

Management Area 12- HARVEY

County -----	Lassen
Ranger District -----	Eagle Lake
Acreeage ----- National Forest -----	28,440
Other -----	0-



A. DESCRIPTION

Location The Harvey Management Area borders the northern edge of the Eagle Lake District. The southern boundary is just northeast of State Highway 44. The most prominent feature is Harvey Mountain, topped by a Forest Service fire lookout.

Physical Environment Slopes on the 7,354 foot Harvey Mountain are moderate to gentle. Harvey Valley (5,550 feet) and Grays Valley (5,600 feet) in the southwest are almost flat. Precipitation averages 33 inches a year. Soils are moderately deep, and surface rock is common on the timbered slopes. Grays Valley and Harvey Valley have deep alluvial soils, and Harvey Valley soils are clayey. Ephemeral streams drain the mountain slopes into Pine Creek in Harvey Valley.

Biological Environment Eastside pine and mixed conifer forests, most of them having commercial value, and brushfields cover the slopes. Grass-sagebrush and wet meadow communities occupy the flats. Fuel loads in the north half of the area are heavy, due primarily to timber harvest. The southern half has light to moderate fuel loads in forested areas among the sagebrush flats. In 1955, a fire burned about 500 acres on the southeast side of Harvey Mountain. An average of twelve small fires, caused mostly by lightning, burn here each decade. Habitat for goshawk, sandhill crane, mule deer, pileated woodpecker, pronghorn antelope, black bear, and mallard is present. The Blacks Mountain State Game Refuge (Refuge 1-F) extends into the northwestern part of the area. Several large prehistorical cultural sites have been discovered herein.

Management Most of the larger-sized trees in the area have been harvested. Cattle graze the Harvey Valley, Grays Valley, Upper Pine Creek, and a sliver of the Dixie Valley Range Allotments. Hunting is the primary recreation activity. The Harvey Valley Demonstration Range contains 127 research plots which are monitored intermittently. The eastern boundary of the Blacks Mountain Experimental Forest adjoins this area.

Facilities The Lassen and Nobles Emigrant Trails cross the area. A cinder pit lies on the western edge. Geothermal lease applications have been filed for lands in the area. The area is linked to Highway 44 by a well-developed Forest road system, and the Union Pacific Railroad parallels Highway 44.

B. STANDARDS AND GUIDELINES

Recreation

1. Manage the undeveloped camping area at White Horse Reservoir as a dispersed campsite.

Sensitive Plants

1. Monitor and protect Egg Lake monkeyflower (*Mimulus pygmaeus*) populations, and inventory for additional populations in seasonally wet areas.
2. Inventory for Modoc County knotweed (*Polygonum polygaloides* ssp. *esotericum*) in adobe flat and dry pond basin areas.

Water and Riparian Areas

1. Improve riparian conditions along Pine Creek. Consider fencing, grazing management and improvement projects.

Wildlife

1. Provide "high" habitat capability for pronghorn antelope through seeding, planting, and coordinating with other resource-use activities
2. Protect and enhance nesting habitat for sandhill cranes

C. PRESCRIPTION ALLOCATION

<u>Prescription</u>	<u>Acres</u>
A Non-Timber Wildlife	200
B Range-Wildlife	500
E Early Successional	200
F Riparian/Fish	200
K Rocky/Sparse Timber	400
R Range	9,000
T Timber	16,430
V View/Timber	1,510
Total	28,440

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Territories 3

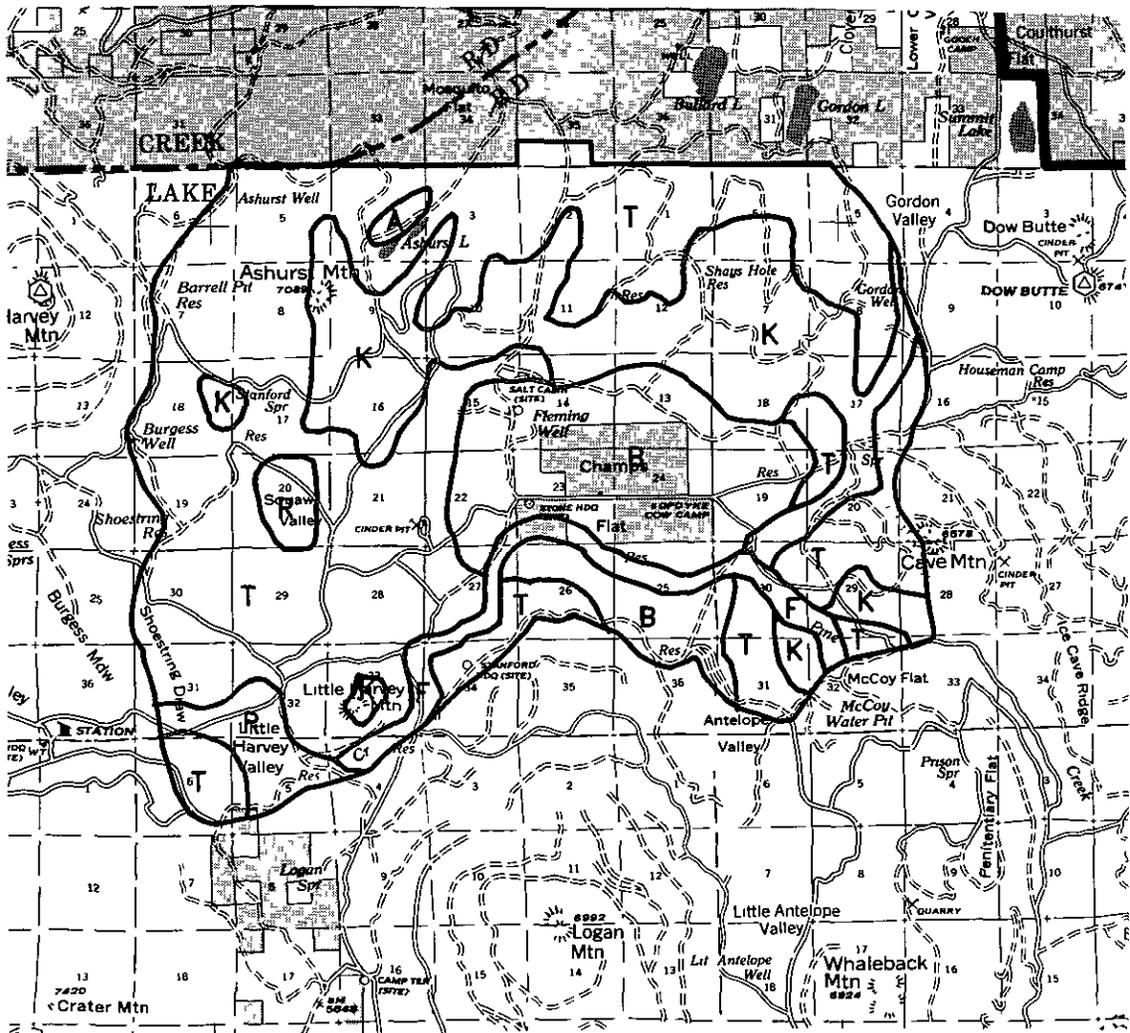
Other Emphasis Species. Pileated woodpecker, deer (summer range), mallard, pronghorn antelope, sandhill crane

E. DESIRED STATE FOR DIVERSITY

<u>Vegetation</u>	<u>Acres</u>
Shrub	
Chauarral	0
Montane Shrub	5
Sagebrush	260
Conifer Forest	
Eastside Pine	570
Mixed Conifer	420
Red Fir	0

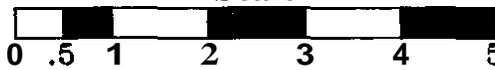
F. RANGE ALLOTMENT STRATEGIES

<u>Allotment</u>	<u>Strategy</u>
Dixie Valley (<5%)	D
Grays Valley (25%)	D
Harvey Valley (50%)	D
Upper Pine Creek (5%)	D



13 Management Area ASHURST

Scale



0 .5 1 2 3 4 5 Miles 1/2" 1 = Mile

January 1992



Management Area 13 - ASHURST

County -----	Lassen
Ranger District -----	Eagle Lake
Acreage ----- National Forest -----	27,060
Other -----	2,181



A. DESCRIPTION

Location The Ashurst Management Area is located about five miles northwest of Eagle Lake. The southern boundary generally parallels Pine Creek, and the northern boundary abuts private land. The only private land within the area is at Champs Flat.

Physical Environment Most of the area is within the watershed of Pine Creek, a tributary of Eagle Lake. The moderately deep soils are weathered from lavas, and surface rock is common. Deep alluvial clayey soils occur in Little Harvey Valley, Squaw Valley, and Champs Flat. Elevations range from 5,200 to 7,089 feet. Slopes are generally moderate, the flanks of Ashurst Mountain, Little Harvey Mountain, and the west side of Cave Mountain are steeper. Precipitation averages 27 inches a year. Northeast of Ashurst Mountain is Ashurst Lake, a wetland marsh.

Biological Environment Flat, well-drained areas support grass-sage communities. Slopes support eastside pine and mixed conifer stands. Riparian vegetation grows along Pine Creek and around Ashurst Lake. Fuel loads in logged areas are generally light to moderate, but occasionally heavy. Lightning caused only four small fires in the last decade, but in 1930 a large fire started on the north side of Ashurst Lake and burned into the adjacent management area. Ashurst Lake is a wetland developed for waterfowl and sandhill crane production. The area also provides habitat for bald eagle, goshawk, mule deer, pronghorn antelope, and pileated woodpecker. Several large prehistorical cultural sites and some historical ranch structures are located in this area.

Management The area was logged in the 1930's and much of the remaining overstory of larger diameter trees has been removed in subsequent timber sales. Large parts of the Champs Flat and Harvey Valley Range Allotments lie within the area. Hunting is the major recreation activity, an undeveloped campsite at Ashurst Lake is frequently used by hunters.

Facilities Oil and gas lease applications have been filed for lands in the area, but no leases have been issued. Access is from County Road 105, and the area has a network of low-standard Forest roads.

B. STANDARDS AND GUIDELINES

Fish

- 1 Investigate the potential of developing a warm water fishery at Ashurst Lake.

Recreation

- 1 Manage the undeveloped camping area at Ashurst Lake as dispersed campsites.

Sensitive Plants

- 1 Monitor and protect populations of Egg Lake monkeyflower (*Mimulus pygmaeus*). Inventory for additional populations in seasonally wet areas.
- 2 Inventory for Modoc County knotweed (*Polygonum polygaloides ssp. esotencum*) in adobe flat and dry pond basin areas.

Water and Riparian Areas

1. Improve riparian conditions along Pine Creek. Consider fencing, grazing management and improvement projects

Wildlife

1. Manage Ashurst Lake for waterfowl and sandhill crane nesting habitat.
2. Improve existing wetland habitat in Little Harvey Valley to increase waterfowl and sandhill crane production and improve migratory waterfowl habitat
3. Provide “high” habitat capability for pronghorn antelope through seeding, planting, and coordinating with other resource-use activities

C. PRESCRIPTIONALLOCATION

Prescription	Acres
A Non-Timber Wildlife	200
B Range-Wildlife	4,700
E Early Successional	200
F Riparian/Fish	1,190
K Rocky/Sparse Timber	7,870
R Range	1,000
T Timber	11,900
Total	27,060

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Temtones **3**

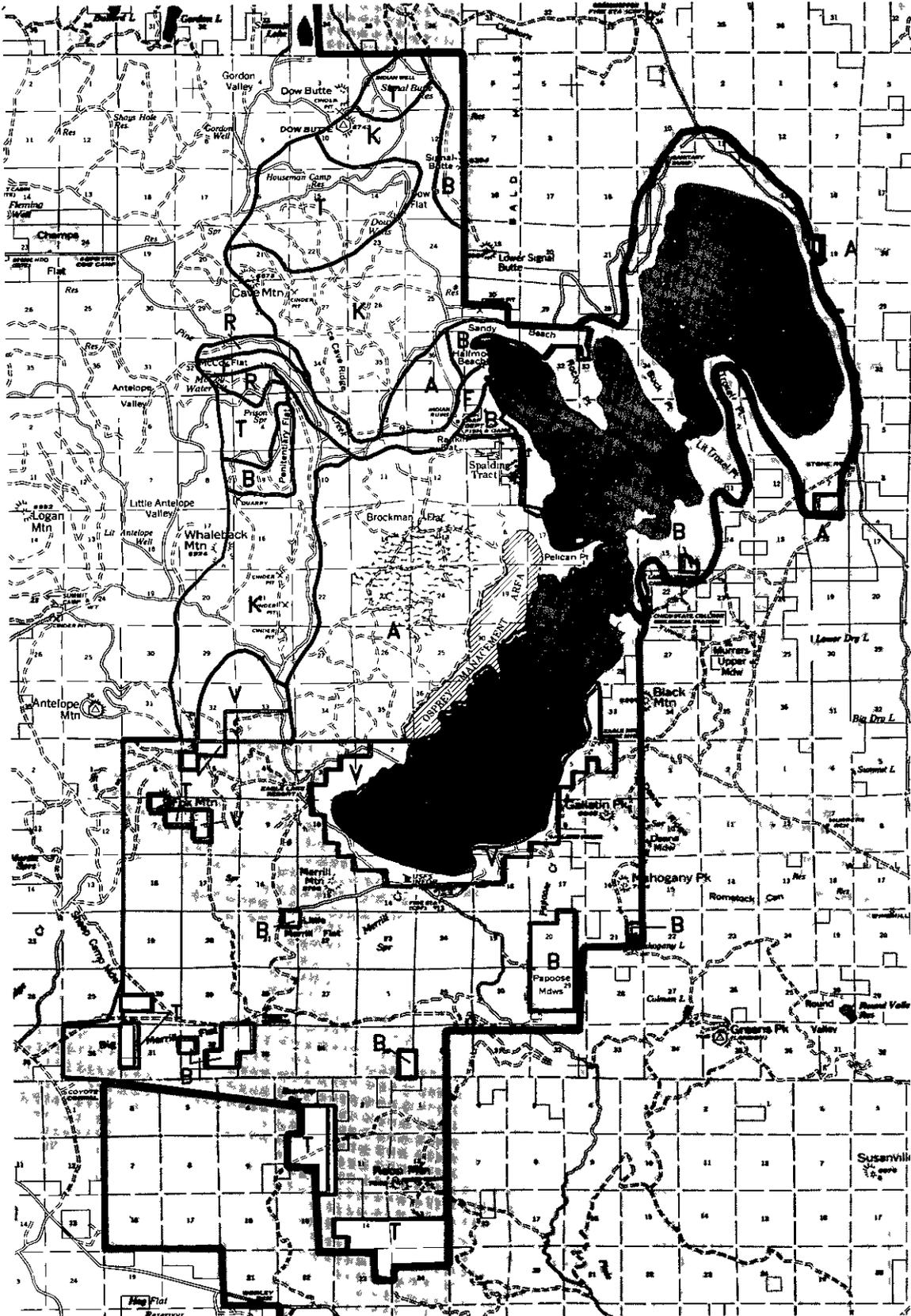
Other Emphasis Species: Pileated woodpecker, deer (summer range), mallard, sandhill crane, pronghorn antelope

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	2
Sagebrush	190
Conifer Forest	
Eastside Pine	810
Mixed Conifer	300
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Champs Flat (>70%)	D
Harvey Valley (25%)	D



14

Management Area
EAGLE

Scale



3/8" = 1 Mile January 1992



Management Area 14- EAGLE

County -----	Lassen
Ranger District -----	Eagle Lake
Acres ----- National Forest -----	40,345
Other -----	65,990



A. DESCRIPTION

Location Eagle Lake is the prominent landmark in the Eagle Management Area, located in the eastern central portion of the Forest. Most National Forest land is northwest of the lake, but the area boundary is extended to include scattered National Forest parcels south and east of the lake. The Bureau of Land Management also administers land within the area, and the California State Lands Commission has jurisdiction over the land under the lake. The remainder is private land.

Physical Environment Elevations range from the current lake level of about **5,105** feet to **7,609** feet on Roop Mountain. The lake level is expected to rise to its historic level of about **5,117** feet with the plugging of the Bligh Tunnel. Slopes vary from almost flat to very steep. Annual precipitation averages 27 inches, but ranges widely from **16** to **40** inches. Virtually all lands within the area are within the Eagle Lake watershed. Pine, Mernll, and Papoose Creeks are Eagle Lake's major tributaries, the lake has no natural outlet and is moderately alkaline. Although a few rock outcrops are granitic, most of the area's landscape is the result of volcanism. Basalt lava flows are highly evident, and soils are generally shallow and very rocky. The otherwise rolling terrain is commonly faulted. Several ice caves lie under Brockman Flat.

Biological Environment Vegetation is very diverse, types include eastside pine, mixed conifer, juniper brushfield, grass-sagebrush, wet meadow, and riparian. Fuel loads in logged areas are moderate to heavy. Pine and fir mortality from bark beetles presents a serious fire hazard. Brockman Flat is susceptible to fires that could pose a threat to the residential Spalding Tract subdivision. Several large fires, in-

cluding the Gallatin Burn (1951), Mernll Burn (1955), and the Eagle Lake Burns (1939 and 1984) have occurred on and adjacent to National Forest lands. The 1984 Eagle Lake Fire burned the edges of two campgrounds and threatened the historic Gallatin House. Fire occurrence is relatively high, annually averaging four small fires caused equally by lightning and people. Eagle Lake boasts one of the highest wintering populations of bald eagles in the state, it is not uncommon to view **50-60** individuals during December and January. Several breeding territories also exist on Forest Service land, as well as Bureau of Land Management and private lands within the basin. Other important emphasis species present are mule deer, pronghorn antelope, mallard, pileated woodpecker, bufflehead, sandhill crane, goshawk, and osprey. A special osprey management area has been established on Forest land at Brockman Flat. The lake is a trophy-trout fishery for the Eagle Lake trout, the only trout capable of surviving in the lake's alkaline water. A California Department of Fish and Game fish trap for hatchery purposes is located at the mouth of Pine Creek. Important cultural resources in the area include rock rings, petroglyphs, pictographs, and historical cabins.

Management Timber on both Forest and private lands has been logged. Timber stand conditions and other multiple-resource factors make this Management Area appropriate for testing the feasibility of uneven-aged timber management in the eastside pine vegetation type. The Signal Buttes Range Allotment and most of the North Eagle Lake and South Eagle Lake Allotments are in the area. Eagle Lake, the second largest natural lake entirely within California, is an increasingly important recreational focus for swimming, boating, fishing, driving, and hik-

ing Forest Service recreation facilities are on a narrow strip of federal property at the south end of the Lake, and comprise the Eagle Lake Recreation Area. It includes five developed campgrounds, served by a sewage treatment facility at Little Merrill Flat, a visitor information site, a boat launch, and Gallatin beach. The Eagle's Nest summer home tract contains 42 homes under special use permits. The Eagle Lake Marina was reconstructed in 1989-90. The historic Gallatin House recently was included in a special use permit to Eagle Lake Children's Chanties. The house has been restored and preserved in its near-original state. It will now be used as a part of the camp facilities for handicapped children. The Gallatin House recently served as a work center for Forest Service employees who maintained the recreation facilities. In September 1982, Lassen County adopted a plan for the Eagle Lake area calling for (1) a naturally fluctuating lake level, (2) a continued land adjustment program in the public interest, (3) a limit on new recreation developments such as new campgrounds, and (4) a prohibition on subsurface exploration for geothermal, gas, oil or other hydrocarbon resources in the Eagle Lake Basin. Such applications had previously been received, analyzed and denied.

Facilities Many cinder pits have been excavated on Forest and private lands. Lassen County Roads A-1 and 201 and State Highway 139 provide access to the area. Private subdivisions are located at Spalding Tract and Stones Landing on the lake, other undeveloped private land is present.

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 At recreation facilities, provide information on the cultural history of the area
- 2 Complete a cultural resource plan for the Eagle Lake Basin
- 3 Recover the scientific values of Archaeological Site #411
- 4 Protect archaeological sites by signing, patrol, and/or other methods

- 5 Provide for the maintenance of the historical character of Gallatin House that results in its eligibility for the National Register of Historic Places

Firewood

- 1 Give personal use of firewood priority over commercial use
- 2 Prohibit firewood cutting east of County Road A-1/201, except by special permit

Fish

1. Coordinate management of Eagle Lake trout habitat with the California Department of Fish and Game

Lands

- 1 Establish a purchase unit at the south end of Eagle Lake to permit land acquisition for the possible relocation of existing developed recreation sites as the water level rises.
- 2 Acquire inholdings that are not developed and other appropriate lands to provide a site for a visitor information center
- 3 Acquire lands to protect Papoose and Pine Creek riparian zones and to improve Eagle Lake's water quality
- 4 Dispose of isolated parcels of National Forest land that do not aid in meeting this Management Area direction. Isolated parcels adjacent to Bureau of Land Management properties will be transferred to BLM
- 5 Through exchange, make National Forest lands available adjacent to the Spalding home tract for the purposes of solid waste disposal and/or sewage processing and treatment. Such uses will not be authorized by special use permit
- 6 Administer the Eagle's Nest recreation residence tract within existing authority to meet requirements in the Lahontan Regional Water Quality Control Board's Eagle Lake Basin Plan

Minerals

1. Recommend withdrawal of the Eagle Lake planning area from mineral entry and mineral leasing
2. Rehabilitate the cinder pit at the north end of Eagle Lake to meet visual quality objectives for the Eagle Lake basin.

Recreation

1. Develop a composite recreation plan addressing the future of the manna, provision of any new facilities, and development of bicycle and off-highway vehicle trails.
2. Develop a visitor information station at the entrance to the Eagle Lake Recreation Area (Junction of county roads 201 and A-1), when land is acquired.
3. Build a new visitor information center and amphitheater at the Merrill Creek information station
4. Exclude livestock from developed recreation sites
5. Develop and implement a vegetative management plan for the Eagle Lake Recreation Area
6. Manage the undeveloped camping areas at Houseman Camp, Dow Wells, Prison Springs, and Pine Bndge as dispersed campsites
7. Maintain the Gallatin House to resemble its appearance during the historical period, by coordinating with Eagle Lake Children's Chanties as it develops and operates a camp for special needs children

8. Make lands available on the south shore of Eagle Lake for the purpose of construction and operation of a Priority 1 Organizational Camp. This use will be authorized by special use permit. ^{1/}
9. Cooperate in efforts to recommend Eagle Lake as a National Recreation Area

Sensitive Plants

1. Monitor and protect populations of Egg Lake monkeyflower (*Mimulus pygmaeus*). Inventory for additional populations in seasonally wet areas.

Timber

1. As part of the Forest's uneven-aged management test, emphasize individual tree selection and group selection where appropriate.
2. Apply the full range of silvicultural practices where uneven-aged management is not feasible.

Visual Resources

1. Maintain a high level of visual quality in the View/Timber Prescription area around Eagle Lake.

Water and Riparian Areas

1. Maintain or improve stream corridors, channels, and other riparian areas along Pine Creek, Merrill Creek, Pappoose Creek and the lakeshore

^{1/} A Priority 1 Organizational Camp is defined under Forest Service Manual 2345.11 as follows

Priority 1 Programs for the disadvantaged or underprivileged in which, regardless of sponsorships, charges to recipients are free or token only and without such sponsorship the recipient probably could not go to camp. Generally speaking, recipients need not be members of the sponsoring organization. Examples of such programs would be those sponsored by the Salvation Army, Boy's Clubs of America and some civic clubs, programs for the physically challenged or infirm where the objective is rehabilitation and training, and programs to provide an outdoor experience not available except through the supervision of the sponsoring organization. Camps for physically challenged children, retarded children, diabetics, or the hearing impaired are examples.

Wildlife

- 1 Enhance habitat within the Eagle Lake basin for breeding and wintering bald eagles. Close nesting and wintering areas to vehicles, as needed, to protect the eagles
- 2 Continue to implement the 1971 management plan for the Eagle Lake Osprey Management Area and the lands allocated to the Non-Timber Wildlife Prescription (A).
3. Protect and enhance nesting habitat for sandhill cranes, particularly Papoose Meadows.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non-Timber Wildlife	12,500
B Range-Wildlife	3,800
D Developed Recreation	125
E Early Successional	100
F Riparian/Fish	900
K Rocky/Sparse Timber	13,220
R Range	900
T Timber	5,400
V View/Timber	3,400
Total	40,345

D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Territories	4
Goshawk Territories	1

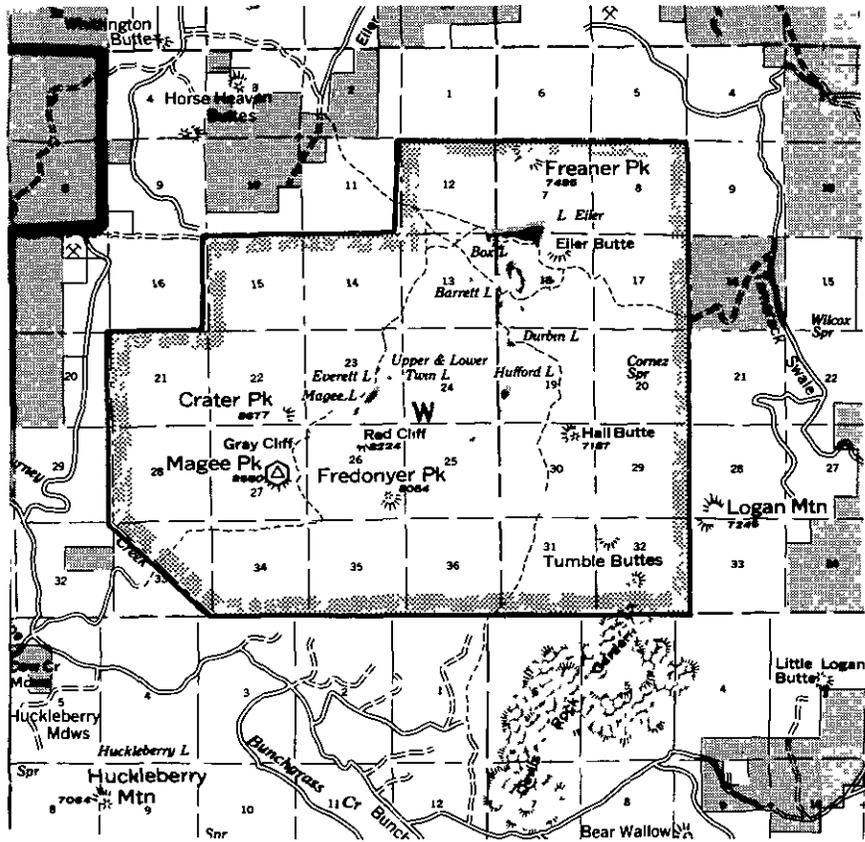
Other Emphasis Species Osprey, deer (summer range), mallard, rainbow trout (including the Eagle Lake rainbow trout), sandhill crane, bufflehead, pileated woodpecker, pronghorn antelope.

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	15
Sagebrush	355
Conifer Forest	
Eastside Pine	840
Mixed Conifer	420
Red Fir	10

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
North Eagle Lake (85%)	D
Signal Butte (100%)	C
South Eagle Lake (>90%)	D



15 Management Area THOUSAND LAKES



January 1992



Management Area 15- THOUSAND LAKES

County -----Shasta
 Ranger District -----Hat Creek
 Acreage-----National Forest ----- 16,335
 Other-----0-



A. DESCRIPTION

Location The Thousand Lakes Management Area is the Thousand Lakes Wilderness. It lies approximately 12 miles south of Burney, midway between the town of Burney and Lassen Volcanic National Park.

Physical Environment The landscape was created by the eruption of an ancient volcano that was subsequently carved by mountain glaciers. Crater Peak at 8,677 feet is the highest point on the Lassen National Forest. Below the rim of peaks lies a glaciated valley with many small lakes. The lowest point occurs at the base of the volcano at 5,546 feet. The climate at these high elevations is very cold. Snowfall is heavy, and precipitation averages 50 inches a year. A snow course has been established within the wilderness for measuring snowpack water content, as part of a statewide water supply forecasting network. Runoff is small, and features such as Big Springs indicate a significant amount of ground water recharge. The soils of the valley are of glacial origin, very rocky, and poorly drained due to underlying impermeable layers. The remaining soils are basaltic forest soils common to the area.

Biological Environment The vegetation varies greatly and includes whitebark pine and mountain hemlock at the summits, extensive lodgepole pine stands on the flats, true fir and mixed conifer forests on the slopes, and evergreen brushfields at the lowest elevations. Although unsurveyed, some high peaks may have populations of alpine plants of biogeographic interest. The moderate to extreme fuel loads reflect decades of natural accumulation. An average of two fires burn each year, one from lightning, the other from human causes. Until the 500-acre Frenner Peak fire in 1987, no large fires had been recorded, but the vegetation pat-

terns suggest an active fire history prior to National Forest establishment. Wildlife species are typical of mid-high elevation areas on the Forest and include marten, spotted owl, pileated woodpecker, black bear, and black-tailed deer. Spotted owls inhabit mature stands in the wilderness. Many of the small lakes have religious significance to Native Americans.

Management Seven of the lakes are aerially stocked with trout and provide the major attraction to visitors. The small size of the wilderness presents little challenge to the experienced hickpacker, but is well suited to the novice hickpacker and day-hiker. Some dispersed camping sites are showing signs of heavy use from backpackers and horse campers.

Facilities Four National Forest roads and four trailheads provide good access to the Wilderness. The southeast corner has been subject to geothermal lease application, but no leases have been issued.

B. STANDARDS AND GUIDELINES

Fire

- 1 Develop and implement a prescribed burning plan.
- 2 Allow fire to resume its natural role in the wilderness ecosystems except where it would endanger public safety or private lands.

Fish

- 1 Survey wilderness lakes to evaluate existing aquatic resources and determine the need for continued fish stocking.

2. In cooperation with California Department of Fish and Game, stock fish in lakes where planting is desirable

Recreation

- 1 Prohibit domestic cattle and sheep
- 2 Construct a trail from Magee Peak to Crater Peak.
3. In areas of concentrated use adversely affecting soil, vegetation **or** water resources, reduce these impacts by dispersing use and relocating trails, as appropriate.
- 4 Improve access for persons-with-disabilities by constructing horse-mounting ramps and widening select trails commensurate with other resource values.

Sensitive Plants

- 1 Inventory for possible populations of short petalled campion (*Szlene invisa*) in red fir stands
- 2 Inventory for possible talus collomia (*Collomia debilis spp larsenii*) on the higher peaks

Visual Resources

- 1 Meet a visual quality objective of preservation throughout the area

Wilderness

- 1 Update and comply with the direction in the Thousand Lakes Wilderness Implementation Plan

C. PRESCRIPTIONALLOCATION

Prescription	Acres
W Wilderness	16,335
Total	16,335

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Marten HMA	2
Spotted Owl Territones	1
Goshawk Territories	1

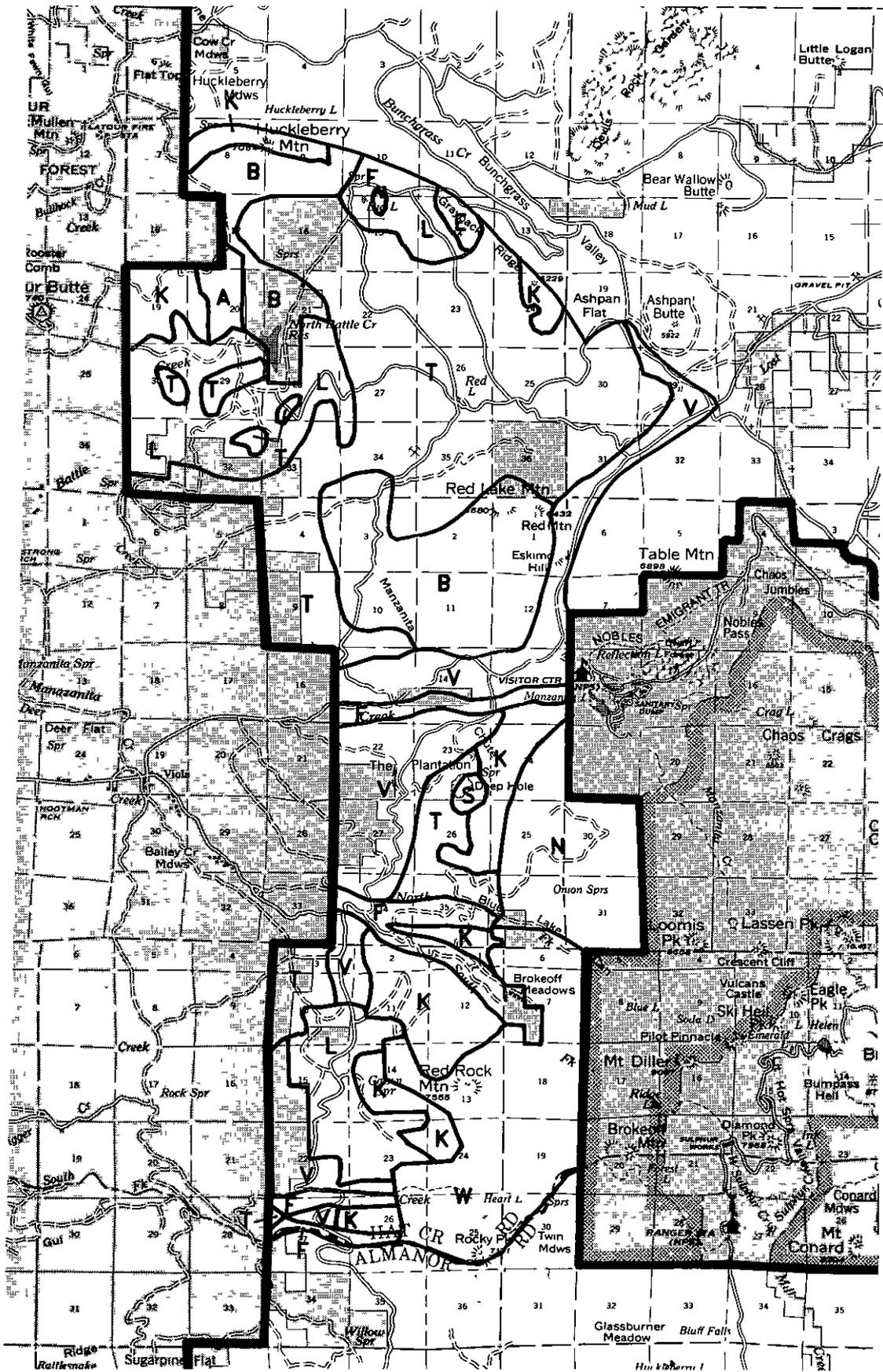
Other Emphasis Species: pileated woodpecker, rainbow trout.

E. DESIRED STATE FOR DIVERSITY

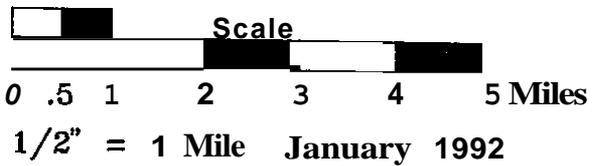
Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	20
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	405
Red Fir	270

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
None	

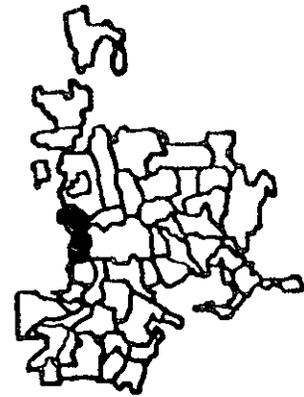


16 Management Area RED



Management Area 16- RED

County -----	Shasta
Ranger District -----	Hat Creek
Acreage ----- National Forest -----	34,705
Other -----	5,395



A. DESCRIPTION

Location The Red Management Area lies along the west boundary of Lassen Volcanic National Park and shares many miles of boundary with the park. Many of its streams originate within Lassen Park, including the north and south ends of Digger Creek, the North and South Forks of Bailey Creek, Manzanita Creek, and North Battle Creek. Parcels of private land are scattered throughout.

Physical Environment The highest point is near Brokeoff Mountain at **8,198** feet; the lowest elevations are along the west side of the area at approximately **5,100** feet. Topography varies from volcanic uplands to steep canyons. These canyons are extensions of canyons in the Park and offer scenic vistas. Several lakes dot the landscape, notably with Heart Lake, North Battle Creek Reservoir, and Big Lake. Deep Hole, a collapsed pit crater, is an unusual geomorphic feature. Precipitation ranges from 50 inches in the north to 70 inches in the south near Red Rock Mountain. Most of this occurs as snow. Soils are a reflection of volcanic activity from nearby Lassen Peak area. Forest soils are rocky and derived from andesite. At the higher elevations, some are quite shallow and susceptible to surface erosion. A few cinder cones occur in this area.

Biological Environment Vegetative types include extensive manzanita brushfields and mixed conifer, red fir, and sub-alpine types mixed with meadows. Forest fuel loads vary from moderate to heavy. Much of the logging slash **has not been adequately treated**, and dense stands of young fir trees add to the fire hazard. Although few fires have been recorded within the area, extensive brushfields are evidence of very large historical fires. Many of the brushfields have been cleared and planted with ponderosa/Jeffrey pine over the past **40** years with varying

degrees of success. Brushfields are important deer fawning habitat. Wildlife includes spotted owls, peregrine falcon, bald eagle, goshawk, pileated woodpeckers, and furbearers such as fisher and marten. The streams, Heart Lake and North Battle Creek Reservoir, are good fisheries, but the reservoir is the most popular.

Management Timber production activities are most evident in the large plantations. Harvesting has accelerated in the last decade with numerous regeneration harvests near Red Lake. The area is a popular firewood gathering spot for residents of Old Station, Shingletown, and even Redding. The area is within the Manzanita Lake and North Battle Creek Range Allotments for cattle grazing. Recreation is heavy both in the summer when Lassen Volcanic National Park is most active and in the winter. The nearby Ashpan Snowmobile Park provides access to many miles of trails. The area is also used by hikers and backpackers, especially in the Heart Lake further planning area, which is accessed by a proposed National Scenic Trail.

Facilities Management of the area is influenced by residential development at Viola and Brokeoff Meadows. The major access to this country is by State Highway **44** and **44/89** and a county road from Viola to Brokeoff Meadows. The south half of the area has been subject to geothermal lease applications, and a portion along the western boundary is subject to oil and gas lease application, but no leases have been issued. Portions of the Nobles Emigrant Trail can still be seen.

Further Planning Areas Part of the Heart Lake further planning area lies in the southern end of the area.

Specialheas The 100-acreDeep Hole is established as a Geological Special Interest Area.

B. STANDARDS AND GUIDELINES

Facilities

- 1 Close the Onion Springs Road (provldeLevel 1 maintenance) once timber sale actinties are completed
- 2 Recommend the remaining portion of the Heart Lake Trail as a National Scenic Trail, and develop parking at the Digger Creek Trailhead

Firewood

- 1 Give personal use of firewood prionty over commercial use.

Lands

- 1 Resolve the occupancy trespass at Brokeoff Meadows, using the Small Tracts Act or other appropriate methods The boundary of Brokeoff Meadows will change at the conclusion of case

Recreation

- 1 Continue designation of certain roads for winter over-snow use, and restnct snow plowing of snowmobile trails between December 1 and April 1
- 2 Continue to support the construction of a joint Lassen Forest/Lassen Volcanic National Park Visitor's Center on Lassen Forest land near the north entrance to Lassen Park

Sensitive Plants

- 1 Inventory for talus collomia (*Collomia debilis spp larsenu*) populations in alpine or subalpine areas
- 2 Monitor and protect populations of northern spleenwort (*Asplenium septentrionale*) and inventory for additional populations on rocky outcrops
- 3 Inventory for possible short-petalled cam-pion (*Silene invisa*) in red fir stands

Soils

- 1 Restrict tractor logging on cinder cone slopes steeper than 20 percent

Special Areas

- 1 Prepare a management plan for the Deep Hole Special Interest Area

Visual Resources

- 1 Meet partial retention visual quality in the foreground of the 17 Road
- 2 Meeta visual quality objective of retention in the foreground of Highway 44/89

Wildlife

- 1 Regenerate decadent brushfields to improve summer range for black-tailed deer
- 2 Enhance cntical fawn mghabitat in the Manzanita Chutes area
- 3 Apply special silvcultural prescriptions to enhance potential nesting habitat for bald eagles at the North Battle Creek Reservoir
- 4 Monitor cliff sites in Blue Lake Canyon for peregrine falcon

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non-Timber Wildlife	400
B Range-Wildlife	4,700
D Developed Recreation	25
E Early Successional	200
F Riparian/Fish	1,130
K Rocky/Sparse Timber	3,840
L Late Successional	6,000
N Semi-Primitive Non-Motonzed	2,800
S Special Areas	100
T Timber	6,060
V View/Timber	4,750
W Wilderness	4,700
Total	34,705

D. WILDLIFE HABITAT ALLOCATIONS

Marten HMA	1
Bald Eagle Territones	1
Peregrine Falcon Territones	1
Spotted Owl Habitat Areas	2
Goshawk Territories	6

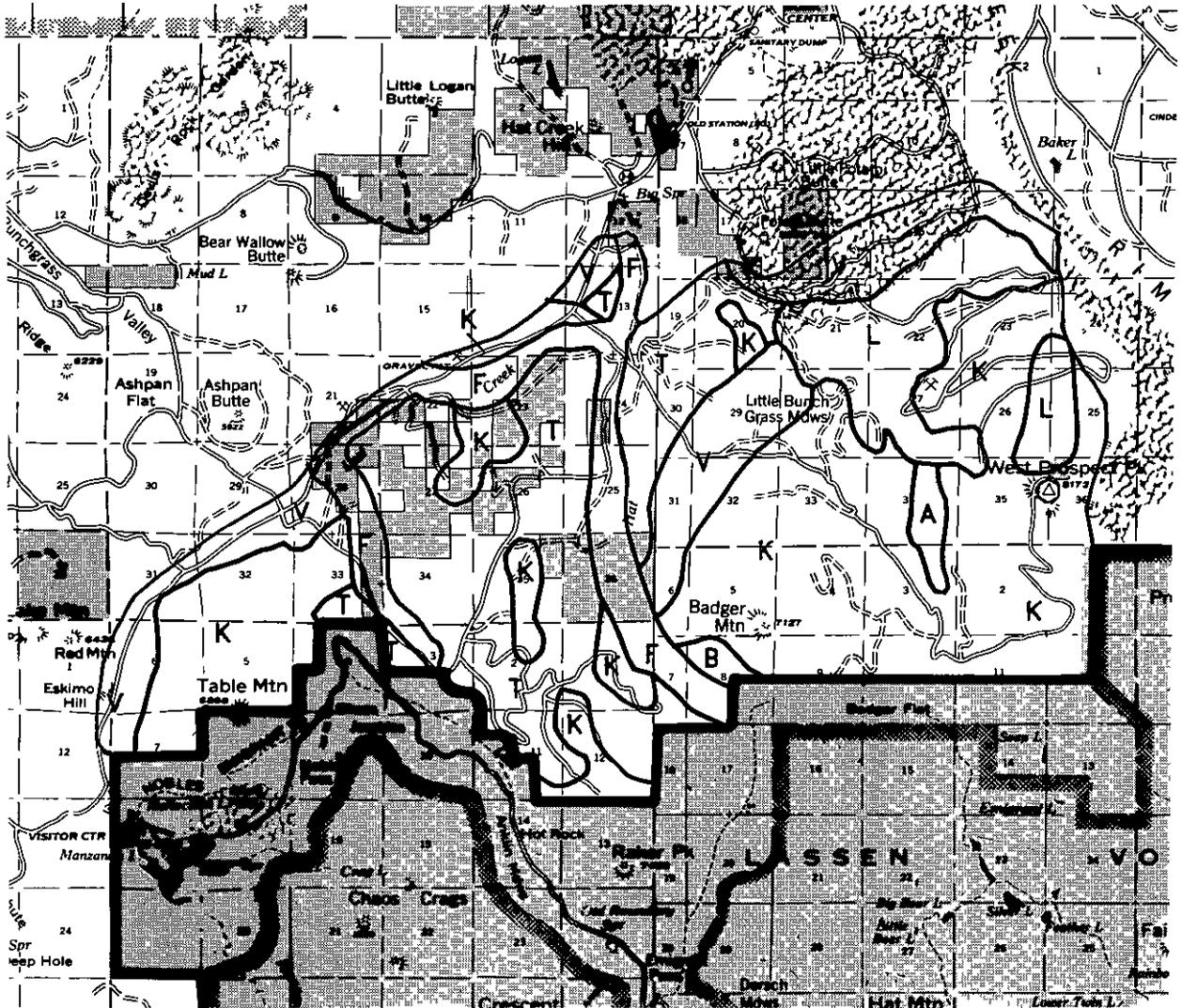
Other Emphasis Species. Osprey, pileated woodpecker, deer (summer range), fisher, rainbow trout

E. DESIRED STATE FOR DIVERSITY

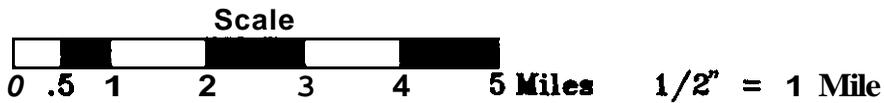
<u>Vegetation</u>	<u>Acres</u>
Shrub	
Chaparral	0
Montane Shrub	210
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Comfer	1070
Red Fir	245

F. RANGE ALLOTMENT STRATEGIES

<u>Allotment</u>	<u>Strategy</u>
Manzanita Lake (100%)	C
North Battle Creek (100%)	C



17 Management Area LOST CREEK



January 1992



Management Area 17 - LOST CREEK

County -----	Shasta
Ranger District -----	Hat Creek
Acreage ----- National Forest -----	25,765
Other -----	2,663



A. DESCRIPTION

Location The Lost Creek Management Area adjoins the northern boundary of Lassen Volcanic National Park. It is bounded on the west by highway 89/44, on the east by the Hat Creek Rim, and on the north by the Sheep Camp Loop Road. Most of the private land occurs in scattered parcels on the west side of the area.

Physical Environment Elevations range from 4,900 along Lost Creek to 8,172 feet on West Prospect Peak. The terrain is generally flat, but slopes up to 50 percent are found on Badger Mountain and West Prospect Peak. Because of highly porous volcanic ash, very little surface runoff or erosion occurs. Significant streams include Lost Creek, Hat Creek, and Rail Canyon, which drain generally north from the Park. Precipitation averages 41 inches a year, primarily in the form of snow during November through March. The volcanic soils are moderately deep to deep and have many rock fragments. Much of the area has an ash overburden. A few cinder cones occur in this area.

Biological Environment Vegetative cover is mixed conifers interspersed with brushfields. The brushfields are the result of old fires predating the National Forest; most have been cleared and planted with ponderosa and Jeffrey pine. Both natural and slash fuel loads in the forested portions range from moderate to heavy, although most of the slash has been treated. The area experiences two or three small, low intensity lightning fires per year. Human-caused fires are rare. Wildlife is typical of mixed conifer and old growth habitat. Spotted owls and goshawks are present in the area. Significant fisheries are limited to Hat Creek, although Lost Creek does support a small trout fishery.

