UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

ESTABLISHMENT REPORT

FOR

WHEELER CREEK RESEARCH NATURAL AREA

SISKIYOU NATIONAL FOREST, CURRY COUNTY, STATE OF OREGON

U.S. GOVERNMENT PRINTING OFFICE : 1968 O—298-607

6200-7 (4/68)

Designation Order:

By virtue of the authority vested in me by the Secretary of Agriculture under Regulation 36 CFR 251.23 I hereby designate as the Wheeler Creek Research Natural Area the lands described in the preceding report by Walter B. Johannsen dated September 29, 1971; said lands shall hereafter be administered as a research natural area subject to the said regulations and instructions thereunder.

August 10, 1972
Date

John R. McGuire
Chief

ESTABLISHMENT REPORT

WHEELER CREEK RESEARCH NATURAL AREA

SISKIYOU NATIONAL FOREST

Principal Distinguishing Features

The Wheeler Creek Research Natural Area contains 334 acres of redwood (Sequoia sempervirens) and Douglas-fir (Pseudotsuga menziesii) forests. It is located on the north slope of a steep mountain drainage (Wheeler Creek) in the western Siskiyou Mountains near the Pacific Coast.

Justification

The Wheeler Creek Research Natural Area provides the first representation of S.A.F. Type 232, Redwood, in the Federal Research Natural Area system and, in the completed system, will represent this type and species as it occurs in the northern limits of its range. Redwood is not only important economically but is also of great interest to the ecologist, biogeographer, and paleobotanist. For this reason, it is important to identify and designate a Research Natural Area for this type at or near its northern limits. The Wheeler Creek Research Natural Area will, therefore, fill an important gap in the existing system.

The Wheeler Creek location was selected as the best of five candidate tracts first identified by the Siskiyou National Forest. These were all stands containing redwood and located somewhere between the California border and the northernmost occurrence of the species, 12 to 14 miles north of the border. In fact, it is based upon the combination of two of the original "special interest" stands with the inclusion of some bordering areas to provide protection and buffering from unnatural influences.

The stand conditions and environment at Wheeler Creek Research Natural Area are typical of redwood as it occurs near its northern limits. 1/ In general, such stands are found on mountain slopes (especially of north aspect) rather than in valley bottom terraces. They generally are mixed stands where redwood percentage dips near or below the Type 232 definition (20 percent) rather than in pure or nearly pure stands. These conditions are met at Wheeler Creek.

The purpose of setting aside this tract is to provide an undisturbed example of redwood at the northern limits of its range for scientific and educational study of this species and its associates. It is anticipated that studies of the following types will be conducted here: (1) Community structure and development (productivity and succession)

1/ Personal communication from Dr. R. W. Waring, Forest Research Laboratory, Oregon State University, Corvallis, Oregon.

including relative competitive abilities of the tree species and variation in community composition associated with environment; (2) as a comparative control in identifying the favorable and unfavorable influences of man's activities on the environment--e.g., evaluation of effects of management on water quality, soil mass movements, or base levels of various pollutants; and (3) autecologic studies of redwood and associated species. It also serves an important function as a gene pool for the northern genotypes of redwood, as well as for other plant and animal species.

Location

The research natural area occupies 334 acres on the south side of the upper Wheeler Creek drainage, a tributary of the Winchuck River in Curry County at the southwestern extremity of Oregon. It includes acreage in Sections 15, 16, 21, and 22, T. 40 S., R. 12 W., Willamette Meridian. The tract lies entirely within the Chetco Ranger District (Brookings, Oregon), Siskiyou National Forest.

Boundary

The research natural area boundary is located along readily-located topographic features wherever possible. Although the southern boundary was originally located along a road, a narrow strip between (above) the road and ridgetop was added for maximum protection of the area from winter storm winds. A small piece south of a major saddle at the southwestern corner of the research natural area was added for the same reason.

The topographic map included in this report shows the location of the boundary and points referred to in the following boundary description: Begins at point (A) where Road 4039 crosses the west boundary of clearcut Unit #1 of the Upper Wheeler Creek Sale; then south to point (B) on the ridgetop; then west along the ridgetop to point (C), the summit of point 1,771; then approximately 10° south of west crossing Road 4039 600 feet south of the road junction and saddle (in the extreme southeastern corner of Section 16) (point D) and continuing to the east edge of clearcut Unit #1, Wheeler Ridge Sale; thence north along east boundary of clearcut Unit #1, Wheeler Ridge Sale, and continuing on the same line to the ridgetop (point F); thence west along the ridgetop and across a high point on the ridge to point (G); then north down the main spur ridge in Section 16, crossing Wheeler Creek (about 500 feet below junction of the main Wheeler Creek and a smaller tributary) and 200 feet up the north bank to point (H); thence east paralleling Wheeler Creek (but located 200 feet north of the stream) to point (I); and south up a spur ridge and along the west boundary of clearcut Unit #1 of the Upper Wheeler Creek Sale to original point (A).

