

Cover Page Info for Cover of RNA Establ Record

Name Lemmingsworth Gulch RNA

Region R06 Station PNW

State Oregon County Curry

Boundary Certified on Appendix I

TMIS # 00437

ATA 8/17/99

Date Reg Forester signed 3/99

Lat 42 degrees 02 N

Long 124 degrees 2 W

<u>1980 SAF</u>	<u>Acres</u>	<u>Ha</u>
234 Douglas-fir-Tanoak-Madrone	120	49
247 Jeffrey Pine	374	151
248 Knobcone Pine	730	295
TOTAL	1224	495

<u>1966 Kuchler</u>	<u>Acres</u>	<u>Ha</u>
California Mixed Evergreen Forest	308	124
No Kuchler equivalent	916	371
TOTAL	1224	495

K25

Access (under location) map vs description both

Original maps or photocopies? Photocopies

Photos included? no

Abutted by non FS land? No

SAF & Kuchler types consistent? No

Climate records length of record 20 yr Distance to weather sta 17 miles

Fauna & Flora authorities Burt W H Jepson W L and Hickman J C Little
E L Nussbaum et al Peterson R T Peck M

Land use conflicts? Grazing? Trails? Recreation? Some recreation use on trail
but fairly minor

Commercial Forest Land no in Wilderness no

* Classify at Subsection level if possible a 5-digit code (or 6 digit if
beginning with M) If not possible then at Section level

May 1999

ESTABLISHMENT REPORT FOR

Cummins /Gwynn Creeks RNA (Siuslaw NF, Waldport RD, Oregon)

Hoover Gulch RNA (Siskiyou NF, Illinois Valley RD, Oregon)

Lemmingsworth Gulch RNA (Siskiyou NF, Chetco RD, Oregon)

Wildcat Mountain RNA (Willamette NF, McKenzie & Sweet Home RDs
Oregon)

Chewuch River RNA (Okanogan NF, Methow Valley RD, Washington)

Steamboat Mountain RNA (Gifford Pinchot NF, Mt Adams RD, Washington)

Little Granite RNA (Nez Perce NF, Hells Canyon NRA Idaho)

**IN ACCORDANCE WITH FSM 4063 42, THE FOLLOWING DISTRIBUTION IS
MADE**



WO / FOREST MANAGEMENT RESEARCH STAFF (original copy)

___ R-6 / Lands and Minerals (Landownership status)

___ PNW / RNA Coordinator (Sarah Greene)

___ Supervisors Office and RD

RO / Environmental Coordination

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. RNAs 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. RNAs also preserve a prime example of common communities that can serve as a baseline for comparison. All seven areas were previously allocated as proposed RNAs during forest planning. This decision formalizes their designation for that use. The RNAs 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 Significant Impact is available upon request from the Regional Office Environmental Coordination, P.O. Box 3622, 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 Dornbeck, 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

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. RNAs 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. RNAs also preserve a prime example of common communities that can serve as a baseline for comparison. All seven areas were previously allocated as proposed RNAs during forest planning. This decision formalizes their designation for that use. The RNAs 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 Significant Impact is available upon request from the Regional Office Environmental Coordination, P.O. Box 3622, 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 Dornbeck, 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.

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

SIGNATURE PAGE

for


RESEARCH NATURAL AREA ESTABLISHMENT RECORD


Lemmingsworth Gulch Research Natural Area

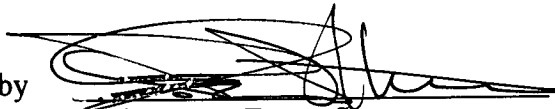
Siskiyou National Forest

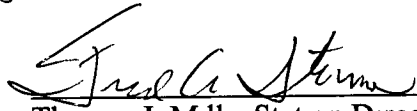
Curry County Oregon

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 5/5/98
Diane E White Ecologist
Siskiyou National Forest

Recommended by  Date 5/14/98
Gilbert Zepeda District Ranger
Chetco Ranger District

Recommended by  Date 7/7/98
Mike Lunn Forest Supervisor
Siskiyou National Forest

Concurrence of  Date 3/22/99
Thomas J Mills Station Director
Pacific Northwest Research Station

LEMMINGSWORTH GULCH RESEARCH NATURAL AREA

TITLE PAGE

Establishment Record for
Lemmingsworth Gulch Research Natural Area
within Siskiyou National Forest Curry County Oregon

ESTABLISHMENT RECORD FOR
LEMMINGSWORTH GULCH RESEARCH NATURAL AREA
WITHIN SISKIYOU NATIONAL FOREST
CURRY COUNTY OREGON

INTRODUCTION

Lemmingsworth Gulch Research Natural Area has been the site of gold rush activities and has been important in the early history of southwestern Oregon

In 1852 gold was discovered in southwestern Oregon leading to a gold rush in the area. There were not huge quantities of the precious metal in Lemmingsworth Gulch but as the market changed and chromium, nickel, and copper went up in price, more and more miners entered the area to stake claims. The trail through the gulch provided access for miners heading into or out of the deeper mountains. Sourdough Camp, on the eastern point of the area, was a central meeting place for the miners and at the height of the mining era in the 1870s it had developed into a large camp community.

As the demand and price of these other products subsequently leveled off, mining activity diminished and is now non-existent. Present uses of the area include backpacking, botanical research, and sightseeing.

The 1224 acre (495 ha) tract is located entirely within the ownership of the United States Forest Service and is administrated by the Chetco Ranger District (Brookings, Oregon), Siskiyou National Forest. It is in close proximity (1.7 miles, 2.7 km) to the Oregon-California border, with the eastern point of the Natural Area bordered by the North Fork of the Smith River, a formally established Wild and Scenic River (Maps 1-3). On the east side of the North Fork, within a few hundred feet of the area, is the southern tip of the Kalmiopsis Wilderness Area.

LAND MANAGEMENT PLANNING

The Lemmingsworth Gulch area was included in the resource analysis and was recommended for establishment as a Research Natural Area by the Siskiyou National Forest Land and Resource Management Plan [dated March] (1989).

OBJECTIVES

This area is proposed for establishment to preserve a naturally occurring physical and biological unit where natural conditions will be maintained as much as possible. This

area is to be designated for the purposes of preserving a representative area that typifies important forest shrub land aquatic geologic and other natural situations that have special or unique characteristics of scientific interest or importance

Lemmingsworth Gulch RNA has many types of vegetation represented They are 1) Mixed Evergreen Forest (Franklin and Dyrness 1973) 2) tanoak (*Lithocarpus densiflorus*)¹ madrone (*Arbutus menziesii*) forest 3) knobcone pine (*Pinus attenuata*) Jeffrey pine (*Pinus jeffreyi*) grass on serpentine soils 4) Port Orford cedar (*Chamaecyparis lawsoniana*) Douglas fir (*Pseudotsuga menziesii*) on serpentine soils and 5) serpentine vegetation matrix and normal soil with good representation of contacts There are also a number of rare or endangered plant species unique to the serpentine soils Aquatically the area is of interest because of a mountain bog in a serpentine area with *Darlingtonia californica*

The RNA will preserve and maintain the genetic diversity as well as protect against environmental disruption It will be part of a national network of ecological areas for research and education Lemmingsworth Gulch RNA will be a reference area for the study of succession as well as enabling researchers to measure long term ecological changes along with providing a control area for comparing results from manipulative research on other similar lands

JUSTIFICATION

The proposed Lemmingsworth Gulch RNA is noteworthy for its extremely high concentration of endemic and rare plant species Lemmingsworth Gulch contains at least 16 sensitive species Topographic variety elevation range and a variety of geological substrates produce a highly diverse flora The Siskiyou Mountains are noted for plant endemism or extremely localized species Many of these species are restricted to serpentine

The western Siskiyou Mountains contain the Josephine Peridotite sheet the largest continuous body of serpentine and peridotite in Oregon Along the margins of this sheet at the point of contact with other substrates there is often a dramatic and abrupt change in vegetation Peridotite is well known for its relatively depauperate tree strata and very diverse shrub and herb layers Research of stand structure composition and succession in forests on peridotite in the western Siskiyou Mountains is extremely limited A research natural area which contains a peridotite area and a contact with normal substrates is a logical addition to a natural area system whose aim is to preserve examples of significant natural ecosystems for comparison with those influenced by man Comparative studies of the extreme condition on peridotite should yield valuable information which will aid in understanding management of forests on adjoining normal substrates

¹ Nomenclature for vascular plants follows Jepson (1993) and Peck (1941) except for trees which follows Little (1970)

Little study on stand dynamics productivity and nutrient flow has been done on forest types found on peridotite Inclusion in the RNA system of knobcone pine forests and Jeffrey pine forests is important so that their peculiar adaptation to the abnormal soil conditions found on peridotite can be studied

Lemmingsworth Gulch RNA can fill the following forest type cell needs in the Klamath Mountains Province as recognized in the Oregon Natural Heritage Plan (Oregon Natural Heritage Program 1993)

Port Orford cedar/western azalea (*Rhododendron occidentale*)

Douglas fir tanoak/salal (*Gaultheria shallon*) forest

Douglas fir tanoak canyon live oak (*Quercus chrysolepis*) forest

Tanoak/California buckthorn (*Rhamnus californica*) community on serpentine

Jeffrey pine western white pine (*Pinus monticola*)/manzanita (*Arctostaphylos*) forest with beargrass (*Xerophyllum tenax*)

Knobcone pine forest

The following aquatic cell needs will also be filled

First order stream system on peridotite with Port Orford cedar/azalea riparian forest

Darlingtonia fen on serpentine peridotite with western azalea and death camas (*Zigadenus micranthus*) along margins

The RNA will preserve forest types found on serpentine in the western Siskiyou Mountains The presence of an entire watershed and an excellent bedrock exposure at the point of exit of the stream into the North Fork of the Smith River will allow comparative studies of nutrient outflow and water quality

Lemmingsworth Gulch contains at least 16 sensitive vascular plants The listings are sensitive on (I) the 1991 Regional Forester's Sensitive Plant List (R6) (II) the Oregon Department of Agriculture Oregon Candidate Species List (C) and (III) the 1995 Oregon Natural Heritage Program List 1) taxa threatened with extinction or presumed to be extinct throughout their entire range 2) taxa that are threatened with extirpation 3) taxa on the review list more information is needed on these species and 4) taxa of concern but not currently threatened or endangered Serpentine endemics are rated with an E

SENSITIVE SPECIES

<u>SPECIES</u>	<u>R6</u>	<u>ODA</u>	<u>OHNP</u>	<u>Endemic</u>
<i>Cardamine nuttallii</i> var <i>gemmata</i>	R6	C	4	E
<i>Carex gigas</i>	R6		2	
<i>Cypripedium californicum</i>			4	
<i>Darlingtonia californicum</i>			4	
<i>Epilobium rigidum</i>			3	E
<i>Eriogonum pendulum</i>			4	E
<i>Eriogonum ternatum</i>			4	E
<i>Gentiana setigera</i>	R6	C	1	E
<i>Hieracium bolanderi</i>	R6		2	E
<i>Microseris howellii</i>	R6	C	1	E
<i>Monardella purpurea</i>	R6		2	E
<i>Poa piperi</i>	R6		2	E
<i>Streptanthus howellii</i>		C	1	E
<i>Thlaspi montanum</i> var <i>siskiyouense</i>			4	E
<i>Vancouveria chrysantha</i>			4	
<i>Viola primulifolia</i> ssp <i>occidentalis</i>	R6	C	1	E

Cardamine nuttallii var *gemmata* *Gentiana setigera* *Streptanthus howellii* and *Viola primulifolia* ssp *occidentalis* are also listed as rare and endangered in California and elsewhere on the California Native Plant Society List 1B (1994)

PRINCIPLE DISTINGUISHING FEATURES

Lemmingsworth Gulch RNA is a 1224 acre (495 ha) area in the Siskiyou National Forest and western Siskiyou Mountains of Curry County Oregon. It is marked by a sharp contact between geologic substrates which results in a dramatic contrast in vegetation types. Peridotite substrates are sparsely forested with a mosaic of knobcone pine in nearly pure stands, Jeffrey pine woodlands, Douglas-fir, and mixed forests dominated by Douglas fir and evergreen hardwoods. Tree cover drops to near zero in many areas so that some portions of the area are dominated by shrub lands. Normal substrates on Dothan Formation, are more densely forested with either older stands of Douglas-fir or younger stands of tanoak and Pacific madrone. The topography typical of the western Siskiyou Mountains consists of dissected drainages, steep slopes, and narrow ridges. The RNA encompasses a single entire watershed that drains eastward into the North Fork of the Smith River. The variety of geologic substrates and the elevation range and topographic variety produce a highly diverse flora. The Siskiyou Mountains are noted for plant endemism and Lemmingsworth Gulch RNA is most noteworthy for the extremely high concentration of endemic and rare plant species.

LOCATION

Lemmingsworth Gulch RNA (Maps 1 through 3) is located entirely within the Chetco Ranger District Siskiyou National Forest. It is about 17 air miles east of Brookings in Curry County Oregon. It lies at 124 degrees 2 minutes longitude and 42 degrees 2 minutes latitude.

Boundaries All bearings referred to in this description are True Geodetic Bearings. Beginning at the junction of Forest Service Trail 1114 and Forest Service Road 1107220. Thence following the southerly boundary of said trail southeasterly to its intersection with the east west saddle that divides Packsaddle Gulch and Cedar Creek. Thence easterly along said divide to a summit. Thence southeasterly along the divide between Cedar Creek and Smith River to a point. Thence north 45 degrees east to the westerly Ordinary High Water Line of the Smith River at a point opposite the mouth of Bald Face Creek. Thence northerly along said Ordinary High Water Line to its junction with Packsaddle Gulch to the summit of Packsaddle Mountain. Thence southwesterly to the point of beginning (See legal description Appendix 1).

