323.82). Specific long term management of the cabin will be determined when Regional Forester makes decision.
    - If this approval is granted, the Eldorado NF will prepare a brief management plan for the cabin and agreement with the Monte Wolfe Foundation regarding future management of the cabin.

    - If the cabin is not eligible for the National Register, or approval to maintain the structure is not granted by the Regional Forester, the cabin will be allowed to deteriorate. Documentation and mitigation required by section 106 of the National Historic Preservation Act will be completed.
- Unauthorized locks, signs on the cabin, and private belongings in the cabin will be removed. Occupancy of the cabin is prohibited until future management of the cabin is determined. The resource will be protected as required by NHPA until a decision on future management of the cabin is determined.
- Manage the cabin and site to prevent degradation of the primitive wilderness character and Opportunity Class 1 objectives of the Middle Mokelumne Canyon management area.
- Monitor the cabin yearly.

C. Heritage Resource Interpretation

Standards and Guidelines

- All interpretation of heritage resources will be done outside of the wilderness (FSM 2323.83).

VII. LANDS

A. Land Adjustment

General Direction

Acquire private lands within the wilderness, as feasible, to protect wilderness values, forestall non-compatible land uses, and reduce conflicts.

1. Mokelumne Wilderness Inholdings

LOCATION	PARCEL	OWNERSHIP	ACRES	ACQUISITION PRIORITY RANKING*
Toiyabe NF				
1. Sec. 7, T9N, R20E	Raymond Cyn	Chandler (trustee)	40	32
2. Sec. 7, T9N, R20E	Raymond Cyn	Orloff	43	28
3. Sec. 7, T9N, R20E	Raymond Cyn	York	37	28
4. Sec. 18, T9N, R20E	Raymond Cyn	Hawley	20	28
5. Sec. 9, T9N, R19E	Jeff Davis Crk	Dressler Co.	160	28
6. Sec. 26, T10N, R18E	Carson Pass	State of CA	40	27
7. Sec. 35, T10N, R18E	Forestdale Crk	State of CA	40	27
Stanislaus NF				
8. Sec. 28&29, T8N, R16E	Round Valley	Garthawaite	10	35
9. Sec. 8, T9N, R20E	mining claim		9	32
Eldorado NF				
10. Sec. 5&8, T8N, R19E	Deer Valley	PG&E	481	39
11. Sec. 19&30, T10N, R18E	Caples Lake	PG&E	120	35
12. Sec. 2, T9N, R18E	Summit City Crk	PG&E	160	35
13. Sec. 3&10, T9N, R18E	Devils Corral	PG&E	320	34
14. Sec. 13&24, T8N, R16E	Cole Creek	Southern Pacific	400	32
15. Sec. 36, T8N, R16E	Tanglefoot	State of CA	40	31
16. Sec. 36, T8N, R16E	Tanglefoot	State of CA	120	27
Total			2040	

*These rankings were the result of a cooperative project between the USDA-Forest Service, The Wilderness Land Trust and Colorado State University. The rankings incorporated an assessment of development potential, ecological importance and social impacts. There is a cabin located on the Underwood Valley parcel on the Calaveras District. The owner has an easement allowing motorized access. Another cabin is located on one of the parcels along Raymond Canyon Creek on the Carson District. This cabin is accessed by trail, and is rented as a wilderness retreat.

B. Property Boundary Location and Marking

General Direction

Prioritize wilderness boundary survey and signing needs. Identify areas where motorized or mechanical vehicle trespass has been a problem, coordinate with engineering staff on each Forest to accomplish survey and signing.

VIII. MINERALS

A. Minerals Management - Locatables and Leasables

General Direction

The Forest Service Manual (FSM 2800 and 2320) and the Code of Federal Regulations (CFR 228 and 293) provide direction for the management of mineral activities in wilderness where there are valid existing rights.

Standards and Guidelines

- Manage any mineral development activity, with valid existing right, to minimize impact on wilderness resources and preserve wilderness character to the extent possible.
- Forest Service mineral examiner to verify valid existing rights prior to authorizing any significant surface disturbing mineral access or development activity.
- Mineral information-gathering activity in designated wilderness, including prospecting, is only for scientific and educational purposes. Mineral information-gathering activity must be authorized in writing by authorized officer. Terms and conditions of authorization must specify purpose of proposed activity.
- The gathering of mineral information, including prospecting, in a wilderness area is not permitted for recreational activities, for commercial exploration or for non-commercial purposes for personal gain, whether by hand tools, panning, sluicing or other methods. (R5 Supplement 2300-94-1).
- Periodically review wilderness mining claims to ensure annual assessments and holding fees are current. For claims which are out of date, notify the BLM to review case file and issue abandoned and void notices as appropriate.

IX. RANGE

A. Range Planning and Analysis

General Direction

Forage utilization levels and range carrying capacity will be determined in Allotment Management Plans (AMP). Base proper forage utilization levels on physical, biological and social objectives for wilderness management area. (FSH 2309.19, 22.22)

Standards and Guidelines

- Where conflicts between grazing operations and recreational use persist, or where cattle consistently wander outside allotment boundaries, Allotment Management Plans will analyze if there are opportunities to exclude livestock from popular wilderness camping areas or problem areas with minimal loss of forage to the permittee. Analysis will include considering changes in allotment boundaries to make use of natural barriers, the forage value, recreational value of area of conflict and desired conditions and objectives for resources.
- Vacant allotments will remain vacant until site-specific environmental analysis determines the future management of these allotments. This analysis will determine if grazing can occur in the area and still meet the desired conditions, and protect the recreation and other resource values of the area. A "No grazing" alternative will be included as part of this analysis.
- No grazing is permitted in the Musser-Jarvis watershed, which is the water supply for Markleeville.

B. Range Management

General Direction

Grazing will be managed in a manner that utilizes forage while meeting Forest Plan direction and management area desired conditions and objectives for all wilderness resources including Riparian Areas, Fish and Wildlife, Vegetation, Watershed/Water Quality, and Soils. Livestock management will be accomplished through Grazing Permits and Allotment Management Plans (AMP).

1. Desired Conditions

The desired condition for the range resource is to maintain wilderness ecosystems so that plants and animals respond to natural forces and are unaffected by human influences. The goal is to maintain or restore vegetation within the reference range of variability for the potential natural vegetation in all range types, maintain or restore ecosystem function, biological diversity and the biotic integrity of aquatic and terrestrial ecosystems

Standards and Guidelines

- Apply Standards and Guidelines from Forest Plans and Amendments to the Forest Plans to maintain or achieve desired conditions.
- Apply the specific range standards and guidelines developed through formal consultation with the U.S. Fish and Wildlife Service (USFWS) and adopted by the Stanislaus and Toiyabe National Forests for areas which have Lahontan cutthroat trout (see Fish and Wildlife direction).

a. Range ecological condition and trend

- Implement grazing Standards and Guidelines and Management Practices so as to achieve the following conditions:

Opportunity Class	Range Ecological Condition	Trend
1. Pristine	Excellent to good	Stable to upward
2. Primitive	Excellent to good	Stable to upward
3. Remote	Good	Stable to upward
4. Portal	Good	Stable to upward

Examples of Range of Actions to be Taken if Standard is Exceeded. **(Actions will be taken through the administration of the grazing permit and allotment management processes.)**

- Work with permittees to implement or change management practices which will help improve condition, including herding and salting.
- Take permit action, including changing the season of use or reducing the number of animals.
- Rest area until resources have recovered and standards are met.

2. Minimize conflicts with recreational use

General Direction

Administer grazing allotments to minimize conflicts between recreational users and grazing operations. Seek to resolve conflicts and problems in Annual Operating Instructions, AMP revisions and visitor education.

Standards and Guidelines

- Educate wilderness visitors regarding the law and policy governing grazing management in wilderness, and where and when visitors may expect to see livestock. (See Interpretive Services)
- Use salting and herding management practices to minimize conflicts with recreational use in popular camping areas and to prevent cattle from wandering to lakes outside allotment boundaries. Problems have been identified at identified at Black Rock Lake, Cole Creek Lakes and Long Lake.

3. Use of Cowbells

Standards and Guidelines

- The use of cowbells will be permitted in those allotments where this management practice was established at the time of this amendment (1998).
- In allotments which are currently vacant, if filled, the use of cowbells will permitted only if this management practice was used by the previous permittee.
- Range and wilderness managers will work with permittees through Annual Operating Instructions and Allotment Management Plans to reduce the noise impacts of cowbells on recreation users.

4. Livestock Impacts to System Trails

Standards and Guidelines

- Where damage to system trails is caused by permitted livestock, the permittee will provide trail maintenance and repair commensurate with impacts caused by livestock.
- Problems will be resolved, and appropriate maintenance determined in cooperation with the permittee in the Annual Operating Instructions. Specific trails of concern are trail 19E53 (Sandy Meadow) and trail 18E02 (Woodchuck Basin) on the Stanislaus Meadow Allotment, and trail 17E27 (Cole Creek Lakes) on the Pardoe Allotment.

C. Range Improvements - Structural

General Direction

Construction of additional fencing or other structural range improvements will be considered only when necessary for resource protection and where other non-structural management practices are not effective or feasible.

Standards and Guidelines

- Fencing materials which harmonize with the environment will be used. Fence installation or repair will normally be accomplished using non-motorized equipment and access. Exceptions may be made except where practical alternatives to motorized use do not exist and such use will not have a significant adverse impact on the natural environment.
- No additional permanent fencing or other range improvement structures will be permitted in Opportunity Class 1 and 2 areas. Only temporary fencing to protect T&E species will be allowed in these areas.

1. Ladeaux Meadow

- In order to protect the habitat and viability of the mountain yellow-legged frog population in the stream at Ladeaux Meadow, a fence will be installed around the perimeter of the meadow, just within the trees surrounding the meadow. The goal of the alignment is to minimize the impact of the fence on visual resources and to make the fence as unobtrusive as possible to recreation visitors.
- Educational information will be included in signing at the Beebe Lake Trailhead informing visitors about the purpose of the fence.
- Fence will remain until monitoring determines that the desired conditions in the meadow have been achieved and that grazing can occur without adversely affecting the frog population, or until the analysis for the Allotment Management Plan for this allotment determines another strategy.

X. RECREATION

A. Recreation Opportunity Spectrum - Primitive

General Direction

Wilderness, including areas designated as Opportunity Class 1, 2, and 3 are to be managed to meet ROS Class objectives for Primitive. Opportunity Class 4 areas are also to be primarily managed to meet ROS objective of Primitive. The area is characterized by a natural environment predominantly unmodified by human activity.

B. Recreation Opportunity Spectrum - Semi-Primitive Non-motorized

General Direction

Some aspects of Opportunity Class 4 areas may be managed to meet ROS Class objective of Semi-Primitive Non-motorized (SPNM). The area is characterized by a predominantly natural or natural appearing environment. The management of trails and social encounters may be managed to meet objectives for SPNM, and some evidence of other visitors and visitor use may be apparent.