Cover Types and Stand Conditions

Except for approximately 30 acres of road right-of-way (along Forest Road 4039) all of the research natural area is occupied by commercial forest stands belonging to S.A.F. forest cover types 232, Redwood, and 229, Pacific Douglas-Fir. Most of the area contains some redwood but near the 20 percent (redwood) breaking point between the two cover types, making it difficult to assign acreage to one or the other. About one-third to one-half of the acreage is assignable to Type 232 and the remainder to Type 229, with a minor redwood component.

A history of fire has produced a mosaic of stand conditions with the area roughly divisible into two major types: Second-growth or small sawtimber (D4) stands of medium stocking, and old-growth or large sawtimber stands (D5) of medium stocking. Redwood is most conspicuous as a component of the old-growth stands. There are various, two-storied intergradations between the two major stand conditions with residual old-growth specimens forming an upper canopy and second-growth a lower tree canopy level.

Physical and Climatic Conditions

The natural area is essentially confined to steep, north-exposed slopes within the Wheeler Creek drainage. It extends from a main ridgetop to creekbottom. Elevations range from approximately 500 to 1,771 feet.

According to the Cutbank Stability Study, the soils of this area are unstable and moderately erodable. These soils are composed of slightly plastic shallow loams overlying moderately thick beds of hard sandstone alternating with moderately thin beds of shaley mudstone. The soil materials of this area range in thickness from 1 to 3 feet, but most commonly are 18 to 30 inches thick over bedrock. These soil materials are well drained, moderately rapidly permeable, have moderate surface soil structural stabilities, and are chiefly slightly plastic loams, but range from nonplastic to moderately plastic locally.

Bedrock of this area is composed of beds of massive, hard, fine- to medium-grained sandstone, which range most commonly from 3 to 8 feet thick, and are light gray to greenish-gray colored, weathering to brownish-yellow or reddish-brown upon exposure. The thinner beds of shaley mudstone commonly range from 2 inches to 2 feet thick and are dark gray to black and relatively soft and easily sheared, especially where relatively thinly bedded with thick beds of sandstone. Almost half of the bedrock is composed of beds of sandstone, about a third of shaley mudstone, and the remainder of chert and conglomerate. Bedding planes of this unit are not prominent, the interfaces are somewhat rough and irregular, and the beds generally dip moderately-steep to steep in random directions.

Typical coastal conditions characterize the climate of the area--moderate temperatures, frequent dense fogs, and strong southwesterly winds. Precipitation is generally heavy, probably averaging around 80 inches annually. Frequent fogs accentuate the moist conditions. A dry season begins in June, becomes especially acute in July and August, and usually extends into late September. Very little precipitation falls as snow. Representative data from the nearest climatic station at Brookings is as follows:

Mean annual temperature	53.4°F
Mean January temperature	47.1°F
Mean July temperature	58.9°F
Mean January minimum temperature	40.0°F
Mean July maximum temperature	66.7°F
Mean annual precipitation	81.40 in.
Mean precipitation, June through August	3.62 in.

Biota

The most abundant tree species are redwood and Douglas-fir, the redwood being the key organism of interest in the Wheeler Creek Research Natural Area. Tanoak (Lithocarpus densiflorus) and Pacific madrone (Arbutus menziesii) are the most common associates, forming a second story under the dominant conifers, as well as forming the dominant cover on some drier and/or recently burned sites. Other trees present include knobcone pine (Pinus attenuata), red alder (Alnus rubra), Pacific dogwood (Cornus nuttallii), California laurel (Umbellularia californica), and cascara (Rhamnus purshiana). Pacific rhododendron (Rhododendron macrophyllum), evergreen huckleberry (Vaccinium ovatum), salal (Gaultheria shallon), and Oregon grape (Berberis nervosa) dominate the shrub layer, which is very densely developed over much of the area. The most important herb is sword fern (Polystichum munitum).

A variety of fauna are known to occur on the Wheeler Creek Research Natural Area. Resident mammals include Columbia blacktailed deer (Odocoileus hemionus columbianus), white-footed deermouse (Peromyscus maniculatus), Townsend chipmunk (Eutamias townsendi), chickaree (Tamiasciurus douglasii), western gray squirrel (Sciurus griseus), Trowbridge shrew (Sorex trowbridgii), short-tailed weasel (Mustela erminea), northern flying squirrel (Glaucomys sabrinus), shrew mole* (Neurotrichus gibbsii), red tree mouse* (Arborimus longicaudis), bats (Myotis spp.), and spotted skunk (Spilogale putorius). Occasional mammals include bobcat (Lynx rufus), mountain lion (Felis concolor), black bear (Ursus americanus), mink (Mustela vison), and racoon (Procyon lotor). Additional species which may be present include Oregon vole* (Microtus oregoni), Pacific shrew* (Sorex pacificus), marten* (Martes americana), ring-tailed cat* (Bassariscus astutus), long-tailed weasel* (Mustella frenata), California red-backed vole* (Clethrionomys californicus), brush rabbit (Sylvilagus bachmani), mountain beaver (Aplodontia rufa pacifica), and California ground squirrel (Spermophilus beecheyi). Also an occasional coyote (Canis latrans).

* In the discussion of fauna, rare or endangered species or species of special biogeographical interest (near range limits) are indicated with asterisks.