Management Timber is intensively managed on both National Forest and private land. The area is within the Hat Creek Range Allotment. Firewood harvest in the area is significant. Most recreation is hunting and fishing around several dispersed undeveloped campsites. Timber stand conditions and other factors make this management area appropriate for testing the feasibility of uneven-aged timber management in the mixed conifer vegetation type.

Facilities The Pacific Crest Trail bisects the area's eastern portion. Portions of the Nobles Trail can be found. Access is provided from Highway 89/44 by a well-developed system of National Forest and private logging roads. Parts of the area have been subject to geothermal lease application.

B. STANDARDS AND GUIDELINES

Facilities

- 1 Relocate the Pacific Crest Trail to National Forest land if and when land exchanges are completed (for example - the Emigrant Ford Exchange)

Fish

- 1 Maintain Hat Creek in the natural and free-flowing state
- 2 Investigate habitat improvement opportunities along Lost Creek and Hat Creek, including enhancing riparian vegetation and developing pools, riffles, and instream cover

Lands

- 1 Consolidate land ownerships, with priority given to lands adjacent to Hat and Lost Creeks

Recreation

- 1 Work with willing partners to rehabilitate Vista Point. Add informational/interpretive signing
- 2 Manage the undeveloped camping areas at Lost Creek as dispersed recreation sites

Sensitive Plants

- 1 Inventory for possible talus collomia (*Collomia debilis* spp. *larsenu*) on talus slopes
- 2 Inventory for possible northern spleenwort (*Asplenium septentrionale*) populations on rocky outcrops

Soils

- 1 Restrict tractor logging on cinder cone slopes steeper than 20 percent

Timber

- 1 As part of the Forest's uneven-aged management test, emphasize individual tree selection and group selection where appropriate
- 2 Apply the full range of silvicultural practices where uneven-aged management is not feasible

Visual Resources

- 1 Meet a visual quality objective of Partial Retention in the background as seen from Thousand Lakes Wilderness looking south, Highway 44 on Hat Creek Rim, and Lassen Park
- 2 Meet a visual quality objective of Retention in the foreground of the Pacific Crest Trail from the Lassen Park boundary to a point one mile north of the Park. Meet Partial Retention in the foreground from that point north along the trail

Wildlife

- 1 Regenerate aspen and cottonwood stands along Hat and Lost Creek
- 2 Enhance critical fawning habitat

C. PRESCRIPTIONALLOCATION

Prescription	Acres
A Non-Timber Wildlife	300
B Range-Wildlife	200
D Developed Recreation	5
E Early Successional	200
F Riparian/Fish	1,350
K Rocky/Sparse Timber	13,190
L Late Successional	3,100
T Timber	3,220
V View/Timber	4,200
Total	25,765

D. WILDLIFE HABITAT ALLOCATIONS

Spotted Owl Habitat Areas	1
Goshawk Terntones	3

Other Emphasis Species. Pileated woodpecker, deer (summer range), marten, fisher

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	50
Sagebrush	5
Conifer Forest	
Eastside Pine	220
Mixed Conifer	945
Red Fir	0

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Hat Creek (50%)	C

Management Area 18 - GRAYS

County -----	Lassen
Ranger District -----	Eagle Lake
Acreage ----- National Forest -----	20,645
Other -----	8,545



A. DESCRIPTION

Location The Grays Management Area borders the northeast corner of Lassen Volcanic National Park. It is bounded on the south by the Canhou Wilderness, on the north by State Highway 44, and on the west by the Butte Creek Road (Road 32N21). Private land is scattered throughout the northern part.

Physical Environment The landscape consists of basalt lava flows and many cinder cones. The soil is extremely rocky, with high ash content. The relatively steep cinder cones rise above the gently sloping landscape. Elevations range from 5,600 feet to 7,796 feet at Two Buttes. Because of the extreme permeability of the volcanic soils and rock, surface water is scarce. However, glacial debris was deposited atop the volcanic rocks in the extreme west, and springs occur at the contact between the two. Butte Creek flows along the west edge of the area. Precipitation averages 36 inches annually.

Biological Environment Vegetation includes eastside pine, mured comfer, red fir, lodgepole pine, grass-sagebrush, and nparian types. Fuel loads in forested areas are moderate to heavy, and are occasionally extreme due to logging. Every year lightning causes two or three small fires. Habitat is present for black-tailed deer, black bear, marten, red fox, pileated woodpecker, goshawk, and possibly fisher and wolverine. Spotted owls nesting near Bogard Buttes lie on the northeastern edge of the species range. Butte Creek is stocked with rainbow and brook trout.

Management Overstory removal and intermediate cuts have harvested many of the larger trees over much of the area. Some lodgepole firewood cutting occurs. Parts of the Grays Valley, Silver Lake, Upper Pine Creek, and Poison Lake Range Allotments lie within the area.

Hunting and fishing are the major recreation activities. Butte Creek Campground, a partly developed facility with 14 campsites on the Lassen Volcanic National Park access road, is in the western edge of the area.

Facilities Major access to the area is by the Butte Lake Road, and by the Forest "10" Road, extending south from Highway 44 adjacent to the area. The historical Lassen and Nobles Trails pass along the area's boundaries.

B. STANDARDS AND GUIDELINES

Fish

1. Improve the trout fishery in Butte Creek upstream from Butte Creek Campground by providing "high" habitat capability.

Recreation

1. Develop and implement a site plan for the Butte Creek campground.
2. Assess development of the spring at Butte Creek campground as a potable water source; if water is provided, upgrade the campground to full fee status.

Sensitive Plants

1. Monitor and protect Egg Lake monkeyflower (*Mimulus pygmaeus*) near Robbers Spring, and inventory for additional populations in seasonally wet areas.

Soils

1. Restrict tractor logging on cinder cone slopes steeper than 20 percent.

Visual Resources

1. Meet a visual quality objective of Retention in the foreground along the road to Butte Lake (32N21).

Wildlife

1. Regenerate the aspen stands along Butte Creek and other key spring/aspen areas.
2. Manage the riparian corridor along Butte Creek to support old growth dependent species

C. PRESCRIPTIONALLOCATION

Prescription	Acres
A Non-Timber Wildlife	200
C Firewood	300
D Developed Recreation	5
E Early Successional	100
F Riparian/Fish	700
K Rocky/Sparse Timber	8,820
L Late Successional	1,900
T Timber	4,650
V View/Timber	2,800
Z Minimal Management	1,170
Total	20,645

D. WILDLIFE HABITAT ALLOCATIONS

Spotted Owl Habitat Areas	1
Goshawk Territories	3

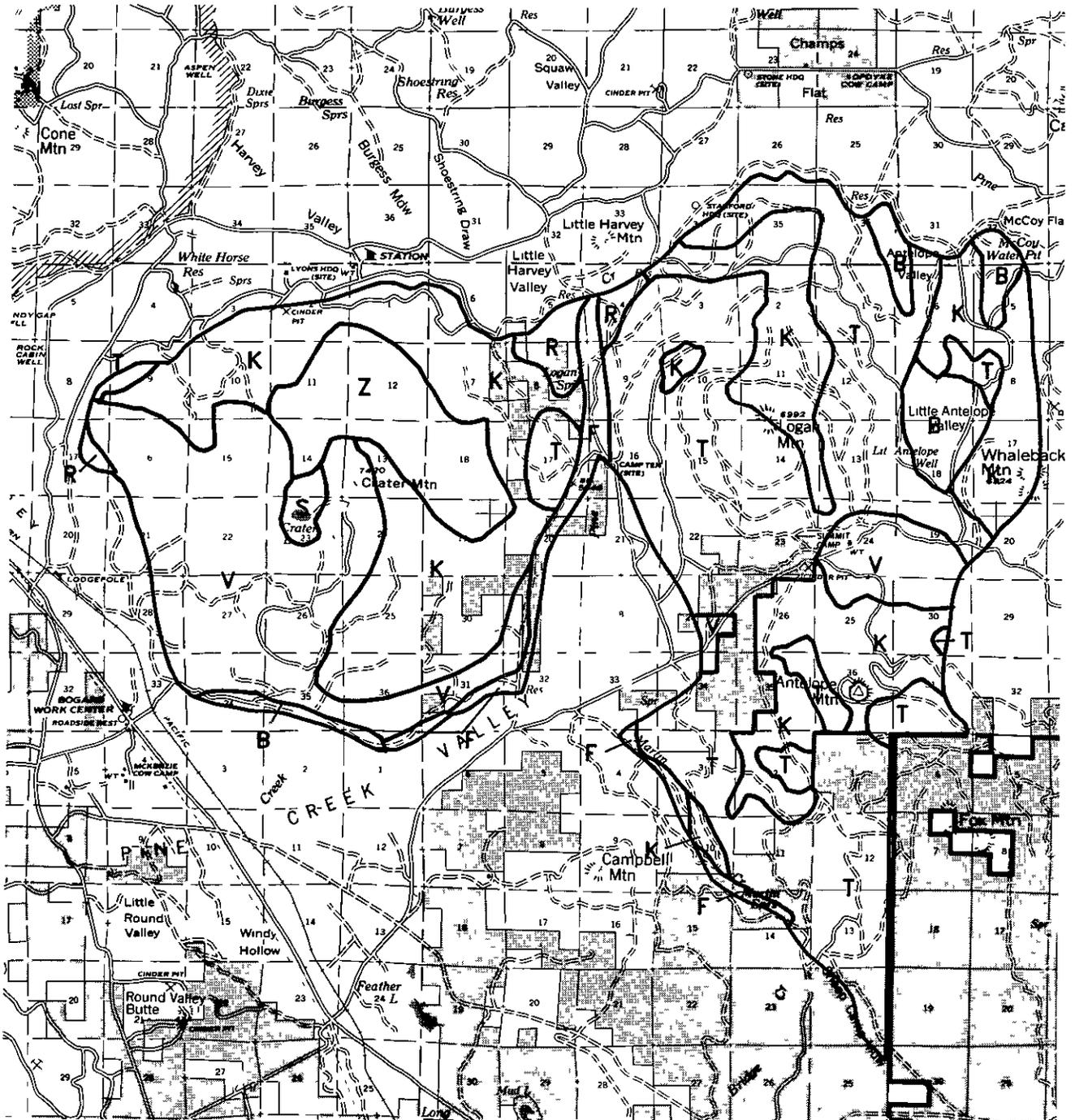
Other Emphasis Species: Deer (summer range), black bear, rainbow trout, pileated woodpecker, marten, and fisher

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	10
Sagebrush	10
Conifer Forest	
Eastside Pine	220
Mixed Conifer	775
Red Fir	5

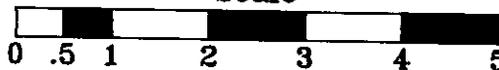
F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Grays Valley (25%)	D
Poison Lake (25%)	D
Silver Lake (10%)	C
Upper Pine Creek (5%)	D



19 Management Area CRATER

Scale



5 Miles 1/2" = 1 Mile

January 1992



Management Area 19 - CRATER

County ----- Lassen
 Ranger District ----- Eagle Lake
 Acreage ----- National Forest ----- 38,690
 Other ----- 4,671



A. DESCRIPTION

Location The Crater Management Area is generally northeast of State Highway 44 and west of Eagle Lake. Prominent landmarks are Crater Mountain, Logan Mountain, and Antelope Mountain (which has a fire lookout). Private land is interspersed with the Forest land near Logan Spring, on the west side of Crater Mountain, on the south side of Antelope Mountain, and between Martin Springs and Summit Camp.

Physical Environment Lava underlies the area and rocky outcrops are common; soils are moderately deep and cobbly. Slopes are moderately steep on Logan Mountain (6,992 feet) and Crater Mountain (7,426 feet), and parts of Antelope Mountain (7,684 feet) are steep. Pine Creek flows between Logan and Crater Mountains at an elevation of 5,600 feet, and a tributary drains Little Antelope Valley. Crater Lake on Crater Mountain illustrates the mountain's recent volcanic origin; the 27 acre lake has no outlet. Precipitation averages 37 inches a year.

Biological Environment Eastside pine, mixed conifer, and red fir stands are common, and grass-sagebrush, marsh, and riparian vegetation are scattered throughout. Except in the sagebrush flats, fuel loads are generally moderate to heavy, but are extreme in patches due to logging. Both brushfields and plantations are highly susceptible to fire. An average of three small fires burn every year, but in 1924 the Antelope Fire burned more than 6,000 acres of Forest and private land. Much of the area has been replanted with pine, but extensive brushfields remain. The more important indicator species present are mule deer, pronghorn antelope, black bear, marten, golden eagle, pileated woodpecker, goshawk, osprey, and rainbow trout. Crater Mountain has sacred values for local Native Americans.

Management Most of the large trees have been harvested with overstory removal and intermediate cuts. A campground at Crater Lake (17 campsites) is heavily used. The lake is stocked with rainbow trout, and non-motorized boats are permitted. Primitive camps are located along the base of Crater Mountain and at Summit Camp, Logan Springs, and Little Antelope Valley; they are heavily used in the hunting season. Parts of Grays Valley, Upper Pine Creek, Lower Pine Creek, Harvey Valley, Champs Flat, and South Eagle Lake Range Allotments are within the area.

Facilities The area is accessed by Forest roads from Highway 44 and County Road 105.

Special Areas A 200 acre area including Crater Lake and its basin is proposed as a geological Special Interest Area.

B. STANDARDS AND GUIDELINES

Recreation

1. Complete a feasibility and development study for a cross-country ski trail up Crater Mountain.
2. Plan and complete an unstaffed visitor information station at Antelope Mountain lookout.
3. Manage the undeveloped camping areas at Summit Camp and Logan Springs as dispersed campsites.

Sensitive Plants

1. Monitor and protect Egg Lake monkeyflower (*Mimulus pygmaeus*) populations. Inven-

tory for additional populations in seasonally wet areas

2. Modify for Mod t t eed (*Polygonum polygaloides ssp. estotericum*) in adobe flat and dry pond basin areas

Special Areas

- 1 Prepare and implement a management plan for the Crater Lake Special Interest Area to protect and accentuate the geologic area's distinctive features

Visual Resources

- 1 Meet a visual quality objective of Partial Retention in the foreground and Modification in the middleground as seen from the Crater Lake Road (32N09)

Water and Riparian Areas

1. Restore and improve riparian conditions along Pine Creek. Consider fencing, grazing management and improvement projects.

Wildlife

- 1 Close selected roads on Crater and Logan Mountains to protect fawning deer.
- 2 Where feasible, develop wetlands to increase waterfowl production and provide habitat for fall migrants.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	2,010
C Firewood	300
D Developed Recreation	10
E Early Successional	200
F Riparian/Fish	300
K Rocky/Sparse Timber	15,080
R Range	400
S Special Areas	200
T Timber	10,300
V View/Timber	7,300
Z Minimal Management	2,590
Total	38,690

D. WILDLIFE HABITAT ALLOCATIONS

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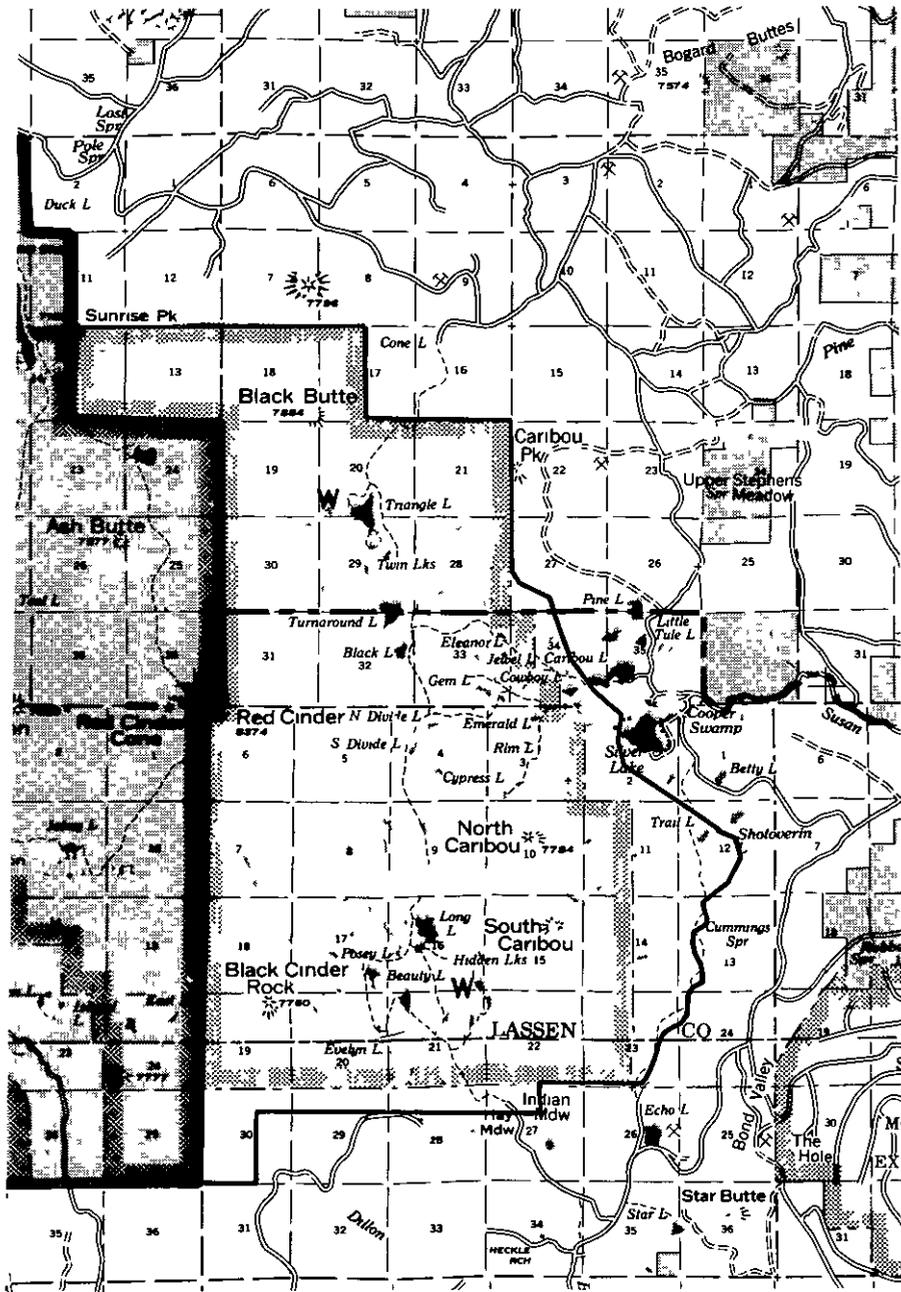
Other Emphasis Species' Deer (summer range), pronghorn antelope, pileated woodpecker, osprey, golden eagle, rainbow trout.

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	80
Sagebrush	70
Conifer Forest	
Eastside Pine	645
Mixed Conifer	1035
Red Fir	20

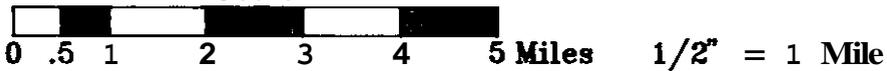
F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Champs Flat (25%)	D
Grays Valley (25%)	D
Harvey Valley (25%)	D
Lower Pine Creek (60%)	D
South Eagle Lake (<5%)	D
Upper Pine Creek (25%)	D



20 Management Area CARIBOU

Scale



January 1992



Management Area 20 - CARIBOU

County ----- Lassen
 Ranger District ----- Almanor
 Acreage ----- National Forest ----- 21,440
 Other ----- 0-



A. DESCRIPTION

Location The Caribou Management Area is the Caribou Wilderness. It adjoins the east side of Lassen Volcanic National Park. The area's north boundary and a portion of its east boundary form the border between the Almanor and Eagle Lake Ranger Districts.

Physical Environment The terrain is a moderately flat plateau. The area contains numerous ponds and lakes and the headwaters of both Pine Creek and the Susan River. Several peaks exceed 7,800 feet elevation. The area is generally rocky and shows evidence of its volcanic origin. Much of the area has been glaciated resulting in shallow, rocky soils. Precipitation averages 60 inches a year, most of it as snowfall.

Biological Environment Timber consists of white fir, red fir, and western white pine on the slopes and at higher elevations, and lodgepole pine on the flat, moist sites. A large pure stand of mountain hemlock covers a bench on the east slope of Red Cinder Mountain, with widely scattered patches elsewhere. Fuel loads range from light to heavy and are entirely from natural processes. Fires average two per year, mostly from lightning, and they generally burn less than an acre. This area is subject to the Natural Fire Management Plan developed jointly for the Caribou Wilderness and Lassen Volcanic National Park. Under this plan, most lightning fires will be permitted to burn under specific conditions and with careful monitoring. Marten and possibly fisher and wolverine inhabit the area. The bufflehead, an uncommon breeder in California, nests at pothole lakes here. Bald eagles feed at lakes, but no nest sites are known. Some unsurveyed potential habitat for spotted owl may exist. A trout fishery is maintained in many lakes by aerial planting by the California Department of Fish and Game. Most of the

larger lakes are stocked with rainbow and brook trout while Eagle Lake trout are planted in the lakes which drain into Pine Creek.

Management During fiscal year 1982, a total of 12,188 visitor days were recorded for the area. Backpackers, day hikers, and fishermen use the trails in the Wilderness Triangle, Turnaround, Black, and Long Lakes receive the most fishing pressure, but trout are also found in many of the smaller lakes such as Beauty, Eleanor, Posey and Black. The Silver Lake Summer Home Tract is located on the east boundary. Trailheads for the Wilderness are located at Cone Lake, Caribou Lake, and Hay Meadow. Parts of the Benner Creek and Silver Lake Range Allotments are within the area.

Facilities Access is provided by county road 110, which ends at Caribou Lake, and Forest Road 10 from the north and south.

Further Planning Areas The Trail Lake B further planning area lies along the eastern edge of this area and is recommended for wilderness designation.

B. STANDARDS AND GUIDELINES

Fire

1. Update and implement a prescribed burning plan in cooperation with Lassen Volcanic National Park.
2. Allow fire to resume its natural role in the wilderness ecosystem except where it may endanger public safety or private lands.

Fish

1. Survey wilderness lakes to evaluate existing aquatic resources and determine the need for continued fish stocking
2. In cooperation with California Department of Fish and Game, stock fish in lakes where planting is desirable.

Recreation

1. In areas of concentrated use adversely affecting soil, vegetation or water resources, reduce these impacts by dispersing use and relocating trails, as appropriate.
2. Improve access for persons with disabilities by constructing horse-mounting ramps and widening select trails commensurate with other resource values.

Sensitive Plants

1. Inventory for possible short petalled campion (*Silene invisa*) in red fir stands
2. Inventory for talus collomia (*Collomia debilis var larsenu*) on talus slopes on the higher peaks

Wilderness

1. Revise the Canby Wilderness Management Plan to serve as a Wilderness Implementation Plan for the Black Cinder and Trail Lake A wilderness additions of 1984.
2. Upon Congressional designation of the Trail Lake B further planning area as wilderness, amend the Canby Wilderness Implementation Plan to also incorporate this area.

C. PRESCRIPTIONALLOCATION

Prescription	Acres
W Wilderness	21,440
Total	21,440

D. WILDLIFE HABITAT ALLOCATIONS

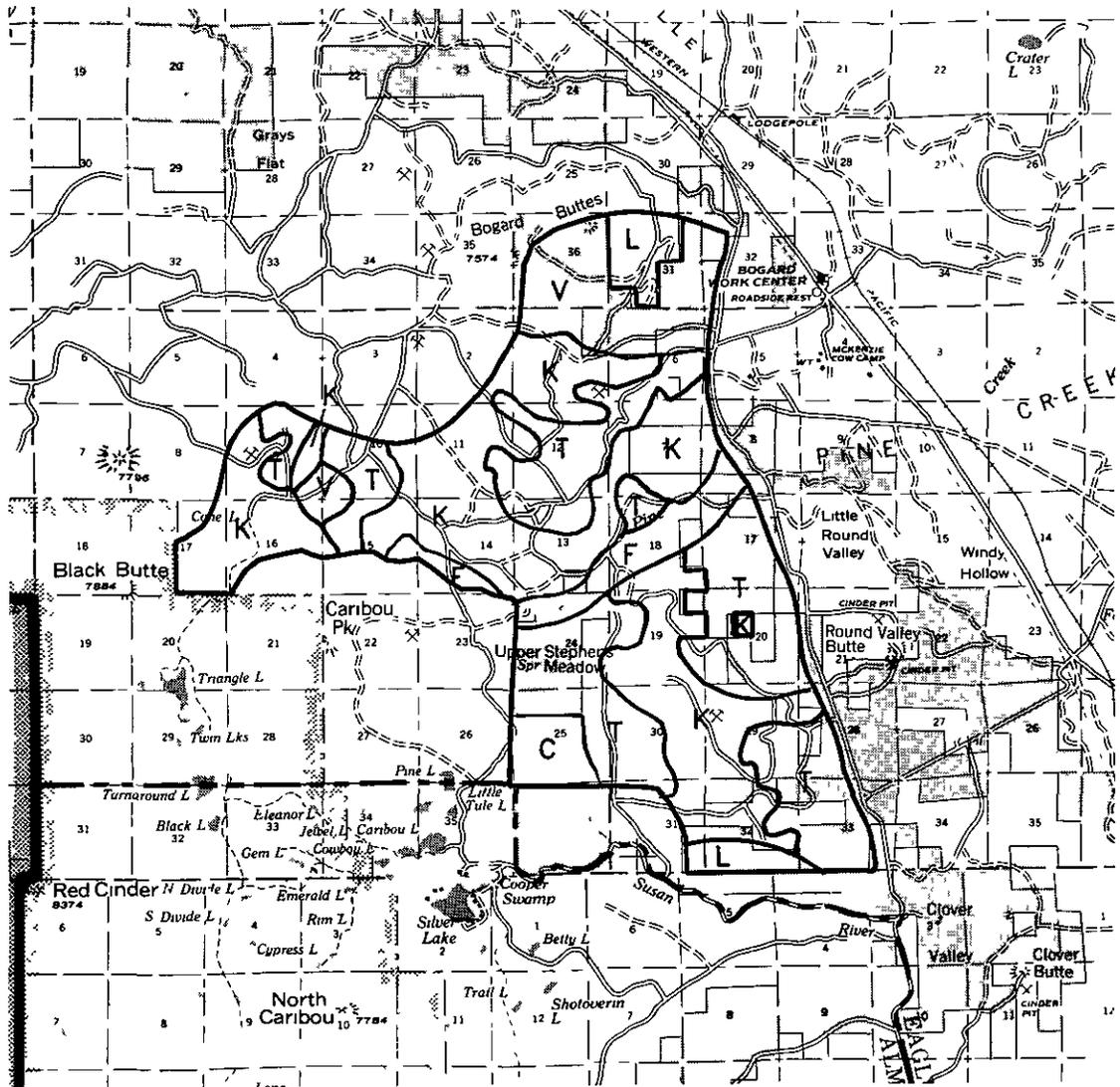
Goshawk Terntones	3
Other Emphasis Species Marten, hairy woodpecker, bufflehead, osprey, rainbow trout, bald eagle	

E. DESIRED STATE FOR DIVERSITY

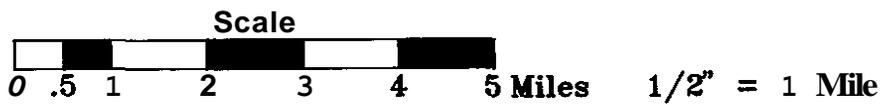
Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	10
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	235
Red Fir	350

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Benner Creek (15%)	C
Silver Lake (30%)	C



21 Management Area CONE



January 1992



Management Area 21 - CONE

County -----	Lassen
Ranger District -----	Eagle Lake
Acreage ---- National Forest -----	10,810
Other -----	3,067



A. DESCRIPTION

Location The Cone Management Area is generally southwest of State Highway 44 and north-east of the Caribou Wilderness Forest Road 32N22, the Westwood Logging Road, forms the eastern boundary of the area. Private inholdings are scattered throughout.

Physical Environment The landscape was formed by lava flows and cinder cones. Numerous cinder cones parallel the prominent north-west-southeast fault scarps. The surface consists of bare rock, permeable rocky residual soil, and volcanic ash. Slopes are steep on the cinder cones, but moderate elsewhere. Elevations range from 5,800 feet to 7,574 feet at Bogard Buttes. The two major watersheds are those of Pine Creek, which flows through the middle of the area and into Eagle Lake, and the Susan River, which drains the southern portion. Precipitation averages 46 inches a year.

Biological Environment Eastside pine, mixed conifer, red fir, lodgepole pine, grass-sagebrush, wet meadow, and riparian vegetation are found in the area. Outside the sagebrush valleys, the area has moderate to heavy fuel loads. People and lightning caused seven small fires during the last decade. The more important indicator species in the area are black-tailed deer, prong-horn antelope, black bear, rainbow trout, marten, fisher, red fox, pileated woodpecker, and goshawk.

Management Overstory removal and intermediate cuts have harvested most of the larger trees over much of the area. Firewood cutters frequent the lodgepole stands. Parts of the Silver Lake, Upper Pine Creek, and Clover Valley Range Allotments lie within the area. Hunting, fishing and hiking are the major recreational uses. The Cone Lake Trail provides access to the northern

part of the Caribou Wilderness. Stephens Camp is an undeveloped campsite.

Facilities The Forest "10" Road crosses the area. A spring feeding a Pine Creek tributary provides drinking water for the Bogard work center, rest stop, and campground.

B. STANDARDS AND GUIDELINES

Fish

1. Improve the native trout fishery and habitat in upper Pine Creek. Eliminate barriers to fish passage.

Lands

1. Acquire lands around Pine Creek and Stephens Meadows if they become available.

Recreation

1. Manage the undeveloped camping areas at Cone Lake, Leaky Louie's Pond, and upper Stephen's Meadow along Forest road 10 as dispersed campsites.

Soils

1. Restrict tractor logging on cinder cone slopes steeper than 20 percent.

Visual Resources

1. Meet a visual quality objective of Partial Retention around Cone Lake.

Water and Riparian Areas

1 Restore and improve riparian conditions along Pine Creek. Consider fencing, grazing management and improvement projects.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
C Firewood	700
E Early Successional	100
F Riparian/Fish	500
K Rocky/Sparse Timber	6,190
L Late Successional	500
T Timber	2,420
V View/Timber	400
Total	10,810

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Terntones 1

Other Emphasis Species: Deer (summer range), pronghorn antelope, rainbow trout, pileated woodpecker, marten, fisher.

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	5
Sagebrush	0
Conifer Forest	
Eastside Pine	35
Mixed Conifer	385
Red Fir	15

F. RANGE ALLOTMENT STRATEGIES

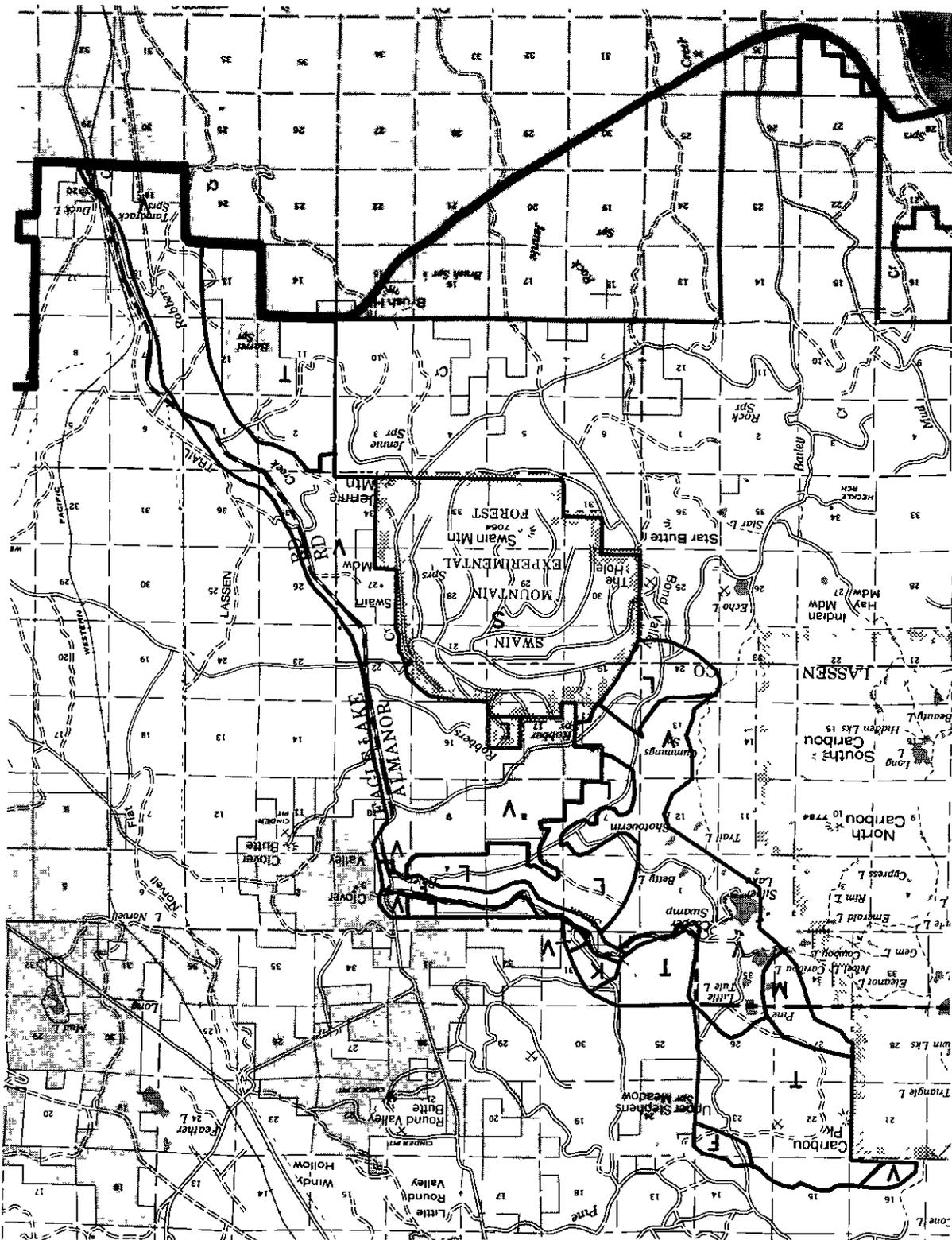
Allotment	Strategy
Clover Valley (15%)	D
Silver Lake (30%)	C
Upper Pine Creek (15%)	D

January 1982

5 Miles 1/2" = 1 Mile



22 SWAIN Management Area



Management Area 22 - SWAIN

County -----	Lassen
Ranger District -----	Almanor
Acreage ----- National Forest -----	21,570
Other -----	40,136



A. DESCRIPTION

Location The Swain Management Area is adjacent to the east boundary of the Canbou Management Area (#20). County Road A-21 forms the east boundary of the area and of the Almanor Ranger District. The Swain Mountain Experimental Forest is located on the southern boundary, and the Silver Lake Summer Home Tract is located on the west boundary. The Susan River and Robbers Creek flow through the area. Sections of private land north of the experimental forest

Physical Environment The terrain is moderately rugged in the northern portion and steeper in the southern. Elevations range from 5,500 to 7,000 feet. Precipitation averages 55 inches a year, mostly as snow. The soils are productive and moderately deep to deep. The northwestern portion has moderately deep, stony soils that have been glaciated.

Biological Environment The forest consists of densely-stocked residual stands of mature white and red fir, interspersed with clearcuts on Swain Mountain, and lodgepole and mixed conifer north of the Susan River. Having been recently logged and intensively treated, fuel loads are mainly light. Some heavy loads occur, however. Occurrence of fires is high, averaging three per year. Most are lightning-caused, and all have been smaller than ten acres in recent decades. Along with the Canbou Management Area, there have been several sightings of marten in this area. Wolverine and fisher may also be present within the area. Habitat for spotted owl is present. Bufflehead, uncommon breeding birds in California, nest at a few of the small, shallow lakes. The Susan River originates at Silver Lake and flows through the northern portion of the

area. It supports resident populations of trout. Robbers Creek flows through the central and eastern portions of the area. It is part of the domestic water supply of Westwood. An 1858 grave of a member of Isaac Roop's second expedition is located at Silver Lake.

Management Large volumes of ponderosa, Jeffrey, and sugar pine were harvested from the southern and eastern portions of the area by the Red River Lumber Company earlier this century. The experimental forest is closed to woodcutting, but firewood cutters heavily use the surrounding area. The management area is part of the Silver Lake, Robbers Creek, Clover Valley and Duck Lake Range Allotments. Recreation activities are generally confined to the Susan River and the northern portion of the area adjacent to the Canbou Wilderness. Two campgrounds, Rocky Knoll and Silver Lake, are at Silver Lake.

Facilities Access to the area is by County Road A-21. The Swain Mountain Experimental Forest was established as a site for true fir research. It contains 6,000 acres of high site land. About 2,500 acres were converted to young growth over a seven year period ending in 1989 to study true fir regeneration and young growth management. This research is being conducted by the Pacific Southwest Experiment Station, which administers the experimental forest with assistance from the Forest.

Further Planning Areas The Trail Lake B further planning area lies along the west edge of this area and is recommended for wilderness designation.

B. STANDARDS AND GUIDELINES

Fire

- 1 Give high priority to fuel and fire management in and adjacent to Swain Mountain Experimental Forest

Firewood

- 1 Control personal-use firewood gathering by designating cutting areas and providing access specifically for this use

Fish

1. Cooperate with California Department of Fish and Game to initiate stream and riparian inventories on the Susan River mainstem and develop an Aquatic Habitat Management Plan
- 2 Continue improving stream conditions on the Susan River and Robbers Creek for resident fish

Lands

1. Keep the shorelines at Silver Lake free of private docks, floats, and other facilities.
2. Maintain near natural settings in the area between the cabins and the lakeshore at Silver Lake
- 3 Maintain a foot trail around Silver Lake

Recreation

- 1 Cooperate with Lassen County to plow snow at National Forest road intersections along County Road A-21, to allow cross-country skiers and snowmobilers to park off the traveled way
- 2 Maintain cross-country ski areas to Swain Mountain Experimental Forest
- 3 Prohibit snowmobile use by the public in the Swain Mountain Experimental Forest

4. Restrict snow plowing within the management area to provide opportunities for winter sports
- 5 Prepare a recreation management plan for the Silver Lake area.
- 6 Manage Trail Lake and surrounding area west of the trail as recommended wilderness to preserve the wilderness qualities until acted upon by Congress
- 7 Allow non-motorized access (mountain bike) on Trail Lake Trail which forms wilderness boundary

Sensitive Plants

- 1 Inventory for possible occurrences of short petalled campion (*Silene invisa*) in red fir stands

Visual Resources

- 1 Meet a visual quality objective of retention in the foreground along County Road 110 and around the Silver Lake Recreation area
- 2 Meet a visual quality objective of partial retention in the foreground of the Trail Lake trail, County Road 10 and A-21

Water and Riparian Areas

- 1 Monitor the water quality of Silver Lake as needed
- 2 Improve riparian conditions along the Susan River

Wildlife

- 1 Control firewood cutting within 150 feet of designated lakes to protect nesting habitat for cavity-nesting wildlife. Post the boundaries of the protected areas and designate on personal use firewood maps
- 2 Maintain or enhance mallow flycatcher habitat.

C. PRESCRIPTIONALLOCATION

Prescription	Acres
B Range-Wildlife	290
C Firewood	300
D Developed Recreation	30
E Early Successional	100
F Riparian/Fish	600
K Rocky/Sparse Timber	200
L Late Successional	3,050
M Semi-Primitive Motonzed	800
N Semi-Pnmitive Non-Motonzed	100
S Special Areas	6,000
T Timber	2,500
V View/Timber	7,600
Total	21,570

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Spotted Owl Habitat Areas	1
Goshawk Temtones	2

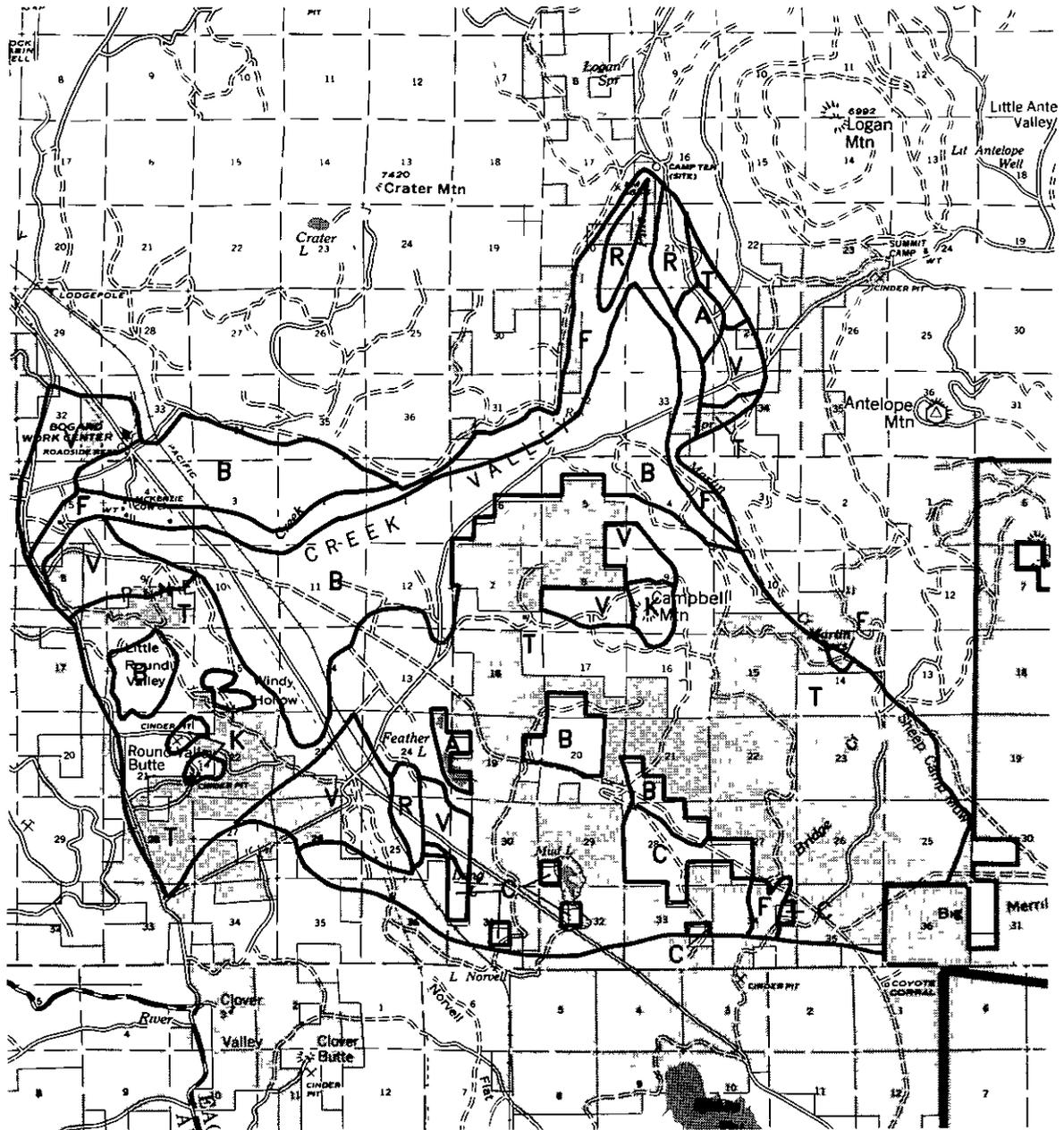
Other Emphasis Species 'Deer (summerrange), marten, bufflehead, willow flycatcher, ram-bow trout.

E. DESIRED STATE FOR DIVERSITY

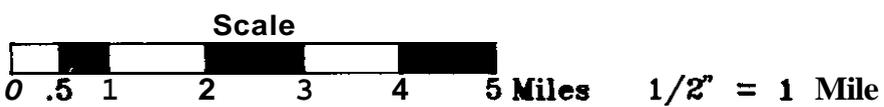
Vegetation	Acres
Shrub	
Chaparral	5
Montane Shrub	5
Sagebrush	1
Comfer Forest	
Eastside Pine	0
Mixed Comfer	580
Red Fir	110

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Clover Valley (15%)	D
Duck Lake (40%)	B
Robbers Creek (75%)	C
Silver Lake (25%)	C



23 Management Area CAMPBELL



January 1992



Management Area 23 - CAMPBELL

County ----- Lassen
 Ranger District ----- Eagle Lake
 Acreage ----- National Forest ----- 21,655
 Other ----- 13,728



A DESCRIPTION

Location The Campbell Management Area lies along State Highway 44 about 25 miles northwest of Susanville. The Westwood Logging Road (32N22) forms the western boundary of the area. Private and Forest lands are intermingled throughout, but private ownership predominates in the southeast.

Physical Environment The area encompasses the broad, flat Pine Creek Valley. A small cinder cone, Round Valley Butte, rises abruptly in the southwest; Campbell Mountain dominates the northeast corner. Soils are derived from andesite and basalt and are moderately deep and cobbly. Deep alluvial soils underlie Pine Creek Valley. Elevations range from 5,640 feet at the north edge of the valley to 6,762 feet on Campbell Mountain. Precipitation averages 42 inches a year. Except for Round Valley Butte, slopes are gentle to moderate. Pine Creek flows through the valley in the north. Bridge Creek drains the east and joins the Susan River at McCoy Flat Reservoir. Water bodies include Feather Lakes, Long Lake, and Mud Lake, wetlands occur in Little Round Valley and northern Pine Valley.

Biological Environment Forest types include white fir, eastside pine, mixed conifer, and lodgepole pine. Grass-sagebrush and wet meadow vegetation occupy the flats. Forested areas generally have moderate to heavy fuel loads and patches of extreme loads, caused mostly by logging. Lightning frequently ignites small fires. In 1950, a lightning fire burned 10,000 acres of this and the adjacent management area. Various areas have been enhanced for waterfowl and sandhill cranes. Habitat for mule deer, pronghorn antelope, rainbow trout, pileated woodpecker, and goshawk is also present.

Management Extensive logging has taken place. Lodgepole stands are heavily used by firewood cutters. Parts of several range allotments lie in the area. Upper Pine Creek, Lower Pine Creek, Clover Valley, Silver Lake, Bridge Creek, and South Eagle Lake Bogard Campground (22 campsites) along Pine Creek is used mainly during fishing and hunting seasons. Snowmobiling, cross-country skiing, and snowshoeing are popular winter activities.

