UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Establishment Report

Hoover Gulch

Research Natural Area

Siskiyou National Forest

Josephine County, OR

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SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Hoover Gulch Research Natural Area

Siskiyou National Forest

Josephine County, Oregon

The undersigned certify that all applicable land management planning and environmental analysis requirements have been met and that boundaries are clearly identified in accordance with FSM 4063.21, Mapping and Recordation and FSM 4063.41 5.e(3) in arriving at this recommendation.

Prepared by _____ Date 8/4/98
Diane E. White, Ecologist
Umpqua National Forest

Recommended by _____ Date 8/6/98
Joel King, District Ranger
Illinois Valley Ranger District

Recommended by _____ Date 8/10/98
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Siskiyou National Forest

Concurrence of _____ Date 8/25/98
for Thomas J. Mills, Station Director
Pacific Northwest Research Station

HOOVER GULCH RESEARCH NATURAL AREA

TITLE PAGE

Establishment Record for

Hoover Gulch Research Natural Area

within Siskiyou National Forest, Josephine County, Oregon

ESTABLISHMENT RECORD FOR
HOOVER GULCH RESEARCH NATURAL AREA
WITHIN SISKIYOU NATIONAL FOREST
JOSEPHINE COUNTY, OREGON

INTRODUCTION

The Hoover Gulch Research Natural Area is located on the Illinois Valley Ranger District of the Siskiyou National Forest. It is adjacent to the Illinois River, which has been designated as a Wild and Scenic River. It includes 1264 acres (511 hectares), and is a good representative of the mixed evergreen forest of southwestern Oregon. The area has burned repeatedly and shows evidence of both stand replacement and lower intensity fires. This has resulted in variable forest stand composition and structure. Fires were likely both natural and human caused. Lightening storms are frequent during the summer and could cause ignitions. In addition, early miners are known to have purposely set fires to clear vegetation to aid in locating minerals. Parent rock is primarily metavolcanic, with small ultramafic outcrops. Soils are poorly developed and very rocky, except on the few benches or flat ridges.

LAND MANAGEMENT PLANNING

The 1989 Land and Resource Management Plan and Record of Decision for the Siskiyou National Forest recommends 1264 acres (511 hectares) of the Hoover Gulch area be established and included in the nation wide system of Research Natural Areas.

Establishment of the Hoover Gulch Research Natural Area would fill three needs in the Pacific Northwest Natural Areas Program, Klamath Ecoregion (Natural Heritage Advisory Council 1993). It fulfills the need for an area with Douglas-fir (*Pseudotsuga menziesii*) -canyon live oak (*Quercus chrysolepis*) woodland and Douglas-fir-tanoak (*Lithocarpus densiflorus*) -canyon live oak forest. The Hoover Gulch Research Natural Area also fulfills the need for a first to third order stream system on metamorphic rock.

OBJECTIVES

The primary objective of the Hoover Gulch RNA is to preserve, in an undisturbed condition, the Douglas-fir-canyon live oak woodland and Douglas-fir-tanoak-canyon live oak forest. This will provide a reference area with unique characteristics of scientific

interest and importance. The RNA contains forest stands that vary in composition, structure, and productivity, providing an excellent opportunity to study the factors that effect productivity in the region. In addition, the RNA will serve as a reference area for the study of ecological succession, provide an opportunity for field and extension activities, serve as a baseline for measuring long-term ecological changes, serve as a control area for comparing results from manipulative research, and serve to monitor effects of resource management techniques and procedures. The Hoover Gulch Research Natural Area will provide an important link to the national network of RNAs.

JUSTIFICATION

The Hoover Gulch RNA has many special features that will contribute to scientific and educational needs in the future. It fulfills the need for an area with Douglas-fir-canyon live oak woodland and Douglas-fir-tanoak-canyon live oak forest that are recognized as major community types in southwestern Oregon. The Hoover Gulch area contains representation of both the relatively undisturbed and more recently burned forests of the Siskiyou Mountains. The area provides representation of important tree species at the dry end of their environmental range, including Douglas-fir, sugar pine (*Pinus lambertiana*), and ponderosa pine (*Pinus ponderosa*).

The Hoover Gulch RNA fulfills the need for a permanent stream system on metamorphic rock. Alder Creek and the unnamed interfluve provide two drainages that are almost equal in size. Because the whole watershed is included, this would provide an opportunity for watershed/nutrient cycling studies. The inclusion of Hoover Creek provides an opportunity to study the importance of cooler side streams in maintaining anadromous fish runs. It also allows the study of other aquatic life such as the Pacific Giant Salamander, which inhabits all three drainages.

This area is known to be inhabited by the Northern spotted owl (*Strix occidentalis*), which is classified as threatened by the Oregon Department of Fish and Wildlife. It is present in these younger, drier forests of mixed evergreen type, even though its preferred habitat has been described as old growth forests in the Western Hemlock zone. Study of the owl in this area will provide better information about its habitat requirements.

The Illinois River Canyon is one of the most floristically rich areas in Oregon. Hoover Gulch would add diversity to the habitats now set aside in botanical areas and other RNAs. In addition, it will preserve a population of the species, *Darlingtonia californica*, which is a plant of concern on the Oregon Natural Heritage Program list.

PRINCIPLE DISTINGUISHING FEATURES

The Hoover Gulch Research Natural Area contains 1264 acres (511 hectares) of a variety of mixed evergreen forest. It occupies the Alder Gulch drainage, the lower and eastern portion of the Hoover Gulch drainage, and an unnamed interfluve between them (Map 1). The streams are tributaries to the Illinois River west of Selma and Grants Pass, Oregon.

The mixed evergreen forests which are characterized by canyon live oak, tanoak, madrone (*Arbutus menziesii*), Douglas-fir, and sugar pine, vary from somewhat pure hardwood on the steep slopes of the Illinois River canyon to an almost pure closed canopy stand of Douglas-fir on benches or ridge tops. On rock outcrops, canyon live oak and madrone show the effects of a hot, dry habitat. Small outcrops of ultramafic parent materials support distinctive open forests of Jeffrey pine (*Pinus jeffreyi*), and incense cedar (*Calocedrus decurrens*) because of the unique soils formed by these materials. Black bear, raccoon, and deer often roam the shores of the Illinois River, which flows through both rocky rapids and quiet pools.

LOCATION

Hoover Gulch RNA is located off Forest Road 4103, about six miles west of Selma, Oregon, sixteen miles southwest of Grants Pass, Oregon on Highway 199, (Maps 2 and 3). The complete surveyor's description is located in Appendix I.

AREA AND ELEVATION

The Hoover Gulch RNA is 1264 acres (551 ha) in size. The elevations range from 1100 feet (335 m) at the river to about 4000 feet (1219 m) at the highest point. The total difference in the elevation within the RNA is 2900 feet (884 m).

ACCESS

Hoover Gulch RNA is 6.5 miles west of Selma, Oregon along Forest Road 4103. It is accessible by wading across the Illinois River whenever the river is fordable. The area is accessible on the upper end by travelling approximately 10 miles west on Forest Road 4201; then north approximately 1 miles on Forest Road 1402; then continuing to the end of Forest Road 845 (Map 3). No trail exists at this time.

AREA BY COVER TYPE

The following are estimates of area by plant association, SAF cover type, and Kuchler cover type (Table 1, Maps 4 through 6).

Table 1. Plant associations, SAF cover types, and Kuchler cover types and the number of acres represented by each in Hoover Gulch RNA.

Plant Associations (Atzet and Wheeler 1984)(Map 4)	Acres	Ha
Tanoak-White Fir (LIDE3-ABCO)	102	41
Tanoak/Dwarf Oregongrape (LIDE3/BENE)	295	119
Tanoak/Salal-Dwarf Oregongrape (LIDE3/GASH-BENE)	99	40
Tanoak/Dwarf Oregongrape-Poisonoak (LIDE3/BENE-RHDI)	47	19
Tanoak/Poisonoak-Hairy Honeysuckle (LIDE3/RHDI-LOHI)	610	247
Jeffrey Pine/Huckleberry Oak (PIJE/QUVA)	12	5
Douglas-fir-Tanoak-Sugar Pine (PSME-LIDE3-PILA)	4	2
Douglas-fir-Jeffrey Pine (PSME-PIJE)	2	1
Tanoak-Canyon Live Oak/Dwarf Oregongrape (LIDE3-QUCH/BENE)	51	21
Tanoak-Vine Maple (LIDE3-ACCI)	23	9
Douglas-fir/Poisonoak-Piper's Oregongrape (PSME/RHDI-BEPI)	1	<1
Douglas-fir/Poisonoak (PSME/RHDI)	13	5
Tanoak-Canyon Live Oak (LIDE3-QUCH)	3	1
Wetland	2	1
Total	1264	511
SAF Cover Types (Eyre 1980) (Map 5)		
Canyon Live Oak (249)	12	5
Douglas-fir-Tanoak-Madrone (234)	1252	506
Total	1264	511
Kuchler Cover Type (Kuchler 1966) (Map 6)		
California Mixed Evergreen (25)	1264	511

PHYSICAL AND CLIMATIC CONDITIONS

Hoover Gulch RNA covers the south canyon wall of the Illinois River, two small, steep, side drainages, and parts of a third drainage. Most of the aspect is northerly ranging from west to northwest to east northeast, but almost every aspect is represented. Slopes range from 20 to 100 percent, but most of the area falls between 50 and 85 percent. The slopes are cut by channels of intermittent and permanent streams, and rock outcrops are frequent, causing a terrain that is extremely varied.

The climate is characterized by wet winters and dry summers. Coastal fog rarely extends this far inland during the summer. Winter snowfall is not frequent near the river, but is common on the ridge. The patterns are most likely affected by the difference in topography. Table 2 gives an idea of the temperature and rainfall in the area.

Table 2. Temperature and precipitation averages for the 30 year period between 1943 and 1972 for the U.S. Weather Station in Grants Pass, Oregon, approximately 20 air miles northeast of Hoover Gulch RNA (Climatological Data Annual Summary 1969-1988).

Average annual temperature	54.4 F
Average annual July temperature	71.3 F
Average annual December temperature	40.0 F
Average annual precipitation	31.9 in
Average annual summer precipitation	1.4 in

DESCRIPTION OF VALUES

The RNA is made up of 13 plant associations, more than any other RNA on the Siskiyou National Forest. It also contains a small wet area with a population of California pitcher plants.

Presence of the Jeffrey pine/Huckleberry Oak Plant Association adds to the value of this area as an RNA. This association occurs on small outcrops of ultramafic soils. Tree cover is primarily Jeffrey pine and incense cedar at low covers. Shrub cover tends to be sparse and includes huckleberry oak (*Quercus vaccinifolia*), California coffeeberry (*Rhamnus californica*), and whiteleaf manzanita (*Arctostaphylos viscida*). The herb layer is primarily grasses and beargrass (*Xerophyllum tenax*).

The driest associations are represented by the Douglas-fir series plant associations Douglas-fir-Jeffrey Pine, Douglas-fir/Poisonoak, Douglas-fir/Poisonoak-Piper's Oregongrape, and Douglas-fir-Tanoak-Sugar Pine. These associations are generally on

west-facing slopes and likely in rocky areas.

Most common is the Tanoak series. It is represented by eight plant associations. The most common is the Tanoak/Poisonoak-Hairy Honey suckle. It is located on the steep, rocky canyon walls along the Illinois River. Poisonoak and hairy honey suckle both indicate areas of low soil moisture holding capacity. Tanoak/dwarf Oregongrape is the second most common plant association. It occurs further up the slope on less steep, more productive areas. Between the Tanoak/Poisonoak-Hairy Honeysuckle Association and the Tanoak/dwarf Oregongrape Association, in an intermediate environment, the Tanoak-Canyon Live Oak/ Dwarf Oregongrape Association occurs. The lower portions of the steeper, more humid draws are characterized by the Tanoak/Vine Maple Association, and the upper portions of the draws, the productive Tanoak/Salal-Dwarf Oregongrape Association. The latter are likely the most productive areas in the RNA.

The wetlands are very small, no more than two acres combined. California pitcher plant, an Oregon Natural Heritage Program species of concern, is present.

FLORA

The following is a partial list of vascular plants that have been identified on the site:

Trees (Little 1970):

Acer macrophyllum	bigleaf maple
Alnus spp.	alder
Arbutus menziesii	Pacific madrone
Castanopsis chrysophylla	golden chinquapin
Chamaecyparis lawsoniana	Port-Orford cedar
Cornus nutallii	Pacific dogwood
Calocedrus decurrens[1]	incense cedar
Lithocarpus densiflora	tanoak
Pinus jeffreyi	Jeffrey pine
Pinus lambertiana	sugar pine
Pinus ponderosa	ponderosa pine
Pseudotsuga menziesii	Douglas-fir
Quercus chrysolepis	canyon live oak
Quercus kelloggii	California black oak
Taxus brevifolia	Pacific yew
Umbellularia californica	California laurel

Shrubs (Jepson 1993)

Arctostaphylos viscida[1]	whiteleaf manzanita

[1] Present on ultramafic sites.

Berberis nervosa	dwarf oregongrape
Chimaphila menziesii	little prince's-pine
Corylus cornuta var. *californica*	hazel
Holodiscus discolor	ocean spray
Lonicera hispidula var. *vacillans*	hairy honeysuckle
Rhamnus californica[1]	California coffeeberry
Philadelphus lewisii	mock orange
Quercus vaccinifolia[1]	huckleberry oak
Toxicodendron diversiloba	poison oak
Whipplea modesta	whipplevine

Herbs (Jepson 1993):

Achlys triphylla	vanillaleaf
Adenocaulon bicolor	pathfinder
Apocynum sp.	dogbane
Arenaria macrophylla	bigleaf sandwort
Asarum hartwegii	marbled wild ginger
Campanula spp.	harebell
Darlingtonia californicum[2]	pitcher plant
Disporum hookeri	Oregon fairybell
Galium californicum	California bedstraw
Galium triflorum	fragrant bedstraw
Goodyera oblongifolia	rattlesnake plantain
Hieracium albiflora	white-flowered hawkweed
Iris sp.	iris
Aspidotis densa	rock fern
Phlox diffusa	
Polystichum munitum	western sword fern
Polystichum imbricans	imbricate sword fern
Pteridium aquilinum var. *pubescens*	bracken fern
Sarcodes sanguinea	snow plant
Sedum spp.	stonecrop
Smilacina racemosa	western false Solomon's-seal
Trientalis latifolia	western starflower
Vancoveria hexandra	white inside-out-flower
Viola sempervirens	redwoods violet
Xerophullum tenax	common beargrass

[1] Present on ultramafic sites.

[2] Present in wetlands.

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[1] Present on ultramafic sites.

[2] Present in wetlands.

FAUNA

The following list of fauna is made up of animals that are likely to be present on the site.

Birds (Peterson 1961):

Actitis macularia	spotted sandpiper
Aix sponsa	wood duck
Aphelocoma coerulescens	scrub jay
Aquila chrysaetos	golden eagle
Asyndesmus lewis	Lewis' woodpecker
Bombycilla cedrorum	cedar waxwing
Bonasa umbellus	ruffed grouse
Bubo virginianus	great horned owl
Buteo jamaicensis	red-tailed hawk
Carpodacus mexicanus	house finch
Catherpes mexicanus	canyon wren
Cathartes aura	turkey vulture
Certhia familiaris	brown creeper
Charadrius vociferus	killdeer
Chordeiles minor	common nighthawk
Cinclus mexicanus	dipper
Colaptes cafer	red-shafted flicker
Columba fasciata	band-tailed pigeon
Contopus sordidulus	western wood pewee
Corvus brachyrhynchos	common crow
Cyonacitta stelleri	Stellar's jay
Dendrocopos pubescens	downy woodpecker
Dendrocopos villosus	hairy woodpecker
Dendroica auduboni	Audubon's warbler
Dendroica occidentalis	hermit warbler
Dendroica townsendi	Townsend's warbler
Dryocopus pileatus	pileated woodpecker
Empidonax sp.	flycatcher
Falco sparverius	American kestrel
Glaucidium gnoma	pygmy owl
Hesperiphona vespertina	evening grosbeak
Hylocichla ustulata	Swainson's thrush
Icteria virens	yellow-breasted chat
Iridoprocne bicolor	tree swallow
Ixoreus naevius	varied thrush
Junco oreganus	Oregon junco
Lanius excubitor	northern shrike
Lophortyx californicus	California quail
Megaceryle alcyon	belted kingfisher
Melanerpes formicivorus	acorn woodpecker
Melospiza melodia	song sparrow

Melospiza lincolnii	Lincoln's sparrow
Mergus merganser	common merganser
Molothrus ater	brown-headed cowbird
Myadestes townsendi	Townsend's solitaire
Myiarchus cinerascens	ash-throated flycatcher
Nuttallornis borealis	olive-sided flycatcher
Oreortyx pictus	mountain quail
Otus asio	screech owl
Pandion haliaetus	osprey
Parus atricapillus	black-capped chickadee
Parus gambeli	mountain chickadee
Parus inornatus	plain titmouse
Parus rufescens	chestnut-backed chickadee
Passerella iliaca	fox sparrow
Passerina amoena	lazuli bunting
Petrochelidon pyrrhonota	cliff swallow
Pheucticus melanocephalus	black-headed grosbeak
Pipilo erythrophthalmus	rufous-sided towhee
Pipilo fuscus	brown towhee
Piranga ludoviciana	western tanager
Psaltriparus minimus	common bushtit
Regulus calendula	ruby-crowned kinglet
Regulus satrapa	golden-crowned kinglet
Salpincetes obsoletus	rock wren
Selasphorus rufus	rufous hummingbird
Selasphorus sasin	Allen's hummingbird
Sialia mexicana	western bluebird
Sitta canadensis	red-breasted nuthatch
Sitta carolinensis	white-breasted nuthatch
Sphyrapicus varius	yellow-bellied sapsucker
Spinus pinus	pine siskin
Spizella passerina	chipping sparrow
Stelgidopteryx ruficollis	ruff-winged swallow
Strix occidentalis	northern spotted owl
Sturnus vulgaris	starling
Tachycineta thalassina	violet-green swallow
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
Turdus migratorius	American robin
Vermivora celata	orange-crowned warbler
Vermivora ruficapilla	Nashville warbler
Vireo gilvus	warbling vireo
Vireo huttoni	Hutton's vireo
Vireo solitarius	solitary vireo
Wilsonia pusilla	Wilson's warbler
Zenaidura macroura	mourning dove

Zonotrichia atricapilla	golden-crowned sparrow
Zonotrichia leucophrys	white-crowned sparrow

Mammals (Burt 1976):

Canis latrans	coyote
Clethrionomys californicus	California red-backed vole
Eptesicus fuscus	big brown bat
Erethizon dorsatum	porcupine
Glaucomys sabrinus	northern flying squirrel
Lasionycterus noctivagans	silver-haired bat
Lasiurus cinereus	hoary bat
Lepus americanus	snowshoe hare
Lynx rufus	bobcat
Martes americana	marten
Microtus oregoni	Oregon vole
Mustela frenata	long-tailed weasel
Myotis californicus	California myotis
Myotis evotis	long-eared myotis
Myotis lucifugus	little brown myotis
Myotis thysanodes	fringed myotis
Myotis volans	long-legged myotis
Neotoma cinerea	bushy-tailed wood rat
Odocoileus hemionus columbianus	black-tailed deer
Plecotus townsendii	Townsend big-eared bat
Peromyscus maniculatus	deer mouse
Peromyscus truei	pinon mouse
Sciurus griseus	western gray squirrel
Sorex trowbridgii	Trowbridge shrew
Sorex vagrans	wandering shrew
Spilogale putorius	spotted skunk
Tamias townsendi	Townsend's chipmunk
Thomomys mazama	Mazama pocket gopher
Ursus americanus	black bear
Vulpes fulva	red fox

Reptiles (Nussbaum, et al. 1983):

Coluber constrictor	racer
Crotalus viridus	western rattlesnake
Eumeces skiltonianus	western skink
Elgaria coeruleus	northern alligator lizard
Elgaria multicarninata	southern alligator lizard
Sceloporus occidentalis	western fence lizard
Thamnophis couchii	western aquatic garter snake

Thamnophis sirtalis common garter snake

GEOLOGY

The geologic complexity of the Hoover Gulch RNA is due to exposure of ultramafic parent materials. Parent materials have an enormous effect on the structure of the forest stands in this region. Most of the area is underlain by a relatively hard metavolcanic rock. There are numerous small outcropings of ultramafic rock within the RNA. These may be located on the plant association map (Map 4) by locating the Jeffrey pine/huckleberry oak , Douglas-fir-Jeffrey pine, and Douglas-fir/poisonoak associations. The substrate over the entire area is best described as a rock mulch or regisol.

SOILS

Soil characteristics vary with elevation and landform. Soils in the area are, for the most part, very rocky and poorly developed. Soil depth and coarse fragment content are important factors affecting the productivity of a site. On relatively recent erosional surfaces, soils are shallow and have high rock content. On ridges and benches, soils are relatively deep, well drained, and productive. There are rock mulch soils on canyon walls.

Six soil survey units occur within the boundaries of the RNA. Two of the units, 7F and 80G, are limited in extent, and will not be described here. The four primary units are outlined below (United States Department of Agriculture 1983)(Map 7). All units occur on mountainous terrain.

48F. Josephine gravelly loam. This soil formed from metasedimentary and metavolcanic rock types. It is typically found on 35 to 55% north-facing slopes. The climate is characterized by an average annual precipitation of 30 to 60 inches, a mean annual air temperature of 45 to 54 degrees F, and a frost-free period of 100 to 170 days.

This soil is deep and well drained, with bedrock occurring from 40 to 60 inches. Permeability is moderately slow. Available water capacity is 4.5 to 12 inches. Runoff is rapid, and the hazard of water erosion is high.

8G. Beekman-Vermisa complex. This unit formed in colluvium derived primarily from altered sedimentary and extrusive igneous rock types. It is generally found on 60 to 100%, north-facing slopes. Average annual rainfall is from 35 to 60 inches, average annual air temperature is 45 to 54 degrees F, and average frost-free period is 100 to 160 days.

The map unit is 50% Beekman gravelly loam and 30% Vermisa extremely gravelly loam. The Beekman soil is moderately deep and well drained. Depth to hard bedrock ranges from 20 to 40 inches. Permeability is moderate. Available water capacity is about 1 to 4 inches. The Vermisa soil is shallow (10 to 20 inches) and somewhat excessively drained.

Permeability is moderately rapid. Available water capacity is 1 to 2 inches. Runoff is rapid, and the hazard of water erosion is high for both soils in the map unit.

81G. Vermisa-Beekman complex. This unit occurs on 60 to 100% south-facing slopes. Bedrock origin is comparable to the unit described above. Annual precipitation averages 35 to 60 inches, annual air temperature is 48 to 54 degrees F, and the frost-free period is 100 to 160 days.

This unit is 60% Vermisa extremely gravelly loam and 25% Beekman gravelly loam. Vermisa tends to be in steeper areas. Refer to 8G for characterization of these two soils.

28F. Dubakella-Pearsoll complex. This unit formed in colluvium derived dominantly from serpentinite and peridotite. It is found on north slopes from 35 to 75% slope. The mean annual precipitation averages 30 to 60 inches, annual air temperature averages 45 to 54 degrees F, and the frost-free period averages 100 to 170 days.

This map unit is 60% Dubakella very cobbly clay loam and 30% Pearsoll extremely stony clay loam. The Dubakella soil is moderately deep and well drained. Bedrock is encountered from 20 to 40 inches. Permeability is slow. Available water capacity is 1.5 to 4 inches. Runoff is rapid. Pearsoll is a shallow soil, 10 to 20 inches to bedrock. Permeability is slow. Available water is about 1.5 to 2.5 inches. Runoff is very rapid. The hazard of water erosion is high for both soils.

LANDS

Hoover Gulch area was acquired with the original body of the Siskiyou National Forest in 1907. There are no valid mining claims in the area. The Illinois River, along the northern border, has been designated a Wild and Scenic River. As such, a quarter mile buffer along the river is managed according to the management plan developed for the Illinois. A botanical area designation has also been made corresponding to the quarter mile buffer. The RNA is bordered along the south and part of the west side by Late Successional Reserve.

CULTURAL

There have been no prehistoric activities detected within the boundaries of the RNA.

IMPACTS/OTHER CONFLICTS

Mineral values: There are no valid mining claims within the boundary of this RNA at present. Eight mining claims, some of which have a mineral determination of validity, are about one and a half miles from the mouth of Hoover Creek. An old miner (Earnest Woodcock, 5850 Redwood Ave., Grants Pass, Oregon) has a claim and mines the area.

The downstream channels seem unaffected by the mining activity, but could be affected if large scale activity were undertaken in the future. No effort to stop mining activities will be undertaken.

Grazing: No public grazing of livestock will be permitted.

Timber: The Illinois River is included in the wild river systems of Oregon and is also designated as a national wild and scenic river. Because of this, management options for the area are already limited (Illinois River Management Plan 1985). All timber that is visible from the Illinois River Road and that within 1/4 mile of the river itself is not included in the allowable cut base. This includes 3/4 of the area in the RNA. About 1/4 of the remainder is noncommercial forest land, is low Site IV with extreme limitations on access and logging operations. About seventy acres (a small portion of the remainder) is Site III-IV for Douglas fir and may be accessible from the ridge. No timber extraction will be allowed in the RNA.

Access: The RNA should create no access problems to adjacent forest areas.