C. Recreation Management - Wilderness

General Direction

The Mokelumne Wilderness is to be managed for public use, enjoyment and understanding in a way which maintains the wilderness character and prevents degradation of wilderness resources and values. Outstanding opportunities for solitude, physical and mental challenge, and primitive recreation are to be maintained. Recreational use will be managed to meet the Opportunity Class objectives, and to prevent the associated standards from being exceeded. Recreation use not dependent on wilderness will be directed to recreation opportunities outside the wilderness. Management will emphasize education, (both on-site and off-site) including contacting repeat user groups, requiring overnight permits to be issued from an office to increase visitor education, and increasing wilderness patrol. Generally, indirect controls are preferable to direct actions to protect the wilderness resources. Direct measures such as restricting certain types of activities and limits on use will be implemented as needed to meet management objectives.

Standards and Guidelines

1. Permits

- Wilderness permits for overnight use, currently required from April 1 through November 30, will be required year round. This change will occur with the re-issuance of the Region 5 order requiring overnight visitors to obtain visitor permits for the Mokelumne and other wilderness areas.
- Forests will jointly pursue networked, computer issuance of overnight permits to reduce cost of administering permits and facilitate availability of information needed for effective management.
- Collect information on day use through a voluntary self-registration system, trail counters or other method. Locations where information is currently needed include: Carson Pass, Lost Cabin, Woods Lake, Caples Lake/Emigrant Lake, Upper North Fork/Hermit Valley, Ebbetts Pass.

2. Specific Area Management

a. Carson Pass Management Area (Frog, Winnemucca Lakes and Round Top Lakes)

- Camping in the will be restricted to a limited number of designated campsites or a designated camping area (6-8 campsites total) at Round Top and Winnemucca Lakes. A quota for the overnight permits in this area will be implemented based on the number of designated sites. The quota period would be from Memorial Day through Labor Day.
- The stay limit for these campsites is two nights.
- No camping will be permitted within 1/4 mile of Frog Lake (ENF).
- To reduce impacts of day use in the Carson Pass area, adjust parking areas as needed to control use.

b. Fourth of July Lake

A quota for overnight permits will be established to prevent further unacceptable resource conditions from developing and to meet desired social conditions by limiting use at peak season at this Fourth of July Lake. There are 6-8 acceptable established campsites in the lake basin which fall within the campsite density standard.

- Only 6 groups/permits will be allowed at 4th of July Lake at one time.
- The stay limit for this area is 3 nights.
- The quota period would be from Memorial Day through Labor Day.

c. Emigrant Lake

- To protect and promote the restoration of the shoreline of Emigrant Lake, camping is prohibited within 300 feet of Emigrant Lake. Camping on snow is excepted from this restriction. Direct visitors to utilize durable sites in forested areas just north of the lake.

d. Salt Springs Management Area

- Coordinate with PG&E to ensure recreational boat use on Salt Spring Reservoir does not degrade wilderness values. Problems with campsite structures, garbage and human waste have occurred at the east end of the reservoir.

3. Use Regulations

Standards and Guidelines

- Group size will be limited to 12 people per group for day use and 8 people per group for overnight use. Exceptions may be made for groups passing through the Mokelumne from other wilderness areas on the Pacific Crest Trail on a case by case basis. Exceptions will not exceed 15 people per group. Document the exceptions and monitor the number of variances granted each year.
- Camping will be prohibited within 100' of streams, trails and the high water mark of lakes.
- Disposing of human waste or wash water will be prohibited within 200' of lakes, streams, trails and campsites. Instruct visitors to bury human waste in shallow hole, 6-8 inches deep.

- Encourage recreation users to clean all gear (hiking boots, clothing, tack, trailers) and animals (dogs and recreational stock) of weeds, burrs and seeds to help prevent introduction of exotic species, especially noxious weeds.

4. Recreational Stock

Standards and Guidelines

a. Area Restrictions

Within the Mokelumne Canyon and below Telephone Gulch in Lower Summit City Canyon overnight recreational stock use is allowed only in the following areas (see map):

- Munson Meadow/Camp Irene/Lake Valley corridor.
- In lower Summit City Canyon from Telephone Gulch to the end of the maintained system trail (where the trail crosses Summit City Creek)
- From the Hermit Valley Trailhead to approximately 1/2 mile below Deer Creek.

Camping with stock in these areas is subject to the following limits:

- The length of stay is limited to two nights.
- No more than four animals per group.
- Supplemental certified weed free feed or processed feed, such as alfalfa pellets or crimped oats must be carried and used.
- Existing system trails in this area are to be managed for primitive conditions, maintenance is to be conducted for resource protection. Non-system trails and primitive travel routes will not be upgraded into maintained system trails. Information would be dispersed to users through trailhead signing, wilderness maps and other means that the trails in the canyon are maintained in a primitive and challenging condition and are not recommended for stock use.

The following additional limits apply to the Munson Meadow/Camp Irene/Lake Valley corridor:

- Camping with stock is only permitted at Camp Irene.
- Only one stock group permitted at Camp Irene at one time. A quota and reservation system for overnight stock use at Camp Irene will be implemented. If the total number of stock groups camping at Camp Irene exceeds 10 in one season, the Districts will assess conditions to insure desired conditions and management objectives for the area are being achieved.

Llamas and pack goats will be excepted from this area restriction due to their smaller size, feed requirements and padded feet. Llamas and pack goats will be permitted to use the entire Mokelumne Canyon within the group size limits and other appropriate regulations, including the requirement to carry supplemental certified weed free or processed feed in the Canyon.

b. Regulations

The following regulations cover all recreational stock including horses, mules, llamas and pack goats

- Holding or confining stock within 200' of lakes, streams, or other water sources and within 100' prohibited.
- Confine stock away from camping areas.
- Tying stock directly to trees except for loading, unloading or short rest breaks while traveling is prohibited. When confining stock for longer periods of time direct visitors to use high line (hitch line), temporary corral, portable electric fence or other method.
- Scatter manure when breaking camp or leaving rest area.
- The number of animals per group is limited to 12 animals per group for both day use and overnight use. Exceptions may be made for groups passing through the Mokelumne from other wilderness areas on the Pacific Crest Trail on a case by case basis. Exceptions will not exceed 25 animals per group. Document the exceptions, monitor the number of variances granted each year and any resource impacts from these exceptions.
- No grazing will be permitted in the Round Top Special Interest Area to protect the botanical values for which this area was designated.
- Stock will be required to stay on trails in the Round Top SIA to prevent resource damage.
- All feed brought into the wilderness must be certified weed free, or processed feed, such as alfalfa pellets or crimped oats.
- Encourage recreational stock users to feed animals weed free feed two days prior to a trip into the wilderness.

5. Opportunities for Solitude

Standards and Guidelines

The following indicators will be monitored to measure impacts on opportunities for solitude.

a. Number of groups or people encountered per day while traveling.

Opportunity Class	Max. # groups encountered	Max. # people encountered
1. Pristine	1	--
2. Primitive	3	--
3. Remote	8	--
4. Portal	--	150

Groups are a good indicator in lightly used areas where people tend to travel in cohesive units. In portal areas, groups of day users often spread out, making differentiation of groups difficult. Counting individuals is a more accurate measure in these areas. The Opportunity Class 4 standard was set according to what was judged to be reasonably achievable at Carson Pass. The typical visit in this area is less than a full day (2-3 hours). The goal is to not exceed an encounter level of 50 people in a typical 2-3 hour visit. If the standard is exceeded more than 20% of the time, analysis and actions will be taken to prevent the standard from being exceeded. Actions to achieve this goal will be phased in over several years.

Range of Actions if Standard is Exceeded. **(Actions in bold may require further analysis)**

- Redirect visitors to non-wilderness trails.
- Improve signing, parking and promotion of nearby non-wilderness trails.
- Develop trails outside the wilderness.
- Reduce trailhead access, parking and road signs.
- Lower trail maintenance levels to discourage use.
- **Review group size limits and consider lower limits.**
- **Require day use permits in areas where this use is significant.**
- **Implement quota system for summer use in affected areas.**

b. Number of other occupied campsites within continuous sight or sound of a campsite.

Opportunity Class	Number of occupied campsites within continuous sight or sound
1. Pristine	0
2. Primitive	1
3. Remote	3
4. Portal	4

In areas where the number of available campsites far exceed the above standard (if all were occupied) could be closed and as needed rehabilitated. However, before eliminating campsites, the situation would be analyzed to determine if this action would cause the formation of new campsites.

Range of Actions if Standard is Exceeded. **(Actions in bold may require further analysis)**

- Information and education to visitors on using screened sites, away from lake and stream shorelines and other visitors.
- Emphasize visitors respecting others by keeping noise levels low in the evening and morning.
- Redirect visitors to trails and destinations outside wilderness.
- Limit the number of established campsites at popular destinations. Undesirable or unacceptable established campsites should be closed: those too close to water, trails or other campsites; those in riparian areas or on other fragile ground; and those excessively impacted sites where erosion is a problem. Before eliminating campsites, consider if this action will cause the formation of new sites. An acceptable number of suitable campsites for each destination will be established based on the campsite mapping and inventory information, and the above standards.
- Reduce access, parking and road signs at trailheads leading into areas where standard is exceeded.
- **Review group size limits and consider lower limits.**
- **Implement quota system for summer use in areas where standard is exceeded.**

6. Campsite Management

General Direction

Emphasize "leave no trace" wilderness camping concepts. In high use areas, primarily Opportunity Class 3 and 4, visitors will be encouraged to use established campsites on durable ground. In areas where no well established campsites exist, low use areas such as Opportunity Class 1 and 2, encourage visitors disperse their use to prevent new campsites from becoming established.

Undesirable or unacceptable established campsites will be closed, including those too close to water, trails (obtrusive to system trails) or other campsites, those in riparian areas or on other fragile ground, and those

excessively impacted sites where erosion is a problem. Campsites to be closed will be rehabilitated if, natural recovery is unlikely within 10 years and rehabilitation efforts are feasible and likely to be successful. Inform visitors of suitable alternate sites.

A general goal for Opportunity Class 3 and 4 areas is to prevent the total disturbed area at campsites from exceeding 1000 sq. feet. As feasible, sites larger than this will be naturalized, reduced and rehabilitated.