AREA AND ELEVATION

Lemmingsworth Gulch RNA is 1224 acres (495 ha) in size. The elevation ranges from 1100 feet (336 m) to 2707 feet (828 m). Total difference in elevation is 1607 feet (492 m).

ACCESS

Access to the RNA is possible from two directions (Maps 2 and 3). Through most of the year access to the RNA is best obtained from the west by Forest Service Road 220, a spur road off Road 1107. It is accessible by following the Winchuck River Road south of Brookings. Access to the eastern part of the RNA may be possible in late summer by following Lone Mountain Road (Oregon Mt. Road) west from O'Brien on U.S. Highway 199. Road 4402 goes to Sourdough Forest Camp, which is at the eastern boundary of the RNA. Forest Service Trail 1114 can be reached by wading the North Fork of the Smith River at Sourdough Camp at the eastern edge of the RNA, or from road 220 at the western edge. This trail forms part of the southern boundary of the RNA and provides access to the other portions of the RNA. The northern portion of the RNA can be reached by cross country travel south from the cut over area at the end of Road 220 in the N ½ of section 3.

Camping areas are at Sourdough Campground (F.S.) on the eastern edge of the RNA, or at Winchuck Campground (F.S.) on Road 896, 8 miles (12.8 km) west of the RNA. A primitive dry camping area is possible at Pallady Spring along Road 1107 in the NW ¼ of section 8.

AREA BY COVER TYPE

Due to the effect of peridotite on vegetation, the plant associations and forest cover types are rather strictly aligned and differentiated according to substrate (Maps 4 through 6). However, as the area has been subjected to a long erosional cycle, perhaps since the Eocene, there has been an admixture of peridotite and normal substrates (Dothan Formation) producing an intermediate soil type found in stream bottoms and along the zone of contact in some areas. The contact zone is abrupt and well-defined in the western portion of the RNA near the drainage head, but broadly ecotonal in the eastern portion. In addition, the peridotite area probably has a considerable range in chemical composition of heavy metals and the calcium magnesium ratio partly due to the degree of serpentinization. Weathering produces marked changes in heavy metal concentration, compounding the variation in effect.

Dothan Formation

There are seven plant associations found on the Dothan Formation. The majority of the plant associations are in the Tanoak Series and one is in the Douglas-fir Series (Table 1). SAF Forest Cover Type 234 Douglas-fir-Tanoak-Madrone and Type 229 Pacific Douglas-fir are also represented here (229 is very small and has not been mapped). The north slope area near the trailhead in sections 4 and 9 has Kuchler's California Mixed-Evergreen Forest type. A small area along the North Fork of the Smith River in sections 10 and 11 may have SAF Forest Cover Type 231 Port-Orford-Cedar, but representation of the Port-Orford cedar is low.

Conifer stands on Dothan are generally healthy, though a high percentage of the Port-Orford cedars in the small area along the North Fork of the Smith River are infected with Port-Orford-cedar root rot (*Phytophthora lateralis*). Tanoak-madrone stands that do not show fire scars are probably fire-originated. Remnant Douglas-firs within the stands show fire scars that correlate roughly with tanoak and madrone ages, which range from 30 to 70 years.

Tanoak and madrone maximum height varies between 32 and 48 feet (10 and 15 m). Maximum diameter varies between 8 and 12 inches (20 and 30 cm). Douglas-firs 60 to 70 years old have maximum heights of about 92 feet (28 m) and maximum diameters of 16 to 20 inches (40 to 50 cm). A few small areas (unmapped) have forests of SAF Type 229 Pacific Douglas-fir with 100+ year old 30 to 35 inch (80 to 90 cm) maximum diameter and over 100 foot (32 m) tall trees.

Stand basal area varies between 30 and 35 sq m/ha. Tanoak comprises 55 to 70 percent of the basal area in tanoak-madrone stands.

Overstory associates are golden chinkapin (*Castanopsis chrysophylla*), California laurel (*Umbellularia californica*), and canyon live oak. The understory is characterized by 55 to 65 percent cover of evergreen huckleberry (*Vaccinium ovatum*), small coverage of

beargrass (*Xerophyllum tenax*) and an almost total lack of other herbaceous vegetation. Tree seedling reproduction is nonexistent though two to four-foot tall root sprouts average about four per tree stem.

Peridotite

On peridotite the vegetation appears stunted in comparison with that on adjacent nonserpentine soils. There are sharp contrasts in composition and productivity at the margins of the serpentine areas. The flora includes serpentine endemics not usually found in adjacent communities. Three plant associations describe the vegetation: Tanoak/California Coffeeberry, Jeffrey Pine-Western White Pine, and Jeffrey Pine-Huckleberry Oak. The SAF Cover Types are Knobcone Pine (248), Douglas-fir-Tanoak-Madrone (234), and Jeffrey Pine (247).

Forests belonging to the Tanoak/California Coffeeberry Plant Association (SAF Type 248) are quite diverse, varying from pure stands of knobcone pine to stands with mixtures of Douglas fir and western white pine.

Pure stands of knobcone pine are heavily infested with dwarf mistletoe (*Arceuthobium campylopodum*). Ten to 50 percent of stand basal area is mistletoe-killed knobcone pine. As knobcone pine possesses serotinous cones, susceptibility to mistletoe may, in seeming contradiction, favor knobcone pine, as the fuel buildup of dead stems presents increasing fire hazard as the stand reaches maturity. The type presents an excellent opportunity for study of the natural role of disease in forest succession, fire-dependent ecosystems.

Stand basal area varies from 6.5 to 65 sq ft/acre (1.5 to 15 sq m/ha). Maximum age of stand dominants varies from 35 to 65 years. Maximum height of dominants varies from 29 to 49 feet (9 to 15 m), while maximum diameter varies between 4 and 8 inches (10 and 20 cm). Reproduction by knobcone pine is almost nonexistent and always outnumbered by tanoak and Douglas fir seedlings.

The understory is composed of a rich array of shrub species having 50 to 75 percent cover. The most consistent associates are huckleberry oak (*Quercus vacciniifolia*), California laurel, California coffeeberry (*Rhamnus californica*), and a shrubby variety of tanoak (*Lithocarpus echinoides*). Up to about 15 species of shrubs may be found in these stands. Beargrass is the dominant herb. Herbaceous cover varies inversely with shrub coverage, illustrating the two-phase effect characteristic of serpentine. Bare rock and bare soils are often abundant, so that a very high number of herbaceous species are present in trace amounts.

Forests belonging to the Jeffrey Pine Series (SAF forest cover type 247, Jeffrey pine) are common on south and southwesterly-facing slopes. Soil development is generally less progressed than in adjoining stands, so that moisture-retaining capacity is lower and the amelioration of heavy metal toxicity that accompanies weathering less developed.

Conifer stands are generally healthy though older trees often are infected with dwarf mistletoe. The tops are characteristically gone from old trees perhaps due to lightning strikes or wind in combination with disease. Stand basal area varies from 30 to 60 sq ft/acre (7 to 14 sq m/ha). Maximum age of dominants varies from 87 to 119 years so that generally the trees are the oldest are found on the peridotite. Maximum height of dominants varies from 49 to 62 feet (15 to 19 m). Maximum diameter varies from 16 to 24 inches (40 to 60 cm). Reproduction by Jeffrey pine is apparently good with wide size class distribution. However intraspecific competition may have produced the spread in size classes. Jeffrey pine seedlings 5 to 10 feet (1.5 to 3 m) tall vary in age from 30 to 40 years old. It may be that seedlings remain generally repressed and the size class distribution results from differential release of only a few seedling establishment episodes.

Jeffrey pine is often found in small pure stands. Species that occur in small amounts in this association are knobcone pine, Douglas-fir, and incense cedar (*Calocedrus decurrens*). The area of Jeffrey pine in section 9 is the only stand with incense cedar.

The understory has a very sparse and patchy shrub layer commonly dominated by huckleberry oak, ocean spray (*Holodiscus discolor*), pinemat manzanita (*Artostaphylos nevadensis*), and dwarf ceanothus (*Ceanothus pumilus*). The herb layer is dominated by grasses particularly Idaho fescue (*Festuca idahoensis*), California fescue (*Festuca californica*), red fescue (*Festuca rubra*), and Geyer's oniongrass (*Melica geyeri*). Diversity of herbs found in trace amounts is high.

Also found on the Peridotite are two serpentine bogs that contain *Darlingtonia californica* (Map 4). This species is subject to heavy commercial exploitation.

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

Plant Association (Atzet and Wheeler 1984) (Map 4)	Acres	Hectares
Tanoak/California Coffeeberry (LIDE3/RHCA)	463	187.6
Jeffrey Pine Western White Pine (PIJE PIMO)	1	24
Jeffrey Pine/Huckleberry Oak (PIJE/QUVA)	168	68.0
Tanoak/Salal (LIDE3/GASH)	37	15
Tanoak/Pacific Rhododendron Evergreen Huckleberry (LIDE3/RHMA VAOV2)	13	5
Tanoak Canyon Live Oak (LIDE3 QUCH)	13	5
Tanoak California Myrtle (LIDE3 UMCA)	30	12
Tanoak/Evergreen Huckleberry Salal (LIDE3/VAOV2 GASH)	189	77
Douglas fir Tanoak Canyon Live Oak (PSME LIDE3 QUCH)	13	5
Tanoak/Evergreen Huckleberry (LIDE3/VAOV2)	280	113
Bog Areas	17	7
Total	1224	495
SAF Cover Types (Eyre 1980) (Map 5)		
Douglas fir Tanoak Madrone (234)	120	49
Jeffrey Pine (247)	374	151
Knobcone Pine (248)	730	295
Total	1224	495
Kuchler Cover Type (Kuchler 1966) (Map 6)		
California Mixed Evergreen Forest	308	124
No Kuchler equivalent	916	371
Total	1224	495

PHYSICAL AND CLIMATIC CONDITIONS

Lemmingsworth Gulch RNA lies within the Siskiyou Mountains physiographic province a region characterized by its steeply folded and faulted pre Tertiary rocks deeply dissected terrain, and the accordance of its ridges and peaks into a broad peneplain, formed during the Miocene and Pliocene epochs. The RNA encompasses an entire watershed with both north and south facing slopes averaging 40 to 60 percent slope. Elevation ranges from 1100 feet (336 m) at the juncture of Lemmingsworth Creek and the North Fork of the Smith River to 2707 feet (828 m) at the summit of Packsaddle Mountain.

The climate of the area is cool and wet much of the year. The area is strongly influenced by the maritime proximity. The summer climate is Mediterranean and drought between May and October is common. Snowfall data are unavailable; however, wet snow accumulates for short periods of time followed by warm rains that melt the snow. Data are presented for the nearest weather station at Brookings, 17 air miles to the west and near sea level, and are averages of the 20 year period from 1969 through 1988 (Climatological Data Annual Summary). Precipitation is undoubtedly higher and temperature more extreme at the RNA site.

Mean annual temperature	54.0F	12.2C
Mean December temperature	48.6F	9.2C
Mean July temperature	59.0F	15.0C
Mean annual precipitation	71.0 in	182 cm
Mean precipitation July-August	3.5 in	9 cm

DESCRIPTION OF VALUES

The Siskiyou Mountains Province is well known for its concentration of threatened and endangered and endemic plant species, which apparently relates to the exposure and lack of modification of geologic strata dating from the Mesozoic. Many of these species are endemic to serpentine. The following is a partial list of plants that occur in Lemmingsworth Gulch RNA.