Watershed value: The establishment of the RNA is expected to have a neutral effect on watershed value. Disturbance to the stream and watershed will be minimized under RNA management.

Recreation values: The recreational use of this area is mostly in the area immediately adjacent to the Illinois River. This area receives little use during the summer months, and should cause very little problem to protection of RNA properties in the future.

Wildlife and Plant Values: Introduction of exotic plant, animal, and fish species shall not be permitted. Reintroduction of former native species may be permitted as long as the objectives of the RNA are met. Control of excessive animal populations may be considered where such populations threaten RNA objectives. Hunting and trapping shall not be encouraged. Habitat improvement projects may be approved if they meet the objectives of the RNA

Special Area Management Values: As a portion of the national Wild and Scenic River System, this part of the Illinois River is managed to protect the unique values, fish, scenery, and recreation. Maintaining the free-flowing nature of the river is a priority. Further management is presented in the Illinois River Management Plan (1985).

Transportation Plan: There are no known road building projects planned for the area The area surrounding the RNA is accessible. There should be no impact to the forest transportation system.

Vegetation Management:
All wildfires occurring at Fire Industrial Level 2 or above should be controlled at 30 acres or less, 90 percent of the time. A limited range of suppression technology and equipment emphasizing direct attack should be used. In suppressing fires, chemical fire

retardants and ground disturbing activity should be avoided. Wildfires occurring at Fire Industrial Level 1 should be handled as outlined in the basic fire management direction of the Forest Plan. Management should provide for a low level of prevention activities. Public contacts should be limited to those which are made incidental to normal fire management activities, with most of the effort concentrated on techniques that accomplish the fire prevention mission prior to the user entering the area.

Fire plays a role in maintaining the structural diversity of the RNA. For example, there are areas where stand replacing fires occurred. These are characterized by younger stands of evergreen hardwoods and conifers. Other areas have had underburning and the older conifers remain. Some of the areas with large conifers have experienced thinning (but not stand replacement). Both of the latter conditions may produce stands with multiple layers of vegetation. If authorized by appropriate PNW Research officers and National Forest System officers, prescribed fire may be utilized as a tool to return fire to its natural role in the area and return plant communities to a condition similar to that which existed prior to active fire suppression. Managed or naturally occurring fire may be used to perpetuate the natural range of seral conditions and thus the plant communities that the RNA is meant to represent. If fire is used to perpetuate a sere, it should mimic a natural fire, but with prudent measures to avoid catastrophe. Fuels normally should be allowed to accumulate at natural rates unless they threaten the objectives of the RNA.

The objective of management within the RNA will be to maintain natural conditions within the tract for scientific and educational study. An additional benefit will be to maintain and protect the populations of California pitcher plants.

ADMINISTRATION RECORDS

The District Ranger, Illinois Valley Ranger Station, Redwood Highway, Cave Junction, OR 97523 shall be responsible for administering and protecting the physical area. The entire RNA will require biennial observation.

The Pacific Northwest Research Station Director will be responsible for any studies or research conducted in the area, and requests to conduct research should be directed to him/her. The director will evaluate research proposals and coordinate all RNA studies and research with the District Ranger. All plant and animal specimens collected in the course of RNA research will be properly preserved and maintained within the university or federal agency herbaria and museums, approved by the Director.

Records for Hoover Gulch RNA will be maintained in the following offices:

Regional Forester, Portland, Oregon
Forest Supervisor, Siskiyou National Forest, Grants Pass, Oregon
District Ranger, Illinois Valley Ranger District, Cave Junction, Oregon
Director, Pacific Northwest Research Station, Portland, Oregon.

Archiving

The Illinois Valley Ranger District of the Siskiyou National Forest will be responsible for maintaining the Hoover Gulch RNA data file and list of herbarium and species samples collected. The data will also be part of the Research Natural Areas Database (part of Oregon State University Forest Science databank), at the Forest Sciences Laboratory, Corvallis, Oregon.

REFERENCES

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Natural Heritage Advisory Council. 1993. Oregon Natural Heritage Plan. Division of State Lands, Salem, OR. 158p.

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Appendix 1

Legal Description

LEGAL DESCRIPTION REVIEW

Case Name/Number HOOVER GULCH R.N.A.

Forest District Illinois Valley Ranger District
Siskiyou National Forest

Type of Case Research Natural Area

This documents that the attached legal descriptions for the case referenced above were reviewed by me for use in a conveyance or area designation.

X The legals are acceptable as presented, and no potential problems were noted during my review.

_____ The legals have potential problems as noted below, however the risk appears minor and conveyance or area designation may proceed.

_____ The legals have potential problems and should not be used in a conveyance or area designation. The following errors and/or concerns need to be corrected/addressed before this description may be used:

REGISTERED
PROFESSIONAL
LAND SURVEYOR
Thomas J Howie
OREGON
JULY 17, 1986
THOMAS J. HOWIE
2235

Other Comments:

Reviewed by: Thomas J Howie
FOREST LAND SURVEYOR

Date: 6/28/94

Professional Registration Number/State: PLS #2235 Oregon

BOUNDARY DESCRIPTION
HOOVER GULCH R.N.A.

The 511.5 ha., (1,264 acre), tract is located in Josephine County, Oregon and is administered by the Illinois Valley Ranger District, Siskiyou National Forest. The natural area lies within sections 2, 3, 10, 11, 12, and 14, Township 38 South, Range 9 West, Willamette Meridian. And is more particularly described as follows:

All bearings referred to in this description are True Geodetic Bearings. All Latitudes and Longitudes are referred to the North American Datum 1927.

Beginning at the southerly Ordinary High Water Line of the Illinios River at the junction with Hoover Gulch;
42 17 39.6 N. Lat 123 44 21.9 W. Long

Thence southerly along Hoover Gulch to a point where Hoover Gulch turns sharpley West and a drainage enters from the east;
42 16 50 N. Lat 123 44 23.2 W. Long

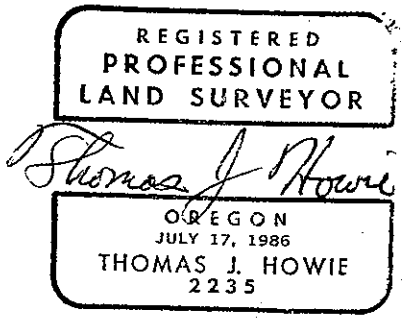
Thence southerly along ridge which divides Hoover Gulch and said side drainage to the divide between Hoover Gulch and Mikes Gulch;
42 16 6.6 N. Lat 123 43 49.4 W. Long

Thence northeasterly along said divide to the summit;
42 16 9.4 N. Lat 123 43 45.5 W. Long

Thence southeasterly along ridge to saddle which divides Alder Gulch and Mikes Gulch;
42 16 19.4 N. Lat 123 42 43.4 W. Long

Thence northerly along the southeasterly divide of Alder Gulch to the southerly Ordinary High Water Line of the Illinois River;
42 17 10.4 N. Lat 123 42 30.0 W. Long

Thence westerly along said Ordinary High Water Line to the point of beginning.



United States
Department of
Agriculture

Forest Service

Pacific
Northwest
Region

1989

Land and Resource Management Plan

Siskiyou National Forest

MANAGEMENT AREA 3 - RESEARCH NATURAL AREA

DESCRIPTION

This prescription is applicable to existing or recommended Research Natural Areas (RNA) (FSM 4063 Research Natural Areas).

Research Natural Areas are part of a national network of field ecological areas designated for research and/or to maintain biological diversity on National Forest System lands. Research Natural Areas are for non-manipulative research, observation, and study. They also may assist in carrying out provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act.

This Forest Plan provides overall direction and standards and guidelines for management of RNA's. The Regional Forester and Pacific Northwest Station Director shall prepare an Establishment Record for each recommended area; this document will describe features, objective for establishment, and management direction. The Establishment Record will be submitted to the Chief of the Forest Service for signature (Designation Order). Once approved by the Chief, an RNA will not be re-evaluated in subsequent rounds of Forest Planning . Refer to Figure IV-6 for a map displaying allocated acres within the management area.

Table IV-16. Acres Allocated to Research Natural Areas

	Acres		
Name	Management Area 3	Overlap by Management Areas 1-2	Total Area
Cedar Log Flat	441	0	441
Coquille River Falls	501	0	501
Craggy Peak	100	0	100
Hoover Gulch	1,292	0	1,292
Lemmingsworth Gulch	818	0	818
Port Orford Cedar	1,120	0	1,120
Wheeler Creek	336	0	336
Total	4,608	0	4,608

MANAGEMENT GOAL

Preservation of naturally occurring physical and biological units where natural conditions are maintained insofar as possible for the purposes of: (1) comparison with those lands influenced by man; (2) provision of educational and research areas for ecological and environmental studies; and (3) preservation of gene pools for typical and rare and endangered plants and animals.

DESIRED FUTURE CONDITION

Areas in condition to provide for naturally occurring physical and biological processes without undue human intervention. Areas containing naturally functioning and evolving plant and animal populations that may serve as a source for gene pools and for education and research on plant and animal communities.

STANDARDS AND GUIDELINES

Wild and Scenic Rivers

MA3-1 Wild and Scenic Rivers shall take precedence where they overlap with RNA's. Land use regulations are generally more restrictive in Wild portions of Wild and Scenic Rivers than in RNA's, and less restrictive in Scenic portions. Management plans for Wild and Scenic Rivers shall address overlaps with RNA's.

Recreation

MA3-2 Recreation activities and uses within an RNA shall be discouraged if they threaten the values for which the RNA is established; this includes overnight camping, recreation use within 200 feet of lakes, ponds and streams, and pack and saddle stock use. All recreation ORV use shall be prohibited. If other recreation uses threaten research or education values, closures or permits should be instituted.

Education use of an RNA should generally be directed toward the graduate level, but may be approved for any group or purpose. On-site interpretive or demonstrative facilities should be prohibited. Publicity that would attract the general public to the area shall be avoided.

Existing trails may be allowed to remain as long as the RNA objectives are not compromised. See MA3-10 for direction on new trails.

Visuals

MA3-3 Visual management shall meet or exceed the inventoried VQO's of the specific areas.

Wildlife and Fish

MA3-4 Introduction of exotic plant, animal, and fish species shall not be permitted. Reintroduction of former native species may be permitted as long as the objectives of the RNA are met. Control of excessive animal populations may be considered where such populations threaten the RNA objectives. Hunting and trapping shall not be encouraged. Habitat improvement projects may be approved if they meet the objectives of the RNA.

Range

MA3-5 No grazing of domestic livestock shall be permitted.

Timber

MA3-6 Cutting and removal of all vegetation, including firewood, shall be prohibited, except as part of approved scientific investigation.

No action shall be taken against insects or diseases unless the outbreak drastically alters the natural ecological processes within the RNA.

Soil and Water

MA3-7 In cooperation with the PNW Research Station, rehabilitation plans shall be developed and implemented in the event of soil disturbing activities such as fire suppression. Soil stabilization of naturally occurring soil loss or movement should not be permitted unless part of an authorized study.

Minerals

MA3-8 Valid claims existing prior to Research Natural Area designation may be developed. Valid claims existing prior to any withdrawal from mineral entry shall be required to have an operating plan providing the least amount of impact. Research Natural Areas may be recommended for withdrawal from mineral entry in situations where mitigation measures do not adequately protect management area values. The mineral potential of the area shall be assessed before withdrawal is recommended.

Lands

MA3-9 An Establishment Record shall be written for each RNA recommended in the preferred alternative of the Forest Plan (joint responsibility of the PNW Station Director and Regional Forester - procedures described in Forest Service Manual 4063).

A management plan should be written for each established RNA. The management plan should include analysis of surrounding lands as related to the integrity of the RNA.

All new special uses shall be denied except for permits for research approved by the PNW Experiment Station and directly related to the objective for the particular Research Natural Area (as determined in the Establishment Record). Noncompatible existing special uses shall be terminated.

Rights-of-way easements existing before RNA establishment shall be honored. Upgrading that would compromise the objectives of the RNA shall be discouraged. The Forest Service should recommend against FERC licenses or permits that compromise the objectives of the RNA.

Facilities

MA3-10 New facilities shall not be built except on valid existing mining claims with approved operating plans or as required as part of an authorized study. New roads, fences, or signs shall not be permitted on RNA's unless they contribute to the objectives or to the protection of the area. New trails may be allowed only if compatible with the objectives for the area and if approved by appropriate PNW Research officers and National Forest System line officers.

Future utility corridor siting should avoid this Management Area. This Management Area may only be entered following environmental analysis in which all other alternatives have been rejected by the Forest Service.

Hazard tree felling for safety reasons is permitted along trails or roads. Felled trees shall remain in place, unless lying across a trail or road. Trees shall not be removed.

Development of rock sources shall not be permitted; stockpiling of rock materials should not occur. Waste material from road construction, reconstruction, or maintenance shall not be left in RNA's.

Fire Management

MA3-11 All wildfires occurring at FIL 2 or above should be controlled at 30 acres or less, 90 percent of the time. A limited range of suppression technology and equipment emphasizing indirect attack should be used. In suppressing fires, chemical fire retardants and ground disturbing activity should be avoided. Wildfires occurring at FIL 1 should be handled as outlined in the basic fire management direction for the Forest.

Management should provide for a low level of prevention activities. Prevention public contacts should be limited to those which are made incidental to normal fire management activities, with most of the effort concentrated on techniques that accomplish the fire prevention mission prior to the user entering the area.

If authorized by appropriate PNW Research officers and National Forest System officers, prescribed fire may be utilized as a tool to return fire to its natural role in the area and return plant communities to a condition similar to that which existed prior to active fire suppression. Managed or naturally occurring fire may be use to perpetuate the sere and thus the cell(s) that the RNA is meant to represent. If fire is used to perpetuate a sere, it should mimic a natural fire, but with prudent measures to avoid catastrophe.

Fuels normally should be allowed to accumulate at natural rates unless they threaten the objectives of the RNA.

Research

MA3-12 All research proposals shall be approved by the PNW Station Director and any applicable permits obtained from the appropriate NFS line officer. Research should be limited to non-consumptive, non-destructive, and essentially observational activities. Some collecting of soil, plants, or animal specimens (State coordination needed) may be permitted on a case by case basis.

RESPONSE TO PLANNING PROBLEMS

1. How Much Timber Should the Forest Produce?

The Forest will be managed to provide an average of 28.4 MMCF plus a one percent estimate of salvable dead for a total of 28.7 MMCF (160.0 MMBF) of chargeable timber volume per year during the first decade. Governed by a policy of nondeclining flow, average annual sale offerings will gradually increase in subsequent decades to reach the long-term sustained yield level of 48.8 MMCF. Harvest should generally occur when timber stands reach culmination of mean annual increment (average age of 100 years on this Forest).

Timber production is supported by a land base of 510,000 acres (selected suitable), which includes 34,624 acres of standing hardwood. Hardwood conversion is limited to no more than 7,500 acres per decade, subject to marketability. Table III-1 displays the management areas that provide timber management opportunities.

Table III-1. Acreage Selected as Suitable for Timber Production by Management Area

	Acres (1988 Inventory)	
Management Area Name	Management Area	Selected Suitable
Wilderness	232,495	0
Wild River	5,029	0
Research Natural Area	4,608	0
Botanical	16,275	0
Unique Interest	2,015	0
Backcountry Recreation	40,871	0
Supplemental Resource	26,921	0
Designated Wildlife Habitat	50,287	0
Special Wildlife Site	28,762	0
Scenic/Recreation River	10,317	8,000
Riparian	96,623	70,000
Prescription B - 11 Basins	(43,308)	
Prescription C - 7 Basins	(26,778)	
Minimum Level	(26,537)	
Retention Visual	9,861	7,000
Partial Retention Visual	133,931	105,000
General Forest	434,307	320,000
TOTAL	1,092,302	510,000

Projections from the FORPLAN model indicate that at least 212 miles of new road construction and 1,353 miles of reconstruction is needed to support the timber program in this next decade. The pattern projected by the model generally underestimates the miles of road needed in the first two or three decades and over estimates the miles needed in subsequent decades (see discussion in Appendix B of the FEIS). Actual miles of road to be constructed and reconstructed in this first decade may be greater than the projection above.

Appendix C lists the timber sales expected to occur during the first decade. Probable location, timing, harvest method, and road construction requirements are listed for each sale area, but these may change as site-specific information is collected.

2. How Much Old-Growth Forest Should be Preserved?

The Forest will be managed to reserve 179,700 acres having mature and old-growth forest characteristics. With the exception of the reserved areas, existing mature and old growth will be metered out to accommodate the harvest sale schedule. The old-growth and mature inventory updated from 1984 to include reduction due to the 1987 Fires and Silver Recovery Project is about 418,000 acres. Special groves of old growth, especially redwood, have been set aside to preserve some unique and magnificent examples for recreational and aesthetic enjoyment. These old-growth groves total 1,321 acres. The most significant of these areas are the 720 acres of redwood groves.

Anticipated harvest activity during the first decade will reduce the amount to approximately 371,000 acres. Except for isolated tracks, riparian, and other areas, most unprotected mature and old growth will be removed by the year 2089 (10th decade). Figure III-1 depicts the protected and non-protected mature and old-growth forest. Table III-2 shows the Management Areas that preserve old-growth characteristics. Management direction for land allocations beneficial to old-growth preservation is described in Chapter IV.

Table III-2. Protected Acres with Old-Growth Timber Characteristics by Management Area (Includes Mature Stands)

	Acres (1988 Inventory)	
Management Area Name	Management Area	Protected Old Growth
Wilderness	232,495	83,726
Wild River	5,029	1,915
Research Natural Area	4,608	2,757
Botanical	16,275	3,563
Unique Interest	2,015	624
Backcountry Recreation	40,871	13,141
Supplemental Resource	26,921	14,879
Designated Wildlife Habitat	50,287	41,566
Special Wildlife Site	28,762	12,122
Scenic/Recreation River	10,317	169 1/
Riparian	96,623	41 1/
Retention Visual	9,861	64 1/
Partial Retention Visual	133,931	964 1/
General Forest	434,307	4,206 1/
TOTAL	1,092,302	179,737

1/ Old-Growth Stands Unsuitable for Timber Management.

3. How Can the Forest's Fish Habitat, Water Quality and Soil Productivity be Maintained or Improved?

Protection is given to fish habitat, water quality, and soil productivity by allocating 407,263 acres (37 percent of the Forest) to Management Areas 1-9 which limit site-disturbing activity and preclude programmed timber harvest. The balance of the Forest will be managed under the Standards and Guidelines which reflect a sensitivity to the maintenance of a healthy ecosystem.

Potential impacts of timber harvest are mitigated by distributing activities through time and space. This is represented in the alternative design by limiting timber harvest in the model with constraints ranging from 7 to 17 percent per decade specific to each Planning Basin.

Salmonid fish habitat is improved through (1) land allocations that minimize soil disturbance and maintain summer water temperatures, (2) riparian prescriptions which protect streamside areas, and (3) fish habitat improvement projects. Watershed conditions are improved in areas presently degraded. Watersheds currently in good condition will be maintained in good condition.

Riparian vegetation will be managed to maintain or improve water quality and fishery habitat. Vegetative disturbance within riparian areas suitable for the production of timber are controlled by either Riparian Prescriptions B or C. Prescription C is applied on the Elk/Sixes, Lobster, Lower Rogue, Indigo, Silver, Pistol, and Lower Chetco basins, and is designed to produce a two-degree decrease in summer water temperature by the third decade. Riparian Prescription B, designed to maintain existing water temperatures, is applied in the remaining basins. Table III-3 shows how riparian habitat is affected by various Management Area designations.

A high level of capital investment is proposed. Approximately $581,000 per year will be spent on fish habitat and watershed improvement projects.

Standards and Guidelines (Forest Plan, Chapter IV) and accompanying Best Management Practices (Forest Plan, Appendix F) are specifically designed to maintain or protect water quality, site productivity, and fisheries. Areas which have active landslides or risk irreversible soil loss are designated unsuitable and have no programmed timber harvest. Many additional inner gorge areas which have high watershed sensitivity and Supplemental Resource Management Areas also have no programmed timber harvest.

Table III-3. Protected and Managed Riparian Vegetation by Management Area

Management Area Name	Acres (1988 Inventory)		
	Management Area	Riparian Protected	Vegetation Managed
Wilderness	232,495	39,271	0
Wild River	5,029	1,450	0
Research Natural Area	4,608	760	0
Botanical	16,275	2,088	0
Unique Interest	2,015	200	0
Backcountry Recreation	40,871	6,220	0
Supplemental Resource	26,921	8,690	0
Designated Wildlife Habitat	50,287	12,705	0
Special Wildlife Site	28,762	4,882	0
Scenic/Recreation River	10,317	0	2,604
Riparian	96,623	26,537	70,086
Prescription B - 11 Basins	(43,308)		
Prescription C - 7 Basin	(26,778)		
Minimum Level	(26,537)		
Retention Visual	9,861	0	0
Partial Retention Visual	133,931	0	0
General Forest	434,307	0	0
TOTAL	1,092,302	102,803	72,690

4. How, and to What Extent, Should Lands in and Adjacent to River Corridors be Managed to Protect, Preserve and Enhance Wild and Scenic River Attributes?

A variety of Management Areas are designed to protect Wild and Scenic River attributes. The existing Wild and Scenic Rivers (the Rogue, Illinois, North Fork Smith, Chetco and Elk Rivers) have their respective sections assigned to either Wild River or Recreation and Scenic Management Areas. Often these rivers corridors are overlapped by another Management Area with a more protective status, such as Wilderness. All viewsheds surrounding the rivers have a natural or near-natural appearance as lands are managed to meet their inventoried VQO's.

Both the North Fork Smith and Chetco Rivers have a 2-mile segment designated "Scenic," but these segments are carried as inventoried "Wild." In each case, the Forest reviewed classification and concluded that the areas meet "Wild" status. This Plan protects their inventoried values in the interim until further analysis or River Management Plans dictate another course of action. Table III-4 shows the number of acres within each Management Area which directly contribute to preservation and enhancement of Wild and Scenic River values.

Table III-4. Management Areas Directly Affecting Wild and Scenic River Attributes in Designated River Corridors

	Acres		
		Contributing to Wild and Scenic River Values	
Management Area Name	Management Area	Rogue/ Illinois	Chetco/Elk/ NF Smith
Wilderness	232,495	0	0
Wild River	5,029	1,894	2,379
Research Natural Area	4,608	1,291	1,153
Botanical	16,275	4,271	1,226
Unique Interest	2,015	160	53
Backcountry Recreation	40,871	16,975	4,907
Supplemental Resource	26,921	10,502	2,054
Designated Wildlife Habitat	50,287	4,230	7,706
Special Wildlife Site	28,762	5,308	3,087
Scenic/Recreation River	10,317	1,878	4,797
Riparian	96,623	7,623	14,178
Retention Visual	9,861	4,352	609
Partial Retention Visual	133,931	39,615	13,727
General Forest	434,307	7,183	53,567
TOTAL	1,092,302	105,282	109,443

5. How Should Sensitive Plant Resources be Managed?

The variety of sensitive plants on the Forest are managed through a number of land allocations designed with specific protection standards. Each Management Area has Standards and Guidelines (in addition to Forest-wide Standards and Guidelines) designed to protect sensitive plants endemic to the Forest (Forest Plan, Chapter IV). Research Natural Areas and Botanical Management Areas provide special emphasis to the preservation of ecotypes and sensitive plants. Four new Research Natural Areas, added to the three existing areas (for a total of 4,608 acres), result in the preservation of 25 ecotypes. Nineteen new Botanical areas, combined with the three existing sites, total 19,632 acres (3,357 of these acres are overlapped by Management Areas 1 through 3, for a total of 16,275 acres in Management Area 4).

Table III-5. Sensitive Plant Distributions by Management Area

	Acres	Percent
Management Area Name	Management Area	Sensitive Plant Habitat
Wilderness	232,495	65
Wild River	5,029	75
Research Natural Area	4,608	65
Botanical	16,275	95
Unique Interest	2,015	65
Backcountry Recreation	40,871	50
Supplemental Resource	26,921	20
Designated Wildlife Habitat	50,287	5
Special Wildlife Site	28,762	15
Scenic/Recreation River	10,317	75
Riparian	96,623	35
Retention Visual	9,861	35
Partial Retention Visual	133,931	35
General Forest	434,307	35
TOTAL	1,092,302	–

6. How, and to What Extent, Should Forest Scenic Values be Protected through Visual Resource Management?

Visual management objectives are achieved by designing to meet VQO's on 658,502 acres. Twelve viewsheds (of 44 total) are governed by their respective inventoried VQO's, four of which encompass heavily used recreation travel corridors. Management of Forest scenic values are designed to complement high recreation use travel corridors and viewsheds. Seven high priority viewsheds (of the 12) managed to meet or exceed their respective inventoried VQO's are: the Upper Illinois, Rogue-Illinois, Oregon Caves, Highway 199, Game Lake, Bolan Lake, and Rough and Ready.

Table III-6 shows the number of acres in each VQO category by Management Area. Approximately 433,800 acres have an unmodified appearance (Preservation). While management activities are evident but visually subordinate (Partial Retention) on 150,168 acres, another 21,373 acres are managed where activities are not evident to the casual Forest visitor (Retention). The remaining area (486,961 acres) is assigned Modification where management activities may dominate the characteristic landscape, but resemble naturally occurring patterns when viewed in the background.

