UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

ESTABLISHMENT RECORD

For

COUGAR BUTTE RESEARCH NATURAL AREA

Umpqua National Forest

Douglas County, Oregon

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SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Cougar Butte Research Natural Area

Umpqua National Forest

Douglas 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 7/10/96
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Concurrence of _____ Date 7/15/96
Roy Brogden, District Ranger,
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Concurrence of _____ Date 7-29-96
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Concurrence of _____ Date 8-2-96
for Thomas J. Mills, Station Director,
Pacific Northwest Research Station

COUGAR BUTTE RESEARCH NATURAL AREA

TITLE PAGE

Establishment Record for
Cougar Butte Research Natural Area
within Umpqua National Forest, Douglas County, Oregon

ESTABLISHMENT RECORD FOR COUGAR BUTTE RESEARCH NATURAL AREA WITHIN UMPQUA NATIONAL FOREST DOUGLAS COUNTY, OREGON

INTRODUCTION

The Cougar Butte Research Natural Area (RNA) consists of 2639 acres (1068 hectares), is located within the boundaries of the Rogue-Umpqua Divide Wilderness of Southwestern Oregon, and is administered by the Tiller Ranger District of the Umpqua National Forest. The proposed RNA is a high upland area of dry forest and meadows, ashand pumice rock plateaus, set in mountain scenery. The tract includes the westside of the Abbott Butte Plateau and associated meadows, part of a timbered ridge, and forested areas of incense-cedar (*Calocedrus decurrens*[1]), Douglas-fir (*Pseudotsuga menzieii*), and white fir (*Abies concolor*).

LAND MANAGEMENT PLANNING

The 1990 Land and Resource Management Plan and Record of Decision for the Umpqua National Forest recommends 2639 acres (1068 hectares) of the Cougar Butte area be established and included in the nationwide system of RNAs, with direction that the establishment report and management plan be completed by 1993 (Land and Resource Managment Plan, pages IV-73, IV-126 and IV-217; Record of Decision, pageROD-19).

Establishment of the Cougar Butte RNA would fill the Western Cascade Province need for the mountain-meadow white fir forest mosaic and the white fir-Shasta red fir/ prince's pine community, as recognized in Research Natural Area Needs in the Pacific Northwest (Dyrness, et al, 1975) and Oregon Natural Heritage Plan (Oregon Division of State Lands, 1993).

OBJECTIVES

The primary objective of Cougar Butte Research Natural Area is to preserve in an undisturbed condition a mountain meadow-forest mosaic in the southern portion of the Oregon Cascades. This area will provide a wide spectrum of natural situations having special or unique characteristics of scientific interest and importance. The RNA will serve as a reference area for study of ecological succession in mountain meadows and the adjacent forests; it will serve as a baseline for measuring long-term ecological changes; and as a monitoring area to determine effects of techniques and management practices applied to similar ecosystems. The Cougar Butte Research Natural Area will provide important links to the national network of RNAs and support the need for preserving

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[1]Nomenclature for vascular plants follows Munz (1968), except for trees, which follows Little (1979).

unique and characteristic natural ecological values.

JUSTIFICATION

This mountain meadow forest mosaic is an excellent observatory of ecological change and would fill the Western Oregon Cascades Province cell needs for mountain meadow white fir forest mosaic and white fir-shata fir/prince's pine. The area is recovering from the damage caused by cattle and sheep grazing, and many examples of change following disturbance are found. Because of the recent exclusion of wildfire, the meadows are being invaded by trees, particularly incense cedar and subalpine fir (*Abies lasiocarpa*). Successional processes are active as the meadows are invaded and compositionally changed.

PRINCIPAL DISTINGUISHING FEATURES

The area has been through several cultural stages, resulting in various ecological changes. In pre-settlement times, crown fires swept through the area, maintaining conditions necessary for the perpetuation of the meadows. Cattlemen and sheepmen used the area at the turn of the century. Their unrestricted use of the range resulted in the expansion of increaser plants and forbs and in the introduction of invader species. Following this, the Forest Service and the CCC built a lookout and a low standard road to Abbott Butte (see map 4). This road is now closed.

This mountain meadow-forest mosaic contains high elevations along the ridge systems and includes meadow complexes mixed among forest stands and tree patches (trees would tend to be incense cedar, white fir and Douglas-fir on south slopes, and Shasta red fir (*Abies magnifica*), mountain hemlock (*Tsuga mertensiana*), and subalpine fir on north and east slopes). There is a strong moisture gradient from the meadows to the forests. Tree heights are greater toward the center, and decrease as elevation increases. The communities vary greatly depending on latitude, elevation, and aspect: grass-sedge with tree islands, vaccinium (*Vaccinium membranaceum*) brush meadows with tree islands, kinnickinick (*Arctostaphylos nevadensis*) with tree islands. Cougar Butte RNA contains the following principal features representative of the mountain meadow-forest mosaic cell:

-meadows on south, southwest, and north facing slopes
-meadow invasion by incense cedar
-meadow/forest ecotone on north facing slopes
-large, flat ridgetop areas with incense cedar, mountain hemlock, and subalpine fir
-forests of incense cedar, Douglas-fir, and white pine (*Pinus monticola*)
-northslope forests of Shasta red fir and mountain hemlock
-two small lakes or ponds
-several wet bogs

The area also contains about 1000 acres (405 hectares) of the white fir-Shasta red fir/ prince's

pine community.

LOCATION

Maps 1 through 4 show the location of the Cougar Butte RNA. The RNA is located on the Tiller Ranger District of the Umpqua National Forest and the boundaries lie within the southern-most portions of the Rogue-Umpqua Divide Wilderness. The approximate center of the RNA is 42o 57' 15" north latitude and 122o 33' 35" West longitude. The RNA is located in Township 30S, Range 2E, portion of Sections 13, 14, 15, 16, 21, 22, 23, 24, 26 and 27; and Township 30S, Range 3E, portions of Sections 18 and 19, Willamette Meridian, Oregon.

Beginning at the summit of Abbott Butte (Map 4), approximate elevation 6131feet, in the SW1/4SE1/4, section 23, T.30 S., R. 2 E., W.M., on the boundary of the Rogue-Umpqua Divide Wilderness. Thence southerly along the boundary of the Rogue-Umpqua Divide Wilderness to a point in Windy Gap. Thence northerly along the boundary of the Rogue-Umpqua Divide Wilderness to the summit of Cougar Butte. Thence northeasterly along the boundary of the Rogue-Umpqua Divide Wilderness to a knob in the SW1/4NE1/4, section 15, T. 30 S., R. 2 E., W.M. Thence easterly along the boundary of the Rogue-Umpqua Divide Wilderness to a point on a ridge in section 14 at elevation 5000 feet. Thence easterly along the boundary of the Rogue-Umpqua Divide Wilderness to a point in a minor draw at elevation 4700 feet. Thence easterly to the West 1/4 corner of section 18, T. 30 S., R. 3 E., W.M. Thence southeasterly to the South 1/4 corner of the same section. Thence South to a point on the ridge which is the boundary of the Rogue-Umpqua Divide Wilderness. Thence easterly along the boundary of the Rogue-Umpqua Divide Wilderness to the summit of Abbott Butte.

AREA AND ELEVATION

Cougar Butte RNA is 2639 acres (1047 ha) in size. The elevations range from 4500 feet to 6128 feet (1438 m to 1868 m). Total difference in elevation within the RNA is 1628 feet (520 m).

ACCESS

Cougar Butte RNA is 20 miles from Tiller, Oregon. From Tiller, the RNA is approached by taking road 28 and heading northeast for 4 1/2 miles, then east on Road 29 for 12 miles, then southeast on Road 30 for 5 miles, to spur Road 950 (see maps 2 and 3). Approximately 4 miles on road 950 is the general area where the Trail 1432 comes nearest the road (see map 4). The southwestern boundary is approximately 1 1/2 miles east on Trail 1432. This boundary is the same as the Rogue-Umpqua Divide Wilderness boundary and is marked by a Wilderness sign (Maps 2 through 4).