Standards and Guidelines

a. Campsite Condition

All campsites will be inventoried and rated as one of the following modified Frissel condition classes:

A. Ground vegetation is flattened or trampled, but will likely recover. Minor disturbance of organic litter. Minimal physical change except for possibly a simple rock fire ring. Total disturbed area is generally less than 100 sq. ft.
B. Some ground vegetation is worn away, particularly around the fire ring or center of activity. Some of the organic litter has been disturbed, but duff and litter are still present on most of site. The typical total disturbed area is 100-500 sq. ft.
C. Ground vegetation has been lost on most of site. Most of the organic litter has been disturbed. Bare mineral soil may be exposed on some of the site (less than 25%). Minor tree root exposure may be present. A typical disturbed area is 500-2000 sq. ft.
D. Bare mineral soil is widespread. All ground vegetation is absent. Two or more, large (i.e. 2000+ sq. ft.), completely barren campsites may have merged. Many tree roots may be exposed on the surface. Soil erosion may be evident.

Standards for Campsite Condition Classes

Opportunity Class	Campsite Condition Class Ratings			
	A	B	C	D
1. Pristine	*This condition class is the goal for Class 1 areas.*	less than 10% total # of sites in a mgmt. area.	--	--
2. Primitive	ok	*This condition class is the goal for Class 2 areas.*	less than 10% total # of sites for a destination.	--
3. Remote	ok	ok	less than 50% total # of sites for a destination.	--
4. Portal	ok	ok	ok	--

--Campsites in this class condition would be prevented from forming. Where they already exist, further degradation would be prevented. Sites would be restored if needed and feasible.

For campsites in all areas the following information would be collected: campsites mapped; named or legal location; distance from water, trail and other sites; visibility/screening; and the site would be rated using the above modified Frissel campsite condition classification system. This quick rating of campsites would be repeated every 3-5 years to determine any changes.

Range of Actions if Standard is Exceeded. **(Actions in bold may require further analysis)**

- Increase leave no trace visitor education and signing.
- Redirect visitors to opportunities outside the wilderness.
- Enhance or develop trails in non-wilderness areas.
- Increase patrol of the area and direct visitor contact and education.
- Close selected campsites.
- Reduce access, parking and road signs to the area.
- Consider lower group size limits or length of stay limit in the specific area.
- Review specific uses of the area (camping, campfires, stock use) and evaluate need for restriction of a specific use. Implement restrictions as appropriate.
- **Designate campsites.**
- **Implement quota system to limit use.**

b. Change in Campsite Condition

- A decline in an individual campsite condition of 25%, or a decline in the sum of the campsite condition for a destination or management area of 25%, as measured by the campsite impact index, will serve as a yellow flag to analyze situation and initiate actions where appropriate.

A detailed campsite inventory will be conducted in areas where existing heavy use is likely to create unacceptable (class D) campsite conditions, or in lightly used areas where increasing use threatens desired conditions and management objectives for the area. Parameters include total campsite area, area of barren core, vegetation loss and bare mineral soil increase. These elements will be rated and weighted to arrive at a score, the campsite impact index, for each campsite and a total score for destinations or management areas.

Range of Actions if Standard is Exceeded. **(Actions in bold may require further analysis)**

- Increase leave no trace visitor education and signing.
- Redirect visitors to opportunities outside the wilderness.
- Increase patrol of the area and direct visitor contact and education.
- Reduce access, parking and road signs to the area.
- Consider lower group size limits or length of stay limit in the specific area.
- Review specific uses in the area (camping, stock use, campfires) and evaluate need for restriction on a specific use. Implement restrictions as appropriate.
- **Designate campsites.**
- **Implement a quota system to limit use.**

c. Total Number of Campsites

Many more established campsites exist throughout the Wilderness than are needed to meet current levels of recreation use. The goal for campsite management in the wilderness is to prevent new campsites from becoming established. Encourage visitors to use established campsites or practice "leave not trace" techniques which prevent campsite formation. Once unacceptable campsites (see the

general direction for campsite management) have been closed, the total number of acceptable campsites will be established for each destination and management area based on the campsite mapping and inventory information and the standards for campsite condition classes, and the number of occupied campsites within sight and sound.

7. Campfire Management

Standards and Guidelines

- Building, using or maintaining a campfire above 8000' in the Mokelumne Wilderness, and in the entire Carson Pass Restricted Area (management zones 16, 17, 18, 19), is prohibited. Elsewhere firewood availability standards and monitoring will be used to determine where and when campfire restrictions are needed below 8000'. Campfires are prohibited in the Salt Springs management area due to the heavy fuel loading, steep slopes and high wildfire danger.
- Re-inventory amount of dead and down woody debris (firewood availability) at Shriner Lake to determine if campfire restrictions are needed in that management area.
- Where not restricted, visitors will be directed to use previously established fire rings or to build "no trace" fires.
- The construction of new fire rings is prohibited.
- Remove all fire rings in areas where restrictions on campfires are in effect.

a. Firewood Availability

Firewood (dead and down woody debris) availability at all campsites would be rated as "none", "scarce", "moderate", or "abundant" using the following definitions**. Comparable unused areas (same species, elevation, slope, aspect) would also be rated.

- Abundant: Dead and downed wood suitable for campfires is readily available within a 300' of the campsite. Collecting wood for 4 large campfires (a party of four staying at the site for 4 days) would not noticeably reduce the amount of down wood available.
- Moderate: Dead and downed wood suitable for campfires is available within a 300' of the campsite. However, collecting wood for 4 large campfires (a party of four staying at the site for 4 days) would noticeably reduce the amount of down wood available.
- Scarce: Little dead and downed wood suitable for campfires is readily available within a 300' of the campsite. There is not enough down wood for 4 large campfires (a party of four staying at the site for 4 days).
- None: There is no dead or down wood suitable for campfires within 300' of the campsite. In areas where dead and down wood naturally occurs, limbs may be stripped from green trees, branches removed from large logs or snags, or other damage may be occurring as a result of attempts to gather firewood.

Standard for Firewood Availability

In applying standard, determine if other impacts related to campfires are occurring including damage to green trees, damage to standing dead trees, excessive fire rings or fire scars. If needed, implement campfire restrictions by destination or management zone, as appropriate.

Sensitivity of Vegetation Type to Wood Collection*	Firewood availability**
Very High	These areas are not productive enough to support wood collection. Campfires to be discouraged or prohibited at destinations where dominant vegetation sensitivity to wood collection is very high.
High	No more than 50% of the campsites within these vegetation types should exhibit a lower firewood availability class than a comparable unused area.
Moderate-High	No more than 75% of the campsites at a destination within these vegetation types exhibit a lower firewood availability class than a comparable unused area. No more than 50% of the sites should exhibit "scarce" or less firewood.
Moderate, Low, Very Low	No more than 75% of the campsites at a destination within these vegetation types should exhibit "scarce" or less firewood.

*The dominant vegetation type for destinations and management areas have been determined from the potential natural vegetation (PNV) mapping completed for the Mokelumne Wilderness.

**Campsites were inventoried (in 1993) using the firewood availability ratings and definitions listed above. If future management determines more effective methods of measuring down woody debris (using fuel loading photographic series, or other measurement or rating), work with Forest or Zone ecologists to relate these new measurements or ratings to the interpretations of vegetation type sensitivity to firewood collection based on productivity.

Range of Actions if Standard is Exceeded.

- Educate visitors on resource concerns and impacts from fires.
- Promote "no trace"/minimum impact fires.
- Promote the advantages and use of backpack stoves.
- Prohibit campfires in the area.

8. Rock Climbing

General Direction

National policy regarding the management of climbing bolts and other fixed anchors is being determined through a negotiated rule-making process. Existing fixed anchors in the wilderness will be inventoried and evaluated to determine future management. Wilderness managers will work with the climbing community and other interested parties in this process.

9. Winter Use

Standards and Guidelines

- Monitor social conditions on peak season weekends in areas receiving high levels of cross country skiing use to determine if further controls are needed.
- Remove the blue diamond markers on the Winnemucca cross-country ski loop.

D. Interpretive Services Planning

General Direction

Wilderness education is the primary tool for management of wilderness visitors. A Mokelumne Wilderness Education Schedule will be developed. This schedule will define wilderness education needs and actions for wilderness users, internal education and training needs for Forest Service personnel and volunteers, and wilderness awareness education for the general public. The schedule would identify specific wilderness education needs, audiences to be reached and methods of providing education.

The following educational needs have been identified:

- *"Leave No Trace".* Communicate the "Leave No Trace" program of minimum-impact backcountry skills and ethics.
- *Wood Campfires.* Inform visitors about the impacts of wood campfires on wilderness resources, specific campfire restrictions within the Mokelumne Wilderness and the reasons for restrictions, and information on 'no trace' fire options.
- *Campsite Closures at Specific Lakes.* Inform visitors about specific camping closures, reasons for closure and alternate camping areas.
- *Wilderness Stock Travel.* Provide information on minimum-impact backcountry stock camping and use techniques.
- *Dogs in the Wilderness.* Inform visitors of the impacts dogs can have on other visitors, regulations regarding dogs in the Mokelumne Wilderness, past problems and other reasons for the regulations.
- *Air Quality.* Inform visitors and the public about the special protection afforded Class I areas (including the Mokelumne Wilderness), the role of air quality in their wilderness experience and the threats to wilderness air quality.
- *Grazing in Wilderness.* Inform wilderness visitors about law and policy regarding grazing in National Forest Wilderness, the management of grazing in the Mokelumne Wilderness, and where and when grazing occurs in the Mokelumne.
- *Backcountry Opportunities Outside Wilderness.* Inform visitors of recreation and backcountry opportunities outside the wilderness. Target visitors to high use areas such as Carson Pass area and non-wilderness dependent use.
- *Fire Management.* Inform the wilderness visitors and the public about the role of fire in the wilderness ecosystem, and new management strategies resulting from the Mokelumne Wilderness Fire Management Plan.
- *Exotic Plant Species and Noxious Weeds.* Educate visitors on the threat of invasive exotic plant species to the wilderness ecosystem, and how they can help prevent introduction of these species.

- *Wilderness Risks.* Inform wilderness visitors that they assume responsibility for the risks and hazards associated with wilderness use. Visitors are responsible for knowing hazards and adequate preparing for their trip. Immediate rescue in the wilderness may not be possible.
- *Training for Front Desk Personnel and Volunteers.* Provide annual training for Forest Service employees and volunteers who issue permits and provide the public with wilderness information so that current and consistent information on "leave no trace" practices, wilderness regulations and restrictions are provided to the public.

E. Interpretive Services Management

When feasible, the Mokelumne Wilderness Map will be updated to reflect changes in policy, regulations and trails.

XI. RIPARIAN AREAS

A. Riparian Area Management

General Direction

The condition of riparian areas is primarily the result of natural ecological processes and not human caused impacts and influences. The goal is to maintain or restore riparian areas to a condition within the natural or reference range of variability. Preferential consideration will be given to riparian dependent resources where conflicts among land uses exist. (FSM 2526) Protect riparian areas from degradation through the management of livestock grazing, recreational uses, and other human influences.