Table III-6. Visual Management Objectives by Management Area

	Acres				
Management Area Name	Management Area	Preservation	Retention	Partial Retention	Moderate/ Maximum Moderate
Wilderness	232,495	232,495	0	0	0
Wild River	5,029	5,029	0	0	0
Research Natural Area	4,608	4,608	0	0	0
Botanical	16,275	16,275	0	0	0
Unique Interest	2,015	2,015	0	0	0
Backcountry Recreation	40,871	40,871	0	0	0
Supplemental Resource	26,921	26,921	0	0	0
Designated Wildlife Habitat	50,287	50,287	0	0	0
Special Wildlife Site	28,762	28,762	0	0	0
Scenic/Recreation River	10,317	0	10,317	0	0
Riparian	96,623	26,537 1/	1,195	16,237	52,654
Prescription B - 11	(43,308)				
Prescription C - 7	(26,778)				
Minimum Level - 1	(26,537)				
Retention Visual	9,861	0	9,861	0	0
Partial Retention Visual	133,931	0	0	133,931	0
General Forest	434,307	0	0	0	434,307
TOTAL	1,092,302	433,800	21,373	150,168	486,961

1/ These areas do not have Preservation VQO's. They are managed to preserve the natural character until facilities such as roads or campgrounds are constructed.

7. How Should Wildlife Habitats on the Forest be Managed?

The combination of assigned Management Areas and capital expenditures prescribed provide a wide range of effective habitat conditions capable of sustaining viable populations of all native and desired non-native vertebrate species. Designated Wildlife Habitat Management Areas meet MR's for wildlife inhabiting mature and old-growth forest. Special Wildlife Sites (Management Area 9), include approximately 15,000 acres of mature and old-growth forest habitat, which are not suitable for timber management. They do serve, however, as "stepping stones" between a number of Designated Wildlife Habitat areas. In total, 179,737 acres of mature and old-growth forest wildlife habitat are maintained through the tenth decade.

The Forest will provide habitat for the following species:

	Number of Habitat Areas (Decades)	
	2nd	5th
Spotted Owl	139	97
Pileated Woodpecker	604	384
Pine Marten	2,380	1,552

Table III-7 shows a variety of Management Areas that contribute to overall wildlife habitat diversity. Standing dead trees (snags) in areas managed for timber provide habitat capable of sustaining at least 60 percent of the maximum population of cavity-nesting birds. Approximately 53,995 acres of prime bald eagle and osprey habitat are provided along rivers and streams that have a protected status. Approximately 46 percent of the Forest provides an adequate combination of cover and forage for deer to sustain an average herd of 28,500 animals for the first five decades.

Capital investments for wildlife habitat improvements should result in higher carrying capacity for many species. Approximately $364,000 per year are prescribed to complete an average of 328 structural improvements and treat about 1614 acres.

Table III-7. Management Area Contributions to Selected Wildlife Habitat Conditions

	Acres (1988 Inventory)				Percent
Management Area Name	Management Area	Managed Deer/Elk Forage	Inventory Mature and Old-Growth Wildlife Habitat	Protect Suitable Bald Eagle /Osprey	Habitat Capability Woodpecker
Wilderness	232,495	0	83,726	34,165	100
Wild River	5,029	0	1,915	2,043	100
Research Natural Area	4,608	0	2,757	411	100
Botanical	16,275	0	3,563	1,125	100
Unique Interest	2,015	0	624	0	100
Backcountry Recreation	40,871	0	13,141	1,627	100
Supplemental Resource	26,921	0	14,879	6,191	100
Designated Wildlife Habitat	50,287	0	41,566	719	100
Special Wildlife Site	28,762	0	12,122	618	100
Scenic/Recreation River	10,317	8,000	169 1/	7,096	80
Riparian	96,623	70,000	41 1/	0	70
Retention Visual	9,861	7,000	64 1/	0	80
Partial Retention	133,931	105,000	964 1/	0	70
General Forest	434,307	320,000	4,206 1/	0	60
TOTAL	1,092,302	510,000	179,737	53,995	77

1/ Old-Growth Stands Unsuitable for Timber Management.

8. How Will Management Direction Affect Recreation Opportunities in the Wilderness and Unroaded Areas?

Non-motorized Primitive and Semi-primitive recreation opportunities are provided principally through Backcountry Recreation and Wilderness Management Areas. Backcountry Recreation includes (1) Primitive and Semi-primitive recreation opportunities in non-motorized areas, and (2) Semi-primitive recreation opportunities in areas with some designated motorized use (4-wheel drive roads and motorbike trails).

Primitive and Semi-primitive recreational capacity are increased in the Backcountry Recreation and Wilderness by constructing 70 miles ($484,000) and reconstructing 24 miles ($110,000) of trail during the first decade. Overall, 293,500 acres of unroaded Primitive and Semi-primitive recreation opportunities are provided. Table III-8 shows the number of acres in each Management Area that provide unroaded Primitive and Semi-primitive recreational opportunities.

Table III-8. Acres of Primitive and Semi-primitive Unroaded Recreation Opportunities by Management Area

	Acres	
Management Area Name	Management Management Area	Unroaded Primitive/Semi-Primitive
Wilderness	232,495	232,495
Wild River	5,029	1,956
Research Natural Area	4,608	869
Botanical	16,275	0
Unique Interest	2,015	0
Backcountry Recreation	40,871	25,960
Supplemental Resource	26,921	3,700
Designated Wildlife Habitat	50,287	0
Special Wildlife Site	28,762	0
Scenic/Recreation River	10,317	0
Riparian	96,623	0
Retention Visual	9,861	0
Partial Retention Visual	133,931	0
General Forest	434,307	28,520
TOTAL	1,092,302	293,500

9. How Should Mineral Resources of the Forest be Developed In Coordination With Management of Other Resources?

Mineral exploration and development are facilitated by retaining 75 percent of the Forest (822,994 acres) in an accessible category. Approximately 91 percent of accessible acres (747,843 acres) have low to moderate restrictions which do not limit mining activities. Approximately 9 percent (75,151 acres) have access restrictions in the high category that make many types of mining activity uneconomical. Appendix I, Table I-87 (S) displays the level of restriction affecting acres within each Management Area. Specific Standards and Guidelines affecting mineral exploration and development are defined in Chapter IV of the Forest Plan for each Management Area.

Table III-9. Level of Mineral Exploration/Development Restriction by Management Area

	Level of Restriction (Acres/1988 Inventory)				
Management Area Name	Management Area	Withdrawn	High	Moderate	Low
Wilderness	232,495	232,495	0	0	0
Wild River	5,029	5,029	0	0	0
Research Natural Area	4,608	2,000	2,608	0	0
Botanical	16,275	3,009	13,266	0	0
Unique Interest	2,015	128	1,887	0	0
Backcountry Recreation	40,871	4,312	0	26,421	10,138
Supplemental Resource	26,921	4,590	22,331	0	0
Designated Wildlife Habitat	50,287	2,127	0	48,160	0
Special Wildlife Site	28,762	1,378	27,384	0	0
Scenic/Recreation River	10,317	2,642	7,675	0	0
Riparian	96,623	0	0	96,623	0
Retention Visual	9,861	1,858	0	8,003	0
Partial Retention Visual	133,931	2,573	0	0	131,358
General Forest	434,307	7,167	0	0	427,140
TOTAL	1,092,302	269,308	75,151	179,207	568,636

United States
Department of
Agriculture

Forest Service

Pacific
Northwest
Region

1989

Final Environmental Impact Statement

Land and Resource Management Plan

Siskiyou National Forest

KEY INDICATORS

The measure of the Forest's ability to respond to each Planning Problem is referred to as a Key Indicator. Indicators include the outputs, uses, or conditions that can be measured or described to gauge the response of the various alternatives; these are displayed in Table I-1.

Table I-1. Key Indicators of Planning Problem Resolution

PLANNING PROBLEMS/ Key Indicators	Unit of Measure
1. TIMBER PRODUCTION	
Selected Suitable Area	M Acres
First Decade Volume	MMCF
Fifth Decade Volume	MMCF
Long-Term Sustained Yield (LTSY)	MMCF
2. OLD-GROWTH FOREST	
Reserved Area 1/	M Acres
Available at End of Fifth Decade	M Acres
3. SOIL, WATER, AND FISHERIES	
Management Areas 1 through 9	M Acres
Riparian Prescriptions C and M 2/	M Acres
Capital Investments 3/	M $
Harvest Dispersion Constraint 4/	Number of Basin
Anadromous Sport Fish User Days	M WFUD's
Commercial Fish	M Pounds
Average Annual Sediment 5/	M Tons
4. WILD AND SCENIC RIVERS	
Adjacent Area Meeting VQO's 6/	M Acres
5. SENSITIVE PLANTS	
Research Natural Area	M Acres
Botanical Area	M Acres
6. VISUAL RESOURCES	
Viewsheds Meeting VQO's 7/	Number
Meets or Exceeds Partial Retention 8/	M Acres
7. WILDLIFE HABITAT	
Spotted Owl Capability 9/	Pairs
Woodpecker Habitat Capability 10/	Percent
Wildlife User Days	M WFUD's
Capital Investments	M $
Special Wildlife Sites	M Acres
8. WILDERNESS AND UNROADED	
Unroaded Condition - Management Area 1 through 9 11/	M Acres
ROS--Primitive and Semi-primitive	M Acres
9. MINERALS	
Area Accessible with Limited Restriction 12/	M Acres

1/ Mature and old-growth forest reserved (protected) in Management Areas 1 through 9 (MA 1-9) plus unsuitable acres in Management Areas 10 through 14 (MA 10-14); from 5.3 acre cells.
2/ Riparian Prescriptions M (Minimum Level) and C; both exceed the Management Requirement (MR) level for water quality as reflected in Prescription B.
3/ The combination of capital investments from fisheries habitat and soil and water resource improvement projects; includes appropriated and K-V funds; both enhancement and mitigation work represented.
4/ Timber harvest dispersion ("basin") constraints are applied to planning basins; they are individually tailored based on Planning Basin values, characteristics, and activity level; they constrain activity more than the MR of 20 percent.
5/ Total average annual sediment output; includes background natural plus existing road loss rates, along with accelerated rates accounted for in the alternatives; calculation does not include other prior disturbances (harvest units or old burns).
6/ Area adjacent to (as seen from) existing or potential Wild and Scenic Rivers that meet or exceed their inventoried VQO's.
7/ Viewsheds which meet or exceed the inventoried VQO's.
8/ Area meeting or exceeding Partial Retention (Partial Retention plus Retention plus Preservation).
9/ Potential habitat capability to support spotted owl pairs over time (long term).
10/ Potential habitat capable of supporting a given percentage of woodpecker populations over time (long term).
11/ Inventoried unroaded area allocated to Management Areas 1 through 9 (MA 1-9) where little or no roading exists and management objectives are highly oriented to nondevelopment.
12/ Area accessible to mineral exploration, development, and extraction with limited (low to moderate) restrictions imposed by other resource protection needs or standards.

1. How Much Timber Should the Forest Produce?

Many individuals and groups feel that the Forest should help sustain regional and local economies by maintaining or increasing annual timber harvests. Along with this they feel that the land base available for commercial timber production should be conserved and not allocated to competing uses, and that intensive timber management practices should be applied on these lands to maximize timber yields. On the other hand, there is concern about the effects of timber management on other resources, such as plant, animal, fisheries, and water quality. Concerns are also expressed by those who commented on the DEIS about our ability to provide for biological diversity and maintain species richness and distribution over time and space. Some focus on reforestation success, growth and yield potential, and sustaining harvest levels in the future. Many feel that the amount of timber harvest should be reduced to benefit wildlife and recreation resources, and to preserve natural ecosystems.

The expectations from timber interests Nationally, regionally, and locally are that the Forest should continue to supply a significant amount of timber. Historically, the Forest has sold approximately 35 million cubic feet (MMCF) of timber annually. The current sell program is 31.2 MMCF. According to the Pacific Northwest Region's distribution of timber targets for the 1980 RPA program, the Forest's share of the timber supply should be about 37 MMCF per year (or 200 MMBF per year). Recent analysis of resource potentials indicates the Forest can only supply up to 33 MMCF per year (or 185 MMBF per year) in the first decade and maintain a nondeclining flow harvest schedule. Thus, the timber supply potential on the Forest is lower than expectations, and lower than what past projections have indicated.

The ability to respond to the timber issue is complicated by the inventory structure existing on the Forest. Standing volume, age class distribution, and the Forest's productive potential combine to create a situation characterized as "deficit inventory". The Forest has the potential to grow timber at a rate higher than can be sustained by the current inventory until the managed plantations reach harvestable ages. Many of the natural stands on the Forest are slow growing mature trees with significant amounts of the growing space occupied by unmerchantable vegetation. This condition results in relatively low volumes per acre compared to the potential of the sites. As these stands are regenerated, the timber growth increases dramatically. However, to sustain timber flows, the existing inventory must be metered out until these regenerated stands reach harvestable size and age. There are few stands in intermediate age classes; consequently, the critical period of scheduling the existing inventory is approximately 70 to 80 years. Intensive management practices can do little to relieve this situation in the short term.

Some of those who commented on the DEIS believe that the Forest should utilize a variety of technical applications to increase yield. These include adjustments to the yield tables, changes in the board foot/cubic foot conversion ratio, utilizing shorter rotations, applying fertilizer to plantations, selecting other programs or models to predict yields, and so forth.

This problem also encompasses the question of whether the Forest should harvest timber on a nondeclining flow schedule, or harvest at a higher level in the near future and plan for a decline in harvest volume in future decades. Departing from nondeclining flow could help sustain local economies by supplying a higher level of National Forest timber during a period when harvests from private lands are expected to be at low levels. Opponents to departure claim that this only shifts the burden of an inevitable decline to the future and increases the risk of adverse environmental impacts by harvesting at the higher level.

More than any other issue, the timber issue affects and is affected by the resolution of other resource issues. Sometimes this relationship is complementary, and sometimes competitive. For example, timber harvesting may enhance deer and elk habitat (through forage production in harvest units), but reduce the amount of wildlife habitat available for species dependent on mature conifer forest.

The most significant effect of other resource uses on timber is the allocation of land to uses that exclude or greatly restrict timber management. Managing for fish habitat, mature forest wildlife habitat, soil protec-

tion, water quality, wilderness, unroaded recreation, Botanical areas, and Research Natural Areas all reduce the number of acres available for timber management. Another significant effect on timber production occurs when management emphasis results in reduced yield from certain acres. This occurs when rotations are lengthened (visual management emphasis), or when harvest is constrained to a fraction of the volume in the stand (streamside management emphasis).

This Planning Problem involves allocation of Forest land to timber production and the selection of management intensities, including harvest schedules and treatments such as commercial thinning and site preparation. Potential timber production of lands allocated to other purposes must also be considered. Factors that vary by alternative include the number of acres selected for timber harvest (selected suitable), long-term sustained yield (LTSY), allowable sale quantity (ASQ), and the number of acres on extended rotation lengths or reduced yields.

Resolution of this problem also involves the consideration of opportunities to convert shrub and hardwood stands to timber-producing conifer stands. There are approximately 48,000 acres of tentatively suitable timber land presently growing predominantly hardwood trees. Even though the hardwood volume is considerable, particularly on the better sites, most of this volume is unmerchantable or of low value in today's market and only minimal amounts are accessible for fuelwood. Conversion to conifers could increase commercial timber production by bringing acres under management. However, large amounts of residue are created, and there is concern that potentially useful material may be wasted. In addition, hardwood stands contribute to the biological diversity of the Forest and provide habitat for various animal species. Many people feel that these stands should be maintained in their natural conditions to fill this role and provide for nonmarket values.

Another element in this Planning Problem is the cost, hazards, utilization factors, and environmental impacts of treating residues created by timber harvest or stand conversion. Limits are needed for acceptable risks associated with residue treatments. Better utilization, for firewood and other forms of energy, could aid in reducing the amount requiring disposal. Disposal activities often involve the application of prescribed fire which can affect air, water quality, and soil productivity.

2. How Much Old-Growth Forest Should be Preserved?

Conflicts over the management of old-growth trees and forests have increased dramatically during the last decade. Interest has grown in preserving old growth for various reasons including: providing habitat for certain species of wildlife, maintaining the aesthetic quality of large old trees and forests, and retaining portions of the Forest in these older stages as part of the natural biological diversity of the area. Some people also feel that centuries-old living trees should not be felled and converted to wood products for human use.

On the other side of this conflict is the feeling that enough old growth has already been designated for preservation, and that the remaining available stands, and the land they occupy, should be included in the base for timber management. Nearly all of the stands currently available for harvest on the Forest are in the mature or old-growth category. They contain the highest volumes per acre and the highest quality wood for manufacturing. Another aspect is the potential wood production that is not captured as long as these lands are occupied by slow-growing old stands. The old-growth stands generally produce little net growth, and in some cases, there is a net loss due to decay and mortality.

Added to this, there is debate as to the adequacy of the Forest's inventory which surfaced through comments to the DEIS. Some believe that the criteria for defining old growth is flawed; that a primary determinate should be age. The specificity of the inventory is stated as being too broad to accurately differentiate "true" old growth from older, undisturbed stands of trees. The failure to come to agreement on differing criteria confounds this aspect of the old-growth question. The inventory information available for the Forest was not developed to specifically identify old growth. Available data on the vegetation

condition has been used to assess the location and extent of old growth on the Forest. This data does not have the resolution to stratify stands with old-growth characteristics from other mature stands. Therefore, although the majority of acres classed as mature and old growth do exhibit old-growth characteristics, some areas do not. These small inclusions of other classes does not render the overall areas unsuitable as old-growth habitat.

The inventory (updated to 1985) indicates 443,000 acres of mature and old growth exist on the Forest; 99,000 acres are in areas dedicated to management that will preserve the old-growth character except for those changes resulting from natural processes (i.e., Wilderness, Wild River, Research Natural Areas, and Botanical Areas); another 38,000 acres are in areas unsuitable for timber management that would not be programmed for harvest. The alternatives vary by the amount of additional old growth included in land allocations that would retain the old-growth character, and by the rate of harvest of those acres that would be available for timber management.

3. How Can the Forest's Fish Habitat, Water Quality, and Soil Productivity be Maintained or Improved?

Fish habitat is highly dependent on water quality. Water temperature and sedimentation are critical to the maintenance and protection of the fisheries habitat. Soil erosion, slope stability, and vegetative cover along streams are extremely important in providing for fisheries and other riparian values. Management of the soil and water resources (termed "watershed management") is closely tied with fisheries management. As a result, these interrelated resources are considered in the same Planning Problem. Many people who made comments on the DEIS are concerned about fisheries and water quality.

The Siskiyou National Forest contains some of the most valuable salmon and steelhead habitat in the United States. Both sport and commercial fishing interests are highly concerned with the fish production capability of rivers and streams, and feel that the Forest should be managed to enhance fish habitat and increase production. The health and productivity of fish habitat depends on good watershed management.

Timber harvesting, roading, and mining activities have the potential to adversely affect fish habitat. Many feel that these activities should be precluded or curtailed on parts of the Forest to ensure protection of the fish and watershed resources. Others believe that these resources can be protected through application of available management practices without substantially reducing timber or mineral outputs.

Approximately 1,150 miles of salmonid-bearing streams, including 600 miles of suitable anadromous habitat, are administered by the Forest. With a few exceptions, most available habitat on the Forest is fully utilized by the fish that return to spawn. The quantity and quality of spawning gravel is considered adequate throughout the Forest, providing spawning habitat for production of approximately 65,000 wildlife and fish user days (WFUD's) in the sport fishery and 880,000 pounds in the commercial harvest.

Management of fish habitat is the responsibility of the Forest Service, while fish populations are managed by the Oregon Department of Fish and Wildlife (ODFW) and the California Department of Fish and Game. ODFW program goals emphasize the increased production of "wild" (non-hatchery) salmonid stocks. Capital expenditures for habitat improvement are the most effective means of achieving ODFW program goals in the short term. The catch attributable to Forest outputs could be increased to approximately 105,000 WFUD's and 1.3 million pounds of salmonid harvest through larger capital investments.

Factors affecting the fisheries resource over which the Forest has little influence are the management of the annual fish harvest, including the off-shore catch, and the withdrawal of stream water for domestic and irrigation use. The most severe withdrawals occur are on private lands in the Deer Creek and Illinois Valley.

In addition to management practices to avoid sedimentation and provide high quality water, there is also concern for maintaining or enhancing soil productivity. Activities can result in soil compaction, displace-

For this analysis, land management decisions within the actual river corridors are limited to the assignment of visual management objectives for site-disturbing activities, trail development, and the specification of Standards and Guidelines. Standards and Guidelines are designed to achieve the goals and objectives of the Wild and Scenic Rivers Act.

Management Plans exist for both the Rogue and Illinois Rivers. However, as a result of the very recent legislation, river management plans will have to be prepared for the three new Wild and Scenic Rivers. River Management Plans are required to be developed for the Chetco, Elk, and North Fork Smith Rivers under the provisions of the Wild and Scenic Rivers Act, 1968. The management plans will state: general principles for any land acquisition which may be necessary; the kinds and amounts of public use which the river area can sustain without impact ot the values for which it was designated; and specific management measures which will be used to implement the management objectives for each of the various river segments and protection of their features. Management plans for these rivers may establish varying degrees of intensity for the protection and development, based on special attributes of the rivers.

Recreational experiences and water quality and quantity can be affected by management activities adjacent to Wild and Scenic River corridors. Land management decisions for areas within the watershed, the viewshed, or corridors of the designated rivers must take into account possible repercussions on the values for which each river segments is classified.

Resolution of this problem involves the recommendations for future management of the three newly designated rivers. The river management plans and accompanying recommendations will be prepared later, and are not part of the Forest Plan. The key indicator for this Planning Problem, therefore, is the allocation of inventoried VQO's and other Management Areas adjacent to the river.

5. How Should Sensitive Plant Resources be Managed?

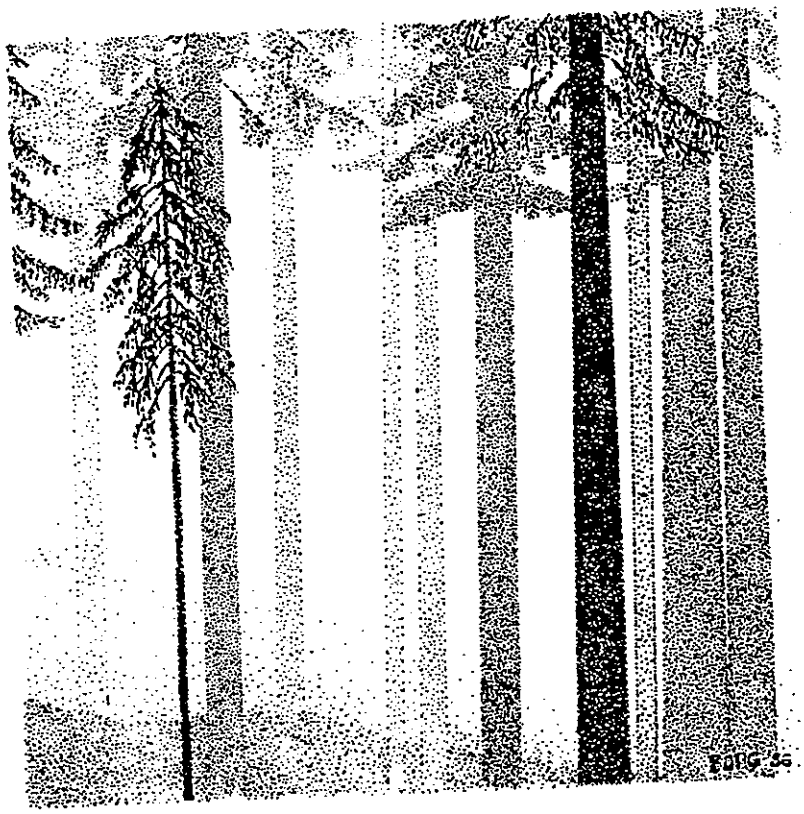
The Forest is habitat for numerous rare plants. There is a considerable amount of interest in protecting these plants from disturbance which could result from activities such as road construction, timber harvest, and mining. There is also concern that some species need protection from plant collectors. Many people feel that unique habitat areas contribute to overall biological diversity and that concentrations of rare plants should be designated as Botanical areas or Research Natural Areas (RNA's); activities that could disturb plants would be precluded in these areas. Others feel that the plant populations should be managed through "on-the-ground" project location and design, without removing or greatly restricting lands for timber management or mineral development.

The management of sensitive plant habitat is addressed through the alternatives by the allocation of various sites to Botanical or RNA designations. Currently there are three Botanical areas and three RNA's dedicated on the Forest. There are 24 candidate Botanical areas and four candidate RNA's under consideration in this analysis. Details of each site are provided in Appendix F.

Key indicators for the development and evaluation of alternatives are the acres allocated to these Management Areas. Sensitive plants and their habitat will also be addressed through standards to guide project design.

6. How, and to What Extent, Should Forest Scenic Values be Protected through Visual Resource Management?

As timber harvest and road construction activities occur, changes in the scenic resource become more apparent. The visual resource management issue revolves around the degree of protection scenic values are given and the costs and impacts of visual resource management on other activities. Activities that alter the vegetation can change the character of the Forest's recreational setting. Many people find alteration of the natural setting objectionable and feel that the Forest should be managed to retain all, or a large



MANAGEMENT AREA 3 RESEARCH NATURAL AREA

Management Area 3 contains distinctive natural ecosystems designated (or proposed) as part of the Research Natural Area Program for scientific and educational purposes. Research Natural Areas (RNA's) are sites which typify an undisturbed aquatic or terrestrial ecosystem where natural features are preserved for scientific purposes and natural processes are allowed to dominate. Three existing RNA's (Coquille River Falls, Port Orford Cedar, and Wheeler Creek) were established by the Chief of the Forest Service and remain constant at 1,957 acres in all alternatives. Four additional areas, totaling 2,799 acres (1,505 tentatively suitable timber land), are being considered for recommendation to the RNA program in this FEIS: Hoover Gulch, Lemmingsworth Gulch, Cedar Log Flat, and Craggy Peak.