AREA BY COVER TYPE

Following are estimates by cover types and plant association. Also see maps 5 through 8.

SAF Cover Types, Map 5 (Eyre, 1980)	Acres	Hectares
205 Mountain Hemlock	112	46
211 White fir	1986	804
207 Red Fir	488	197
218 Lodgepole pine	38	15
233 Western hemlock	15	6
Total	2639	1047

Kuchler Types, Map 6 (Kuchler, 1964)	Acres	Hectares
2 Cedar-Hemlock-Douglas-fir	50	20
5 Mixed Conifer	1700	688
4 Fir-Hemlock Forest (Abies-Tsuga)	200	81
7 Red Fir forest (Abies)	550	222
8 Lodgepole pine-subalpine forest	100	40
No classification category	39	17
Total	2639	1047

Plant Associations and Community types, Map 7 (McCrimmon and Atzet, 1990)

Forest Types	Acres	Hectares
White fir-Shasta red fir/Common prince's pine (ABCO-ABMAS/CHUM)	1039	420
Mountain hemlock/Grouse huckleberry/ Depauperate (TSME/VASC/Dep)	60	24
Shasta red fir/Thin-leaved huckleberry (ABMAS/VAME)	700	283
Lodgepole pine/Pinemat Manzanita/Lupine (PICO/ARNE/Lupine)	30	12
White fir/Vine maple/Vanilla leaf (ABCO/ACCI/ACTR)	250	101

White fir-Incense cedar/Dwarf Oregon grape (ABCO-CADE3/BENE)	300	121
Mountain hemlock-Shasta red fir/ Thin-leaved huckleberry (TSME-ABMAS/VAME)	180	73
Mountain hemlock-Subalpine fir/Grouse huckleberry (TSME-ABLA2/VASC)	50	20
Western hemlock/Dwarf Oregon grape/ Vanilla leaf (SWO) (TSHE/BENE/ACTR)	20	9
White fir-Lodgepole pine/ Western serviceberry (ABCO-PICO/AMAL)	10	5
Total	2639	1047

Position and relative size of the meadows are shown on Map 8.

PHYSICAL AND CLIMATIC CONDITIONS

The proposed RNA is the headwater area of Squaw Creek, tributary to Jackson Creek, which is tributary to the South Umpqua River. It is located in the Cascades Geomorphic Division, but is similar to the High Cascades. The area above the 5500 feet (1667 m) contour is from the Pliocene period and is composed of open textured olivine basalt and olivine bearing andesite. The remainder of the tract is derived from the sardine formation of the Miocene period.

Soils are predominantly loam textured, rocky, and shallow over basalt and andesite bedrocks. On lower, steeper slopes, the soil contains more clay. Map 9 shows the soil inventory. The area is subject to a modified maritime climate with cool, wet winters and warm, dry summers. The area is typical of high elevation montane and subalpine environments of Southern Oregon. The nearest climatic data, interpolated from Crater Lake, Oregon, 15 air-miles to the east, and collected from 1971 to 1980, are listed below (Climatalogical Data Annual Summary).

Mean Annual Temperature	37.2° F	2.9° C
Mean January Minimum Temperature	23.4° F	-4.8° C
Mean July Maximum Temperature	56.0° F	3.3° C
June through August Precipitation	4 inches	10 cm
Average Annual Precipitation	65 inches	162 cm
Average number of days between last spring frost and first fall frost	13 days	

DESCRIPTION OF VALUES

Flora:

Most of the area is occupied with Shasta-red fir, white fir, Douglas fir, and mountain hemlock. Species composition varies with altitude, aspect, and other factors, but generally Shasta-red fir and mountain hemlock thrive best at higher altitudes, while Douglas-fir is more common on the lower portions. White fir occurs over the whole area but requires moist sites. About 30 to 40 percent of the area is fully stocked with timber while the remainder is only partially covered (50 percent tree canopy). Dry meadows and mountain alder (*Alnus tenuifolia*) patches account for most of the non-forested and partially forested areas.

Threatened, endangered, or sensitive plant species which occur here inlude:

Frasera umpquensis[2]	Umpqua frasera
Haplopappus whitneyi discoideus[3]	Whitney haplopappus
Allium campanulatum[3]	Sierra onion
Illiamna latibracteata[3]	California globe-mallow
Fritillaria glauca[3]	Siskiyou fritillaria

The following is a partial list of vascular plants that have been identified on the site:
Trees (Little, 1979)

Abies concolor	White fir
Abies magnifica	Shasta red fir
Acer circinatum	Vine maple
Acer douglasii	Douglas maple
Alnus teniufolia	Mountain alder
Pinus contorta	Lodgepole pine
Populus tremuloides	Quaking aspen
Quercus garryana	Oregon white oak
Salix sp.	Willow
Tsuga mertensiana	Mountain hemlock

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[2]Federal candidate, Category 2 (State Canditate Taxa)

[3]R-6 sensitive plant list 1992 (No state status)

Shrubs (Hitchcock and Cronquist, 1973; Munz, 1968)

Amelanchier alnifolia	Western serviceberry
Arctostaphylos nevadensis	Pinemat manzanita
Arctostaphylos patula	Greenleaf manzanita
Berberis repens	Low Oregon grape
Ceanothus prostratus	Squaw carpet
Corylus cornuta var. *californica*	California hazel
Holodiscus discolor	Creambush oceanspray
Pachystima myrsinites	Oregon boxwood
Prunus emarginata	Bittercherry
Ribes sanguineum	Red currant
Rosa gymnocarpa	Woodrose
Rubus nivalis	Snow bramble
Rubus parviflorus	Thimbleberry
Sambucus cerulea	Elderberry
Sorbus sitchensis	Sitka mountain ash
Spiraea douglasii	Douglas spiraea
Symphoricarpus albus	Common snowberry
Vaccinium membranaceum	Thinleaf huckleberry

Forbes and Grasses (Hitchcock and Cronquist, 1973; Munz, 1968)

Achillea millefolium	Common yarrow
Achlys triphylla	Vanilla leaf
Actaea rubra	Baneberry
Adenocaulon bicolor	Trail plant
Anaphalis margaritacea	Pearly everlasting
Anemone deltoidea	Three leaf anemone
Arnica latifolia	Mountain arnica
Asarum caudatum	Ginger
Caltha sp.	Marsh marigold
Carex sp.	Sedge
Chimaphila umbellata	Prince's pine
Cirsium sp.	Thistle
Clintonia uniflora	Queenscup bead lily
Delphinium sp.	Tall larkspur
Deschampsia sp.	Hairgrass
Dicentra formosa	Bleeding heart
Elymus glaucus	Blue wildrye
Eriogínum sp.	Buckwheat
Eriophyllum lanatum	Oregon sunshine
Festuca californica	California fescue
Galium sp.	Bedstraw
Haplopappus sp.	Haplopappus

Heracleum lanatum	Cow parsnip
Hieracium albiflorum	White-flowered hawkweed
Juncus sp.	Rush
Lathyrus sp.	Peavine
Linnaea borealis var *longiflora*	Western twinflower
Lomatium sp.	Biscuit root
Lupinus sp.	Lupine
Madia madioides	Woodland tarweed
Marah oreganus	Manroot, wild cucumber
Mertensia sp.	Bluebell
Monardella odoratissima	Mountain balm
Montia siberica	Miner's lettuce
Muhlenbergia sp.	Muhly
Phacelia sp.	Phacelia
Phlox diffusa	Phlox
Potentilla sp.	Cinquefoil
Rudbeckia occidentalis var *occidentalis*	Black-headed coneflower
Sitanion hystrix	Bottlebrush squirreltail
Streptopus sp.	Twisted stalk
Trientalis latifolia	Western starflower
Vancouveria hexandra	Inside-out flower
Veratrum viride	Helleborn
Vicia sp.	Vetch

Fauna

The following list of fauna is made of animals that are likely to occur on the site (Cindy Barkhurst, Umpqua National Forest Wildlife Biologist).