Standards and Guidelines

- At a minimum, riparian areas will be maintained or restored in proper functioning condition (PFC) as defined in the Riparian Area Management, TR 1737-9 1993 - Process for Assessing Proper Functioning Condition (BLM, 1993), and Riparian Area Management, TR 1737-9 1993 - Process for Assessing Proper Functioning Condition for Lentic Riparian Wetland Areas (BLM, 1994).
- The species composition and structural diversity of native riparian plant and animal communities is maintained or restored.
- Riparian areas would be restored where human caused impacts threaten ecosystem function, where natural recovery is unlikely, and where restoration is likely to succeed. The first priority will be those areas identified as "at risk", second priority would be for those areas identified as "non-functional" (see PFC references). Upward trends in vegetation would be expected in 3-5 years and in physical functions in 5-10 years.

XII. SOILS

A. Soil Management

General Direction

Soil conditions are primarily a result of ecological processes and not human caused impacts and influences. Limit soil displacement and erosion to a rate similar to that which occurs naturally. Soil cover, soil moisture, porosity, soil cover and organic debris woody debris reflect site capability. Achievement of objectives and desired conditions would be assessed through measures of soil movement, erosion, compaction and productivity.

Standards and Guidelines

- Limit soil erosion, disturbance and compaction resulting from human activities to the extent described for campsites, trails and soils in each Opportunity Class.
- Campsite and trail conditions will be monitored and actions initiated to eliminate unacceptable erosion, compaction or removal of soil cover and woody debris.

XIII. SPECIAL AREAS

A. Proposed Wild and Scenic Rivers - Wild North Fork Mokelumne River

General Direction

The 18 miles of the North Fork Mokelumne River within the Wilderness is proposed for Wild River status. Wilderness and Wild River designation are generally compatible.

Standards and Guidelines

- The area is to be managed to an ROS Class of Primitive, with very low interaction between visitors and the evidence of other users remaining minimal.

B. Special Interest Areas - Round Top Botanical and Geological SIA

General Direction

Wilderness uses will be managed to protect the Special Interest Area (SIA) values. Recreational activities which require minimal facility, which produce minimal impacts, and which are designed for short stays will be favored.

Standards and Guidelines

- Recreational stock must stay on system trails in the Round Top SIA.
- No grazing of recreational stock in the Round Top SIA. (see Recreation Management)
- No outfitter guide permits issued for this area. (see Special Uses)

C. Research Natural Areas - Snow Canyon RNA

General Direction

Protect RNA from wilderness use activities which modify the environment. Discourage uses which contribute to modification of RNA. Prohibit uses if they threaten RNA research and educational values.

Standards and Guidelines

- Campfires are prohibited. (see Recreation Management)
- Provide limited access. Trails will not be constructed.
- Monitor campsite conditions in the RNA. Prevent an increase in the number of established campsites and prevent increased impacts at existing campsites.

XIV. SPECIAL USES

General Direction

Non-commercial organizations (travel groups, youth groups, educational institutions) will be directed to contact District offices to determine if special use authorization is required and to obtain information on wilderness use regulations and restrictions. Those organized recreational events which require a special use authorization would not be permitted in the wilderness, but redirected to non-wilderness locations.

Standards and Guidelines

- Competitive events, training events and contests are not be permitted in the wilderness (FSM 2323.13h).

A. Outfitters and Guides

General Direction

Outfitter and guide use will be managed to ensure compatibility with the wilderness resource and other visitors. Outfitter/guide services are administered through special use permits following procedures outlined in the Forest Service Special Uses Handbook (FSH 2709.11) and the Outfitter/Guide Administration Guidebook.

Wilderness use by organized camps under special use permit will be considered part of the use allocated to outfitter/guides. The use of the wilderness by organized camps is subject to all of the same conditions and requirements as outfitter/guides. The determination to allow the use of the wilderness, type, number and location of trips, and the number of service days will defined in their operating plans.

1. Issuing Permits

Standards and Guidelines

Outfitter/guide special use permits will be evaluated on a case by case basis to determine if a public need exists for the service and will be limited to those activities which meet the following criteria:

a. Meets a demonstrated public need. The following elements will be considered in determining whether or not there is a public need for a particular service:

- The service is needed to achieve the public purposes and agency objectives for wilderness, including: recreational, scenic, scientific, educational, conservation, and historic use.
- Significant numbers of potential visitors have been making unsolicited requests for new or additional services in the area.
- Existing outfitter services are not able to accommodate the activity or number of visitors requesting the activity within the existing permitted service days.
- Non-commercial public use is not adequately achieving these purposes.
- Commercial use will not conflict with existing non-commercial use of the area.
- Will not conflict with special management objectives, such as RNA or SIA.

b. Wilderness dependent. the service cannot be provided in a non-wilderness area. In determining wilderness dependency, the following elements will be considered:

- Solitude and unconfined, primitive recreation are central components of the experience.
- The trip focus on a specific resource or condition found only in the wilderness.
- The service cannot be provided on public lands outside the wilderness, there are no similar and suitable non-wilderness locations available.

c. Capacity and allocation. Determine capacity of area based on objectives and standards for social and resource conditions, allocate total capacity among private, commercial outfitted, and institutional public users.

- Is compatible with wilderness character, values and resources and with the specific Opportunity Class objectives and desired conditions for the area of operation.
- Will not degrade wilderness conditions, and specifically will not cause standards to be exceeded.
- Is compatible with current types and levels of use.

d. Economic viability.

- The type of service is economically viable.

Additional direction on issuing outfitter special use permits:

- Outfitter and guide permits will not be issued for the Carson Pass, Fourth of July Lake and Emigrant Lake management areas.
- Permits to collect native plants will be issued for administrative or research needs.
- Outfitter and guide use will be not be permitted in Opportunity Class 1 areas to protect the primitive experience and conditions in these areas.
- Outfitters and guides using pack and saddle stock will not be permitted in the Mokelumne Canyon to protect the vegetation and soils at the limited camping areas in the area.

- When an existing outfitter/guide permits expire, a new permit will not be issued unless the criteria are met. If these criteria have been met and a service has been identified to be provided by an outfitter, selection of permitee will be based on past experience and performance, ability to provide the needed service, financial viability, knowledge of wilderness values and "leave no trace" practices.

2. Permit Management

General Direction

All wilderness use regulations and restrictions (including group size limits, campfire closures, and quotas) apply to outfitters and guides. Permits will specify the total amount of use, in service days, to be permitted. Any specific planned trip dates, trip destinations, the season of use, and frequency of multiple trips to specific locations will be defined in operating plans. The number of service days or trips allowed in specific areas will be compatible with Opportunity Class objectives for the areas of operation and the current level of private use.

3. Outfitter Performance Requirements

General Direction

Specific performance requirements will be defined in the outfitter/guide operating plans. Outfitter campsite conditions, use practices and client education will be monitored.

Standards and Guidelines

- Outfitters and guides will provide clients with information on "leave no trace" practices, wilderness values and regulations. Outfitter will train all guides and trip leaders to provide the same. Districts will assist outfitters in fulfilling these requirements.
- Outfitters and guides who use recreational stock will be required to carry and use supplemental weed free or processed feed for overnight trips.
- Outfitters and guides will be required to provide trail maintenance commensurate with their impact on trails.

4. Maximum Levels of Outfitter Guide Use to be Permitted in the Mokelumne Wilderness

General Direction

The following maximum use levels for outfitter guide services to be permitted in the Mokelumne Wilderness are maximum use levels to be allowed and not a goal or target to fill. All outfitter use needs to meet the criteria listed under "Issuing Permits" prior to approving the use and issuing a permit.

Standards and Guidelines

Type of Use	Trip days per month	Service days per year (client days)
Day hiking	3 (x 5 months x 12 people =)	180
Backpacking	7 (x 5 months x 8 people =)	280
Recreation Stock	12	480
Winter use	10 (x 3 mo. x 8 or 12 people)	240-360
Total	32	1180-1300

XV. VEGETATION/SENSITIVE PLANTS

A. Vegetation Management

General Direction

Natural ecological processes, such as fire and environmental variation, determine the composition, distribution, structure, vigor and function of plant communities. The goal is to maintain or restore vegetation within the range of variability for the potential natural community. Viable populations of indigenous plant species, including threatened, endangered and sensitive species, are protected from human caused impacts and influences. Human uses and influences are managed to achieve these conditions. Monitoring to evaluate vegetation condition and assess impacts from human use and influences will include: forage utilization, condition and trend; vegetation loss at campsites; amount of dead and down woody debris; presence and extent of new populations of exotic species (particularly noxious weeds); population trends of sensitive plant species; and current fire regimes compared to historic fire regimes.

B. Exotic Species Management

General Direction

The goal is to prevent any exotic species from becoming established, to eradicate invasive exotic species when identified, and to eradicate other non-native species as feasible and desirable. Use prevention, education, detection and eradication strategies to achieve these goals.

Standards and Guidelines

1. Education

- Recreational users, including recreational stock users, will be educated on the threat of invasive exotic weeds, and how they can help prevent the spread of exotic species into the wilderness.

2. Prevention

- All feed brought into the wilderness must be certified weed free, or processed feed, such as alfalfa pellets or crimped oats.
- Encourage wilderness users to clean all equipment (hiking boots, tack, trailers), clothing and animals of weeds, burrs and seeds prior to entering the wilderness.
- Encourage recreational stock users to feed animals weed free feed two days prior to a trip into the wilderness.
- A risk assessment for noxious weed introduction will be completed as part of the planning and analysis for any ground disturbing activity. The assessment will be completed or reviewed by the Forest noxious weed coordinator.
- All equipment used in administrative ground disturbing activities will be cleaned prior to entry into the wilderness to prevent noxious weed introduction.
- Fire management and suppression activities conducted in the wilderness will incorporate planning and practices to prevent the introduction of exotic species into the wilderness.

3. Detection

- Forest noxious weed coordinator will train wilderness rangers, volunteers and others working in the wilderness how to identify invasive exotic plant species.
- The Forest noxious weed coordinator will coordinate and implement annual inventory and mapping of noxious weeds in the wilderness. Inventory will focus on trailhead, trail corridors, grazing allotments and other areas vulnerable to infestation. The annual goal for inventory will be 200 acres or 40 linear miles of trail per year.
- Sites where noxious weeds have been eradicated will be monitored for at least two years following eradication to determine success.

4. Eradication

- Prompt eradication is the desired response to infestations of exotic noxious weeds. Use the minimum tool principle in developing eradication and control strategies. Employ methods which achieve eradication or control objectives while causing the least impact on wilderness resource. Manual removal of noxious weeds will be given preference where effective. The use of herbicides requires Regional Forester approval. Required environmental analysis will be conducted.