Figure II-5 displays a map of each location, and Table II-3 shows the acres associated with each candidate area and how they were allocated by alternative.

Appendix I, Table I-82 (S) shows the number of acres within each Management Area which directly contribute to preservation and enhancement of Wild and Scenic River attributes. Those that contribute to maintenance of water quality and visual quality are indicated.

5. How Should Sensitive Plant Resources be Managed?

The variety of sensitive plants on the Forest would be managed through a number of land allocations designed with specific protection standards. Each Management Area has Standards and Guidelines (in addition to Forest-wide Standards and Guidelines) designed to protect sensitive plants endemic to the Forest (see LRMP, Chapter IV). Research Natural Areas (RNA's) and Botanical Management Areas would provide special emphasis to the preservation of ecotypes and sensitive plants. Four new RNA's are proposed in addition to the three existing areas (for a total of 4,754 acres) resulting in the protection of 25 ecotypes. Nineteen new Botanical areas would be recommended for addition to the three that presently exist for a total of 19,262 acres.

The distribution (percentages) of sensitive plant habitat in the various Management Areas is indicated in Appendix I, Table I-83 (S). Specific descriptions and attributes of each individual site are included in the FEIS, Appendix F.

6. How, and to What Degree, Should Forest Scenic Values be Protected through Visual Resource Management?

Visual management objectives would be achieved by designing to meet VQO's on 657,193 acres. Twelve viewsheds (of the 44 considered) would be governed by their respective inventoried VQO's, four of which encompass heavily used recreation travel corridors. Management of Forest scenic values would be designed to complement high recreation use travel corridors and viewsheds. The high priority viewsheds that would be managed to meet or exceed their respective inventoried visual objectives are: Upper Illinois, Rogue-Illinois, Oregon Caves, Highway 199, Game Lake, Bolan Lake, and Rough and Ready.

Appendix I, Table I-84 (S) shows the number of acres in each VQO category by Management Area. Approximately 487,540 acres would have an unmodified appearance (Preservation). While management activities would be evident, but visually subordinate (Partial Retention) on 148,397 acres, another 21,256 acres would be managed where activities are not evident to the casual Forest visitor (Retention). The remaining area (435,109 acres) would be in Modification where management activities may dominate the characteristic landscape, but resemble naturally occurring patterns when viewed in the background.

7. How Should Wildlife Habitats on the Forest be Managed?

The combination of land allocations and capital expenditures prescribed in this alternative would provide a wide range of effective habitat conditions. Designated Wildlife Habitat Management Areas would be allocated to meet MR's for wildlife inhabiting mature and old-growth forest. All Special Wildlife Sites (Management Area 9) would be allocated, including more than 15,000 acres of mature and old-growth forest habitat. These old-growth sites within Management Area 9 are small areas not suitable for timber management; they serve as "stepping stones" between a number of Designated Wildlife Habitat areas. In total, 198,097 acres of mature and old-growth forest wildlife habitat would be maintained through the tenth decade.

Appendix I, Table I-85 (S) shows a variety of land allocations that contribute to overall wildlife habitat diversity. Standing dead trees (snags) in areas managed for timber production would provide habitat capable of sustaining at least 60 percent of the maximum population of cavity-nesting birds. Approximately 53,995 acres of prime bald eagle and osprey habitat would be provided along rivers and streams that have a protected status. Approximately 46 percent of the Forest (505,000 acres) would provide an adequate

stages or age class. Some issues are related to both species composition and age class distribution. The issue of hardwood conversion is an example. The Forest is concerned with the diversity of both rare and common species. Rare species, endemics or species at the limits of their range (Brewer spruce and redwood, respectively), are often managed through land allocations such as Research Natural Areas and Botanical areas. Maintaining the diversity of the more common species is accomplished by Standards and Guidelines. Both rare and common species are monitored.

Meadows

Most meadows on the Forest are climax to tree species. Many were burned by the Indians to provide hunting grounds and later by ranchers to maintain forage for game and stock. The meadows provide edge (the transition from forest to meadow) for wildlife species, and a concentration of grass species. They are now gradually returning to forest.

Sensitive Plants

A plant classified as sensitive generally: (1) needs special habitat; (2) is at the limit of its range and is only locally rare; or (3) can survive on a variety of habitats, but has a limited range. The Siskiyou National Forest has all three types. The Forest Service is particularly concerned about endemics and species requiring special habitat (Webb 1988). The objective is to maintain the genetic diversity and viability of all species, but endemics may require special consideration.

To maintain diversity and viability, some species (such as *Kalmiopsis leachiana*) require disturbance; others require protection (like *Darlingtonia Californica*). Requirements for many sensitive species are still unknown; more information is needed to understand their population dynamics. Many sensitive plants are in areas where no activities will take place; as such, options for maintaining population viability remain open. Some sensitive species which occur in General Forest may actually benefit from timber harvest activities; reproduction is stimulated. However, if management activities are detrimental, sensitive plants are protected from significant reduction by Standards and Guidelines. A more detailed discussion of sensitive plants can be found in the **SENSITIVE PLANTS** section of this chapter.

Botanical Areas and Research Natural Areas

Both Botanical and Research Natural Areas help maintain species diversity on the Forest. For a detailed discussion of these important areas, refer to the **SENSITIVE PLANTS** section.

Riparian Areas

From a vegetative standpoint, riparian sites are unique. They are moist habitats surrounded by moisture-limited systems. The complement of species near the water's edge is usually quite different than the adjacent area. There is often more structural diversity, and the age-class distribution is usually more complete. They have some of the oldest trees because fire is often less influential than erosional processes as the cause of vegetational changes. Younger trees are in the newly flooded or recently eroded areas; the older trees are scattered throughout.

Hardwoods

Hardwood species include tanoak, Pacific madrone, red alder, manzanitas, canyon live oak, Pacific rhododendron, golden chinquapin, and various others. There has been little commercial market for these species, although some tanoak and red alder have been harvested for pulp. Most of the hardwoods are cut by local residents for firewood.

Some hardwood sites are climax to tanoak; others are climax to western hemlock, white fir, or Douglas-fir. Those on the southern coast of Oregon are generally climax to tanoak and will, therefore, remain as such

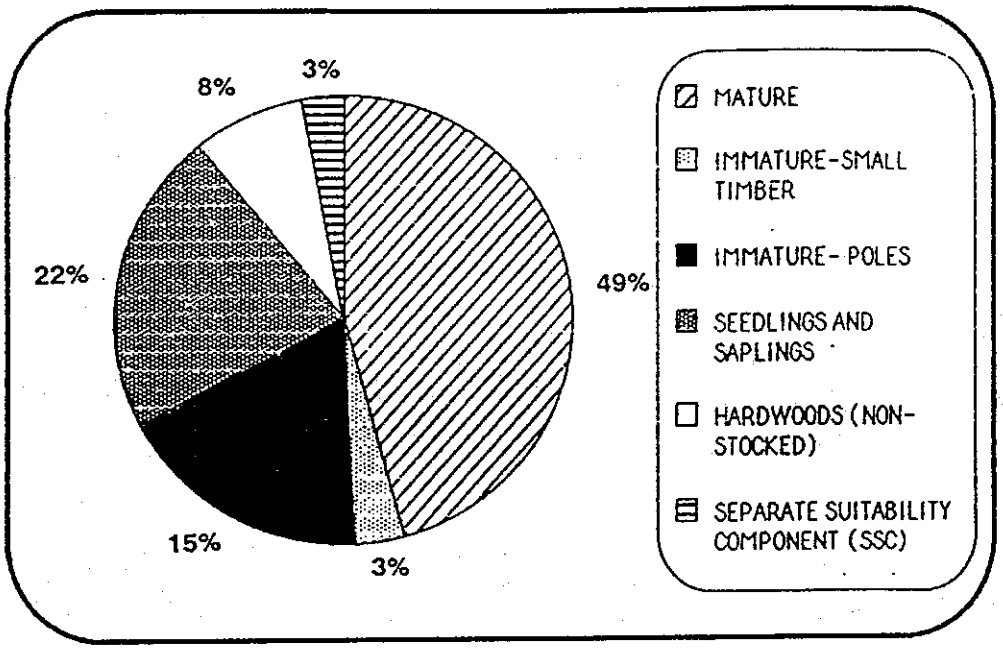


Figure III-16. Timber Condition Classes (Percent of Tentatively Suitable Forest Land)

CURRENT DEMANDS, WANTS, AND DESIRES

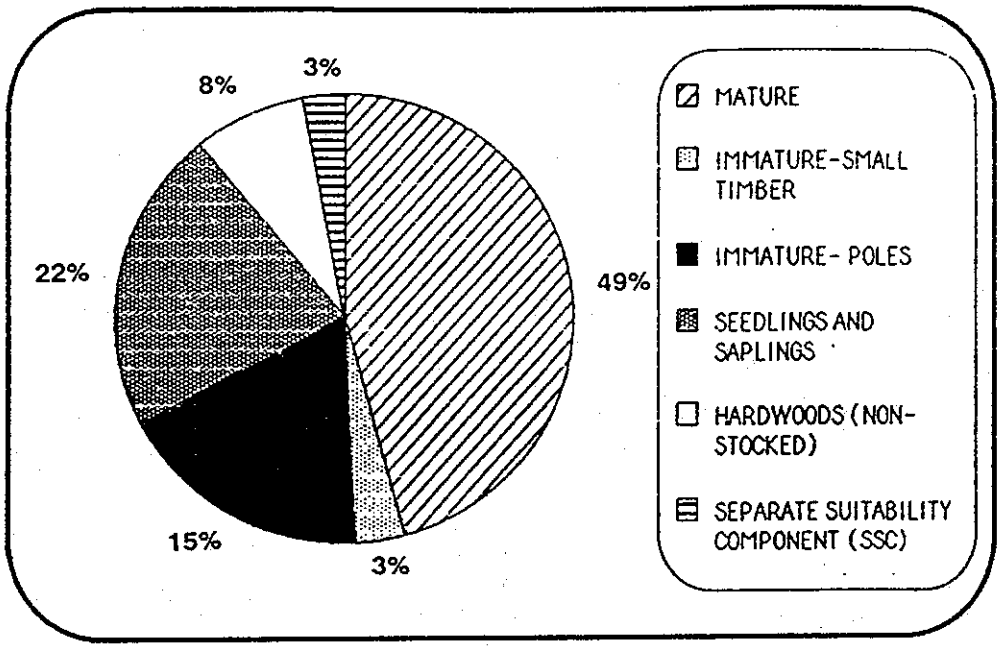
Public demands that relate to species diversity include the establishment of Research Natural Area, Botanical, and Riparian Management Areas. Maintaining the viability of sensitive plants, meadow maintenance, and conversion of hardwood areas are also part of diversity management. It is evident that most people want to maintain the Forest's species diversity. Some want diversity perpetuated for research, others simply feel diversity is strongly tied to ecosystem health and its ability to respond to various needs, disturbances, or even changes in climate.

Demands associated with age-class distribution are the perpetuation of old growth and the provision for a sustained flow of managed age classes for timber harvest. The separation of demands into those associated with diversity and age helps to categorize the problems, but the two concepts should not be considered as separate. Many species only do well in the environmental conditions accompanying certain seral stages; the diversity of species is linked to age diversity.

ABILITY TO SATISFY DEMAND

DIVERSITY

Biologically, the Forest is capable of maintaining the present complement of species, barring an extensive catastrophe. Land allocations may be key to maintaining viable populations of some plants, but the greatest need is for information on life cycles and environmental requirements of sensitive species and even some timber species. The use of "minor" species (less common trees in a forest stand) in forestry practices is becoming commonplace, but information on their performance is lacking. Harvested units are being planted with a species mix similar to preharvest conditions, but predicting yields in such mixtures is in its infancy.



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ABILITY TO SATISFY DEMAND

DIVERSITY

Biologically, the Forest is capable of maintaining the present complement of species, barring an extensive catastrophe. Land allocations may be key to maintaining viable populations of some plants, but the greatest need is for information on life cycles and environmental requirements of sensitive species and even some timber species. The use of "minor" species (less common trees in a forest stand) in forestry practices is becoming commonplace, but information on their performance is lacking. Harvested units are being planted with a species mix similar to preharvest conditions, but predicting yields in such mixtures is in its infancy.

Existing Botanical Areas

The Forest contains three existing Botanical areas totalling 4,475 acres. Of these acres, 3,401 acres (or 76 percent) are within the Kalmiopsis Wilderness. Sensitive plant species are present in all three areas. The 352-acre Babyfoot Unusual Interest Area (Botanical) was established in 1966 to protect Brewer spruce and other rare plant species. The 3,803-acre Big Craggies Botanical Area was established in 1964, primarily to protect Brewer spruce and *Kalmiopsis leachiana*. The 320-acre York Creek Unusual Interest Area (Botanical) was established in 1966 primarily to protect an extensive patch of *K. leachiana*.

Potential Botanical Areas

Two types of potential Botanical areas have been identified: (1) those designed to protect sensitive plants, and (2) those designed to preserve outstanding examples of old-growth stands (very large, old trees).

1. **Sensitive Plant Botanical Areas.** There are 19 potential Sensitive Plant Botanical areas (35,596 acres) identified throughout the Forest. Eight Dollar Mountain is probably the best known site. Over 20 sensitive plants are present (almost one-third of those known to be on the Forest); this same assemblage is not known to be present elsewhere (as a group). Sensitive species are located on both bog and dry sites at a variety of locations; the largest Darlingtonia bogs on the Forest are within the Eight Dollar Mountain site. This site has been continually botanized since the 1880's, and is of much historical interest in regard to early-day botanists. A number of species were first collected in this area. Another outstanding example is the Bigelow Lakes site. A large variety of sensitive species are present. Some plant species are at their most northern or western limits. This concentration of plants is not known elsewhere on the Siskiyou or adjacent National Forests.

2. **Old-growth Botanical Areas.** There are five potential Old-growth Botanical Areas (1,321 acres) on the Forest. The best example is the Lobster Grove site which is dominated by very large Douglas-fir *(Picea breweriana)* and Port-Orford-cedar, some approaching 8 feet in diameter. There are also outstanding examples of large tanoak, Pacific madrone, and Oregon myrtle (the world's largest myrtle tree is located within the Grove).

RESEARCH NATURAL AREAS

Research Natural Areas (RNA's) are allocated for research and education. These ecosystems are unaffected by man and are intended to be baseline representatives for the study of natural processes and the maintenance of gene pools. Representatives of both rare and common ecosystems are included. A system of RNA's has been set up throughout the Pacific states to preserve representatives of plant communities. Many plant communities are not yet represented by RNA's. The present representation of cells (ecosystems, species, or special areas earmarked for inclusion by the RNA Committee) falls short of the Committee's recommendations for this Forest. The Siskiyou presently has three RNA's. Four additional RNA's have been proposed by Forest Service researchers and others for inclusion into the RNA system (Dyrness and others 1975). See Appendix F for more detail on individual areas.

Existing Research Natural Areas

Three RNA's (1,957 acres) exist on the Forest. The Port Orford Cedar RNA (1,120 acres) was established in 1937, it contains six plant communities (cells) not represented in other RNA's. Most of the RNA is covered with old-growth Port-Orford-cedar and Douglas-fir. Although ages are not accurately known, many of the dominant specimens are undoubtedly 400 to 500 years old. The Coquille River Falls RNA (501 acres), established in 1945, contains two plant communities. It was established primarily to provide examples of virgin old-growth Port-Orford-cedar. Both RNA's with Port-Orford-cedar have been infected since about 1967 with Port-Orford-cedar root disease, an introduced pathogen. The ability of the RNA's to retain Port-Orford-cedar is receiving much attention. The Wheeler Creek RNA (336 acres) was established in

1972 to preserve an example of redwood forest near the northern limits of its range. This RNA contains three plant communities.

Potential Research Natural Areas

Ecologists have identified four sites on the Forest suitable for establishment of new RNA's: Hoover Gulch, Lemmingsworth Gulch, Cedar Log Flat, and Craggy Peak (Figure II-5). See Appendix F for detailed descriptions. Hoover Gulch (1,292 acres) contains three plant communities (cells) not represented in other RNA's. Lemmingsworth Gulch contains eight plant communities on 965 acres. It is marked by a sharp contrast between geologic substratum which results in a dramatic contrast in vegetation types, including seven sensitive plant species. Cedar Log Flat (441 acres) contains 10 sensitive plants and one plant community type (Jeffrey Pine-Grass at low elevations). The Craggy Peak site contains six plant communities. Two plant communities on 100 acres occur in the Siskiyou portion. Another 1,100 acres, containing the remaining four plant communities, are located on the adjoining Rogue River National Forest.

CURRENT DEMANDS, WANTS, AND DESIRES

Three Planning Problems, which reflect current demands, pertain to management of sensitive or unique plant resources.

2. "How Much Old-Growth Forest Should Be Preserved?"

Some people have expressed a desire to preserve unique stands of old growth in various locations in the general forest. They feel these areas should be set aside for purposes of study, and aesthetic and biological diversity values.

5. "How Should Sensitive Plant Resources Be Managed?"

Approximately 40 percent of the Forest is habitat for sensitive and rare plants. The large variety of plants present has generated considerable local, state, and national notoriety. Citizens interested in the botanical resources of the Siskiyou National Forest (including RNA's) feel that unique concentrations of rare plants should be protected from detrimental change. There is concern that some sensitive plant areas could be overused. A decision can be made to either ignore sensitive plants and their habitats, or manage these resources to protect their inherent values.

9. "How Should Mineral Resources of the Forest Be Developed in Coordination With Management of Other Resources?"

Some citizens are concerned that protection of botanical resources may have a detrimental effect on mining operations (and to a lesser extent, timber).

ABILITY TO SATISFY DEMAND

2. "How Much Old-Growth Forest Should Be Preserved?"

Five sites (total acreage 1,321) have been identified which contain outstanding examples of old-growth stands (very large, old trees). Some or all of these sites can be excluded from timber harvest through land allocations such as Botanical Management Areas, or they can remain as areas which will eventually be harvested.

NONCONSUMPTIVE USE

Of the over 250 wildlife species inhabiting the Siskiyou, only 22 are classified as game animals or furbearers; and even these animals frequently serve the public in nonconsumptive ways. Nongame wildlife are recognized as an important natural resource by the ODFW (Marshall 1986).

Although no accurate figures for nonconsumptive use are available for the Forest, the 1975 National Survey of Fishing and Hunting showed that for every day a hunter spent in the field, three other individuals were bird-watching, photographing, or observing wildlife (USDI Fish and Wildlife Service 1977). During 1980, 2.2 million Oregon residents participated in some kind of nonconsumptive wildlife use activity (USDI Fish and Wildlife Service/USDC Bureau of the Census 1982).

Thousands of people boat or hike along the Rogue and Illinois Rivers every year; "watchable wildlife" are an important part of their recreation experience. On the Siskiyou, recreation-days attributable to nonconsumptive use of wildlife resources are at least as high as recreation-days attributable to hunting.

Most people enjoy seeing wildlife in their natural habitat. Most people agree that all wildlife species presently existing on the Forest should continue to be part of the Forest ecosystem. People differ on how much of each vegetative type should be maintained to achieve the most desirable mix of habitats.

ABILITY TO SATISFY DEMAND

Three Planning Problems pertain to management of wildlife resources and the ability of the Forest and the Forest Service to satisfy demand:

1. "How Much Timber Should the Forest Produce?"

The Forest could adjust the allowable cut to meet a wide range of wildlife objectives. Specifically, in areas managed for timber the Forest is physically able to meet ODFW criteria for elk and deer cover/forage requirements (ODFW 1985a).

2. "How Much Old-Growth Forest Should Be Preserved?"

There is a wide range of options. Old growth can be reserved for wildlife that need this type of habitat; land allocations to meet MR's for wildlife can be expanded (increased from 159,949 acres; a minor portion is mature forest). If no more old growth is cut, the Forest could maintain approximately 393,000 acres of old-growth forest indefinitely (including dedicated areas). If present mature stands (50,000 acres) are allowed to progress into old growth, and if lands cut over in the last 40 years (138,000 acres) are allowed to grow back into old growth, an additional 188,000 acres could be managed as old growth.

7. "How Should Wildlife Habitats on the Forest Be Managed?"

Wildlife and their habitats are an important part of the Siskiyou ecosystem. If all wildlife species presently occurring on the Siskiyou are to remain as viable components of the Forest ecosystem, then this entails preservation of at least minimum amounts of the various habitats. Examples of the most essential habitats are meadows, riparian areas, snags, early successional stages, mature and old-growth forest, and hardwood stands.

Primary land allocations can be made to protect the various habitats supporting specific wildlife populations on the Forest, such as Designated Wildlife Habitat, Special Wildlife Sites, and Supplemental Resource Management Areas. Wildlife objectives can be furthered through secondary allocations such as Research Natural Areas and Botanical areas. Standards and Guidelines can be used to establish

In addition to fire, timber harvest also has a major effect on ecosystem function and productivity. Timber harvest generally occurs in the late seral stages of coniferous forest. These forests are complex ecosystems which have complex functions. The late seral stage coniferous forest consists of large long-lived trees forming a broken canopy with a variable distribution of dominants and codominants. A vertical foliage distribution is present with a patchy understory which provides niches for vertebrates and invertebrates (Harris 1984).

These forests also contain snags and broken topped trees that provide roosting and nesting sites for birds and mammals. Underground mychorrhizal fungi provide food for many mammal species and assist trees in the uptake of nutrients for growth and survival. Fallen logs support insects, which serve as food for many vertebrates. Vertebrates, such as amphibians, also live in the decaying logs. The decaying logs, also provide sites of nutrient cycling and contribute to the maintenance of long-term site productivity (Harris 1984).

Patterns of timber harvest have consequences to diversity at the landscape level. The contiguous nature of late seral stages is replaced by a patchwork interspersed with early seral stages. This condition has been referred to as "forest fragmentation." The degree of fragmentation may influence the abundance of forest interior species.

On the Siskiyou National Forest, much of the timber harvested has been on productive lower elevation sites, where vertebrate species density is generally higher. The amount of late seral stage forest has also been reduced nearly 26 percent since 1940. The existing acres of late seral stage (mature and old growth) are displayed in Table III-30.

CURRENT DEMANDS, WANTS, AND DESIRES

The National Forest Management Act requires that Forest plans "preserve and enhance the diversity of plant and animal communities...so that it is at least as great as that which would be expected in the natural forest" (36 CFR 219.27). Additional direction states, "Management prescriptions, where appropriate and to the extent practicable, shall preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which would be expected in a natural forest and the diversity of tree species similar to that existing in the planning area."

Several respondents to the DEIS mentioned the need to maintain the species diversity of the Forest; especially botanical resources. Many comments mention establishment of Research Natural Area, Botanical, and Riparian Management Areas. Several species were mentioned specifically, including redwood, Brewer spruce, and Port-Orford-cedar.

Perpetuation of old-growth forest ecosystems and the need to consider old growth preservation at the landscape scale were common themes. Some respondents emphasized uneven-aged management. Other public desires includes meadow maintenance, maintaining species viability, and retaining hardwood components in forest stands. Some respondents recognized that much is to be learned about providing biological diversity in the forest. They recommended inventories, monitoring, and research to develop future guidelines and practices.

ABILITY TO SATISFY DEMAND

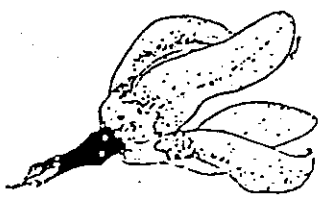
Biologically, the Forest is capable of maintaining the present complement of species, barring an extensive catastrophe. Land allocations are one tool to maintaining viable populations of some plants and animals. Other tools, such as management plans and Forest-wide Standards and Guidelines, may be appropriate for some species. Redwood, Port-Orford-cedar, and Brewer spruce are examples of plant species that can be maintained by using more than one approach. Table III-31 relates biological diversity to management issues and strategies.

Botanical, Research Natural Areas, Special Wildlife Sites, Designated Wildlife Habitat, and selected Supplemental Resource Management Areas are all designated, in part, to maintain plant and animal diversity. There are plants and animals which also occupy land allocated to General Forest, Retention, and Partial Retention Visual Management Areas. In these areas, sensitive plants and animals that thrive on infrequent disturbance will be considered on a case-by-case basis during project planning. Emphasis is placed on the development of Species Management Guides for all of these species to allow evaluation, protection, and maintenance at the landscape scale. If plants requiring frequent disturbance are found in areas other than General Forest and Partial Retention Visual, a method of introducing disturbance in the proper frequency and intensity to assure species viability will be considered.

Remarkable groves of old-growth forest and unique plant habitats can be allocated to Botanical Management Areas. In addition to these allocations, late seral stage forest would be provided in areas allocated to no harvest prescriptions (Management Areas 1-9). Mature and old-growth forest is also present on lands unsuitable for timber management within Management Areas 10-14.