Trees (Little 1970)

<i>Arbutus menziesii</i>	Pacific madrone
<i>Calocedrus decurrens</i>	incense cedar
<i>Castanopsis chrysophylla</i>	golden chinkapin
<i>Chamaecyparis lawsoniana</i>	Port-Orford-cedar
<i>Lithocarpus densiflorus</i>	tanoak
<i>Pinus attenuata</i>	knobcone pine
<i>Pinus jeffreyi</i>	Jeffrey pine
<i>Pinus lambertiana</i>	sugar pine
<i>Pinus monticola</i>	western white pine
<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Quercus chrysolepis</i>	canyon live oak
<i>Taxus brevifolia</i>	Pacific yew
<i>Umbellularia californica</i>	California laurel

Shrubs (Jepson 1993, Peck 1941)

<i>Amelanchier utahensis</i>	
<i>Arctostaphylos nevadensis</i>	pinemat manzanita
<i>Berberis aquifolium</i> var. <i>repens</i>	

<i>Ceanothus pumilus</i>	dwarf ceanothus
<i>Garrya buxifolia</i>	silk tassel tree
<i>Gaultheria shallon</i>	salal
<i>Holodiscus discolor</i>	oceanspray
<i>Juniperus communis</i>	prostrate juniper
<i>Quercus vaccinifolia</i>	huckleberry oak
<i>Lithocarpus echinoides</i>	dwarf tanoak
<i>Physocarpus capitatus</i>	Pacific ninebark
<i>Rhamnus californica</i>	California coffeeberry
<i>Rhododendron occidentale</i>	western azalea
<i>Rosa</i> sp	rose
<i>Vaccinium ovatum</i>	evergreen huckleberry
<i>Vaccinium parvifolium</i>	red huckleberry

Grasses herbs ferns and others (Jepson 1993 Peck 1941)

<i>Achillea millefolium</i>	yarrow
<i>Allium falcifolium</i>	onion
<i>Allium siskiyouense</i>	Siskiyou onion
<i>Anemone deltoidea</i>	threeleaf anemone
<i>Angelica arguta</i>	angelica
<i>Antennaria suffrutescens</i>	evergreen everlasting
<i>Aquilegia formosa</i>	columbine
<i>Arabis aculeolata</i>	Waldo rockcress
<i>Arnica cernua</i>	serpentine arnica
<i>Arnica spathulata</i>	Klamath arnica
<i>Aspidotis densa</i>	rock fern
<i>Balsamorhiza deltoidea</i>	balsam-root
<i>Calamagrostis</i> sp	reed grass
<i>Calochortus tolmiei</i>	pussy ears
<i>Calypso bulbosa</i>	fairy slipper
<i>Calystegia atriplicifolia</i> ssp <i>atriplicifolia</i>	morning-glory
<i>Castilleja hispida</i> ssp <i>brevilobata</i>	short-lobed indian paintbrush
<i>Castilleja miniata</i> ssp <i>elata</i>	Siskiyou indian paintbrush
<i>Cardamine nuttallii</i> var <i>gemma</i>	purple toothwort
<i>Carex mendocinensis</i>	sedge
<i>Carex echinata</i> ssp <i>echinata</i>	sedge
<i>Carex inops</i> ssp <i>inops</i>	sedge
<i>Cerastium arvense</i>	field chickweed
<i>Claytonia parviflora</i>	miner s lettuce
<i>Collinsia linearis</i>	narrowleaf collinsia
<i>Cypripedium californicum</i>	California lady s slipper
<i>Danthonia californica</i>	California oatgrass
<i>Darlingtonia californica</i>	California pitcher plant
<i>Disporum hookeri</i>	Oregon fairybell
<i>Drosera</i> sp	sundew

Elymus sp
Epilobium munitum
Epilobium rigidum
Erigeron foliosus var *confinus*
Eriogonum pendulum
Eriogonum ternatum
Eriophyllum sp
Erysimum sp
Erythronium sp
Festuca sp
Galium ambiguum ssp *siskiyouense*
Gentiana affinis var *ovata*
Gentiana setigera
Hastingsia alba
Helenium bigelovii
Hieracium bolanderi
Hieracium parryi
Horkelia sericata
Hypericum anagalloides
Iris bracteata
Iris innominata
Lathyrus delnorticus
Lathyrus nevadensis var *nevadensis*
Ledum glandulosum
Ligusticum sp
Lilium bolanderi
Lilium pardalinum
Lilium pardalinum ssp *vollmeri*
Lomatium howellii
Lomatium macrocarpum
Luzula sp
Melica sp
Microseris laciniata
Monardella purpurea
Moehringia macrophylla
Narthecium californicum
Orobanche uniflora
Parnassia californica
Penstemon sp
Phacelia corymbosa
Phlox diffusa
Phlox speciosa
Pinguicula vulgaris ssp *macroceras*
Platanthera sparsiflora
Polygala californica
Polystichum imbricans

small flower willow herb
Siskiyou mountains willow-herb
fleabane daisy
Waldo buckwheat
ternate buckwheat
wooly sunflower
wallflower
fawn lily
fescue
yolla bolly bedstraw
gentian
Mendocino gentian
sneezeweed
hawkweed
hawkweed
silky horkelia
tinker s penny
Siskiyou iris
Del Norte county iris
Del Norte pea
wild pea
western labrador tea
Bolander s lily
lily
Vollmer s lily
Howell s lomatium
hairy wood rush
oniongrass
Siskiyou monardella
bigleaf sandwort
bog asphodel
naked broom-rape
grass-of-parnassus
beardtongue
phacelia
pink phlox
horned butterwort
sparse-flowered bog-orchid
milkwort
swordfern

<i>Polystichum munitum</i>	western swordfern
<i>Pteridium aquilinum</i> var <i>pubescens</i>	braken
<i>Pyrola</i> sp	wintergreen
<i>Rudbeckia californica</i> var <i>glauca</i>	California cone flower
<i>Sanguisorba officinalis</i>	burnet
<i>Sanicula peckiana</i>	Peck s sanicle
<i>Scirpus</i> sp	bulrush
<i>Scoliopus hallii</i>	
<i>Sedum laxum</i>	stonecrop
<i>Senecio canus</i>	groundsel
<i>Sidalcea malvaeflora</i>	checker mallow
<i>Silene campanulata</i> ssp <i>glandulosa</i>	campion
<i>Sisyrinchium idahoense</i>	
<i>Smilacina racemosa</i>	western false Solomon s seal
<i>Streptanthus howellii</i>	Howell s jewelflower
<i>Synthyris reniformis</i>	snow queen
<i>Thlaspi montanum</i> var <i>siskiyouensis</i>	penny-cress
<i>Toxicodendron diversilobium</i>	poisonoak
<i>Trientalis latifolia</i>	western starflower
<i>Trifolium</i> sp	clover
<i>Trillium rivale</i>	trillium
<i>Triteleia bridgesii</i>	triteleia
<i>Vancouveria chrysantha</i>	Siskiyou inside-out-flower
<i>Vicia americana</i> var <i>americana</i>	american vetch
<i>Viola adunca</i>	western dog violet
<i>Viola cuneata</i>	violet
<i>Viola primulifolia</i> ssp <i>occidentalis</i>	western bog violet
<i>Viola lobata</i> ssp <i>lobata</i>	pine violet
<i>Whipplea modesta</i>	whipple vine
<i>Wyethia</i> sp	mule s ears
<i>Xerophyllum tenax</i>	beargrass
<i>Zigadenus micranthus</i>	death camas

FAUNA

The following terrestrial vertebrates are known to be present in the RNA (Burt 1976 Nussbaum Brodie Storm 1983 Peterson 1961) Either sightings or animal signs have been observed by employees on the Chetco Ranger District

<i>Euarctos americanus</i>	black bear
<i>Canis latrans</i>	coyote
<i>Martes americana</i>	pine marten
<i>Bassaricus astutus</i>	ringtail
<i>Dryocopus pileatus</i>	pileated woodpecker

Strix occidentalis
Rana boylei
Charina bottae

spotted owl
yellow legged frog
rubber boa constrictor

The pine marten and pileated woodpecker are animals that are being watched and the spotted owl is on the threatened species list

Other animals that could potentially occur are the red legged frog (*Rana aurora*) wolverine (*Gulo luscus*) Del Norte salamander (*Plethodon elongatus*) common kingsnake (*Lampropeltis getulus*) and goshawk (*Accipiter gentilis*) These are on the Regional Forester s sensitive species list (Goshawk for R 5)

GEOLOGY

Lemmingsworth Gulch is at the western edge of the Josephine peridotite sheet an area of about 225 square miles extending from the Illinois River west to the western edge of the RNA A narrow band of Dothan Formation forms the stream course for the North Fork of the Smith River The Dothan Formation also bounds the RNA on the west and extends nearly to the coast

The peridotite apparently was implaced in an ocean floor construction sequence during the Jurassic Period and largely altered to serpentine by subsequent transport Peridotite and serpentine are well known for their low biomass yet herbaceously rich vegetation, which may be the result of a low calcium to magnesium ratio and a high nickel chromium, and heavy metal content

The Dothan Formation of Late Jurassic age is a sediment sequence representing a continental margin sedimentation which, in the area of the RNA is composed of mudstones and siltstones (Dott 1970) It weathers to produce a normal soil not high in heavy metals with a low calcium to magnesium ratio The Dothan Formation is intruded in places by small lenses or pods of Tertiary Dacite Porphyry

SOILS

There are nine soil survey units present within the boundaries of the RNA Four of the units 050G 122 F 137G and 207E represent a small proportion of the area and will not be described (U S Dept Agriculture Curry County Soil Survey in press)(Map 7)

51G Cassiday Grouslous Bravo complex This unit has metasedimentary or metavolcanic parent rock types It is generally found on 30 to 60 percent south facing slopes The Cassiday soil is found on back slopes and slightly convex areas The Grouslous soil occurs on narrow ridge tops shoulder slopes and other convex areas The Bravo soil occurs on back slopes and slightly concave areas The landform is mountainous Elevation ranges from 200 to 3000 feet The climate may be characterized

by a mean annual precipitation of 110 inches a mean annual air temperature of 49 degrees F and a frost-free period of 160 to 210 days

Bedrock is found between 10 and 40 inches Soils are generally well drained with moderate to moderately slow permeability Available water capacity is 2 to 5 inches The hazard of erosion is rated very severe

123F Fritsland-Bravo Cassiday complex This unit has metasedimentary or metavolcanic parent rock types It is generally found on 30 to 60 percent south-facing slopes The Fritsland soil is found on back slopes and slightly concave areas (the Bravo and Cassiday soils are described above) The landform is mountainous The elevation ranges from 200 to 3000 feet The climate may be characterized by a mean annual precipitation of 110 inches a mean annual air temperature of 49 degrees F and a frost free period of 160 to 220 days

Bedrock is found between 20 and 60 inches Soils are generally well-drained with moderate to moderately slow permeability Available water capacity is 2 to 5 inches The hazard of erosion is moderate to severe

134E Greggo-Mislatnah-Rock outcrop complex This unit has serpentized peridotite or other serpentized parent rock types It is generally found on 0 to 30 percent slopes The Greggo soil is found on shoulder slopes knobs and convex rises The Mislatnah soil is found in undulating areas and slightly convex rises The rock outcrops are along ridge crests shoulder slopes and are random throughout The landform is mountainous The elevation ranges from 1600 to 2500 feet The climate may be characterized by a mean annual precipitation of 110 inches a mean annual temperature of 49 degrees F and a frost-free period of 120 to 210 days

Bedrock is found at 10 to 40 inches Soils are generally well drained with moderate to moderately slow permeability Available water capacity is 1 to 4 inches The hazard of erosion is moderate to severe

135F Greggo-Mislatnah-Rock outcrop complex This soil unit is very similar to 134E with the exception that it occurs on 30 to 60 percent slopes

136G Greggo-Rock outcrop-Mislatnah complex This soil unit is similar to the two previously described except the percentage of rock crop has increased The slopes are 60 to 90 percent and are north-facing Elevation ranges from 1400 to 2500 feet Erosion hazard is very severe

182F Mislatnah-Redflat-Greggo complex This unit has serpentized peridotite or other serpentized parent rock types It is generally found on 30 to 60 percent, north-facing slopes The Mislatnah soil occurs on back slopes and slightly convex areas The Redflat soil occurs on gentler sloping areas foot slopes and concave areas The Greggo soil occurs on narrow ridge tops shoulder slopes and other convex areas The landform is mountainous The elevation ranges from 400 to 2500 feet The climate may be

characterized by a mean annual precipitation of 110 inches a mean annual air temperature of 49 degrees F and a frost-free period of 120 to 160 days

Bedrock is found at 10 to 40 inches Soils are well drained and permeability is moderately slow Available water capacity is 1 to 4 inches The hazard of erosion is severe

204E Redflat-Mislatnah-Greggo complex This unit is similar to that described above but with a higher percentage of Redflat soil It is found on 0 to 30 percent slopes The frost-free period may be slightly longer 120 to 210 days The available water capacity ranges from 1 to 9 inches and the hazard of erosion is moderate

LANDS

Lemmingsworth Gulch was acquired in the original body of the Siskiyou National Forest in 1907 The only out-standing rights are mining claims that are not suspected to become active in the near future

CULTURAL

In 1848 gold was discovered which lead to a gold rush in northern California and southern Oregon In the RNA, there is a trail that heads east and then northeast along the Kalmiopsis Wilderness boundary The trail was the access into the Siskiyou Mountains for the miners who worked claims in the region

The main encampment and central point for those traveling was Sourdough Camp located just outside the RNA boundary Miners could buy supplies meet partners and sell their ore A grave is located on Winston Prairie It contains the remains of Al Hanzicker who died there in 1936

IMPACTS AND POSSIBLE CONFLICTS

Minerals

There are nine valid mining claims on record in the Lemmingsworth Gulch area They are not expected to become active but if they were to begin operations they shall be required to have an operating plan providing the least amount of impact to the RNA RNAs may be recommended for withdrawal from mineral entry situations where mitigation measures do not adequately protect the management area values However the mineral potential of the area shall be assessed before withdrawal is recommended

Grazing

No grazing of domestic livestock shall be permitted

Timber

Timber resource values are low on this tract in terms of standing volumes or site quality and management potential largely due to the serpentine soils. The area is generally covered with young stands of Douglas-fir, knobcone pine, Jeffrey pine, and associated species. Average commercial stand volumes are estimated at 10,000 board feet per acre but vary widely with the substrates. Average commercial site index is approximately 75. The site is basically noncommercial. The central portion of the RNA has extremely steep, rocky soils which are subject to rapid erosion and landslides. Past erosion following wildfires is evident.

Access

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

Watershed Values

Establishment of the RNA should have a neutral to beneficial effect on water and soil resources since significant disturbance to this moderate to highly unstable landscape will be avoided.

Recreation Values

The only current recreational use of the RNA is an occasional hunter, hiker, fisherman, or amateur botanist so that use is very limited and usually restricted to the trail corridor. Because of the steep, brushy, unstable slopes, the bulk of the RNA is not expected to receive any use. Recreational use not restricted to the trail corridor will be observed and action taken if needed to prevent injury to the fragile rare plant populations. The concentration and identification of rare plant species will not be advertised in public information programs. Collection of plant specimens will be restricted to specimens needed for scientific study. Collection needs must be outlined in detail and presented to the Pacific Northwest Forest and Range Experiment Station, the Siskiyou National Forest Supervisor's Office, and the Chetco Ranger District for approval. Only the Forest Supervisor can issue a permit to collect plants listed as rare.