C. Insect and Disease Management

General Direction

Indigenous insect and plant disease are to be allowed to play, as nearly as possible, their natural ecological role within the wilderness. Epidemics which threaten adjacent lands or resources may be controlled (FSM 2324.11)

D. Sensitive Plant Management

General Direction

Direction in FSM 2670 will be followed including, maintain viable populations of all native species, and develop and implement management practices to ensure sensitive species do not become threatened or endangered because of Forest Service actions.

Standards and Guidelines

- Forest Botanist will develop priorities for inventory of sensitive plant populations in the wilderness based on known and potential habitat, and where impacts of wilderness uses present a potential conflict.
- Forest Botanist will survey routes of new trail construction, trail reroute or other ground disturbing projects prior to project implementation, and a Biological Evaluation completed as required by Forest Service Manual direction (FSM 2670).

XVI. VISUAL RESOURCES

General Direction

The visual quality objective for the wilderness is Preservation. Only ecological changes in the landscape are to be allowed.

Standards and Guidelines

- Trails and other improvements will be designed and located to be as unobtrusive as possible.

XVII. WATERSHED/WATER QUALITY

A. Watershed Maintenance

General Direction

Maintain satisfactory natural watershed condition (FSM 2323.41). Watershed conditions are a result of natural forces and are substantially unaffected by human caused impacts and influences. Hydrologic function, channel morphology (including width/depth ratio, pool parameters, bank angle and stability), flooding, erosion, and deposition reflect site capability.

Standards and Guidelines

- Achieve at least 80% of the range of reference variability on stream conditions (using the USDA-FS Region 5 Stream Condition Inventory (SCI) June 1996). Where conditions are greater than 80%, prevent degradation. Maintain existing condition on stream reaches where condition is within the range of reference variability.
- Rehabilitate areas where human caused land disturbing activities, such as grazing and recreation use, have degraded wilderness resources and natural recovery will take longer than 10 years.

B. Water Quality Management

General Direction

Wilderness uses will be managed to ensure lakes and streams meet State water quality standards for non-degradation. Baseline information on water quality would be collected and periodic monitoring completed.

Standards and Guidelines

- Water quality is not allowed to be degraded as a result of human uses and influences.
- Monitor bacteria levels (fecal/coliform) and clarity of selected lakes and streams within the wilderness every 5 years to determine if water quality is within State standards and to provide baseline information to track any degradation in water quality.
- Wilderness visitors to utilize "cat method" of dispersed, shallow burial of human waste.
- Washing directly into lakes, streams or other water sources is prohibited.
- The use and disposal of soaps, detergents, toothpaste or other contaminants directly in lakes, streams or other water sources is prohibited.
- Disposal of human waste or wash water, and holding or confining recreational stock within 200' of lakes, streams or other water sources is prohibited. (see Recreation Management)
- Implement all applicable Best Management Practices for water quality identified in the Region 5 Water Quality Handbook.

XVIII. WILDERNESS

A. Wilderness Inventory and Planning

General Direction

Use monitoring data and public participation to inform major changes in management direction.

Standards and Guidelines

- Complete campsite inventory in the following management areas: 5, 9, 15, 20, 21, 22, 25, 26, 27, 28, 29, 30 (partial inventory completed as of 1998), 31, 33, 34, 36, 37, 41 and 42.
- Reassess Shriner Lake to determine if campfire restrictions are needed.
- Monitor the indicators identified in this amendment (see Recreation and Range) and use this information to guide future management. A monitoring plan, with procedures and forms, has been developed for all indicators.

- Conduct necessary survey, inventory and planning to establish AQRV monitoring as indicated in Air Resources in this amendment.
- Survey and evaluate heritage resources as indicated in the schedule under Heritage Resources in this amendment and an evaluation of Monte Wolfe Cabin.
- Develop consistent search and rescue policies and procedures between the Forests and in conjunction with other agencies.
- Collect day use data at trailheads receiving high levels of this use.
- Complete Wilderness Education Action Schedule as indicated under Interpretive Planning in this amendment.
- Survey stream and riparian conditions along Cole Creek within the wilderness.

B. Wilderness Management

1. Control of Dogs

General Direction

Dogs will not be allowed to run at large, chase wildlife or harass other visitors.

Standards and Guidelines

- Dogs will be required to be on a leash or under physical control in the Carson Pass, Emigrant Lake and Fourth of July Lake management areas.
- Elsewhere in the wilderness dogs must be under immediate voice control. Immediate voice control is defined as the dog being within 50' of the owner and the dog immediately obeys voice commands or signals.
    - Dogs actively being used in search and rescue, grazing management operations, or other administrative purposes, and dogs actively being used in the legal hunting of wildlife are excepted from the 50' requirement.
- Monitor compliance with this direction, and restrictions adjusted as needed.

2. Noise

General Direction

Maintain outstanding opportunities for solitude and inspiration, minimize noise impacts of recreation uses and disturbance of visitors seeking solitude. Encourage visitors to leave radios, tape and CD players at home. Enforce 36 CFR 261.10 (h) which prohibits use of any device which produces noise in such a manner and at such a time so as to unreasonably disturb any person, and 36 CFR 261.10 (d) which prohibits the discharge of firearms within 150 yards of a campsite or occupied area, or in a manner whereby any person or property is exposed to injury or damage.

a. Firearm Use

Recreational shooting is not a wilderness dependent activity, and the noise from this activity can disturb other visitors seeking solitude. The desired condition is for recreation shooters to engage in this activity in appropriate non-wilderness settings.

Standards and Guidelines

- Provide education to provided hunters and others carrying firearms on the value of solitude and quiet in wilderness, and the impacts of shooting on other users. Target shooters will be encouraged to engage in this activity in appropriate non-wilderness areas.
- Monitor incidents and complaints regarding recreational shooting. All complaints regarding recreational shooting will be documented in incident reports. Develop a user-friendly form for volunteers (such as at the Carson Pass) to record complete information about shooting incidents and complaints. If monitoring indicates there are persistent problems regarding recreational shooting, further actions will be considered including a special order restricting this use in the wilderness, if needed.

3. Wilderness Patrol Levels

General Direction

The following recommended minimum frequency of wilderness ranger patrols are based on the Opportunity Class allocations which reflect existing and desired visitor use levels for each management area and desired education and management strategies.

- *Opportunity Class 1* - One patrol trip per season
- *Opportunity Class 2* - Two to four patrol trips per season
- *Opportunity Class 3* - Patrol every 2-4 weeks in summer season (4-8 trips in average season)
- *Opportunity Class 4* - Patrol every weekend day in peak season

APPENDIX A

TABLE OF MONITORING REQUIREMENTS

ACTIVITY, PRACTICE, OR EFFECT	MONITORING OBJECTIVE	MONITORING TECHNIQUE	PRECISION OR VALIDITY	MINIMUM SAMPLE SIZE	MINIMUM FREQUENCY
Number of groups or people encountered per day while traveling.	Measure opportunities for solitude while traveling.	Counting encounters along specified routes. (see monitoring work plan for instructions)	High	Designated monitoring routes.	At least twice per season on designated routes, may vary by level of concern that a specific area is near the standard.
Number of occupied campsites within sight and sound of a campsite.	Measure of opportunity for solitude while camping.	Counting occupied campsites within continuous sight and sound.	High	All campsites at a destination.	Ideally, once annually for each management area or destination. Will vary by level of concern that a specific area is near the standard.
Campsite condition class.	Establish acceptable baseline conditions for camping areas. Measure change in natural condition at campsites.	Rate campsite condition using modified Frissel rating system. (see monitoring plan)	High	All campsites at a destination.	All campsites every 3-5 years.
Campsite condition impact index.	Measure change in natural conditions (vegetation loss & soil disturbance) at camping areas. Identify need to limit impacts.	Campsite condition evaluation form. (see monitoring plan)	High/ Moderate	All campsites at a destination.	Every 3-5 years at destinations where conditions have potential to exceed Opportunity Class objectives.
Total number of campsites	Measure change in number of campsites at destinations and management areas.	Count and map the # of campsites for each destination or mgmt area.	High/ Moderate	All campsites at a destination.	All campsites every 3-5 years.
Number of user created trails.	Measure impacts from use along travel routes.	Count the number of user created trails along specific trail segments.	High	Designated monitoring segments in Class 3 & 4 areas.	Every 1-2 years.
Trail condition (width).	Measure changes in trail condition in high use areas, particularly areas with high day use.	Measure trail width at established monitoring points.	High	Permanently located monitoring points in high use areas.	Semi-annually. Once at beginning of season and once at end of season.

MONITORING REQUIREMENTS

REPORTING PERIOD	STANDARD OF COMPARISON	VARIABILITY INDICATING ACTION	RESPONSIBLE STAFF	AVERAGE ANNUAL COST
Annually at end of season.	Class I - 1 groups Class II - 3 groups Class III - 8 groups Class IV - 150 people	Standard is exceeded more than 20% of time.	District wilderness managers.	$750
Annually at end of season.	Class I - 0 Class II - 1 Class III - 3 Class IV - 4	Standard is exceeded more than 20% of time.	District wilderness managers.	$300
Annually at end of season.	No type D campsites in wilderness, no new type C sites in Classes I and II. Class I - <10% type B Class II - <10% type C Class III - <50% type C Class IV - no type D	Same as standard of comparison. Exceeding standard indicates further actions.	District wilderness managers.	$750
Annually at end of season.	First evaluation establishes baseline condition. Subsequent monitoring is compared to this baseline.	Increase of 25% (10 points) in the average impact index for a destination.	District wilderness managers.	$1000
Annually at end of season.	First evaluation establishes baseline condition. Undesirable campsites are closed. Subsequent monitoring is compared to baseline. Most campsites were inventoried and mapped in 1993.	Increase in number of campsites, either 20% or 5 additional sites (whichever is less) per destination.	District wilderness managers.	$750
Annually at end of season.	No new user-created trails allowed to form, undesirable user trails are eliminated. First evaluation establishes baseline condition. Subsequent monitoring is compared to baseline.	Same as standard of comparison. Exceeding standard indicates further actions.	District wilderness managers.	$500
Annually at end of season.	First evaluation establishes baseline condition. Subsequent monitoring is compared to this baseline.	Increase of 50% in trail width.	District wilderness managers.	$300