The combination of mature and old-growth forest on unsuitable lands and Management Areas 1-9 can be evaluated for each alternative to determine if late seral stages will likely be present in Planning Basins through the planning period. The potential pattern of late seral stages over the forest landscape can also be compared for each alternative.

The ability of the Siskiyou National Forest to provide significant quantities of old-growth forest in some plant associations may be impaired by the natural fire frequency in some areas of the Forest. Fire frequencies are also affected by human activity. High fire frequencies on the lower slopes of the inland valleys were maintained by the Indians and are perpetuated by today's culture. Many of these lower slopes have reburned as many as three times in the last two decades. Several plant associations of the Douglas-fir Series and the drier associations of the White Fir Series are not likely to persist in an old-growth condition for long periods of time.



RECREATION

The recreational capacity of the Forest varies depending on land allocation. The Primitive and Semi-primitive recreational opportunities are the main concern. The maximum amount of land that can be allocated, including existing Wilderness areas, to a condition suitable for Primitive or Semi-primitive recreational use is 547,000 acres.

The Forest's ability to provide this type of experience outside of designated Wilderness has costs associated with foregoing timber harvest and the actual implementation costs (Figure III-26). These opportunity costs are also associated with the protection of old-growth. When areas are allocated to unroaded status, the protection of old-growth forests also occurs. Only implementation costs are associated with the lowest land allocation for Primitive recreation, while opportunity costs of foregoing timber harvest are associated with the maximum supply of Primitive recreation opportunities.

SENSITIVE PLANTS

The maximum acreage of land that may be allocated to Botanical and Research Natural Areas is 46,148 acres. The Forest capacity to provide adequate resources of sensitive plants is often associated with the opportunity costs of foregoing mineral extractions on selected Botanical and Research Natural Areas. These "costs" are presently not quantified due to uncertain markets and inadequate mineral surveys. However, the acres of mineral accessibility and restrictions to activity vary with the options of preserving sensitive plant habitat.

VISUALS

The maximum amount of area that may be allocated to Retention and Partial Retention Visual Management Areas is 88,000 and 300,000 acres, respectively. The supply of scenic vistas is directly related to the opportunity costs of timber harvest. Slower rates of harvest on areas managed for scenic values are these opportunity costs. Increased amounts of pristine views are correlated with increased opportunity costs. These opportunity costs, therefore, may also be associated with the old-growth character of longer rotations. In other words, scenic vistas associated with a longer timber rotation also provide some old-growth characteristics.

WILDLIFE HABITAT

Wildlife habitat measurements are varied depending on the objectives desired. Big-game habitat supply is more a result of Standards and Guidelines than major land allocations, assuming adequate openings are present. Dead and defective tree habitat for species dependent on such habitat also varies with Standards and Guidelines. There are few opportunity costs associated with such supplies, though higher logging costs, layout costs, and snag enhancement costs, such as tree topping, increase as one manages for an increased supply of dead and defective tree habitat.

MINERAL RESOURCES

Any change in Forest capacity to limit access for mineral extraction is primarily associated with areas allocated to an unroaded condition, conflicting resource values, and restrictive Standards and Guidelines. Such restraints and requirements can affect the economic feasibility of mineral extraction.

Land assigned to the last five Management Areas provides a much broader range of uses. A greater degree of site disturbance is allowed. The visual emphasis in three of the five areas, however, does limit the methods, scheduling, and locations of some site disturbing activities. Motorized access is prevalent in these Management Areas in support of the timber harvest program, some forms of recreation, and hunting use. Overall, energy and mineral development opportunities are not encumbered by overly-restrictive requirements and mitigations for access and development. Land assigned to Management Areas 10-14 ranges from 422,185 acres (39 percent of the Forest) in Alternative M to 811,439 acres (72 percent) in Alternative NC.

No indirect or cumulative effects on land status have been identified.

Wilderness Management Area (1)

These areas were established by Congress to provide opportunities for solitude and recreation in a natural state. Standards and Guidelines for Wilderness limit site disturbance to that which can be accomplished with hand tools. With the exception of mining activity on valid claims established prior to December 31, 1984, no motorized access is permitted. Land within the Wildernesses is not available for energy and mineral development, except as previously noted. Total acreage within the Wilderness Management Area (232,495 acres) remains fixed by alternative. Where two or more Management Area allocations overlap (e.g., Big Craggies Botanical Area in the Kalmiopsis Wilderness), the Wilderness effects and constraints on land status take precedence.

Levels of agency activity that vary by alternative are generally limited to trail construction/reconstruction and activities related to resource protection. Natural fuels treatment within Wilderness is permitted to varying degrees in all alternatives, except Alternatives NC, A, and A-Departure.

Wild River Management Area (2)

With the exception of permits, structures, and practices that were established prior to legislative designation, site disturbance within the Wild River Management Area is generally limited to that which would preserve the river in a natural, wild, and primitive condition. No motorized access is permitted unless provided for in the legislation (e.g., Rogue River as cited in P.L. 90-542). Subject to valid existing claims, lands in Wild River are withdrawn from mineral and energy development.

Trail development, fish and wildlife habitat improvement projects, and primitive campsites illustrate the extent of agency activities permitted in the Wild River Management Area. Treatment of natural fuels through prescribed burning is also permitted in all alternatives except NC, A, and A-Departure.

Research Natural Area Management Area (3)

RNA's are established (or recommended to be established) to represent typical and distinctive natural ecosystems and habitats for scientific or educational use in an unmodified condition. Standards and Guidelines for RNA's generally prohibit site disturbance unless consistent with the objectives of the area. Site-disturbing activities beyond trail development and maintenance are not permitted in this Management Area. Special use permits may be approved by the Pacific Northwest Experiment Station when directly related to the objective of the RNA. Lands within this Management Area would have high levels of access restrictions for mineral and energy development. However, withdrawals from mineral and energy development can only be considered through the NEPA process.

Three existing RNA's total 1,957 acres. Recommended additions to this Management Area of approximately 1,300 acres occur under Alternatives E, G, K, M, and S.

activities that conflict with wilderness values. Public demand for removal of the activity from Wilderness could result.

Wild and Scenic/Recreation Rivers

Allocations to or designations of Wild, Scenic, or Recreation Rivers could have significant direct effects on mineral activities due to high or withdrawn access restrictions. The Illinois and Rogue River are partially withdrawn from mineral entry under the current situation. Allocations to Wild segments will generally result in the withdrawal of land from mineral activities within 1/4 mile either side of the river. In some cases, withdrawal may be recommended in Scenic segments. Access restrictions on Recreation segments are generally high. Protection of visuals on lands adjacent to the 1/4 mile corridor (i.e., within the viewshed) may impact mineral activities on a much larger area due to public demand for protection of those areas. Development of reservoirs and powerlines, and other types of intensive use, are generally not permitted on Wild and Scenic Rivers. Removal of sand and gravel will usually be prohibited.

Botanical, Unique Interest, and Research Natural Areas

The potential for major direct effects on minerals can occur in these areas. Because of the potential conflict with sensitive plants and unique plant communities, all three allocations impose high restrictions relative to access and development. If protection cannot be assured during mining, the need for withdrawal will be considered through environmental analysis of specific operating plans. Known deposits of strategic minerals such as nickel, laterites, and chromite could be significantly affected.

Existing Research Natural Areas (RNA's) and Botanical Areas are withdrawn (or are in the process of being withdrawn) from mineral entry. Impact will vary by alternative and by individual area depending on the mineral potential (see Appendix F for site specific information for RNA's and Botanical Areas). Unique Interest Areas are quite limited in number and area.

Backcountry Recreation

This Management Area assignment could lead to significant direct effects on mineral activities. The level of access restrictions is low to moderate, depending on whether the individual area is motorized or non-motorized. In general, though, areas of higher mineral potential have existing primitive jeep roads and motorized trails. Where these occur, the established use would likely continue under either the Management Area prescription or an approved operating plan.

Designated Wildlife Habitat and Special Wildlife Habitat Areas

Allocations to Wildlife Management Areas could have moderate or high restrictions on mineral access and development depending on the sensitivity of the species affected. While not prohibitive, some of the more sensitive wildlife habitats and species may carry restrictions on mineral activities that could make mining uneconomical.

Riparian and Supplemental Resource Management Areas

Assignments to these areas could have a significant direct effect on mineral activities. A moderate access restriction has been applied to the acreage of Riparian areas. A high restriction will apply to Supplemental Resource areas, depending largely on the proposal and sensitivity of the area and its related resource values. The potential for major conflict exists between placer mining and fish habitat, water quality, recreation use, and other values and uses. This could lead to more severe access restrictions; however, to date, this has not been the Forest's experience.

undoubtedly be found on the Forest. Also, much remains to be discovered about the range and abundance of individual plant species. Known plant communities needing representation in the RNA system are included in the proposed RNA's. Research in progress on the plant associations of the Siskiyou Mountain Province (Atzet and Wheeler 1984) will undoubtedly result in the identification of additional plant communities needing representation in RNA's.

Over the short term, there is a low risk that sites not designated will be precluded from receiving future consideration as RNA's or Botanical areas. For most sites, a decision to withhold RNA or Botanical status can be reversed at the end of the first planning period (10-15 years). This would not be true of the old-growth sites, which might be harvested (at least partially) before the Forest Plan is revised. Over the long term (by the fifth decade), grazing, road building, timber harvesting, and mining activities will have taken their toll and many sites will no longer retain the qualities necessary to meet the criteria for designation as RNA or Botanical areas. The Forest's rare plant resources would be best managed by assigning Botanical areas status to high priority sites. Plant resources in sites with lower priorities would be intensively inventoried before this Forest Plan is revised in 10-15 years. For a description of the RNA's and Botanical areas (existing and proposed) refer to Appendix F (FEIS).

Alternatives NC, A, and A-Departure

DIRECT EFFECTS. No potential Botanical areas are established with these alternatives. In areas with a significant amount of land allocated to General Forest (see Table II-3), site conditions will change from natural to managed over the long term as road building and logging take place. This means most of these sites will eventually be unsuitable for designation as Botanical areas. This is especially true for old-growth sites; all of these sites are allocated in whole or in part to General Forest. Individual sensitive plant populations within potential Botanical areas (and elsewhere) will be managed through application of Standards and Guidelines; however, the natural features of individual areas may not be protected in the long term.

Existing RNA's and the proposed Hoover Gulch RNA (3,249 acres) are allocated (14 plant communities protected). Present cell needs (Dyrness and others 1975) will not be met. Thus, future needs will have to be found in Wilderness or in other compatible management areas. If they are not found, cells will not be represented and baseline information will be unavailable.

Lemmingsworth Gulch and Cedar Log Flat contain both mineral resources and land allocated to General Forest. Up until the next revision of the Forest Plan in 10-15 years, these two sites may not be heavily impacted by mining, road building, and timber harvesting activities. In the long term, logging and road building will inevitably make the sites unsuitable for designation as RNA's. The portion of the proposed Craggy Peak RNA on the Siskiyou National Forest has no known mineral resources and no timber available for harvesting; the option to designate this site as an RNA would probably be available indefinitely.

Many sensitive species are present in existing Wilderness, RNA's, and Riparian areas. Without specific information on environmental requirements of sensitive species, the effects of this alternative on specific sensitive plants is unknown over the long term. Refer to Appendix F (FEIS) for additional information.

Alternative A-Departure is the same as Alternative NC and A, except that accelerated timber harvest activities may change the character of individual areas sooner.

INDIRECT EFFECTS. The public will still be able to visit potential Botanical and RNA's; however, at some sites inherent natural values may be lost over time because of grazing, road building, timber harvesting, and mining activities. Although few allocations were made in this alternative for Botanical or RNA's, some of the areas will still be relatively unchanged and available for designation during the next one or two decades.

RESEARCH NATURAL AREAS

The Siskiyou Mountains represent a complex pattern of vegetation across a base of varied geological types. White fir is the dominant climax species in much of the area. It is associated with Douglas-fir, ponderosa pine, sugar pine, and Shasta red fir, which are commonly seral to white fir but, together, make up the mixed conifer formation. Tanoak is also a major climax dominant, particularly on the coastal Districts. It is associated with redwood, Douglas-fir, madrone and oaks forming the mixed evergreen formation (Franklin and Dyrness 1973).

The Research Natural Area system has been set up to preserve examples of all significant natural ecosystems, such as those just discussed, for comparison with those influenced by man. RNA's are reserved for scientific and educational use. Many plant communities are not yet represented by RNA's. The Siskiyou presently has three RNA's; four additional areas on the Siskiyou have been proposed by Forest Service researchers and others for inclusion into the RNA system (Dyrness and others 1975).

The Port Orford Cedar and Coquille River Falls Research Natural Areas, both on the Powers Ranger District, were established in 1937 and 1945 respectively. The Wheeler Creek Research Natural Area on the Chetco Ranger District was established in 1972. The four proposed sites on the Siskiyou are Hoover Gulch, Lemmingsworth Gulch, Cedar Log Flat, and Craggy Peak. The Cedar Log Flat and Lemmingsworth Gulch areas also contain a number of sensitive plant species. Figure F-1 displays the locations of existing and proposed RNA's. The individual sites are described in the **Narratives** section of this appendix.

In May 1981, the Forest Supervisors of the Rogue River, Siskiyou, and Umpqua National Forests requested that Forest Service ecologists make a field search to locate "cells" needed for the Research Natural Area Program in the Pacific Northwest. The four areas listed as proposed RNA's in the Siskiyou Forest Plan were part of the analysis. In addition, the following areas were reviewed in the field, but were not selected.

KINNEY CREEK

The Kinney Creek area on the Rogue River National Forest was considered for its stand of canyon live oak (*Quercus chrysolepis*), indicative of shallow soils and hot sites. The stand was only several acres and without access. A river crossing was necessary to access the stand. Douglas-fir, incense-cedar and sugar pine were all represented and some of the stand was not climax to the oak.

TAYLOR CREEK

Taylor Creek, on the Galice Ranger District, was also considered for filling the canyon live oak cell need, but as with the Kinney Creek Site, both size and access were problems. The stand is located just inside the Siskiyou National Forest boundary near the Taylor Creek road. The proposed Hoover Gulch RNA was a better option than either Kinney Creek or Taylor Creek.

ELKHORN PRAIRIE

Elkhorn Prairie is on the border of the Rogue River and Siskiyou National Forests (Applegate and Illinois Valley Ranger Districts). Grayback Mountain is the nearest well known landmark. Cells considered were herblands (grass balds), large, high elevation, cold springs, green fescue meadows and the red fir/white fir interface. It was considered as part of a larger area including cells on the Rogue River National Forest, but was not recommended because of the high degree of disturbance and domestic animal use.

WINDY VALLEY

Windy Valley, located on the northern quarter of the Chetco District, was considered for a representative of a typical marsh and coastal stream with riparian hardwoods. The flat valley is somewhat atypical of

3. *Page Mountain Grove*. This is an old growth grove of large Douglas-fir and Port-Orford-cedar in the southeastern portion of the Illinois Valley Ranger District. The grove is along the Happy Camp Road near the divide between the Siskiyou and Klamath National Forests. The area is quite accessible to the public and has high potential for recreation and environmental education use. Part of the site (not the Addition) is within a 300 acre MMR site for pileated woodpeckers, (Management Area 8, Designated Wildlife Habitat, see the Forest Plan).

4. *Redwood Groves*. This proposed Botanical area was created between the draft and final plans, in response to public comments. The area contains a number of separate stands, which represent some of the best remaining old-growth redwood forest on the Siskiyou (and in Oregon). Several stands are near the existing Wheeler Creek RNA.

5. *Snaketooth Redwood*. This 21 acre site is the northern-most coastal redwood grove. Half of the original 40 acre site was harvested in the early 1960's. It is located on the Chetco Ranger District, in the Little Redwood Creek drainage.

RESEARCH NATURAL AREAS

EXISTING

1. *Coquille River Falls*. The Coquille River Falls RNA contains two plant communities (cells) not represented in other RNA's: (a) mixed forest of Douglas-fir, tanoak, and Port-Orford-cedar; and (b) red alder/swordfern.

2. *Port Orford Cedar*. The Port Orford Cedar RNA contains six plant communities (cells) not represented in other RNA's: (a) mixed stand of grand fir, bigleaf maple, and western hemlock, with understory dominated by swordfern; (b) open vegetational mosaic on serpentine ridge with stunted Douglas-fir, canyon live oak, and coffeeberry; (c) swale dominated by red alder and slough sedge (*Carex obnuta*); (d) swale dominated by Oregon ash and slough sedge (*Carex obnuta*); (e) mixed-forest stand located on serpentine and dominated by Douglas-fir, with minor amounts of Port-Orford-cedar and Pacific madrone in the overstory, and tanoak and beargrass in the understory; and (f) mixed upland forest dominated by Douglas-fir, Port-Orford-cedar, and western hemlock, with understory of tanoak and swordfern.

3. *Wheeler Creek*. The Wheeler Creek Research Natural Area was established to preserve (a) a redwood stand near the northern limit of its range. Two additional cells in this RNA are: (b) forested riparian zone with a major hardwood component of bigleaf and vine maple, and abundant herbaceous cover; and (c) mesic forest with understory of tanoak, Evergreen huckleberry, and Pacific rhododendron.

PROPOSED

Forest ecologists have identified four sites on the Forest suitable for establishment of new RNA's. They are listed by priority order.

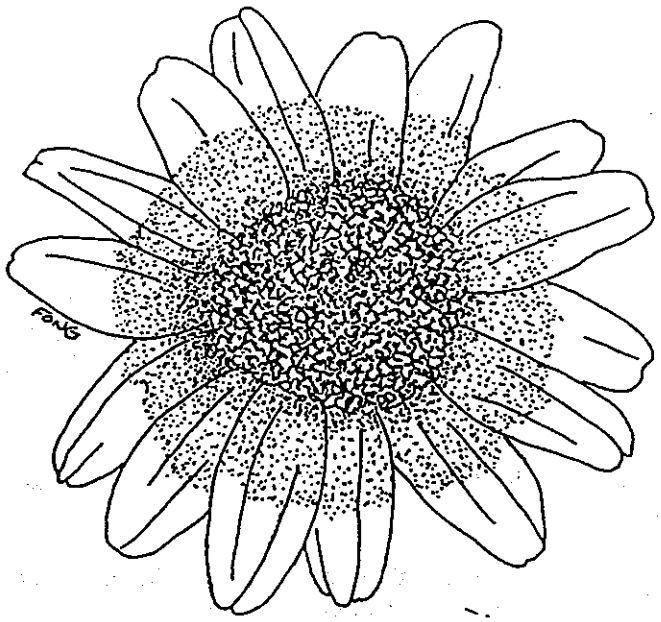
1. *Lemmingsworth Gulch*. Lemmingsworth Gulch (Chetco Ranger District) contains eight cells: (a) mixed-evergreen forest (Douglas-fir and evergreen hardwoods--minor component), (b) tanoak/madrone forest, (c) knobcone pine, (d) Jeffrey pine/grass on serpentine at high elevation, (e) serpentine vegetation matrix and normal soil island with good representation of contacts, (f) stream drainage in serpentine at mid- to high-elevation, and (g) mountain bog in serpentine area with *Darlingtonia*. This site also contains a variety of sensitive and rare plant species.

2. *Hoover Gulch*. Hoover Gulch (Illinois Valley Ranger District) contains three plant communities (cells) not represented in other existing or proposed Research Natural Areas: (a) canyon live oak, (b) mixed evergreen forest (Douglas-fir and evergreen hardwoods), and (c) a major drainage in mixed-evergreen forest. These plant communities are common in southwest Oregon and northwest California, but suitable

locations for RNA's are not. The lower portion of the area is within the Wild and Scenic Illinois River corridor. This site is also part of a spotted owl habitat area (SOHA) (see Management Area 8, Forest Plan). There are no existing mining claims in the area.

3. *Cedar Log Flat.* Cedar Log Flat (Galice Ranger District) contains an important plant community not represented in other existing or proposed Research Natural Areas: Jeffrey pine-grass at low elevation. This is an uncommon plant community. There are no other sites available to represent this plant community in the RNA system. This site has not been grazed. In 1984 Dennis Vroman (Galice Ranger District) discovered six sensitive plant species at the site, most of which are otherwise confined to the Illinois Valley area.

4. *Craggy Peak.* The Craggy Peak site (Illinois Valley Ranger District) contains six cells: (a) vernal pond at mid- to high-elevation, (b) cold springs, (c) Shasta red fir - white fir forest, (d) Brewer spruce showing maximum development, (e) Baker cypress in the eastern Siskiyou Mountains, and (f) mountain herblands at high elevation. The largest portion of the proposed Craggy Peak RNA is located on the Rogue River National Forest (the portion on the Rogue River is called Oliver Matthews RNA). Cells b and f are on the Siskiyou portion of area; the cold springs cell is especially important.



United States
Department of
Agriculture

Forest Service

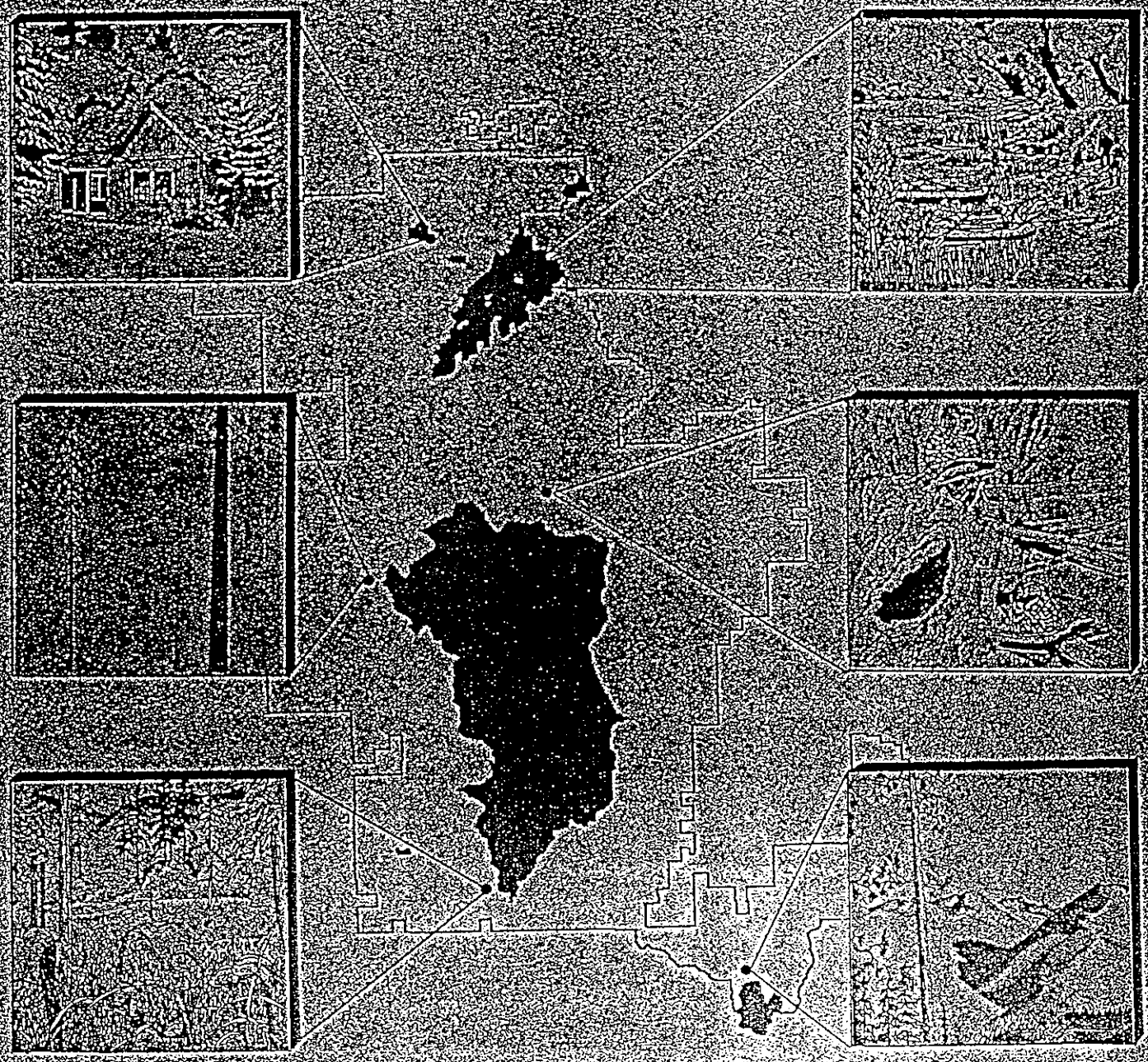
Pacific
Northwest
Region

1989

Record of Decision

Land and Resource Management Plan

Siskiyou National Forest



Two additional sections have been inventoried as Wild but were not included in the Oregon Omnibus of 1988: (1) the two-mile section of the North Fork Smith River from Baldface Creek to the California Bo and (2) the two-mile section of the Chetco River from Boulder Creek to Mislatnah Creek. I intend to c these two sections of rivers as Wild until a determination is made in future River Management Plans

Management Area acreage in Wild River is 5,029 acres (27,128 total, but many acres are overlappe Wilderness). Those rivers with Wild River segments are listed below:

Chetco
Elk
Illinois
Rogue
North Fork Smith

MANAGEMENT AREA 3 - RESEARCH NATURAL AREA

The objective of this allocation is to provide opportunities for research, observation, and stuc ecosystems influenced only by natural processes.