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 the RNA objectives. Hunting and trapping shall not be encouraged. Habitat improvement projects may be approved if they meet the objectives of the RNA.

Special Management Area Values

The establishment of Lemmingsworth Gulch as an RNA will in no way conflict with its previous designation of a Botanical Area. The RNA designation will in fact protect the area more thoroughly than before.

Transportation Plan

There are no known road building projects planned for the area. The area surrounding the RNA is highly accessible and should warrant no further road building. 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 in 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 plant diversity of the RNA. Pure knobcone pine stands for example are found only where stand replacing fires occur. The serotinous knobcone pine cones require heat in order to open and shed seeds. 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. A primary focus will be to maintain and protect the populations of rare plants.

ADMINISTRATION RECORDS

The District Ranger Chetco Ranger Station 555 Fifth St. Brookings OR 97415 shall be responsible for administering and protecting the physical area. The entire RNA will

require regular observation with special attention to the rare and endangered plant species and to the *Darlingtonia* bog

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 Lemmingsworth Gulch RNA will be maintained in the following offices

Regional Forester Portland Oregon
Forest Supervisor Siskiyou National Forest Grants Pass Oregon
District Ranger Chetco Ranger District Brookings Oregon
Director Pacific Northwest Research Station Portland Oregon

Archiving

The Chetco Ranger District of the Siskiyou National Forest will be responsible for maintaining the Lemmingsworth 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

- Atzet T D L Wheeler 1984 Preliminary plant associations of the Siskiyou Mountain Province U S D A Forest Service Pacific Northwest Region Siskiyou National Forest Grants Pass OR 315 pp
- Burt W H 1976 A field guide to mammals Houghton Mifflin Co Boston MA 289
- California Native Plant Society 1994 Inventory of rare and endangered vascular plants of California Special Publication No 1
- Climatological Data Annual Summary 1969 1988 Nat Oceanic and Atmos Adm National Climate Center Asheville N C
- Dott R H Jr 1971 Geology of the southwestern Oregon Coast west of the 124th meridian Or Dept of Geol And Miner Indust Bulletin #69 Portland 63 pp
- Erye F H 1980 Forest cover types of the United States and Canada Society of American Foresters 5400 Grosvenor Lane Washington D C 20014
- Franklin J F Dyrness C T 1973 Natural vegetation of Oregon and Washington USDA For Serv Gen Tech Rep PNW 8 Pac Northwest For & Range Exp Stn Portland Oregon 417 pp
- Jepson W L Hickman J C Eds 1993 The Jepson Manual Higher Plants of California University of California Press Berkeley California 1400 pp
- Kuchler A W 1964 Manual to accompany the map of potential natural vegetation of the conterminous United States Am Geogr Soc Spec Publ 36 various paging illus
- Little E L 1978 Checklist of United States trees (Native and naturalized) Ag Handbk No 541 U S Government Printing Office Washington D C 375 pp
- Nussbaum R A E D Brodie Jr R M Storm 1983 Amphibians and reptiles of the Pacific Northwest Univ of Idaho Press Moscow ID 332 pp
- Oregon Natural Heritage Program 1993 Rare threatened and endangered plants and animals of Oregon Oregon Natural Heritage Program, Portland Oregon 84 pp
- Peterson R T 1961 A field guide to western birds Houghton Mifflin Co Boston MA 309 pp
- Peck M 1941 A Manual of the Higher Plants of Oregon Binfords & Mort Portland OR

Siskiyou National Forest Land and Resource Management Plan 1989 Siskiyou
National Forest Grants Pass Oregon

United States Department of Agriculture Soil Survey of Curry County Oregon
Natural Resources Conservation Service and Forest Service In Press



Appendix 1
Legal Description

LEGAL DESCRIPTION REVIEW

Case Name/Number Lemmingsworth Gulch R N A

Forest District Chetco Ranger District, Siskiyou National Forest

Type of Case Research National 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

Other Comments

Reviewed by

Thomas J Howie
FOREST LAND SURVEYOR

Date

6/28/94

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Thomas J Howie
OREGON
JULY 17 1986
THOMAS J HOWIE
2235

Professional Registration Number/State PLS #2235 Oregon

BOUNDARY DESCRIPTION
LEMMINGSWORTH GULCH R N A

The 414.4 ha, (1,024 acre), tract is located in Curry County, Oregon and is administered by the Chetco Ranger District, Siskiyou National Forest. The natural area lies within sections 2, 3, 4, 9, 10 and 11, Township 41 South, Range 11 West, Willamette Meridian. And is more particularly described as follows:

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

Beginning at the junction of Forest Service Trail #1114 and Forest Service Road #1107220,

42 1 45 6 N Lat 124 0 46 3 W Long

Thence following the southerly boundary of said trail southeasterly to its intersection with the east-west saddle which divides Packsaddle Gulch and Cedar Creek,

42 1 12 8 N Lat 123 59 22 6 W Long

Thence easterly along said divide to a summit,

42 1 15 8 N Lat 123 59 6 8 W Long

Thence southeasterly along the divide between Cedar Creek and Smith River to a point,

42 0 53 9 N Lat 123 58 37 4 W Long

Thence North 45° East to the westerly Ordinary High Water Line of the Smith River at a point opposite the mouth of Bald Face Creek,

42 1 20 9 N Lat 123 58 1 1 W Long

Thence northerly along said Ordinary High Water Line to its junction with Packsaddle Gulch,

42 1 28 2 N Lat 123 58 3 4 W Long

Thence crossing said gulch and following the northerly divide of Packsaddle Gulch to the summit of Packsaddle Mountain,

42 1 50 9 N Lat 124 0 23 4 W Long

Thence southwesterly to the point of beginning

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Thomas J. Howie

OPLEG 44
JULY 17 1986
THOMAS J. HOWIE
2235

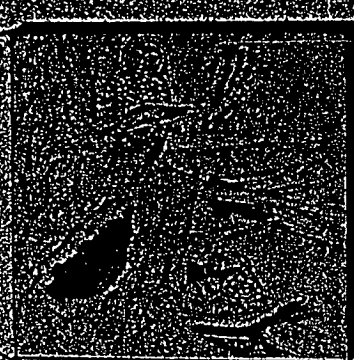
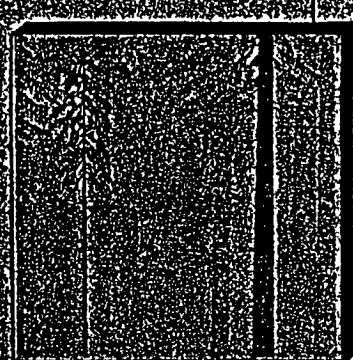




United States
Department of
Agriculture
Forest Service
Pacific
Northwest
Region

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 RNAs. 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

Name	Acres		Total Area
	Management Area 3	Overlap by Management Areas 1 & 2	
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 RNAs 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 RNAs.

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 used 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

Management Area Name	Acres (1988 Inventory)	
	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.

RESPONSE TO PLANNING PROBLEMS

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)

Management Area Name	Acres (1988 Inventory)	
	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 river 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 VQOs.

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

Management Area Name	Acres		
	Management Area	Contributing to Wild and Scenic River Values	
		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

Management Area Name	Acres				
	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

Management Area Name	Acres (1988 Inventory)				Percent
	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

Management Area Name	Acres	
	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

Management Area Name	Level of Restriction (Acres/1988 Inventory)				
	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

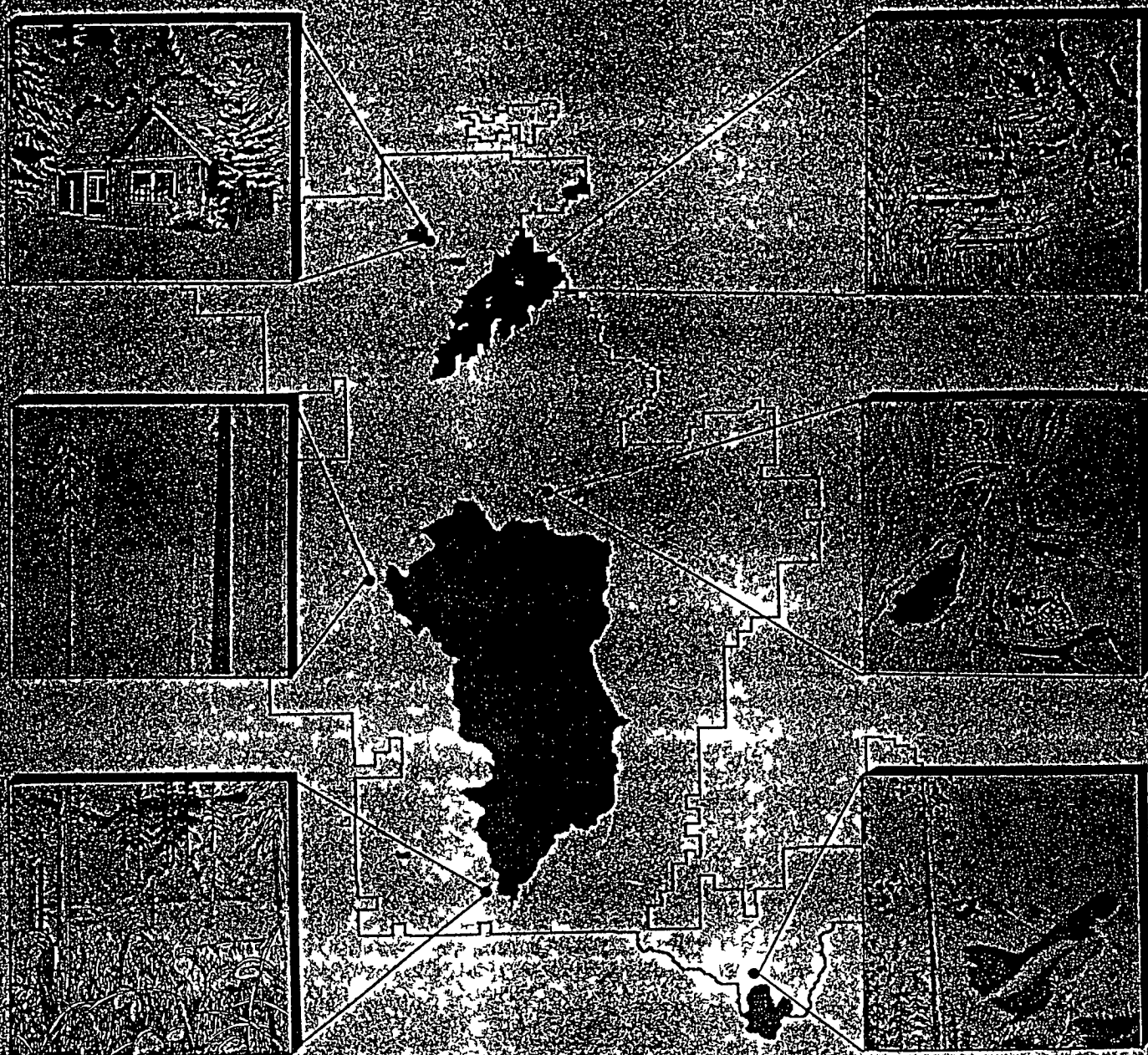
1989



Final Environmental Impact Statement

Land and Resource Management Plan

Siskiyou National Forest



PLANNING PROBLEMS

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 1.1.

Table 1.1 Key Indicators of Planning Problem Resolution

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

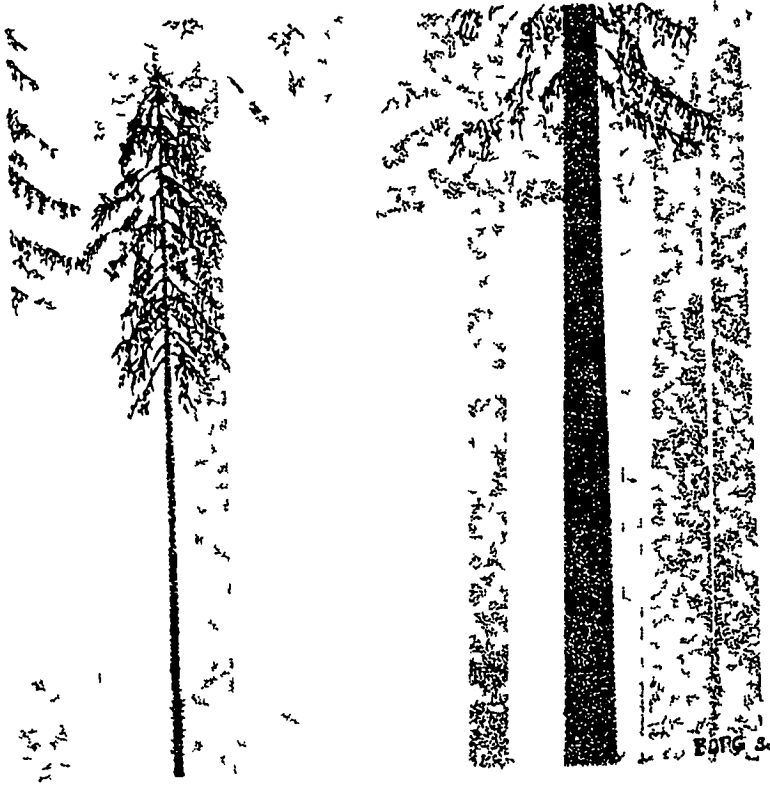
The Forest is habitat for numerous rare plants There is a considerable amount of interest in protecting these plants from disturbance which could result from activities such as road construction timber harvest and mining There is also concern that some species need protection from plant collectors Many 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.