ACTIVITY, PRACTICE, OR EFFECT	MONITORING OBJECTIVE	MONITORING TECHNIQUE	PRECISION OR VALIDITY	MINIMUM SAMPLE SIZE	MINIMUM FREQUENCY
Number of variances to group size limits.	Track the number of variances granted annually.	Document and report each variance granted and rationale.	High	Number of variances per District.	Annually
Firewood Availability	Measure change in natural conditions resulting from this activity.	Rate firewood availability (down woody debris) within 300' of campsites. (see monitoring plan)	High/ moderate	All campsites at a destination.	3-5 years
Day Use (number of day users)	Establish baseline information for management of day use.	Trail counters, TH registers, car counts or other means.	Moderate	By trailhead or mgmt area in high use areas.	Annually
Aircraft Over-flights	Assess extent of problems with low aircraft over-flights.	Count # of low over-flights (see over-flight reporting form).	Moderate	# of low over-flights experienced per day.	5 days per season.
Dogs	Compliance with wilderness regulations for dogs.	Record all violations on incident reports or violation notices.	High	# of incidents per District or Class 3 or 4 mgmt area.	Annually
Recreational Shooting	Assess number of incidents regarding this activity and need for further actions.	All complaints regarding shooting to be put into incident reports. Specifics of each incident, and total # of incidents to be reviewed.	High/ Moderate	Each District will maintain file of incident reports regarding shooting.	Annually
Outfitter/ Guide Per-formance Standards	Assess outfitter compliance with wilderness regs, "LNT" practices and client education.	Outfitter campsite visits, trail encounters, and client surveys	Moderate	Each outfitter guide permit.	Annually
Monte Wolfe Cabin	Monitor damage, occupancy or other misuse of site.	Visual inspection.	High	Site visit	Annually

MONITORING REQUIREMENTS

REPORTING PERIOD	STANDARD OF COMPARISON	VARIABILITY INDICATING ACTION	RESPONSIBLE STAFF	AVERAGE ANNUAL COST
Annually	Group sizes are established. Specifically permitted variances to these limits should be rare.	More than 5 variances in a season will require review of policy.	District wilderness managers	$150
Annually at end of season.	By dominant vegetation sensitivity to wood collection. Very High - no wood collection High - <50% sites rate lower than unused area. Moderate-high - <75% sites rate lower than unused area, <50% sites rate scarce or none. Moderate, low, very low - <75% sites rate scarce or none.	Standard is exceeded by more than 20% or is exceeded for 2 consecutive years for a destination.	District wilderness managers.	$1000
Annually at end of season.	Use first year(s) of monitoring as baseline condition to compare future use monitoring.	To be determined.	District wilderness managers.	$1000
Annually at end of season.	Use first year(s) of monitoring as baseline condition to compare future use monitoring.	To be determined.	District wilderness managers.	$500
Annually at end of season.	The goal is 100% compliance with regulations regarding dogs.	Less than 75% compliance or 15 incidents per year.	District wilderness managers.	$150
Number of complaints will be reviewed annually.	The Wilderness Act: provide outstanding opportunities for solitude. FSM 2320: protect wilderness values, including solitude and inspiration; favor wilderness dependent activities. LNT principles. And 36 CFR 261.10. Ideally, no recreation shooting incidents occur.	Each incident to be reviewed to determine if CFR was violated. If more than 5 incidents in a season, reassess need for specific Forest Order.	District wilderness managers will coordinate with Law Enforcement.	$150
Annually at end of season.	Mokelumne Wilderness Management Guidelines, "LNT" practices, Mokelumne Wilderness regulations.	To be determined by Districts and SUP manager, and defined in permit or operating plan.	District wilderness managers.	$1000
Annually at end of season.	Mokelumne Wilderness Management Guidelines, FSM 2360.	Any occupancy, or unauthorized use or improvements.	District wild. managers and/or Archaeologist.	$750

ACTIVITY, PRACTICE, OR EFFECT	MONITORING OBJECTIVE	MONITORING TECHNIQUE	PRECISION OR VALIDITY	MINIMUM SAMPLE SIZE	MINIMUM FREQUENCY
Range Ecological Condition, and Trend	Measure range condition compared to potential natural vegetation (desired condition for wilderness).	Toe point transect for condition. Frequency sampling for trend.	Moderate	Permanently established transects on each allotment in wilderness.	Condition - every 5 years. Trend - every 10 years.
Sensitive Species: mtn. yellow-legged frog, sensitive plants, etc.	Assess distribution in wilderness, and monitor populations in locations where use impacts threaten viability.	Distribution inventory. Counts of individuals. Habitat condition.	Moderate to high	Reach of stream, pond or lake.	Annually
Presence of noxious weeds	Monitor vulnerable portions of wilderness to prevent establishment and to ensure success of eradication efforts.	Field observation & mapping: esp. trails, camping areas, around trailheads, and grazing allotments.	Moderate	To be determined by Forest Noxious Weed Coordinator.	Annually
Water Quality	Human Health - fecal/coliform counts Water Quality - temperature, specific conductivity, clarity, pH	Collect samples at selected lakes and streams and analyze at State approved water quality laboratories.	Moderate to high	Emigrant, Winnemucca, 4th of July, Beebe, Cole Crk, Shriner, Wheeler and Raymond Lakes.	Fecal/coliform - 5 samples per location first season to establish baseline. Re-monitor every 5 years. Water Quality - every 3-5 years.
Water Chemistry	Compare trends in pH, ANC and clarity as sensitive receptors of AQRV's	Coordinate with UCSB (Jim Sickman) to continue to collect samples and analyze.	Moderate to high	Winnemucca, Emigrant and Beebe Lakes.	Annually
Number of motorized/ mechanized approvals	To assess extent of motorized/ mechanized use for administrative purposes.	Document each approval granted.	High	By District.	Annually
Air Quality Related Values	To meet the intent of the Clean Air Act in protecting Class I airshed.	Various, to be determined, see Appendix C.	To be determined.	To be determined.	To be determined.

MONITORING REQUIREMENTS

REPORTING PERIOD	STANDARD OF COMPARISON	VARIABILITY INDICATING ACTION	RESPONSIBLE STAFF	AVERAGE ANNUAL COST
Condition - every 5 years. Trend - every 10 years.	Class I -good to excellent/stable to upward trend Class II -good to excellent/stable to upward trend Class III -good/stable to upward trend Class IV -good/stable to upward trend	To be determined through Grazing Permit, Allotment Management Plan, Annual Operating Instructions.	Forest or District Range staff	$3000
Annually	NFMA, population viability, known habitat requirements. Initial inventory establishes distribution, habitat condition and population size at specific sites for future comparison.	See Forest Plan, or determined Forest Biologists. (50% decrease in pop. in 1 year or 25% over 5 years?)	Forest Fisheries Biologist, Wildlife Biologist or Botanist.	$5000
Annually	Goal is to prevent any noxious weed from becoming established and to eradicate any that are identified.	Presence of any noxious weed.	Forest Noxious Weed Coordinator	$1500
By monitoring frequency.	Federal and State water quality standards and objectives defined in Basin Plans, including non-degradation standard. Human use and influences not to degrade water quality. Some baseline info exists, for other parameters, initial monitoring will establish baseline.	As defined in Federal and State water quality standards. (and/or 15% of samples exceed state standards)?	Forest Hydrologist coordinates with Wilderness Managers.	$1000
Annually	Federal and State standards through the Clean Air and Clean Water Acts. The "no change" condition class defined for specific receptors in the "Guidelines for Evaluating Air Pollution Impacts on Class 1 Wilderness Areas in the PSW Region"	See "Guidelines for Evaluating..." or to be determined. See also Beth Plymale's masters thesis as a reference.	Forest Air Resources staff coordinates with UCSB and Regional Air Resource Specialist.	$1000
Annually	Rationale and authority for granting approval for motorized/mechanized uses in wilderness are defined in FSM 2326.	Any use outside existing policy and authority.	Forest wilderness manager or responsible staff.	$200
Annually	See "Guidelines for Evaluating Air Pollution Impacts on Class 1 Wilderness Areas in the PSW Region" See also Beth Plymale's masters thesis as a reference.	To be determined.	Forest Air Resources Coordinator and Districts.	To be determined.

APPENDIX B

1. AQRV MONITORING SCHEDULE FOR THE MOKELUMNE WILDERNESS

Below is an outline of steps to be taken to complete inventory and monitoring of identified AQRV sensitive receptors in the Mokelumne Wilderness. Use this schedule in conjunction with the AQRV Monitoring Recommendations in Table 2, Appendix B to finalize AQRV monitoring.

Visibility

- Use existing camera data to prepare a visibility impairment table (see R-5 AQRV guidelines).
- Implement a short term particulate study to determine types and amounts of particulates. Establish baseline source apportionment. (UC Davis Crocker Nuclear Lab or Air Resource Specialists are resources for equipment and analysis)
- Determine if visibility is "socially impaired" (use R-9 guidelines).
- Work with Regional Air Specialists on regional haze regulations.
- Establish a volunteer night sky monitoring program (see Duriscoe 1993 for guidelines).

Ambient Air Quality

- Install passive sampling devices (PSD) for short term study of ozone levels. Re-inventory every 3-5 years.
- Use PSD's to determine ambient levels of SO2, NO2, and NOx.

Water Chemistry

- Continue monitoring of Winnemucca, Emigrant and Beebe Lakes with Jim Sickman of UCSB.
- Compare trends in pH, ANC and clarity with the standards for the "no change" condition class for these receptors.

Aquatic Wildlife

- If there are negative changes in water chemistry, monitor potentially impacted aquatic wildlife species.

Cloud Water

- Conduct short term study (6 months) with passive cloud water sampler.
- Determine if cloud water acidity levels are a threat to wilderness vegetation.

Lichens

- Complete a study plan for lichen monitoring including methodology and QA/QC procedures.
- Establish permanent lichen plots.
- Conduct element testing of lichen samples on a 5 year cycle.
- Measure physiological changes in lichen.
- Compare lichen health with analysis past collected samples.

Toxic Air Pollutants

- Review toxic emissions in Class I airshed for amount and source in each county. (use information from USEPA Toxics Release Inventory and information from local air pollution districts)
- Review impacts and thresholds for each identified hazardous air pollutant (HAP).
- Work with Regional Air Specialist to categorize potential threats.
- If needed, monitor to establish presence and impacts of HAP's in Class I airshed.

2. SUMMARY OF AQRV MONITORING RECOMMENDATIONS FOR THE MOKELUMNE WILDERNESS

Below are three different levels of monitoring AQRV's which could be implemented in the Mokelumne Wilderness. Level I represents the least extensive/intensive and least expensive option, and Level 3 is the most extensive/intensive and most expensive option. Decisions on which level of monitoring to implement will consider the relative importance of the threat; the cost and difficulty in monitoring; how well the applicability of the monitoring to PSD or other the regulatory processes.