Facilities The Lassen and Nobles Emigrant Trails cross the area, and many cultural sites lie along Pine Creek. In addition to Highway 44, access is by Lassen County Roads A-21, 112, and 105. A Caltrans roadside rest area is present on Highway 44. The Union Pacific Railroad crosses the area. An administrative site, Bogard Work Center, is present.

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 At the Bogard Work Center visitor office, provide information on the Nobles and Lassen Emigrant Trails.

Firewood

- 1 Give personal use of firewood priority over commercial use.
- 2 Manage lodgepole pine stands for firewood rather than sawlog production.

Fish

- 1 Eliminate barriers to fish passage in Upper Pine Creek

Lands

- 1 Seek to acquire land around Long Lake and Feather Lakes to facilitate wetland development
- 2 Dispose of isolated parcels of National Forest land.

Recreation

- 1 Develop a plan to take advantage of the winter recreation potential in the vicinity of the Bogard Work Center
- 2 Develop a visitor information facility at the Bogard Rest Area
- 3 Manage Willow Springs and Pine Creek Valley as dispersed campsites

Sensitive Plants

- 1 Monitor and protect populations of Egg Lake monkeyflower (*Mimulus pygmaeus*) Inventory for additional Egg Lake monkeyflower populations in meadow areas

Soils

- 1 Restrict tractor logging on cinder cone slopes steeper than 20 percent

Water and Riparian Areas

- 1 Restore and improve riparian conditions along Pine Creek Consider fencing, grazing management and improvement projects
- 2 Remove the splitter at McKenzie Cow Camp and restore Pine Creek to its natural course

Wildlife

- 1 Adjust livestock grazing schedules and fence islands and nesting sites to protect the waterfowl and sandhill crane nesting in the Pine Creek wetlands

- 2 Restore riparian vegetation in selected reaches of Pine and Martin Creeks Regenerate aspen stands in the Martin Springs area
- 3 Enhance pronghorn antelope habitat by seeding and planting, coordinated with other resource uses, to provide "high" habitat capability
- 4 Enhance and protect nesting habitat capability for bald eagles at Feather and Long Lakes Close areas to vehicles during the nesting season, as needed, to protect the eagles

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non-Timber Wildlife	500
B Range-Wildlife	9,180
C Firewood	1,100
D Developed Recreation	5
E Early Successional	400
F Riparian/Fish	2,970
K Rocky Sparse Timber	600
R Range	800
T Timber	3,500
V View/Timber	2,600
Total	21,655

D. WILDLIFE HABITAT ALLOCATIONS

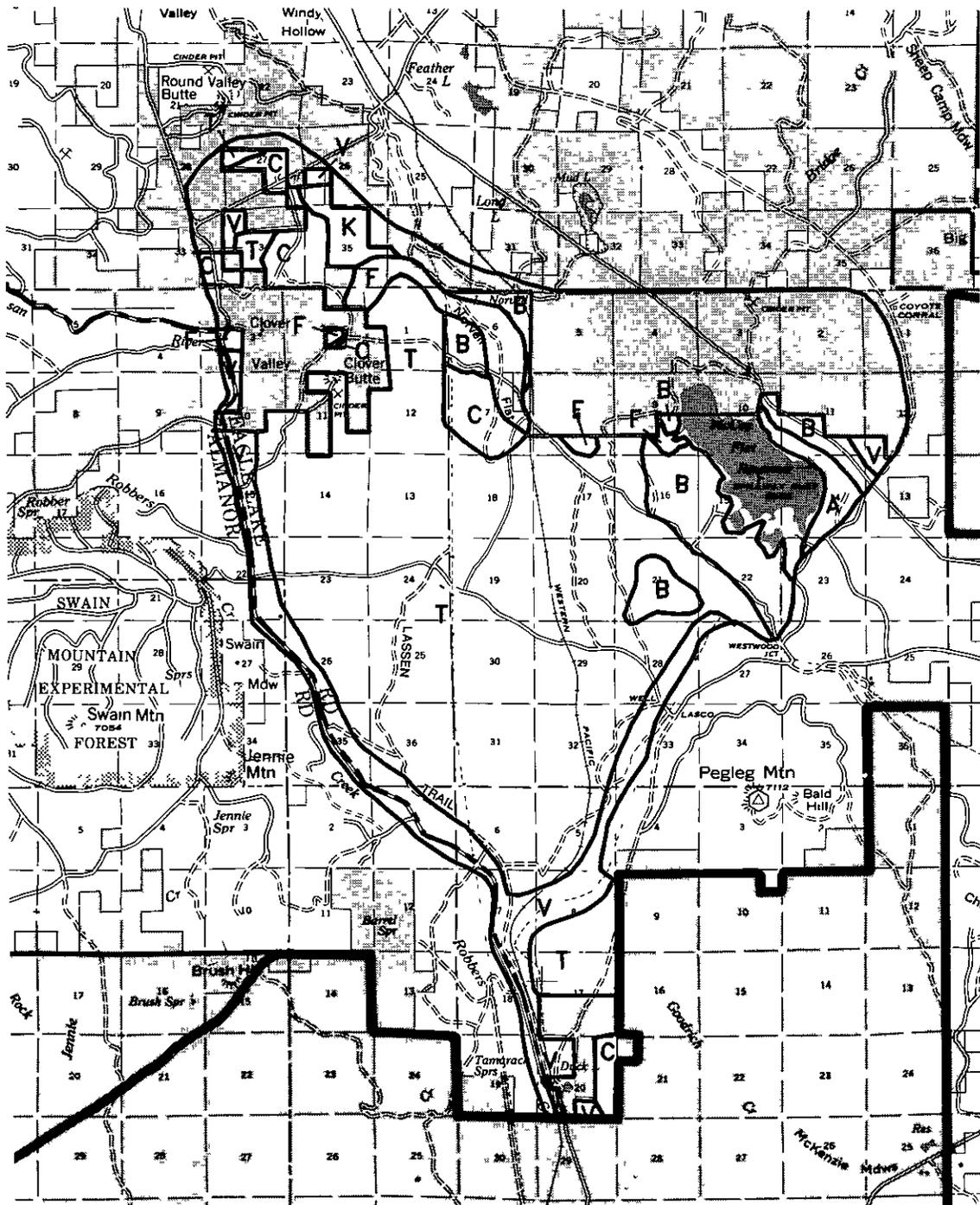
Goshawk Territories	1
Other Emphasis Species	Deer (summer range), mallard, bufflehead, pronghorn antelope, rainbow trout, sandhill crane

**E. DESIRED STATE
FOR DIVERSITY**

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	0
Sagebrush	240
Conifer Forest	
Eastside Pine	300
Mixed Conifer	235
Red Fir	0

**F. RANGEALLOTMENT
STRATEGIES**

Allotment	Strategy
Bndge Creek (30%)	C
Clover Valley (15%)	D
Lower Pine Creek (40%)	D
Silver Lake (5%)	C
South Eagle Lake (<5%)	D
Upper Pine Creek (50%)	D



24 Management Area McCOY



January 1992



Management Area 24 - McCOY

Count -----Lassen, Plumas (about 200 acres
Ranger District ----- Eagle Lake
Acreage-----National Forest ----- 23,950
Other-----9 236



A. DESCRIPTION

Location The McCoy Management Area lies about three miles north of Westwood. Concentrations of private land exist near Barrel Spring, Duck Lake, Clover Valley, and McCoy Flat Reservoir

Physical Environment The area is nearly flat except at Clover Butte, a cinder cone, in the northwest corner of the area. Bedrock is composed of andesite and basalt. Soils are moderately deep and cobbly, with lava ridges exposed in many areas. Elevations range from about 5,200 to 6,200 feet. Two major watersheds are present. Robbers Creek in the south drains into Mountain Meadows Reservoir, while the Susan River flows through the northern part of the area and is dammed at McCoy Flat Reservoir. Lassen Irrigation District holds the rights to all water impounded in the reservoir, its easement and use date from 1876. Precipitation averages 43 inches a year.

Biological Environment Mixed conifer, east-side pine, lodgepole pine, grass-sage, and riparian woodland are the major vegetation types. Fuel loads are moderate to heavy from both natural processes and human activity. Much of it is slash from firewood cutting and precommercial thinning. In the last decade, a number of lightning and human-caused fires have burned. In 1950, a large fire burned 1,000 acres near McCoy Reservoir. Ospreys and bald eagles nest at McCoy Flat Reservoir. A major portion of the small California breeding population of the bufflehead also nests here. Other important wildlife species are mule deer and black-tailed deer, pronghorn antelope, mallard, rainbow trout, marten, pileated woodpecker, and goshawk. Although McCoy Flat Reservoir supports a highly productive fishery in some years, its potential is not realized due to a total drawdown in most years for irrigation.

Management Most of the larger-sized trees have been harvested with overstory removal and intermediate cuttings. Much of the area is forested with lodgepole pine and is an important source of firewood for Westwood and Susanville residents. Parts of the Duck Lake, Robbers Creek, Bidge Creek, and Clover Valley Range Allotments are within the area. The Bizz Johnson Trail follows the abandoned Southern Pacific Railroad right-of-way. McCoy Flat reservoir is a popular fishing site in normal or wet years; the area near the dam receives heavy day use and some overnight camping. Other recreation includes snowmobiling and hunting.

Facilities State Highway 44 and Lassen County Road A-21 are both paved roads kept open year-round. County Roads 101 and 104 and Forest system roads also provide access. The Union Pacific Railroad bisects the area. Two historical emigration routes, the Lassen and Nobles Trails, cross the area. The area contains evidence of railroad logging.

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 At trailheads along the Bizz Johnson Trail, interpret associated railroad logging history.
- 2 Along the Bizz Johnson Trail, protect historical railroad camps by signing and other means,

Firewood

- 1 Give personal use of firewood priority over commercial use.

2. Manage lodgepole pine stands for firewood production rather than sawlog production

Fish

- 1 Cooperate with California Department of Fish and Game and the Bureau of Land Management to initiate stream and riparian inventories on the Susan River mainstem and develop an Aquatic Habitat Management Plan.
- 1 Cooperate with the California Department of Fish and Game and the Lassen Irrigation District to develop a permanent pool and fishery for McCoy Reservoir, and establish waterfowl improvements.

Lands

- 1 Acquire lands around Duck Lake if they become available

Recreation

1. Manage the undeveloped camping areas at Norvell Flat and Lasco Well as dispersed campsites

Soils

- 1 Restrict tractor logging on cinder cone slopes steeper than 20 percent

Visual Resources

1. Meet a visual quality objective of Retention in the foreground view of Highway 44 and around McCoy Flat Reservoir.
- 2 Meet a visual quality objective of Partial Retention in the foreground view of A-21 and the foreground view of the Bizz Johnson Trail

Water and Riparian Areas

1. Restore and improve riparian conditions along the Susan River

Wildlife

- 1 Retain and recruit a large number of snags along the McCoy Reservoir shoreline for cavity-dependent wildlife. Close an area around the reservoir to all firewood cutting
- 2 Provide at least the “medium” habitat capability for deer summer range
3. Enhance and protect nesting habitat for sand-hill cranes at Norvell Flat.
- 4 Maintain a high level of habitat diversity along the Bizz Johnson Trail to provide non-game birds for public viewing

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non-Timber Wildlife	400
B Range-Wildlife	2,800
C Firewood	1,700
E Early Successional	200
F Riparian/Fish	720
K Rocky/Sparse	500
L Late Successional	1,350
T Timber	11,620
V View/Timber	4,660
Total	23,950

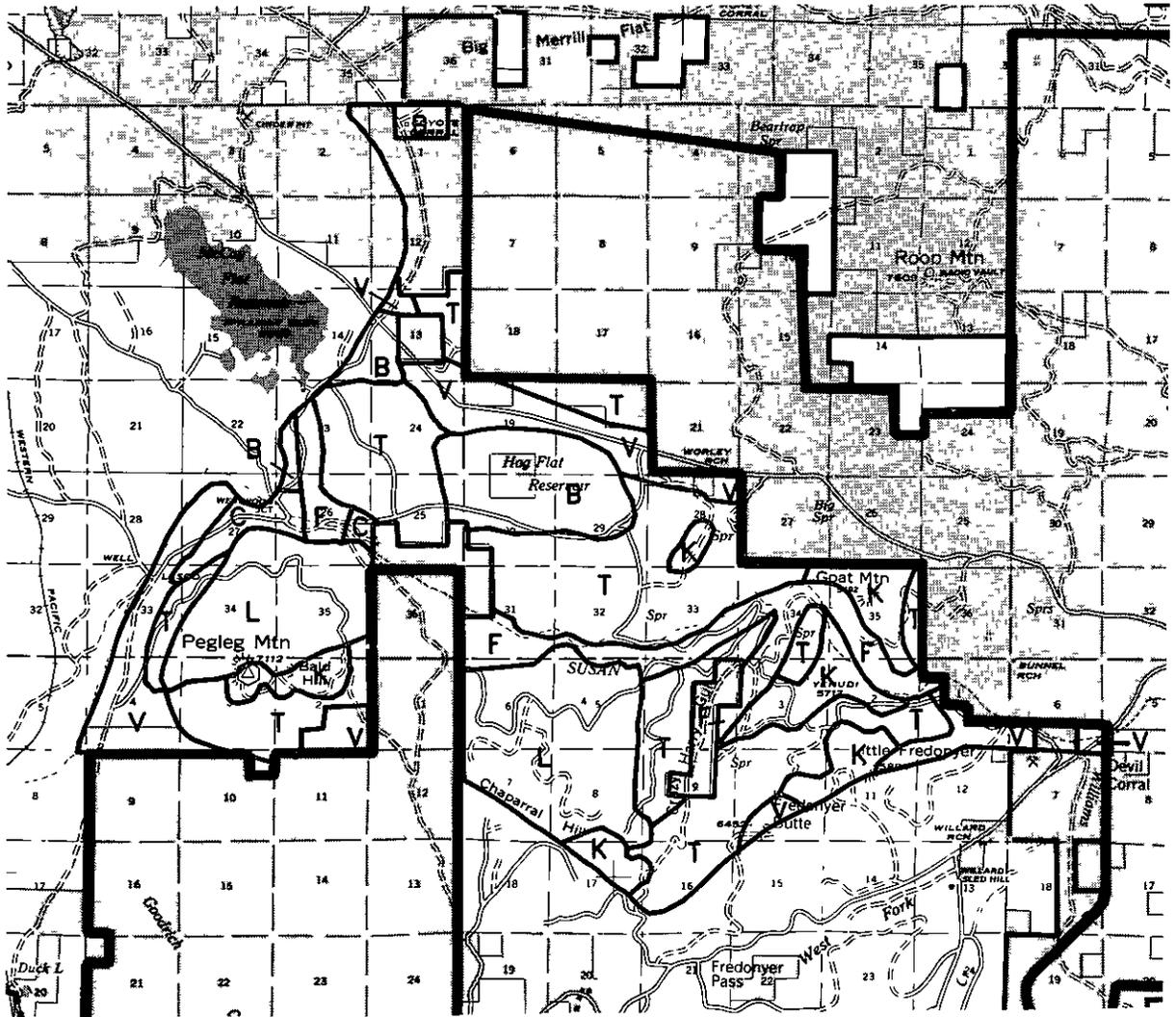
D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Terntones	1
Goshawk Terntones	1
Other Emphasis Species	Osprey, mallard, bufflehead, rainbow trout, deer (summer range), pileated woodpecker

**E. DESIRED STATE
FOR DIVERSITY**

**F. RANGEALLOTMENT
STRATEGIES**

Vegetation	Acres	Allotment	Strategy
Shrub		Bndge Creek (40%)	C
Chaparral	2	Clover Valley (55%)	D
Montane Shrub	0	Duck Lake (40%)	B
Sagebrush	35	Robbers Creek (25%)	C
Conifer Forest			
Eastside Pine	285		
Mixed Conifer	555		
Red Fir	5		



25 Management Area HOG

Scale



January 1992



Management Area 25 - HOG

County -----	Lassen
Ranger District -----	Eagle Lake
Acreage ----- National Forest -----	19,680
Other -----	6,157



A. DESCRIPTION

Location The Hog Management Area is directly west of Susanville. Its northern and eastern edges coincide with the Forest boundary. The area is bounded on the south by the limits of the Susan River watershed and in other directions by private land. The abandoned Southern Pacific Railway grade and Lassen County Roads 101 and 112 form the western edge of the area. Private inholdings are located in Crazy Harry Gulch and Hog Flat Reservoir.

Physical Environment Except for the southern and western slopes of Pegleg Mountain, the area is part of the Susan River watershed. Lassen Irrigation District holds the rights to all water impounded in the Hog Flat Reservoir, which is usually drained during late summer and fall. The area is nearly flat in the north, while slopes in the south are moderate to steep. Rocky soils are common, with lava ridges exposed in many locations. Soils overlie Eocene non-marine sediments in the Crazy Harry Gulch area. Pegleg Mountain (7,112 feet) is the most prominent landscape feature; the lowest point is 4,600 feet at Devil's Corral. The Susan River has incised a steep, scenic canyon through the area. Annual rainfall averages 35 inches.

Biological Environment Vegetation types include eastside pine, mixed conifer, white fir, lodgepole pine, brushfields, meadows, and riparian woodland. Tree-bordered meadows are common. Fuel loads are light to moderate in the open pine flats, the brushfields and brushy plantations, but dangerously heavy loads occur in mired conifer stands on the southeast quarter of the area. In 1918, a fire burned 1,850 acres (930 acres of National Forest land) on the east side of Pegleg Mountain. Usually two or three small fires burn every year. Habitat exists for spotted

owl, goshawk, bald eagle, osprey, mallard, marten, mule deer, black-tailed deer, and pileated woodpecker. The Susan River is a significant trout fishery. The area contains several large prehistoric sites and abundant evidence of railroad logging.

Management Overstory removal and intermediate cuts have harvested many of the larger trees in the area. Because of proximity to Susanville and abundance of lodgepole pine, the area is popular for firewood cutting. The entire Susan River Range Allotment and parts of the Duck Lake and Bridge Creek Range Allotments are in this area.

Facilities A few mining claims are present. The Bizz Johnson Trail follows the abandoned Southern Pacific Railway right-of-way. Primitive camping sites occur at Goumaz, where the river, the trail, and Forest Road 30N03 meet. The Nobles Trail crosses the area. State Highway 44 crosses the north end of the area, and County Roads 112 and 101 bound the area on the west. The California Department of Forestry maintains a fire lookout on Pegleg Mountain.

B. STANDARDS AND GUIDELINES

Firewood

- 1 Give personal use of firewood priority over commercial use.
- 2 Manage lodgepole pine stands for firewood production and wildlife habitat rather than sawlog production.

Fish

- 1 Cooperate with California Department of Fish and Game and the Bureau of Land Management to initiate stream and riparian inventories on the Susan River mainstem and develop an Aquatic Habitat Management Plan

Lands

- 1 When available, acquire lands along the Susan River and Crazy Harry Gulch to improve riparian conditions
- 2 Cooperate with proposed efforts to develop a hydroelectric dam on the Susan River in exchange for other easements or lands

Recreation

- 1 Assess the need and feasibility of developing a trailhead at the terminus of the Bizz Johnson Trail in Westwood
- 2 Manage Crazy Harry Gulch for dispersed camping

Soils

- 1 Map the occurrence of unstable Eocene non-marine soils in detail (Order 2 Survey) for all proposed timber sale areas

Visual Resources

- 1 Meet a visual quality objective of Partial Retention in the foreground of the Bizz Johnson Trail and on Pegleg Mountain

Water and Riparian Areas

- 1 Restore and improve riparian habitat along the Susan River and Crazy Harry Gulch

Wildlife

- 1 Maintain a high level of habitat diversity along the Bizz Johnson Trail to provide non-game birds for public viewing

2. Protect and recruit a large number of snags along the Hog Flat Reservoir shoreline for cavity dependent wildlife. Close an area adjacent to the reservoir to personal-use firewood cutting

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	2,100
C Firewood	1,100
E Early Successional	100
F Riparian/Fish	1,500
K Rocky/Sparse Timber	1,880
L Late Successional	4,900
T Timber	6,400
V View Timber	1,700
Total	19,680

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Spotted Owl Habitat Areas	2
Goshawk Territories	3

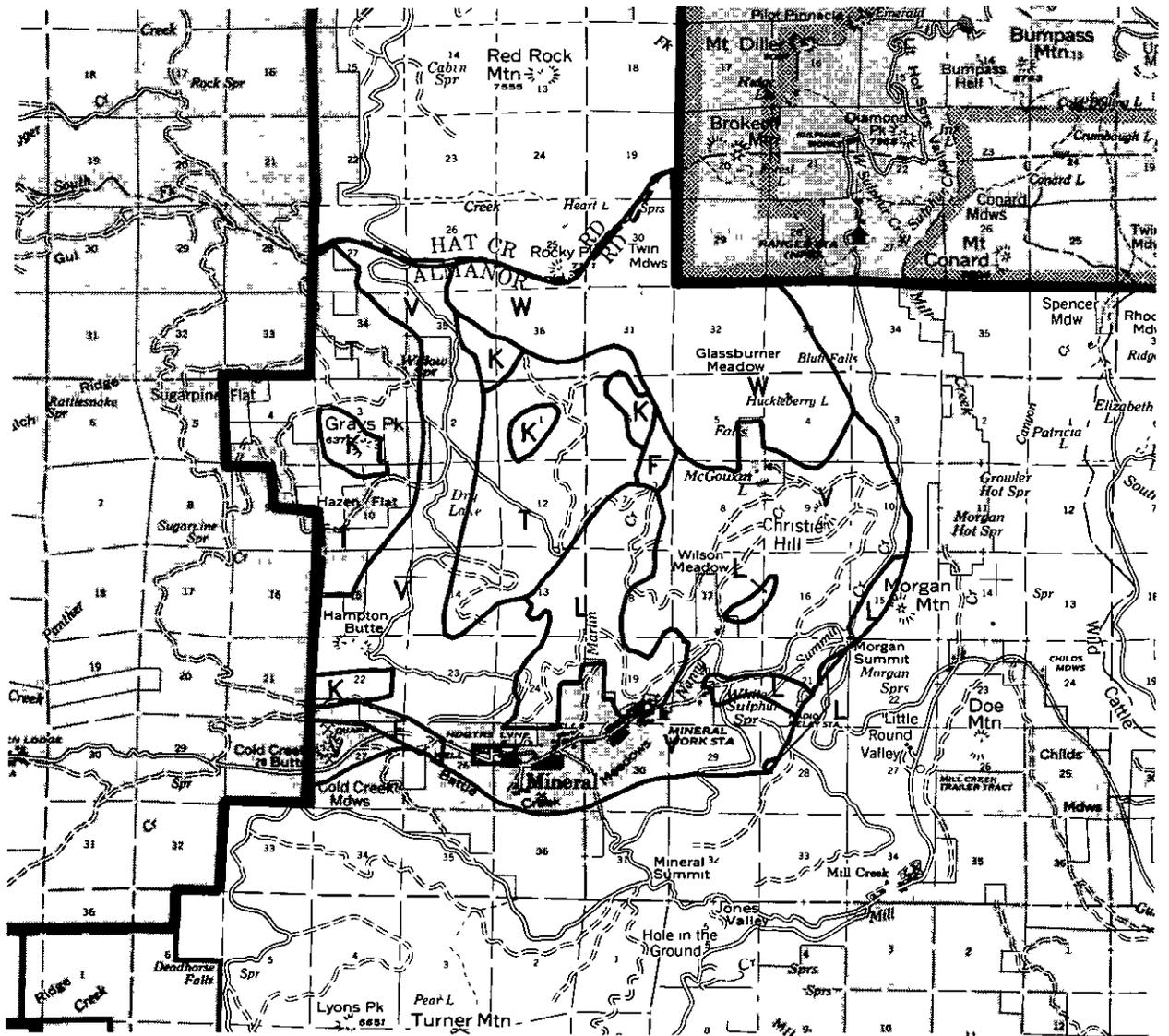
Other Emphasis Species Deer (summer range), mallard, pileated woodpecker, rainbow trout, black bear, bufflehead, marten

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	350
Sagebrush	5
Conifer Forest	
Eastside Pine	315
Mixed Conifer	440
Red Fir	30

F. RANGEALLOTMENT STRATEGIES

<u>Allotment</u>	<u>Strategy</u>
Bridge Creek (30%)	C
Duck Lake (20%)	B
Susan River (100%)	C



26 Management Area MINERAL

Scale



January 1992



Management Area 26 - MINERAL

County -----	Tehama
Ranger District -----	Almanor
Acreage -----	National Forest ----- 19,145
	Other ----- 3,762



A. DESCRIPTION

Location The Mineral Management Area is adjacent to the southwestern corner of Lassen Volcanic National Park. The western boundary is also the boundary of both the Forest and the Almanor District. The community of Mineral is located on the southern boundary. Several private inholdings are present.

Physical Environment The area has mountainous terrain. Elevations range from 4,500 to 6,500 feet. Annual precipitation averages 50 inches. Martin, Nanny, and Summit Creeks originate in the eastern portion of the area, and all are tributary to Battle Creek. The stony, moderately-deep soils overlie volcanic rock. Near the park boundary, the area has been glaciated and has shallow soils.

Biological Environment Forests are generally composed of mixed conifers with white and red fir dominating at higher elevations. The Heart Lake area has red and white fir, lodgepole pine, brush, and subalpine vegetation with many small lakes. Fuel loads vary from light to heavy. In the 1930's, a large fire burned over 1,500 acres west of McGowan Lake, but most fires have burned less than ten acres each. An average of 2.4 fires occur each year, and over half of them are human-caused. The area is part of the summer range and migration corridor for the East Tehama deer herd. Battle Creek is an important recreational fishery. Important wildlife species include black bear, marten, spotted owl, and goshawk.

Management The western portion of the area is included in the Martin-Digger Range Allotment. Timber harvesting has occurred outside the Heart Lake further planning area. Some firewood is cut and opportunities for commercial firewood sales exist. Battle Creek Campground

is a popular site near Mineral, and increasing use is expected at the snowmobile park at Morgan Summit. The Heart Lake National Recreation Trail and the McGowan Lake Cross-Country Ski Trail attract use. A gold mining claim is located near Nanny Creek. The eastern half of the area is in the Lassen Known Geothermal Resource Area, and the western half has been subject to geothermal lease application.

Facilities Mineral is a Forest Service administrative site. An application has been filed for a small hydroelectric generation facility on Battle Creek. The Nobles Emigrant Trail crossed the area near Mineral, and later wagon roads also passed through en route to Susanville and the Idaho mines.

Further Planning Areas The Heart Lake further planning area, which is recommended for Wilderness designation lies partly within this area and is accessed by the Heart Lake National Recreation Trail.

B. STANDARDS AND GUIDELINES

Cultural Resources

1. At recreation facilities, provide information on the cultural history of the area.
2. Evaluate and protect the historical values of the old Mineral Ranger Station.

Recreation

1. Restrict plowing the McGowan Cross-Country Ski Trail between December 1 and April 15.

2. Improve the parking area for the McGowan Cross-country Ski Trail
3. Seek opportunities to expand cross-country ski grooming of the McGowan trail system.

Sensitive Plants

1. Inventory for possible short petalled campion (*Silene invisa*) and closed throated heard tongue (*Penstemon personatus*) in red fir stands
2. Monitor and protect populations of northern spleenwort (*Asplenium septentrionale*) Inventory for additional populations in dacite rock outcrops

Visual Resources

1. Meet a visual quality objective of Retention in the foreground of State Highways 36 and 89
2. Meet a visual quality objective of Partial Retention in the middleground of State Highway 36 and 99
3. Meet partial retention visual quality objective in the foreground of the 17 Road

Water and Riparian Areas

1. Manage Martin Creek to maintain water quality for downstream domestic water users
2. Protect the springs supplying domestic water for the East Mineral residences

C. PRESCRIPTIONALLOCATION

Prescription	Acres
D Developed Recreation	15
E Early Successional	100
F Riparian/Fish	200
K Rocky/Sparse Timber	1,000
L Late Successional	2,830
T Timber	3,100
V View/Timber	7,800
W Wilderness	4,100
Total	19,145

D. WILDLIFE HABITAT ALLOCATIONS

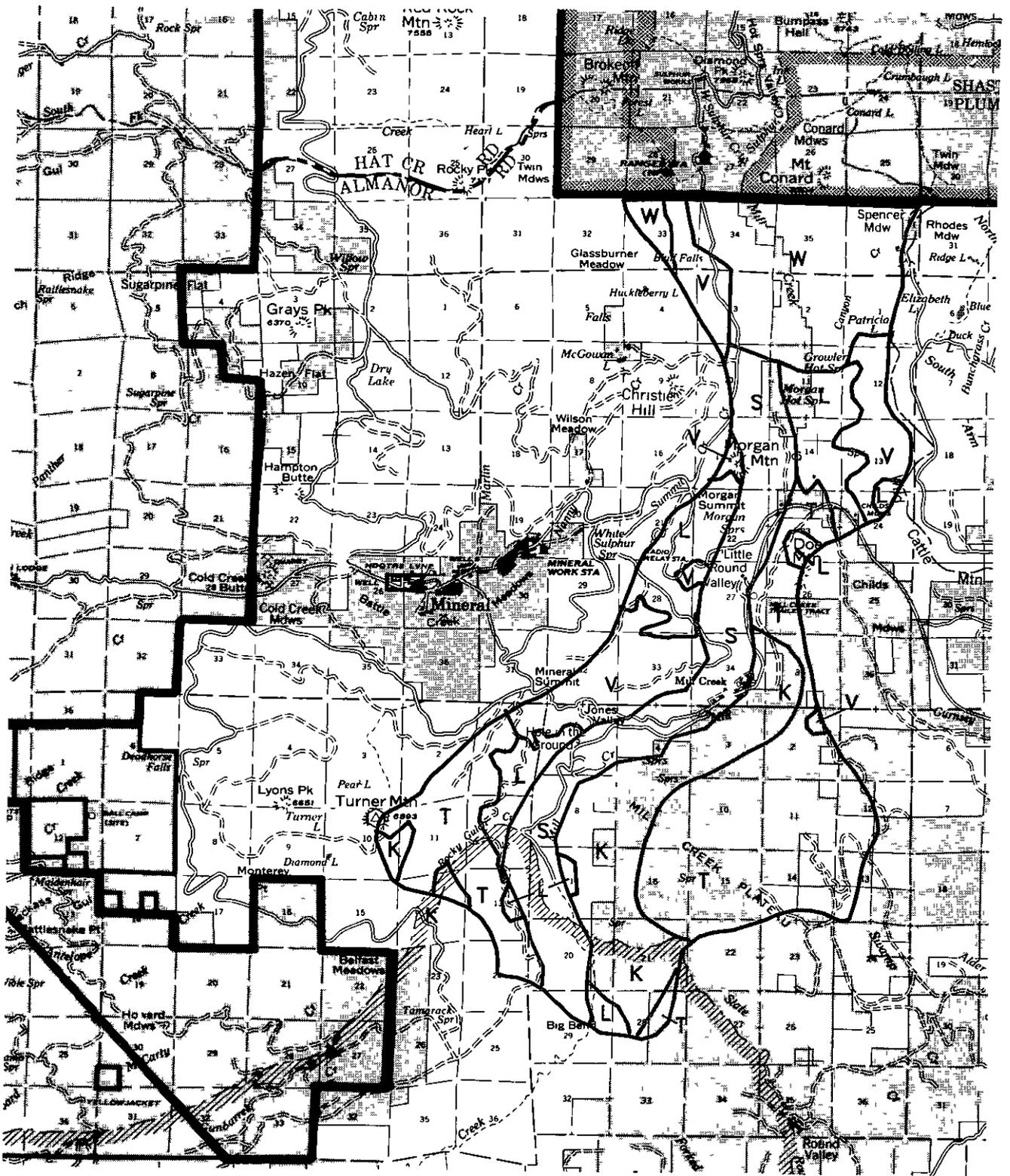
Spotted Owl Habitat Areas	2
Goshawk Territories	2
Other Emphasis Species Deer (summer range), marten, rainbow trout	

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	5
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	640
Red Fir	285

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Martin Digger (100%)	C



27 Management Area UPPER MILL CREEK

Scale



January 1992



Management Area 27 - UPPER MILL CREEK

County ----- Tehama
 Ranger District ----- Almanor
 Acreage ----- National Forest ----- 16,730
 Other ----- 7,605



A. DESCRIPTION

Location The Upper Mill Creek Management Area contains the upper Mill Creek drainage from Big Bend north to the southwest boundary of Lassen Volcanic National Park. It is bounded on the west by the Battle Creek drainage and on the east by the Deer Creek drainage. Near the Mill Creek Summer Home Tract, the creek enters a well defined canyon. The Mill Creek Plateau in the southeastern portion of the area is almost entirely private land.

Physical Environment Elevations range from 3,000 to 8,000 feet. Precipitation averages 55 inches a year, most of it as snow at the higher elevations. The soils in the area are moderately deep to deep, stony, and overlie volcanic rock. Erodible rhyolite soils occur in a few areas.

Biological Environment In the north, large meadows are bordered by aspen, and steep slopes are covered with white and red fir. The southern and eastern slopes are rocky and brush-covered. The southern slopes support Douglas-fir and ponderosa/Jeffrey pine stands. Fuel loads are moderate to heavy. Fires are frequent, averaging more than eight per year in the last decade, but all have burned less than 10 acres. Over half have been human-caused. The area is summer range for the East Tehama deer herd. Important wildlife species include spotted owls, marten and goshawks. Mill Creek is an important anadromous fishery for spawning of spring-run chinook salmon and steelhead upstream above the Highway 36 crossing. The Yahi Yana Native Americans depended heavily on the fishery and the oaks on the canyon slopes. Archaeological evidence indicates a lengthy and intensive use of the canyon by Native Americans.

Management Timber management has been limited by the complexities presented by inter-

mingled private lands, and by steep slopes and rocky soils. Firewood cutting is a minor use. Portions of the area are included in the Morgan Springs, Collins, Rice Creek, Lyonsville, and Deer Creek Range Allotments. Campers use the Mill Creek Campground and the Hole-In-The-Ground Campground. Some fishing and hiking occurs along Mill Creek. Spencer Meadows National Recreation Trail passes through the area. The northern half of the area is in the Lassen Known Geothermal Resource Area, and an adjacent area is subject to geothermal lease application. The private land from Childs Meadows north to the National Park has surface geothermal features.

Facilities The area is accessed by Highways 36 and 172. The Mill Creek Summer Home Tract is located in the south central portion of the area on Highway 172. Mill Creek has been the subject of applications for small hydroelectric generation facilities, but no licenses have been issued.

Further Planning Areas Parts of the Wild Cattle Mountain and Heart Lake further planning areas lie in this area and are recommended for Wilderness designation.

Wild and Scenic The upper one-third of the proposed Mill Creek Wild and Scenic River is in the area.

B. STANDARDS AND GUIDELINES

Facilities

- 1 Analyze opening the old road to Big Bend and providing a trailhead and access trail to Mill Creek from the end of the road.

Fish

- 1 Evaluate existing fish habitat conditions in Mill Creek and determine relative distribution and abundance of anadromous fish species
- 2 Evaluate enhancement opportunities for anadromous fish habitat in Mill Creek. Enhancement may include placement of in-stream habitat structures, stabilizing stream-banks and bars, revegetating the floodplain, "cleaning" spawning gravels, fencing and/or redistributing livestock
- 3 Restrict disturbance of floodplain vegetation upstream from Mill Creek homesites to enhance riparian values
- 4 Evaluate the compatibility of proposed stream access (roads/trails) with the protection of the anadromous resource
- 5 In cooperation with private landowners and the California Department of Fish and Game, monitor adult salmon holding and spawning habitat utilization from near the Lassen Volcanic National Park boundary to Hole-in-the-Ground
- 6 Work cooperatively with private landowners and the Nature Conservancy to protect and improve stream conditions for anadromous fish upstream of Highway 36

Recreation

- 1 Protect the recreation qualities of the potential expansion area for the Hole-in-the-Ground Campground
- 2 Close the Mill Creek Trail to motorized use below Big Bend and maintain the trail at Maintenance Level 2
- 3 Restrict plowing along roads that comprise the trail system within the Morgan Summit Snowmobile Park between December 1 and April 15

Sensitive Plants

- 1 Inventory for short-petalled campion (*Silene invisa*) in red fir stands

Soils

- 1 Restrict tractor logging on rhyolitic soils having slopes greater than 35 percent

Visual Resources

1. Meet a visual quality objective of Retention in the foreground of Mill Creek, County Road 172 and Highway 36
2. Meet a visual quality objective of Partial Retention in the foreground of the Spencer Meadows National Recreation Trail and in the middleground of Highway 36

Water and Riparian Areas

- 1 Recommend no hydroelectric development that would cause damage to fisheries, water quality, or recreation values of tributaries of Mill Creek

Wild and Scenic Rivers

- 1 Preserve the "outstandingly remarkable" values of Mill Creek until congressional action on the proposed inclusion in the Wild and Scenic Rivers System, commensurate with recommended classifications

C. PRESCRIPTION ALLOCATION

Prescription	Acres
D Developed Recreation	10
K Rocky/Sparse Timber	900
L Late Successional	3,700
S Special Areas	3,500
T Timber	2,400
V View/Timber	3,390
W Wilderness	2,830
Total	16,730

D. WILDLIFE HABITAT ALLOCATIONS

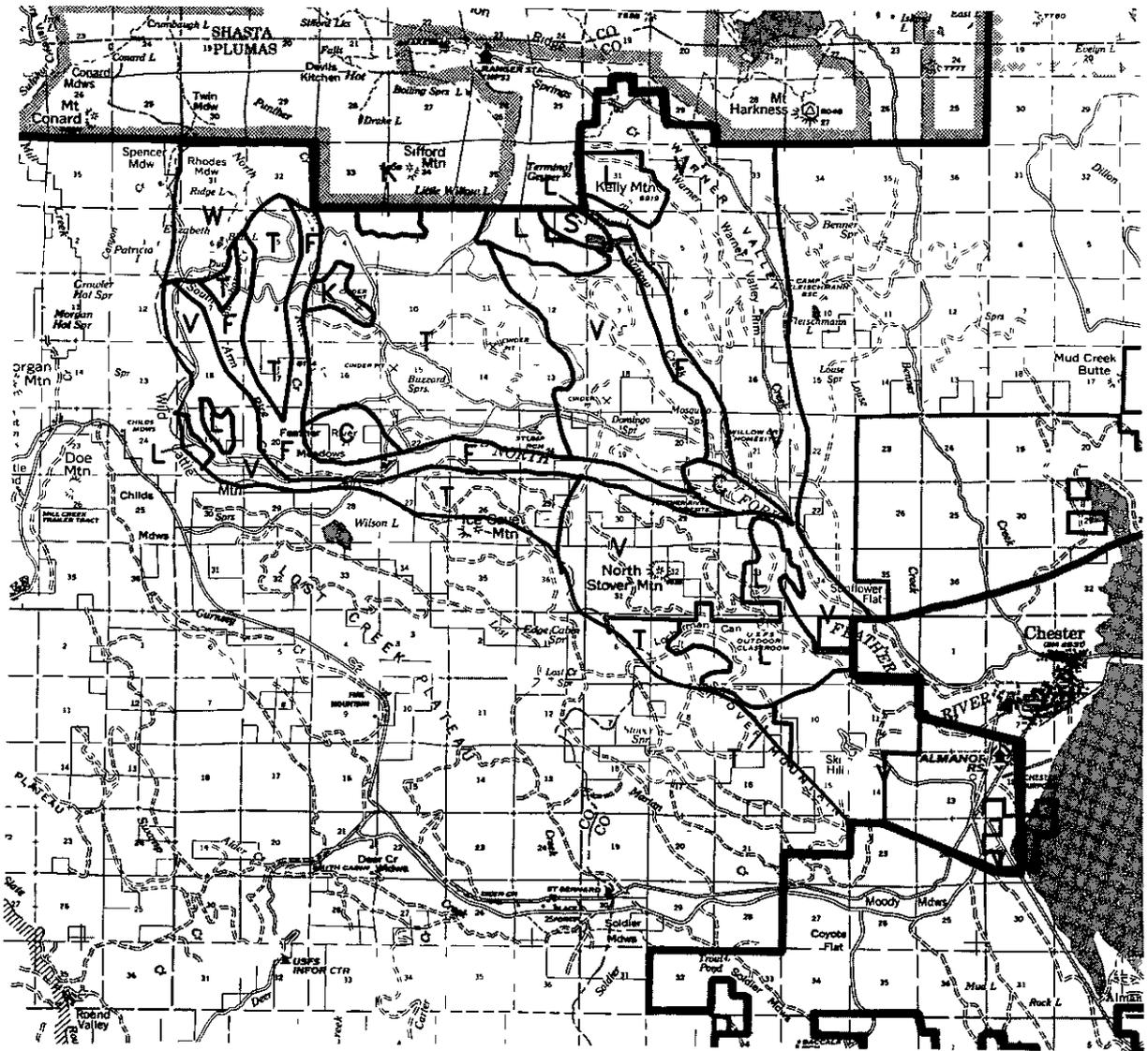
Marten HMA	1
Spotted Owl Habitat Areas	2
Goshawk Territones	2
Other Emphasis Species Deer (summerrange), chinook salmon, steelhead trout, rainbow trout	

F. RANGEALLOTMENT STRATEGIES

<u>Allotment</u>	<u>Strategy</u>
Collins (100%)	C
Deer Creek (20%)	C
Lyonsville(10%)	C
Morgan Spnngs (100%)	C
Rice Creek (30%)	C

E. DESIRED STATE FOR DIVERSITY

<u>Vegetation</u>	<u>Acres</u>
Shrub	
Chaparral	10
Montane Shrub	20
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	650
Red Fir	105



28 Management Area FEATHER RIVER



January 1992



Management Area 28 - FEATHER RIVER

County -----	Plumas
Ranger District -----	Almanor
Acreage ----- National Forest -----	26,850
Other -----	10,599



A. DESCRIPTION

Location The Feather River Management Area lies south of Lassen Volcanic National Park. The headwaters of the North Fork of the Feather River, Bunchgrass Creek, and the north and south forks of Rice Creek join at Feather River Meadows to form the river. Several large sections of private land are present.

Physical Environment The terrain is generally mountainous. Elevations range from 4,500 to almost 7,000 feet at Kelly Mountain. Precipitation averages 70 inches annually. The soils over the majority of the area are stony and moderately deep to deep. Near the park boundary soils have been glaciated and are shallow and rocky. Erodible rhyolite soils occur in a few areas.

Biological Environment Forests are primarily comprised of mixed conifers, with red fir at the higher elevations. Fuel loads vary from light to heavy. An average of two fires per year have occurred over the past decade. None have been over ten acres, and all have been lightning-caused. A number of important fisheries are present, including those of the North Fork Feather River, Rice Creek, Warner Creek, and Willow Creek. Willow Lake is a significant fishery and waterfowl production area. It produces both common and uncommon species, including Canada goose, mallard, cinnamon teal, merganser, bufflehead, and ring-necked duck. Other important emphasis species include spotted owls, goshawks, bald eagles, marten, and black bear. The area is also important as a major fawning area for black-tailed deer.

Management Kelly Mountain was an important source of obsidian for local Native Americans. The Red Bluff to Susanville road, constructed about 1860, allowed commerce between

the Sacramento Valley and mines in Idaho and Nevada. Timber production has been extensive. Firewood cutting is heavy, and opportunities exist for commercial firewood sales. The area includes Rice Creek, Soldier Meadows, and Benner Creek Range Allotments. The area presents many recreation opportunities, associated with numerous streams, Willow Lake, and Terminal Geyser on National Park lands north of Willow Lake. Timber stand conditions and other factors make this management area appropriate for testing the feasibility of uneven-aged timber management in mixed conifer and red fir vegetation types.

Facilities The Pacific Crest National Scenic Trail crosses the area from North Stover Mountain past Domingo Springs and into the National Park near Terminal Geyser. A hiking trail leads from Willow Lake to Terminal Geyser. Developed campgrounds are located at Domingo Springs, High Bridge, and Warner Creek. A low-quality cinder pit is located on road 29N18 near Upper Rice Creek Campground. Most of this management area lies in the Lassen Known Geothermal Resource Area and much of the rest has been subject to geothermal lease application. Except in the northwest corner, the area is crossed by many Forest roads, including the Warner Valley road into Lassen Volcanic National Park. Two summer home tracts, Willow Creek and Feather River are present. A private summer home tract is located in Warner Valley in the northeast corner of the area. Also included are the Locherman Canyon outdoor classroom and the Stover Mountain Ski Hill.

Further Planning Areas Part of the Wild Cattle Mountain further planning area lies in this area. It is recommended for Wilderness designation.

Special Areas A 110-acre area including Willow Lake Bog is established as a botanical special interest area, representing unusual bog vegetation

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 At recreation facilities, provide information on the cultural history of the area

Lands

- 1 Acquire lands adjacent to Willow Lake when available

Recreation

- 1 Install recreation facilities at Willow Lake to manage use
- 2 Maintain the natural values of the Locherman Canyon outdoor classroom and nature trail area.
3. Construct a trailhead at Domingo Springs for the Pacific Crest National Scenic Trail
- 4 Continue to provide downhill ski opportunities at Stover Mountain.
- 5 Manage the undeveloped camping areas at Upper Rice Creek as dispersed campsites.
6. Develop a management plan for the Willow Lake Special Interest Area to insure resource protection through management of recreational use

Sensitive Plants

- 1 Monitor and protect populations of American sedge (*Scheuchzeria palustris* var *americana*) at Willow and Domingo Lakes Inventory for additional populations at other lake and bog areas
- 2 Monitor and protect short-petalled campion (*Silene invisa*) near Rice Creek and inventory for additional populations in red fir areas

Soils

- 1 Restrict tractor logging on rhyolitic soil having slopes steeper than 35 percent.