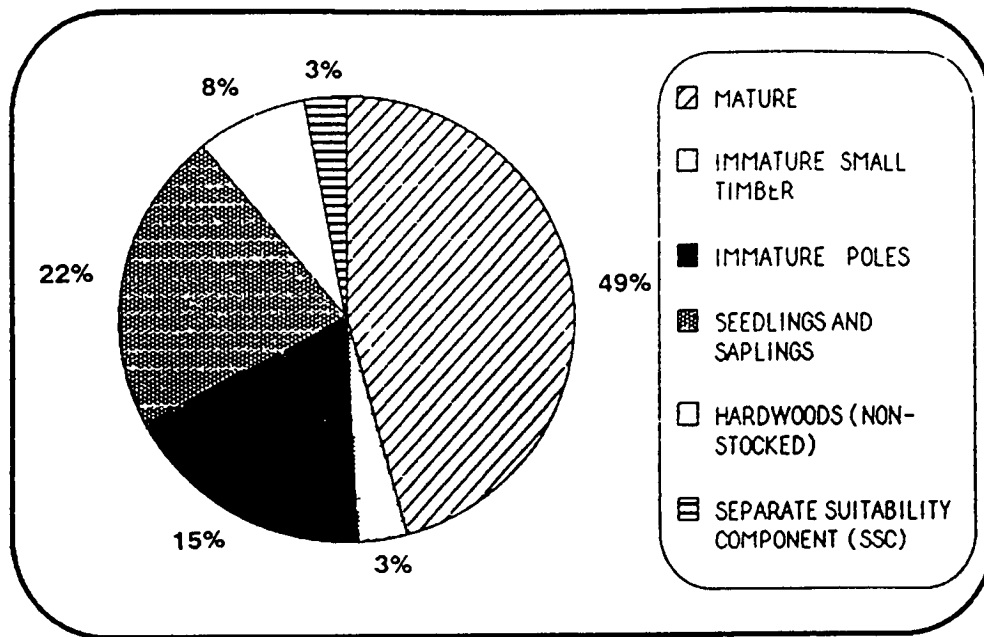


Figure III 16 Timber Condition Classes (Percent of Tentatively Suitable Forest Land)

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

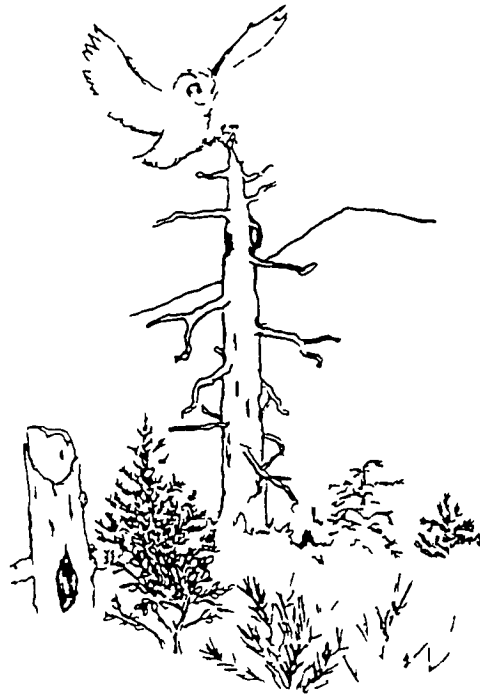
Biologically, the Forest is capable of maintaining the present complement of species, barring an extensive catastrophe. Land allocations may be key to maintaining viable populations of some plants, but the greatest need is for information on life cycles and environmental requirements of sensitive species 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.

Allocations to Botanical Research Natural Area Special Wildlife Site Designated Wildlife Habitat and selected Supplemental Resource Management Areas all basically maintain plant or animal diversity Wilderness Wild Rivers Unique Interest Backcountry Recreation Scenic and Recreation Rivers Riparian and Retention Visual Resource Management Areas are primarily allocated for other purposes but in essence acres placed in these categories receive medium to low consumptive use Plants that thrive on infrequent disturbance will do well in these areas Partial Retention Visual and General Forest on the other hand will be intensively managed Plants requiring disturbance will do well in both these areas If plants requiring infrequent disturbance are found here they will be protected 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 would be needed to assure total species diversity

AGE CLASS

Mature timber and old growth are well distributed throughout the Forest Both age classes are renewable Mature sawtimber is being harvested and regrown but there is a gap in age classes that must be considered if sustained yield is a goal and other resources are not sacrificed Intensive silvicultural practices and allocation of resources to the better sites show promise for increasing future productivity and yield

While old growth will always be present on the Forest individual stands cannot be sustained forever Management can prolong their existence but they will eventually have to be replaced Since structural characteristics not age are the primary value it may be possible to develop stands with old growth characteristics in less than the assumed 200 years It is becoming more common to leave shelterwood or seed trees for the next rotation rather than removing them after the new stand is established These larger older trees provide snags and large woody material needed for bird and small mammal habitat They also provide genetic and structural continuity between rotations



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 1880s 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 MRs 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 mycorrhizal 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 include 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.

MINERAL DEPOSITS

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

SUMMARIES

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 RNAs: (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 RNAs: (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 RNAs. They are listed by priority order:

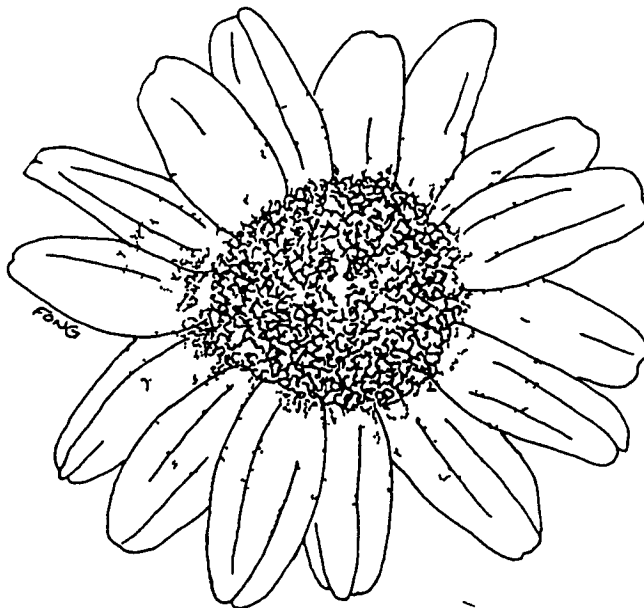
1 *Lemmingsworth Gulch* Lemmingsworth Gulch (Chetco Ranger District) contains eight cells: (a) mixed-evergreen forest (Douglas fir and evergreen hardwoods, minor component); (b) tanoak/madrone forest; (c) knobcone pine; (d) Jeffrey pine/grass on serpentine at high elevation; (e) serpentine vegetation 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

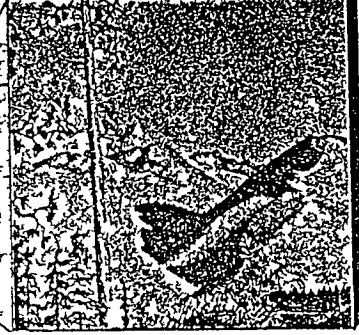
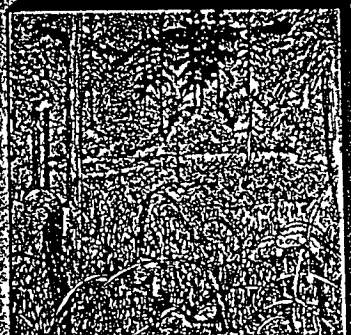
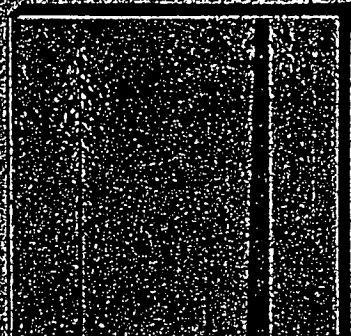
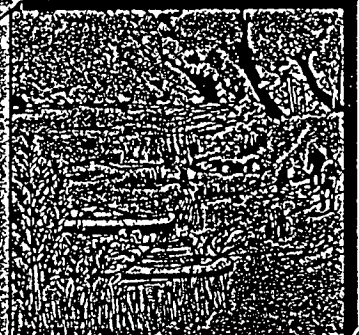
1989



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 Mislatah Creek I intend to c these two sections of rivers as Wild until a determination is made in future River Management Plan

Management Area acreage in Wild River is 5 029 acres (27 128 total but many acres are overlapped 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 stud ecosystems influenced only by natural processes

There are three existing Research Natural Areas on the Forest My decision is to recommend the add of four new areas Their establishment is subject to approval by the Chief of the Forest Ser Recommended for inclusion as Research Natural Areas are 2,651 acres (See FEIS Appendix F) In 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 communitie 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 be fully considered and managed according to the Standards and Guidelines in project planning, implementation, and monitoring.



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
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

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	Douglas 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

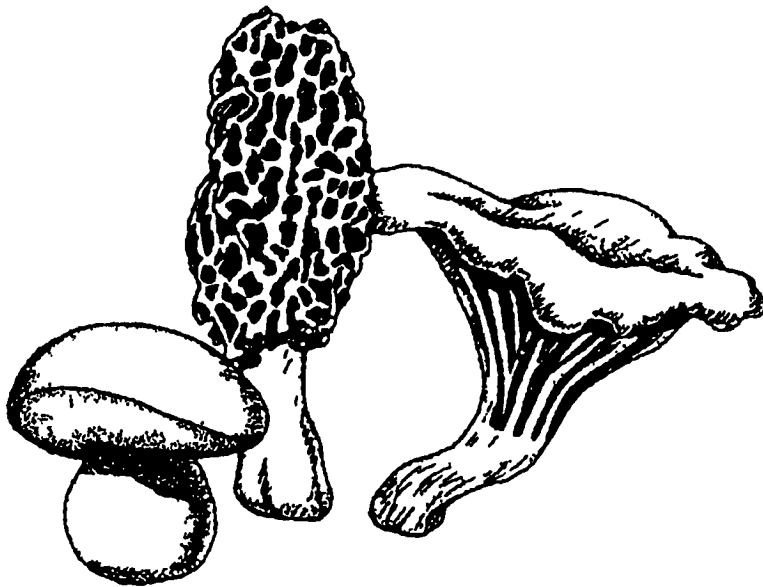
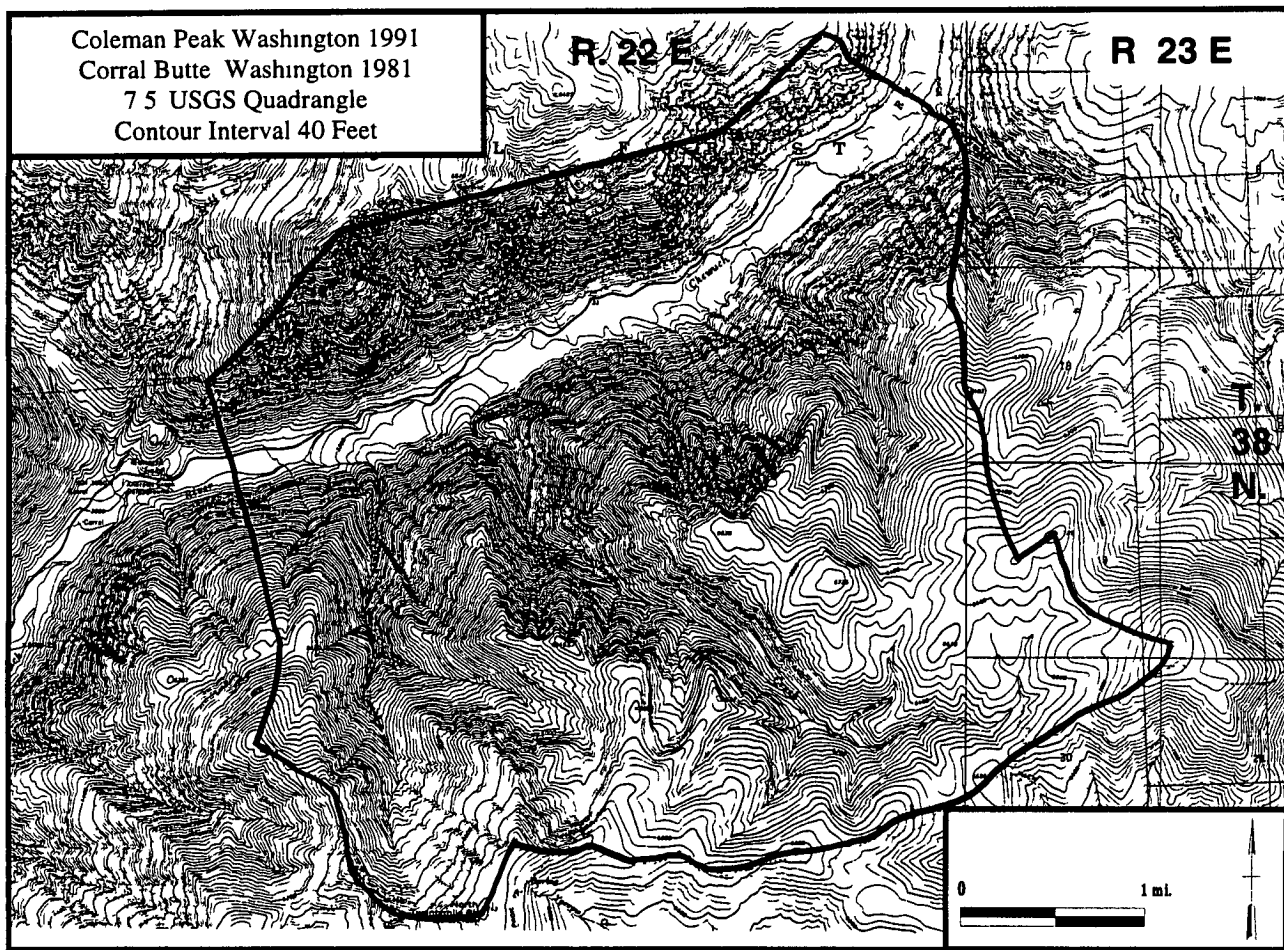