Birds (Udvardy, 1977)

Accipiter cooperii	Cooper's hawk
Accipter gentilis	Western goshawk
Accipter striatus	Sharp-shinned hawk
Aquila chrysaetos	Golden eagle
Bubo virginianus	Great horned owl
Certhia familiaris	Brown creeper
Colaptes auratus	Flicker woodpecker
Columbia fasciata	Bandtail pigeon
Cyanocitta stelleri	Stellars jay
Cypseloides niger	Vaux swift
Dendragapus obscurus	Blue grouse
Dendrocopos pubescens	Downy woodpecker
Dendrocopos villosus	Hairy woodpecker
Falco sparverius	Sparrow hawk

Iridoprocne bicolor	Tree swallow
Italiaeetus leucocephalus	Bald eagle
Ixoreus naevius	Varied thrush
Junco oreganus	Oregon junco
Oreortyx pictus	Mountain quail
Otus asio	Screech owl
Parnus rufescens	Chestnut backed chickadee
Piranga ludoviciana	Western tanager
Sialia mexicana	Western bluebird
Sitta canadensis	Red-breasted nuthatch
Sitta carolinensis	White-breasted nuthatch
Sphyrapicus varius	Red-breasted sapsucker
Troglodytes aedun	House wren
Turdus migratorius	Robin

Mammals (Maser, Mate, Franklin, and Dyrness, 1981)

Bassariscus astutus	Ringtail cat
Canis latrans	Coyote
Citellus beecheyi	California ground squirrel
Clethrionomys occidentalis	Red backed tree vole
Erethizon dorsatum	Porcupine
Eutamias townsendi	Townsend chipmunk
Felix concolor	Mountain lion
Glaucomys sabrinus	Northern flying squirrel
Lynx rufus	Bobcat
Mustela frenata	Long-tailed weasel
Mustela vison	Mink
Neotoma fuscipes	Dusky-footed woodrat
Ochotona princeps	Cony (pika)
Odocoilius hemionus	Blacktailed deer
Procyon lotor	Raccoon
Sylvilagus bachmani	Brush rabbit
Tamiasiurus douglasi	Chickeree
Thomomys mazama	Mazama pocket gopher
Ursus americanus	Black bear
Wapiti	Roosevelt elk

Reptiles and Amphibians (Nussbaum, Brodie, and Storm, 1983)

Ambystoma gracile	Northwest salamander
Bufo boreas	Western toad
Crotalus viridis	Rattlesnake
Rana aurora	California red-legged frog
Taricha granulosa	Rough-skinned newt
Thamnophis sirtalis	Garter snake

GEOLOGY

The area is dominated by ash-flow tuffs and pyroclastic breccias commonly associated with the Little Butte Volcanic Group (Sherrod, 1986). In addition, occasional andesitic and basaltic flow material occurs as evidenced by Elephant Rock. The Little Butte Volcanic Group is part of a larger extrusive igneous complex that has been dated as Miocene (17-25 million years) in age. The Little Butte Volcanic Group is characterized by numerous layers of interbedded rhyolitic tuffs and coarse fragmented breccias that are difficult to map because of their limited exposures (stream channels) and their lack of aerial continuity. Interspersed in these tuffs and breccias are isolated flow deposits, believed to be extruded from local vents. In this area, it appears that localized flow material could have small impoundments (lakes) that acted as sediment traps and repositories for air fall tuffs. This could provide an explanation for localized lacustrin deposits.
Another event during the Pleistocene Era that contributed to the present day landforms above 4500 feet in the vicinity of Cougar Butte was alpine glaciation. These slopes along the divide contain numerous features associated with glaciation including U-shaped topography, erosional terraces, hanging valleys, and depositional features such as till and moraines. The abrupt vertical relief of Elephant Rock and the lack of talus below suggest that forces other than ordinary weathering have contributed to the landscape. Another interesting aspect of this area is the seeps and springs often found in association with glacial deposits. It appears that these wet areas have played an important role in the development of the wet meadow environment.

SOILS AND LANDTYPES

The Cougar Butte area consists primarily of Miocene age volcanic rocks. The principal rock is tuff and breccia, which is andesitic or occasionally dacitic in nature. Some of the tuffs in the westerly portion are water-laid in what seems to have been a fairly large lake.

The following land type information corresponds to Map 9 and is obtained from the Umpqua Natonal Forest Soil Resource Inventory (Radtke and Edwards, 1976)

SRI Mapping Unit	Predominant Landtypes and Percentages
Unit 156	Landtype 1 (70%) - Predominately hard andesites and basalts. Typically occurs as cliffs, rocklands, and rock knobs. Minor amounts of volcanic materials may be present. Soils are either thin (<3") or occur in scattered packets and can only support scattered grasses, forbs, shrubs, and scattered trees or small patches of trees. Landtype 56 (30%) - High elevation (frigid to cryic), very shallow (<12") to deep (20-40"), non-skeletal to skeletal soils on steep (>60%) residual slopes associated with hard andesites and basalts.
Unit 517	Landtype 51 (60%) - Low to mid-elevation (mesic), very shallow (<12") to deep (40"), non-skeletal to skeletal soils

	on steep (60%) residual slopes associated with hard andesites and basalts. Landtype 7 (40%) - Very shallow (<12") to deep (>40") miscellaneous type of soils, supporting various grasses, forbs, sedges, and shrubs
Unit 561	Landtype 56 (70%) - High elevation (frigid to cryic), very shallow (<12") to deep (40"), non-skeletal to skeletal soils on steep (>60%) residual slopes associated with hard andesites and basalts. Landtype 1 (30%) - Predominately hard, andesites and basalts. Typically occurs as cliffs, rocklands, and rock knobs. Minor amounts of volcanic materials may be present. Soils are either thin (<3") or occur in scattered packets and can only support scattered grasses, forbs, shrubs, and scattered trees or small patches of trees.
Unit 576	Landtype 57 (70%) - High elevation (frigid to cryic), very shallow (<12") to deep (>40"), non-skeletal to skeletal soils on gently (<35%) to moderately steep (35-60%) residual slopes associated with hard andesites and basalts. Landtype 6 (30%) - Wetlands within forest types and meadow areas that have high water tables or become seasonally ponded. Dominant vegetation may consist of sedges, rushes, grasses, alder, devil's club and willow.
Unit 195	Landtype 19 (70%) - Deep (>40"), non-skeletal to skeletal, recent coarse textured glacial till soils with sandy loam to light loam textures. A cemented subsoil layer may exist. Occurs on gentle (<35%) to steep (>60%) galcial deposits of the typical U-shaped glaciated valleys. Bedrock can be variable. Seeps and springs are common features or inclusions. Landtype 6 (30%) - Wetlands within forest types and meadow areas that have high water tables or become seasonally ponded. Dominant vegetation may consist of sedges, rushes, grasses, alder, devil's club and willow.
Unit 57	Landtype 57 (70-100%) - High elevation (frigid to cryic), very shallow (<12") to deep (>40"), non-skeletal to skeletal soils on gently (<35%) to moderately steep (35-60%) residual slopes associated with hard andesites and basalts.

Unit 6	Landtype 6 (70-100%) -Wetlands within forest types and meadow areas that have high water tables or become seasonally ponded. Dominant vegetation may consist of sedges, rushes, grasses, alder, devil's club, and willow.
Unit 3	Landtype 3 (70-100%) - Deep commercial conifers (>10% crown cover). Soils are prevalent with small non-forest openings which are too small to map. Complex of soils, highly variable in depth, rock content, and moisture status. Landform is interspersed with wet spots, stone fields, rock outcrop, talus-scree slopes, and avalanche tracks or chutes. Full range of slope gradients.

LANDS

Lands within and surrounding the RNA are reserved National Forest lands and all within the R-RD Wilderness Area.