Special Areas

- 1 Prepare and implement a plan for the Willow Lake Bog Special Interest Area, to protect and accentuate the botanical area's distinctive features Include recreation objectives for this area

Timber

- 1 As part of the Forest's uneven-aged management test, emphasize individual tree selection and group selection where appropriate
2. Apply the full range of silvicultural practices when uneven-aged management is not feasible

Visual Resources

- 1 Meet visual quality objectives along the Pacific Crest National Scenic Trail as shown on the Adopted Visual Quality Objective Map

Wildlife

- 1 Maintain and enhance potential bald eagle nesting habitat at Stover Mountain
2. Maintain and enhance willow flycatcher habitat
- 3 Maintain and enhance potential sandhill crane habitat

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	300
C Firewood	800
D Developed Recreation	30
E Early Successional	200
F Riparian/Fish	1,900
K Rocky/Sparse Timber	600
L Late Successional	4,780
S Special Areas	100
T Timber	6,870
V View/Timber	9,580
W Wilderness	1,590
Z Minimal Management	100
Total	26,850

D. WILDLIFE HABITAT ALLOCATIONS

Marten HMA	1
Bald Eagle Temtones	1
Spotted Owl Habitat Areas	2
Goshawk Temtones	3

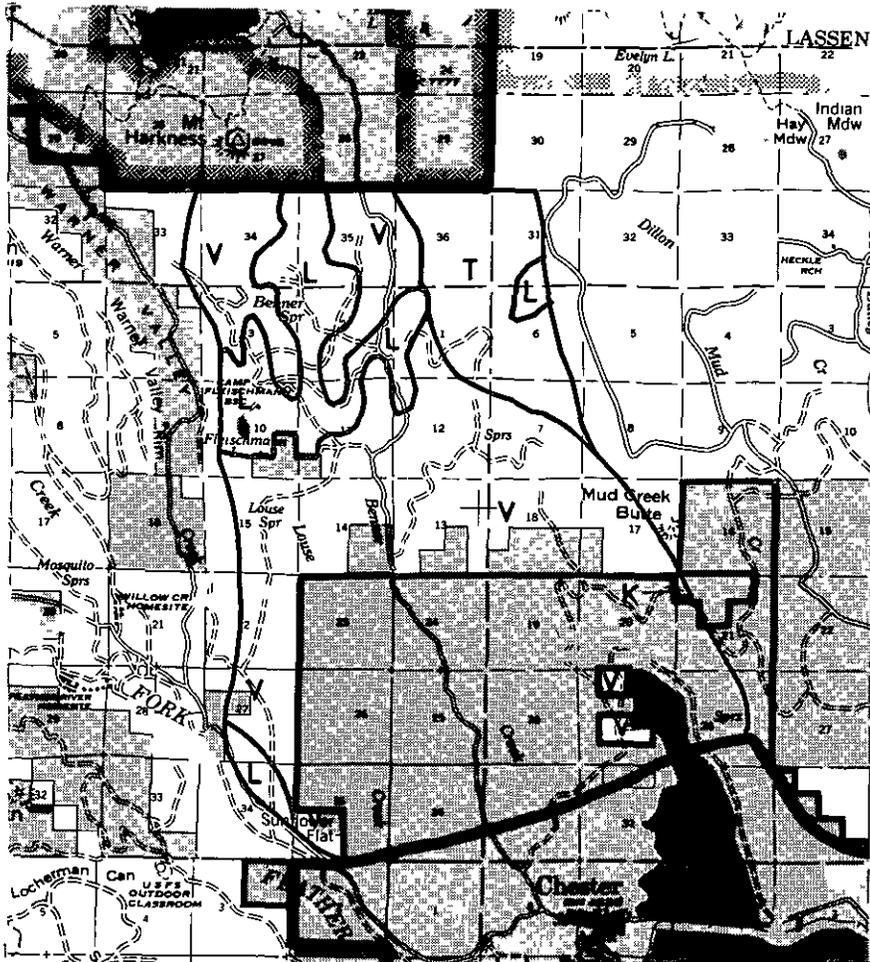
Other Emphasis Species Deer (summer range), mallard, black bear, rainbow trout, osprey

E. DESIRED STATE FOR DIVERSITY

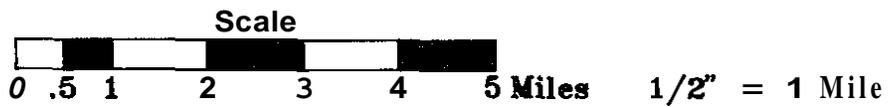
Vegetation	Acres
Shrub	
Chaparral	5
Montane Shrub	10
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	1200
Red Fir	60

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Benner Creek (5%)	C
Rice Creek (70%)	C
Soldier Meadows (20%)	C



29 Management Area BENNER



January 1992



Management Area 29 - BENNER

County -----	Plumas
Ranger District -----	Almanor
Acreage ----- National Forest -----	10,315
Other -----	11,173



A. DESCRIPTION

Location The Benner Management Area lies adjacent to the southeast corner of Lassen Volcanic National Park. The community of Chester is adjacent to the southern border. The western boundary is Warner Valley and the eastern boundary is the Mud Creek drainage. In the south, along Lake Almanor are two isolated parcels surrounded by private land.

Physical Environment Last Chance, Benner, and Louse Creeks originate here. The terrain is mountainous, and elevations range from 4,500 to 6,000 feet. Precipitation is approximately 60 inches a year. The soils are stony, moderately deep to deep, and generally productive. Near the park boundary the area has been glaciated and has shallow rocky soils.

Biological Environment Forests are predominately comprised of mixed conifers, with red fir at higher elevations. Fuel loads range from light to heavy. Some large fires have burned the area in the past. Currently, an average of 2-4 fires burn each year, but none have been over ten acres. Over half the fires are lightning-caused. Benner Creek and Fleischmann Creek are heady used fisheries. Although Louse Creek was once a major spawning stream for lake-run rainbow trout, the run is virtually depleted. Waterfowl breed near Lake Almanor where National Forest parcels are scattered. During summer, this area is moderately used by deer for fawning. Spotted owls, goshawks, sandhill cranes, martens, and black bears are also found in this area.

Management The southern portion of the area was harvested heady in the 1930's by Red River Lumber Company, and several of today's roads are built on their railroad grades. Local residents rely heavily on the area for firewood, but opportunities exist for commercial firewood sales.

The Benner Creek Range Allotment covers the area. Benner Creek Campground is located in the central portion of the area on County Road 318. Last Chance Campground is a PG&E facility at the extreme north end of Lake Almanor. Some fishing and hiking occurs along Benner Creek. The western half of the area lies in the Lassen Known Geothermal Resource Area.

Facilities Plumas County Road 318 crosses the area and is the only access road to Juniper Lake in Lassen Volcanic National Park. A recreation camp under special use permit to the Boy Scouts of America is located at Fleischmann Lake.

B. STANDARDS AND GUIDELINES

Facilities

1. Evaluate Childs Meadows for the location of an administrative site.

Lands

1. Retain Fleischmann Lake in public ownership because of its high recreational value to the local community.

Recreation

1. Manage the undeveloped areas at Fleischmann Lake and along Benner Creek for dispersed recreation.
2. Continue special use permit for Camp Fleischmann so long as permit conditions are met in a satisfactory manner.

- 3 Incorporate public recreational needs in the management plan for the Fleischmann Lake Boy Scout Camp

Visual Resources

- 1 Meet a visual quality objective of retention in the foreground of the Juniper Lake road

Wildlife

- 1 Protect and enhance greater sandhill crane nesting habitats
- 2 Enhance wetland habitats for waterfowl production
- 3 Maintain and enhance willow flycatcher habitat

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	200
C Firewood	200
D Developed Recreation	5
E Early Successional	100
F Riparian/Fish	100
L Late Successional	2,810
T Timber	1,230
V View/Timber	5,670
Total	10,315

D. WILDLIFE HABITAT ALLOCATIONS

Marten HMA	1
Spotted Owl Habitat Areas	1
Goshawk Territones	2

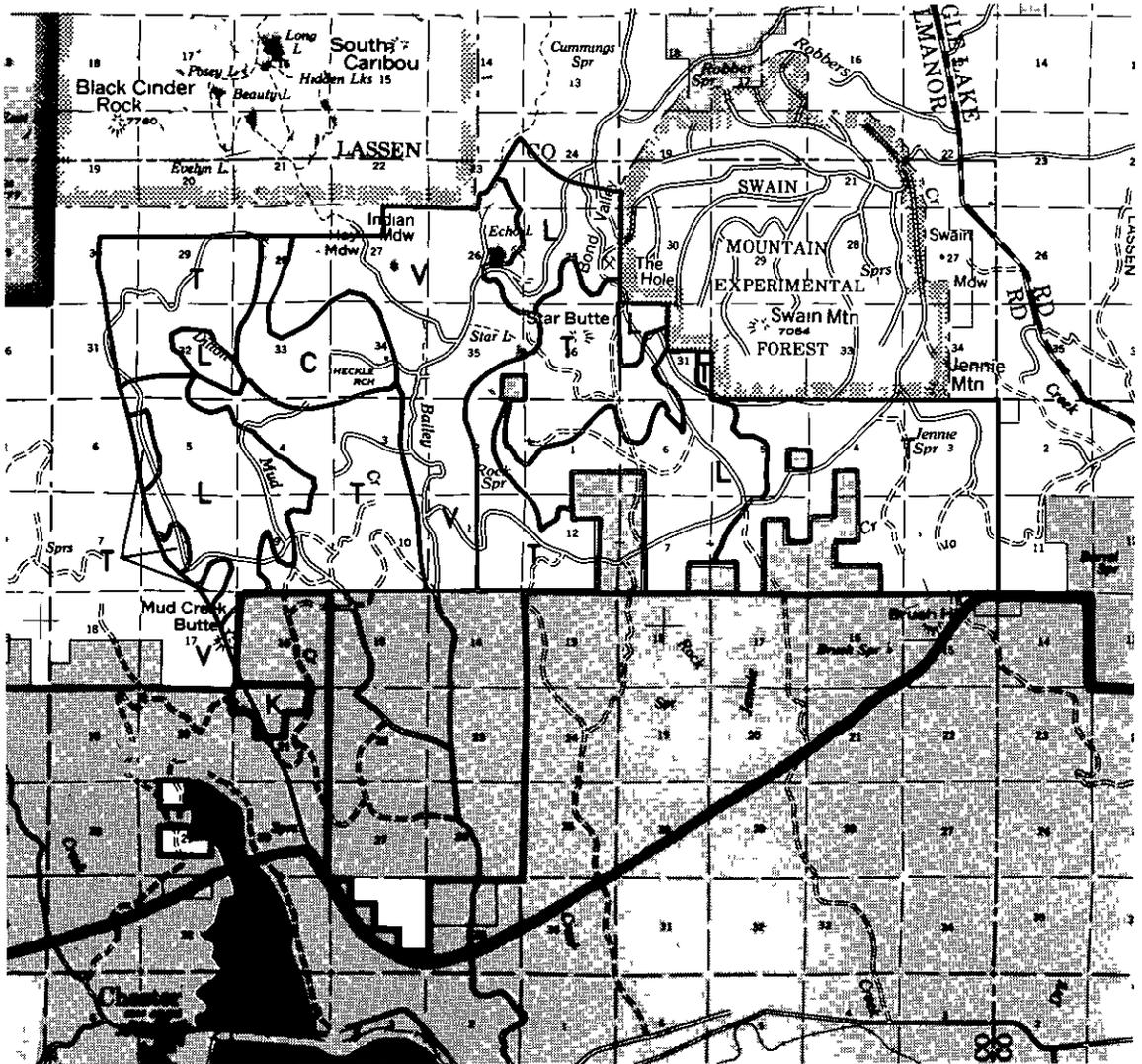
Other Emphasis Species Deer (summer range), mallard, black bear, rainbow trout, sandhill crane

E. DESIRED STATE FOR DIVERSITY

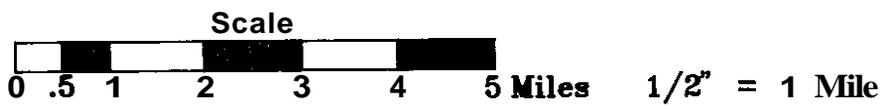
Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	0
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	515
Red Fir	60

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Benner Creek (30%)	C



30 Management Area BAILEY CREEK



January 1992



Management Area 30 - BAILEY CREEK

County -----Plumas
 Ranger District -----Almanor
 Acreage -----National Forest -----15,980
 Other -----3,277



A. DESCRIPTION

Location The Bailey Creek Management Area is adjacent to the southern boundary of both the Caribou (#20) and Swain (#22) Management Areas. It extends south toward Lake Almanor, west to the Mud Creek drainage, and east to Jennie Mountain. Except for private land in the south, most of the area is National Forest land.

Physical Environment The terrain is moderately rugged. Elevations average 5,000 to 5,500 feet. Precipitation averages 50 inches per year. The soils are generally deep, stony, and productive. Near the Caribou Wilderness, they have been glaciated and are shallow and relatively unproductive.

Biological Environment In the southern half, the forest is the mixed conifer type. The northwest portion is predominately lodgepole, while the northeast is red fir. A large volume of red fir is adjacent to Swain Mountain. Fuel loads are moderate to heavy. The large brushfields present are the result of past conflagrations. More recently, fires have averaged two per year, all smaller than ten acres. Most fires are lightning-caused. The Mud Creek Rim on the southwestern boundary is well known as prime habitat for black-tailed deer and receives considerable hunting use. Echo Lake is heavily used for fishing and camping. Spotted owls, goshawks, bald eagles, martens, and black bears are also present in this area.

Management The area was first harvested by Red River Lumber Company in the 1930's and many of the current roads are built on railroad grades. The northwestern portion—Heckle Ranch—is an important fuelwood cutting area for the residents of Chester. The area is in the Benner Creek Range Allotment. Fishing, hiking, and camping occur at Echo Lake and Star

Lake. The Hay Meadows trailhead for the Caribou Wilderness lies at the north boundary. Forest Road 32N10 connects with Highway 36 and accesses the area.

B. STANDARDS AND GUIDELINES

Fire

1. Give high priority to fire and fuel management adjacent to the Swain Mountain Experimental Forest.

Firewood

1. Facilitate personal-use firewood gathering by designating areas and providing access specifically for firewood gatherers.

Recreation

1. Analyze development of a recreation area at Echo Lake to manage use.

Visual Resources

1. Meet a visual quality objective of Retention in the foreground view of Echo Lake.
2. Meet a visual quality objective of Partial Retention in the foreground view of the 10 Road and the non-wilderness (east) side of the Trail Lake Trail.

Wildlife

1. Protect and enhance the bald eagle nesting territory.
2. Protect and enhance potential willow flycatcher and bufflehead duck habitat.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	200
C Fueewood	1,620
E Early Successional	200
F Riparian/Fish	100
K Rocky/Sparse Timber	100
L Late Successional	5,520
T Timber	5,700
V View/Timber	2,540
Total	15,980

D. WILDLIFE HABITAT ALLOCATIONS

Marten HMA	1
Bald Eagle Terntones	1
Spotted Owl Habitat Areas	3
Goshawk Terntones	3
Other Emphasis Species	Deer (summerrange), black bear, rainbow trout, willow flycatcher, bufflehead

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	1
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	515
Red Fir	210

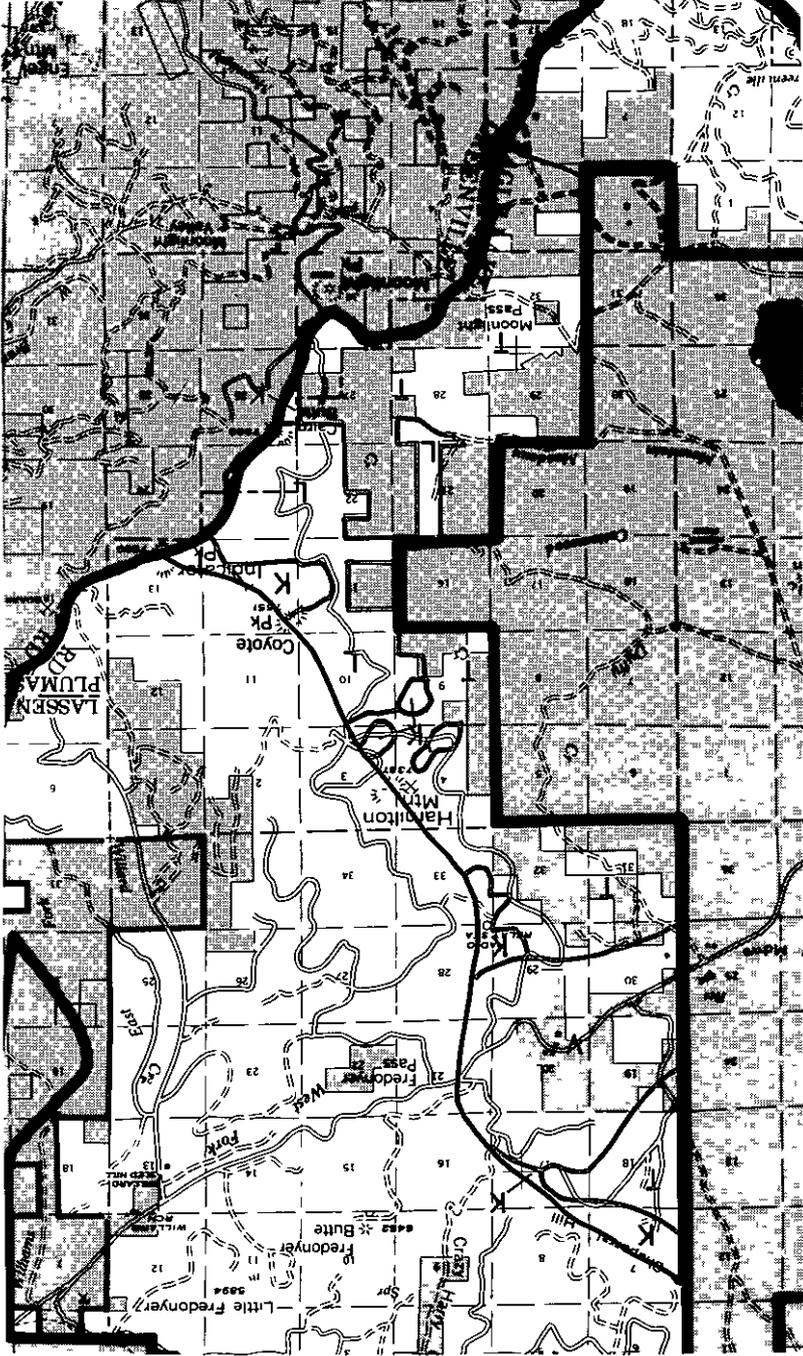
F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Benner Creek (50%)	C



Scale 0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile
January 1992

31 HAMILTON Management Area



Management Area 31 - HAMILTON

County -----Lassen Plumas
 Ranger District -----Eagle Lake
 Acreage - National Forest -----8,710
 Other -----7,553



A DESCRIPTION

Location The Hamilton Management Area includes lands drained by Duffy, Cottonwood, Mountain Meadows Creeks, and the east branch of Goodrich Creek, all of which flow into Mountain Meadows Reservoir. Much of the area overlooks Westwood, which is about eight miles to the west. Forest and private lands are intermixed throughout the area.

Physical Environment The terrain is rugged with peaks and drainages. The lowest point is 5,200 feet near Coppervale Hill, and the highest point is the 7,651 foot Coyote Peak on the boundary between the Hamilton and Willard Management Areas. Mean annual precipitation averages 40 inches, but reaches only 30 inches in the lowlands. Much of the soil is derived from volcanic rocks and Eocene non-marine sediments, soils are moderately deep. Landslides and slumps occur in the non-marine sediments.

Biological Environment Forest types are red fir and mixed conifer, the latter type includes most of the Douglas-fir on the Eagle Lake District. Riparian zones and subalpine meadows are also scattered throughout the area. The northern end has moderate to heavy slash loads, and the southern end has light to moderate natural fuel loads. Adjacent private lands have heavy fuel buildups, which represent a fire hazard to this area. In 1920, a large fire started on private land and swept over Hamilton Mountain. Over the last decade, about one lightning fire per year has occurred. Habitat exists for goshawk, spotted owl, pileated woodpecker, fisher, rainbow trout, black bear, and black-tailed deer. Significant historic sites include the old Coppervale Guard Station and mining remains along Mountain Meadows Creek.

Management Past logging has been extensive. The Coyote and Mountain Meadows Range Allotments and a portion of the Fredonyer Allotment are in this area. The Coppervale Ski Area is located south of Highway 36 on the west side of Fredonyer Summit and is managed under special use permit by Lassen Community College. Logging roads near Coppervale are popular for cross-country skiing.

Facilities State Highway 36 crosses the northern part of the area, and telephone and electrical transmission lines parallel the highway. Access from the north is from State Highway 36, except in the vicinity of Moonlight Pass where access is over private land. From the south, access is over Plumas National Forest roads. Two snow survey courses are located just north of Fredonyer Summit.

B. STANDARDS AND GUIDELINES

Firewood

- 1 Give personal use of firewood priority over commercial use.

Lands

- 1 Exchange or otherwise dispose of isolated Forest Service land holdings.

Recreation

- 1 Develop a plan to take advantage of the dispersed winter recreation potential in the Fredonyer Pass area.

2. Establish a snowmobile recreation facility at Fredonyer Summit
3. Restrict plowing (and log hauling) on designated snowmobile and cross country ski routes between December 1 and April 15

Sensitive Plants

1. Inventory for possible occurrences of short petalled campion (*Silene unvisa*) in red fir stands

Soils

1. Map the occurrence of unstable Eocene non-manne soils in detail (Order 2 Survey)

Visual Resources

1. Meet a visual quality objectives of retention in the foreground and partial retention in the middleground of Highway 36

Wildlife

1. Cooperate with the California Department of Fish and Game to enhance blue grouse habitat

C. PRESCRIPTION ALLOCATION

Prescription	Acres
D Developed Recreation	40
E Early Successional	100
F Riparian/Fish	100
K Rocky/Sparse Timber	1,500
L Late Successional	2,700
T Timber	2,170
V View/Timber	2,000
Z Minimal Management	100
Total	8,710

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Spotted Owl Habitat Areas	1
Goshawk Terntones	1

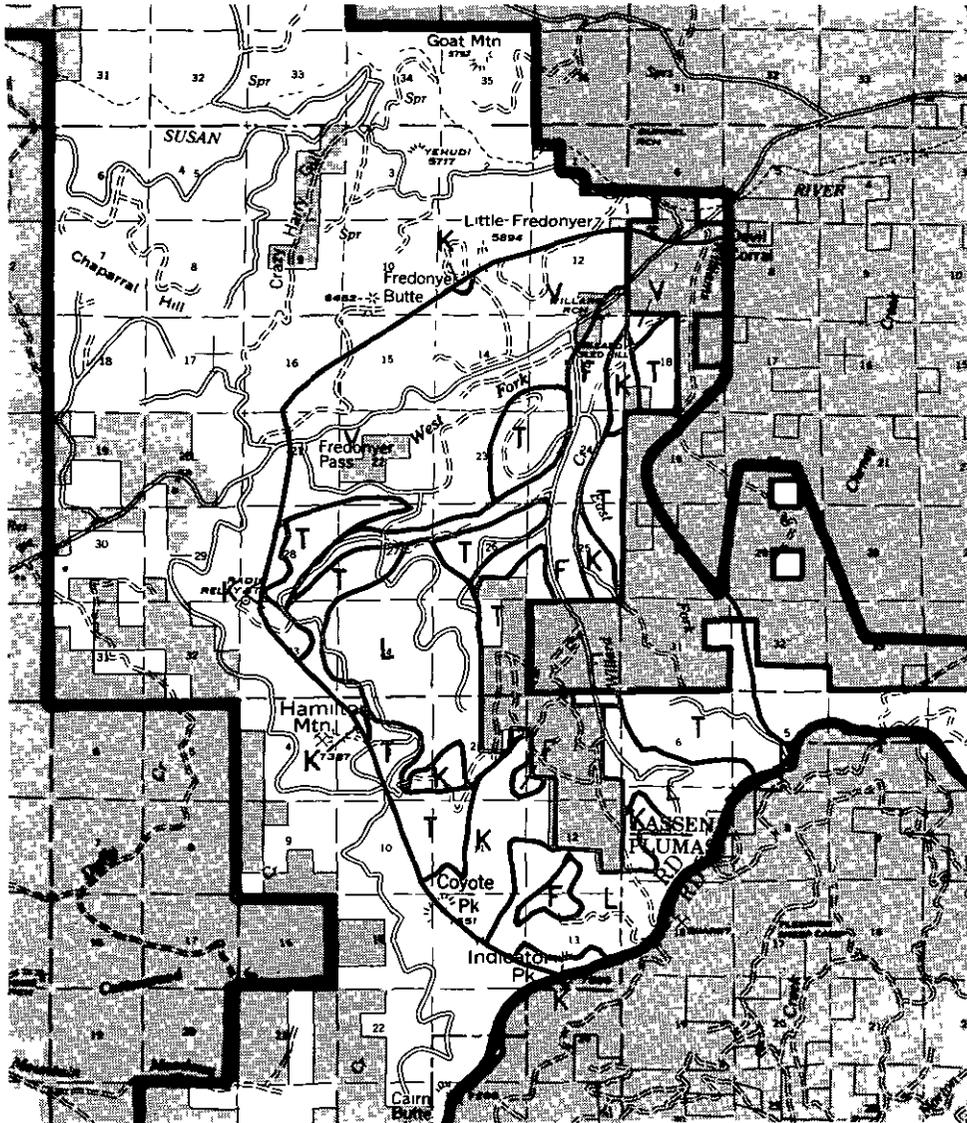
Other Emphasis Species Pileated woodpecker, blue grouse, deer (summer range), black bear

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	10
Sagebrush	1
Conifer Forest	
Eastside Pine	20
Mixed Conifer	395
Red Fir	20

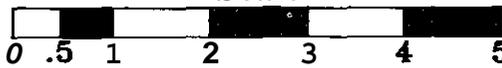
F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Coyote (100%)	B
Fredonyer (25%)	C
Mountain Meadows (100%)	B



32 Management Area WILLARD

Scale



5 Miles 1/2" = 1 Mile

January 1992



Management Area 32 - WILLARD

County -----Lassen, Plumas
 Ranger District -----Eagle Lake
 Acreage-----National Forest -----14,155
 Other -----3,636



A DESCRIPTION

Location The Willard Management Area encompasses all Forest land within the Willard Creek watershed. The management area boundary coincides with the watershed boundary in the north, west, and south. The eastern and northern parts of the area include some private land, notably Stephens and Willard Ranches.

Physical Environment Elevations range from 4,400 to 7,651 feet. Precipitation averages 35 inches per year. Bedrock is composed of andesite on the higher slopes and primarily volcanic mudflows at lower elevations. Many areas below 6,200 feet are blanketed with cobbly sedimentary eocene deposits of non-marine origin. On steeper slopes, these deposits show extensive evidence of both ancient and recent landslides and slumps. Erosion of these failure areas is significant today. Surface rock is common, especially at higher elevations.

Biological Environment Major vegetation types are eastside pine, mixed conifer, red fir, and riparian woodland. Fuels are mostly the result of management activities. Moderate to heavy loads are interspersed with some light loads. Heavy fuel buildups on adjacent private land present a threat to this area. In 1920, a large fire started on private land to the west and burned into the area. Few lightning fires have started in the last decade. A study of this area's fire-scarred trees revealed that large, moderate-intensity ground fires burned roughly every 80 years until 1980. Habitat exists for black-tailed deer, black bear, pileated woodpecker, spotted owl, fisher, and goshawk. Willard Creek and its tributaries from Hamilton Mountain are perennial and provide brook and rainbow trout habitat. Several archaeological sites have been identified, including a significant habitation of Maidu Native Americans.

Management Most timber stands in the Willard Creek watershed have had intermediate harvests. In recent years, extensive salvage sales have resulted in removal of much insect-infested timber. Susanville residents utilize this nearby area for firewood cutting. All but the very eastern edge of the Fredonyer Range Allotment is within the area. Cross-country skiers frequent the ridge between Fredonyer Summit and Hamilton Mountain, as well as the Forest roads in the area. Other recreation includes snowmobiling, dispersed camping, hunting, and occasional fishing.

Facilities California State Highway 36 traverses the northern part of the area, and other access is provided by Forest roads.

B. STANDARDS AND GUIDELINES

Firewood

1. Give personal use of firewood priority over commercial use.

Fish

1. Restore the Willard Creek watershed to provide "high" habitat capability for fish.

Recreation

1. Conduct a use survey, and prepare and implement a plan to manage dispersed camping along Willard Creek.
2. Cooperate in the development of a campground along Willard Creek in partnership with Native American groups.

Sensitive Plants

- 1 Inventory for possible occurrences of short petalled campion (*Szlene invisca*) in red fir stands

Soils

1. Map the occurrence of unstable Eocene non-marine soils in detail (Order 2 Survey)

Visual Resources

- 1 Meet a visual quality objectives of Retention in the foreground and partial retention in the middleground of Highway 36
- 2 Meet a visual quality objectives of Retention in the foreground of the Willard Creek road

Water and Riparian Areas

- 1 Restore and improve riparian conditions along Willard Creek and its tributaries. Consider fencing, grazing management and improvement projects

Wildlife

- 1 Cooperate with the California Department of Fish and Game to enhance blue grouse habitat

C. PRESCRIPTION ALLOCATION

Prescription	Acres
D Developed Recreation	15
E Early Successional	100
F Riparian/Fish	1,420
K Rocky/Sparse Timber	1,900
L Late Successional	4,600
T Timber	2,400
V View/Timber	3,720
Total	14,155

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Spotted Owl Habitat Areas	2
Goshawk Territories	2

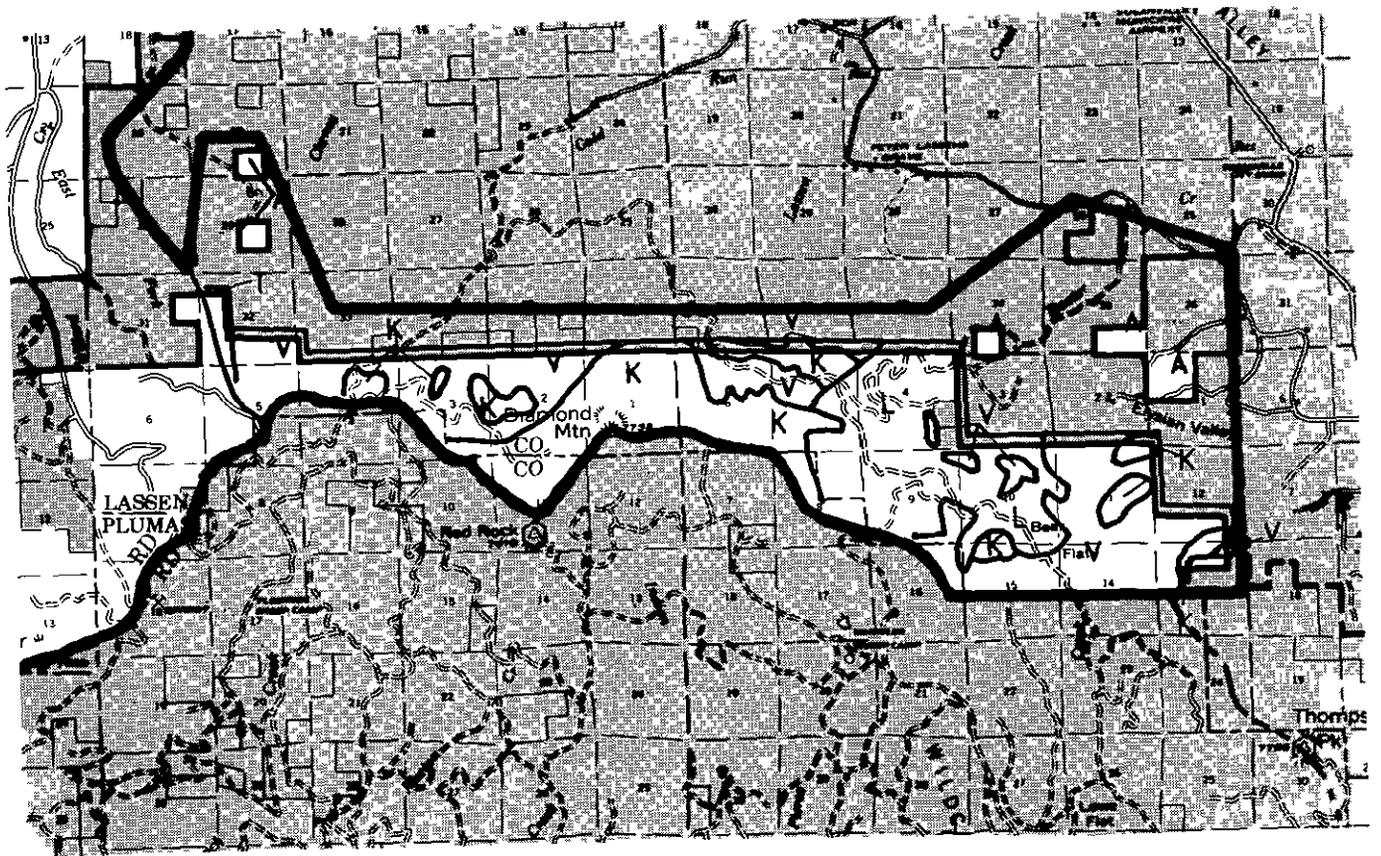
Other Emphasis Species: Pileated woodpecker, blue grouse, deer (summer range), rainbow trout, black bear

E. DESIRED STATE FOR DIVERSITY

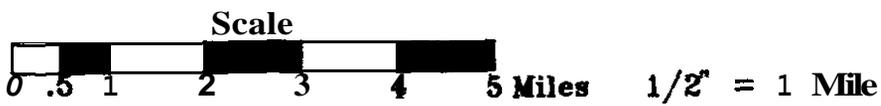
Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	2
Sagebrush	0
Conifer Forest	
Eastside Pine	65
Mixed Conifer	540
Red Fir	90

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Fredonyer (>70%)	C



33 Management Area DIAMOND



January 1992



Management Area 33 - DIAMOND

County -----	Lassen, Plumas
Ranger District -----	Eagle Lake
Acreage ----- National Forest -----	8,270
Other -----	34,826



A DESCRIPTION

Location The Diamond Management Area is on the east end of the Eagle Lake Ranger District. It abuts the Plumas National Forest on the south and the Willard Creek watershed to the west. The northern portion includes several National Forest parcels surrounded by private lands.

Physical Environment The area is situated on the abrupt northern end of the Sierra Nevada. The 7,338-foot Diamond Mountain rises above the 5,000-foot lowlands and is the dominant landscape feature viewed from Susanville. Scenic attributes include sharp relief, perennial snowfields, timberline, aspen groves, old growth timber, avalanche chutes, and alpine character in general. Slopes are moderate to steep. Granitic soils are prevalent, but metavolcanic soils and cobbly sedimentary Eocene non-mantle soils also occur, having large areas of rocky soils. Numerous intermittent streams feed Cheney, Gold Run, Hills, Lassen, Baxter, and Elysian Creeks. Average annual precipitation is 30 inches.

Biological Environment Vegetation types include mixed conifer, red fir, brushfields, alpine grasslands, lodgepole pine, and riparian woodland. Some large timber is present. Flatter areas have moderate loads of slash, while steeper slopes have moderate to heavy loads of natural fuels. Heavy fuel buildup on adjacent private land poses a hazard. Long-time residents recall that, until 1930, ranchers set the grasslands afire after removing their cattle in the fall. Since then no large fires have burned. Recently, the occurrence rate of lightning and human-caused fires has been moderate. The area provides habitat for goshawk, spotted owl, pileated woodpecker, black bear, and black-tailed deer.

Management Slopes up to 30 percent have had repeated intermediate cuttings. Some firewood is cut from the area. The Diamond Mountain Range Allotment and the extreme eastern portion of the Fredonyer Range Allotment are within the area. In 1850, a gold discovery spurred a small, four-year gold rush to the Diamond Mountain Mining District. Evidence of historical mining activities lies along streams. Numerous mining claims still exist, although most are inactive. Hunting and driving for pleasure are primary forms of recreation.

Facilities Lassen County Road 204 and various Forest roads access the area.

B. STANDARDS AND GUIDELINES

Lands

1. Dispose of isolated parcels of National Forest land if not needed for wildlife habitat.

Facilities

1. Work in cooperation with the California Department of Fish and Game and local hunting groups to facilitate closure of the road at Bear Flat during deer hunting season to conform to seasonal area closures on the Plumas National Forest.

Sensitive Plants

1. Inventory for possible occurrences of short petalled campion (*Szlene invisa*) in red fir stands.
2. Inventory for possible occurrences of talus collomia (*Collomia debilis var larsenu*) and other rare alpine species in alpine areas.

Soils

- 1 Map the occurrence of unstable Eocene non-marine deposits and granitic soils in detail (Order 2 Survey) before conducting ground-disturbing activities

Visual Resources

1. Maintain a high level of visual quality on Diamond Mountain as shown on the Adopted Visual Quality Objective Map

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non-Timber Wildlife	400
B Range Wildlife	200
E Early Successional	100
F Riparian/Fish	100
K Rocky/Sparse Timber	2,250
L Late Successional	2,420
V View/Timber	2,800
Total	8,270

D. WILDLIFE HABITAT ALLOCATIONS

Spotted Owl Habitat Areas	1
Goshawk Territories	2

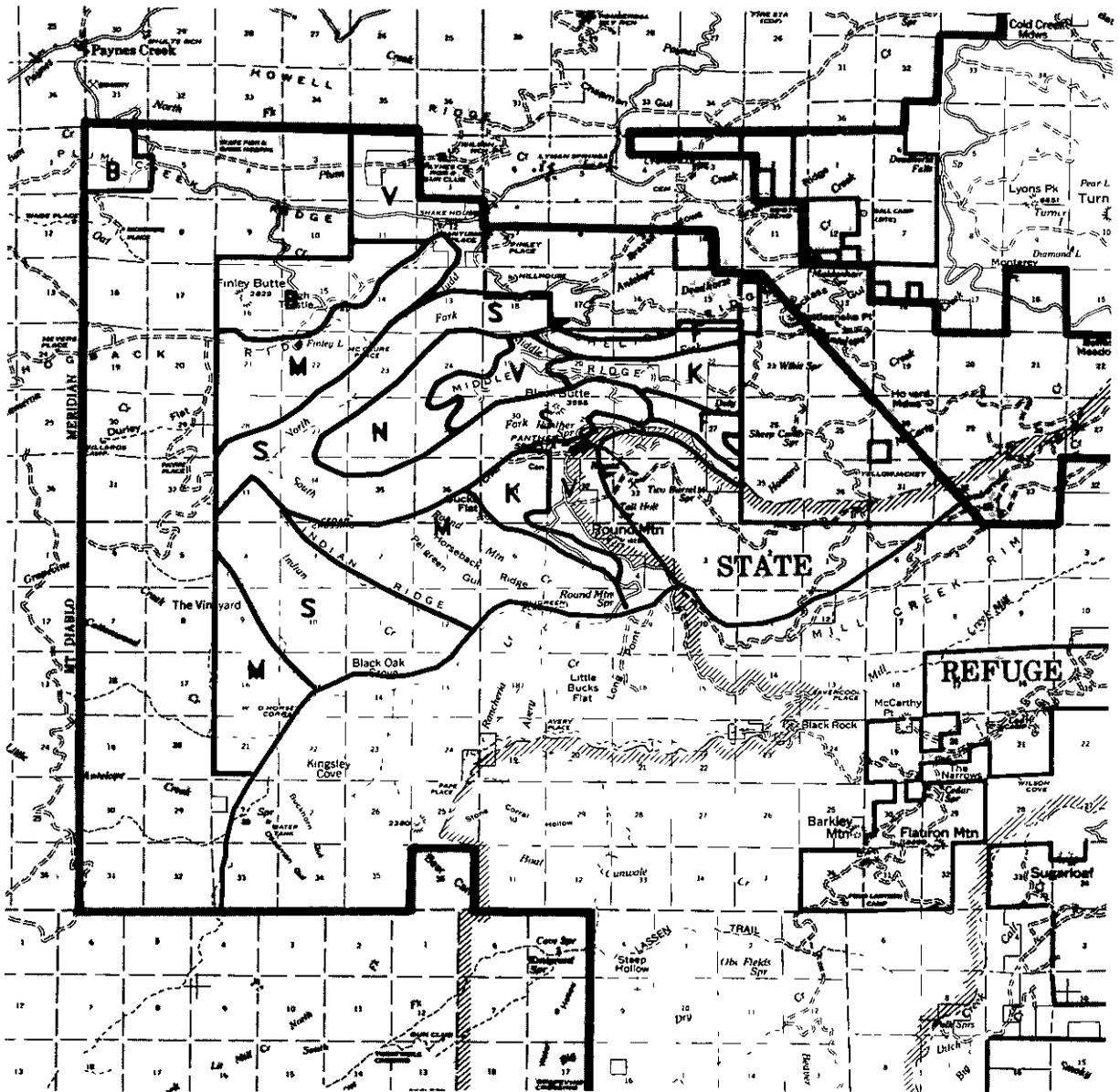
Other Emphasis Species. Deer (summer range), black bear, pileated woodpecker

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	2
Sagebrush	40
Conifer Forest	
Eastside Pine	0
Mixed Conifer	155
Red Fir	210

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Diamond Mountain (100%)	B
Fredonyer (15%)	C



34 Management Area ANTELOPE CREEK



January 1992



Management Area 34 - ANTELOPE CREEK

County -----	Tehama
Ranger District -----	Almanor
Acreage ----- National Forest -----	25,285
Other -----	26,113



A. DESCRIPTION

Location The Antelope Creek Management Area borders the northwestern edge of the Almanor Ranger District. West of the Forest boundary is private land. The area encompasses the upper portion of Antelope Creek and many tributaries. The east and west parts of the area are private land.

Physical Environment The terrain is mountainous. Many steep-sided canyons are separated by long, flat ridges. Elevations range from 2,000 to 4,200 feet. Precipitation averages 30 inches a year. The moderately deep soil overlies volcanic rock.

Biological Environment Forest vegetation is primarily oak, pine, and some Douglas-fir. Grasses and brush grow in non-forested areas. The eastern portion contains some merchantable timber, mostly mixed conifer. Fuel loads are light to moderate. Many large fires have occurred, one in 1929 burned over 2,500 acres. The 1990 Finley Fire started in this area and burned 23,700 acres. Much of the area has burned at least twice in the last 80 years. Currently, one or two fires burn here each year. Over half are human caused, and usually are small. The area provides important wildlife habitat. It includes a major portion of the East Tehama deer herd's winter range, as well as transitional range. Antelope Creek is an important anadromous fishery, containing remnant runs of chinook salmon and steelhead. Golden eagles and goshawk are also present. Considerable archaeological evidence shows long and regular use by Native Americans.

Management Timber harvesting has been limited to the eastern, or forested, half of this area.

An early V-flume used to transport lumber to Red Bluff crossed the area from Lyonsville, past Finley Lake, and along Hogback Ridge. Many early ranches utilized the grazing lands in the western portion. This is still an important livestock area and is included in the Antelope, Lyonsville, and Tehama Range Allotments. A small developed campground, South Antelope, is located on the South Fork of Antelope Creek near Panther Springs. The entire area is heavily used by deer hunters, and some OHV use occurs year-round on Jeep trails.

Facilities Panther Springs is a Forest administrative facility. Access is limited to a few roads in the north and to Ponderosa Way (28N29), which traverses the eastern half from north to south. Antelope Creek has been the subject of applications for small hydroelectric development.

Further Planning Areas The central one-third of the area is in the Ishi B further planning area.

Special Areas A 3,890-acre area of the blue oak and digger pine vegetation type comprises the recommended Indian Creek Research Natural Area.

Wild and Scenic The area contains the north and south forks of the proposed Antelope Creek Wild and Scenic River.

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 Provide protection of cultural resource sites

Fire

1. Continue with the prescribed fire program in ponderosa pine stands along Ponderosa Way when compatible with management objectives for the timber stands present
2. Use fire suppression and rehabilitation strategies and tactics that least alter the landscape or disturb the land surface in the Semi-Primitive Prescription areas.

Fish

1. Coordinate efforts with the California Department of Fish and Game (CDFG) to inventory Antelope Creek to determine existing habitat conditions for resident and anadromous fish.
2. Coordinate efforts with CDFG to evaluate the need to modify potential barriers to anadromous fish migration
3. Protect habitat and evaluate restoration opportunities for resident and anadromous fish on Antelope Creek

Law Enforcement

1. Establish a station at Panther Springs to help administer the Ishi Wilderness and semi-primitive areas, and to protect cultural and other resources

Recreation

1. Develop a recreation management plan for the Ishi B Semi-Primitive Motorized and Non-Motorized Areas
2. Manage the undeveloped camping areas along Middle Ridge as dispersed campsites

Sensitive Plants

1. Inventory for possible occurrences of Butte County fritillary (*Fritillaria eastwoodiae*) in foothill woodland areas

Water and Riparian Areas

1. Recommend denial of hydroelectric development on Antelope Creek and its tributaries if site specific analysis indicates that damage to fisheries, water quality or recreational values would result

Wild and Scenic Rivers

1. Preserve the "outstandingly remarkable" values of Antelope Creek until congressional action on the proposed inclusion in the Wild and Scenic Rivers System, commensurate with recommended classifications

Wildlife

1. Retain old growth in the canyons of Antelope Creek as needed to meet diversity standards

C. PRESCRIPTION ALLOCATION

<u>Prescription</u>	<u>Acres</u>
B Range-Wildlife	2,940
D Developed Recreation	5
F Riparian/Fish	640
K Rocky/Sparse Timber	1,000
M Semi-Primitive Motorized	8,200
N Semi-Primitive Non-Motorized	1,900
S Special Areas	7,700
V View/Timber	2,800
Z Minimal Management	100
Total	25,285

D. WILDLIFE HABITAT ALLOCATIONS

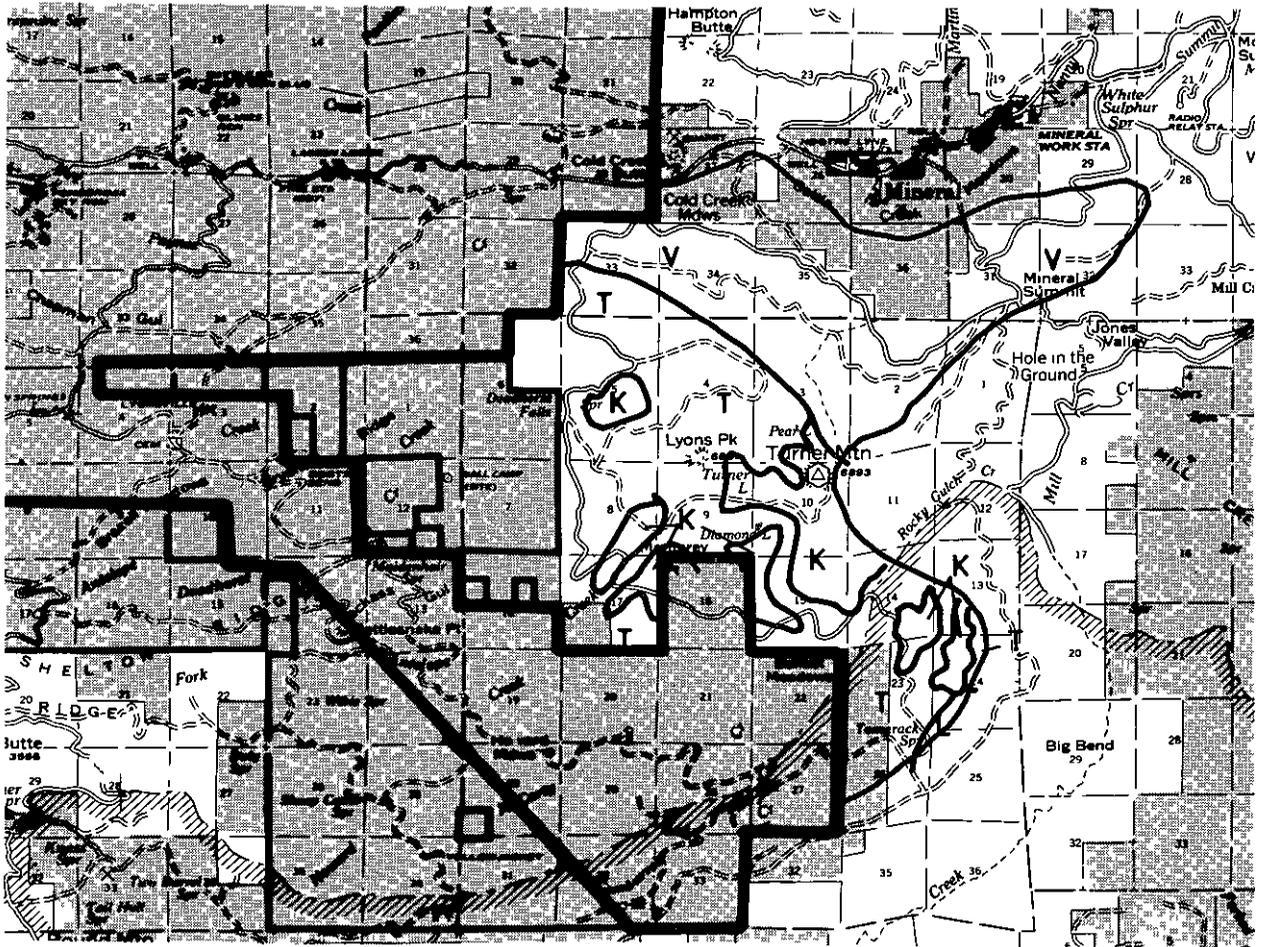
Goshawk Territories 1

Other Emphasis Species Deer (winter range), gray squirrel, chinook salmon, steelhead trout

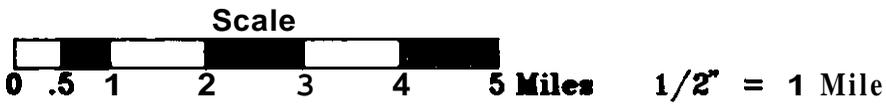
**E. DESIRED STATE
FOR DIVERSITY**

**F. RANGEALLOTMENT
STRATEGIES**

Vegetation	Acres	Allotment	Strategy
Shrub		Antelope (100%)	C
Chaparral	300	Tehama (10%)	C
Montane Shrub	0	Lyonsville (35%)	C
Sagebrush	0		
Conifer Forest			
Eastside Pine	0		
Mixed Conifer	200		
Red Fir	0		



35 Management Area TURNER



January 1992



Management Area 35 - TURNER

County -----Tehama
 Ranger District -----Almanor
 Acreage-----National Forest -----11,090
 Other -----7,210



A. DESCRIPTION

Location The Turner Management Area is situated south of Mineral and Highway 36. The western and southern boundary is the Forest boundary, and the eastern boundary is the Mill Creek drainage. The major terrain feature is the 6,893-foot Turner Mountain, topped by a Forest Service lookout. The western and northern portions are private land.