Figure 2 Chewuch River RNA



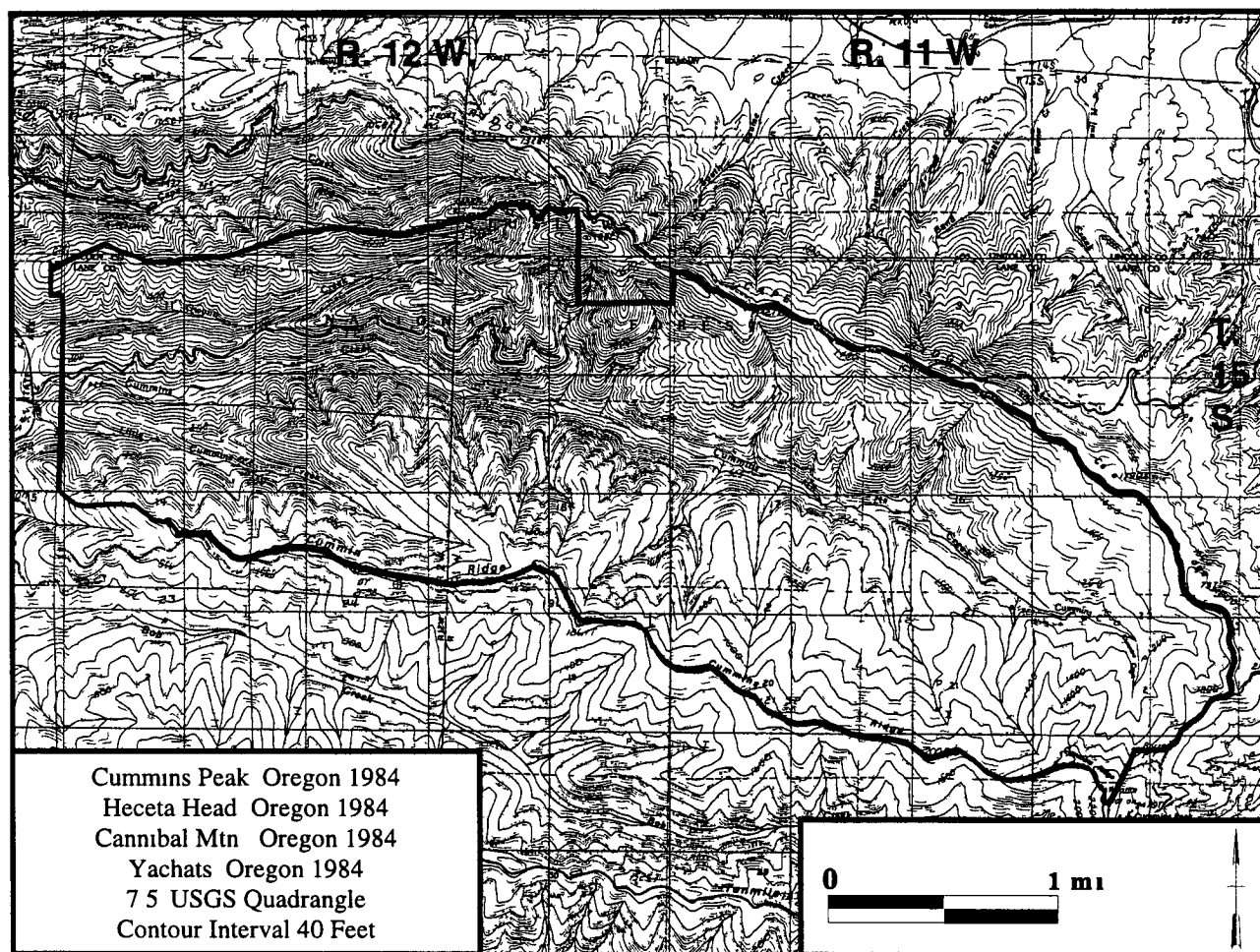
Mineral Resources There are no known mineral resources in this RNA

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



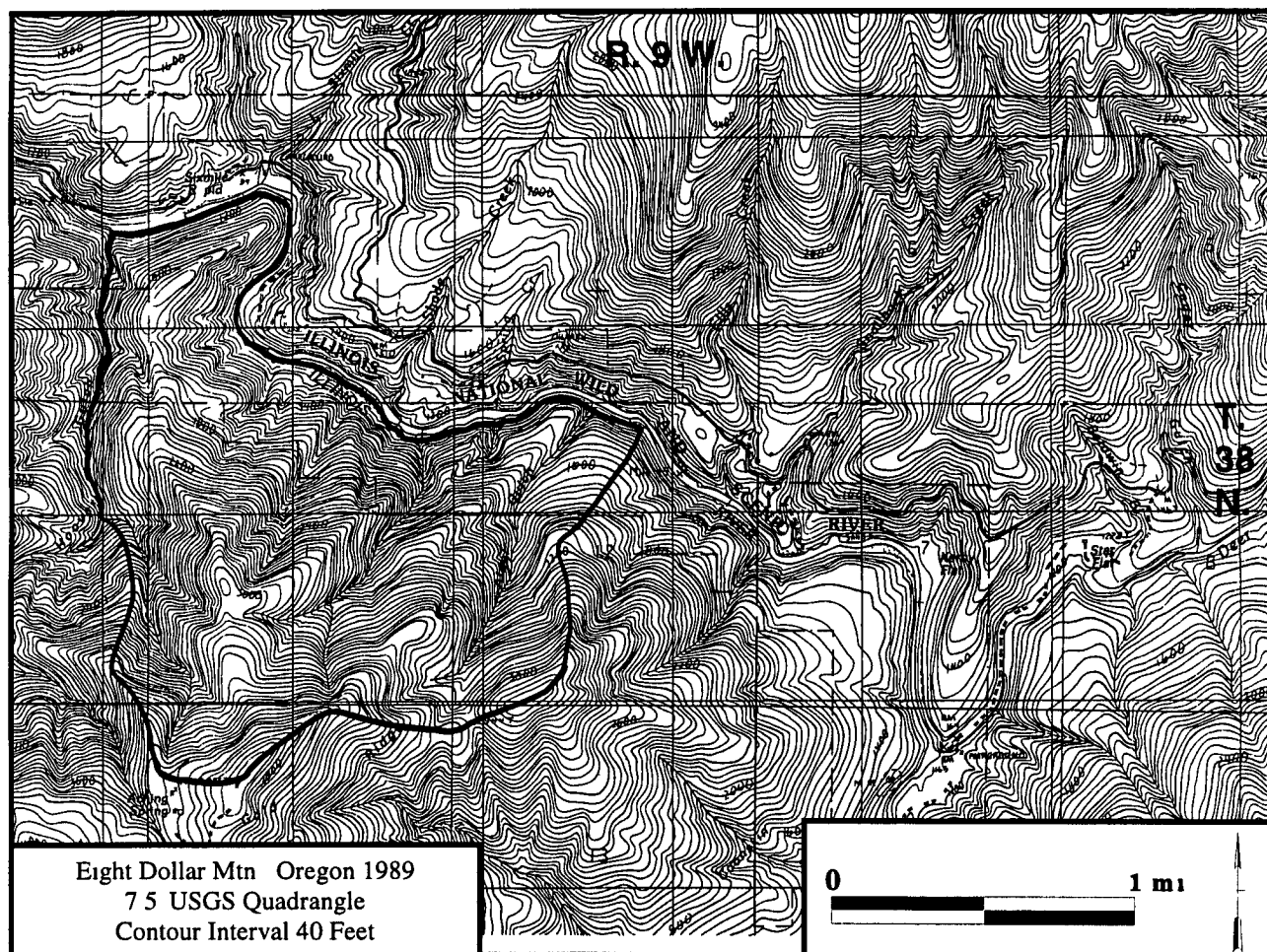
Mineral Resources There are no known mineral resources in this RNA

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, almost 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 are 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



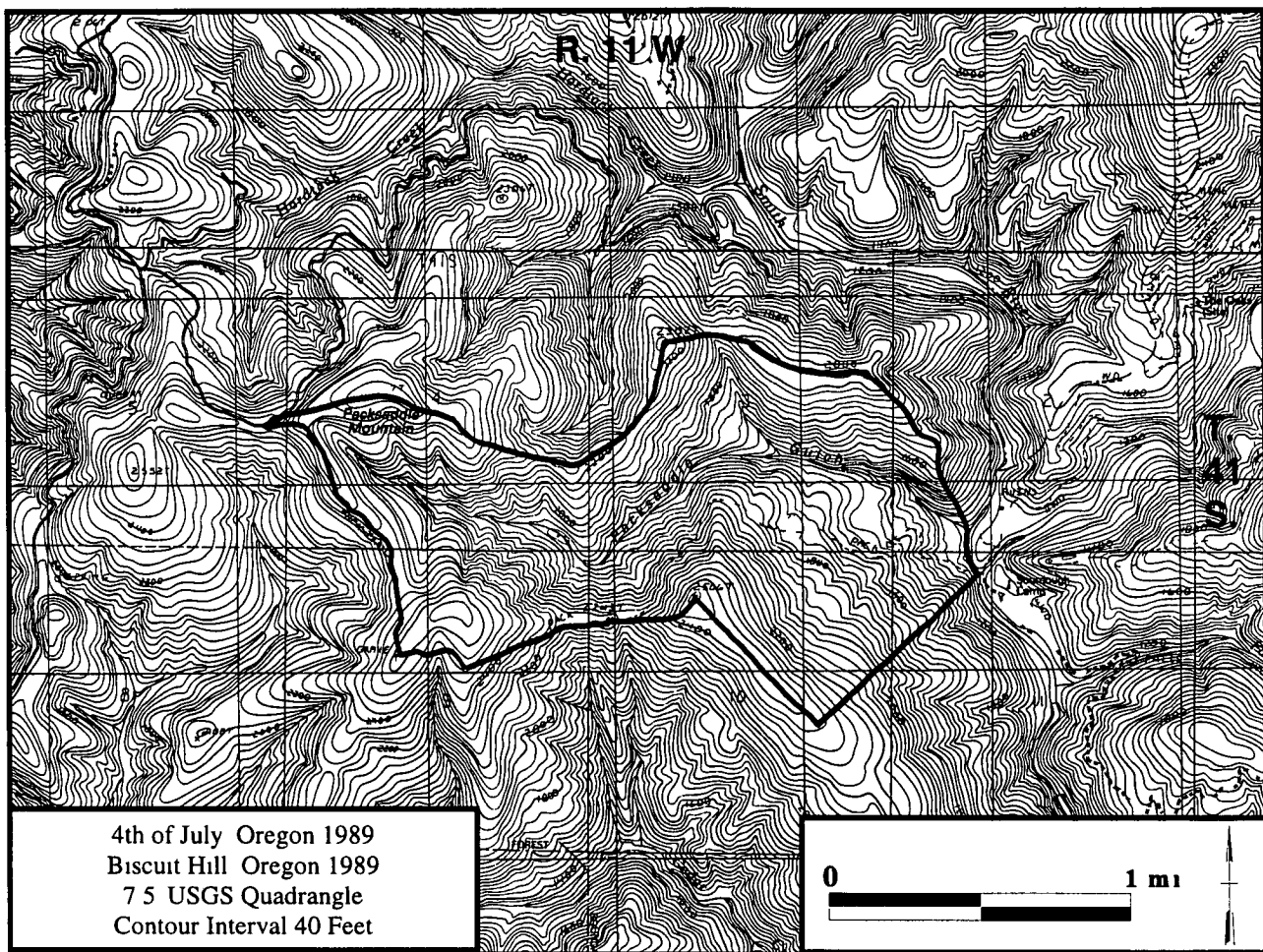
Mineral Resources There are no valid mining claims in this RNA