CULTURAL

At the time of European contact, the Cow Creek Band of the Umpqua Tribe of Indians occupied the southern Umpqua Basin (Beckham and Minor 1992). There are indications that the Cow Creeks occupied the "Myrtle Creek, Cow Creek, and the South Umpqua River drainage from the mouth of Myrtle Creek to approximately Elk Creek near Tiller, Oregon" (Beckham and Minor 1992: 103). Their neighbors to the southeast and northeast were the Southern Molalla.

During this time, the Cow Creeks were made up of five bands (Riddle 1922, 1953): (1) Mi-wa-leta band was located on the north side of Cow Creek in the Cow Creek valley near what is now Riddle, Oregon; (2) Quintiousa band was located on the south side of Cow Creek valley along the South Umpqua River; (3) Targunsan band was located on the South Umpqua River east of Canyonville, Oregon; (4) Wartahoo band was located in the Upper Cow Creek area east of Glendale, Oregon; and (5) Myrtle Creek band was located along Myrtle Creek (Riddle 1953, Beckham and Minor 1992).

The Cow Creeks had a culture that could be transferred from the coast to the Columbia Plateau (Beckham and Minor 1992). The permanent residency was made in the lowland and upland valleys while the high mountains were used for hunting, food gathering, and spiritual uses during the late summer and early fall (Beckham and Minor 1992). An area near Abbott Butte including such places as Huckleberry Lake, Huckleberry Gap, Windy Gap, Neal Springs, Donegan Prairie was used for food processing. This area is known as Huckleberry Patch and is eligible for inclusion on the National Historic Places as a Traditional Use Area for the Cow Creeks.

Historical records show that the Cow Creeks hunted with bows and arrows equipped with bone and stone projectile points (Riddle 1953). They also used communal game drives. Bush fences with ropes at the openings and snares were set up across canyon heads and at salt licks and

watering holes.

Use of the area was described in "Cow Creek Band of the Umpqua Tribe Indians: Occupation and Use of Territory in Southwestern Oregon" by Stephen Beckham and "Resource Utilization Study" (Beckham 1983a and b). The studies depended on the use of "ethnographic information obtained from living tribal member who have spent their lives in the aboriginal homeland." The Cow Creeks have held on to an outstanding knowledge of traditional ways and practices in terms of land use and resources.

OTHER

NA

IMPACTS/OTHER CONFLICTS

Mineral resources: The Report of Mineral Character, dated 8/19/75, indicates that the area has been subject to minor folding without the introduction of mineralizing solutions. The rock does not contain valuable minerals in its inherent content. The rock found in the proposed area is very ordinary and has no economic potential. Rock of equal quality is found at more conveniently located sources outside of the RNA. The area has been withdrawn from mineral entry.

Grazing: The proposed RNA is not located in a cattle or sheep grazing allotment. However the Whaleback and Woodruff Allotments, administered by the Rogue River National Forest, and the Umpqua National Forest administered Acker Divide Allotment are adjacent to the area. Livestock stray into the Abbott Butte area around Cougar Butte, but these intrusions are infrequent.

Timber: The RNA is located within the Rogue-Umpqua Divide Wilderness and timber is not accessible for use.

Watershed values: All the streams within the RNA are headwaters for various drainages. Consequently there are no upstream uses to affect the quantity or quality of the water.

Recreation values: Dispersed recreation use, such as hiking, hunting, and camping, is relatively low. The RNA will not be depicted on maps that are for sale to the public. Public uses include hunter camps and light horse use, but will be discouraged or prohibited if such uses threaten research or educational values. Trails will be maintained but not unduly enhanced or improved.

Wildlife/plant values: The following threatened, endangered, or sensitive plant species are know

to occur in the area:

Umpqua frasera	*Frasera umpquaensis*
Whitney's haplopappus	*Happlopappus whitneyi* var. *discoides*
Sierra onion	*Allium campanulatum*
California globe mallow	*Iliamna latibracteata*
Siskiyou fritillaria	*Fritillaria glauca*

Umpqua frasera is fairly common to the whole area. The other species occur mainly in isolated colonies. No management problems are anticipated if the area is designated as an RNA. An increase in elk use could possibly affect these species but most have low palatability. Of these species, Sierra onion is probably most attractive to animals.

There are no known sightings of threatened, endangered, or sensitive wildlife species.

Transportation Plan: There are no roads in the proposed RNA. Two Forest Service system trails, the Rogue-Umpqua Divide Trail (1470) and Cougar Butte (1432), access the area. No other development is planned. No impacts to the District transportation system are expected.

Vegetation management: At the present time, the policy is to suppress all wildfires at a minimum cost consistent with land and resource management objectives and fire management direction (FSM 5130.2). The Umpqua National Forest Land and Resource Management Plan states that fires endangering the boundaries of RNAs should be suppressed while still outside the RNA using appropriate suppression responses. Fires within the RNA will be allowed to burn undisturbed, unless they threaten humans or property outside the area, or the uniqueness of the RNA, as determined by an Escaped Fire Situation Analysis.

ADMINISTRATION RECORDS

Administration and protection of the Cougar Butte RNA will be the responsibility of the Umpqua National Forest. The Tiller Ranger District has the direct responsibility.

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 university or federal agency herbaria and museums, approved by the Director.

Records for the Cougar Butte RNA will be maintained in the following offices:

Forest Supervisor, Umpqua National Forest, Roseburg, Oregon

District Ranger, Tiller Ranger District, Tiller, Oregon
Director, Pacific Northwest Research Station, Portland, Oregon

Archiving

The Tiller Ranger District of the Umpqua National Forest will be responsible for maintaining the Cougar Butte RNA data file and list of herbarium and species samples collected. The data will also be part of the Research Natural Area Database (part of Oregon State University Forest Science databank) at the Forestry Sciences Laboratory, Corvallis, OR.