Physical Environment The terrain is mountainous. Elevations range from 4,500 to 6,900 feet. Precipitation averages 50 inches a year. Soils are moderately deep to deep and overlie volcanic rock. Cobbles and stones are common in the soil profile.

Biological Environment The forest is composed of mixed conifers, except for red fir at the higher elevations. Fuel loads range from light to heavy. Fuel loads are heavier on surrounding private lands because little or no fuel treatment followed logging. This presents a hazard to National Forest lands. Fires are infrequent; two occur about every five years. Most burn less than 10 acres. Half are lightning-caused, and half are human-caused. A small part of the 23,700-acre Finley Fire burned in this area in 1990. Great gray owls may occur in this area. Marten and goshawk are other important resident species. This is a summer range and migration route for black-tailed deer.

Management The area was first logged around 1900, and today about 75 percent of the area has had some harvesting. Very little dispersed recreation occurs. Three gold mining claims are clustered near Mineral Summit. The northwest tip of the Management Area lies in the Lassen Known Geothermal Resource Area.

Facilities Access is provided by Highway 36; County Road 172; Forest Roads 29N43, 29N04, and 29N48; and other Forest Service and private roads.

B. STANDARDS AND GUIDELINES

Recreation

- 1 Analyze the need for a recreation area and sanitation facilities at Diamond Lake.

C. PRESCRIPTIONALLOCATION

Prescription	Acres
B Range-Wildlife	100
E Early Successional	100
F Riparian/Fish	100
K Rocky/Sparse Timber	2,300
L Late Successional	200
T Timber	4,000
V View/Timber	4,290
Total	11,090

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Territories 1

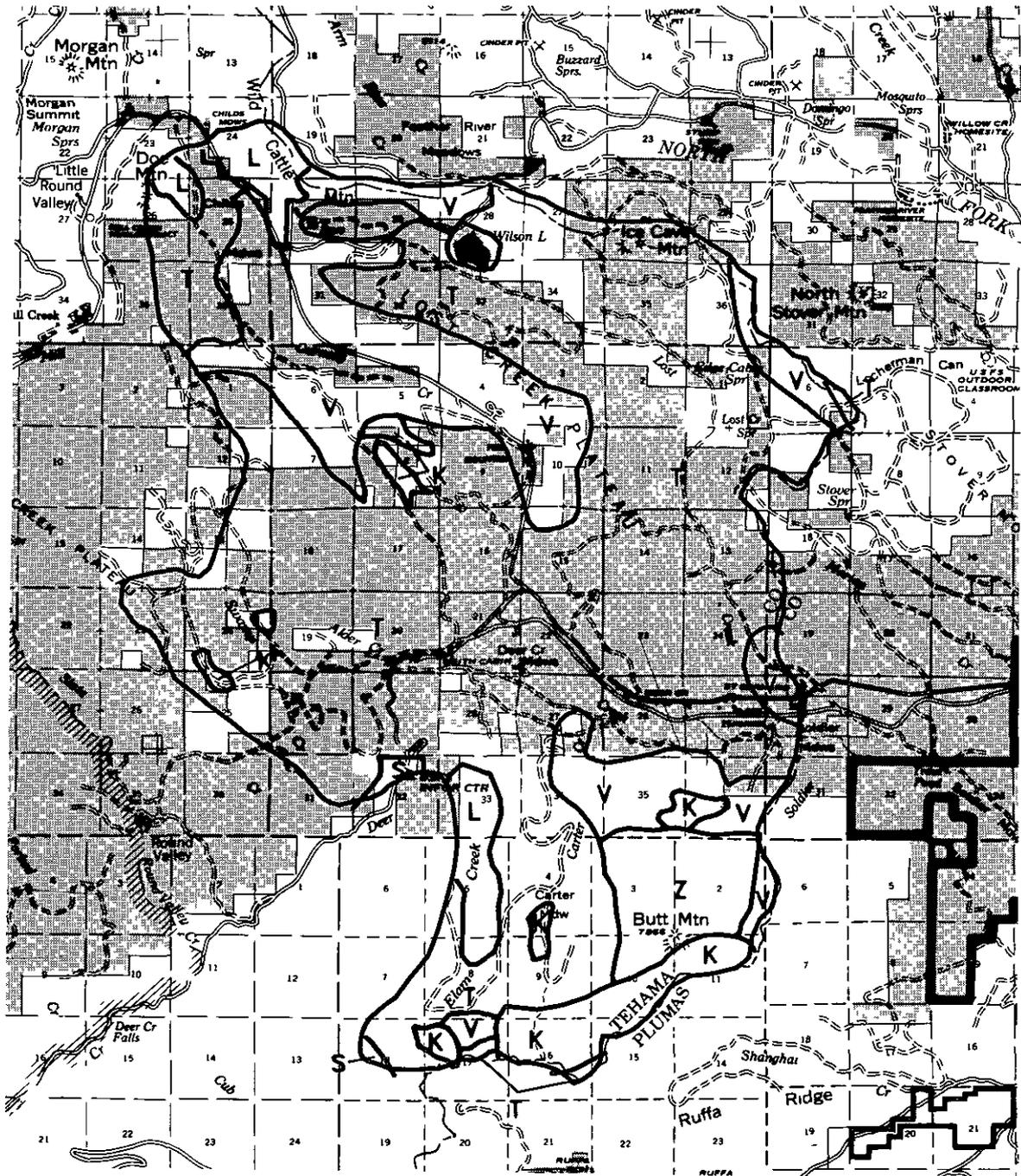
Other Emphasis Species Deer (summer range), gray squirrel, marten, black bear, rainbow trout, spotted owl

**E. DESIRED STATE
FOR DIVERSITY**

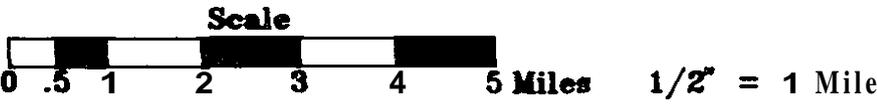
<u>Vegetation</u>	<u>Acres</u>
Shrub	
Chaparral	0
Montane Shrub	10
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	495
Red Fir	40

**F. RANGE ALLOTMENT
STRATEGIES**

<u>Allotment</u>	<u>Strategy</u>
Lyonsville (55%)	C



36 Management Area UPPER DEER CREEK



January 1992



Management Area 36 - UPPER DEER CREEK

County -----	Tehama
Ranger District -----	Almanor
Acreage ----- National Forest -----	17,220
Other -----	29,390



A. DESCRIPTION

Location The Upper Deer Creek Management Area is a large, diverse area containing the headwaters and upper tributaries of Deer Creek. It lies midway between the towns of Mineral and Chester. Deer Creek Meadows is a prominent landmark at the confluence of Deer and Gurnsey Creeks. Except for continuous National Forest land in the south, the area is primarily scattered National Forest parcels surrounded by private land.

Physical Environment The diverse terrain includes rocky peaks, flat plateaus, and steep creek gorges. Elevations range from 4,000 feet to 7,866 feet at Butt Mountain. Precipitation is about 60 inches a year. The soils are moderately deep to deep, and are developing in andesite and rhyolite. The rhyolite soils are erodible and have lower productivity than other soils in the area.

Biological Environment Forests consist of mixed conifers at the lower elevations and red fir at higher elevations. The highest points of Butt Mountain are sub-alpine. Fuel loads vary from light to heavy. Fires occur at a rate of about two per year. Well over half are from lightning, and nearly all are smaller than ten acres. Wilson Lake in the extreme north central portion is an important waterfowl area, supporting breeding Canada geese, mallards, cinnamon teal, and the uncommon ring-necked duck. Bald eagles are often seen at the lake and, in past years, osprey breeding has occurred. Both Gurnsey Creek and Deer Creek support popular put-and-take fisheries. Potential habitat could be provided to steelhead and spring-run chinook salmon in tributary streams with the rehabilitation of the upper Deer Creek fish ladder. The area is summer range for the East Tehama deer herd. Marten, spotted owls, and goshawks are also present. Major features of the Dutch Hill Mine estab-

lished about 1880 still exist—the tunnel, flume, and ditch used to carry water from Wilson Lake to Feather River Meadows. Sites at Childs Meadows show the area's importance to the Yahi Yana Native Americans for summer settlement.

Management Timber has been harvested throughout this area except on Butt Mountain. The area is within the Deer Creek and Soldier Meadows Range Allotments. Deer Creek Meadows is utilized as summer livestock range and has an undeveloped campsite. Gurnsey Creek Campground and Elam Campground are developed sites. Fishing and hiking are popular along Deer Creek, Gurnsey Creek, and Lost Creek.

Facilities The northern portion of the management area lies within the Lassen Known Geothermal Resource Area, and other portions have been subject to geothermal lease application, but no leases have been issued. Highways 32 and 36 intersect near the center of the area. A segment of the Pacific Crest National Scenic Trail traverses the northeast corner of the Management Area. The Lassen Trail also crosses the area.

Further Planning Area The area contains the northwestern half of the Butt Mountain further planning area.

Wild and Scenic The area contains the uppermost end of the proposed Deer Creek Wild and Scenic River.

B. STANDARDS AND GUIDELINES

Cultural Resources

1. At recreation facilities, provide information on the cultural history of the area.

- 2 Interpret the Dutch Mill Mine ditch for visitor information.

Fish

- 1 Protect habitat and evaluate for enhancement opportunities for anadromous and resident fisheries along Deer Creek and its tributaries
- 2 Pursue the opportunity with private landowners in Deer Creek Meadows to improve stream conditions through the management of livestock

Lands

- 1 Acquire lands containing fish habitat and/or riparian areas

Recreation

- 1 Maintain the potential of the Butt Mountain area for a downhill ski area development
- 2 Assess the need for snowmobile and cross-country skiing facilities
- 3 Manage recreation use on acquired lands to protect riparian habitat and streamside management zones

Sensitive Plants

- 1 Inventory for possible occurrences of short petalled campion (*Scutellaria invisa*) and closed throated beard tongue (*Penstemon personatus*) in red fir stands
- 2 Inventory for possible occurrences of Wilkin's harebell (*Campanula wilkinsiana*) at Deer Creek and other meadows
- 3 Inventory for Cantelow's lewisia (*Lewisia cantelowii*) on wet rock faces

Soils

- 1 Prohibit tractor logging on rhyolitic soils having slopes steeper than 35 percent

Visual Resources

1. Meet partial retention visual quality objectives or higher along the Pacific Crest National Scenic Trail as shown on the Adopted Visual Quality Objective Map.
- 2 Meet a visual quality objective of Retention in the foreground of Highway 36.
3. Meet a visual quality objective of Partial Retention in the foreground of Wilson Lake

Wild and Scenic Rivers

1. Preserve the "outstandingly remarkable" values of Deer Creek until congressional action on the proposed inclusion in the Wild and Scenic Rivers System, commensurate with recommended classifications

Wildlife

- 1 Maintain or enhance potential bald eagle nesting habitat near Wilson Lake.
- 2 Control access and minimize impacts to the area around Wilson Lake.
- 3 Maintain or enhance potential willow flycatcher habitat

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non-Timber Wildlife	200
D Developed Recreation	40
E Early Successional	100
F Riparian/Fish	600
K Rocky/Sparse Timber	900
L Late Successional	1,900
S Special Areas	100
T Timber	6,200
V View/Timber	4,690
Z Minimal Management	2,490
Total	17,220

D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Terntones	1
Suotted Owl Habitat Areas	2
Goshawk Terntones	2

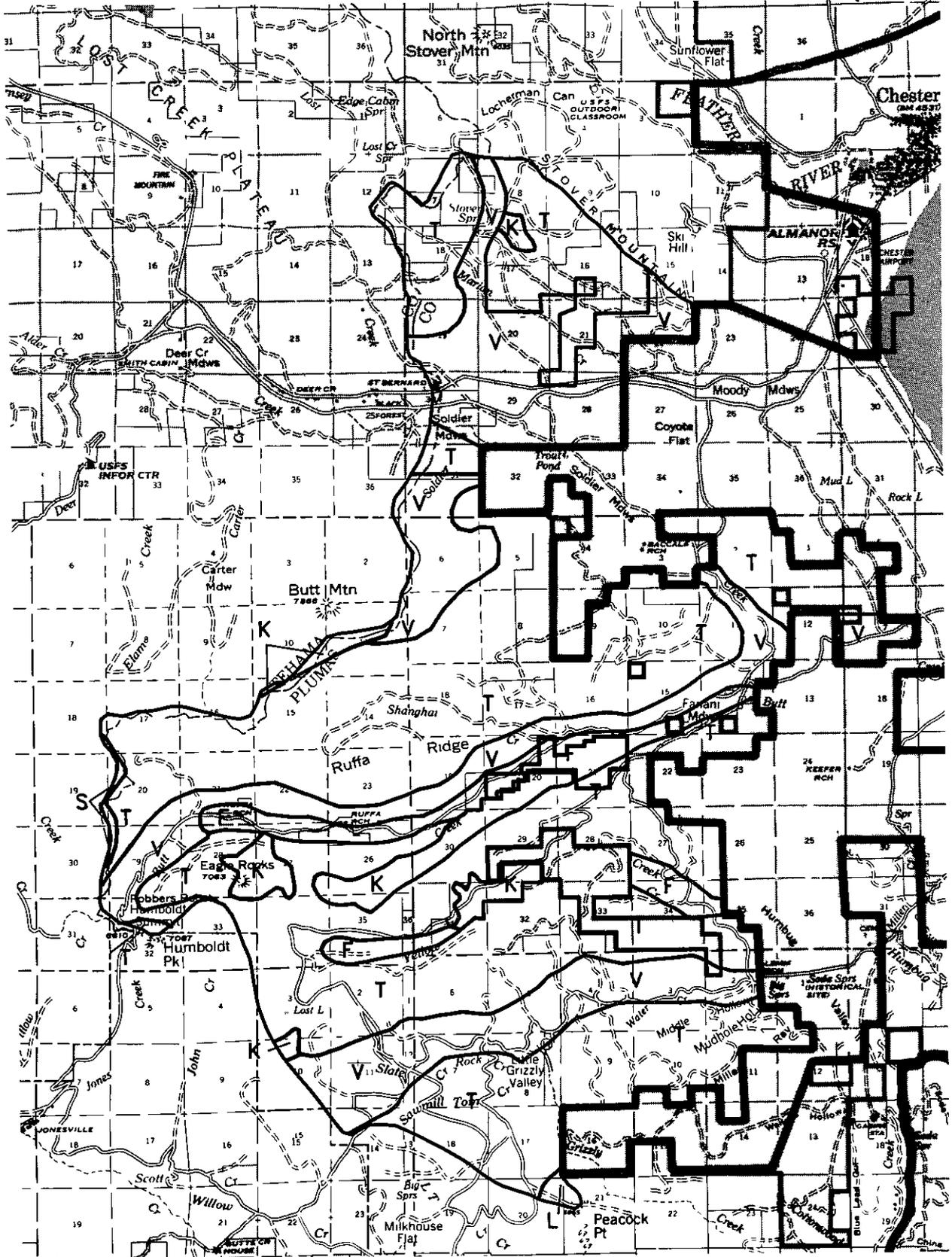
Other Emphasis Species. Deer (summer range), mallard, chinook salmon, steelhead trout, rainbow trout, willow flycatcher, marten.

E. DESIRED STATE FOR DIVERSITY

<u>Vegetation</u>	<u>Acres</u>
Shrub	
Chaparral	0
Montane Shrub	10
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	605
Red Fir	210

F. RANGEALLOTMENT STRATEGIES

<u>Allotment</u>	<u>Strategy</u>
Deer Creek (50%)	C
Soldier Meadows (20%)	C



37 Management Area BUTT CREEK

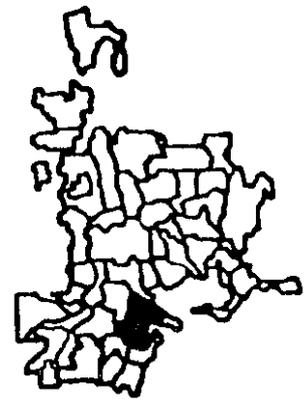


January 1992



Management Area 37 - BUTT CREEK

County -----Plumas
 Ranger District -----Almanor
 Acreage-----National Forest -----31,905
 Other -----8,632



A. DESCRIPTION

Location The Butt Creek Management Area lies in the east-central portion of the Almanor Ranger District. The east boundary of the area is the Forest boundary near Coyote Flat, Fanam Meadows, Humbug Valley, and Yellow Creek. Several large private inholdings occur along creeks.

Physical Environment The highest elevation is about 7,800 feet at Butt Mountain. Average elevation is 5,500 feet. Most of the terrain is moderately sloping. Soils are moderately deep to deep and are productive. Large amounts of stones and cobbles are present in some areas. Precipitation averages 40 inches a year. Two major streams originate in the area. Butt Creek begins near Humboldt Summit and flows into Butt Valley Reservoir. Yellow Creek originates between Eagle Rocks and Lost Lake, and flows into the Feather River at Belden. Both contribute to hydroelectric generation by Pacific Gas and Electric Company (PG&E).

Biological Environment Forest types in the area are predominantly mixed conifer and red fir. Fuel loads range from light to heavy. Large fires have burned in the past, including a 250 acre fire in 1973. Fire occurrence has recently averaged 3.5 per year. None have burned more than ten acres, and well over half are lightning-caused. The area supports moderate densities of summering black-tailed deer, and marten and goshawks are believed to occur. Yellow, Soldier, and Butt Creeks are productive trout fisheries. The area is crossed by part of the Dutch Mill Mine Ditch (c. 1880), and by two early commercial freight and stage routes, the Humbug and the Chico-Humboldt roads (c. 1860). A well-preserved section of the latter at Humboldt Summit shows the engineering abilities of the time.

Management Over half the area has had some harvesting. The area is included in four range allotments: Soldier Meadows, Butte Creek, West Humbug, and Soda Creek-North Butte. Developed recreation sites are present at Little Gizzly Valley Campground and PG&E's Yellow Creek Campground. Fishermen and hikers use Soldier Creek, Butt Creek, Yellow Creek, and Stover Camp.

Facilities Access is by county, Forest Service, and private roads. A portion of the area has been subject to geothermal lease application. The Pacific Crest National Scenic Trail follows the western edge of this area. The Lassen Trail (1849-51) also crosses parts of the area.

Further Planning Areas The area contains the southeastern half of the Butt Mountain further planning area.

B. STANDARDS AND GUIDELINES

Cultural Resources

1. At Humboldt Summit, interpret the Humboldt Road for visitor information.

Fish

1. Protect fish habitat and evaluate restoration opportunities for resident fish of the Butt Creek and Yellow Creek drainages.
2. Develop a working relationship with adjacent landowners to protect and improve stream conditions in upper Yellow Creek.

Recreation

- 1 Develop trailheads for the Pacific Crest National Scenic Trail at Humboldt and Humbug roads, assess the need at the Highway 36 crossing
- 2 Interpret significant land management activities along the Pacific Crest National Scenic Trail for trail users
- 3 Manage the undeveloped camping areas at Stover Springs and Soldier Meadows as dispersed campsites. Install sanitation facilities

Sensitive Plants

- 1 Inventory for possible occurrences of short petalled campion (*Silene invisa*) and closed throated beard tongue (*Penstemon personatus*) in red fir stands
- 2 Inventory for Cantelow's lewisia (*Lewisia cantelowii*) on wet rock faces
- 3 Inventory for Quincy lupine (*Lupinus dalestae*) in open, rocky areas

Visual Resources

- 1 Meet a visual quality objective of Partial Retention in the foreground along the Pacific Crest National Scenic Trail

Water and Riparian Areas

- 1 Continue bank stabilization and stream enhancement of Soldier, Yellow, and Butt Creeks

Wildlife

- 1 Continue improvement of riparian, meadow, and stream habitats along Soldier, Yellow, and Butt Creeks
- 2 Maintain or enhance potential willow flycatcher habitat

C. PRESCRIPTIONALLOCATION

Prescription	Acres
B Range-Wildlife	200
D Developed Recreation	5
E Early Successional	200
F Riparian/Fish	1,200
K Rocky/Sparse Timber	1,800
L Late Successional	100
S Special Areas	100
T Timber	17,200
V View/Timber	11,100
Total	31,905

D. WILDLIFE HABITAT ALLOCATIONS

Marten HMA	1
Goshawk Territories	3

Other Emphasis Species. Deer (summer range), rainbow trout, spotted owl, willow flycatcher.

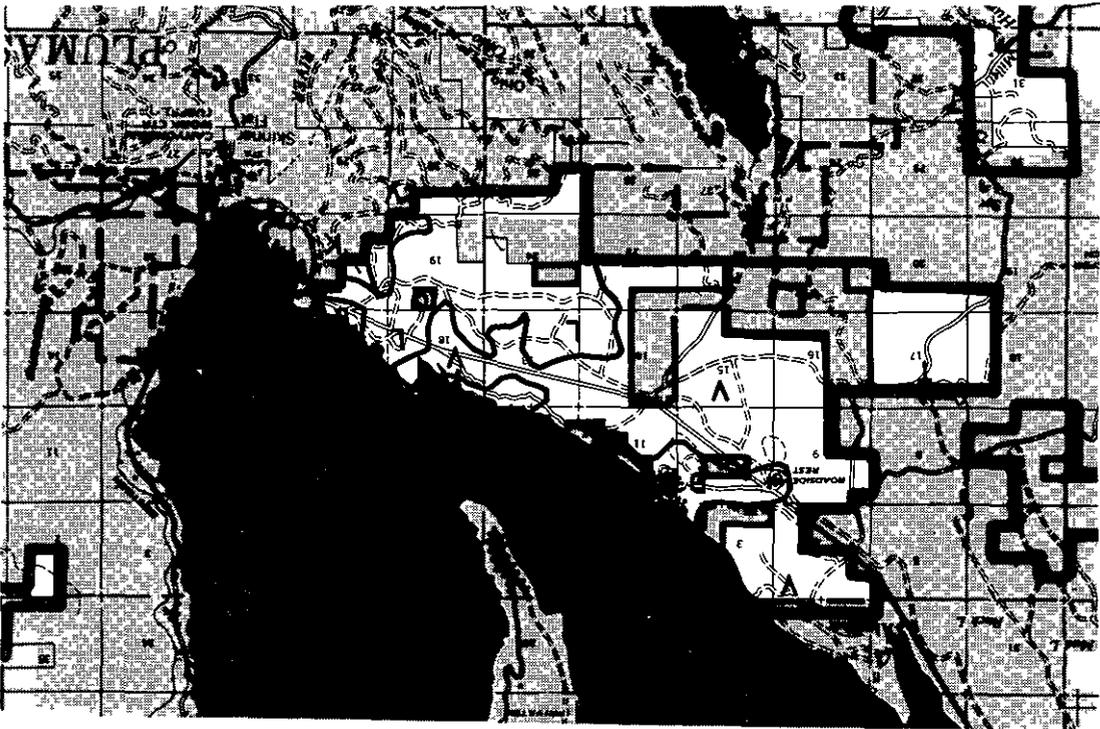
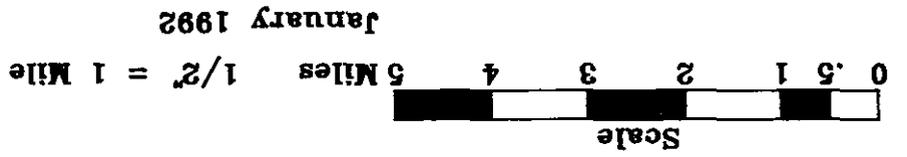
E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	30
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	1255
Red Fir	335

F. RANGEALLOTMENT STRATEGIES

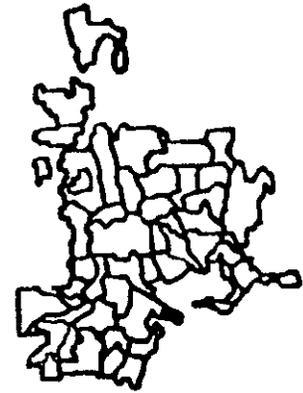
Allotment	Strategy
Butt Creek (100%)	C
Soda Creek - North Butte (30%)	C
Soldier Meadows (50%)	C
West Humbug (50%)	C

38 Management Area PRATTVILLE



Management Area 38 - PRATTVILLE

County -----	Plumas
Ranger District -----	Almanor
Acreage ----- National Forest -----	6,290
Other -----	1,203



A DESCRIPTION

Location The Prattville Management Area includes the southwest shore of Lake Almanor. It is isolated by private land on three sides and by Lake Almanor on the east. In places, thin strips of shoreline are privately owned.

Physical Environment The terrain is very gentle. Elevations range from about 4,480 feet at the lakeshore up to 5,000 feet. Precipitation averages 40 inches a year. Soils are productive and moderately deep to deep. A few areas have large amounts of stones and cobbles in the soil.

Biological Environment The forest type is mostly mixed conifer; approximately 1,200 acres are plantations of ponderosa and Jeffrey pine. Fuel loads vary widely from light to heavy. Although two fires in 1958 burned a total of 150 acres, all other recorded fires have been kept under ten acres. Fires average almost three per year, and over 80 percent are human-caused. Two bald eagle nest territories and several active osprey nests are present. Proximity to both Lake Almanor and Butt Valley Reservoir makes this a prime habitat for both these raptor species. Canada geese, common mergansers, and other waterfowl nest in trees adjacent to the lake. Black-tailed deer use the area heavily in summer. An uncommon furbearer, the fisher, is believed to occur here. Spotted owl and goshawk are also present. The middle section of the Dutch Hill Mine ditch (circa 1880), a riveted metal pipe, crosses through this area, as do the remnants of an extensive network of railroad logging grades.

Management Red River Lumber Company logging operations continued here until the 1930's. About half the area now has been logged. The area is included in the Soldier Meadows Range

Allotment. Several developed campgrounds are present: the National Forest's Almanor Campground, and PG&E's Fox Farm, Rocky Point, and Lassen View Campgrounds. A day-use beach area also is on Forest land near the Almanor Campground. A summer home tract and resort at the community of Almanor on National Forest land is under special use permit. Hiking and beach activities occur along the lakeshore. One gold mining claim lies in this area.

Facilities Highway 89 runs along the east side of the area. The Butt Valley Reservoir, adjacent to the southern boundary, is partially supplied with water by a two mile long tunnel from Lake Almanor that crosses the area from northeast to southwest. The mouth is just south of Prattville. The management area derives its name from the community of Prattville founded by Dr. Benjamin Pratt in the late 1800's. The original site was flooded by Lake Almanor, and the current community is a resort area on the lake shore. The Forest Service operates the Almanor Campground and beach facility. In 1973, the Forest Supervisor approved a plan to terminate permits of seven of the summer homes, and to expand the campground and reconstruct a day-use beach area to allow adequate public access. The decision was upheld on appeal by the Regional Forester and the Chief of the Forest Service.

B. STANDARDS AND GUIDELINES

Cultural Resources

1. At recreation facilities, provide information about the cultural history of the area.

Recreation

1. Prepare a comprehensive recreation development plan for the Lake Almanor Campground and vicinity.
2. Conduct a site study and, **if** conditions are favorable, construct a group campground near Lake Almanor.
3. Maintain a near natural setting along shoreline at Lake Almanor.

Sensitive Plants

1. Monitor and protect Egg Lake monkeyflower (*Mimulus pygmaeus*) population and inventory for additional populations in open, seasonally wet areas.
2. Inventory for Qumcy lupine (*Lupinus dale-siae*) in open, rocky areas

Visual Resources

1. Meet a visual quality objective of Retention between Lake Almanor and Highway 89
2. Meet a Partial Retention or Retention visual quality objectives southwest of Highway 89 as shown on the Adopted Visual Quality Objective Map

Wildlife

1. Maintain “high” habitat capability for snags (see Appendix O) to maintain habitat for nesting ospreys and Canada geese within 0.5 miles of Lake Almanor and near small wetlands
2. Protect and enhance nesting habitat capability for bald eagles at the Rocky Point and Prattville territories, in cooperation with the Plumas National Forest. Close areas to vehicles during the nesting season as needed to protect the eagles.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
D Developed Recreation	480
L Late Successional	2,210
V View/Timber	3,600
Total	6,290

D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Terntones	2
Spotted Owl Habitat Areas	1
Goshawk Temtones	2
Other Emphasis Species	Osprey, pileated woodpecker, mallard, deer (summer range), fisher

E. DESIRED STATE FOR DIVERSITY

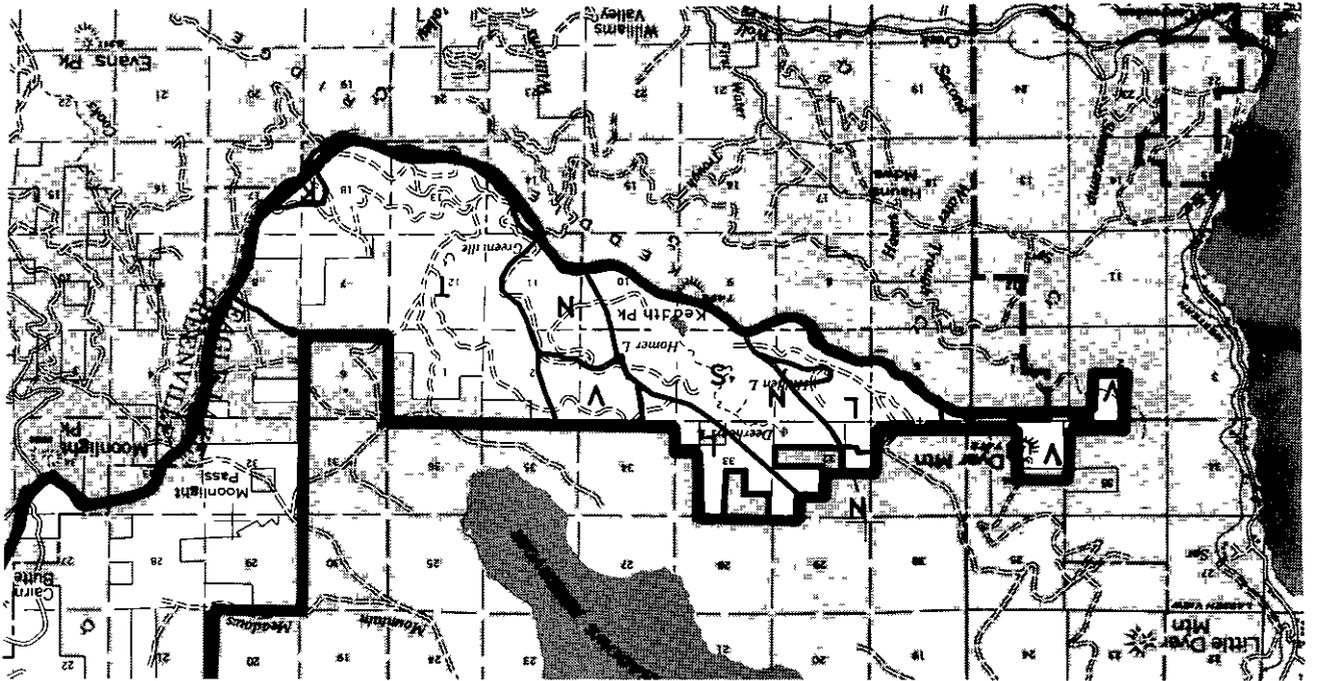
Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	1
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	300
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Soldier Meadows (10%)	C

39 Management Area KEDDIE

Scale
0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile
January 1992



Management Area 39 - KEDDIE

County -----Lassen, Plumas
 Ranger District -----Eagle Lake
 Acreage - National Forest -----7,590
 Other -----884



A DESCRIPTION

Location The Keddie Management Area is located east of Lake Almanor between the communities of Westwood and Greenville. The area is bounded by the Plumas National Forest along Keddie Ridge and by private land to the north. Private land is concentrated in the north and east portions.

Physical Environment This area is situated at the steep northern end of the Sierra Nevada. Elevations range widely from 5,000 feet to over 7,400 feet on Keddie Peak and Dyer Mountain. Metamorphic volcanic rocks underlie porous, shallow, seemingly stable rocky soils. Average annual precipitation is 35 inches. Glaciers carved three small lake basins (Homer, Hidden, and Deerheart Lakes) and produced a bold escarpment of bare rock rising above Westwood and State Highway 36, about six miles to the north. Greenville Creek and other unnamed creeks drain into Mountain Meadows Reservoir to the north.

Biological Environment Mixed Conifer Forest and brushfields predominate over much of the area, while red fir stands occur in the western portion. Fuel accumulations are hazardous in forested areas; heavy loads result from both slash and natural processes, including blow-downs. As the area burned in the 1979 Will Fire returns to brush, the fire hazard increases. Heavy fuel accumulations on surrounding private lands pose another hazard. Over the last ten years, seven small fires have burned, started mainly by lightning. The area provides habitat for black-tailed deer, black bear, fisher, marten, pileated woodpecker, spotted owl and goshawk. Rainbow trout are planted in Homer and Deerheart Lakes. The area has religious significance for local Maidu Native Americans.

Management Most of the area has been harvested by intermediate cuts. In 1979, the Will Fire burned 760 acres along Greenville Creek and its east branch. Timber was salvage logged after the fire, and most of the burn has been planted with Jeffrey pine. The area is within the Homer Lake Range Allotment. A hiking trail connects Homer, Hidden, and Deerheart lakes, which are popular camping and fishing spots. An undeveloped camp is located beside Greenville Creek.

Facilities Many gold mining claims have been worked throughout the area. Dyer Mountain Lookout is located on the highest point in the western part of the area. Access to the area from the north is over private roads; Plumas County and Plumas National Forest roads provide access from the south.

Special Areas A 1,480 acre area is established as the Homer/Deerheart Scenic Special Interest Area.

B. STANDARDS AND GUIDELINES

Recreation

1. Consider outside proposals for a downhill ski area, and cooperate in any ski area planning by other agencies.

Sensitive Plants

1. Inventory for possible occurrences of short petalled campion (*Sylene invisa*) and closed throated beard tongue (*Penstemon personatus*) in red fir stands.

Special Areas

1. Prepare and implement a plan for the Homer/Deerheart Scenic Special Interest Area, recognizing the *significant* cultural and recreation values of the area

Visual Resources

- 1 Meet a visual quality objective of Partial Retention on the portions of Keddie Ridge seen as background from Highway 36 and Westwood
2. Meet a visual quality objective of Retention on the top of Keddie Ridge seen as middle-ground from Greenville and Highway 89.

Wildlife

- 1 Improve and protect nesting habitat capability for bald eagles in areas within two miles of Mountain Meadows Reservoir
- 2 Create, improve and protect introduction sites and nesting habitat for peregrine falcon introductions and natural recruitment

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range Wildlife	200
E Early Successional	100
F Riparian/Fish	220
K Rocky/Sparse	190
L Late Successional	1,900
N Semi-Primitive Non-Motoned	900
S Special Areas	1,200
T Timber	2,280
V View/Timber	600
Total	7,590

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Spotted Owl Habitat Areas	1
Goshawk Territories	2

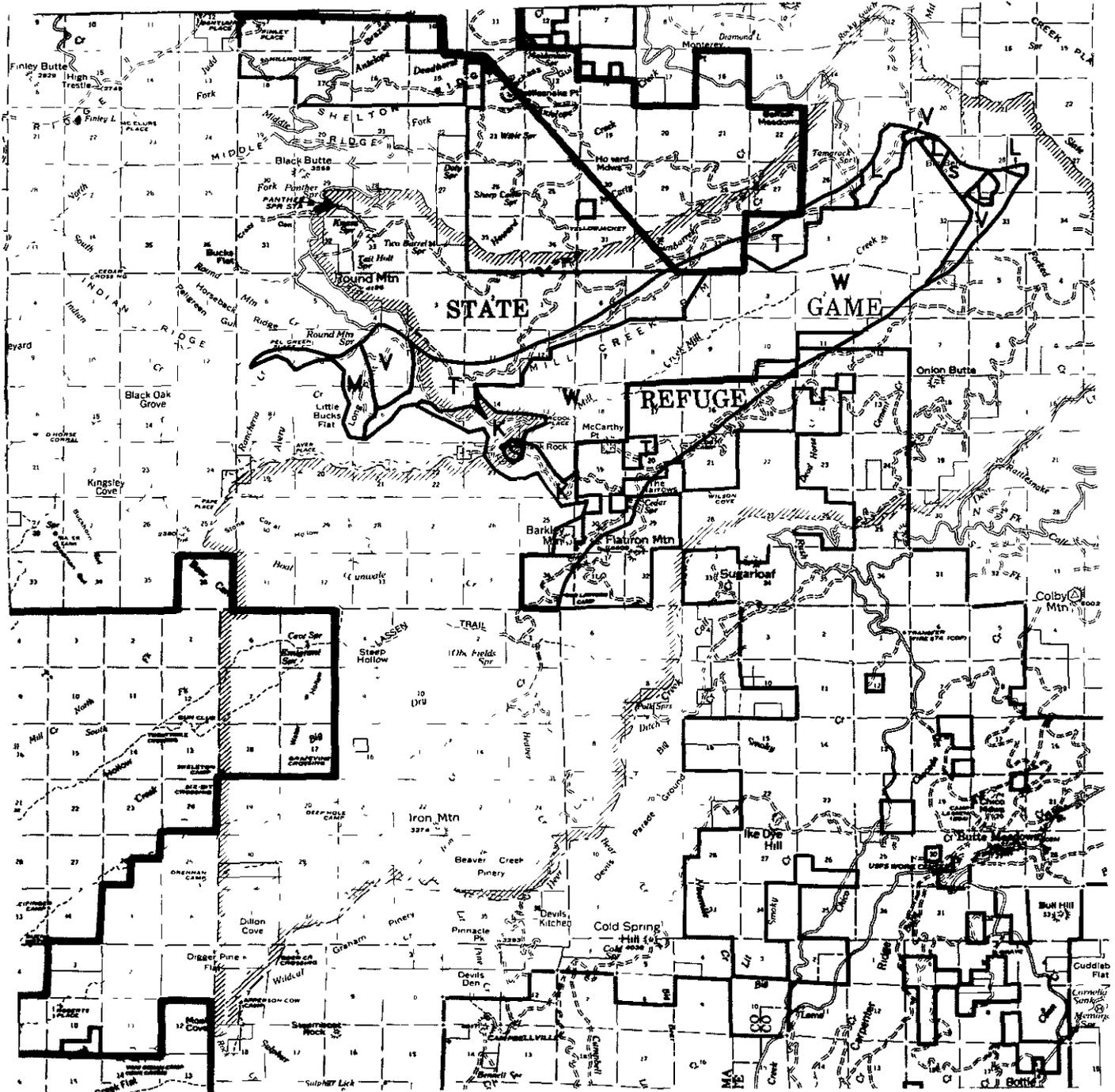
Other Emphasis Species: Deer (summer range), marten, rainbow trout, pileated woodpecker, black bear, peregrine falcon.

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	10
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	145
Red Fir	185

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Homer Lake (100%)	B



40 Management Area LOWER MILL CREEK

Scale



January 1992



Management Area 40 - LOWER MILL CREEK

County -----	Tehama
Ranger District -----	Almanor
Acreage ----- National Forest -----	11,975
Other -----	8,980



A DESCRIPTION

Location The Lower Mill Creek Management Area extends from the central portion of the Almanor Ranger District to Ponderosa Way and the Ishi Wilderness. Its elongated shape encompasses the 10-mile portion of Mill Creek from Big Bend downstream to Black Rock. Several private sections of land lie in the area.

Physical Environment The major terrain feature is the deep, dramatic Mill Creek Canyon, with upland plateaus on each side. The lowest point is about 2,000 feet where Mill Creek flows around Black Rock. Barkley Mountain has the highest elevation of 4,488 feet. Precipitation averages 30 inches a year. The soil is shallow and overlies volcanic rock.

Biological Environment Ponderosa and digger pine are widespread, and Douglas-fir occupies the drainages and north-facing slopes of the upper canyon. At the lower elevations, oak and brush species are predominant. The light fuel loads here are derived from natural sources — grass, brush, and oak leaves. These fuels promote intense, fast-moving fires. Since 1916 most of the area has burned more than once in a series of large fires. Recent fires before 1990 averaged less than one a year, and slightly over half of them were lightning-caused. A small part of this area was burned in the 131,000-acre Campbell Fire in 1990. The area provides important habitat for wildlife. Mill Creek supports steelhead trout and one of the last native runs of the rare spring-run chinook salmon. The area has a diverse and dense raptor fauna including golden eagles, spotted owls, and prairie falcons. Although the peregrine falcon apparently does not occur in the area now, habitat is suitable. Current plans are to eventually release these birds here to assist their population recovery. The Mill Creek canyon was inhabited by Native Amer-

cans for centuries, as the anadromous fishery and oaks provided ample food sources.

Management Timber management has been limited by administrative restrictions to allow for further planning area studies and wild and scenic river evaluations. Steep slopes, harsh sites, and sparse timber stocking have also limited harvesting in this area. Commercial timber stands are small. The area has been used by local ranchers since the turn of the century and is part of the Tehama Range Allotment. Black Rock Campground is a small developed site. Hikers, backpackers, and fishermen use Mill Creek and the trails in the area. Some OHV use also occurs.

Facilities Only one road crosses the creek in this area. Forest Road 28N29 3 at Black Rock. Mill Creek has been the subject of applications for small hydroelectric facilities. The Lassen Emigrant Trail crosses the southern tip of the area near Obe Fields Spring.

Further Planning Areas The area contains all of the Mill Creek further planning area.

Special Areas The area contains a 15-acre volcanic dome established by this Plan as the Black Rock Geologic Special Interest Area.

Wild and Scenic The area contains the middle segment of the proposed Mill Creek Wild and Scenic River.

B. STANDARDS AND GUIDELINES

Cultural Resources

1. Protect, stabilize, recover and interpret values of archaeological sites.

- Nominate the area used by Ishi and the Yahi Yana people as a National Register District

Facilities

- Maintain the trailhead at Obe's Field.

Fire and Fuels

- Use fire suppression strategies and tactics that least alter the landscape or disturb the land surface.

Fish

- Protect and maintain habitat conditions for anadromous fish
- When conditions permit, continue cooperative efforts with the California Department of Fish and Game, U. S Fish and Wildlife Service, Department of Water Resources and U. C. Davis to monitor the in-river population of adult spring-run chinook salmon.
- Cooperate with California Department of Fish and Game on spawning stock surveys.
- Evaluate existing habitat conditions for anadromous fish

Lands

- Through land exchange, acquire lands or interests therein needed to provide consistent management of the proposed Mill Creek Wild and Scenic River.

Sensitive Plants

- Inventory for possible occurrences of Butte County fritillary (*Fritillaria eastwoodiae*) populations in foothill woodlands.
- Inventory for Cantelow's lewisia (*Lewisia cantelowii*) on wet rock faces

Special Areas

- Prepare and implement a plan for the Black Rock Geologic Area to protect and accentuate the area's distinctive features.

Wild and Scenic Rivers

- Preserve the "outstandingly remarkable" values of Mill Creek until congressional action on the proposed inclusion in the Wild and Scenic Rivers system, commensurate with recommended classifications.