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



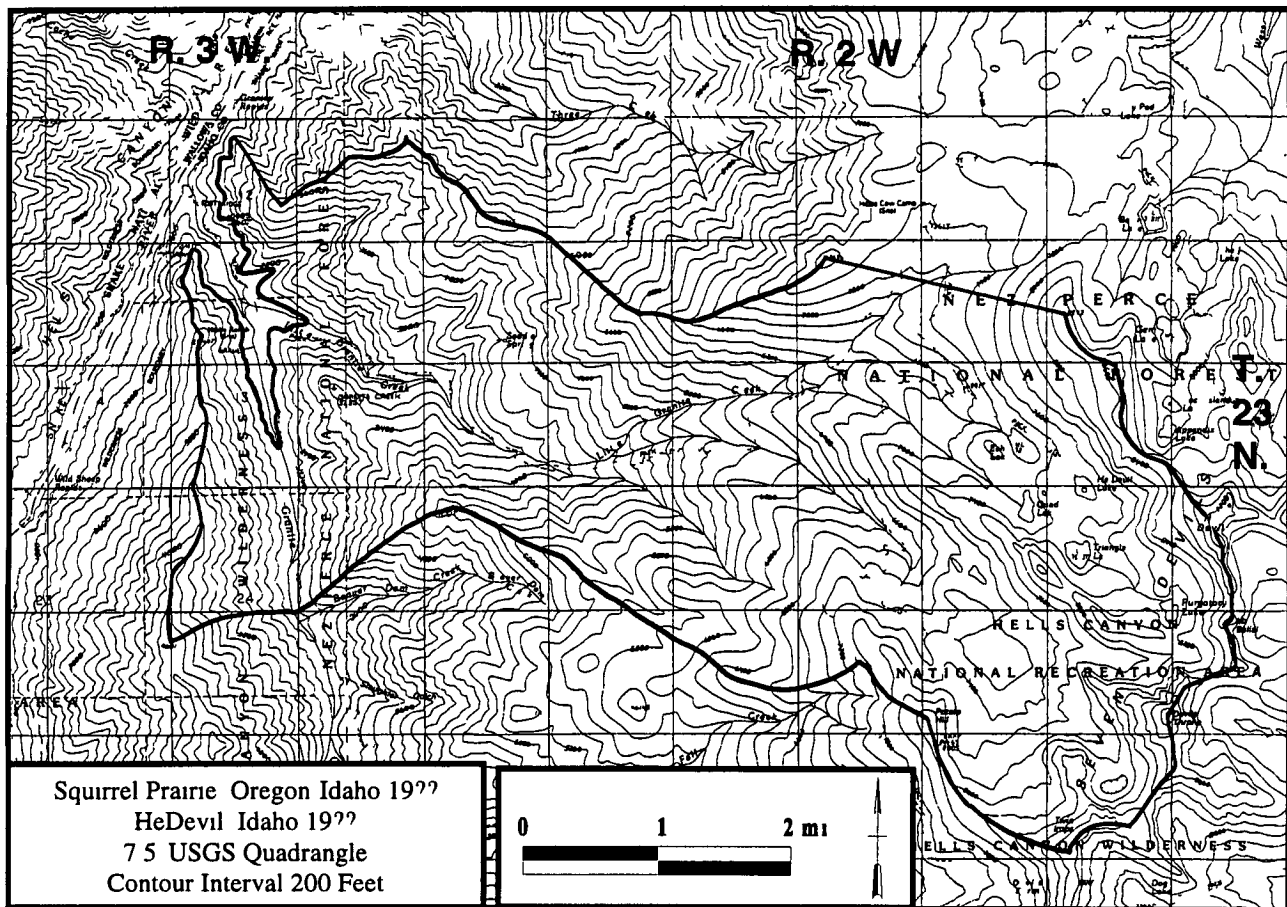
Mineral Resources There are nine valid mining claims on record in this area. They are not expected to become active, but if they were to begin operations, the operating plans would require mitigation measures to protect RNA values. If these mitigation measures prove inadequate, then withdrawal from mineral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



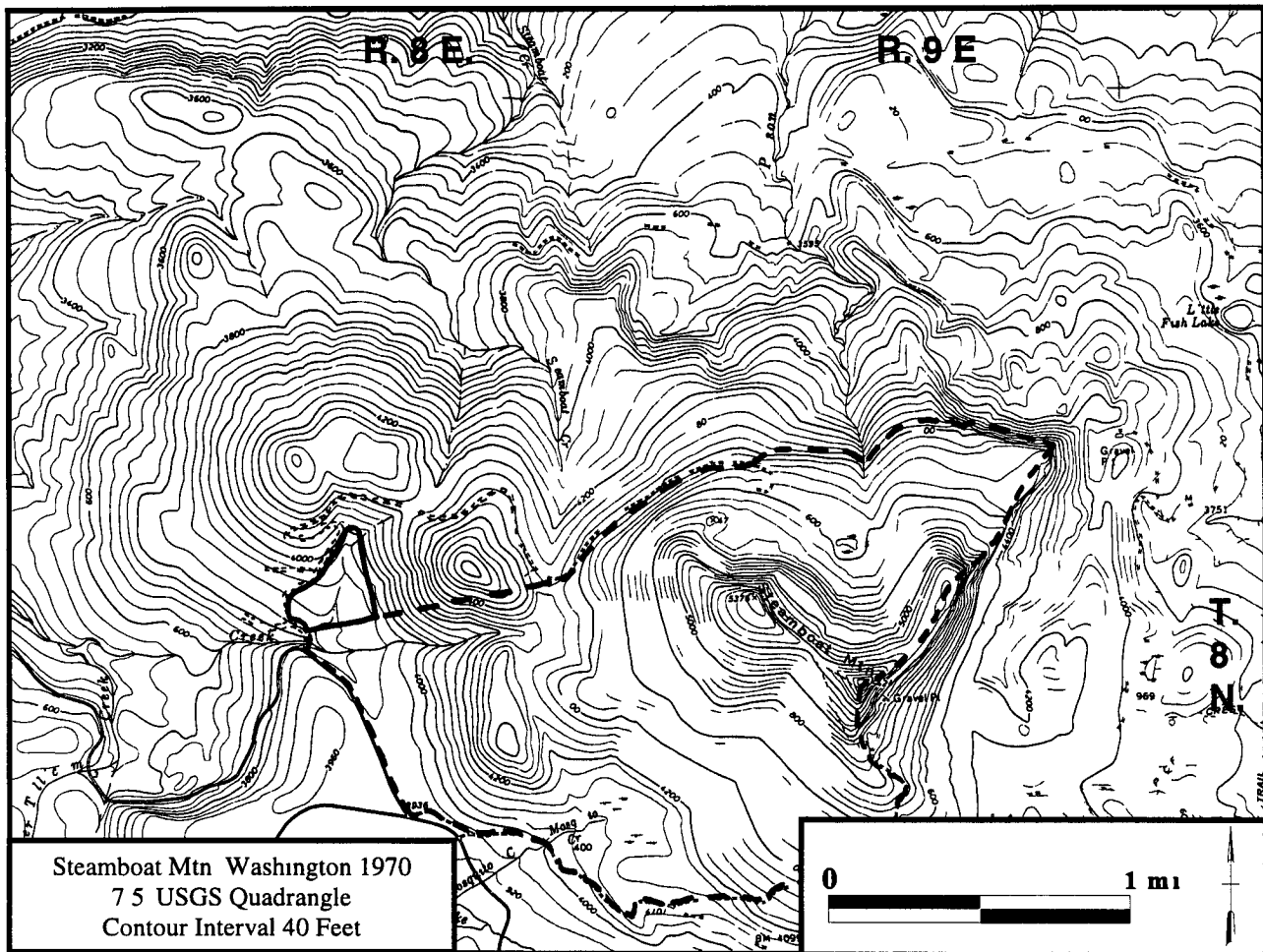
Mineral Resources There are no active hardrock mining claims in this RNA. There has been gold mining activity north of this RNA and is likely that some exploratory mining has taken place in the RNA in the past.

Grazing There are no grazing allotments in this RNA. There is some incidental grazing from pack and saddle stock 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



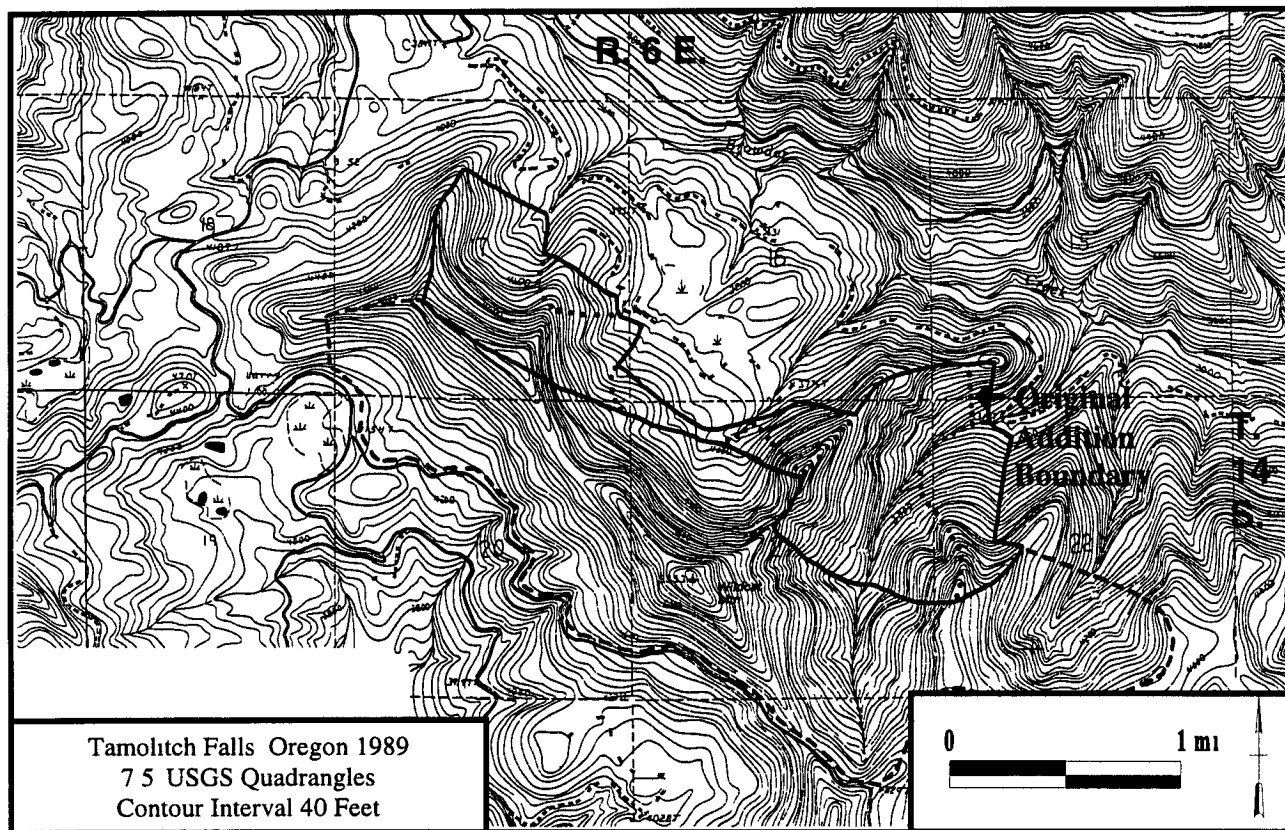
Mineral Resources There are no known mineral resources in this addition to the RNA