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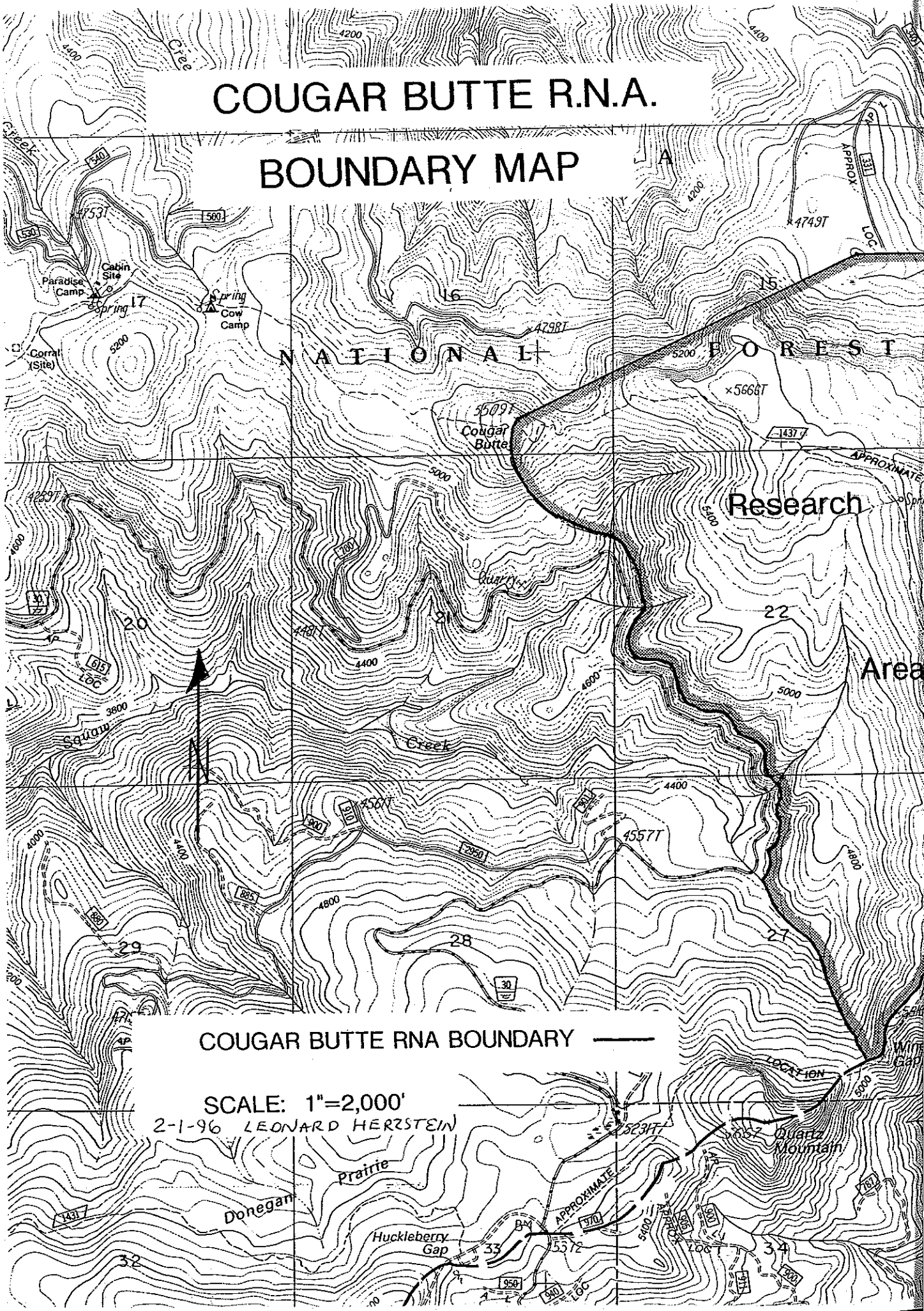
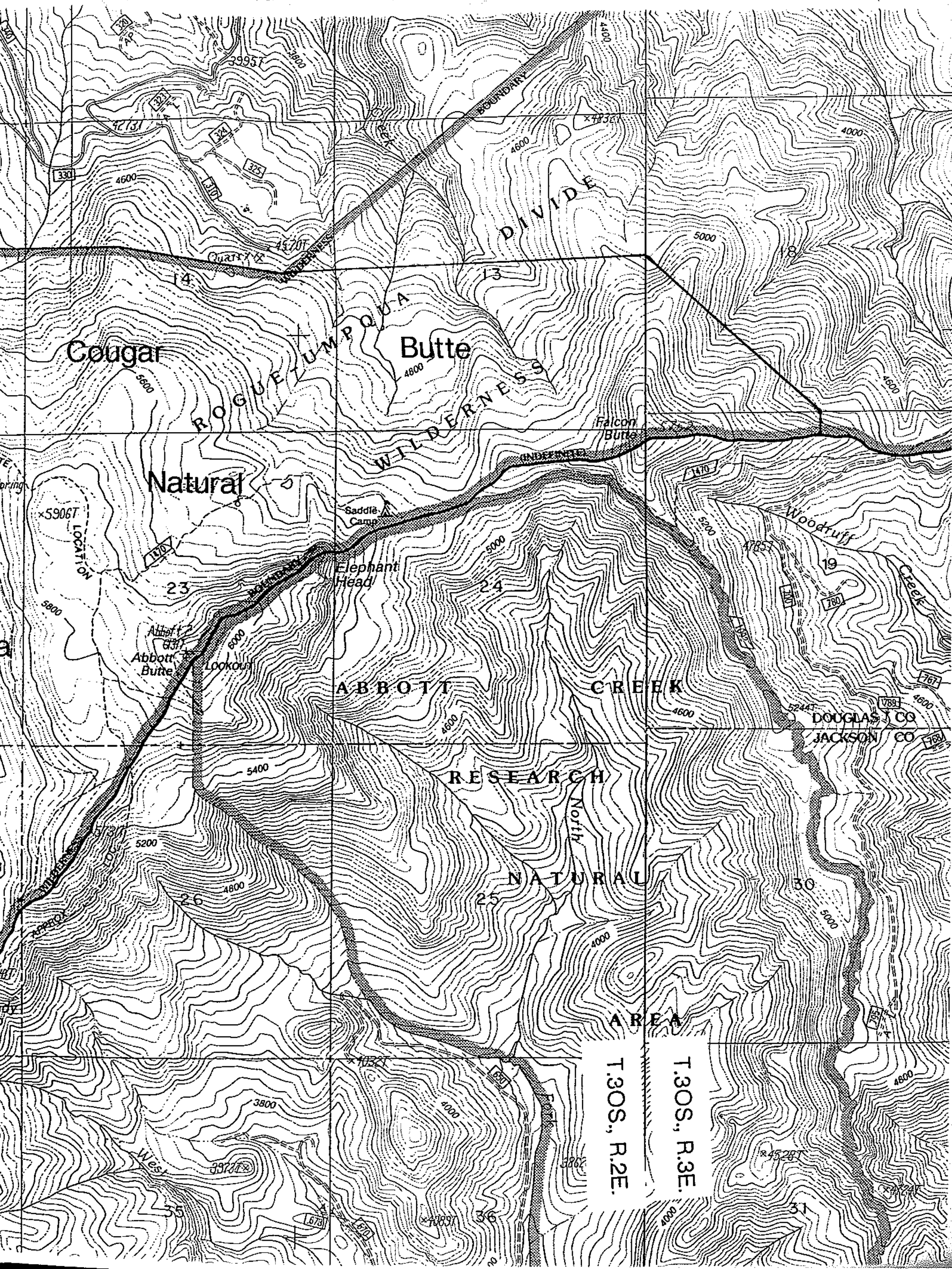

COUGAR BUTTE R.N.A.
BOUNDARY MAP
Paradise Camp
Cabin Site
Spring
Cow Camp
Corral (Site)
NATIONAL
FOREST
Cougar Butte
Research
Area
Quarry
Creek
Squaw
Prairie
Donegan
Huckleberry Gap
Quartz Mountain
APPROXIMATE
LOCATION
COUGAR BUTTE RNA BOUNDARY
SCALE: 1"=2,000'
2-1-96 LEONARD HERZSTEIN


Cougar
Butte
Natural
ROGUE-UMPQUA
DIVIDE
WILDERNESS
BOUNDARY
Falcon Butte
Saddle Camp
Elephant Head
Abbott Butte
Lookout
LOCATION
Woodruff Creek
ABBOTT CREEK
RESEARCH NATURAL AREA
North Fork
West
DOUGLAS CO
JACKSON CO
T.30S., R.2E.
T.30S., R.3E.
14
13
18
23
24
19
26
25
30
35
36
31
4600
5000
5200
5400
5600
5800
6000
4800
4000
3800
4400
330
310
320
323
324
325
1470
760
780
767
768
789

COUGAR BUTTE RESEARCH NATURAL AREA BOUNDARY DESCRIPTION

The Cougar Butte Research Natural Area is located in portions of sections 13, 14, 15, 16, 21, 22, 23, 24, 26, and 27, Township 30 South, Range 2 East, and sections 18 and 19, Township 30 South, Range 3 East, Willamette Meridian, Douglas and Jackson Counties, Oregon. The 1,074.2 hectare (2,654 acres) Research Natural Area lies entirely within a portion of the Rogue-Umpqua Divide Wilderness on the Tiller Ranger District, Umpqua National Forest. And is more particularly described as follows:

Beginning on the summit of Abbott Butte, approximate elevation 6,131 feet, in the NW1/4SE1/4, section 23, T. 30 S., R. 2 E., W.M., which is Angle Point 801 on the southern boundary of the Rogue-Umpqua Divide Wilderness description as approved 5/4/87. Lat. 42° 56' 36.4" North, Long. 122° 32' 54.4" West, NAD27.
Thence southwesterly along the Rogue-Umpqua Divide Wilderness boundary to a point in Windy Gap which is Angle Point 834 on the Rogue-Umpqua Divide Wilderness boundary.
Thence northerly and northwesterly along the Rogue-Umpqua Divide Wilderness boundary to the summit of Cougar Butte which is Angle Point 922 on the Rogue-Umpqua Divide Wilderness boundary.
Thence northeasterly along the Rogue-Umpqua Divide Wilderness boundary to a knob in section 15, T. 30 S., R. 2 E., W.M., which is Angle Point 923 on the Rogue-Umpqua Divide Wilderness boundary.
Thence easterly along the Rogue-Umpqua Divide Wilderness boundary to a point on a ridge in section 14 at elevation 5000 feet which is Angle Point 925 on the Rogue-Umpqua Divide Wilderness boundary.
Thence easterly along the Rogue-Umpqua Divide Wilderness boundary to a point in a minor draw at elevation 4700 feet which is Angle Point 926 on the Rogue-Umpqua Divide Wilderness boundary.
Thence easterly to the West 1/4 corner of section 18, T. 30 S., R. 3 E., W.M.
Thence southeasterly to the South 1/4 corner of the same section.
Thence true geodetic South to a point on the ridge which is the southern boundary of the Rogue-Umpqua Divide Wilderness.
Thence easterly along the Rogue-Umpqua Divide Wilderness boundary to the summit of Abbott Butte and the point of beginning.

I certify the above boundary description of the Cougar Butte Research Natural Area was prepared under my direct supervision.

Leonard E. Herzstein
Forest Land Surveyor
Umpqua National Forest
Oregon L. S. No. 2150

signed FEB. 29, 1996
(date)

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 23, 1975
LEONARD E. HERZSTEIN
2150

current certificate
expires 6/30/97

Decision Notice/Designation Order
and
Finding of No Significant Impact

COUGAR BUTTE RESEARCH NATURAL AREA
(Douglas County, Oregon)

USDA - Forest Service
Umpqua National Forest
Tiller Ranger District

INTRODUCTION

The Regional Forester recommended the establishment of Cougar Butte Research Natural Area (RNA) in the Record of Decision for the 1990 Umpqua National Forest Land and Resource Management Plan (Forest Plan). That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. Results of the Regional Forester's analysis are documented in the Forest Plan (Chapter IV, pages 73, 114, 126, 217, and 218) and Final Environmental Impact Statement (Chapter IV, pages 60-61).

The Regional Forester has re-examined the "proposed" Cougar Butte RNA to ensure the environmental effects of establishing it as an RNA have not changed since 1990. This environmental analysis is documented in an environmental assessment.

The "proposed" 2,639 acre (1,068 hectares) Cougar Butte RNA is located within the boundaries of the Rogue-Umpqua Divide Wilderness of Southwestern Oregon. The RNA is a high upland area of dry forest and meadows, ash and pumice rock plateau, set in mountain scenery. The tract includes the westside of the Abbott Butte Plateau and associated meadows, part of a timbered ridge, and forested areas of incense-cedar and white fir. The RNA contains the following principle features representative of the mountain meadow-forest mosaic cell: (Establishment Record, pp. 1-2)

-Meadow on south, southwest, and north facing slopes
-Meadow invasion by incense cedar
-Meadow/forest ecotone on north facing slopes
-Large, flat ridgetop areas with incense-cedar, mountain hemlock, and subalpine fir
-Forest of incense-cedar, Douglas-fir, and white pine
-North-slope forests of Shasta red fir and mountain hemlock
-Two small lakes or ponds
-Several wet bogs

DECISION

Based on the analysis, it is my decision to adopt Alternative 2. By virtue of the authority delegated to me by the Chief of the Forest Service in Forest Service Manual Section 4063, I hereby establish the Cougar Butte RNA. It shall be comprised of 2,639 acres of land in Douglas County, Oregon on Tiller District of the Umpqua National Forest, as described in the "location" section of the Establishment Record.

Alternative 2 is selected because it provides long-term protection and recognition of a Western Oregon Cascades Province Forest cell type not currently adequately represented in the RNA system--mountain meadow white fir forest mosaic and white fir-Shasta fir/prince's pine. The Cougar Butte RNA will be managed in compliance with all relevant laws, regulations, and Forest Service Manual direction regarding RNA's, and in accordance with the management direction identified in the Umpqua Forest Plan (IV-217-218, 126-127) and the management standards attached for alternative 2 (EA, section II).

The Umpqua Forest Plan is hereby amended to change Cougar Butte RNA from a "candidate" to "established" RNA. This action is consistent with the long-term resource management goals and objectives of the Forest Plan {36 CFR 219.10(f)}. This will be a non-significant amendment to the Forest Plan (36 CFR 219).

PUBLIC INVOLVEMENT

The public was given notice of the proposal to establish the Cougar Butte RNA through the April 1996, Schedule of Proposed Actions (SOPA). In addition to the notice in our quarterly schedules, letters were sent to approximately 350 individuals and organizations on the Forest's Land Management Planning mailing list. There were no responses to the SOPA notice and there was one response to the 350 letters that were mailed.

ALTERNATIVES

The other alternative considered was a "No Action" alternative (Alternative 1), which would continue management of the Cougar Butte RNA as a "candidate" RNA. This alternative was not selected because it failed to advance the RNA system.

FINDING OF NO SIGNIFICANT IMPACT

It has been determined through the environmental analysis 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 RNA's, 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. There are no known effects on historic or cultural resources, actual or eligible National Register of Historic Places sites, park lands, prime farm lands, wetlands, or wild and scenic rivers. No significant adverse effects are anticipated to any environmentally sensitive or critical area. (Establishment Record pp 12-14).

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

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

5. No significant direct, indirect or cumulative impacts to the natural resources or other components of the human environment are anticipated (Establishment Record, pp. 13-14).

6. The proposed action will not adversely affect any federally listed or proposed endangered or threatened species or Regionally sensitive species of plants or animals or their critical habitat (Establishment Record, pp 6-9; 13-14).

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

8. The proposed action is consistent with the Northwest Forest Plan 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).

IMPLEMENTATION

Implementation of this decision shall not occur within 7 days following publication of the legal notice of the decision in The Oregonian.

APPEAL OPPORTUNITIES

Legal notice of this decision will appear in The Oregonian. This decision is subject to appeal pursuant to 36 CFR Part 217. A copy of the Notice of Appeal must be in writing and submitted to:

Chief, USDA Forest Service
ATTN: NFS APPEALS
14th and Independence Avenue, S.W.
P.O. Box 96090
Washington, D.C. 20090-6090

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

The Forest Supervisor of the Umpqua National Forest will notify the public of this decision and mail a copy of the Decision Notice\Designation Order to all persons interested in or affected by the decision.

CONTACT PERSON

For further information regarding the Cougar Butte RNA contact: Diane White, Area Ecologist, Umpqua National Forest, 2900 N.W. Stewart Parkway, (P.O. Box 1008), Roseburg, Oregon 97470, Phone 541-957-3378.

(for)

ROBERT W. WILLIAMS
Regional Forester
Pacific Northwest Region

September 16, 1996
Date

Signed by Nancy Graybeal (for)
Deputy Regional Forester

ENVIRONMENTAL ASSESSMENT

Cougar Butte Natural Research Area

Tiller Ranger District
Umpqua National Forest
U.S.D.A - Forest Service
Douglas County, Oregon

I. PURPOSE AND NEED

A. Need

The Record of Decision (ROD) for the 1990 Land and Resource Management Plan (LRMP) identified approximately 2,500 acres in the Cougar Butte area as a candidate for a research natural area (RNA). The ROD did not formally establish the Cougar Butte RNA because Establishment Report had not been prepared and the official responsible for signing the ROD in 1990 did not have authority to designate RNAs.

An Establishment Report, which is hereby incorporated by reference, has been prepared for the Cougar Butte RNA. Having completed the Report, there is a need to formally convert this RNA from a candidate research area to an established research area. This conversion is accomplished by amending the LRMP through a Decision Notice and Designation Order. The purpose of amending the LRMP is to formally establish this RNA as part of the Research Natural Area System.