Water and Riparian Areas

- Recommend denial of hydroelectric development that would cause damage to fisheries, water quality, or recreational values of Mill Creek

Wildlife

- Monitor cliff sites in the Mill Creek drainage for peregrine falcon nesting use. Use artificial propagation to insure success of active nest sites if necessary to meet population recovery goals.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	200
D Developed Recreation	5
K Rocky/Sparse	600
L Late Successional	900
M Semi-Primitive Mootoned	800
S Special Areas	400
T Timber	590
V View/Timber	900
W Wilderness	7,580
Total	11,975

D. WILDLIFE HABITAT ALLOCATIONS

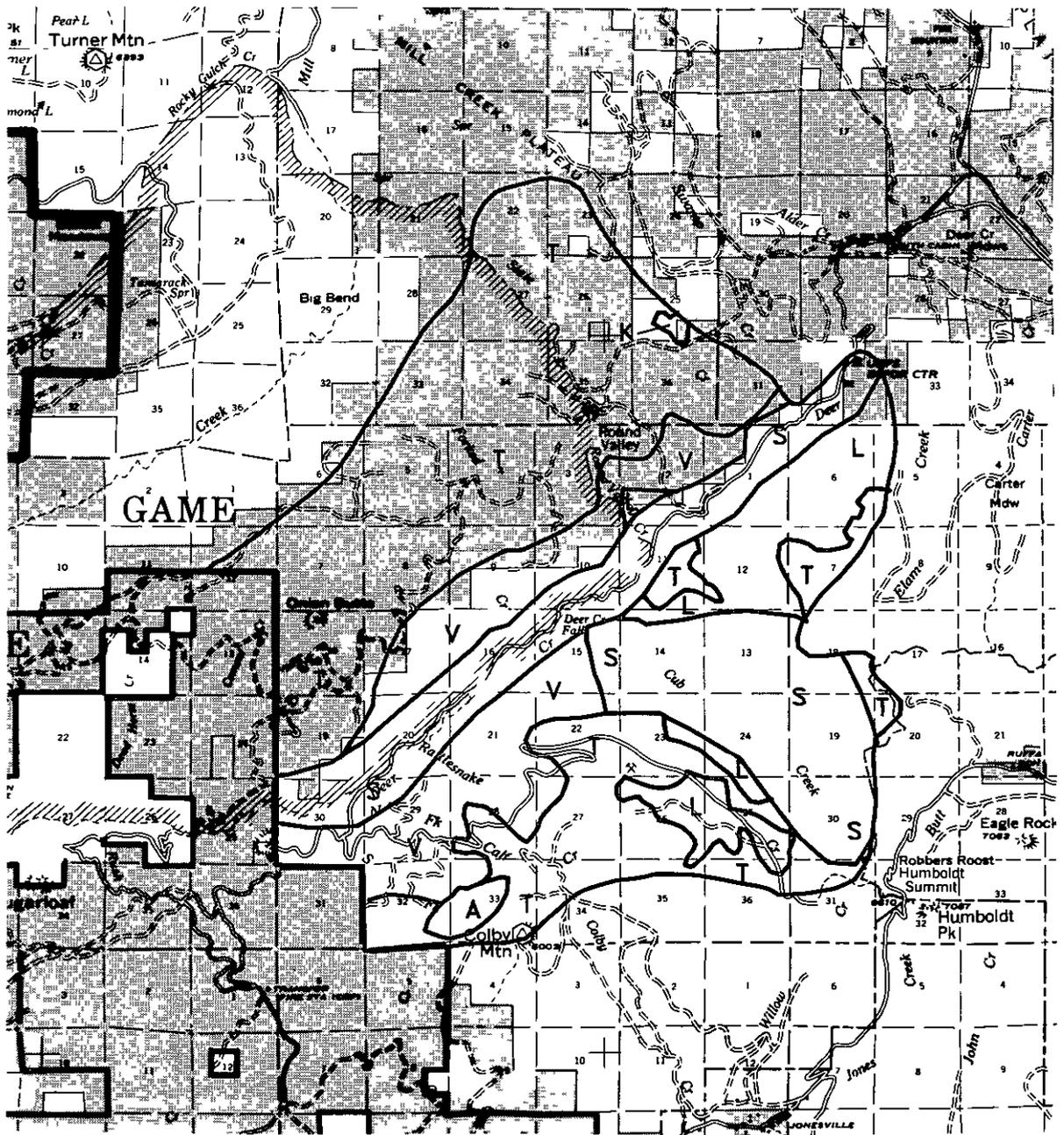
Spotted Owl Habitat Areas	1
Peregrine Falcon Territories	1

Other Emphasis Species: Deer (winter range), gray squirrel, chinook salmon, steelhead trout

**E. DESIRED STATE
FOR DIVERSITY**

**F. RANGEALLOTMENT
STRATEGIES**

Vegetation	Acres	Allotment	Strategy
Shrub		Tehama (30%)	C
Chaparral	625		
Montane Shrub	35		
Sagebrush	0		
Comfer Forest			
Eastside Pine	0		
Mixed Conifer	375		
Red Fir	0		



41 Management Area MIDDLE DEER CREEK



January 1992



Management Area 41 - MIDDLE DEER CREEK

County-----Butte
 Ranger District-----Almanor
 Acreage----National Forest -----16,570
 Other -----6,329



A DESCRIPTION

Location The Middle Deer Creek Management Area is the portion of Deer Creek Canyon from Elam Campground downstream to the Forest boundary. Also included are the headwaters of Deer Creek's tributaries—Slate, Forked, and Rattlesnake Creeks. Deer Creek Canyon is the major feature. The southeast half is completely in National Forest ownership, while the northwest half is mostly private land.

Physical Environment The terrain in the canyon is quite steep with many cliffs and bluffs. The uplands are also mountainous, but are less steep. At 6,000 feet, Colby Mountain on the southern boundary is the highest point. A Forest Service lookout is located on the summit. The lowest point is 3,200 feet. Precipitation averages 30 inches a year. The moderately deep, rocky soil overlies volcanic rock.

Biological Environment Forests are mainly composed of mixed conifers. Red fir is present on the uplands near Colby and Upper Rattlesnake Creek, while oaks and other low elevation species are found from Alder Campground downstream to the area boundary. Fuel loads vary from light to heavy. While a few large fires burned in the past, none recently has exceeded ten acres. Fires average one per year and are started equally by humans and lightning. Much of the area north of Deer Creek is a wildlife refuge. Spotted owls have been found on the steep south side of Deer Creek. Black-tailed deer use the area as summer range or migrate through in spring and fall. Deer Creek supports a popular put-and-take trout fishery. It also supports runs of steelhead and a remnant population of spring-run chinook salmon. This anadromous fishery has enhancement potential.

Management Timber harvesting has occurred in the southern one-third of this area. The

remaining National Forest land is either roadless or isolated by private lands. The area is part of the Tehama, Deer Creek, and Butte Meadows Range Allotments. Alder Campground and Potato Patch Campground are popular sites along Highway 32. Very little dispersed camping occurs, except for hunter camping around Round Valley.

Facilities Access is via Highway 32 and numerous Forest Service and private roads. Deer Creek has been the subject of an application for a small hydroelectric facility. The Lassen Trail crosses the area north of Deer Creek in the vicinity of Round Valley.

Wild and Scenic The upper one-third of the proposed Deer Creek Wild and Scenic River lies within the area.

Special Areas The area contains the Cub Creek Research Natural Area.

B. STANDARDS AND GUIDELINES

Cultural Resources

1. At recreation facilities, provide information about the cultural history of the area.

Fish

1. Protect and maintain habitat conditions for anadromous fish.
2. Continue cooperative efforts with the California Department of Fish and Game, U.S. Fish and Wildlife Service, Department of Water Resources and U.C. Dams to monitor the in-river population of adult spring-run chinook salmon.

- Evaluate the distribution and abundance of anadromous fish and their habitat to determine the need for barrier modification at the fish ladder at Upper Deer Creek Falls

Fire and Fuels

- Use fire suppression strategies and tactics that least alter the landscape or disturb the landsurface in the Cub Creek Research Natural Area.

Recreation

- Restrict camping or other occupancy along Deer Creek parallel to Highway 32, other than at designated campgrounds

Sensitive Plants

- Inventory for possible occurrences of short petalled campion (*Silene invisa*) and closed throated beard tongue (*Penstemon personatus*) in red fir stands

Visual Resources

- Meet a visual quality objective of Retention in the foreground of Highway 32 and/or Deer Creek and Partial Retention middleground.

Water and Riparian Areas

- Recommend denial of hydroelectric development that would cause damage to fisheries, water quality, or recreational values of Deer Creek or its perennial tributaries

Wild and Scenic Rivers

- Preserve the "outstandingly remarkable" values of Deer Creek until congressional action on the proposed inclusion in the Wild and Scenic Rivers System, commensurate with recommended classifications

C. PRESCRIPTIONALLOCATION

Prescription	Acres
A Non-Timber Wildlife	200
D Developed Recreation	10
E Early Successional	100
F Riparian/Fish	200
K Rocky/Sparse Timber	210
L Late Successional	3,300
S Special Areas	5,700
T Timber	3,350
V View/Timber	3,500
Total	16,570

D. WILDLIFE HABITAT ALLOCATIONS

Spotted Owl Habitat Areas	3
Goshawk Territories	2

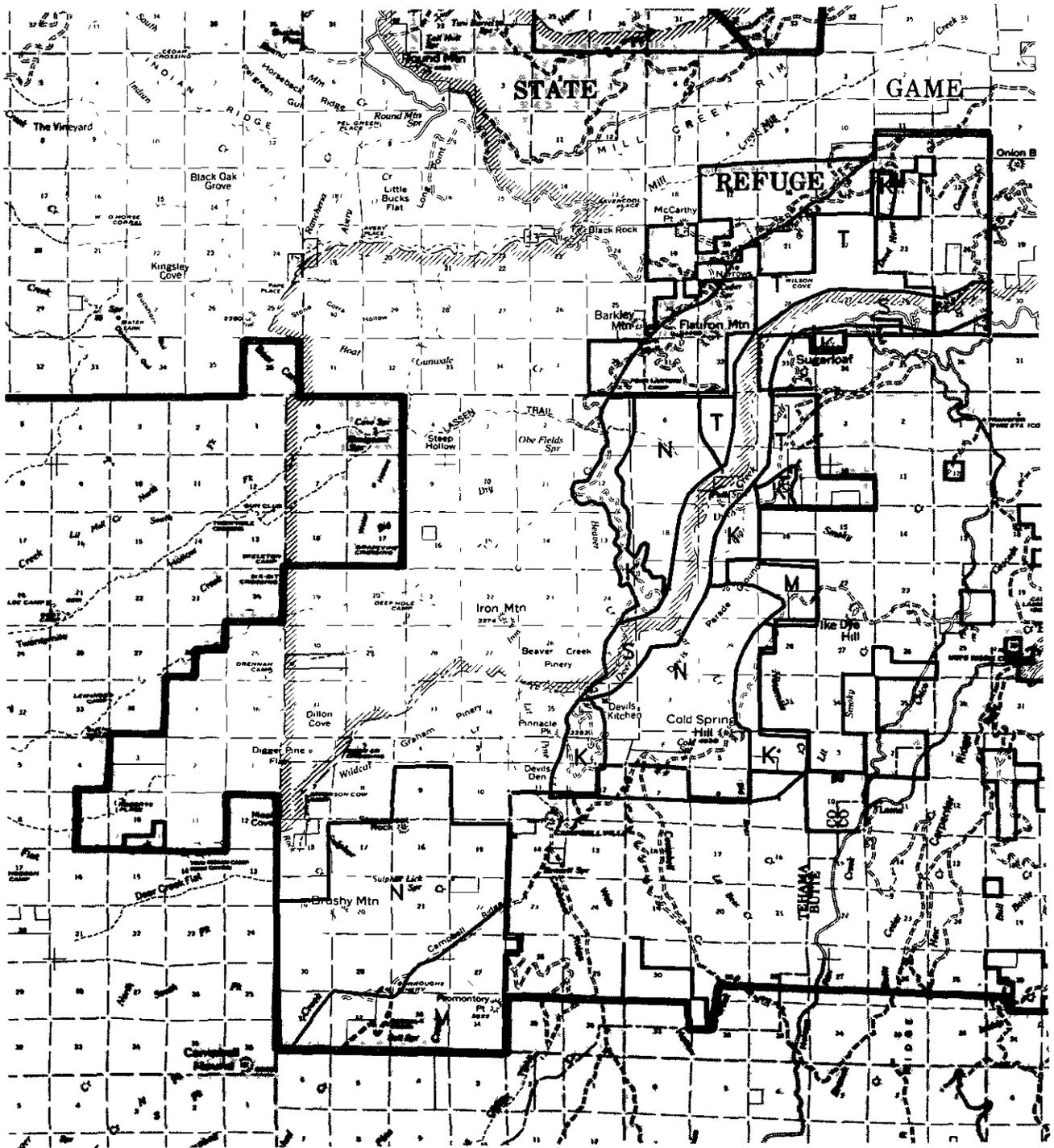
Other Emphasis Species. Pileated woodpecker, deer (summer range), chinook salmon, steelhead trout, rainbow trout

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	195
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	630
Red Fir	115

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Butte Meadows (25%)	C
Deer Creek (30%)	C
Tehama (15%)	C



42 Management Area LOWER DEER CREEK

Scale

0.5 1 2 3 4 5 Miles $3/8" = 1 \text{ Mile}$

January 1992



Management Area 42 - LOWER DEER CREEK

County -----	Butte
Ranger District -----	Almanor
Acres ----- National Forest -----	18,020
Other -----	16,636



A. DESCRIPTION

Location The Lower Deer Creek Management Area is located along the southwest boundary of the Almanor Ranger District. It contains the Deer Creek drainage from below Onion Butte downstream to Devil's Kitchen. Substantial sections of private land are in the south and east portions of the area. The chief features are its history and its anadromous fishery in Deer Creek canyon. The northwest boundary borders the Ishi Wilderness.

Physical Environment The highest elevation is 4,038 feet at Cold Spring Hill, and the lowest is about 1,400 near Sulphur Creek. The major terrain feature is the rugged Deer Creek canyon. Precipitation averages 30 inches a year. A shallow soil overlies volcanic rock.

Biological Environment The area is typical "front" country—the western most forested slopes of the Sierra Nevada—with mixed conifer forest on the ridge tops, and oaks, chaparral, and grasslands at lower elevations. Fuel loads are light and consist mostly of fine materials. Many large fires historically occurred, and most of the area has burned at least once in the last 60 years. Average fire occurrence is about three fires every two years. Eighty percent are lightning-caused, and rarely do they burn more than 10 acres each, but the 131,000-acre Campbell Fire burned the western portion of this area in 1990. Golden eagles, prairie falcons, goshawks, and other raptors are present. Steelhead and spring-run chinook salmon also occur as remnant runs in Deer Creek. Other wildlife present are species associated with oak, grassland, chaparral, and riparian habitats. For subsistence, the Native Americans relied on acorns, and resident and anadromous fish.

Management Because commercial timber is scarce, logging has been limited. However, the area was historically used for extensive livestock operations by many ranchers. Approximately 21 head of horses roam the area, remnants of domestic herds gone wild. The area is part of the Tehama and Campbell Mountain Range Allotments. Hikers, backpackers, and fishermen enjoy streams and trails in the area, particularly along Deer Creek at Transfer Bridge, Murphy's Trail, and Ponderosa Way.

Facilities Access is limited to two roads in the eastern portion and Ponderosa Way in the west. Deer Creek has been the subject of applications for small hydroelectric facilities, but no leases have been issued.

Further Planning Areas This area includes part of the Ishi B further planning area.

Wild and Scenic The area contains the middle segments of the proposed Deer Creek Wild and Scenic River.

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 Protect archaeological sites by resource protection patrol or other methods.
- 2 Nominate the area used by Ishi and the Yahi-Yana people as a National Register District.

Facilities

- 1 Develop an administrative site with temporary quarters in the vicinity of Devil's Kitchen for wilderness and recreation management.

Fish

1. Protect and maintain habitat conditions for anadromous fish.
2. Continue cooperative efforts with the California Department of Fish and Game, U.S. Fish and Wildlife Service, Department of Water Resources and U.C. Davis to monitor the in-river population of adult spring-run chinook salmon.

Lands

1. Pursue the acquisition of private lands in areas highly suitable for peregrine falcons, and for cultural resource values

Range

1. Complete the Wild Horse Territory Management Plan, and monitor management objectives.

Recreation

1. Develop a trailhead at Deer Creek for access into Ishi Wilderness.

Sensitive Plants

1. Inventory for possible occurrences of Butte County fritillary (*Fritillaria eastwoodiae*) in foothill woodland areas.
2. Inventory for Cantelov's lewisia (*Lewisia cantelovii*) on wet rock faces.

Visual Resources

1. Meet a visual quality objective of Retention in the foreground of Deer Creek.

Water and Riparian Areas

1. Recommend denial of hydroelectric development that would cause damage to fisheries, water quality, or recreational values of Deer Creek or its perennial tributaries

Wild and Scenic Rivers

1. Preserve the "outstandingly remarkable" values of Deer Creek until congressional action

on the proposed inclusion in the Wild and Scenic Rivers System, commensurate with recommended classifications.

C. PRESCRIPTIONALLOCATION

Prescription	Acres
B Range-Wildlife	700
E Early Successional	100
F Riparian/Fish	220
K Rocky/Sparse Timber	2,800
M Semi-Primitive Motonzed	2,700
N Semi-Primitive Non-Motonzed	6,900
S Special Areas	3,000
T Timber	1,600
Total	18,020

D. WILDLIFE HABITAT ALLOCATIONS

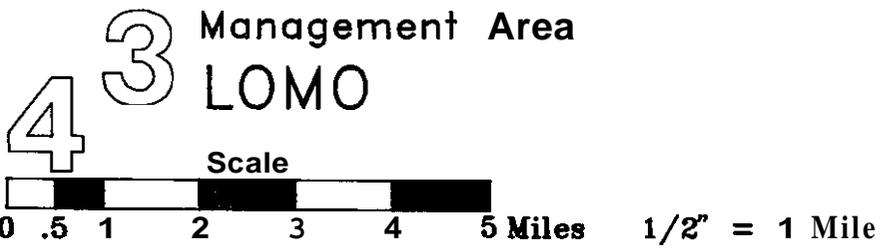
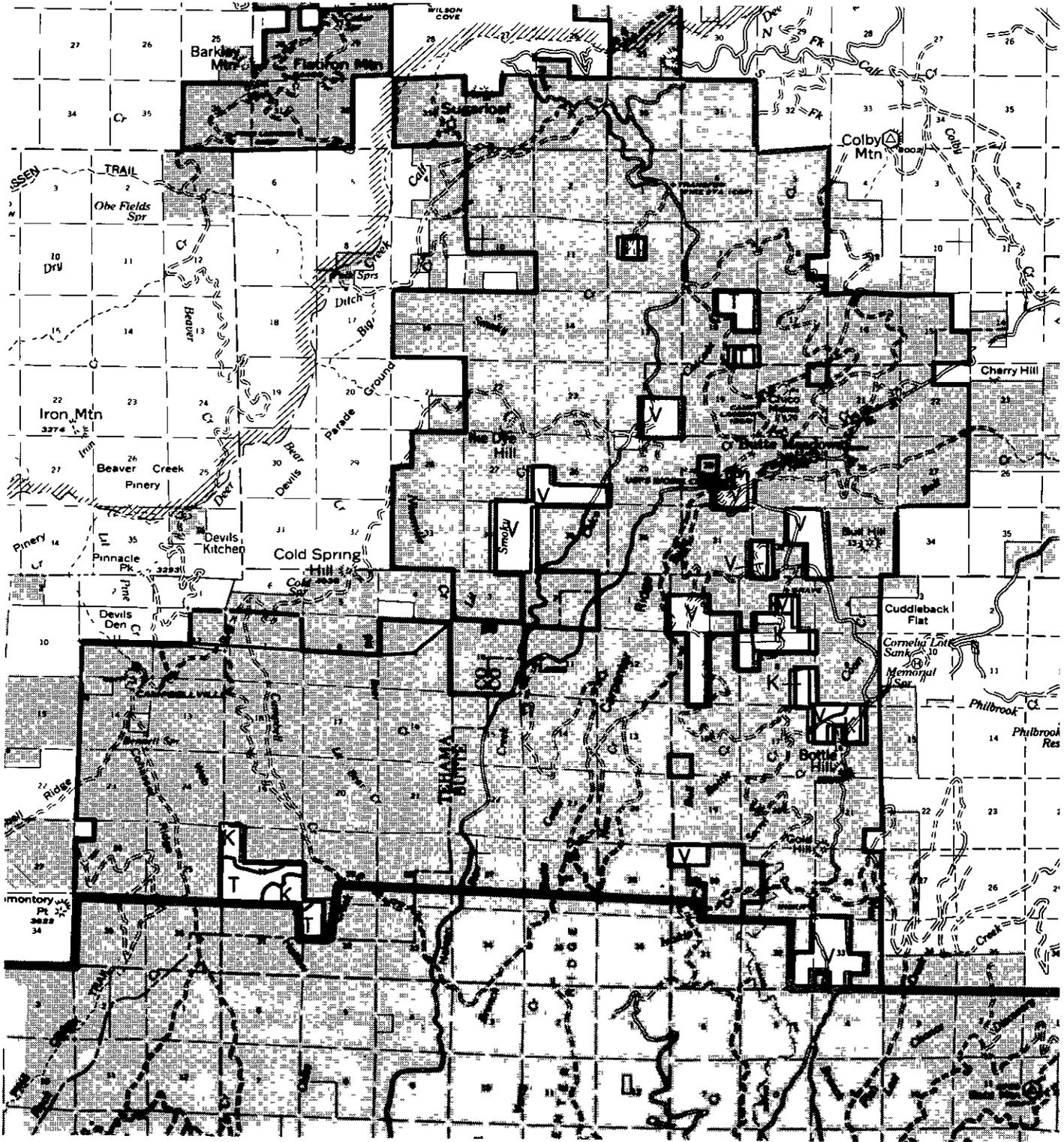
Goshawk Territories	2
Other Emphasis Species: Deer (winter range), gray squirrel, chinook salmon, steelhead trout	

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	195
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	300
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Campbell Mountain (100%)	C
Tehama (15%)	C



January 1992



Management Area 43 - LOMO

County -----	Butte
Ranger District -----	Almanor
Acreage ----- National Forest -----	5,025
Other -----	25,142



A. DESCRIPTION

Location The Lomo Management Area has the least amount of National Forest lands of any management area on the Almanor Ranger District. It contains scattered National Forest parcels ranging in size from 80 to 640 acres; the majority are plantations and reforestation sites initiated by the former Magalia Ranger District in the 1950's.

Physical Environment The terrain is mountainous, especially in the vicinity of Big Chico and West Branch Canyons. The highest elevation is 5,307 feet at Bottle Hill. Short reaches of Big Chico and Cascade Creeks are on Forest lands, these streams support fisheries. Precipitation averages 65 inches a year. The soils are generally moderately deep and weathered from andesite, metavolcanic, and metasedimentary rock.

Biological Environment Vegetation is predominately the mured conifer type. Fuel loads vary from light to heavy. Fires burn an average of only once every three years. While records show the occurrence of large fires in the past, in recent years none has exceeded 10 acres. Almost 70 percent have been human caused. Wildlife species are typical of the mixed-conifer community, and include goshawks and black bears. Big Chico Creek supports a high-quality trout fishery and contributes high quality water to a reach downstream occupied by anadromous fish. It was listed on the USDI Nationwide Rivers Inventory of 1981.

Management The area was the scene of early logging. Small mills were located at various places, including the West Branch of the Feather River. Lumber was flumed from an early mill at Chico Meadows down Big Chico Creek Canyon to the Central Valley. Butte Meadows was an

important logging center for Diamond International and supported a large camp. In addition to logging, mining was an important activity. The community of Inskip was a thriving commercial center for the mines in the area long before large-scale lumbering began; all that remains is a hotel and a few buildings. The area is part of the Bull Hill and Butte Meadows Range Allotments. Developed sites are Soda Springs Campground and Butte Meadows Campground; Butte Meadows also has a summer home tract.

Facilities The Butte Meadows fire station is occupied in the summer and fall. Butte Creek has been the subject of applications for small hydroelectric generation facilities. State Highway 32 and the road to Butte Meadows and Jonesville give access to many private roads in the area.

B. STANDARDS AND GUIDELINES

Facilities

1. Evaluate the Butte Meadows fire station for future administrative purposes.

Lands

1. Assess the need to preserve biodiversity when selected isolated parcels are proposed for land exchange.

Sensitive Plants

1. Inventory for possible populations of Constance's rock cress (*Arabis constancei*), Stebbin's monardella (*Monardella stebbinii*), and Feather River stonecrop (*Sedum albomarginatum*) on serpentine soils.

2. Inventory for closed-throated beardtongue (*Penstemon personatus*) in red fir and mixed conifer stands.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	900
D Developed Recreation	15
E Early Successional	100
K Rocky/Sparse Timber	600
T Timber	410
V View/Timber	3,000
Total	5,025

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Territones	1
Other Emphasis Species	Black bear, rainbow trout

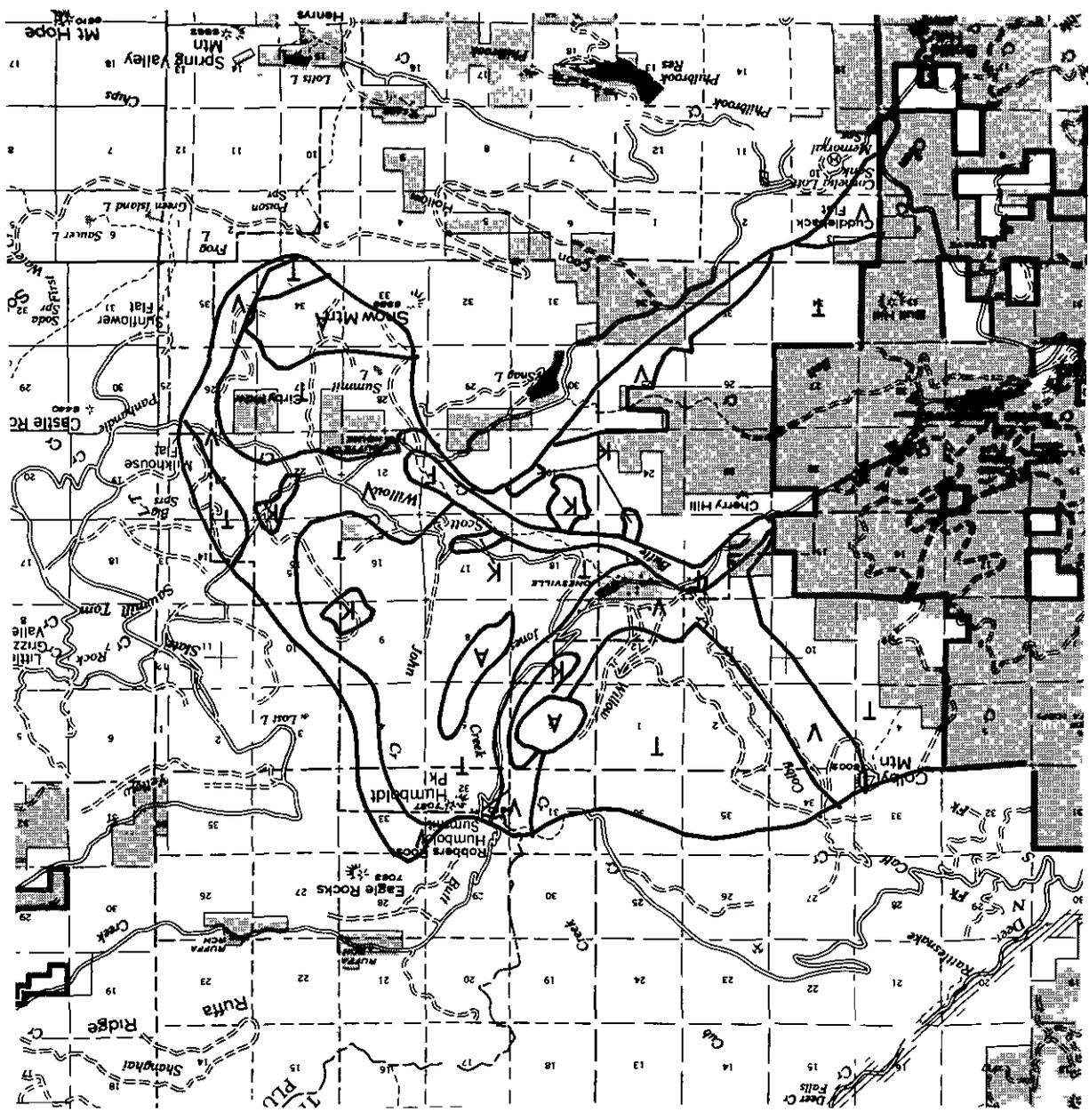
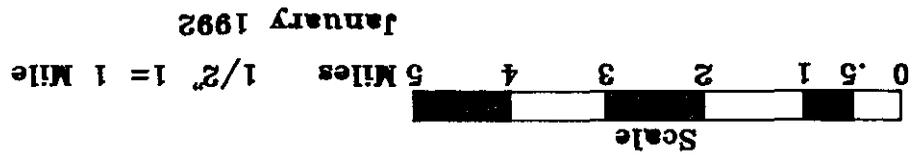
E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	635
Montane Shrub	0
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed <i>conifer</i>	140
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Bull Hill (100%)	A
Butte Meadows (50%)	C

44 Management Area JONESVILLE



Management Area 44 - JONESVILLE

County -----	Butte
Ranger District -----	Almanor
Acreage ----- National Forest -----	23,120
Other -----	4,561



A. DESCRIPTION

Location The Jonesville Management Area is located in the south central portion of the District. Several scattered inholdings occur along creeks and valley floors.

Physical Environment The terrain is mountainous. The highest elevation is Humboldt Peak at 7,087 feet. The Pacific Crest Trail crosses the area in the vicinity of the peak. Butte Creek and its tributaries drain most of the area. Precipitation averages 75 inches a year. Soils are stony and moderately deep to deep. The Snow Mountain area has been glaciated and has large numbers of stones on the surface.

Biological Environment The forest at higher elevations is composed of red fir, while a mixed conifer forest characterizes the middle and lower elevations. Fuel loads vary from light to heavy. Approximately one third of the area consists of vast brushfields resulting from fires. Several pine plantations have recently been established in them. In 1970, a 75-acre fire burned in this area, but since then no fire has exceeded ten acres. Fires average one per year, and all are human-caused. Goshawks are known to nest here. Black-tailed deer summer in the meadows and brushy areas. Butte Creek and other fish streams flow through the area.

Management Timber has been harvested throughout the eastern two-thirds of the area. It is part of the Soda Creek-North Butte, Butte Meadows and Coon Hollow Range Allotments. Cherry Hill Campground is along Butte Creek, and the Jonesville summer home tract is located nearby. Some hiking, fishing, and camping occurs along Butte Creek and Scotts John Creek. Two gold mining claims are present near Colby Mountain.

Facilities The area is crossed by the Humboldt and Humboldt County Roads. These were developed on early competing stage routes from the Sacramento Valley to mining communities in Nevada and Idaho. Remnants of the original Humboldt Grade are found near Humboldt Summit. Jonesville, in the approximate center of the area, was one of the stage stops. The Pacific Crest National Scenic Trail follows the eastern edge of this area.

B. STANDARDS AND GUIDELINES

Facilities

1. Assess the Cold Springs location for a proposed administrative site.

Fish

1. Evaluate fish habitat conditions and use in the Butte Creek watershed.

Recreation

1. Interpret significant land management activities along the Pacific Crest National Scenic Trail for trail users.
2. Manage the undeveloped camping area at Cold Springs as dispersed campsites.
3. Analyze the developed recreation potential of newly acquired parcels along Colby Creek before engaging in any activities that could adversely affect that potential.

Sensitive Plants

1. Inventory for possible occurrences of short-petalled campion (*Silene invisa*) and closed throated beard tongue (*Penstemon personatus*) in red fir stands

Visual Resources

1. Meet a visual quality objective of Partial Retention in the foreground of Pacific Crest Trail.

Wildlife

1. Maintain or enhance potential mallow fly-catcher habitat

C. PRESCRIPTIONALLOCATION

<u>Prescription</u>	<u>Acres</u>
A Non-Timber Wildlife	900
B Range-Wildlife	1,860
D Developed Recreation	20
E Early Successional	100
F Riparian/Fish	900
K Rocky/Sparse Timber	1,350
L Late Successional	330
T Timber	11,030
V View/Timber	6,630
Total	23,120

D. WILDLIFE HABITAT ALLOCATIONS

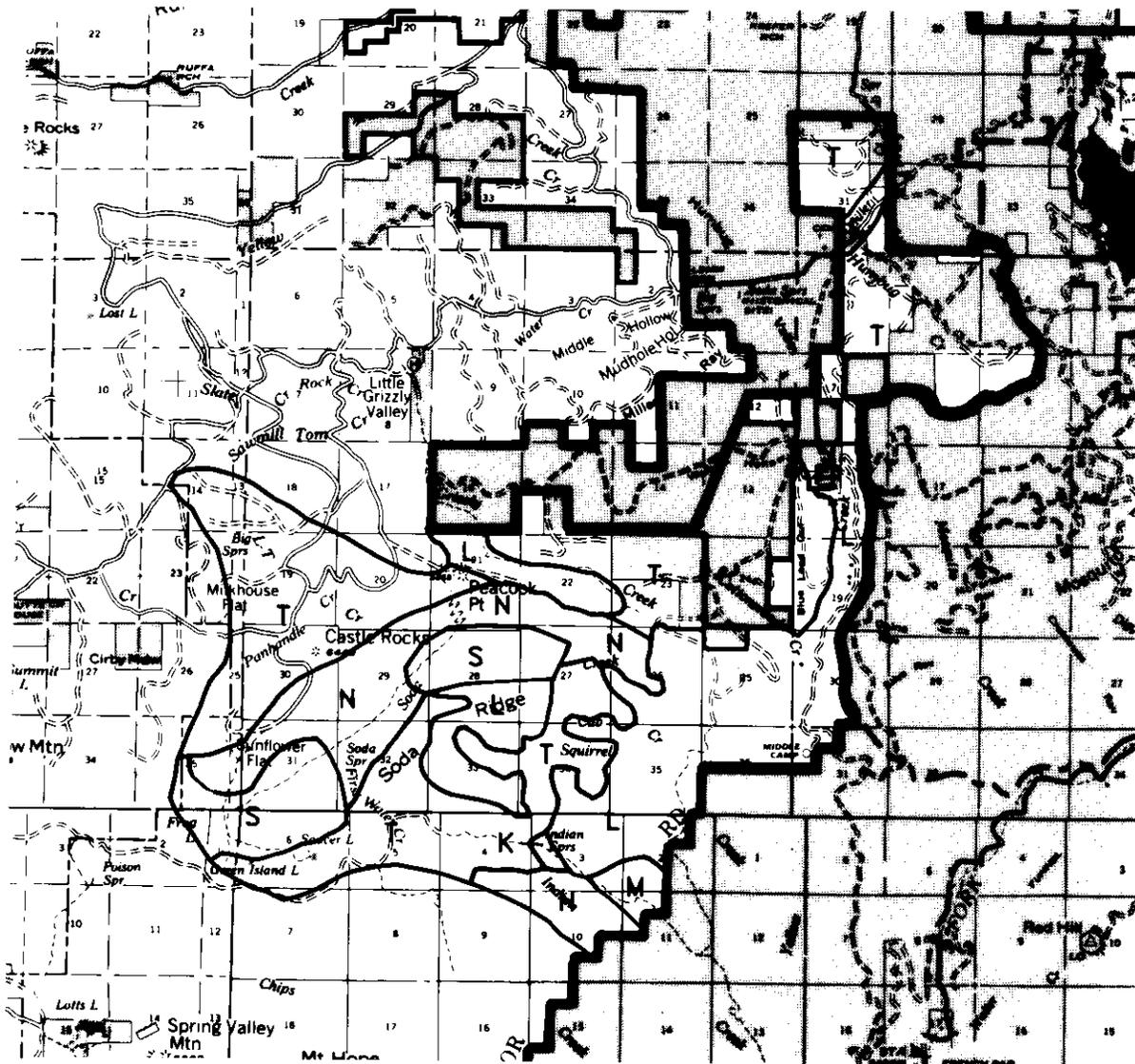
Goshawk Territories	1
Other Emphasis Species. Deer (summer range), black bear, rainbow trout, spotted owls.	

E. DESIRED STATE FOR DIVERSITY

<u>Vegetation</u>	<u>Acres</u>
Shrub	
Chaparral	9
Montane Shrub	25
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	685
Red Fir	275

F. RANGE ALLOTMENT STRATEGIES

<u>Allotment</u>	<u>Strategy</u>
Butte Meadows (25%)	C
Coon Hollow (40%)	C
Soda Creek-North Butte (45%)	C



45 Management Area SODA RIDGE

Scale



January 1992



Management Area 45 - SODA RIDGE

County -----Plumas
 Ranger District -----Almanor
 Acreage-----National Forest -----15,460
 Other -----3,602



A. DESCRIPTION

Location The Soda Ridge Management Area is situated southwest of Humbug Valley. The area's eastern boundary is the boundary between the Plumas and Lassen National Forests. Three contiguous sections of the northeast portion are privately owned, while the rest is National Forest land.

Physical Environment The major terrain feature is the Soda Creek canyon, a steep-sided gorge with rocky summits on both sides. Soda Creek originates at Green Island, Frog, and Saucer Lakes and joins Yellow Creek at the Forest boundary. Elevations range from 5,000 to 5,440 feet at Castle Rocks. Precipitation averages 65 inches a year. Except for the productive and level Soda Ridge, the area is rocky and not high site timberland. Soils range from shallow to deep and are almost always stony. Soils are weathering from andesite, metavolcanics, and metasediments.

Biological Environment The forest is primarily composed of red fir, with some mixed conifers and lodgepole pine. Fuel loads vary from light to heavy. Fires average slightly over one per year, and over 70 percent are from lightning. In recent times, only two fires have burned more than ten acres each. Soda Ridge contains three quality fisheries: Soda, Gnzzly, and Yellow Creeks. As a result of their remoteness and resulting low angler use, all support self-sustaining trout populations. A portion of Yellow Creek is a State-designated wild trout stream, the portion in Humbug Valley receives heavy use. Habitat is available for spotted owl, goshawk, marten, and black bear. In summer, part of the Buck's Mountain deer herd uses the area. This area may contain the greatest concentration of Martis Complex (1500 BC - AD 500) archaeological sites

on the Forest. The Humbug Wagon Road (c 1865), which connected Oroville with mines in Idaho and Nevada, passes through the area. The former settlement of Longville served as a way-station near the northern end of Humbug Valley.

Management Due to roadless area management, timber harvesting has been limited to the northwest portion of the area. The area was probably first entered by prospectors in the 1850's because of its proximity to the gold fields of the Feather River. Major drainages such as Yellow Creek were routes for exploration. The area is included in three range allotments: Soda Creek-North Butte, West Humbug, and Chips Creek. Hikers and backpackers use trails through the area and, along with anglers, visit Soda Creek and Yellow Creek.

Facilities Access is limited to the Humbug Valley road along the eastern portion and to minor roads off of 27N04 north of the area. Several creeks in the area have been the subject of applications for small hydroelectric facilities.

Special Areas Soda Ridge (1,295 acres) and Green Island Lake (1,210 acres) are recommended as Research Natural Areas to represent the white fir and bog vegetation types, respectively.

B. STANDARDS AND GUIDELINES

Fire and Fuels

- 1 Use fire suppression strategies and tactics that least disturb the landscape and ground surface in the Soda Ridge and Green Island Lake candidate Research Natural Areas.

Fish

- 1 Cooperate with Plumas National Forest and the California Department of Fish and Game regarding projects that could affect watershed values or access to Yellow Creek.
- 2 Continue cooperation with California Department of Fish and Game to manage the trophy and wild trout sections of Yellow Creek.
- 3 Develop a working relationship with adjacent landowners to protect and improve stream conditions in the Yellow Creek drainage

Recreation

- 1 Maintain existing trails management area. Continue to manage designated OHV route on Soda Ridge and maintain access to the High Lakes

Sensitive Plants

1. Monitor and protect populations of Constance's rock cress (*Arabis constancei*), Feather River stonecrop (*Sedum albomarginatum*), and cut-leaved butterweed (*Senecio eurycephalus var lewisrosei*). Inventory for populations of Stebbins' monardella (*Monardella stebbinsi*) on serpentine
- 2 Monitor and protect populations of Quincy Lupine (*Lupinus dalesiae*) and inventory for additional populations on open, rocky areas

Visual Resources

- 1 Meet a visual quality objective of Preservation or Retention in the foreground of Soda Creek

C. PRESCRIPTION ALLOCATION

Prescription	Acres
E Early Successional	100
F Riparian/Fish	100
K Rocky/Sparse Timber	200
L Late Successional	5,590
N Semi-Primitive Non-Motorized	2,800
S Special Areas	1,600
T Timber	5,070
Total	15,460

D. WILDLIFE HABITAT ALLOCATIONS

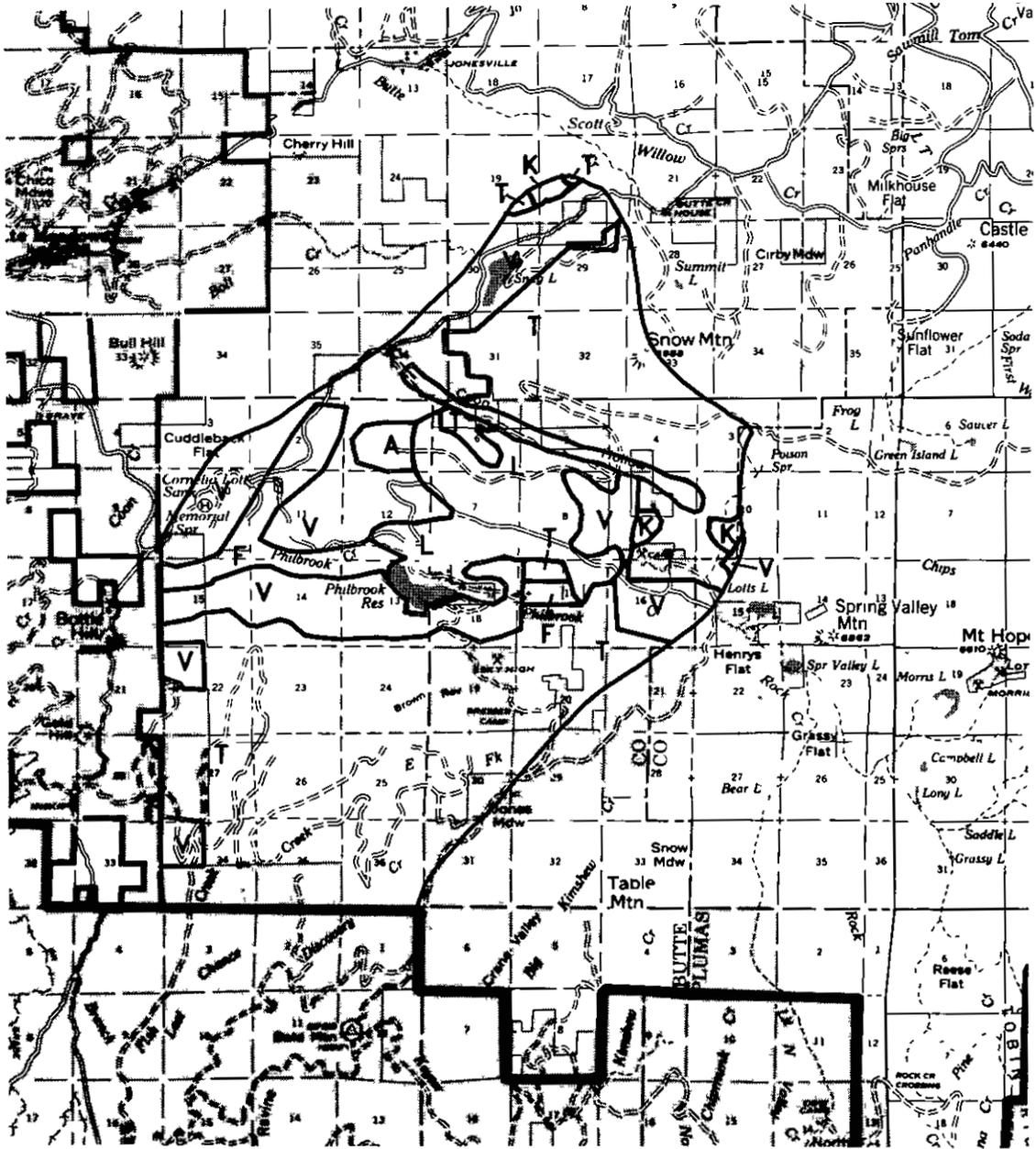
Marten HMA	1
Spotted Owl Habitat Areas	3
Goshawk Territories	2
Other Emphasis Species	Back bear, rainbow trout

E. DESIRED STATE FOR DIVERSITY

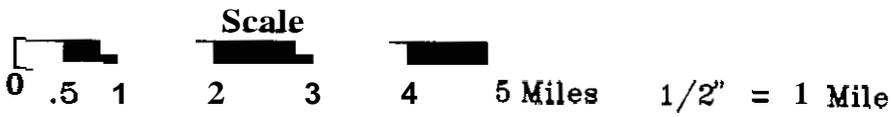
Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	130
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	550
Red Fir	360

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Chips Creek (40%)	C
Soda Creek-North Butte (25%)	C
West Humbug (50%)	C



46 Management Area PHILBROOK



January 1992



Management Area 46 - PHILBROOK

County -----	Butte
Ranger District -----	Almanor
Acreage ----- National Forest -----	17,750
Other -----	4,385



A. DESCRIPTION

Location The Philbrook Management Area is located along the south-central Forest boundary. Several private inholdings are scattered throughout the area.

Physical Environment The terrain is mountainous. Philbrook and Coon Hollow Creeks drain pronounced canyons, and the West Branch of the Feather River is the major stream. Elevations range from 6,988 feet on Snow Mountain to 4,800 feet at the south boundary. The soils vary widely. Most are moderately deep to deep, stony, and derived from volcanics, but portions of the area have been glaciated and have shallow rocky soils. Many rock outcrops emerge at the high elevations. Precipitation averages 80 inches a year.

Biological Environment The forest is primarily the mixed conifer type, but red fir dominates the higher elevations. The southern portion of the area is high site timberland. Fuel loads vary widely from light to extreme. Except for a large fire in 1929, all fires in recent decades have been smaller than ten acres. Fires average slightly less than one per year and nearly 80 percent of them are human-caused. The West Branch Feather River, Fish Creek, and Philbrook Creek are important fisheries. Philbrook Lake supports a catchable trout fishery and a small nesting population of Canada geese. Spotted owls have been located here and, during summer, deer use the area heavily as a fawning area. Past gold mining throughout the southern half of the area left extensive ditch systems, tailings, and mining artifacts. Among the archaeological sites is a large prehistorical quarry where tools were fashioned from basalt, perhaps as early as 1500 BC.

Management Timber management opportunities are widespread, as about 70 percent of the area has not had any harvesting. The northern one-third of the area lies within the Coon Hollow and Murphy Hill Range Allotments. The area was the scene of early gold mining activity. Carr Mine is the only currently active mine, but remains of several others, including the Sky High Mine, are evident. The community of Inskip west of the area was a commercial center during the late 1800's. West Branch Campground and PG&E's Philbrook Campground are located near Philbrook Creek. Hiking, fishing, and camping occur along the West Branch and around Philbrook Lake.