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

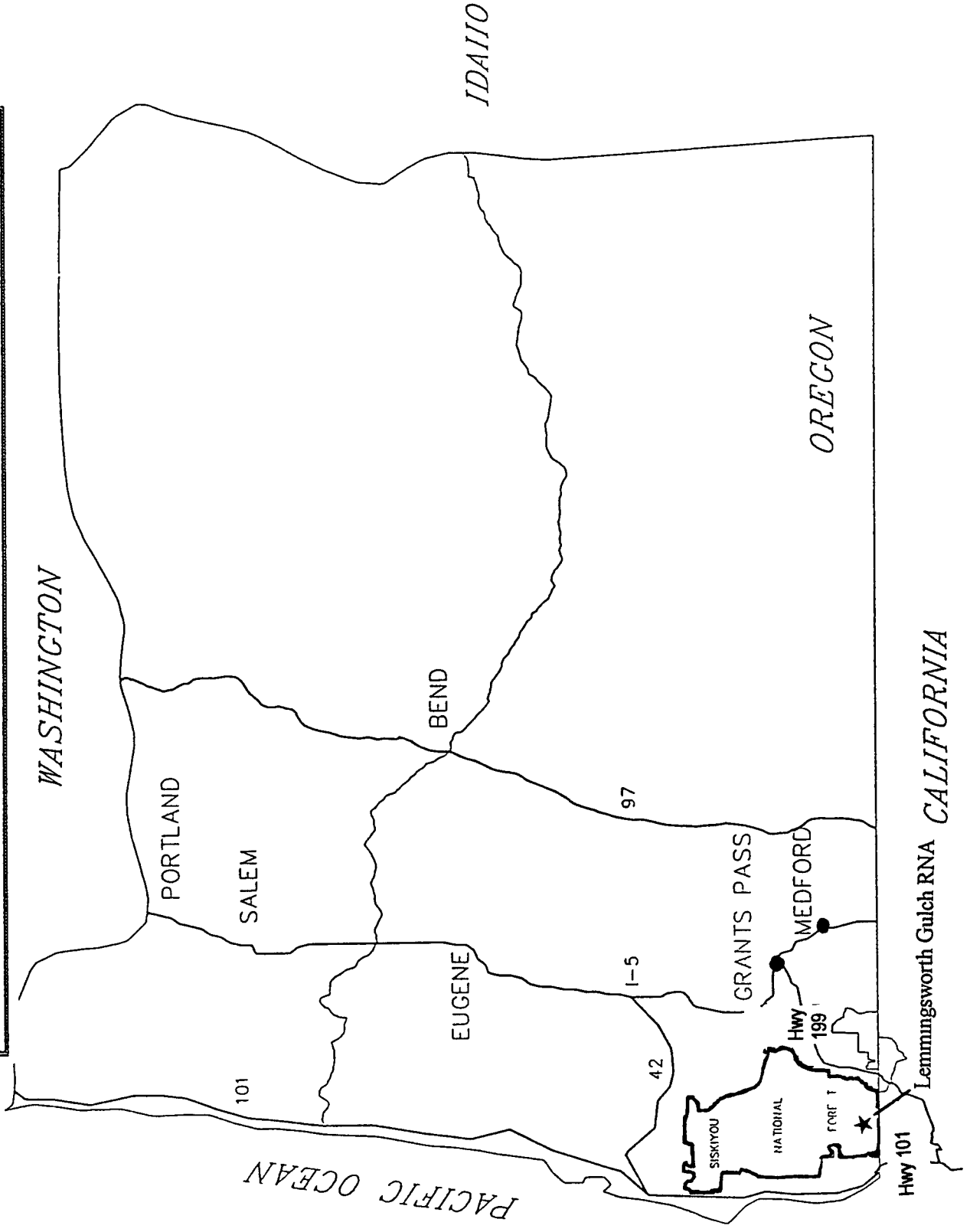
Grazing There is no grazing in this RNA

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

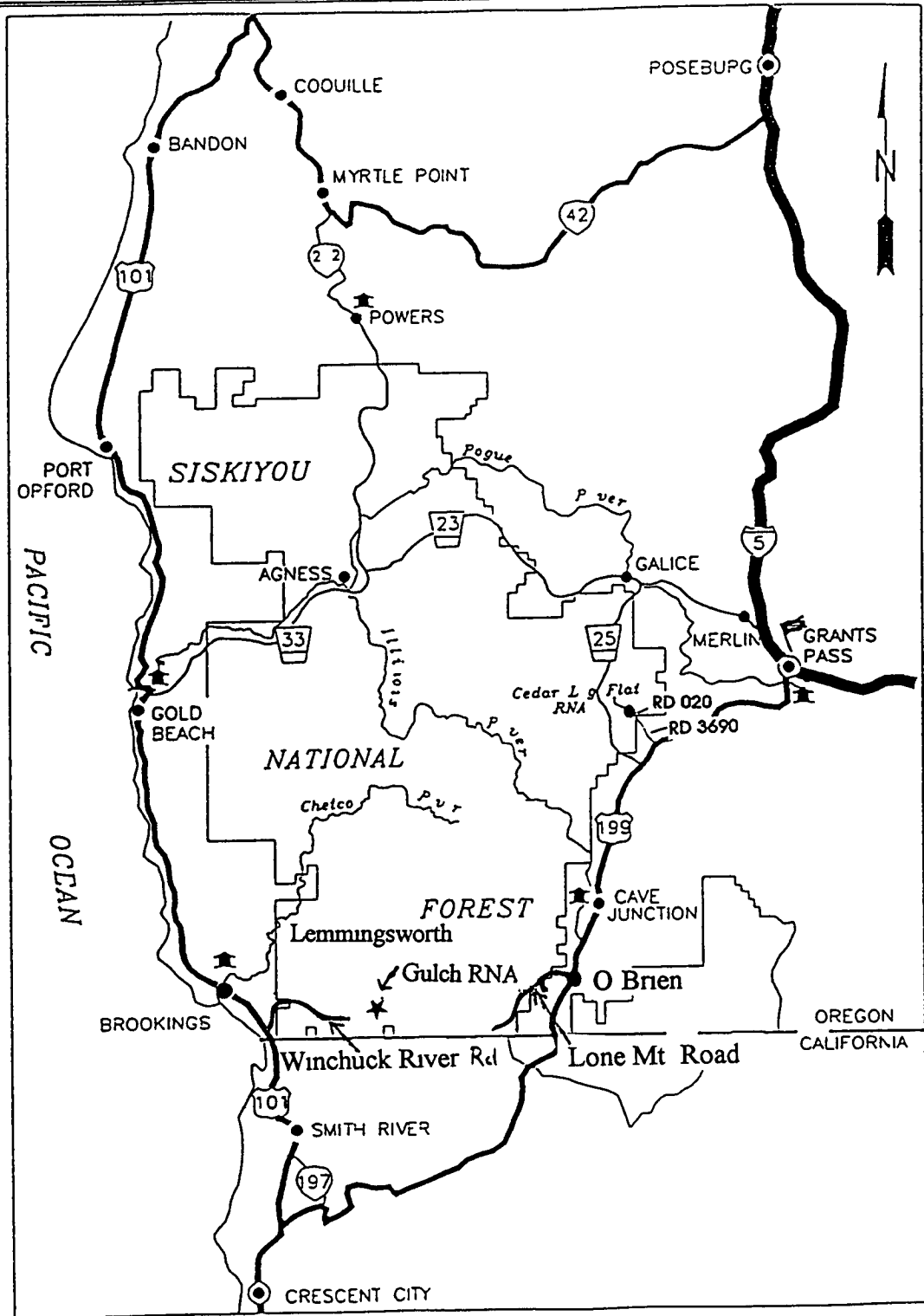
General Location in Oregon of Siskiyou National Forest
and Lemmingsworth Gulch
Research Natural Area





Map 2

Location of Lemmingsworth Gulch
Research Natural Area Within
the Siskiyou National Forest





1

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

R.N.A.	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 are 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

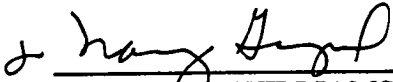
This decision is subject to appeal pursuant to 36 CFR Part 217 A copy of the Notice of Appeal must be in writing and must be submitted to

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



ROBERT W WILLIAMS
Regional Forester
Pacific Northwest Region

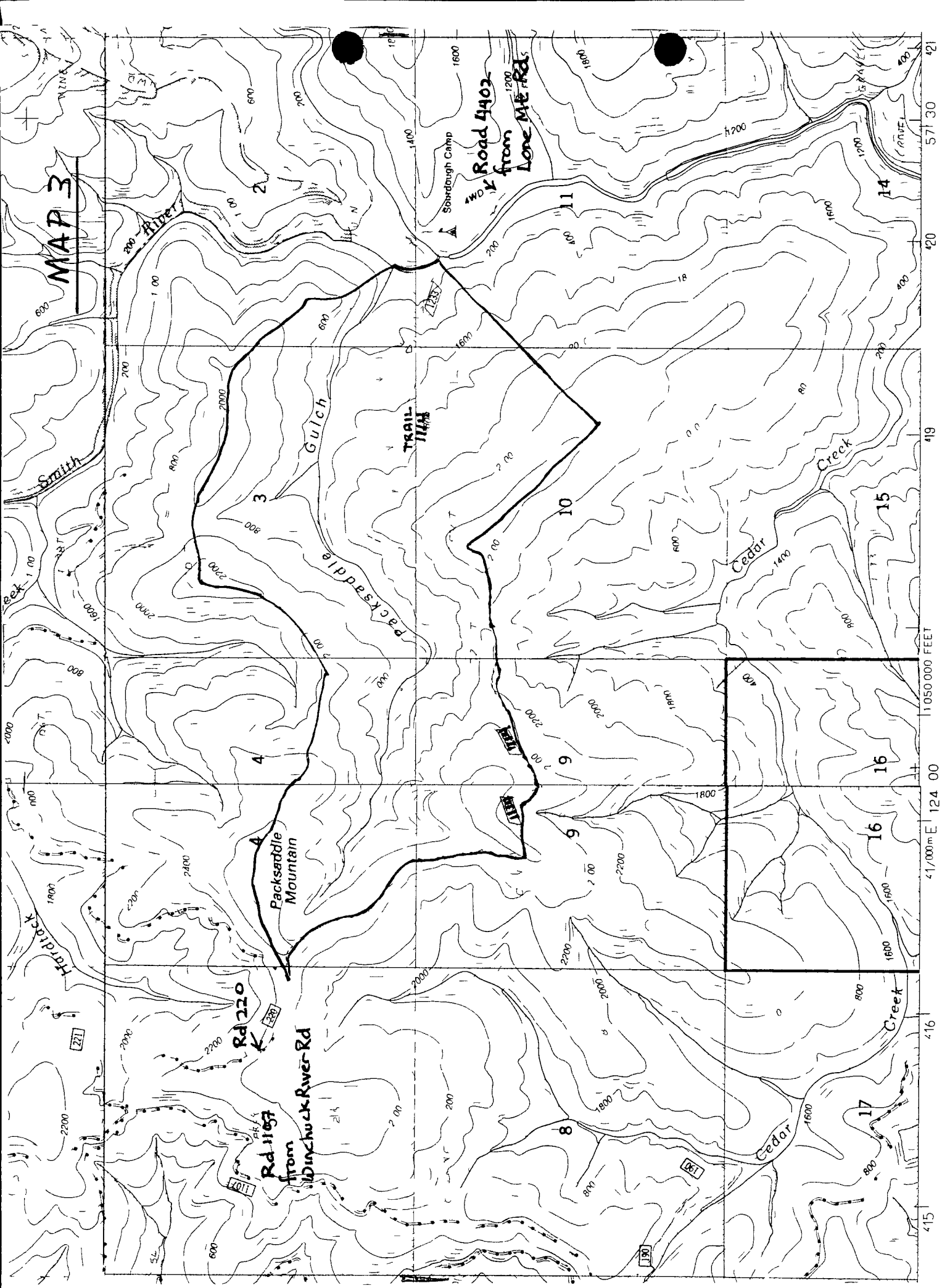
May 17, 1999

Date

(For) Nancy Graybeal
Deputy Regional Forester







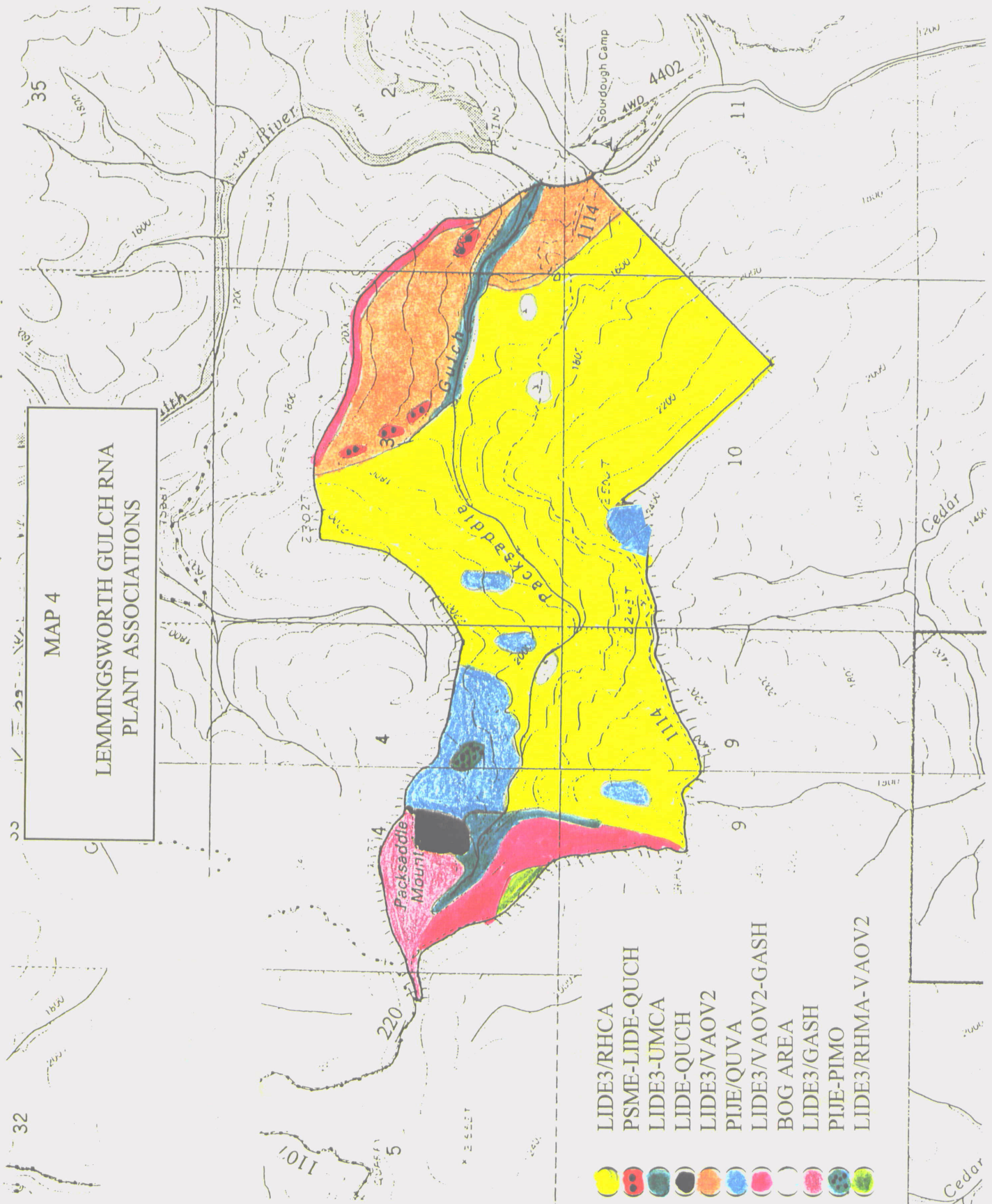
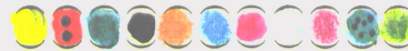
REVISIONAL BASE MAP PREPARED BY THE U.S. GEOLOGICAL SURVEY
 CONTROL BY
 COMPILED FROM AERIAL PHOTOGRAPHS TAKEN
 1984



MAP 4

LEMMINGSWORTH GULCH RNA
PLANT ASSOCIATIONS

- LIDE3/RHCA
- PSME-LIDE-QUCH
- LIDE3-UMCA
- LIDE-QUCH
- LIDE3/VAOV2
- PIJE/QUVA
- LIDE3/VAOV2-GASH
- BOG AREA
- LIDE3/GASH
- PIJE-PIMO
- LIDE3/RHMA-VAOV2



MAP 5

LEMMINGSWORTH GULCH RNA SAF FOREST COVER TYPES

- SAF 234 Douglas Fir-Tanoak-Madrone
- SAF 247 Jeffrey Pine
- SAF 248 Knobcone Pine