There are three existing Research Natural Areas on the Forest. My decision is to recommend the adc of four new areas. Their establishment is subject to approval by the Chief of the Forest Se Recommended for inclusion as Research Natural Areas are 2,651 acres (See FEIS, Appendix F). I interim, these four additional areas will be managed as Research Natural Areas. The total Manage Area will be 4,608 acres. The areas are listed below:

Cedar Log Flat
Craggy Peak
Lemmingsworth Gulch
Wheeler Creek (Existing)
Coquille River Falls (Existing)
Hoover Gulch
Port Orford Cedar (Existing)

MANAGEMENT AREA 4 - BOTANICAL

The objective of this allocation is to provide exhibits of plants, plant groups, and communities exceptional botanical and ecological value.

There are three existing Botanical areas on the Forest. I am allocating an additional 19 Botanical comprising 15,157 inventoried acres (See FEIS, Appendix F). This will bring the acres of Botanical to 19,632 with 16,275 acres in the Management Area (other acres are overlapped by higher Management Areas). The Botanical areas are listed below:

Babyfoot (Existing)
Bear Camp
Big Craggies (Existing)
Big Tree
Bigelow Lakes
Bolan Lake
Chrome Ridge
Days Gulch
Eight Dollar Mountain
Grayback Mountain
Iron Mountain
Lobster Grove
Redwood Groves
Oregon Mountain
Page Mountain
Red Flat
Rough and Ready Flat
Snaketooth Redwood
Snow Camp
Sourgame
Vulcan
York Creek (Existing)

5. How Should Sensitive Plant Resources be Managed?

The Siskiyou National Forest is one of the most floristically diverse areas in the Nation. The wide range of geology and climate, coupled with the unique pattern of development throughout time, have resulted in large numbers of species inhabiting a relatively small area, many of which are endemic to the Forest and surrounding area. Habitat for many of these species is protected in allocations such as Wilderness. Numerous habitat areas are distributed across many other parts of Forest. The Interdisciplinary Team has carefully evaluated each area in light of the timber, mineral, and plant resources, as well as consideration of public comments. A number of areas with unique plant habitat or outstanding examples of plant communities exist where their intrinsic values exceed that which could be derived by developing these areas for commodity goods. The Selected Alternative allocates these special places as Botanical Areas. Nineteen new Botanical Areas are allocated which add 15,157 acres to the inventory of 4,475 acres in the three existing Botanical Areas.

The Selected Alternative also recommends that four new Research Natural Areas (RNA's) totalling 2,651 acres be added to the three existing RNA's. These areas are needed to fill cells in a National network oriented to research and educational purposes. It is important to preserve physical and biological units where natural processes are maintained to provide a base for comparison with lands under different types of management. The benefits for education and research, and the preservation of gene pools for typical as well as rare plants and animals, has greater value than that which might be derived from development of these areas.

The distribution of RNA's and Botanical Areas across the Forest also significantly contributes to maintenance of biological diversity. Coupled with the Standards and Guidelines designed to protect the unique plant communities and habitats, these allocations serve to perpetuate the species and types across the range of natural variability, particularly those near the ends of the range which may be most sensitive to change. This is particularly important in its contribution to the resiliency of the forest, or the capacity of the forest to withstand and adapt to changing conditions.

There are many areas of sensitive plant habitat not included on the special allocations that preclude development activities. The sensitive plant resources in these areas will be managed under the Standards and Guidelines which require that an evaluation be done for any project where sensitive species are found, and that habitat be managed to maintain viable populations throughout their existing range. In most cases, projects can be designed or successfully mitigated to be compatible with perpetuating sensitive species and their habitat.

In my view, the Selected Alternative contains the best balance of allocations to preserve special habitats and emphasize protection of sensitive plants and their habitat throughout the Forest during project planning. The best examples and most unique habitats are allocated to Botanical Areas and RNA's. In other areas where plant resource values are lower and the opportunity costs in terms of timber would be higher, the sensitive plant resources will fully considered and managed according to the Standards and Guidelines in project planning, implementation, and monitoring.

DECISION NOTICE / DESIGNATION ORDER
and
FINDING OF NO SIGNIFICANT IMPACT

ESTABLISHMENT OF SEVEN RESEARCH NATURAL AREAS

USDA Forest Service
Pacific Northwest Region
Oregon and Washington

By virtue of the authority vested in me by the Chief of the Forest Service, in Forest Service Manual Section 4063, I hereby establish the Research Natural Areas listed in Table 1 and as described in their respective Establishment Records in the section entitled "Location".

Table 1: Research Natural Area Locations

RNA	National Forest	Ranger District	County	Acres
Oregon				
Cummins/Gwynn Creeks	Siuslaw	Waldport	Lane & Lincoln	6530
Hoover Gulch	Siskiyou	Illinois Valley	Josephine	1264
Lemmingsworth Gulch	Siskiyou	Chetco	Curry	1224
Wildcat Mt.*	Willamette	McKenzie and Sweet Home	Linn	525
Washington				
Chewuch River	Okanogan	Methow Valley	Okanogan	8500
Steamboat Mt.*	Gifford Pinchot	Mt. Adams	Skamania	40
Idaho				
Little Granite**	Nez Perce	Hells Canyon NRA	Idaho	6259

*Additions to previously established RNAs
**Administered by the Wallowa-Whitman National Forest, Region 6

The Regional Forester recommended the establishment of these RNAs in the Record of Decision for their respective Land and Resource Management Plans (Forest Plans). That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.2. Results of the Regional Forester's analysis are documented in the Forest Plans and Final Environmental Impact Statements which are available to the public.

SELECTED ALTERNATIVE

The Regional Forester has reexamined the RNAs to ensure that the environmental effects of establishing the areas as RNAs have not changed since the Forest Plans were adopted. In one case, Wildcat Mt., areas were recommended for addition to the proposed RNA to better accomplish the original purpose of the RNA. For the remaining RNAs no changes were found. This analysis is documented in the attached Environmental Assessment.

Based on the analysis in the Environmental Assessment, it is my decision to adopt Alternative 2 which establishes these seven areas as Research Natural Areas. Alternative 2 is selected because it provides long-term protection of the research and educational values of these special areas and the ecosystem elements that they represent. The RNAs will be managed in compliance with all relevant laws, regulations and Forest Service Manual direction regarding RNAs and in accordance with the management direction identified in their respective Forest Plans.

Although this alternative is consistent with the management direction in each Forest Plan it does change the allocation for these areas from "Proposed RNA" to "Established RNA". This is a non-significant amendment of the Forest Plans [36 CFR 219.10(f)].

OTHER ALTERNATIVE CONSIDERED

The other alternative considered was Alternative 1, the "No Action" alternative which would continue management of the RNAs as "Proposed RNAs". Alternative 1 was not selected because it would provide only short-term protection of the research and educational values of the areas. Alternative 1 is consistent with the Forest Plans.

FINDING OF NO SIGNIFICANT IMPACT

Based on the environmental analysis documented in the Environmental Assessment, it has been determined that the proposed action is not a major federal action that would significantly affect the quality of the human environment, therefore, an environmental impact statement is not needed. This determination is based on the following factors [40 CFR 1508.27]:

CONTEXT

Although this is an addition to the national system of RNAs, both short-term and long-term physical and biological effects are limited to the local area.

INTENSITY

1. There are no known effects on public health and safety.

2. No significant direct, indirect or cumulative impacts to the natural resources or other components of the human environment are anticipated.

3. Effects on the human environment are not uncertain, do not involve unique or unknown risks, and are not likely to be highly controversial.

4. There are no known effects on historical or cultural resources, park lands, prime farmlands, wetlands, or wild and scenic rivers. Effects of establishing the RNAs is to protect ecologically sensitive areas. No significant adverse effects area anticipated to any environmentally sensitive or critical area.

5. The action is not likely to establish a precedent for future actions with significant effects.

6. The proposed action will not adversely affect any federally listed or proposed endangered or threatened species or Regionally listed sensitive species of plants or animals or their critical habitats.

7. The proposed action is consistent with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (USDA, USDI 1994).

8. The proposed action is consistent with Federal, State, and local laws and requirements for protection of the environment.

NOTIFICATION and IMPLEMENTATION

Legal notice of this decision will appear in The Oregonian and The Seattle Post-Intelligencer. The Forest Supervisor of each National Forest shall notify the public of this decision and mail a copy of the Decision Notice/Designation Order to all persons on their Forest Plan mailing lists.

Implementation of this decision shall not occur within seven days following publication of the legal notice of the decision in The Oregonian and The Seattle Post-Intelligencer.

APPEAL RIGHTS

This decision is subject to appeal pursuance to 36 CFR Part 217. A copy of the Notice of Appeal must be in writing and must be submitted to:

Chief, USDA Forest Service
ATTN: NFS Appeals
14th and Independence Ave., S.W.
P.O. Box 96090
Washington, DC 20090-6090

Any written Notice of Appeal of this decision must be fully consistent with 36 CFR 217.9 (Content of a Notice of Appeal), must include the reasons for appeal, and must be submitted within 45 days from the date of legal notice of this decision in The Oregonian and The Seattle Post-Intelligencer.

CONTACT PERSON

For further information regarding this decision contact Sarah Greene, RNA Coordinator, Pacific Northwest Research Station, 3200 S. W. Jefferson Way, Corvallis, Oregon 97331, phone 541-750-7360.

/s/ Nancy Graybeal

ROBERT W. WILLIAMS
Regional Forester
Pacific Northwest Region

May 17, 1999
Date

(For) Nancy Graybeal
Deputy Regional Forester

THE OREGONIAN ◆ FRIDAY, MAY 21, 1999

PUBLIC NOTICES

CLASS 8

Public Notices 8

Public Notices 8

NOTICE OF DECISION

On May 17, 1999, USDA, Forest Service, Regional Forester for the Pacific Northwest Region (Portland, Oregon) made a decision to establish 7 Research Natural Areas. RNA's are part of a national network of field ecological areas designated for research and education. They also provide gene pool preserves for plant and animal species, especially rare and endangered species. RNA's also preserve a prime example of common communities that can serve as a baseline for comparison. All seven areas were previously allocated as "proposed" RNA's during forest planning. This decision formalizes their designation for that use. The RNA's established with this decision are: CUMMINS/GWYNN CREEKS (Siuslaw NF, OR, 6530 acres); HOOVER GULCH (Siskiyou NF, OR, WA, 1264 acres); LEMMINGSWORTH GULCH (Siskiyou NF, OR, 1224 acres); WILDCAT MOUNTAIN ADDITION (Willamette NF, OR, 525 acres); CHEWUCH RIVER (Okanogan, NF, WA, 8500 acres); STEAMBOAT MOUNTAIN ADDITION (Gifford Pinchot NF, WA, 40 acres); and LITTLE GRANITE (Nez Perce NF, Hells Canyon National Recreation Area, ID, 6259 acres).

A copy of the Decision Notice/Designation Order and Finding of No Signficant Impact is available upon request from the Regional Office, Environmental Coordination, P.O. Box 3623, Portland, Oregon 97208.

This decision is subject to appeal pursuant to Forest Service regulation 36 Code of Federal Regulation (CFR) Part 217. Any written Notice of Appeal must be fully consistent with 36 CFR 217.9 (Content of a Notice of Appeal) and must include the reasons for appeal. Any written appeal must be postmarked or received by the Appeal Deciding Officer, Chief Mike Dombeck, USDA - Forest Service, ATTN: NFS Appeals, P.O. Box 96090, Washington, D.C. 20090-6090 within 45 days of the date of this legal notice.

For further information regarding these RNAs, contact Sarah Greene, RNA Coordinator, Pacific Northwest Research Station, 3200 S.W. Jefferson Way, Corvallis, Oregon 97331, phone 541-750-7360.

Seattle Post-Intelligencer

Friday, May 21, 1999

PUBLIC NOTICES

380 Legal Notices

NOTICE OF DECISION

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ESTABLISHMENT OF SEVEN RESEARCH NATURAL AREAS

ENVIRONMENTAL ASSESSMENT

Pacific Northwest Region
USDA Forest Service
Oregon and Washington

Lead Agency:

USDA Forest Service
P.O. Box 3623
Portland, OR 97208

Responsible Official:

ROBERT W. WILLIAMS, Regional Forester
Pacific Northwest Region
P.O. Box 3623
Portland, OR 97208

Prepared by:

Donna Short
Sweet Home Ranger District
Willamette National Forest
3225 Highway 20
Sweet Home, OR 97386
541-367-5158

Abstract:

This Environmental Assessment identifies the need for the proposed action, describes the analysis process and the alternatives formulated during that process. It discusses the environmental effects of each of the proposed alternatives. Two alternatives were evaluated and compared and are as follows: Alternative 1 - No Action and Alternative 2 - Finalize Establishment.

ESTABLISHMENT OF SEVEN RESEARCH NATURAL AREAS

USDA FOREST SERVICE
PACIFIC NORTHWEST REGION
OREGON AND WASHINGTON

ENVIRONMENTAL ASSESSMENT

Proposed Action

The proposed action is to establish seven Research Natural Areas (RNAs) as proposed in the Land and Resource Management Plans (Forest Plan) of each respective National Forest. These RNAs will be managed according to the direction provided in the management plans. This proposed action, formal designation of the RNAs by the Regional Forester, will amend each National Forest's Forest Plan. Table 1 lists the RNAs that are included in this environmental assessment and Figure 1 shows their locations.

Table 1: Research Natural Area Locations

RNA	National Forest	Ranger District	County	Acres
Oregon				
Cummins/Gwynn Creeks	Siuslaw	Waldport	Lane & Lincoln	6530
Hoover Gulch	Siskiyou	Illinois Valley	Josephine	1264
Lemmingsworth Gulch	Siskiyou	Chetco	Curry	1224
Wildcat Mt.*	Willamette	McKenzie and Sweet Home	Linn	525
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Idaho				
Little Granite**	Nez Perce	Hells Canyon NRA	Idaho	6259

*Additions to previously established RNAs
**Administered by the Wallowa-Whitman National Forest, Region 6

Figure 1: Vicinity Map

Purpose and Need for Action

The purpose of establishing these RNAs is to contribute to a series of RNAs designated to "illustrate adequately or typify for research or education purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance" (36 CFR 251.23). An evaluation by the Regional RNA Committee, pursuant to direction in Forest Service Manual 4063.04b, identified the vegetation types represented by these RNAs as suitable and desirable for inclusion in the national network. Establishment of these RNAs will provide long-term protection and recognition of these representative vegetation types (see Table 2).

Table 2: Representative Vegetative Types

RNA	Physiographic Province	Major Vegetation Types		
Chewuch River	East Slope WA Cascades	Engelmann spruce/horsetail	Mid-elevation riparian with mixed conifer, hardwoods, and marshland-bog	
Cummins/Gwynn Creeks	Oregon Coast Range	Douglas-fir/Western hemlock	Sitka spruce	Coastal aquatic systems
Hoover Gulch	Klamath Mountains	Doug-fir/canyon liveoak	Douglas-fir-tanoak-canyon live oak	
Lemmingsworth Gulch	Klamath Mountains	Port-Orford-cedar/ western azalea	Dougla-fir-tanoak/ salal	Douglas-fir-tanoak-canyon live oak
		Tanoak/California buckthorn on serpentine	Jeffrey pine-western white pine/ manzanita-beargrass	Knobcone pine
Little Granite	Seven Devils	Subalpine fir/grouse huckleberry	Douglas-fir/ ponderosa pine/ snowberry	Spruce-subalpine fir/ false huckleberry
		Snake River greenbush rims	Ponderosa pine/ bluebunch wheat-grass	Low, mid and high elevation streams
Steamboat Mt.	East Slope WA Cascades	Pacific silver fir-mountain hemlock-Engelmann spruce		
Wildcat Mt.	West slope Oregon Cascades	Pacific silver fir/ foamflower	Pacific silver fir/ vinemaple/foamflower	

A more detailed description of the vegetation, wildlife, and physical and climatic conditions can be found in the Establishment Record for each RNA. Site conditions have been reviewed since these RNAs were proposed during the land management planning process and no significant changes have occurred.

Public Involvement

Each National Forest included this project in their quarterly publication "Schedule of Proposed Actions" (FSH 1909.15, sec. 17) or sent a letter to interested parties. No comments were received from the public on continuing with the establishment process for these RNAs. The proposed RNAs were also subjected to public review and comment during the land management planning process that resulted in the Forest Plans.

Alternatives and Environmental Consequences

Alternative 1, No Action: This alternative continues management according to the direction in the each National Forest's Forest Plan for "proposed RNAs". This management generally limits recreation use to non-motorized use of existing trails and prohibits timber harvest and/or other vegetation management. There are no cumulative effects generated by this alternative. Other environmental consequences are described in the Final Environmental Impact Statement for each Forest Plan. For the RNA addition with a boundary change (Wildcat Mt.) there is a possible loss of research potential in the area that was not included in this RNA addition originally.

Alternative 2, Proposed Action: This alternative will formally establish each RNA in the location described in their respective Establishment Record. The standards and guidelines listed in each respective Forest Plan will be applied to the management of these RNAs (see Table 3). Environmental consequences of this alternative have been discussed in the Final Environmental Impact Statements for each Forest Plan (Final EIS) (see Table 3). These consequences include the short-term loss of opportunities to change vegetation conditions through management. There are no significant cumulative effects from establishment of these RNAs beyond those already discussed in the Final EIS's.

The direction in the National Forest management plans for established RNAs also includes reasonably foreseeable actions such as withdrawal of the area from mineral entry. The general consequences of withdrawal are discussed in the Final EIS's. Site-specific consequences will be disclosed in more detail when the mineral entry withdrawal recommendation is implemented.

A map of each RNA follows in Figures 2 - 8. A summary of the consequences associated with a particular RNA are listed below the map for that RNA. The summary for Wildcat Mt. also discusses any additional environmental consequences not covered by the Forest Plan Final EIS for the proposed boundary changes.

Table 3: Land Management Plan References

RNA	National Forest	Standards and Guidelines in Land and Resource Management Plan	Environmental Consequences in Final EIS
Chewuch River	Okanogan NF	Chapter 4 - pages 92-93	Chapter IV - pages 69-70
Cummins/Gwynn Creeks	Siuslaw NF	Chapter IV - pages 104-107	Chapter IV - pages 77-80
Hoover Gulch	Siskiyou NF	Chapter IV - pages 81-84	Chapter IV - pages 9,20,77
Lemmingsworth Gulch	Siskiyou NF	Chapter IV - pages 81-84	Chapter IV - pages 9,20,77
Little Granite	Wallowa-Whitman NF	Chapter 4 - page 12, 83	Chapter IV - pages 7,61,72, 78,83,85
Steamboat Mt.	Gifford Pinchot	Chapter IV - page 138	Chapter IV - pages 6,43,53, 87,96,98,100,106,120,135
Wildcat Mt.	Willamette NF	Chapter IV - pages 134-137	Chapter IV - pages 166-169

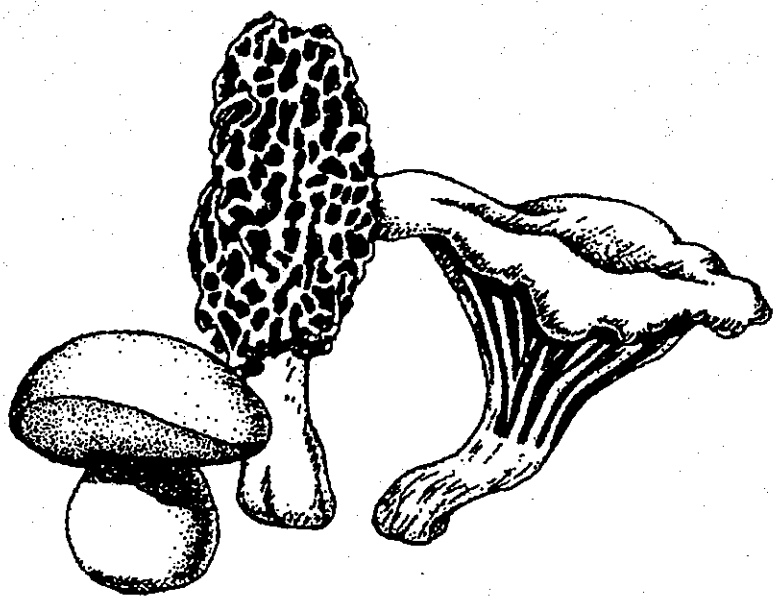
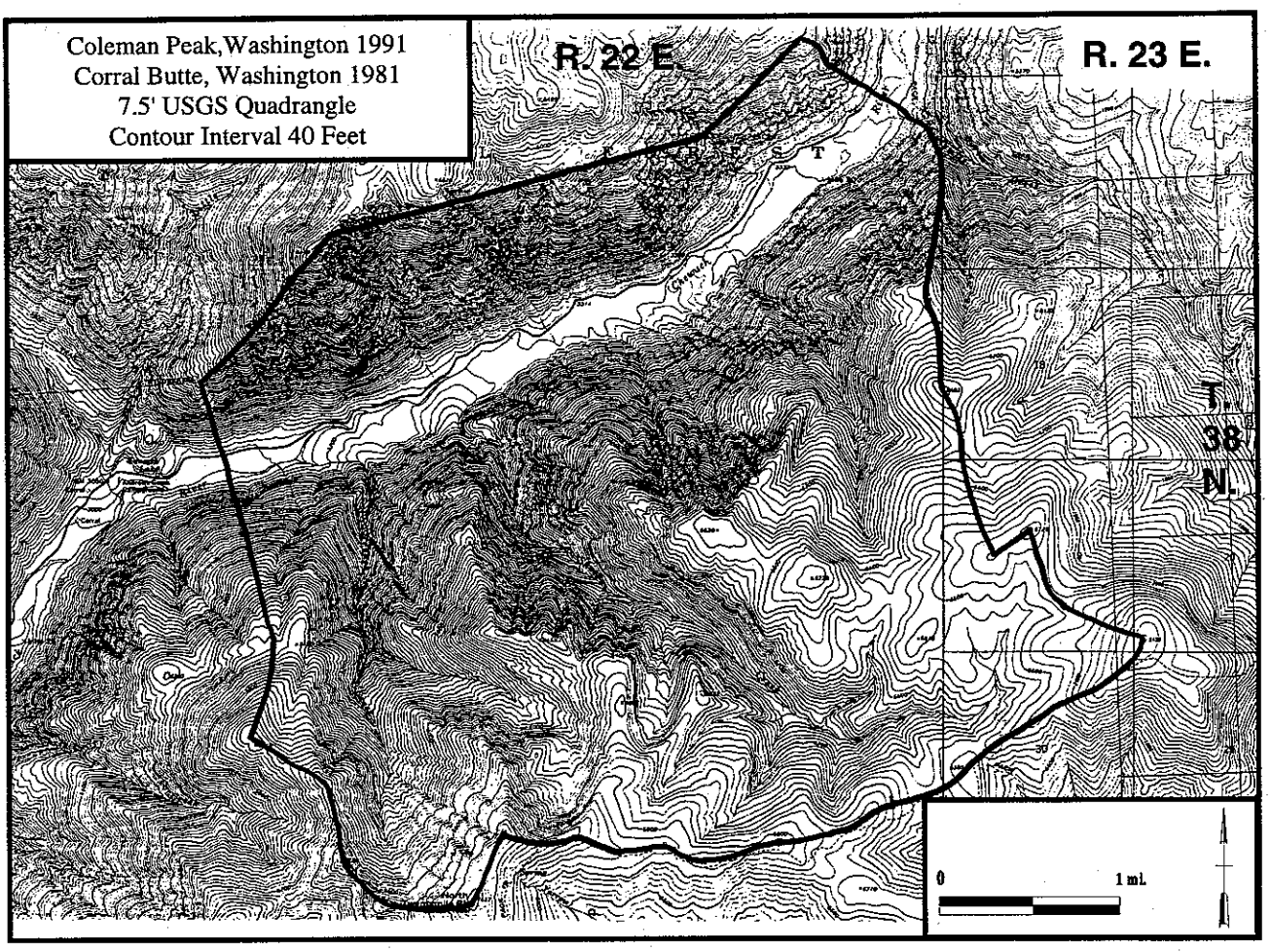


Figure 2: Chewuch River RNA



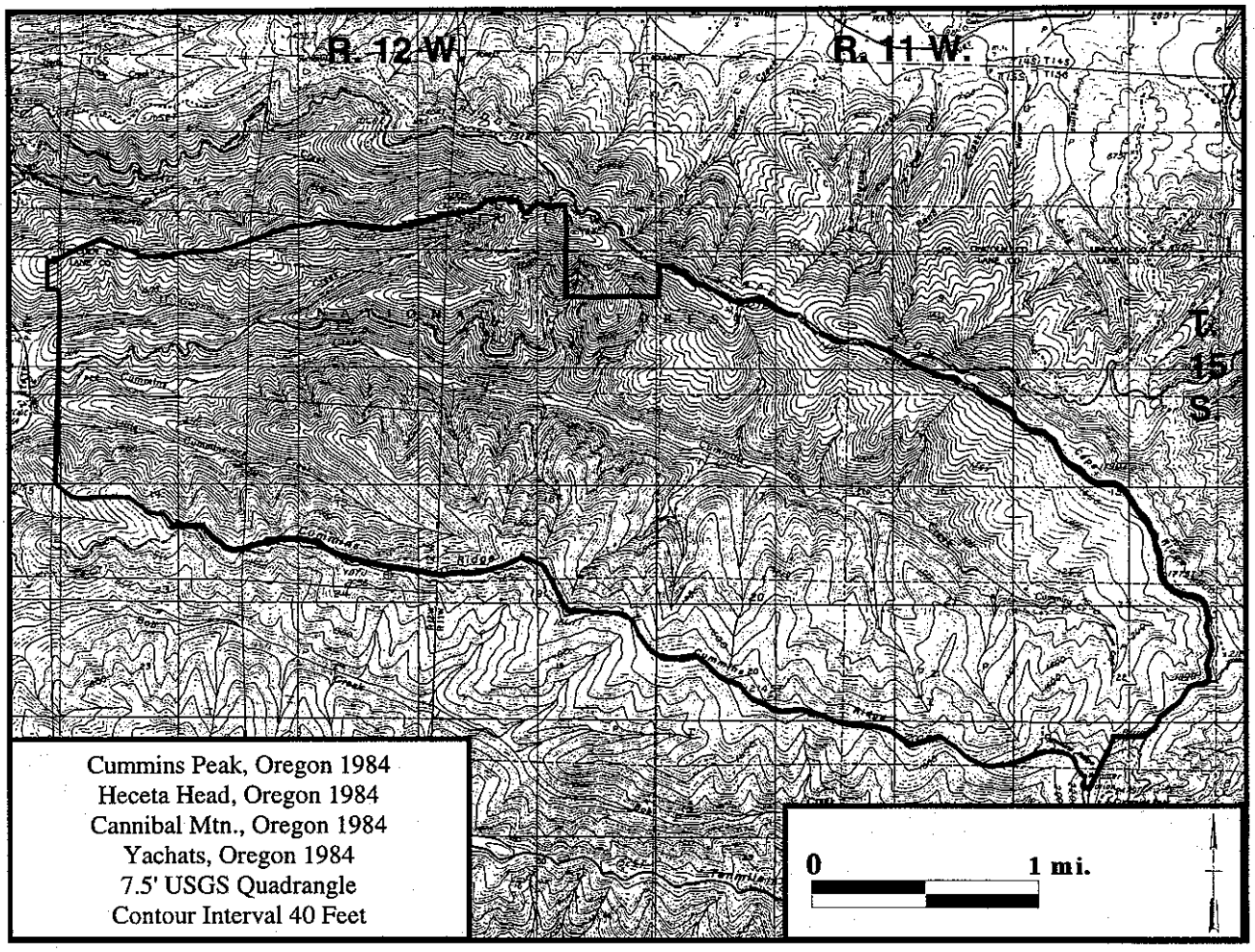
Mineral Resources: There are no known mineral resources in this RNA.