Facilities Road access is limited to several routes along the major drainages. Philbrook and Snag Lakes are reservoirs developed to supply water for hydroelectric generation. The West Branch and other creeks in the area are the subject of applications for small hydroelectric facilities.

B. STANDARDS AND GUIDELINES

Recreation

1. Continue to cooperate with Pacific Gas and Electric Company regarding recreation developments.
2. Manage the undeveloped camping areas at Snag Lake and Cuddleback as dispersed campsites.

Sensitive Plants

1. Inventory for possible occurrences of Constance's rock cress (*Arabis constancei*),

Stebbin's monardella (*Monardella stebbin-sii*), cut-leaved butterweed (*Senecio eurycephalus* var. *Lewisrosei*), and Feather River stonecrop (*Sedum albomarginatum*) on serpentine soils.

- 2 Monitor and protect closed throated beard tongue (*Penstemon personatus*) populations. Inventory other mixed conifer and red fir areas for additional populations.
- 3 Inventory for possible occurrences of short petalled campion (*Silene invisa*) in red fir areas

C. PRESCRIPTION ALLOCATION

Prescription	Acres
A Non Timber Wildlife	100
B Range-Wildlife	1,200
D Developed Recreation	10
E Early Successional	100
F Riparian/Fish	1,050
K Rocky/Sparse Timber	290
L Late Successional	2,580
M Semi-Primitive Mootoned	200
T Timber	6,500
V View/Timber	5,720
Total	17,750

D. WILDLIFE HABITAT ALLOCATIONS

Spotted Owl Habitat Areas	1
Goshawk Terntones	3

Other Emphasis Species: Deer (summer range), black bear, rainbow trout

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	65
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	470
Red Fir	290

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Coon Hollow (60%)	C
Murphy Hill (10%)	C

Management Area 47 - Mt. HOPE

County-----	Butte
Ranger District-----	Almanor
Acreage-----National Forest -----	23,290
Other -----	5,838



A. DESCRIPTION

Location The Mt Hope Management Area is the southernmost area on the Forest. It includes Chips Creek and other tributaries to the North Fork Feather River. The area's eastern boundary is the boundary between the Plumas and Lassen National Forests. About seven sections of land in the west half of the area are privately owned.

Physical Environment The terrain is typical Sierra Nevada high country. Elevations range from 4,500 feet to 6,862 feet at Spring Valley Mountain. Precipitation averages 70 inches per year. The soils scattered among the bare granite outcrops are rocky and sandy.

Biological Environment Vegetation includes extensive brushfields and mixed conifer forests, with red fir on the ridge tops and lodgepole pine on the moist sites. Fuel loads range from light to heavy. A large fire in 1945 originating on private land burned into the area. Since then, no fire has burned more than ten acres. Fires burn about once every two years, and half of them are human-caused. The many small lakes support a significant recreational fishery, as does Chips Creek in its lower reaches. In summer, the Buck's Mountain deer herd uses the area. Some uncommon species that would be expected here are marten, red fox, and possibly wolverine. Spotted owls and goshawks are also present.

Management This was the scene of early mining activity. The Lott and Morris mines were active prospects around 1900, but no major developments resulted. This prospecting was an extension of the activities in the Feather River Canyon to the east. Although some logging did take place during the early 1900's, major timber harvests were never a part of the area's history.

A logging camp was located at Ramsey Bar on Kimsheew Creek in the south, and operations reached approximately the southern area boundary about 1910. The area is part of the Murphy Hill and Chips Creek Range Allotments. The Pacific Crest National Scenic Trail follows Chips Creek through the area. The High Lakes area is a popular camping and OHV spot, and hikers and backpackers use several of the trails.

Facilities Access is provided by several rough jeep trails reached over a private road from the west. Several creeks in the area have been the subject of applications for small hydroelectric generation facilities.

B. STANDARDS AND GUIDELINES

Fish

1. Continue cooperation with the California Department of Fish and Game (DFG) in fisheries planting and management.

Fire and Fuels

1. Use fire management techniques and strategies that least alter the landscape and land surface in the Chips Creek and High Lakes Basins.

Lands

1. Investigate jurisdictional exchange with the Plumas National Forest for areas that can be better accessed from the Lassen National Forest.

Minerals

- 1 In the High Lakes area, insure that prospecting and mining operation plans involve full reclamation of sites upon completion, and that all facilities and operations are consistent with prescriptions for semi-primitive areas, protect wildlife values, and maintain existing water quality in the surrounding lakes and streams

Recreation

- 1 Prepare a comprehensive recreation plan to manage use in the High Lakes and Chips Creek Basin areas, and provide sanitation facilities as needed
2. In the areas southwest from Long Lake and south from Bear Lake, allow motorized use only on existing jeep trails

Sensitive Plants

- 1 Inventory for possible occurrences of Constance's rock cress (*Arabis constancei*), Stebbin's monardella (*Monardella stebbin-sii*), cut-leaved butterweed (*Senecio eurycephalus var Lewisrosei*) and Feather River stonecrop (*Sedum albomarginatum*) on serpentine soils
- 2 Inventory for short-petalled campion (*Silene invisa*) and closed-throated beardtongue (*Penstemon personatus*) in red fir and mixed conifer stands.

Soils

- 1 Monitor and take necessary actions to prevent damage to meadows and soils in the High Lakes area.

C. PRESCRIPTION ALLOCATION

Prescription	Acres
B Range-Wildlife	400
E Early Successional	100
F Riparian/Fish	100
K Rocky/Sparse Timber	1,010
L Late Successional	2,280
M Semi-Primitive Motorized	4,600
N Semi-Primitive Non-Motorized	13,900
T Timber	600
V View/Timber	300
Total	23,290

D. WILDLIFE HABITAT ALLOCATIONS

Spotted Owl Habitat Areas	1
Goshawk Territories	2
Other Emphasis Species	Deer (summer range), red fox, marten, rainbow trout

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	200
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	260
Red Fir	575

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Chips Creek (60%)	C
Murphy Hill (90%)	C

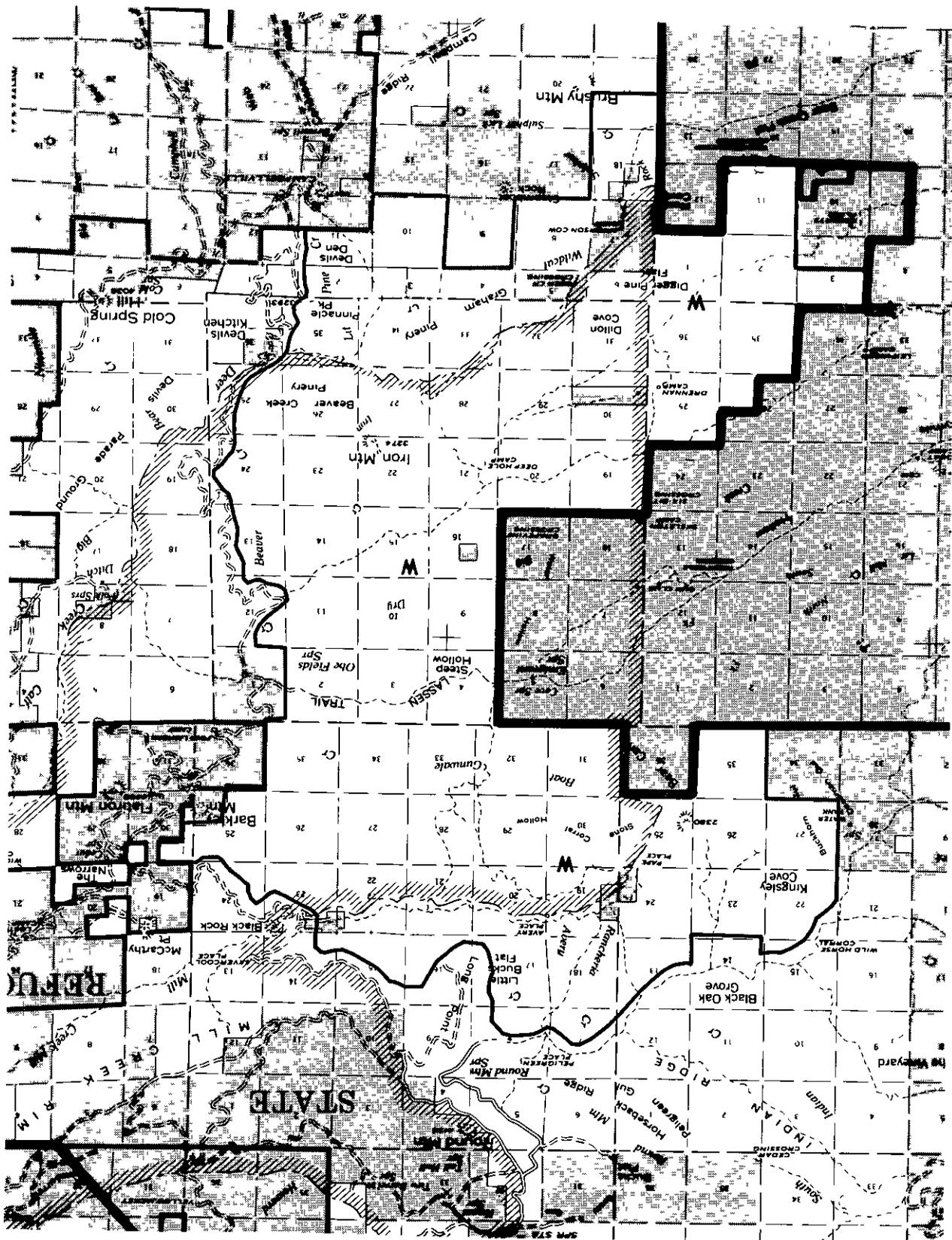
January 1992

5 Miles 1/2" = 1 Mile



Scale

48 ISHI Management Area



MANAGEMENT AREA 48 - ISHI

County -----	Butte Ranger
District -----	Almanor
Acreage --- National Forest -----	41,100
Other -----	1,520



A. DESCRIPTION

Location The Ishi Management Area is the Ishi Wilderness. It is located along the southwest boundary of the Almanor Ranger District. It contains the middle reaches of Mill Creek and Deer Creek. The wilderness is almost solidly National Forest land.

Physical Environment The highest elevation is 4,488 feet at Barkley Mountain, and the lowest is about 900 feet, the lowest point on the Forest at the Forest boundary near Moak Cove. The major terrain features are the rugged Deer Creek and Mill Creek Canyons. Precipitation averages 30 inches a year. A shallow soil overlies volcanic rock, which often shows as prominent bluffs and cliffs.

Biological Environment This is typical front country with mixed conifer forest on the ridge tops, and oaks, chaparral, and grasslands at lower elevations. Riparian areas along Deer and Mill Creeks have scattered stands of ponderosa pines and Douglas-firs. Fuel loads are light and consist mostly of fine materials. Most of the area has burned at least once in the last 60 years, and many large fires historically occurred. More recently, the Iron Fire burned 500 acres in 1980, and the 131,000 acre Campbell fire burned 80 percent of the area in 1990. Average fire occurrence is about three fires every two years. Eighty percent are lightning-caused. Golden eagles, prairie falcons, peregrine falcons, and other raptors are present. Steelhead and spring-run chinook salmon also occur as remnant runs in Deer and Mill Creeks. Other wildlife present are species associated with oak, grassland, chaparral, and riparian habitats. Native Americans relied on acorns, and resident and anadromous fish for subsistence. The area is named for Ishi, its last Native American inhabitant and last

survivor of the Yahi Yana tribe, who emerged from isolation near Oroville in 1911.

Management The area was the scene of extensive livestock operations by many ranchers. A portion of the Brushy Mountain Wild Horse Territory is also within the area. The area is part of two range allotments: Tehama and Cone-Ward South. Hikers, backpackers, and fishermen enjoy streams and trails in the area, particularly along Deer Creek and along Mill Creek below Black Rock.

At the southwestern tip of Ish Wilderness are about 200 acres of BLM land included in the wilderness. Through a memorandum of understanding with BLM, the Lassen National Forest manages this area.

Facilities A new trail system is located across the ten-am between Mill and Deer Creeks. Access is by two trail networks, one on each main creek. The main trailheads are at Black Rock and Deer Creek at Ponderosa Way. Access is also available along Ponderosa Way and the Peligreen Jeep Trail along the east and north boundaries of the wilderness respectively. Deer Creek has been the subject of applications for small hydroelectric facilities.

Wild and Scenic The area contains the lower segments of the proposed Deer Creek and Mill Creek Wild and Scenic Rivers.

Special Areas The wilderness contains the 660-acre Graham Pinery recommended Research Natural Area, representing the Pacific ponderosa pine vegetation type. The RNA was burned over in the 1990 Campbell Fire.

B. STANDARDS AND GUIDELINES

Cultural Resources

- 1 Protect, stabilize, recover, and interpret values of archaeological sites

Fire and Fuels

- 1 Develop and implement a wilderness prescribed burn plan
- 2 Allow fire to resume its natural role in the wilderness ecosystem except where it may endanger public safety or private lands

Lands

- 1 Pursue acquisition of inholdings within the Ishi Wilderness boundaries

Range

- 1 Monitor and adjust grazing practices in accordance with range conditions and the Ishi Wilderness Implementation Plan (1989 and to be supplemented)

Recreation

- 1 Improve access for persons-with-disabilities by constructing horse-mounting ramps at trailheads

Sensitive Plants

- 1 Inventory for possible occurrences of Butte County fritillary (*Fritillaria eastwoodiae*) in foothill woodlands

Wilderness

- 1 Comply with the direction in the Ishi Wilderness Implementation Plan

C. PRESCRIPTION ALLOCATION

Prescription	Acres
W Wilderness	41,100
Total	41,100

D. WILDLIFE HABITAT ALLOCATIONS

Peregrine Falcon Territories	2
Other Emphasis Species: Deer (winter range), gray squirrel, chinook salmon, steelhead trout	

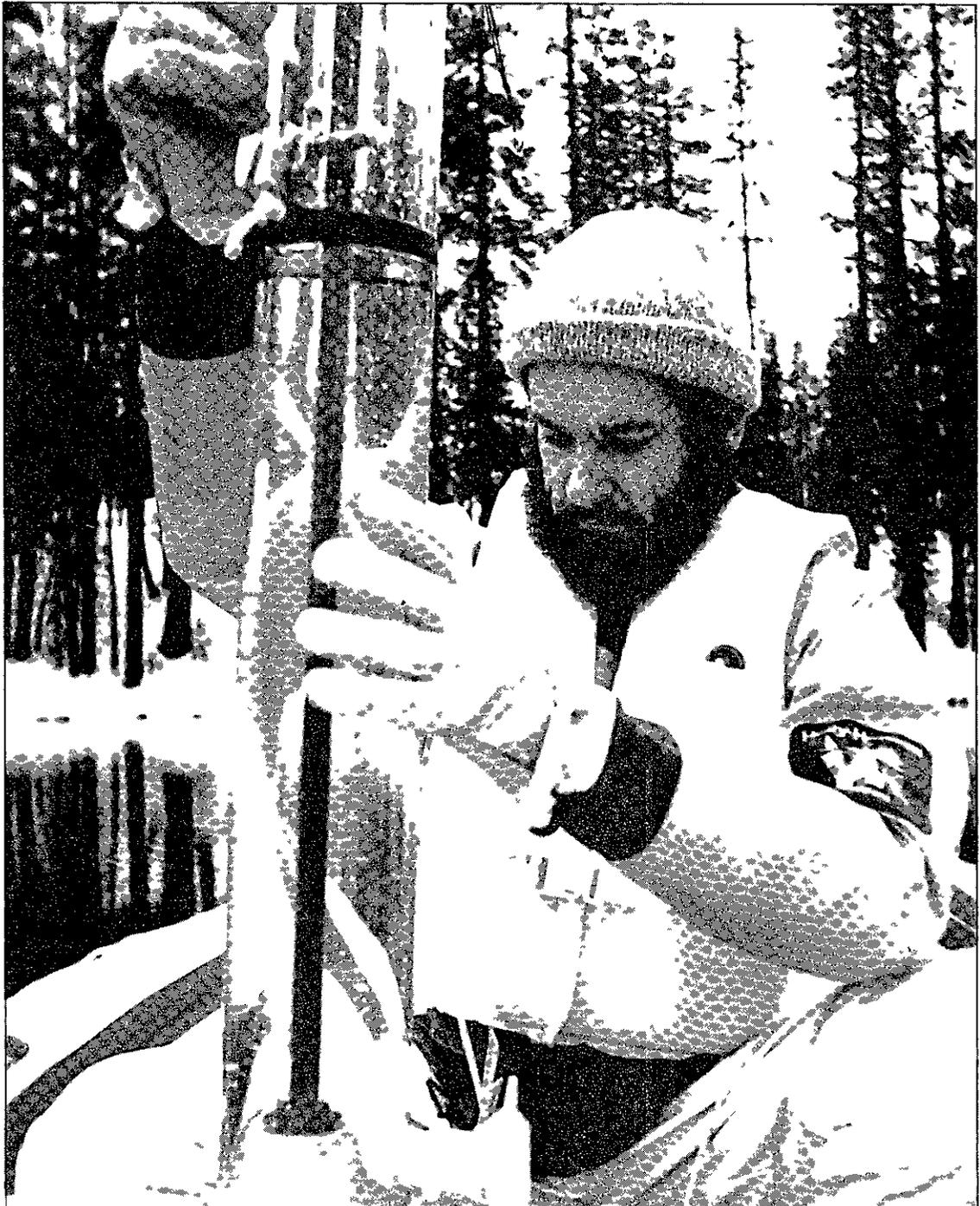
E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	200
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed Conifer	260
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Cone-Ward South (100%)	C
Tehama (30%)	C

Monitoring and Evaluation **5**



Lake water sampling in the Caribou Wilderness

CHAPTER 5 - MONITORING AND EVALUATION

A. PURPOSE

Monitoring and evaluation is required by the National Forest Management Act of 1976 and the implementing regulations found in 36 CFR 219.12(k). The purpose of monitoring is to measure and evaluate the effectiveness of Forest Plan implementation. Monitoring provides quantitative and qualitative information on implementation progress and results. It is a means to determine how well Plan objectives are being met and the appropriateness of Forest Standards and Guidelines. Monitoring may lead to changes in management practices, or provide a basis for minor adjustments, amendment or possible revision of the Plan.

B. THE MONITORING PROCESS

Monitoring is intended to help keep the Forest Plan responsive to changes. Monitoring and evaluation have a distinctly different purpose and scope. Monitoring consists of observations and gathering data or information. During evaluation, the data and information are analyzed and interpreted. This analysis determines if planned conditions or results are being attained and are within the intent of the Plan, and if not, why.

There are three levels of monitoring: implementation monitoring; effectiveness monitoring, and validation monitoring. *Implementation monitoring* determines whether practices and activities are implemented as designed and in compliance with Forest Plan objectives and Standards and Guidelines. *Effectiveness monitoring* determines if plans, prescriptions, projects, and activities are effective in meeting management direction, objectives, and the Standards and Guidelines. This level of monitoring is conducted by resource specialists based on resource values and risks, and public issues. *Validation monitoring* determines whether the initial data, assumptions, and coefficients used in the development of the Plan are correct, or if there is a better way to meet Plan objectives. Validation monitoring is conducted when the results from effectiveness monitoring indicate basic assumptions or

coefficients are questionable. Figure 5-1 shows the three levels of monitoring.

C. THE EVALUATION PROCESS

The evaluation process is described in the Land and Resource Management Planning Handbook (FSH 1909.12, Chapter 6). Monitoring and evaluation are separate, sequential tasks. Monitoring is designed to observe and record the results of implementing the Forest Plan. Evaluation looks at those results, determines how well they meet Forest Plan direction, and identifies measures to keep the Plan current.

Evaluation techniques include, but are not limited to: general management reviews, program renewals, activity renewals, field assistance trips by other resource specialists, and interdisciplinary team review of monitoring results.

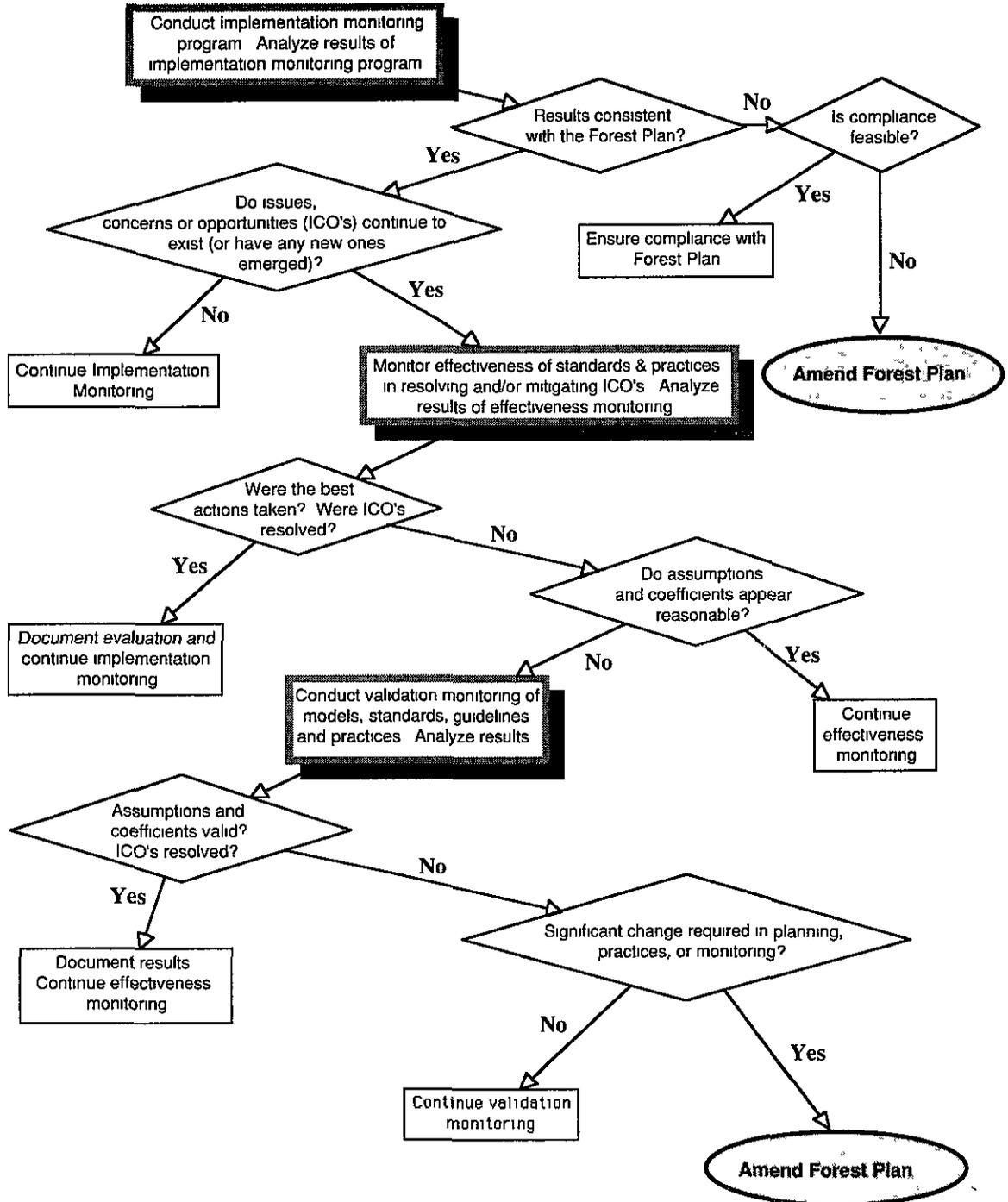
Implementation monitoring involves a periodic comparison between the end results that are realized and those projected in a project plan. Costs, outputs, and environmental effects are compared in order to judge the overall progress of Plan implementation and the achievement of the desired future condition. An annual monitoring report will be prepared summarizing the results of the previous year's monitoring efforts.

Following implementation monitoring, evaluation of monitoring data will occur. An interdisciplinary team will analyze and evaluate the results of the monitoring program, and recommend to the Forest Supervisor any need for further action or adjustment. Their recommendations can include:

1. Continue with the practice or activity. No change is necessary. Monitoring indicates that goals, objectives, and Standards and Guidelines are achieved.
2. Refer a problem to the appropriate Forest officer for corrective action to improve the application of a Standard or Guideline, or management prescription.

Figure 5-1

Evaluation of Forest Plan Monitoring Results



3. Modify the management practice through Forest Plan amendments
4. Modify land allocations through Forest Plan amendments.
5. Revise output schedules.
6. Revise unit output costs
7. Revise the Forest Plan

D. THE MONITORING PLAN

Table 5-2 shows the detailed monitoring requirements for the Forest Plan. For each resource parameter or management practice to be monitored, the monitoring objective, the source of management policy or law requiring monitoring, one or more measurement techniques/data sources, and the expected precision and reliability are specified. Also specified are the minimum frequency of measurement, the standard to compare against, the allowed variation from the standard that will require no further action, and the responsible staff director. Finally, the annual cost is estimated for monitoring each item.

As a minimum, NFMA requires the following be covered in a monitoring plan as directed in 36 CFR 219.

1. Compare planned versus applied Management Standards and Guidelines to determine if objectives are achieved.
2. Quantitatively compare planned versus actual outputs and services.
3. Measure effects of prescriptions, including significant changes in land productivity.
4. Determine planned cost versus actual costs associated with carrying out prescriptions.
5. Determine population trends of the Management Indicator Species and relationship to habitat changes
6. Evaluate effects of National Forest management on adjacent land, resources, and communities.
7. Identify research needs to support or improve National Forest management
8. Determine if lands are adequately restocked
9. Determine, at least every ten years, if lands identified as unsuitable for timber production have become suitable
10. Determine whether maximum size limits for harvest areas should be continued
11. Insure that destructive insects and disease organisms do not increase to potentially damaging levels following management activities.

The Forest Supervisor, Staff Directors, and District Rangers and their staffs will monitor the activities and effects listed in Table 5-2. The District Rangers will prepare a monitoring program annually, as part of the total Forest annual program of work. This monitoring program will specify the amount and location of monitoring to be accomplished, given the activities in the program of work and given the funds available for monitoring. It will identify specific projects, locations, sampling intensities, person days required, and costs.

Appendix A identifies new or modified plans needed to implement the Forest Plan. Some of these plans, once developed, may result in changes to the monitoring program specified in Table 5-2.

E. EXPECTED PRECISION AND RELIABILITY

Precision is the accuracy with which data are collected, reliability is the degree to which the monitoring reflects the actual Forest condition. Both expected precision and reliability of the monitoring program are qualitatively rated as high, moderate, or low in Table 5-2 as defined in Table 5-1. Key productivity targets, such as timber volumes and grazing animal numbers, can be accurately measured and will reflect actual conditions. Monitoring of some environmental conditions, such as range condition and trend, will entail less precision and reliability because of the environmental complexity. The accuracy limits for precision and reliability are defined as follows:

For each item monitored, Table 5-2 gives one of these ratings for precision and one for reliability. The precision/reliability of portions of the monitoring program will be sufficient to achieve the purposes of the monitoring and evaluation plan.

Table 5-1

Expected Precision and Reliability

<u>Expected Precision/Reliability</u>	<u>Accuracy Limits</u>
High	Allows 10% variation from actual values
Moderate	Allows 33% variation from actual values
Low	Allows 50% variation from actual values

F. MONITORING COSTS

The costs shown are estimates of actual annual monitoring costs for each item. Each cost estimate includes current costs plus any expected additional costs needed to meet new Forest Plan direction.

Monitoring costs can be part of a project or independent of projects. For example, in a timber sale, the need for monitoring outputs, activities, and compliance with standards is triggered by the project, and monitoring funds are included as part of the project's funding. For some other activities or resources, such as air quality, monitoring is an activity for which separate funding is needed.

Monitoring costs can be funded by one or more management functions. In most cases, such as monitoring reforestation or bald eagle habitat, the entire monitoring cost is paid out of one function's dollars in the Forest budget. In other cases, such as monitoring compliance with Best Management Practices, the monitoring cost is shared by the involved functions, such as timber management, watershed management and engineering.

G. THE AMENDMENT AND REVISION PROCESS

The Forest Plan incorporates legal mandates, professional judgment, and the public's stated

concerns into a future vision of the Forest. It charts a path for getting there by developing management goals and objectives, and translating them into management direction in the form of Standards and Guidelines. National Forest planning is a dynamic process. Forest Plans can and should be modified if conditions warrant. As management goals are applied on the ground or as new information is learned about resources, the Plan's goals and objectives may no longer be appropriate. In these instances, activities may be tailored to fit the resource conditions, or planning objectives as stated in the Plan may be amended.

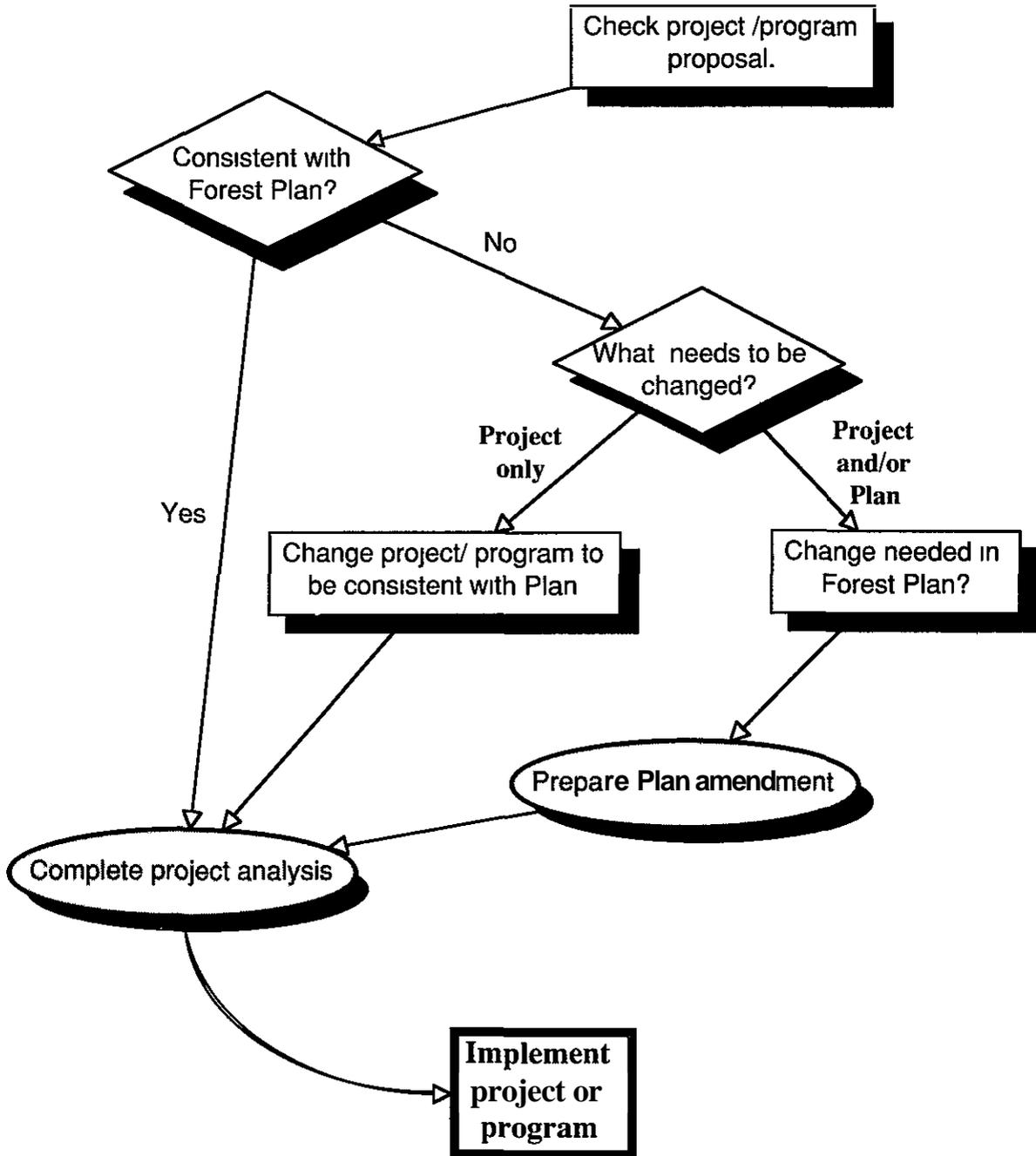
NFMA requires that the Forest Plan be evaluated every five years to see if it is still applicable. Site specific planning and annual monitoring reports document shifts from Plan direction due to corrections in the database, new information, changes in land allocations or environmental conditions, or adjustments in outputs because of funding or the workforce. Depending upon the extent of the changes, a minor amendment or a significant revision of the Forest Plan may be needed.

The Forest Supervisor may amend the Plan, and will determine whether the amendment is significant or not. Significant amendments and revisions are signed by the Regional Forester after appropriate public notification and satisfactory completion of NEPA procedures. The same process required for the development and approval of the Forest Plan will be followed when a significant amendment is proposed. Insignificant amendments may be approved by the Forest Supervisor after public involvement and NEPA documentation.

The Forest Plan will ordinarily be revised on a 10-year cycle, or at least every 15 years, per direction found in 36 CFR 219.10(g). However, it may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals, or objectives have a significant effect on Forest level programs. In the monitoring and evaluation process, the interdisciplinary team may also recommend a revision of the Plan at any time. Figure 5-2 outlines the amendment process and the dynamic nature of forest plans.

Figure 5-2

Amendment Process and Dynamic Nature of the Plan



**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

	GENERAL 		
	A Implement- ation Cost	B. Project Planning and Implementation	C Economic and Social Effects
Objective	Compare actual against projected costs of implementing the Plan	(1) Assess compliance of environmental documents with NEPA requirements and Forest Plan direction (2) Assess compliance of project implementation with environmental documents	(1) Compare actual against projected changes in tourism trends, and service sector and timber industry employment (2) Encourage and implement programs that increase economic diversity and employment in the local area, where such opportunities do not conflict with Forest Plan direction
Source	NFMA	NEPA	State and County Records, Employment Office, Forest Records (RRIS)
Techniques/data sources	Record projected costs versus actual costs from forest accounts	(1) Line Officer EA review and approval process (2) ID Team field review of projects during/after completion	(1) Review records of actual employment and compare with projected levels (2) Cooperate with individuals and groups for compatible Forest uses, such as Eagle Lake Children's Camp for special needs children
Precision/reliability	High/High	High/Moderate	Moderate/Low
Minimum monitoring frequency	Annually	One timber sale per District and one other project Forest-wide each year	Evaluate trends every five years Encourage and implement programs to strengthen and diversify local economies as opportunities arise
Standard of comparison	Annual expenditures matching annual budget for each budget element	Conformance with (1) NEPA Regulations, Forest Standards and Guidelines, Prescriptions, and Management Area Standards and Guidelines (2) Project environmental document	<i>Socio-economic overview of the Lassen National Forest, 1982 Recreation Resource Information System (RRIS) data</i>
Variation from standard	Plus or minus 10%	None Any non-compliance will be cause to review project administration, validity of Forest Plan direction and/or EA and to determine if corrective action is necessary	More than 15% increase in timber industry unemployment from projected level More than 25% reduction in projected payments to counties
Responsible staff	Administration	Planning	Planning
Annual cost	\$1,000	\$5,000	\$300 (\$1.500 every five years)

GENERAL	1. AIR QUALITY 
D. Incomplete and Unavailable Information	A. Condition of Air Quality Related Values in Class I Areas (Caribou and Thousand Lakes Wildernesses)
<p>(1) Review scientific literature for evolving definition of old growth timber stands, for new or improved vegetative diversity guidelines, and for habitat needed to maintain viable populations of dependent plant and animal species</p> <p>(2) Monitor group selection harvesting for cost and resources needed to implement that method. Measure success in reestablishing desired species and growth rates</p>	Establish background data and trends in air quality
Scientific literature, Regional guidelines, Forest records	Clean Air Act
<p>(1) Review literature and guidelines, incorporate new information into Forest Plan</p> <p>(2) Compile Forest and Regional data for review and possible changes to Forest Plan</p>	Ambient air sampling as described in the Regional Air Quality Plan
Moderate/Moderate	Moderate/Moderate
Annually, or as significant new information becomes available	To be developed by a Regional Air Quality Monitoring Team
Conformance with Regional direction, Forest Standards and Guidelines. Adherence to project environmental documents	Prevention of significant deterioration (PSD) of existing air quality
None. Any significant new information will be incorporated into the Forest Plan, and corrective measures will be taken to amend the Plan and change management activities	PSD increments for particulate matter and sulfur dioxide as specified in the Clean Air Act for Class I areas
Resources and Timber	Resources and Fire
\$1,000 (More if changes are significant)	\$10,000

TABLE 5-2: MONITORING PLAN BY RESOURCE	B. Compliance with Local Air Quality Regulations	2. BIOMASS A. Biomass
Objective	Assure that Forest Service activities that could create air pollution (road construction, use, development under special use permit, mining, and prescribed burning) comply with all regulations and permit requirements of local air quality regulatory agencies	Monitor and evaluate effects of biomass program on wildlife, soils and other resource values
Source	Clean Air Act.	Forest Standards and Guidelines
Techniques/data sources	Review project environmental documents, prescribed burn plans, and field inspections	Review records of biomass and firewood sold. Compare with monitoring results of wildlife and soil resources where potential conflict exists
Precision/reliability	Moderate/moderate	Moderate/moderate
Minimum monitoring frequency	Annually on 20% of prescribed burn projects, one timber sale per District, and one other project Forest-wide	Field review of one project per Ranger District per year
Standard of comparison	Conformance with project environmental documents and requirements of local air quality regulatory agencies	Adherence to project environmental documents Attainment of soil and wildlife Objectives for leaving biomass and woody debris. Avoidance of excessive soil compaction
Variation from standard	None. No variation from air quality targets and permit conditions	None. Meet objectives of environmental documents
Responsible staff	Resources	Resources
Annual cost	\$1,000	\$10,000

3. CULTURAL RESOURCES

A. Management of Cultural Resources

B. Inventory and Evaluation of Cultural Resources

Ensure that cultural resources are protected during Forest management activities, and that Forest actions do not restrict traditional Native American religious practices

Assess the adequacy of the Forest cultural resource inventory and determine if cultural resource inventories **and** evaluations will be completed by the first decade. Assess if 20% of all cultural properties will be evaluated for eligibility to the National Register of Historic Places by the first decade.

NFMA, National Historic Preservation Act, American Indian Religious Freedom Act, Regulations in 36 CFR 219.24, Forest Standards and Guidelines

NFMA, Regulations in 36 CFR 219.12 (k)2 and 36 CFR 60.0

Review cultural resource inventories and condition of cultural resources following the completion of projects. Prescribe measures for protection of cultural resources in the implementation plans for this Forest Plan.

Compare results of cultural resource inventories to locational models. Review cultural resource accomplishment report.

Moderate/Moderate

High/High

Field review of at least one project per Ranger District per year, where cultural resources are an issue.

Annually

Maintenance of the condition of cultural resources as prescribed in FSM 2361.

Strong correlation between cultural resources locational models and results of cultural resource inventories. Inventory rate is at least **5%** of Forest per year. Eligibility for inclusion in the National Register of Historic Places is determined for approximately 2% of cultural properties on the Forest per year.

None that results in an effect (36 CFR 800.3) to cultural properties on or eligible for the National Register of Historic Places, other than those allowable effects specified in Memoranda of Agreements with the State Historical Preservation Officer and the Advisory Council on Historical Preservation.

Approximate correspondence between cultural resource inventories and locational models. Inventory and evaluations are within 25% of target.

Resources

Resources

\$3,000

\$1,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

3. CULTURAL RESOURCES		
	C. Effect of Forest Visitors and Natural Factors on Cultural Resources	D. Interpretation of Cultural Resources
Objective	Determine the effects of Forest visitors and natural factors on cultural resources in the forms of looting, vandalism, collection, erosion, and decay	Determine the effectiveness of efforts to promote public education and enjoyment of cultural resources
Source	National Historic Preservation Act, Forest Standards and Guidelines	National Historic Preservation Act, Forest Standards and Guidelines
Techniques/data sources	Field review of the condition of cultural resources	Review facilities and information sources that interpret cultural resources to the public and that provide information to the scientific community
Precision/reliability	Moderate/Moderate	Moderate/Moderate
Minimum monitoring frequency	Review the condition of all cultural properties on or eligible for the National Register of Historic Places once every five years, annually review those vulnerable to significant damage. Immediately review cultural properties reportedly disturbed	Field review two sites annually
Standard of comparison	Maintain condition of cultural resources as prescribed in FSM 2361	Adequate interpretation of cultural history and availability of cultural resource information of scientific interest, as described in FSM 2361
Variation from standard	None for properties on or eligible for the National Register	None. Adequate interpretation of the cultural history of an area. Release information of significant scientific interest within three years after acquisition
Responsible staff	Resources	Resources
Annual cost	\$10,000	\$1,000

4. FACILITIES			5. FIRE AND FUELS 
A. Trails	B. Trail Maintenance	C. Road Maintenance	A. Wildland Fire Suppression Tactics and Strategies
Determine if Forest Plan Objectives for the trail system are being achieved	Determine appropriate trail maintenance levels for resource management needs	Determine appropriate road maintenance levels for resource management needs	To assure that fire suppression actions are consistent with Forest Plan Standards and Guidelines
Forest Standards and Guidelines	Forest Standards and Guidelines	Forest Standards and Guidelines	Forest Service Manual
Tabulation of mileages of trails constructed, reconstructed, and maintained, from final construction, reconstruction, and maintenance reports	Field review of trail conditions and traffic on 5% of trail system each year	Field review of traffic, road bed condition, and maintenance practice on 2% of the inventoried road system each year Traffic counters will be used where maintenance levels appear too high	Field review of escaped fire situations, including the situation analysis, the operational shift plan, and the actual results
High/High	Moderatemoderate	Moderate/Moderate	Moderate/Moderate
Assess every five years	Annually	Annually	Annually for all fires over 300 acres and 5% of all fires under 300 acres
Meet Forest Plan objectives by decade for trail mileage	Maintenance levels commensurate with user needs	Maintenance levels commensurate with management needs	Conformance with Fire Management Action Plan
Plus or minus 25% by end of decade	Less than 10% of inventoried trails below established trail maintenance levels	Minor discrepancy between maintenance levels and management needs, as revealed by roadway damage or traffic counts	None Any variability will be cause to review validity of the Fire Management Action Plan and Standards and Guidelines to determine if corrective action is necessary
Resources	Resources	Engineering	Fire
\$500	\$2,000	\$20,000	525,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

	5. FIRE AND FUELS		6. FIREWOOD 
	B. Burned Acreages by Fire Intensity Class	C. Fuel Treatment and Prescribed Fire	A. Firewood Supply
Objective	Compare the actual and predicted extent of wildfire acres	Review prescribed burns and fuel treatments to determine if project objectives and Forest Plan Standards and Guidelines were met	Determine if the Forest is making available an adequate supply of firewood for personal use to meet the demand
Source	Forest Standards and Guidelines, National Fire Management Analysis System (NFMAS)	Forest Service Manual	Forest Standards and Guidelines
Techniques/data sources	Review fire reports and compare actual to predicted wildfire acreages for each Management Area	Review prescribed burn and annual fuel treatment plans, and perform field inspections to verify implementation	Maintain records of both personal use and commercial use permits. Conduct surveys to determine amount of firewood available.
Precision/reliability	High/High	Moderate/moderate	Low/Moderate
Minimum monitoring frequency	Annually	Annually review 10% of projects completed on each District	Annually
Standard of comparison	Conformance with Fire Management Action Plan	Conformance with objectives stated in the prescribed burn and fuel treatment plan	Availability of at least the average annual amount of firewood taken from the Forest during the previous five years
Variation from standard	Plus or minus 20% over a five year period between actual and predicted burned acres	20% variation between actual and planned effects	None
Responsible staff	Fire	Fire	Timber
Annual cost	\$1,000	\$8,000	\$1,000

6. FIREWOOD	7. FISH	8. FOREST HEALTH	9. LANDS 
B. Snags and Down Logs	A. Anadromous and Resident Fish	A. Forest Pest Conditions	A Land Occupancy Authorization
Determine if adequate snags and fallen ("dead and down") logs are available for wildlife in areas of heavy firewood cutting	Determine habitat status and trend in relation to management activities for resident and anadromous fish	Detect and evaluate pest-related problems and damage through the Forest pest detection reponing process	Determine if documents authorizing land use occupancy and use are Consistent with Forest Plan
Forest Standards and Guidelines	Forest Standards and Guidelines, Management Area Direction	NFMA	Forest Standards and Guidelines.
Conduct field surveys to determine number of snags and down logs per acre in firewood source areas	Population surveys in conjunction with California Department of Fish and Game, direct counting of anadromous fish, and habitat surveys	Timber stand or area-wide examination by ground and aerial surveys in conjunction with pest detection reports	Review authorizing instruments
Moderate/moderate	Moderate/moderate	Moderate/moderate	High/High
One firewood area per Ranger District per year	Annually for a defined sample of habitats	Annually	Review all authorizing instruments within 3 years of Forest Plan implementation
Conformance with Objectives stated in Forest Standards and Guidelines	Maintenance of viable population levels and non-declining habitat status	Maintenance of pest damage at acceptable levels	FSM 2700, Forest Standards and Guidelines, and Management Area Direction
None	No reduction in stream shading No negative trend in pool to riffle ratios or residual pool volumes No temperature variation	Pest damage levels not inhibiting the Forest's ability to meet timber production Objectives, and not increasing to dangerous levels following management activities	None after 3 years
Resources	Resources	Timber	Lands
\$1,000	\$10,000	\$1,000	\$3,000

TABLE 5-2: MONITORING PLAN BY RESOURCE	3. LANDS B. Land Adjustments	10. MINERALS A. Plans of Operation
Objective	Ensure land adjustments are consistent with the Forest Land Adjustment Plan	Operating plans are consistent with the Forest Plan
Source	Forest Standards and Guidelines, Management Area Direction	Forest Standards and Guidelines
Techniques/data sources	Review proposed land adjustments	Review plans of operation
Precision/reliability	High/High	High/High
Minimum monitoring frequency	Annually	Annually and thereafter as amendments to operating plans are made
Standard of comparison	FSM 5400, Forest Standards and Guidelines, Land Adjustment Plan	Forest Standards and Guidelines. Management Area Direction, FSM 2810, 36 CFR 228, subpart A
Variation from standard	None	None
Responsible staff	Lands	Lands
Annual cost	\$500	\$1,000

11. RANGE

A. Range Utilization Studies

B. Rangeland Condition and Trend

Review Ranger District programs to determine appropriate livestock grazing levels to maintain proper vegetative conditions

Determine if all rangelands are maintaining productivity, are in satisfactory or better condition, and have a static or improving trend in range condition (This monitoring is in addition to District range program monitoring of condition and trend on allotments)

Forest Standards and Guidelines

Forest Standards and Guidelines

Monitor Ranger District progress in
 (1) Conducting utilization studies during and after the grazing season
 (2) Establishing utilization plots to evaluate forage production
 (3) Reviewing grazing reports to determine total animal months produced
 (4) Establishing and maintaining range condition and trend monitoring programs

(1) Document range condition, based on review of Ranger District condition and trend surveys that apply current, approved range analysis methods
 (2) Review range condition assessments in District environmental analyses of projects that manipulate vegetation

Moderate/Low

High/Moderate

Review two Allotment Management Plans per Ranger District per year

Evaluate utilization on each transect every five years

Utilization, and range condition and trend meeting standards given in the Forest Service Handbook, Forest Standards and Guidelines, and range allotment strategies meeting Management Area Direction, and allotment management plans

Non-declining productivity, condition, and trend as described in FSH 2209.11

None

No measurable decline in range condition or any analysis that indicates declining trend

Resources

Resource?