	Level I	Level II	Level III
OZONE/ PINE NEEDLE DAMAGE	-Conduct initial qualitative survey of Wilderness to determine presence and extent of needle damage. (coordinate with zone air specialist and/or train Forest staff)	Level I and: -If Level I indicates impacts, use passive ozone samplers to measure ozone levels at various elevations in wilderrness. Repeat every 3-5 years.	Level II and: -Establish permanent pine plots in wilderness to monitor needle damage.
LICHENS (concentrations of sulfur, nitrogen, metals, organic and metal based toxins/effects of ozone, SOx, NOx)	-Develop lichen study plan: methodology, QA/QC, floristic survey, site characterization, etc. Establish plots. (use protocols in "Lichens as Bioindicators of Air Quality") -Monitor presence/absence and relative abundance of species in plots.	Level I and: -Collect and conduct chemical analysis of 2-4 common lichen species, establish baseline levels, repeat every 5 years to examine changes.	Level II and: -Measure physiological changes in lichen to assess damage from pollution stress factors. -Lichen health monitoring to establish trends: % bleaching, % convolution, % fertility.
TOXINS (hazardous air pollutants)		-Review and determine toxic air emissions for type, amount and source location for each county in which Class I airshed is located. (use EPA Toxics Release Inventory, local air pollution control districts) -Review identified impacts and thresholds for each hazardous air pollutant (HAP). -Consult with Zone air specialist and categorize each HAP by potential threat class.	Level II and: -Monitor to establish presence and impacts of toxins in Wilderness. Method varies with pollutant, some toxins measured by analysis of lichen tissue (see above).

	Level I	Level II	Level III
VISIBILITY/ PARTICULATES (carbon, nitrate, sulfate, soil particles - from emissions from burning, refineries/power plants and other industrial point sources, autos, road/construction)	-Use existing camera data to prepare Visibility Impairment Table for the Mokelumne Wilderness. -Re-install automatic camera in Mokelumne, or utilize IMPROVE site at Lake Tahoe to continue to monitor visibility.	Level I and: -Train Forest personnel to use mobile particulate sampler. -Use mobile sampler to measure particulates near/in Wilderness. Establish baseline levels and source apportionment. Repeat every 3-5 years.	Level II and: -Work with zone/region air and wilderness specialists to establish Forest standard for visibility: % change in contrast, SVR, change in deci-view?
WATER QUALITY (acidification from deposition of nitrates and sulfates)	-Continue annual sampling and analysis - ANC, pH, clarity - of Winnemucca, Emigrant and Beebe Lakes. Coordinate with Jim Sickman - UCSB.	-Conduct intensive sampling of 1-3 lakes to better determine baseline conditions of pH, ANC.	

APPENDIX C

MAPS AND FIGURES

1. Management Zone and Opportunity Class Map
2. Campfire Management Map
3. Carson Pass Restricted Area Map
4. Overnight Stock Recreation Stock Restriction Map
5. Grazing Allotment map
6. Recommended Designs for Signs

LEGEND

1 Salt Springs
2 Mokelumne Peak
3 Tanglefoot
4 Shriner Lake
5 Cole Creek Cyn
6 Mosquito Lake
7 Munson Meadow
8 Camp Irene
9 Lwr Summit City
10 Lower Beebe Lake
11 3 Lakes Plateau
12 Pardoe Lake
13 Beebe Lake
14 Martel Flat
15 Uppr Summit City
16 Corrie Lochan
17 4th of July Lake
18 Emigrant Lake
19 Carson Pass
20 Forestdale Basin
21 Devils Corral
22 Granite Lake
23 Snow Canyon
24 Grouse Lake
25 Mid Moke. Cyn
26 Stevenot
27 Upper Moke. Cyn
28 Jackson Canyon
29 Sandy Meadow
30 Wheeler Lake
31 Frog Lake
32 Underwood Valley
33 Lake Valley
34 Lower Moke. Cyn
35 Sheep Meadow
36 Indian Valley
37 Reynolds Peak
38 Raymond Peak
39 Raymond Lake
40 Raymond Cyn Crk
41 Pleasant Valley
42 Thornburg Canyon

OPPORTUNITY CLASS 1
Pristine

OPPORTUNITY CLASS 2
Primitive

OPPORTUNITY CLASS 3
Remote

OPPORTUNITY CLASS 4
Portal

R. 20 E.

R. 19 E.

R. 16 E.

T. 8 N.

Mokelumne Wilderness Management Guidelines

MANAGEMENT ZONES AND OPPORTUNITY CLASSES

north

February, 2000

scale: 1:101376

5/8" = 1 mile

LEGEND

Campfires are prohibited above 8000'. Campfires are also prohibited within 1/4 mile of the high water line of Salt Springs Reservoir.

Mokelumne Wilderness Management Guidelines

CAMPFIRE MANAGEMENT

February, 2000

north

scale: 1:101376

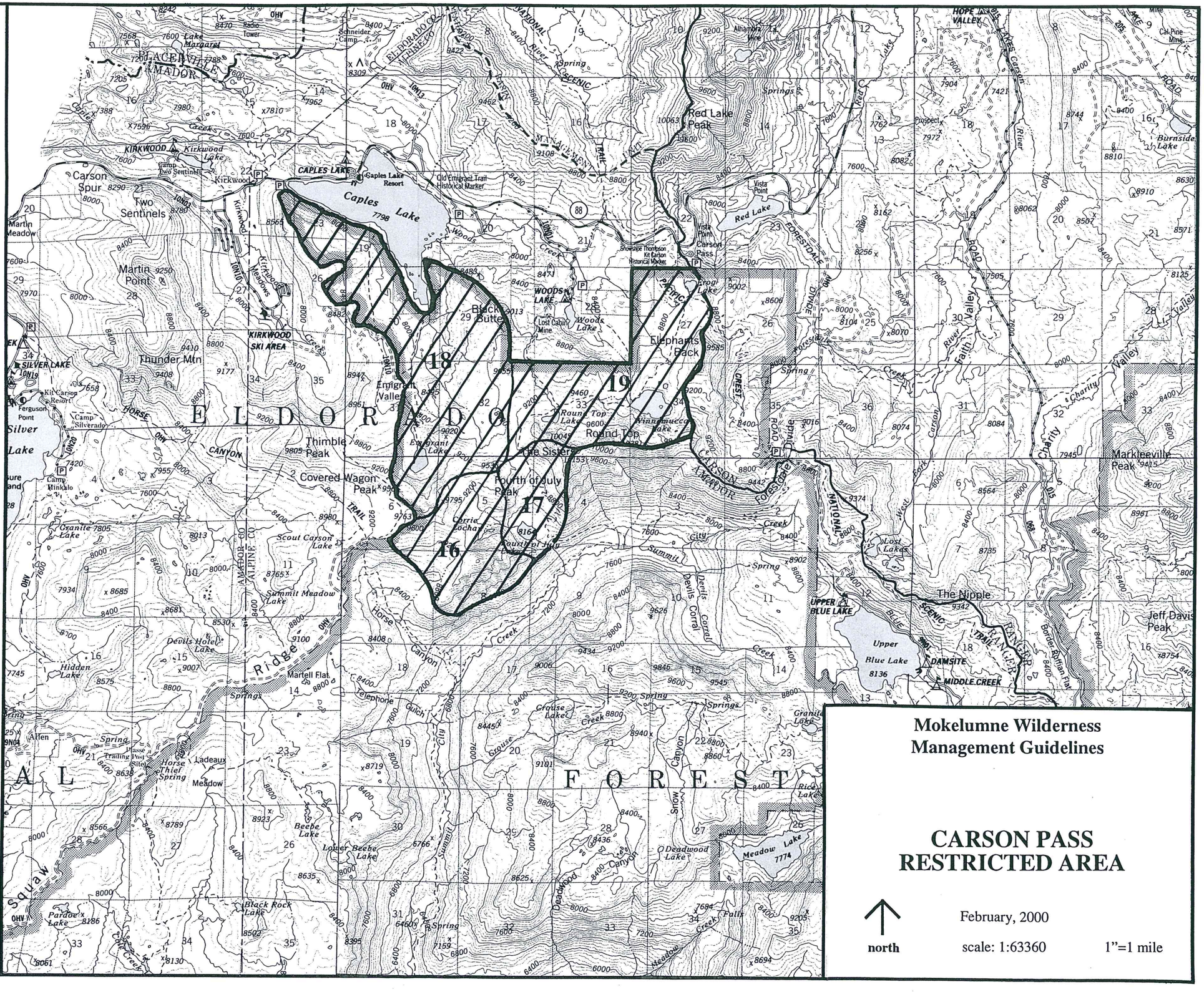
5/8" = 1 mile

LEGEND

Carson Pass Restricted Area

Within this area the following regulations apply:

- **No wood campfires.**
- **Dogs must be leashed or physically restrained.**
- **Recreation stock must stay on system trails.**
- **No grazing of recreational stock.**



Mokelumne Wilderness Management Guidelines

CARSON PASS RESTRICTED AREA

north

February, 2000

scale: 1:63360

1"=1 mile

LEGEND

Aside from restricted areas below, recreation stock use is permitted throughout the Mokelumne Wilderness, subject to the wilderness-wide regulations (no more than 12 animals per group, etc).

Camping with recreation stock is prohibited in these areas. Llamas and pack goats are excepted.

Camping with recreation stock is permitted in these areas with special limits (llamas & pack goats excepted):

- **No more than 4 animals per group.**
- **Two night stay limit.**
- **See special limits at Camp Irene.**