B. Proposed Action

The proposed action is to establish a Cougar Butte Research Natural Area (RNA) totaling 2,639 acres and to manage it in accordance with direction provided on pages 74, 126, 217, and 218 in Chapter IV of the 1990 LRMP.

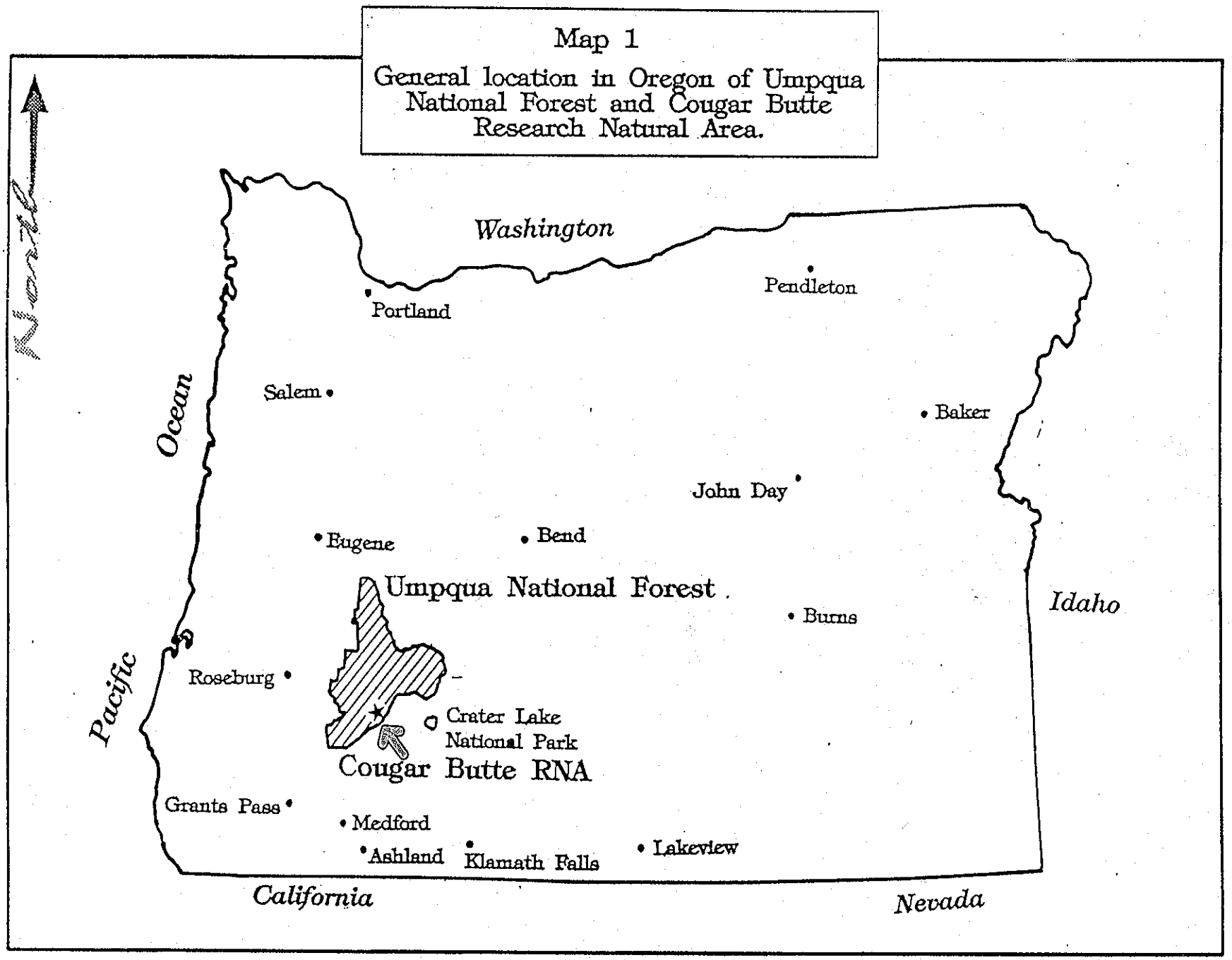
C. Environmental Setting

The Cougar Butte RNA is located in the Rogue-Umpqua Divide Wilderness Area. Motorized use and timber harvest is prohibited in wilderness areas. (see maps 1 and 2)

The attributes that support Cougar Butte as an Established RNA are described in the Establishment Report. The conversion from a candidate to an established research natural area will have no environmental effects or impacts on Forest outputs.

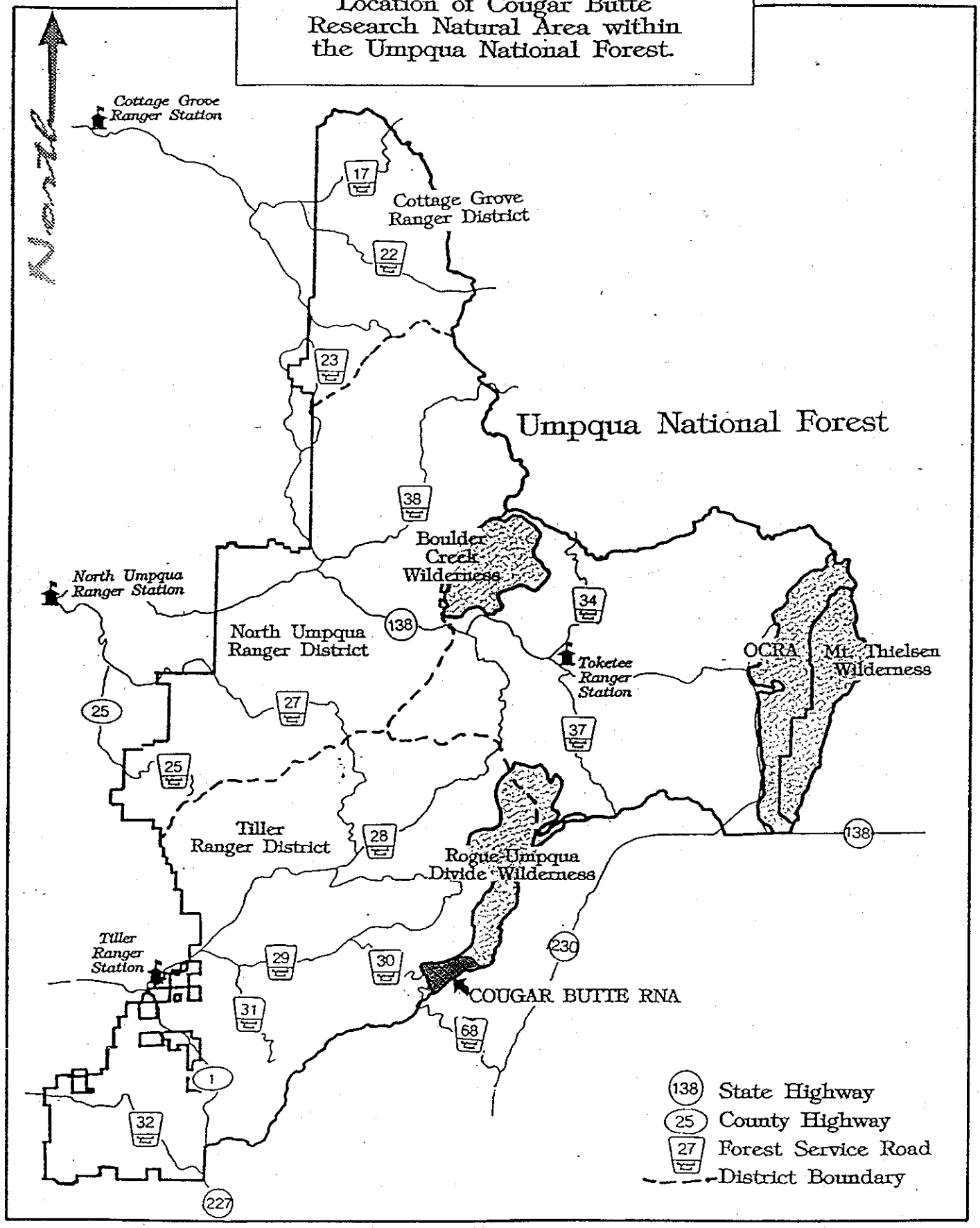
D. Issues

The public was given initial notice of this proposal in April of 1996 through the Forest's quarterly Schedule of Proposed Actions. There was no response to that notice. Letters explaining the Proposed Action were also sent to approximately 350 individuals and organizations who had requested that they be notified regarding implementation of the LRMP. One letter was received in response to the 350 letters suggesting a wider range of