\$2,000

\$2,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

	11. RANGE	12. RECREATION 	
	C. Updating of Allotment Management Plans	A. Developed Recreation Sites	B. ROS Classes
Objective	Determine if allotment management planning meets the time frames identified in the LRMP and meets the standards for AMP development in Regional direction	Determine condition of recreational facilities and need for repair or replacement	Determine conformance with ROS class Objectives
Source	Region 5 Allotment Planning Handbook	Forest Standards and Guidelines	Forest Standards and Guidelines
Techniques/data sources	Review Ranger District progress in developing allotment management plans	Sampling and inventory of recreation facilities condition and need for repair or replacement	Review projects, plans, and EA's for ROS class conformance Review physical, social, and managerial setting of ROS classes
Precision/reliability	Moderate/Moderate	High/High	Moderate/Moderate
Minimum monitoring frequency	Monitor progress in updating six AMP's annually for 15 years	Annually for 20% of sites	One project per Ranger District per year
Standard of comparison	Standards in the Forest Service Handbook and Forest Standards and Guidelines	Maintenance of facilities in new condition	Physical, social, and managerial setting guidelines for ROS classes
Variation from standard	As a minimum. meet the schedule developed for AMPs	Less than 20% deterioration compared to the new condition	At least 90% of the area meets the allocated ROS class objectives
Responsible staff	Resources	Resources	Resources
Annual cost	\$2,000	\$8,000	\$1,000

12. RECREATION		3. SENSITIVE PLANTS
C. Recreation Use	D. Off-Highway Vehicle (OHV) Effects	A. Sensitive Plant Populations
Determine actual use as compared with projected use Improve accuracy of use reporting	Determine effects of OHV's on critical soil, vegetation, cultural, wildlife, and visual resources Determine level of conflict between OHV users and other recreationists Update OHV plans	Ensure habitat maintenance or improvement for Sensitive plants to avoid Federal listing as Threatened or Endangered species
Forest Standards and Guidelines	NFMA, Forest Standards and Guidelines	Forest Standards and Guidelines
Recreation use sampling and analysis, RRIS data	Field review of OHV use areas and review of resource surveys, visitor reports, and Forest personnel observations	Gather ecological and biological data and document populations and habitat trends from field surveys via photo points or quadrant sampling, as described in Sensitive species management guides Conduct field surveys for environmental analyses of proposed projects during the season when Sensitive plants can be accurately identified
Moderate/moderate	Low/Moderate	Moderate/moderate
Annually	Annually for use areas where conflicts are reported, ongoing sampling of other use areas	Annually on a project-by-project basis
RRIS sampling results, prior year use, and use projections	Previous condition of areas used by OHV's, FSM 2355	Maintenance of species viability as defined in FSM 2670, Forest Standards and Guidelines, and approved Sensitive species management guides
10% deviation from prior year use projections	No more than ten reported user conflicts or injuries per season of use in major OHV areas Forest Standards and Guidelines not met for soil, vegetation, cultural resources, wildlife, and visual resources in over 10% of acreage surveyed (attributable to OHV use)	Any decrease in population vigor, abundance, and distribution that does not affect long-term viability of the species or increase the potential for formal Federal listing under the Endangered Species Act Thresholds for change vary by plant species, as identified in species management guides
Resources	Resources	Resources
\$2,000	\$3,000	\$3,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

		14. SOILS	
		A. Soil Productivity	B. Soil Compaction
Objective	Prevent irreversible loss of soil productivity by using erosion hazard information and by assessing the effects of management prescriptions and Forest projects on soil properties	Determine soil compaction from timber harvesting, biomass removal, site preparation, rangeland use, recreational activity, and other soil disturbing activities Use findings to develop more stringent mitigation measures where needed and to suggest areas requiring special site preparation measures to remedy past compaction	
Source	NFMA	Forest Standards and Guidelines	
Techniques/data sources	Assess key soil properties (i.e. puddling, erosion, mass movement, organic matter, and evidence of severe burning) to determine if any losses in soil productivity are likely to occur. Sample projects on each District to determine if erosion hazard ratings were made and considered in project design.	Monitoring of changes in soil density will be conducted with the nuclear gauge, air permeameter, penetrometer, or other equipment. If possible, monitor selected sites before and after disturbance. Otherwise, compare the disturbed site to an undisturbed site with the same soil.	
Precision/reliability	Moderate/moderate	Moderate/moderate	
Minimum monitoring frequency	Annually sample one land-disturbing project per Ranger District	Monitor 10% of land disturbing projects on the Forest each year. Assign sample priorities to sites most likely to be compacted. The permanent road system is not considered as part of the annually disturbed acreage.	
Standard of comparison	Maintain soil characteristics within natural ranges. Compare soils on disturbed sites with equivalent soils on undisturbed sites.	No significant increase in bulk density or reduction in total porosity on sites where more than 15% of the area has been disturbed.	
Variation from standard	Loss of 15% of productivity compared to the undisturbed condition	No more than 10% increase in bulk density or no more than 10% reduction in total porosity, or disturbance on more than 15% of a managed area. Once these thresholds are exceeded, further activity would be restricted, pending successful application of remedial actions.	
Responsible staff	Resources	Resources	
Annual cost	\$3,000	\$3,000	

15. SPECIAL AREAS A. Research Natural Areas and Special Interest Areas	16. TIMBER 		
	A. Timber Sale Volume	B. Regeneration Acreages	C. Plantation Stocking Level
To detect any change in the features for which a special area was established	Evaluate timber sale volume for the Plan period in relation to the allowable sale quantity	Determine acreage of Forest's regeneration timber harvest in relation to Forest Plan objectives	Determine if tree stocking in plantations meets minimum Regional standards and will assure regeneration of the forest within five years
Forest Standards and Guidelines	NFMA	NFMA	NFMA
Field inspection according to the plan established for each special area	Determine the total volume sold each year during the Plan period from MAR Reports	Determine total acreage of regeneration harvest from timber sale reports or other data sources	Field review of 5% of the plantation exams to assure compliance with R5 standards
Moderate/Moderate	High/High	High/High	High/High
Once every five years unless specified otherwise in an area management plan	Annually	Annually	One and three years after planting
Natural condition Establishment report and/or area management plan	Timber sale volume objective for the Plan period	Forest Plan annual acreage target	Adherence to procedures outlined in FSH 2409 26
Insignificant changes in the features and/or natural processes described in the establishment report and/or area plan	Within $\pm 10\%$ of decadal average Annual timber sale volumes may vary	Plus or minus 10% of the objective	None
Resources	Timber	Timber	Timber
\$1000	\$500	\$1,000	\$2,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

16. TIMBER

**D. Land Suitability for
Timber Production**

**E. Maximum Clearcut
Size Limits**

Objective	Determine if a change is needed in allowable sale quantity (ASQ) due to new forest growth and utilization information, land base reductions due to land exchange, RNA, wilderness, wildlife habitat and semi-primitive designations, or changes in management intensity	Determine whether maximum size limits for clearcut areas should be continued or revised
Source	NFMA	NFMA
Techniques/data sources	Determine change in timber acreage and volume due to new information and as a result of each Forest action Compare the new land base and inventory values to those listed in the Plan	Evaluate maximum size clearcut areas for their productivity and capability to achieve resource Objectives, based on requirements for watershed, wildlife habitat, scenery, biodiversity, soils, and other resource protection needs
Precision/reliability	High/High	Moderate/Low
Minimum monitoring frequency	Every ten years or when the Forest Plan is revised	Every 5 years for 3 to 5 timber sale areas
Standard of comparison	Timberland acreage and productivity conform to Table 3-22 of the Forest Plan FEIS, Timber Area, and Volume	Review current literature for new information on the effects of clearcutting on other multiple use values If available, evaluate similar sales with different size clearcuts and/or different sale design Determine effects on resource values, if possible
Variation from standard	Reclassification of more than 5% of the currently suitable timber lands	Maximum clearcut areas could have a significant added effect on water quality, soil productivity, plant and animal diversity, and visual quality A significant added effect is one which is clearly attributable to clearcut size
Responsible staff	Timber and Resources	Timber and Resources
Annual cost	\$1,000	\$5,000

17. VEGETATION AND DIVERSITY		18. VISUAL RESOURCES
A. Vegetation Seral Stages Including Old-Growth	B. Woodpeckers, Snags, ID L	A. Visual Condition of the Forest
Ensure that the minimum required acreage (5%) and distribution of all seral stages of the existing vegetation types, including old growth forests, are provided within each Management Area	Ensure that the amount, distribution, and characteristics of snags and down logs in each Management Area are consistent with the needs of woodpeckers as specified in Habitat Capability Models	Determine compliance with Visual Quality Objectives (VQO's)
Regional Guide, Forest Standards and Guidelines	Regional Guide, Forest Standards and Guidelines, Management Area Direction	Forest Standards and Guidelines
Survey old growth habitat and vegetation diversity in conjunction with timber inventory, compartment and stand exams, project environmental analyses, and timber sale reviews. Include old growth inventory in the next Forestwide timber inventory	Survey snags and down logs, and compare results with standards established for woodpeckers in Habitat Capability Models	Review effects of selected projects in areas having VQOs of Retention and Partial Retention. Occasionally review projects in areas having VQO of Modification
Moderate/Moderate	Moderate/Moderate	Moderate/Moderate
Annually on a sample of projects with the potential to affect vegetation diversity	Annually on one timber sale and one site preparation project on each Ranger District	Annually on two projects per Ranger District
Maintain minimum (5%) acreages in each seral stage, as specified in Management Area direction	Retain snags and down logs for habitat elements as prescribed in Forest and Management Area Standards and Guidelines	Meet VQOs and visual elements of Forest Plan prescriptions
None below minimum levels identified in Management Area direction	None below minimum identified in Forest or Management Area Standards and Guidelines	Reduction in visual quality by no more than one VQO level on no more than 10% of acreage reviewed
Timber and Resources	Timber and Resources	Resources
\$3,000	\$5,000	\$3,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

19. WATER AND RIPARIAN AREAS 

A. Water Quality Management

B. Significant Changes in Watershed Condition

Objective	Assess compliance with and effectiveness of Best Management Practices (BMP's) for all management activities in a given watershed	Identify damaged watersheds or subbasins and needed improvements
Source	Regional Guide, FSM	Forest Standards and Guidelines
Techniques/data sources	Review project environmental analysis documents, contract provisions, field activities, water quality analysis, and field observations	Review water resources project reports, watershed surveys, MAR Reports, and the Watershed Improvement Needs Inventory Compare with requirements of BMP's
Precision/reliability	High/High	Moderate/Moderate
Minimum monitoring frequency	Annual activity review and analysis as specified in project plans	Annually on two subbasins per Ranger District
Standard of comparison	Implement BMPs as adopted for project impact mitigation or to meet Forest Standards and Guidelines or State water quality objectives for beneficial uses	No watersheds or subbasins disturbed beyond appropriate thresholds of concern (TOC), although wildfire impacts may raise subbasins briefly over their TOC Inventoried improvement needs being met Forest Standards and Guidelines and Best Management Practices being implemented
Variation from standard	None Needed BMP's are identified in project planning documents BMP's must be implemented, and State water quality Objectives and discharge requirements are mandatory	None Where uncontrollable events such as wildfire or flood damage create problems, promptly plan appropriate improvements or preventive measures
Responsible staff	Resources	Resources
Annual COST	\$3,000	\$4,000

19. WATER AND RIPARIAN AREAS

C Eagle Lake Water Quality

D Cumulative Watershed Effects

Detect any decreases in water quality compared to long-term average quality, particularly any adverse effects from National Forest lands

Identify cumulative impacts of proposed land-disturbing activities in specific watersheds and impacted subbasins

Forest Standards and Guidelines

Forest Standards and Guidelines

Participate in an ongoing Challenge Cost Share project with California Department of Water Resources to sample at nine established Stations on the lake, subject to availability of funds

Recommend appropriate Thresholds of Concern to management to keep disturbance below levels that could create adverse water quality effects. Consider cumulative watershed effects in estimating effects of proposed land-disturbing activities. Review project environmental documents and conduct watershed surveys. Inspect completed projects to check for any adverse watershed impacts that might be due to cumulative effects

High/Moderate

Moderate/moderate

Five times each year

Annually on at least one 3rd or 4th order watershed per district

Maintain average water quality similar to long-term average water quality

Limit disturbance (measured as equivalent roaded acres [ERA]) in sensitive watersheds to less than **15%** of the watershed area, or limit disturbance as otherwise specified in a project's environmental analysis

Nutrient concentrations **5%** more than long-term mean concentration
Dissolved oxygen concentrations **10%** less than long-term mean concentration
Biomass or duration of algae bloom **10%** more than long-term mean

None. Keep disturbance below 15% ERA or other appropriate threshold of concern (TOC) as noted in project EA's. If uncontrollable events (e.g. wildfire) raise disturbance above TOC, defer or minimize new disturbance and/or apply improvement measures to reestablish ground cover, control erosion, and protect water quality

Resources

Resources

\$7,000

\$5,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

19. WATER AND RIPARIAN AREAS	
E. Riparian Habitat	
Objective	Assess riparian values, condition, and trend
Source	Forest Standards and Guidelines
Techniques\data sources	Quantify riparian values, condition, and trend by measuring riparian parameters on permanent riparian plots. Establish plots with an interdisciplinary team composed of soils, biology, hydrology, range, and other specialists. The technique will include at least periodic photo point documentaries, channel condition ratings, and vegetation condition ratings on permanent plots.
Precision/reliability	High/High
Minimum monitoring frequency	Annually for 20% of the permanent riparian plots established on the Forest.
Standard of comparison	Maintain riparian area condition, and meet goals established for each riparian area. Establish goals based on evaluation of the initial data sets from the plots.
Variation from standard	At least 90% of established goals for each specified riparian area are achieved by decade one.
Responsible staff	Resources
Annual cost	\$3,000

20. WILD AND SCENIC RIVERS A Wild, Scenic, and Recreational Values of Recommended and Designated Wild and Scenic Rivers	21. WILDERNESS AND FURTHER PLANNING AREAS A. Wilderness Use and Further Planning Area Use
No degradation of wild, scenic, or recreational values for which each river corridor has been designated or recommended for designation	Determine if wilderness values are being maintained in each Wilderness and recommended wilderness
Forest Standards and Guidelines	Wilderness Act, Forest Standards and Guidelines
Field inspection of proposed and/or designated wild and scenic river corridors	Inspect trails, camping areas, trailheads, and use data for heavy use areas Review activities adjacent to Further Planning Areas Annual wilderness reports
Moderate/moderate	Moderate/moderate
Assess impacts on wild and scenic river values as management activities are proposed	Annually for heavy use areas
Original condition, Wild and Scenic Rivers Act, Forest Plan EIS Table E-17, legislation document, and the Wild and Scenic River Plans	Original condition, wilderness implementation plans, capacity estimates, or established limits of acceptable change (LAC)
95% of acreage meets "S" prescription in Standards and Guidelines Free flowing condition is maintained in 100% of river segments Maintain current wild, scenic or recreational levels in 100% of acres	When 10% of site inspections show degradation of one Frissell Site Condition Class from previous inspection
Resources	Resources
\$2,000	\$3,000

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

22. WILDLIFE 
Threatened and Endangered Species

A. Bald Eagle Habitat

**B. Northern
Spotted Owls**

Objective	(1) Determine trends of the breeding population (2) Evaluate trends in habitat capability for both nesting and wintering birds	(1) Evaluate trends in habitat capability (2) Monitor Habitat Conservation Area (HCA) for habitat integrity
Source	Endangered Species Act, NFMA, Forest Standards and Guidelines	NFMA, Endangered Species Act, Forest Standards and Guidelines
Techniques/data sources	(1) Survey use and productivity of existing and potentially suitable nesting sites (2) Evaluate habitat conditions within nesting and wintering habitat, using the variables identified in Habitat Capability Models (3) Conduct bald eagle counts in cooperation with other agencies	(1) Follow Regional protocols to determine population and reproductive success (2) Review and implement recovery plan when released
Precision/reliability	High/High	High/Moderate
Minimum monitoring frequency	Annually	Annually
Standard of comparison	(1) Maintain breeding habitat according to Forest Plan objectives, Management Area Direction, and population goals established in the Pacific States Recovery Plan (2) Maintain habitat capability, as measured against Bald Eagle Habitat Capability Models	(1) Compile records on distribution and reproduction (2) No loss in habitat capability, as defined in an approved recovery plan
Variation from standard	(1) No Forest-related reductions in breeding or wintering populations (2) No reduction in habitat capability due to Forest management actions	None
Responsible staff	Resources	Resources
Annual cost	\$3,000	\$5,000

22. WILDLIFE

<p>C. Peregrine Falcons</p>	<p>Sensitive Species D. California Spotted Owls</p>
<p>Monitor historical and potential nest sites in cooperation with other agencies</p>	<p>(1) Ensure compliance of Forest projects with Regional spotted owl direction (2) Determine population and habitat condition trends in network Spotted Owl Habitat Areas (SOHA's) (3) Validate Regional direction for maintaining viable populations of spotted owls</p>
<p>NFMA, Endangered Species Act, Forest Standards and Guidelines</p>	<p>NFMA, Regional Guide and current regional direction, Forest Standards and Guidelines</p>
<p>Survey of historical and potential nest sites</p>	<p>(1) Review project plans and implementation to assess impacts on Spotted Owl Habitat Areas (SOHA's) and non-network spotted owls (2) Quantify at least 10 and 20 percent of breeding pairs and fledging success in a sample of network SOHA's according to the protocols in the Spotted Owl Monitoring Handbook (3) Same as (2), but sample sites having a variety of habitat conditions, including non-network sites</p>
<p>High/Moderate</p>	<p>High/Moderate</p>
<p>Annually</p>	<p>Annually.</p>
<p>Maintain and expand the breeding population according to Forest Plan objectives</p>	<p>(1) No net decline in network SOHA habitat conditions as defined by Regional Standards and Guidelines. Protect non-network pairs until SOHA's fully meet habitat standards (2) No net decline in occupancy or reproductive success when compared to similar habitats in the Region, or no reduction in habitat conditions</p>
<p>None, except for variations caused by changes in policy or cooperating agencies</p>	<p>None</p>
<p>Resources</p>	<p>Resources</p>
<p>\$5,000</p>	<p>570,000</p>

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

22. WILDLIFE 

E. Goshawks

F. Marten and Fisher

Objective	Determine population and habitat trends within designated goshawk habitat	(1) Field verify the suitability of designated marten and fisher habitat management areas (HMA's) Identify which areas are not currently suitable and plan for reaching suitability in the shortest possible time (2) Review scientific literature for evolving definitions of suitable habitat Change and refine HMA's as appropriate (3) Verify occupancy and use by designated species in each HMA
Source	NFMA, Regional Guide	NFMA, Forest Standards and Guidelines
Techniques/data sources	Identify and document habitat conditions in Goshawk Management Areas (GMA's) Survey designated habitat and determine occupancy and reproductive success in 10% of designated GMAs	(1) Compare verified habitat components to the current regional literature review and Forest Habitat Capability Model (2) Conduct population sampling studies in selected HMA's as methods are developed
Precision/reliability	Moderate/moderate	Low/Low
Minimum monitoring frequency	Annually, for the sample of GMA's and for all projects that may modify habitat in designated GMA's Survey nest occupancy in 10% of GMA's annually, and survey all project areas for post treatment evaluations	Annually
Standard of comparison	No significant decline in occupancy or reproduction when compared to other Forests in NE California, based on provisions in the Regional Guide, previous surveys of occupancy and reproduction of goshawks in NE California, Management Area Direction, and Habitat Capability Models	No decline in habitat capability within HMA's identified for species viability Less than 10% decline in occupancy of the HMA's
Variation from standard	Less than 10% decline in occupancy or reproduction within the network No failure to designate GMA's prior to implementing major habitat modification projects in areas where GMA's are to be established	Allow no Forest-related decline in habitat capability within HMA's or comdors until more information on habitat requirements and management effects is available
Responsible staff	Resources	Resources
Annual cost	\$2,500	\$5,000

22. WILDLIFE

Other Management Indicator Species

G. Black Bear

H Deer and Antelope

I. Western Gray Squirrel

Assess changes in habitat capability and population trends for black bear resulting from management activities

Determine population trends in relation to management activities
Ensure that desired levels of habitat capability are provided

Determine population and habitat trends Determine trends of selected habitat components, especially hardwoods

NFMA, Regional Guide

NFMA. Regional Guide

NFMA, Regional Guide

Analysis of habitat capability for black bear in Management Areas where emphasized Post treatment reviews of projects involving mitigation measures for black bear Use California Dept of Fish and Game population data

Comparison of habitat capability with current population estimates from the Calif Dept of Fish and Game Assessment of habitat conditions following vegetation management projects

Sample habitat to determine capability for squirrels On a Management Area basis, summarize acreages, species composition, condition, and existing basal area Determine desired basal area based on Habitat Capability Models

Moderate/Low

Low/Low

Moderate/Moderate

Every five years

Annually for a sample of vegetative treatment projects and every five years for correlations of habitat capability with population estimates

Annually for 20% of the projects that affect hardwoods

Current acreage and spatial arrangement of high and moderate habitat capability as specified in the R-5 Habitat Capability Models

Maintenance of population levels and habitat capability as established in habitat capability models, and project environmental documents

No reduction or negative trends in hardwood types, amount, distribution, or habitat characteristics

Habitat amounts and arrangement meet "moderate" habitat capability as a minimum

Population levels or habitat capability levels near predicted levels or those specified in environmental documents

None

Resources

Resources

Resources

\$1,000 (\$5,000 every 5 years)

51,000

5500

**TABLE 5-2:
MONITORING
PLAN BY
RESOURCE**

		22. WILDLIFE 	
		J. Hairy and Pileated Woodpeckers	K. Ospreys
Objective	Determine population and habitat trends of these two cavity nesting birds	Ensure that ospreys are successfully reproducing and that adequate nesting habitat exists for osprey around Eagle Lake, Lake Almanor, Lake Britton. and other major water bodies	
Source	NFMA, Regional Guide	NFMA, Regional Guide	
Techniques/data sources	Habitat or snag transects and population surveys on selected sites	Population and productivity surveys and habitat transects near major water bodies	
Precision/reliability	Moderate/Moderate	High/High	
Minimum monitoring frequency	Annually for 20% of the projects that affect snag levels	Annually for a sample of nesting sites	
Standard of comparison	No reduction in nesting based on historical nesting records, and maintenance of habitat characteristics in Habitat Capability Models	No reduction in nesting success or nesting habitat, based on previous five year average of nesting success and habitat characteristics in Habitat Capability Models	
Variation from standard	None	10% reduction in nesting success or nest tree densities No reduction in breeding and reproduction when compared to similar sites in NE California	
Responsible staff	Resources	Resources	
Annual cost	\$1,000	\$1,000	

22. WILDLIFE**I. Waterfowl Group
(Mallard and Bufflehead)**

Determine trends in nesting
populations of waterfowl

NFMA, Regional Guide

Direct counts of nests, adults,
and young on selected sites

Moderate/Moderate

Annually

No reduction in nesting, based
on historical nesting and
production records
Maintenance of habitat
characteristics in Habitat
Capability Models

10% reduction in nesting
habitat when compared to other
areas in NE California

Resources

\$1,000



Early forest cabin
(Courtesy Eastman's Studio Postcards)

CHAPTER 6 - PLAN APPENDICES

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APPENDIX A - EXISTING AND NEEDED IMPLEMENTATION PLANS

This appendix lists the Forest's (1) existing plans and their status after the adoption of the Forest Plan, and (2) implementation plans that are needed.

1. EXISTING PLANS

a. Superseded by Forest Plan, no separate plan retained:

- (1) Almanor Ranger District Multiple Use Plan 1972
- (2) Eagle Lake Ranger District Multiple Use Plan 1972
- (3) Fire Management Plan 1972
- (4) Hat Creek Ranger District Multiple Use Plan 1972
- (5) Mineral Ranger District Multiple Use Plan 1972
- (6) Forest Timber Management Plan 1975
- (7) High Lakes Recreation Management Plan 1976

b. Review and update to be consistent with the Forest Plan as soon as possible:

- (1) Annual Cooperative Law Enforcement Plan
- (2) Annual Marijuana Eradication Plan
- (3) Antelope Herd Plan
- (4) Bald Eagle Territory Plans
- (5) Deer Herd Plans
- (6) Districts' Annual Operating Plans
- (7) Range Allotment Management Plans
- (8) Harvey Valley Experimental Range Plan 1954
- (9) Fish Habitat Management Plan 1967
- (10) Visitor Information Service Plan 1969
- (11) Osprey Management Plan 1971
- (12) Lake Almanor Recreation Management Composite Plan 1972
- (13) Wild Horse Management Plan 1975 (proposed)
- (14) Caribou Wilderness Management Plan 1976
- (15) Forest Off-Road Vehicle Plan 1976

- (16) Thousand Lakes Wilderness Management Plan 1977
- (17) Long-Range Plan for the Operation of Swain Mountain Experimental Forest 1979
- (18) Long-Range Plan for the Operation of Black Mountain Experimental Forest 1980
- (19) Canby Wilderness Fire Management Plan 1982
- (20) Pacific Coast Peregrine Falcon Recovery Plan 1982
- (21) Bizz Johnson Trail Management Plan 1983
- (22) Facilities Master Plan 1989
- (23) Ishi Wilderness Implementation Plan 1989
- (24) Vegetation Management for Reforestation 1989
- (25) Winter Off-Highway Vehicle Plan 1989

2. IMPLEMENTATION PLANS TO BE PREPARED IN CONFORMANCE WITH THE FOREST PLAN

- (1) Antelope Creek Wild & Scenic River Implementation Plan
- (2) Black Rock Special Interest Area Plan
- (3) Brushy Mountain Wild Horse Territory Management Plan
- (4) Campground Vegetation Maintenance Plans
- (5) Canby Wilderness Addition Implementation Plan
- (6) Crater Lake Special Interest Area Plan
- (7) Deep Hole Special Interest Area Plan
- (8) Deer Creek Wild & Scenic River Implementation Plan
- (9) Eagle Lake Cultural Resource Plan
- (10) Eagle Lake Recreation Composite Plan
- (11) Fire Management Action Plans
- (12) Fisheries Management Plan (updated)
- (13) Heart Lake Wilderness Implementation Plan
- (14) Homer/Deerheart Special Interest

- | | |
|---|---|
| <p>Area Plan</p> <p>(15) Lake Britton National Register of Historic Places District Plan</p> <p>(16) Land Adjustment Plan</p> <p>(17) Lassen Emigrant Trail Management Plan</p> <p>(18) Marten and Fisher Habitat Management Area Plans</p> <p>(19) Mill Creek Wild & Scenic River Implementation Plan</p> <p>(20) Mill Creek Wilderness Implementation Plan</p> <p>(21) Montgomery Creek Grove Special Interest Area Plan</p> <p>(22) Murken Special Interest Area Plan</p> <p>(23) Noble's Emigrant Trail Management</p> | <p>Plan</p> <p>(24) Pacific Crest Trail Plan</p> <p>(25) Pine Creek Watershed Management Plan</p> <p>(26) RNA Establishment Reports</p> <p>(27) RNA Management Plans</p> <p>(28) Sensitive Plant Species Management Guides</p> <p>(29) Silver Lake Recreation Plan</p> <p>(30) Spencer Meadows National Recreation Trail Plan</p> <p>(31) Spotted Owl Habitat Area Plans</p> <p>(32) Wild Cattle Mountain Wilderness Implementation Plan</p> <p>(33) Willow Lake Bog Special Interest Area Plan</p> |
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APPENDIX B - RESEARCH AND TECHNICAL PLANNING NEEDS

This appendix lists and briefly describes research and technical planning needs. Research needs are studies needed to fully implement the Forest Plan. Technical planning needs are information needed for the scheduled Plan revision that can be gathered through use of existing techniques.

1. RESEARCH NEEDS

Biomass

- a Determine soil, plant, and wildlife needs for biomass retention

Cultural Resources

- a Develop and implement suitable criteria for allocation of cultural properties to preservation, conservation, public use, or no management.

Fire and Fuels

- a. Determine appropriate use of prescribed fire in true fir and mixed conifer types of the Northern Sierra and the Southern Cascades. This includes

- (1) Short and long-term impacts on stands in relation to stand size, tree sizes, season and intensity of burn, and existing fuels,
- (2) Cost effectiveness; and
- (3) Suitability as a treatment prior to harvest activity

Fish

- a. Develop a scientifically valid method to predict cumulative effects of land management activities on aquatic ecosystems.
- b. Validate habitat inventory procedures as a predictive model to determine production capabilities of stream ecosystems
- c. Define winter habitat critical to the overwinter survival of trout and salmon

Soils, Water, and Riparian Areas

- a. Establish and validate a Region-wide standard for estimating cumulative disturbance effects
- b. Define thresholds for unacceptable cumulative disturbance in sensitive watersheds
- c. Develop riparian area condition rating system
- d. Define thresholds for unacceptable soil compaction

Timber

- a. Develop improved site preparation methods for natural regeneration of true fir on slopes over 30 percent
- b. Develop the full range of alternative methods for brush control in plantations
- c. Evaluate the effects of individual tree and group selection harvesting.

Vegetation and Diversity

- a. Develop old growth evaluation system, including a definition for minimum and optimum stand characteristics for old growth
- b. Determine specific stand characteristics required by late seral dependent plant and animal species.
- c. In old growth retention areas, develop management tools for enhancing decadent conditions in younger stands that do not meet specified old growth characteristics
- d. Develop management strategies for minimizing wildfire loss while maintaining desired old growth stand characteristics

Wildlife

- a. Continue the California spotted owl demographic study to determine distribution, repro-

duction, and juvenile dispersion of spotted owls throughout the Forest

b Monitor spotted owls in SOHA's and the HCA to determine reproductive success in designated habitat areas

c Continue the prey base study to determine abundance and habitat needs of the primary prey species found in spotted owl territories in the range of the California spotted owl. Determine whether prey is a limiting factor in population density

d Determine HMA occupancy and status for fisher, marten and goshawk. Monitor populations to determine reproductive success and dispersion of juveniles

e Design and develop studies to evaluate effects of various silvicultural and fuels management options on species that are dependent on old growth habitat (including but not limited to spotted owls, marten, fisher, goshawk, and pileated and hairy woodpeckers)

f Evaluate the use of Habitat Capability Models for MIS species to adequately meet the needs of other species.

2. TECHNICAL PLANNING NEEDS

Air Quality

a Establish Air Quality Related Values (AQRV's) for Class I and II areas to respond to State or county requests for input on air-polluting projects. Collect baseline data on AQRV's.

Cultural Resources

a Integrate plans for the management of cultural resources with those of the State of California

b Develop predictive models for the location of cultural resources.

c Determine the research potential of known archaeological sites based on their historical context (e.g. Paleo-Indian, mining, logging, etc)

d Develop a method for identifying the vulnerability of cultural resources to damage

e Determine effective means to protect cultural resources from damage

Fish

a Determine anadromous fisheries distribution and abundance, habitat conditions and habitat availability

b Determine anadromous smolt production from Forest lands

c Determine the relationship between anadromous smolt production and the number of adults which subsequently return and successfully reach the spawning grounds

Geology

a. Conduct a Forest-wide third-order Geological Resource Inventory (GRI)

Range

a Determine effects of livestock grazing on riparian zones.

b Determine effects of livestock grazing on waterfowl productivity

c Determine the extent of conflict between cattle grazing and plantation establishment

d Conduct a wild horse and burro carrying capacity study in conjunction with preparing a management plan for the Wild Horse Territory

e. Develop a riparian classification and rating system for the east side of the Forest

Recreation

a. Identify the demand for recreation activities and facilities on the Forest (Determine dispersed use by major activity)

b. Compare the range of recreational opportunities to the expectations of the Forest visitors. By ROS class, determine the adequacy of capacities and levels of management.

Sensitive Plants

a Inventory for populations of Sensitive plants on the Forest

b Determine habitat requirements for Sensitive plant species.

c Determine reproductive and dispersal requirements, and investigate genetic variability for Sensitive species

d. Develop species management guides consolidating known biological, ecological, and management information for each Sensitive species

Soils, Water, and Riparian Areas

a Conduct an Order 2 Water Resource Inventory (WRI) for Deer and Antelope Creeks

h. Update the Forest-wide Watershed Improvement Needs (WIN) Inventory to determine the location and priority of needed watershed restoration

c. Assess soil fertilization opportunities on the Forest

d Determine the value and distribution of benefits of induced water yields

Special Areas

a Inventory for paleontological and geological sites, and evaluate their significance for possible research natural areas (RNA's)

b Prepare Establishment Reports and management plans for new research natural areas.

Timber

a. Reinventory the timber resource before the next planning period. **Consider integrating other** resource needs, especially wildlife, when mapping forest and non-forest vegetation

b. Monitor success of plantations that include sugar pine seedlings that have genetic resistance to white pine blister rust

Wildlife

a Determine snag longevity of the various tree species on the Forest

b Determine appropriate snag densities in the eastside pine type

c. Determine the relationships between snag density and cavity nesting wildlife populations in the eastside pine type

d. Determine the carrying capacity of seasonal deer herd ranges on both public and private lands.

e Inventory deer presence and use, and forage availability on 600 acres per year that are being reforested using special techniques to encourage deer browse and natural succession

f Refine estimates of the demand for recreational use of fish and wildlife

g. Inventory existing northern and California spotted owl habitat and determine habitat condition

h Determine the relationship between habitat condition, and spotted owl (both sub-species) productivity and viability

i Incorporate continuing scientific research into managing spotted owls (both sub-species) to maintain species viability. Review on a continuing basis.

j Survey for spotted owls in non-traditional habitat.

k. Inventory existing fisher and marten habitat areas and determine habitat condition

l. Determine the relationship between habitat condition and the productivity and viability of fisher and marten

m. Inventory Forest for existing goshawk nests with successful reproduction. Move goshawk management areas to actual nesting sites.

n Incorporate continuing scientific research into wildlife management strategies. Change management strategies where justified. Rationale for non-network owl protection and limited timber management in areas set aside for goshawks will be reviewed at least annually

o Determine the relationship between silvicultural treatments and northern flying squirrel, marten, fisher and goshawk habitat use and abundance

APPENDIX C - TIMBER DATA

Table C-1 shows the land classification of the Forest. Table C-2 shows the present timber inventory of growing stock, live cull, salvable dead, growth, and mortality. Table C-3 shows present and future age class distributions. Table C-4 shows the average annual acreage by vegetation management practice. Table C-5 shows

acres by timber productivity classification. Table C-6 shows the recommended number of trees per acre for acceptable restocking levels. Table C-7 shows the allowable sale quantity by harvest method. Figure C-1 shows a comparison between the Long Term Sustained Yield Capacity and the Allowable Sale Quantity.

Table C-1

Land Classification

<u>Classification</u>	<u>Acres</u>
1 Non-forested land (including water)	304,450
2 Forested land	825,135
3. Forest land withdrawn from timber production	55,025
4 Forested land not capable of producing crops of industrial wood	0
5. Forested land physically unsuitable - irreversible damage likely to occur, not restockable within 5 years	0
6. Forested land - inadequate information 1/	0
7. Tentatively suitable timber base (Item 2 minus items 3, 4, 5, and 6)	770,110
8 Forested land not suitable for timber production 2/	173,769
9 Total unsuitable acres (Items 3, 4, 5, 6, and 8)	228,794
10 Total suitable acres (Item 2 minus item 9)	596,341
11 Total National Forest land (Items 1 and 2)	1,129,585
<hr/>	
1/ Lands for which current information is inadequate to project responses to timber management. Usually applies to low site lands.	
2/ Lands identified as not suitable for timber production due to (a) assignment to other resource uses to meet Forest Plan Objectives, (b) management requirements, and (c) not being cost efficient in meeting Forest Plan objectives over the planning horizon.	

Table C-2
Present and Future Forest Conditions

Softwood Volume (Trees 11" DBH or greater)			
	Suitable Land	Total Unsuitable Land	Forest Land
Present Forest:			
Growing Stock			
MMCF	1,120	665	1,785
MMBF	7,168	4,256	11,424
Live Cull 1/			
MMCF	9	8	17
MMBF	31	27	58
Salvable Dead 1/			
MMCF	10	9	19
MMBF	66	56	122
Non-Salvable Dead 2/			
MMCF	70	63	133
MMBF	475	426	901
Annual Net Growth			
MMCF	31	2	33
MMBF	201	12	213
Annual Mortality 3/			
MMCF	6	3	9
MMBF	36	21	57
Future Forest: 4/			
Growing Stock			
MMCF	2,354	1,100	3,454
MMBF	15,066	7,040	22,106
Annual Net Growth			
MMCF	23.2	6.5	29.7
MMBF	148	42	190
Rotation Age 5/			
Years	120 to 150		

1/ From timber inventory (dead less than 5 years)

2/ Includes volume from trees that have been dead more than 5 years

3/ Total of salvable and non-salvable volume that has been dead (less than 5 years), divided by 5

4/ 16th decade

5/ Average rotation age is an approximate for regenerated stands on lands with timber emphasis

Table C-3		
Age Class Distribution 1/		
Approximate Age Class (years)	Present Forest (percent)	Future Forest (percent)2/
0-30	4	8
30-60	18	14
60-120	56	53
120+	22	25

1/ All forested land
2/ 16th decade

Table C-5		
Timber Productivity Classification		
Potential Growth (cubic feet/acre/year)	Suitable Lands (Acres)	Unsuitable Lands (Acres)
20-49	32,500	5,300
50-84	185,100	32,500
84+	378,700	191,000

Table C-4	
Vegetation Management Practices	
Annual Average Acreage in First Decade for Suitable Lands	
<u>Practice</u>	<u>Acres</u>
Regeneration Harvest	
Clearcut	1,600
Shelterwood and Seed Tree (seed cut only)	1,000
Overstory Removal/ Stand Maintenance	900
Group Selection Harvest	500
Intermediate Harvest	
Commercial Thinning	4,000
Salvage/Sanitation	1,500
Timber Stand Improvement	4,700
Reforestation 1/	4,000

1/ Includes both natural and artificial regeneration

Table C-6			
Stocking Standards			
Forest Type	R5 Site Class	Number of Trees Recommended 21	Minimum Acceptable for Certification 21
Ponderosa Pine	I	200	150
Ponderosa Pine	II	200	125
Ponderosa Pine	III	150	100
Ponderosa Pine	IV	125	75
Red & White Fir	All	300	200
Douglas-fir	All	225	125
Mixed Conifer	All	200	150
Lodgepole Pine 1/	All	200	150

11 The Regional Guide did not establish a minimum stocking goal for lodgepole pine type, however, the Forest has determined empirically that the stocking for mixed conifer applies to lodgepole pine

2/ Minimum stocking levels can be superseded by a site-specific prescription approved by a certified silviculturist

Figure C-1
Annual Long Term Sustained Yield and A.S.Q.
(Million Cubic Feet)

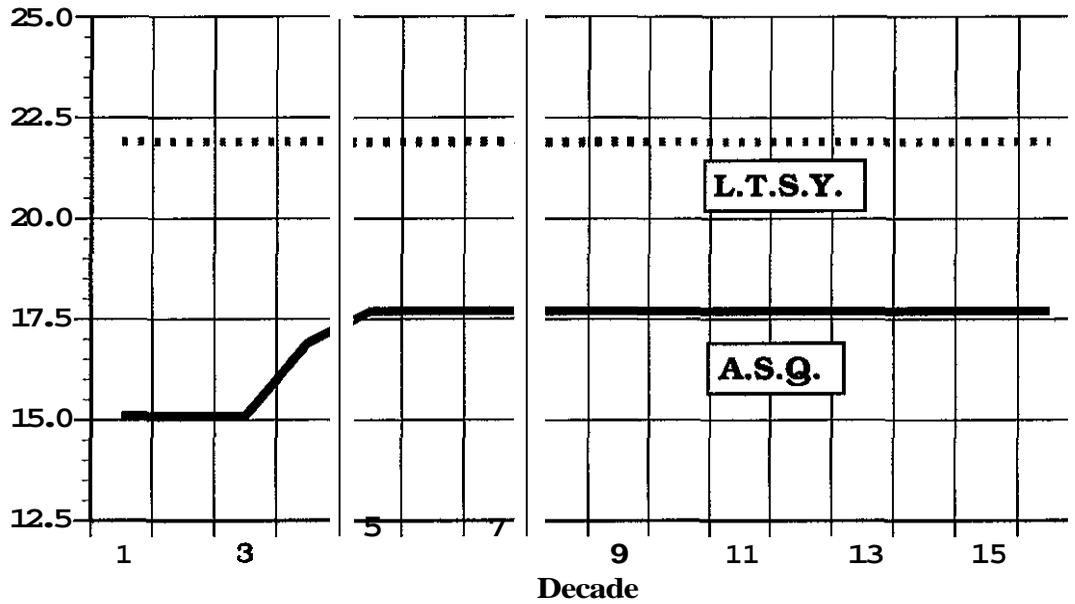


Table C-7**Allowable Sale Quantity and Timber Sale Program Quantity
(Average Volume Per Year for the First Decade)**

Harvest Method	Allowable Sale Quantity 1/	
	Sawtimber (MMCF) 1/	Other Products (MMCF) 2/
Regeneration Harvest		
Clearcut	6.4	0
Shelterwood and Seed Tree	3.5	0
Overstory Removal	0.2	0
Stand Maintenance	2.2	0
Group Selection	1.9	0
Intermediate Harvest		
Commercial Thinning	0.4	0.2
Salvage/Sanitation	0.2	0.1
Total	14.8	0.3
Allowable Sale Quantity	15.1MMCF (96.0MMBF)3/	
<u>Additional Sales 2/</u>		
Total for all harvest methods.	.7	9
Timber Sale Program Quantity.	16.7MMCF 4/ (1080 MMBF) 3/	

1/ Only includes chargeable volumes from suitable lands

2/ Only includes nonchargeable volumes from suitable and/or unsuitable lands

3/ Based on local unit of measure

4/ Total of allowable sale quantity and additional sales

APPENDIX D - TENTATIVE 10-YEAR TIMBER SALE ACTION PLAN

In planning timber sales, the highest priority is given to regeneration harvest. Within this harvest type, the poorly-stocked and two-story strata are to receive first consideration, followed by well-stocked strata. Following the regeneration harvest, the next priority is intermediate harvest, followed by selection harvest.

Table D-1 shows the tentative timber sale program for the first five years of the Plan. This program is based on current information and maybe revised due to unforeseen changes in sale area conditions or budget levels. A Five-Year Timber Sale Program is updated each year based on timber stand examination of sale areas to be incorporated into the Program.

Total volume to be harvested during the ten-year Plan period is 960 MMBF. Because of recent constraints to maintain suitable habitat for the California Spotted Owl pending Regional direction, the ASQ for the first two years of the Plan period will fall below the programmed harvest level of 96 MMBF. Upon the adoption of management direction, it is anticipated that the ASQ will increase above the programmed harvest.

Because of increased harvesting in the first half of the Plan period, harvest levels in the second half will fall slightly below the programmed ASQ. Unless a departure from the base sale schedule is considered, phasing in carries the drawback of lower programmed harvests in subsequent years.

Harvest methods for the second half of the Plan period will be similar to the first half of the Plan period with a mixture of tractor and cable logging, and possibly helicopter logging. The amount of harvesting in each timber type will approximate the annual average amount indicated by FORPLAN. Specific details of exact sale areas, volume to be harvested, and road construction are not known for sales in the second half of the Plan period. Many of those areas have previous timber sales with harvesting underway or recently completed.

Abbreviations used in Table D-1 are as follows:

- District
 - AL = Almanor
 - HC = Hat Creek
 - EL = Eagle Lake
- Management Areas (MA)
 - Management Area numbers are shown in Table 4-4 of the Forest Plan.
- Forest Type
 - MC = Mixed conifer
 - Pine = Eastside pine
 - Fir = True fir
- Logging Method
 - T = Tractor
 - H = Helicopter
 - C = Cable Yarding System
- Harvest Method
 - GS = Group Selection
 - CC = Clearcut
 - OR = Overstory Removal
 - ITM = Individual Tree Marked
 - SW = Shelterwood
 - Int = Intermediate Sanitation
 - Regen = Regeneration Harvest

**Table D-1
10 Year Timber Program**

Sale Name	District MA#	Sale Area (Acres)	Forest Type	Sale Volume (MMBF)	Road Construction	Road Reconstruction	Logging Method	Harvest Method
Fiscal Year 1992								
Warner Rim	AL/28	2,300	MC	2.0	6.0	5.0	T	GS, OR, SW
Maverick	AL/27	400	MC	5.0	3.5	7.6	T	OR, CC, SW, Int
Hampton Martin	AL/26	850	MC	1.0	2.0	5.0	T	CC, OR
Chnsty Summit	AL/26	380	MC	5.0			T	CC, SW
Snowy Carr	AL/46	300	MC	3.0	4.2	1.8	T	OR, Int
Loco	AL/44	400	MC	5.0	4.9	10.8	T,H	Int, OR, SW, CC
Shotput	HC/17	1,000	MC	2.0			T	OR, CC
Mr. Wilson	HC/5	1,000	Pine	2.4			T	OR, CC
Blacktop	HC/5	300	MC	3.0			T	OR, CC, Int
Daze	HC/1	500	MC	2.0	1.4	1.9	T	OR, CC, Int
Mud	HC/9	500	MC	1.0			T	OR, CC, Int
Windy Gap	EL/11	1,000	Pine	5.0			T	OR, SW, CC
Stanford Spnngs	EL/11	800	Pine	4.5			T	OR
Swains Hole	EL/11	4,000	Pine	4.0	5	4	T	OR, Int, CC
Hog	EL/25	1,250	Pine	2.5	2	2.0	T	OR, CC
Small Log	All	8,000		19.0			T	Int
Salvage	All			8.0				
Misc.	All			7.0				
Total				81.4	22.7	34.5		