Grazing: There is currently no grazing in this RNA although there have been cattle and sheep in the area along the road in the past and there are allotments adjacent to the area.

Timber: Approximately 2400 acres are covered by lands that meet the productivity requirements for commercial timber harvest. This land was not included in the timber base for the Forest Plan, therefore establishment will have no effect on probable sale quantity.

Recreation: The RNA is adjacent to the Pasayten Wilderness. The area within and surrounding the RNA is a popular location for hiking, hunting, fishing and other recreational activities. Establishment of the RNA should not significantly impact those activities. There are a number of dispersed recreation sites along the Chewuch River Road within the RNA. This existing use will still be allowed but not encouraged.

Figure 3: Cummins/Gwynn Creeks RNA



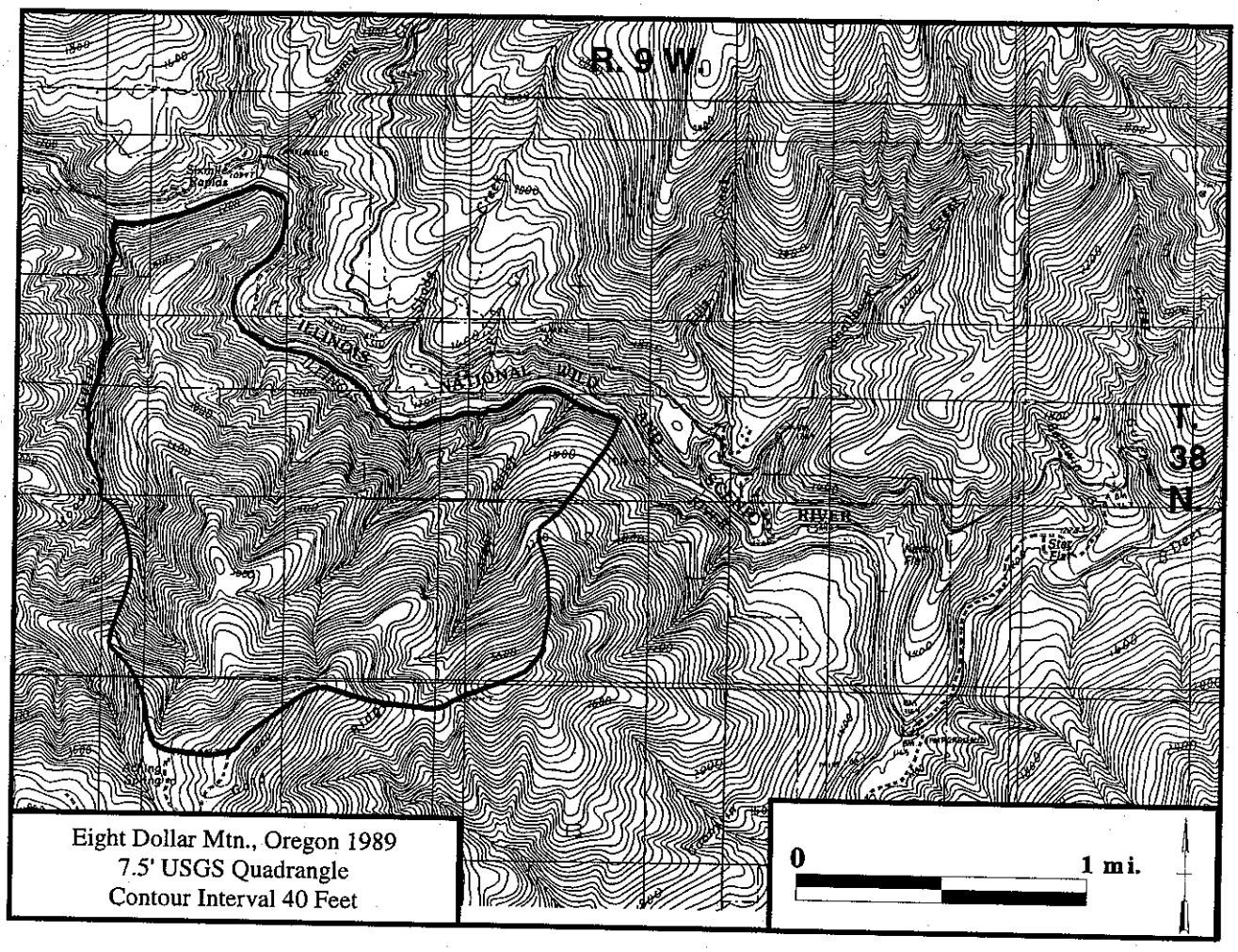
Mineral Resources: There are no known mineral resources in this RNA.

Grazing: There is no grazing in this RNA.

Timber: The entire area of the RNA is forested lands that exceed the productivity requirements for timber management. However, all most all the RNA is in the Cummins Creek Wilderness. This designation precludes timber harvest and these lands were not included in the timber base for the Forest Plan. Therefore, establishment will have no effect on probable sale quantity.

Recreation: The RNA receives some dispersed recreation such as fishing, hunting and hiking. There several trails and there are plans to build additional trails and create isolated campsites off the trails in the Wilderness. It is expected that this recreational use will increase in the future but this use is not expected to create conflicts with RNA values.

Figure 4: Hoover Gulch RNA



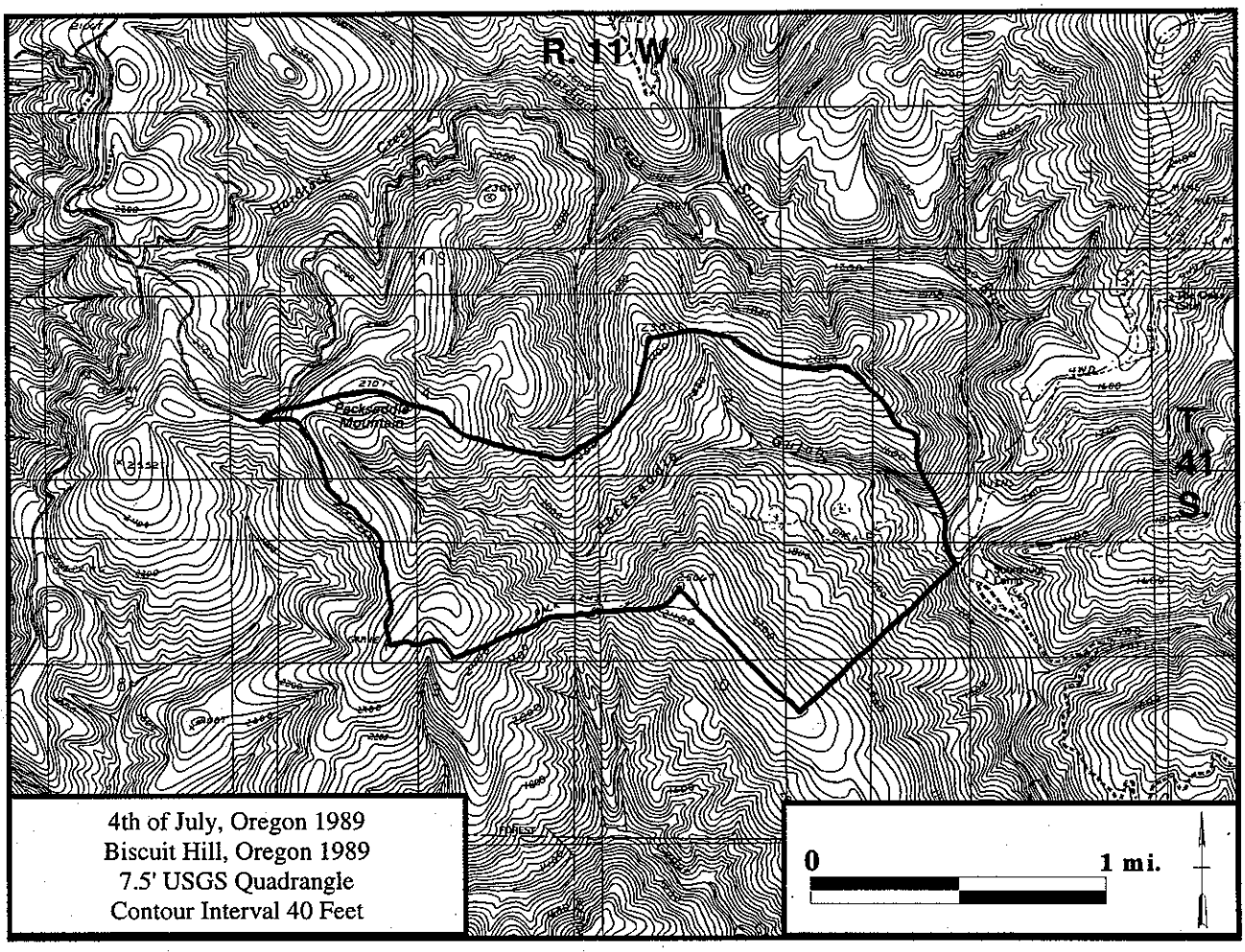
Mineral Resources: There are no valid mining claims in this RNA.

Grazing: There is no grazing in this RNA.

Timber: That portion of the RNA within 1/4 mile of the Illinois River, approximately 3/4 of the RNA, is in the Wild and Scenic River corridor and is not included in the allowable cut base. Only 70 acres of the remainder has forest land suitable for commercial timber harvest. This land was not included in the timber base for the Forest Plan. Therefore, establishment will have no effect on probable sale quantity.

Recreation: Most current use is immediately adjacent to the Illinois River. The RNA itself receives a little use during the summer and this use is likely to continue without affecting the research or educational values of the RNA.

Figure 5: Lemmingsworth Gulch RNA



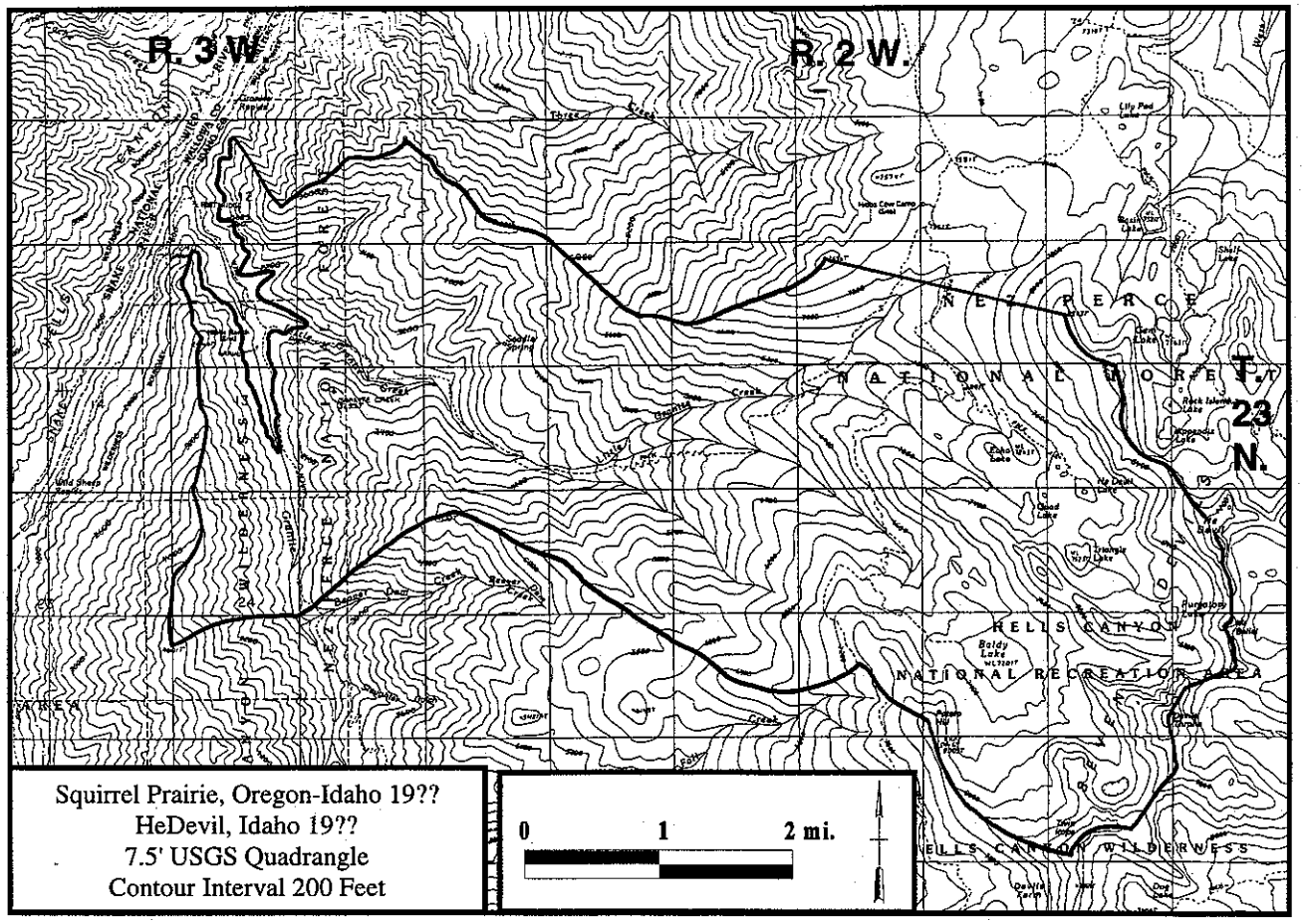
Mineral Resources: There are nine valid mining claims on record in this area. They are not expected to become active, but if they were to begin operations the operating plans would require mitigation measures to protect RNA values. If these mitigation measures prove inadequate then withdrawal from mineral entry may be recommended.

Grazing: There is no grazing in this RNA.

Timber: Timber resource values are low as most of the RNA has unsuitable soils for producing commercial timber. This land was not included in the timber base for the Forest Plan. Therefore, establishment will have no effect on probable sale quantity.

Recreation: Current use is occasional and mostly restricted to the trail corridor. This use is expected to continue unless it negatively impacts the fragile rare plant communities found in the RNA.

Figure 6: Little Granite RNA



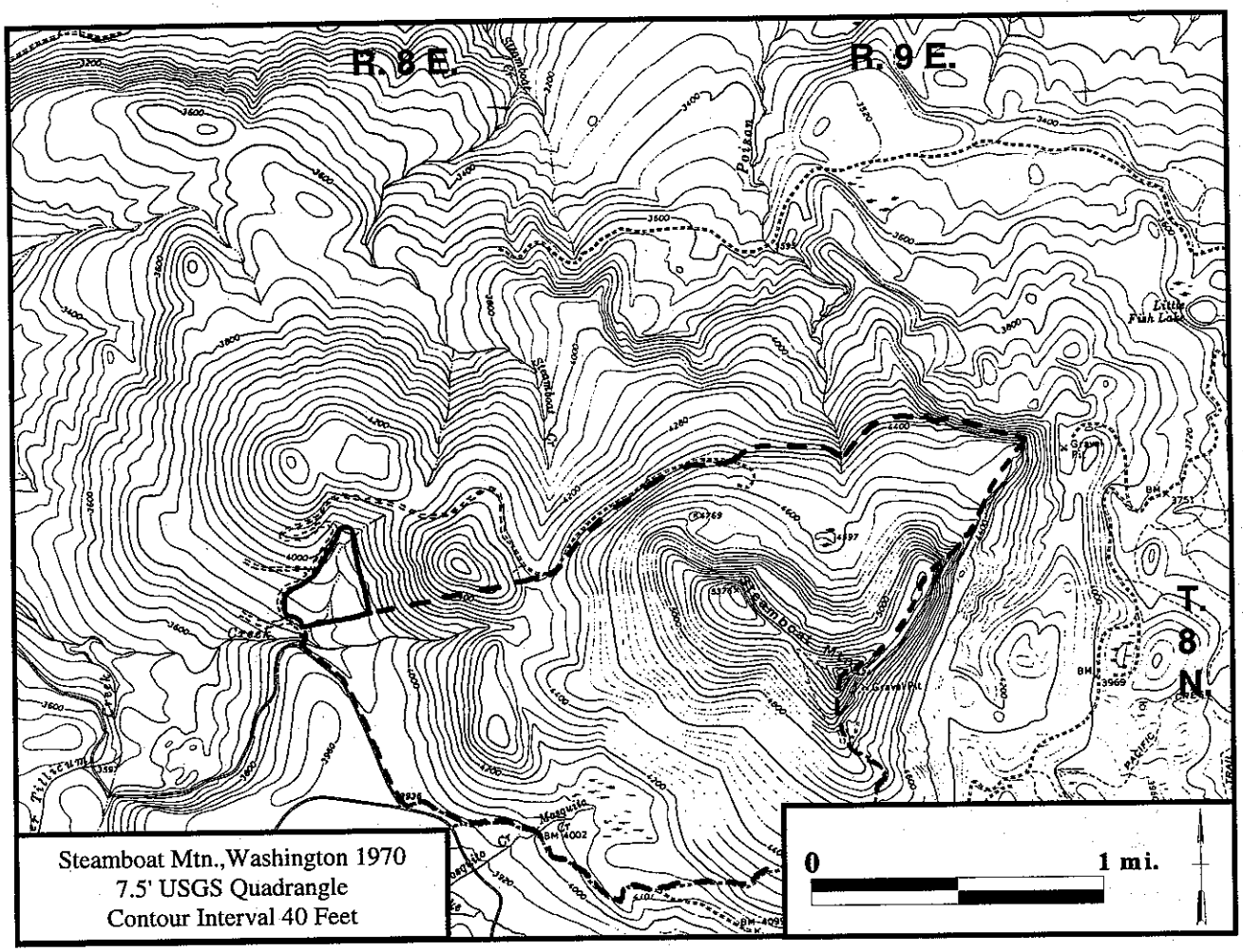
Mineral Resources: There are no active hardrock mining claims in this RNA. There has been gold mining activity north of this RNA and is likely that some exploratory mining has taken place in the RNA in the past.

Grazing: There are no grazing allotments in this RNA. There is some incidential grazing from pack and saddle stack during the summer and fall. This limited use is expected to continue unless it creates unforeseen conflicts with RNA educational or research objectives.

Timber: This RNA is entirely within the Hells Canyon Wilderness so timber management is precluded by that designation. Therefore, establishment will have no effect on allowable sale quantity.

Recreation: There is substantial recreation use in the upper lakes basin from backpackers and horse packers during the summer months, with use concentrated around the lakes themselves. There are two trails through the RNA and the lower end also receives occasional use by river runners during the spring season. There is some use of the upper elevations in the fall from hunters. Increased recreational use is expected over time but it is not expected to impact RNA values and no changes in management of recreation are proposed at this time.

Figure 7: Steamboat Mt. RNA Addition



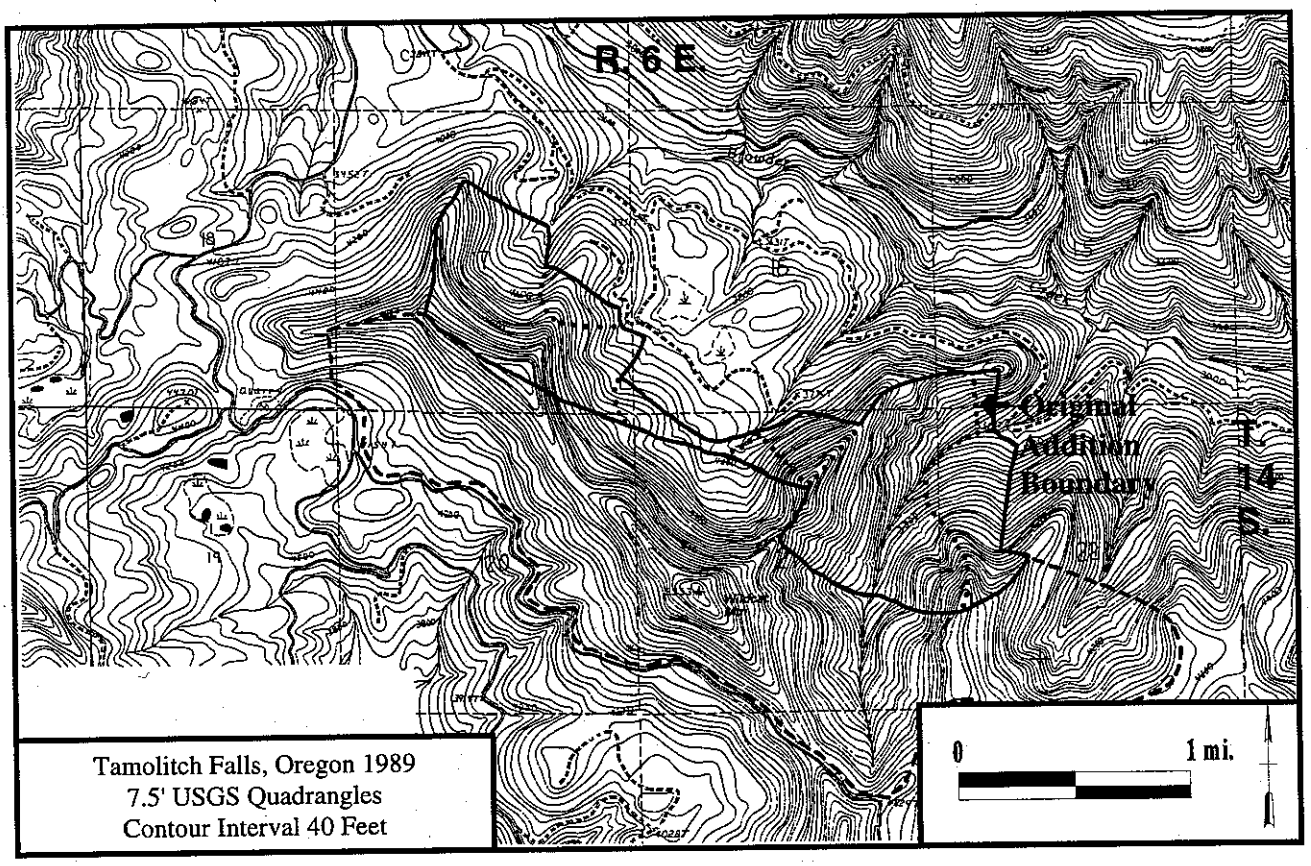
Mineral Resources: There are no known mineral resources in this addition to the RNA.

Grazing: There is no grazing in this RNA.

Timber: Approximately 35 acres out of 40 are within a Riparian Reserve. These lands are not available for commercial timber harvest. This land was not included in the timber base for the Forest Plan. Therefore, establishment will have no effect on probable sale quantity.

Recreation: Dispersed recreation such as hunting and hiking will continue unless it reduces the research or educational values of the RNA.