R. 16 E.

R. 20 E.

R. 19 E.

T. 8 N.

Mokelumne Wilderness Management Guidelines

OVERNIGHT RECREATION STOCK MANAGEMENT IN MOKELUMNE CANYON

north

February, 2000

scale: 1:101376

5/8" = 1 mile

Pardoe

Indian Valley

Stanislaus Meadow

Bear Valley

Bamert

Highland Lakes

Noble Canyon

Dressler

Campbell-Loope

Mokelumne Wilderness Management Guidelines

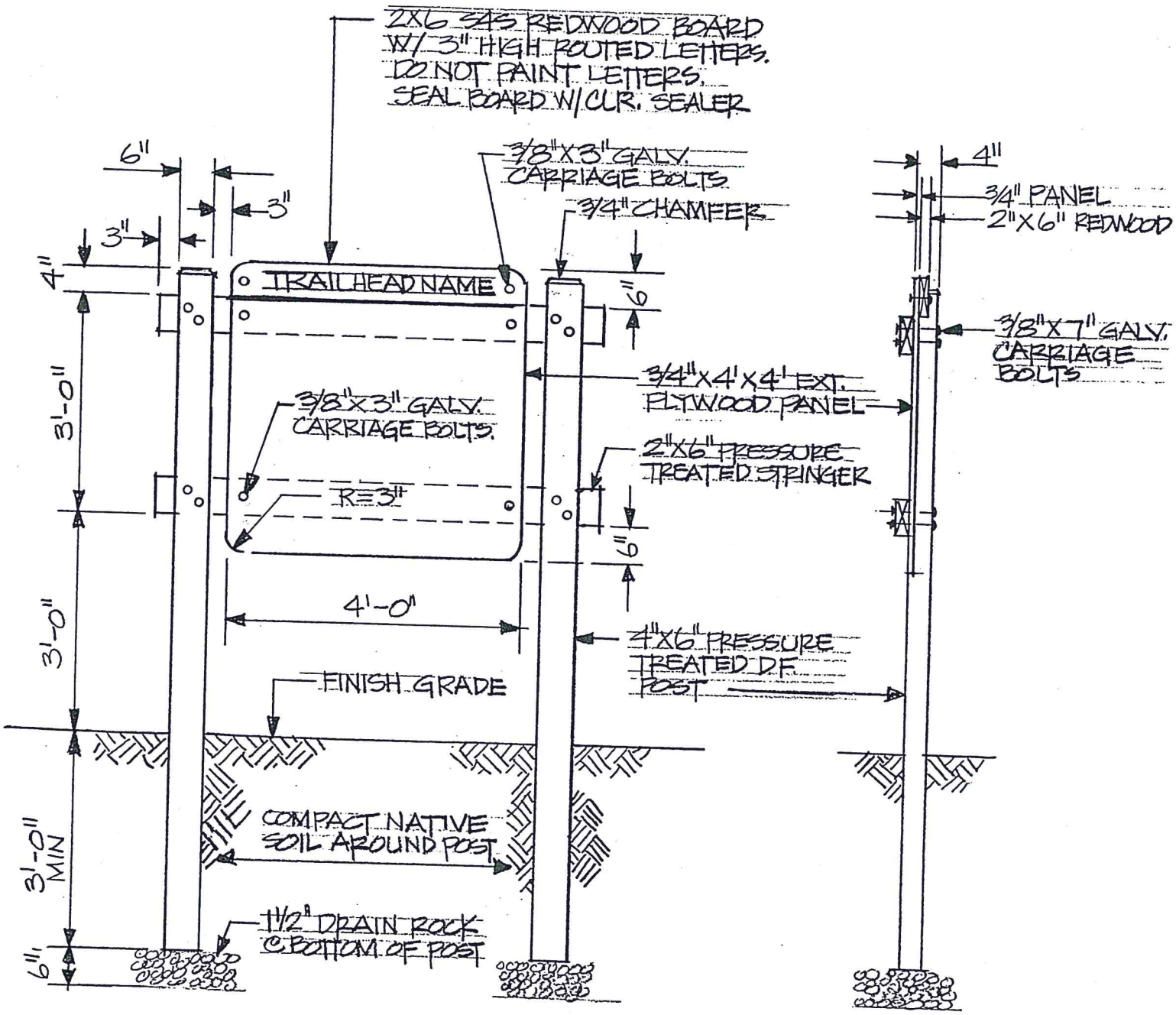
GRAZING ALLOTMENTS

February, 2000

north

scale: 1:101376

5/8" = 1 mile



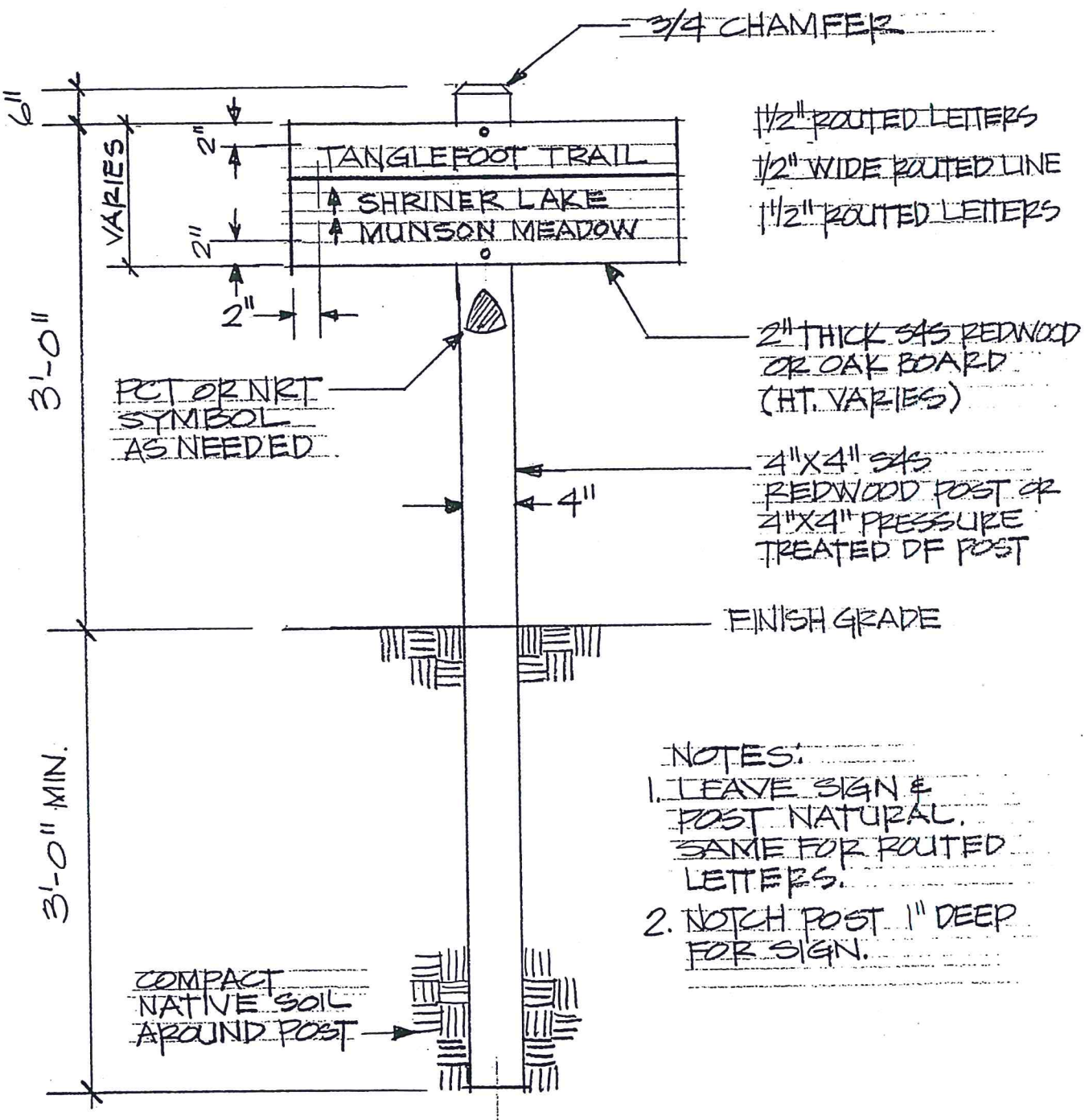
FRONT VIEW

SIDE VIEW

NOTE:
PAINT 4'X4' PLYWOOD PANEL WITH 2 COATS OF OLYMPIC SOLID COLOR STAIN "OXFORD BROWN".

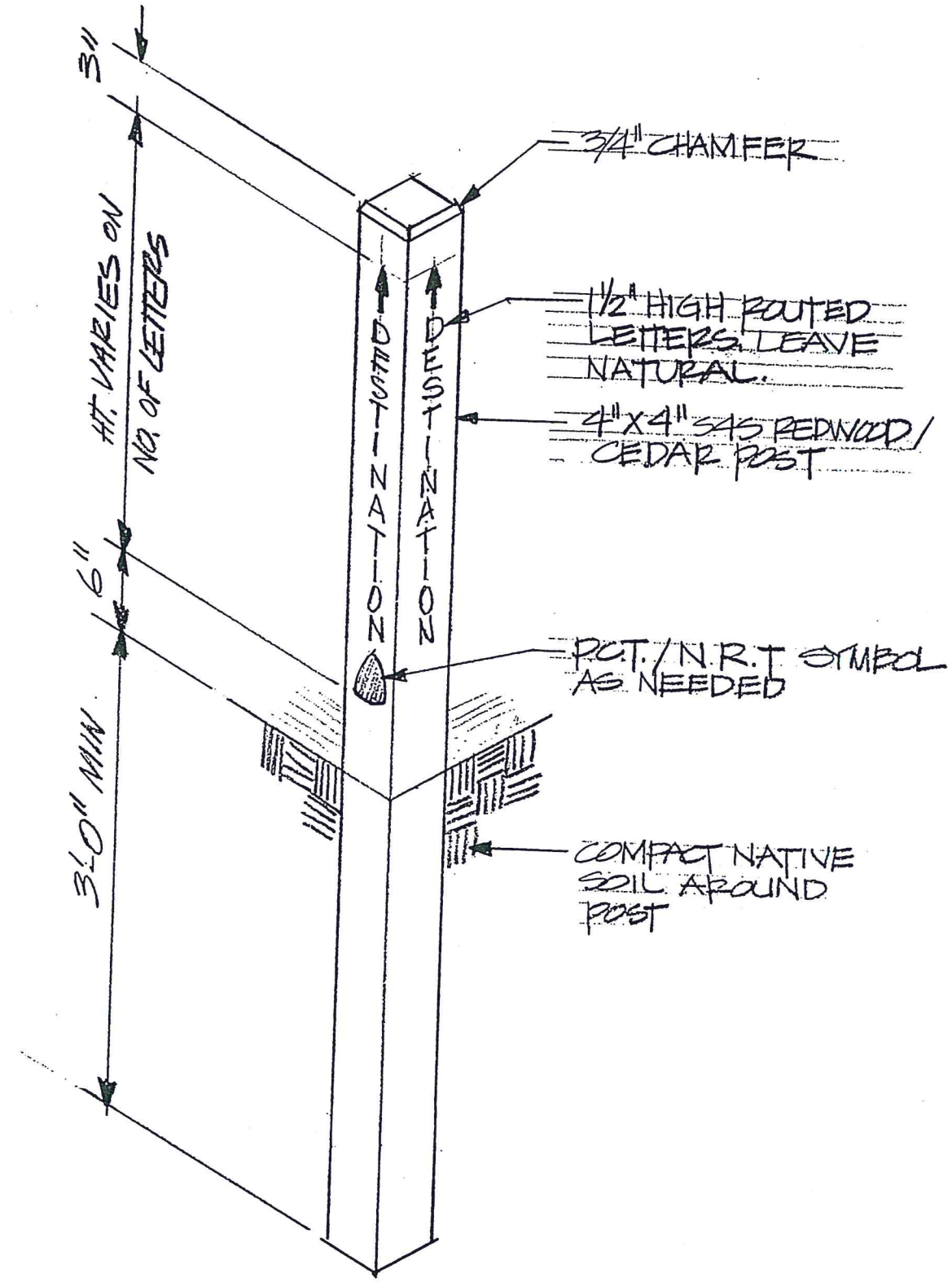
TRAILHEAD INFORMATION PANEL

SCALE: 1/2" = 1'-0"



DETAIL: TRAIL DESTINATION SIGN

SCALE: 1" = 1'-0"



DETAIL; TRAIL JUNCTION SIGN

SCALE; 1" = 1'-0"

*U.S. GPO 2000-0-583-070/10011