Map 1
General location in Oregon of Umpqua National Forest and Cougar Butte Research Natural Area.
North
Washington
Portland
Pendleton
Salem
Baker
Ocean
John Day
Eugene
Bend
Umpqua National Forest
Idaho
Burns
Pacific
Roseburg
Crater Lake National Park
Cougar Butte RNA
Grants Pass
Medford
Ashland
Klamath Falls
Lakeview
California
Nevada

Map 2

Location of Cougar Butte Research Natural Area within the Umpqua National Forest.



alternatives should have been considered. The issue of a range of alternatives was addressed in the EIS for the 1990 LRMP and no longer was an issue. Internal scoping did not reveal the existence of any significant issues that would generate alternatives to the proposed action.

II. ALTERNATIVES

This section describes the No Action Alternative and the Proposed Action.

Alternative 1 - No Action

Under the No Action Alternative, the Forest would continue to manage this candidate area in accordance with pages 73, 74, 126, 217, and 218 in Chapter IV of the 1990 Land and Resource Management Plan. As a candidate area, recreational use in this portion of the Rogue-Umpqua Wilderness area is constrained. The No Action Alternative serves as a baseline for measuring the environmental effects of the Proposed Action.

Alternative 2 - Proposed Action

Alternative 2 would designate a 2639 acre area as the Cougar Butte RNA and manage the area according to direction in the LRMP, Chapter IV, pages 73, 74, 126, 217, and 218. Under Alternative 2, this RNA will receive formal designation and become part of the Research Natural Area System. The following management standards, which were taken from FSM 4063.3 and 4063.37 are part of Alternative 2. (see appendix)

Protect this RNA against activities that directly or indirectly modify ecological processes.

Prohibit any form of recreational use that threatens or interferes with the objectives or purpose for which the RNA was established.

Pursuant to 36 CFR Part 261, Subpart B, the Forest Supervisor shall issue orders to protect the area's features.

Trails, fences, and signs are prohibited in this area unless they contribute to the objectives or to the protection of the area.

Upon formal establishment as a RNA, clearly identify and monument corners and turning points of the boundary in the field.

III. ENVIRONMENTAL EFFECTS

A. Issues

There were no significant issues identified during the scoping process. The environmental consequences of Alternative 1 are described on pages 60 and 61 of Chapter IV to the EIS

for the LRMP. The environmental consequences of Alternative 2 are essentially the same as the No Action Alternative in that some resource uses, such as trail maintenance and development, would be discouraged or prohibited.

B. Other Resources

Amending the LRMP to formally establish the Cougar Butte RNA is an administrative action lacking environmental effects. Consequently, this action will not have an effect on public health, safety, cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, areas deemed ecologically critical, sites listed or eligible for listing in the National Register of Historic Places, endangered or threatened species or its habitat determined to be Critical under the ESA of 1973, or threaten a violation of Federal, State, or local law imposed for the protection of the environment. The Proposed Action is not highly controversial as evidenced by the lack of public response during the Scoping phase of this analysis. The Action being proposed does not involve unique or unknown risks. It does not Establish a precedent as research natural areas have been established elsewhere in Region 6. Since this is an administrative action, there will be no cumulatively significant impact on the environment.

IV. AGENCIES AND PERSONS CONSULTED

There were no agencies or persons consulted other than the publics identified in Section 1. They were notified of the Proposed Action.

A P P E N D I X

--Forest Service Manual 4063.3

4063.3 - Protection and Management Standards. Standards for protection and management of a research natural area must support and promote the basic objectives and purposes of establishing the area. To ensure that the standards do not digress from original objectives over time, make sure that the establishment record clearly states the objectives for establishing the area and identifies the special values for which the area is being recognized (FSM 4063.41). In addition, comply with the following standards:

1. Protect research natural areas against activities that directly or indirectly modify ecological processes. The prime consideration in managing research natural areas is maintenance of unmodified conditions and natural processes.

2. Do not permit logging or wood gathering activities.

3. In research natural areas where livestock grazing is not part of the management prescription, the Regional Forester and Station Director shall, as appropriate, establish a level of acceptable casual or incidental livestock use that can be tolerated and is consistent with the management prescription for the research natural area.

4. Where grazing is needed to establish or maintain vegetative communities, define objectives for grazing.

5. Prohibit any form of recreational use if such use threatens or interferes with the objectives or purposes for which the research natural area is established.

6. Where special orders are needed to limit, restrict, or control specific activities such as camping, seasons of use, or other uses, that are not compatible with the objectives of the research natural area, the Forest Supervisor shall issue orders pursuant to 36 CFR Part 261, Subpart B, to protect an area's features. Any such orders shall incorporate the special closure provisions of 36 CFR 261.53 (see FSM 5353 for penalties applicable to violations of orders).

7. Do not permit roads, trails, fences, or signs on an established research natural area unless they contribute to the objectives or to the protection of the area. Boundary fencing is permitted for protection against livestock or excessive human use. Buildings are not permitted. In rare instances, temporary gauging stations and instrument shelters may be desirable. Follow procedures at FSM 4063.31 for authorizing temporary physical improvements.

8. Where pest management activities are prescribed, they shall be as specific as possible against target organisms and induce minimal impact to other components of the ecosystem.

9. If practicable, remove exotic plant or animal life.

4063.37 - Monumenting Boundaries. Upon establishment of a research natural area, clearly identify and monument corners and turning points of the boundary in the field.

4063.4 - Establishment. Document each recommended research natural area with an establishment record.

4063.41 - Establishment Record Content. Include all of the following information in the sequence listed in an establishment record for a recommended research natural area. Where a particular item does not pertain to the recommended research natural area, enter a brief statement explaining why it does not apply. Do not omit any item or leave the subject area blank. Use English units and then metric equivalents in parentheses throughout the record. Enclose the entire content in the manuscript cover (Form FS-6200-7).

1. Maps and Photographs. As a minimum, each record must contain (affixed to the inside of the front cover):

a. A legible road map showing the location of the research natural area with respect to the nearest city and the recommended access routes to the area.

b. A map showing boundaries and ownership status of the proposed area with roads and trails at a scale approximating 2 inches per mile (32 mm/km).

c. A vegetational map using Society of American Foresters and/or Kuchler types with defined signs and symbols.

d. When available, a contour map.

Maps must indicate the direction "North". Include photographs where they add to the report. Copies of photographs should be submitted for entry in the Forest Service Permanent Image Collection housed at the National Agricultural Library through the WO Research Natural Area Coordinator. Refer to maps and photographs in the text of the establishment record.

2. Decision Notice/Designation Order. This is a separate written instrument by which the Regional Forester, with concurrence of the Station Director, officially designates a research natural area. See FSM 4063.42 for placement of the order and for assembling and transmitting the establishment record to the Regional Forester and Station Director.

Prepare a Decision Notice/Designation Order using language and format consistent with FSM 1950 and FSH 1909.15 for research natural areas both within and outside of congressionally designated areas (FSM 4063.05).

Decisions made to establish a research natural area are subject to appeal under 36 CFR Part 217. Publish notice of the decision as required by 36 CFR 217.5.