Figure 8: Wildcat Mt. RNA Addition

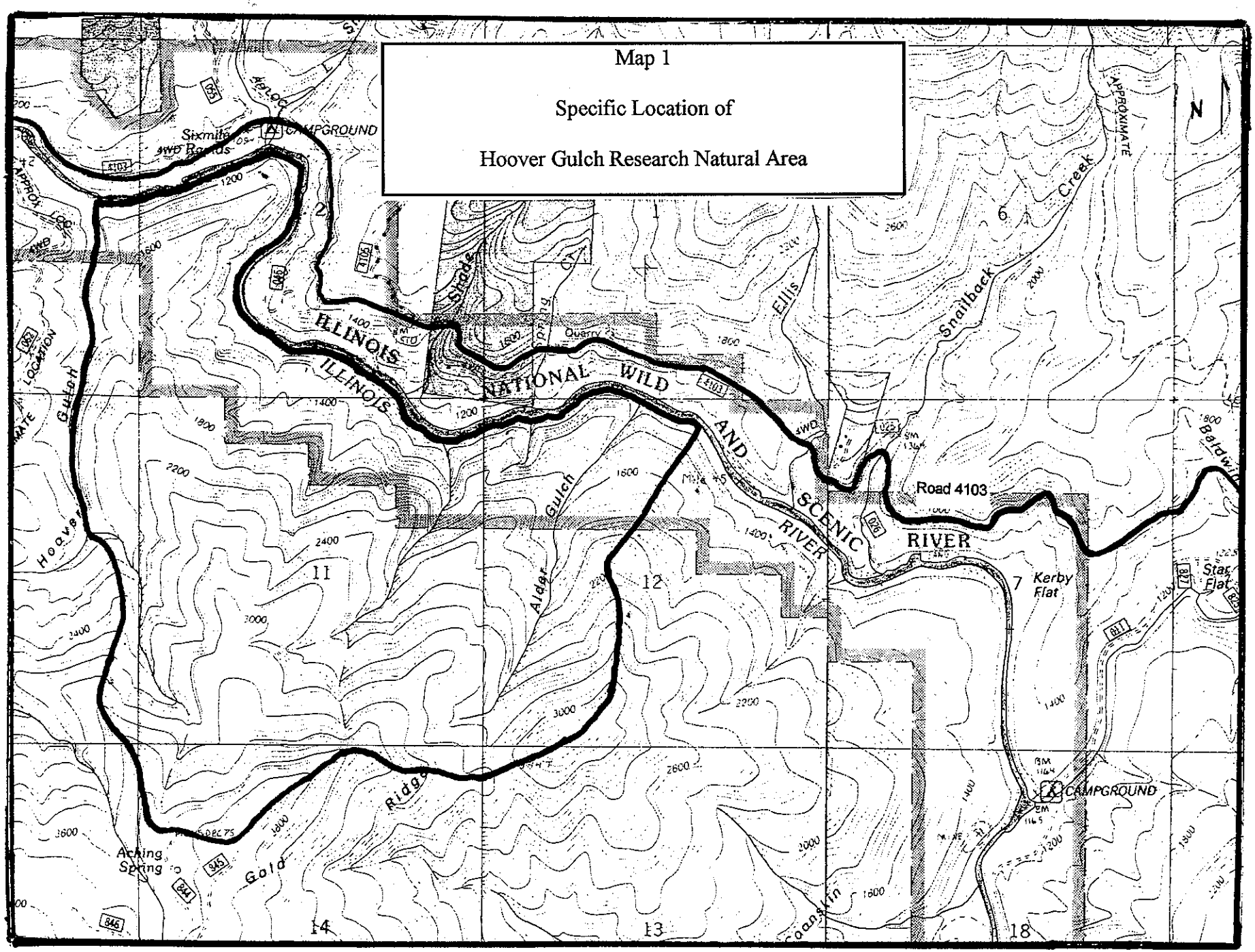


Mineral Resources: There are no known mineral resources in this addition to the RNA.

Grazing: There is no grazing in this RNA.

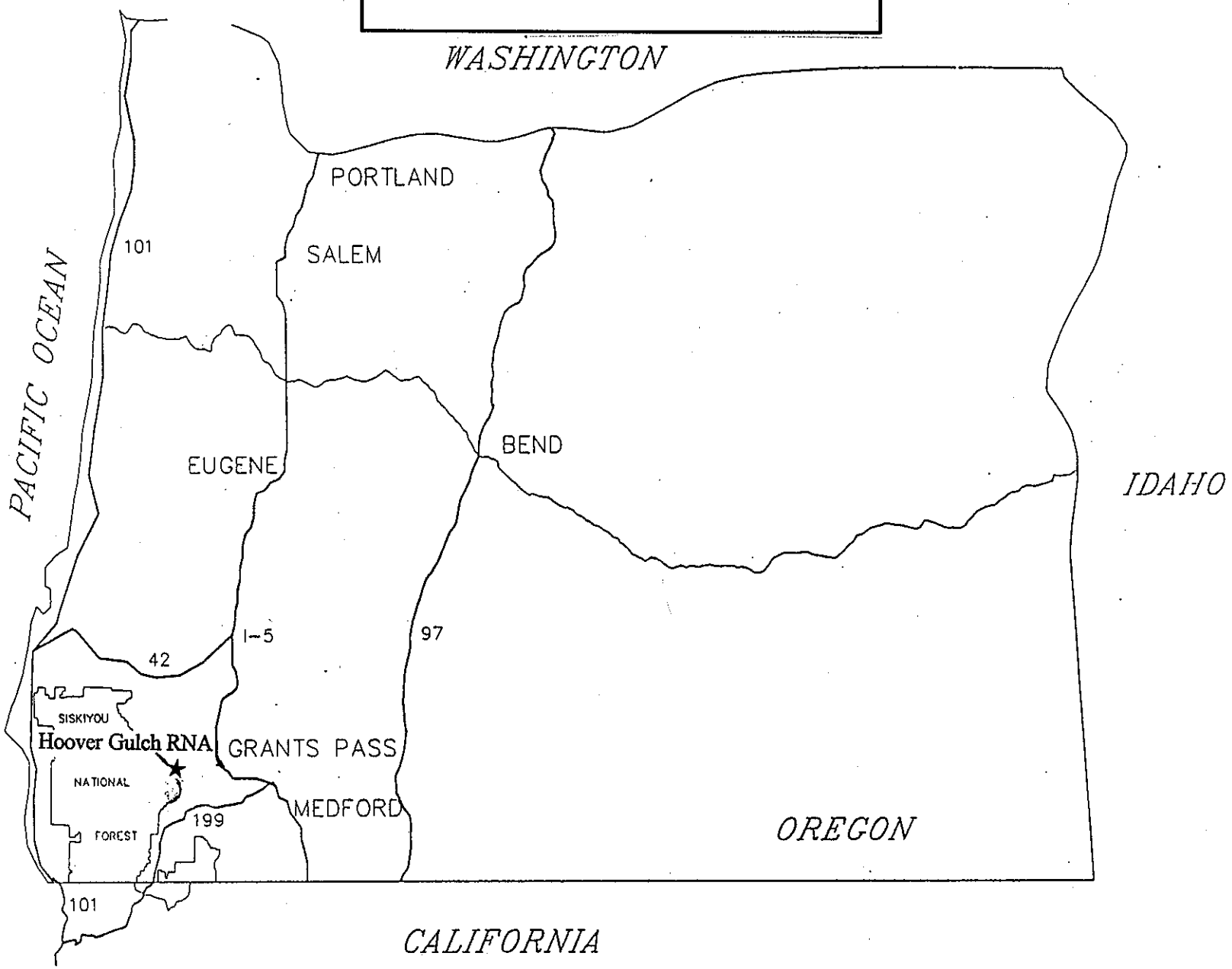
Timber: The addition proposed in the 1990 Willamette National Forest Land Management Plan totaled 384 acres. The current proposed addition totals 525 acres. The current proposed addition to the RNA contains approximately 178 acres of forest suitable for timber management, approximately 51 acres more than the original proposed addition. Of the 178 acres only 50 are available for timber harvest due to other concurrent land management allocations such as Riparian Reserves, a Late-Successional Reserve, and Special Habitat. This reduction in suitable and available acres was accounted for in calculation of probable sale quantity during the development of the Northwest Forest Plan, therefore there will be no effect from establishment.

Recreation: There is very limited recreational use within the RNA due to its lack of trails or any other recreational facilities. The most likely use is some hunting which is limited by the steep slopes and Sitka alder/devil's club patches. This use is not expected to conflict with the research or educational values of the RNA or be affected by designation of this addition to the RNA.


Map 1
Specific Location of
Hoover Gulch Research Natural Area
ILLINOIS
NATIONAL WILD AND SCENIC RIVER
Road 4103
CAMPGROUND
Kerby Flat
Snailback Creek
Ellis
Shady
Hoover Gulch
Alder Gulch
Ridge
Gold
Acting Spring
Sixmile
Baldwin
Star Flat
N

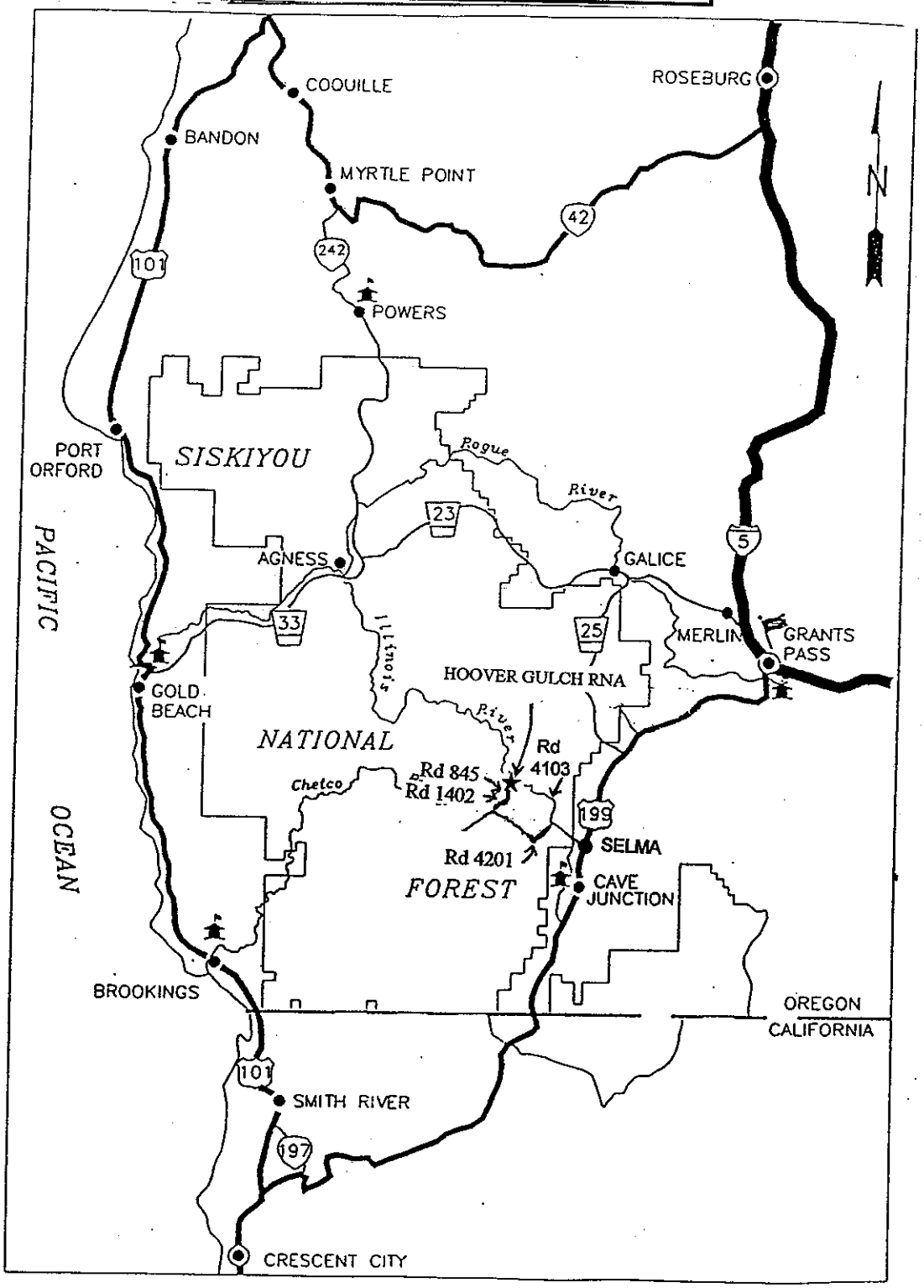
Map 2

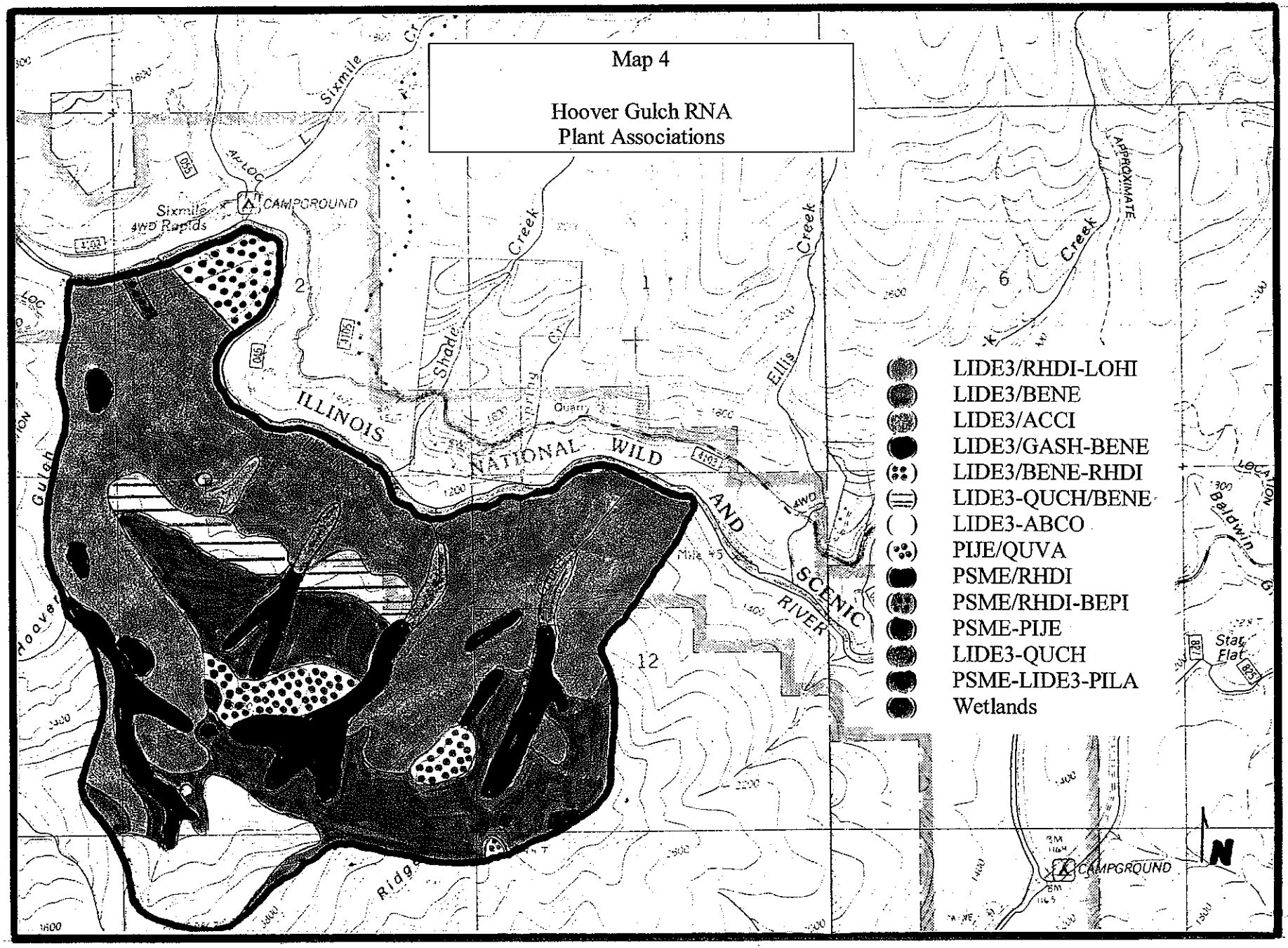
General Location of
the Siskiyou National Forest and
Hoover Gulch Research Natural Area

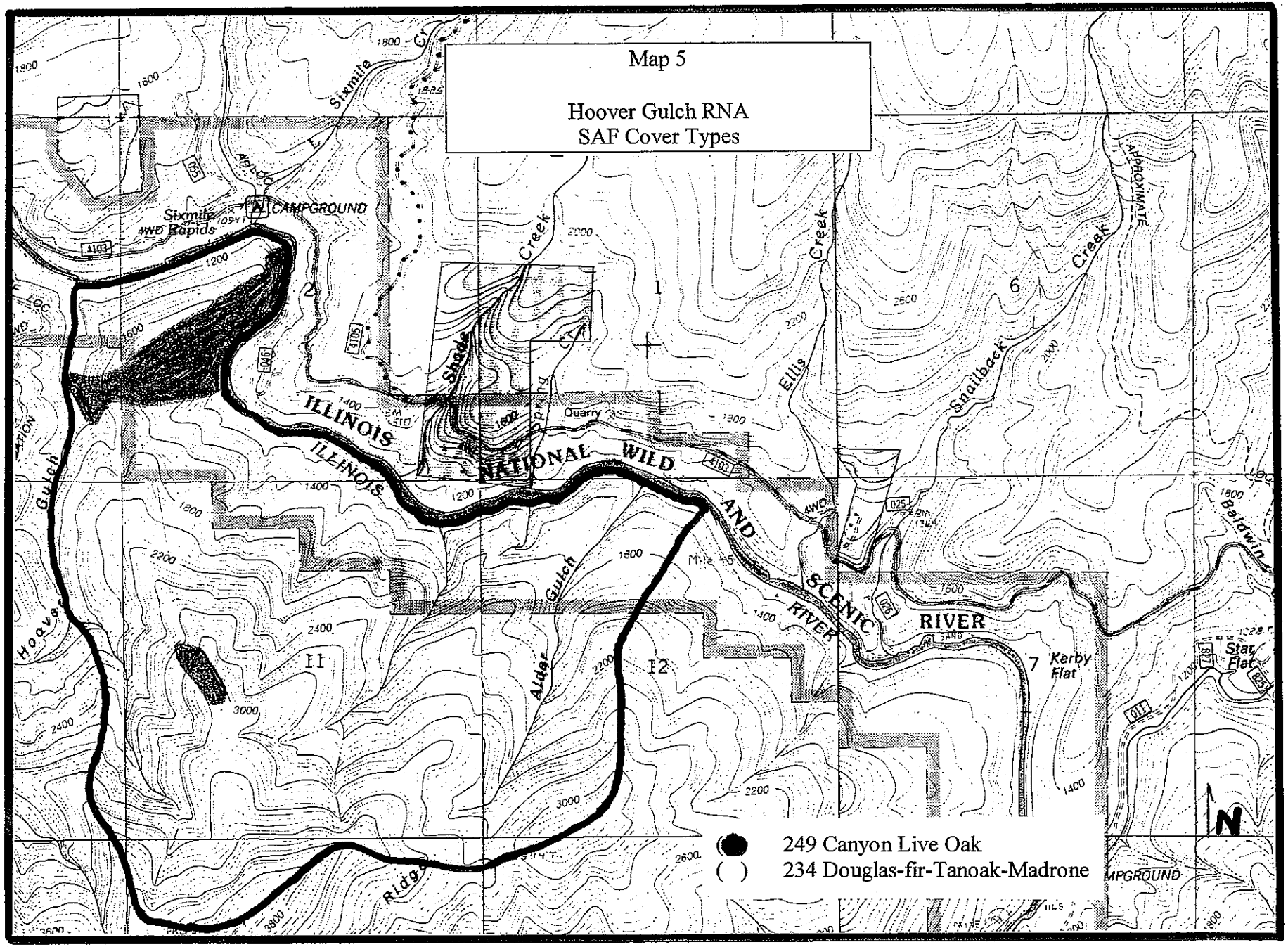


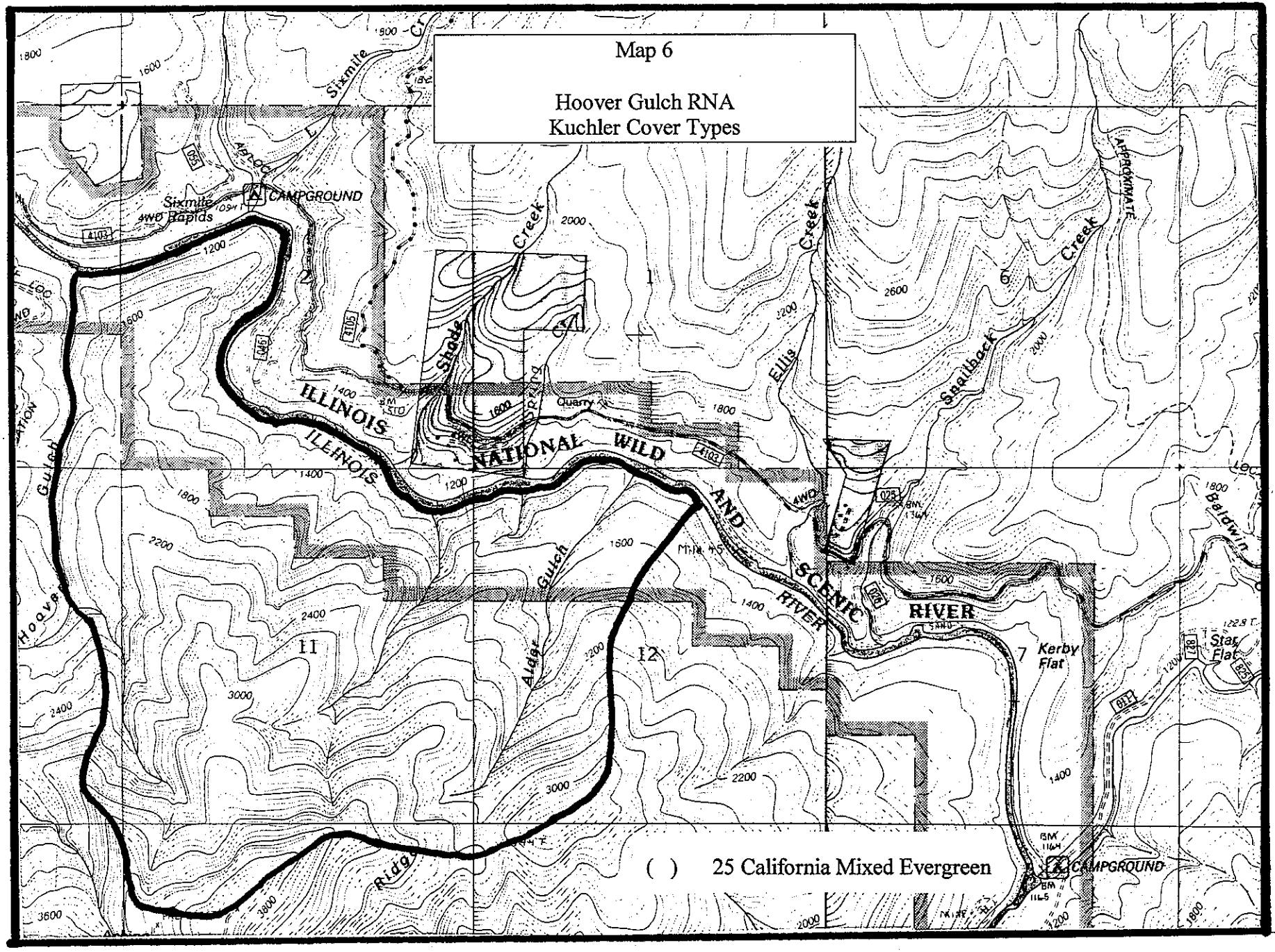
Map 3

Location of Hoover Gulch Research Natural Area
within the Siskiyou National Forest




Map 4
Hoover Gulch RNA
Plant Associations
LIDE3/RHDI-LOHI
LIDE3/BENE
LIDE3/ACCI
LIDE3/GASH-BENE
LIDE3/BENE-RHDI
LIDE3-QUCH/BENE
LIDE3-ABCO
PIJE/QUVA
PSME/RHDI
PSME/RHDI-BEPI
PSME-PIJE
LIDE3-QUCH
PSME-LIDE3-PILA
Wetlands
Sixmile Cr.
CAMPGROUND
Sixmile 4WD Rapids
Shady Creek
Ellis Creek
Creek
ILLINOIS
NATIONAL WILD
AND
SCENIC
RIVER
Hoover Gulch
Baldwin
Flat
CAMPGROUND
N


Map 5
Hoover Gulch RNA
SAF Cover Types
249 Canyon Live Oak
234 Douglas-fir-Tanoak-Madrone
ILLINOIS
NATIONAL
WILD
AND
SCENIC
RIVER
Sixmile
Rapids
CAMPGROUND
Shady
Creek
Ellis
Creek
Snailback
Creek
Quarry
Hoover
Gulch
Alder
Gulch
Ridge
Kerby
Flat
Star
Flat
Baldwin
APPROXIMATE
1
2
6
7
11
12
N


Map 6
Hoover Gulch RNA
Kuchler Cover Types
( ) 25 California Mixed Evergreen
Sixmile
CAMPGROUND
Sixmile Rapids
4WD
Shady Creek
Ellis Creek
Snailback
Ridge
Quarry
Spring
ILLINOIS
NATIONAL WILD
AND
SCENIC
RIVER
Hoover Gulch
Aldge Gulch
Baldwin
Kerby Flat
Star Flat
CAMPGROUND
1
2
6
7
11
12

Map 7

Hoover Gulch RNA
Soil Survey Units