Amphibians present include the western red-backed salamander* (Plethodon vehiculum), Del Norte salamander* (Plethodon elongatus), clouded salamander* (Aneides ferreus), Pacific giant salamander* (Dicamptodon ensatus), Oregon slender salamander (Batrachoseps attenuatus), Olympic salamander (Rhyacotriton olympicus), Oregon salamander (Ensatina escholtzii), and yellow-legged frog (Rana boylei). Among the invertebrates, a small species of scorpion and several land snails are of special interest.

Impact on Other Resource Values

Timber

Almost the entire natural area is classed as commercial forest land and has been included in calculations of the allowable cut. It is calculated that establishment of the natural area will reduce the allowable cut of the Siskiyou National Forest by 100 M board feet per year. This is based on the calculated annual net growth of 12 MM board feet per year on 141,690 acres of commercial forest land in the Chetco Ranger District (1967 inventory data). The reduction of allowable cut is less than .1 of 1% of the average annual cut on the Siskiyou and will be incorporated in the new management plan now being prepared.

The natural area does not block transportation system development or occupy critical landings or cable yarding points for adjacent tracts.

Water

Establishment of the research natural area is expected to have a neutral effect on watershed values. Disturbance of the area will be minimized. The soils here are unstable and moderately erodable and would require considerable care in logging or any additional road construction.

Recreation

Minor recreational use by sightseers and hunters has occurred in the past. Use is not expected to increase significantly in the future nor interfere with use of the area for scientific and educational purposes. Almost all use will be confined to the immediate vicinity of the road because of the steep topography and brush.

Minerals

A mineral examination of the natural area has been made. No mineralization was detected. A copy of the examiner's report is included as Exhibit A.

The area will be withdrawn from mineral entry after establishment.

Protection and Management

The objective of management in the research natural area will be to maintain natural conditions within the tract for scientific and educational study.

1. Roadside strip. Salvage of dead, down, and dangerous trees will be allowed along Road 4039 for 200 feet on either side of the road center line. Only these types of materials will be logged from the roadside strip in order to assist in maintenance of an undisturbed environment within the natural area. Logging within the roadside strip will be entirely by cable methods with the road used as the landing.

2. Maps. The area boundary will be shown on the multiple-use map for the Chetco Ranger District.

3. Signs. In accordance with R-6 standards, permanent boundary markers (metal signs) will be posted on the boundary of the research natural area. The project will be the responsibility of the Chetco District Ranger, and funds for the signing will be requested immediately after formal establishment of the area. Special attention will be given accurate location and signing of the boundary between points C and H.

4. Trails. A system of low-standard way trails or routes, totaling about 2 miles in length, will be located and constructed within the research natural area to provide access for scientists using the area. The location and standards for these routes will be a joint responsibility of National Forest Administration and the Experiment Station; one or more scientists will work with Chetco Ranger District personnel under the guidance of the Pacific Northwest Natural Area Committee.

5. Public Use. No effort will be made to prohibit recreational use unless this use conflicts with the utilization of the area for research purposes or its maintenance in a natural condition.

Recommendation

It is recommended that the Wheeler Creek Research Natural Area be established on the lands described in this report.

September 29, 1971
Date

Submitted: W B Johansen
Timber Management Staff

Sept 30, 1971
Date

Recommended: W B Greayne
Forest Supervisor
Siskiyou National Forest

JUL 5 1972
Date

Recommended: For K. H. Wright
Director
PNW Experiment Station

Date

Recommended: Acting
Regional Forester
Region 6

8/8/72
Date

Approved: Acting
Director
Division of Recreation

AUG 10 1972
Date

Approved:
Deputy Chief
Research

August 10, 1972
Date

Approved: John R. McGuire
Chief

REPORT OF MINERAL CHARACTER Job No. G-254

Requested by: Division of Lands and Minerals

Subject: Wheeler Creek Research Natural Area

Lands Involved: See area description and map

Mining Engineer and Date of Examination: Colver F. Anderson
March 23, 1972

Areal Geology

The general area is composed of silty sandstone with shaly layers belonging to the Dothan formation of Jurassic age. A light-colored intrusive rock, dacite, occurs frequently close to Mt. Emily and occasionally as dikes or sills in the subject area.

Economic Geology

Dacite occurrences have been noted many times in the Coastal Mountains and no commercial mineral bodies have been associated. Mineral occurrence on Mt. Emily is probably related to a different intrusive. There is no metallic mineralization indicated within the natural area or in surrounding ground.

History and Production

None

Extent of Examination

All road cut exposures within and near the proposed withdrawal were examined. Several rock exposures off the road were also checked for mineral indications.

Conclusions

The Wheeler Creek Research area is nonmineral in character.

Date 5/10/72

Colver F. Anderson
COLVER F. ANDERSON, Mining Engineer

EXHIBIT A

II. Mineral Situation

A. Mining History

There is no history of mining or present activity in the subject area.

B. Search of County Records

No mining claims in the subject area have been found in the county records.

C. Mineral Examiner's Report

See Mineral Report.

D. Mining Economics of the Local Area

There are no mineral economics to discuss. The land is nonmineral in character.

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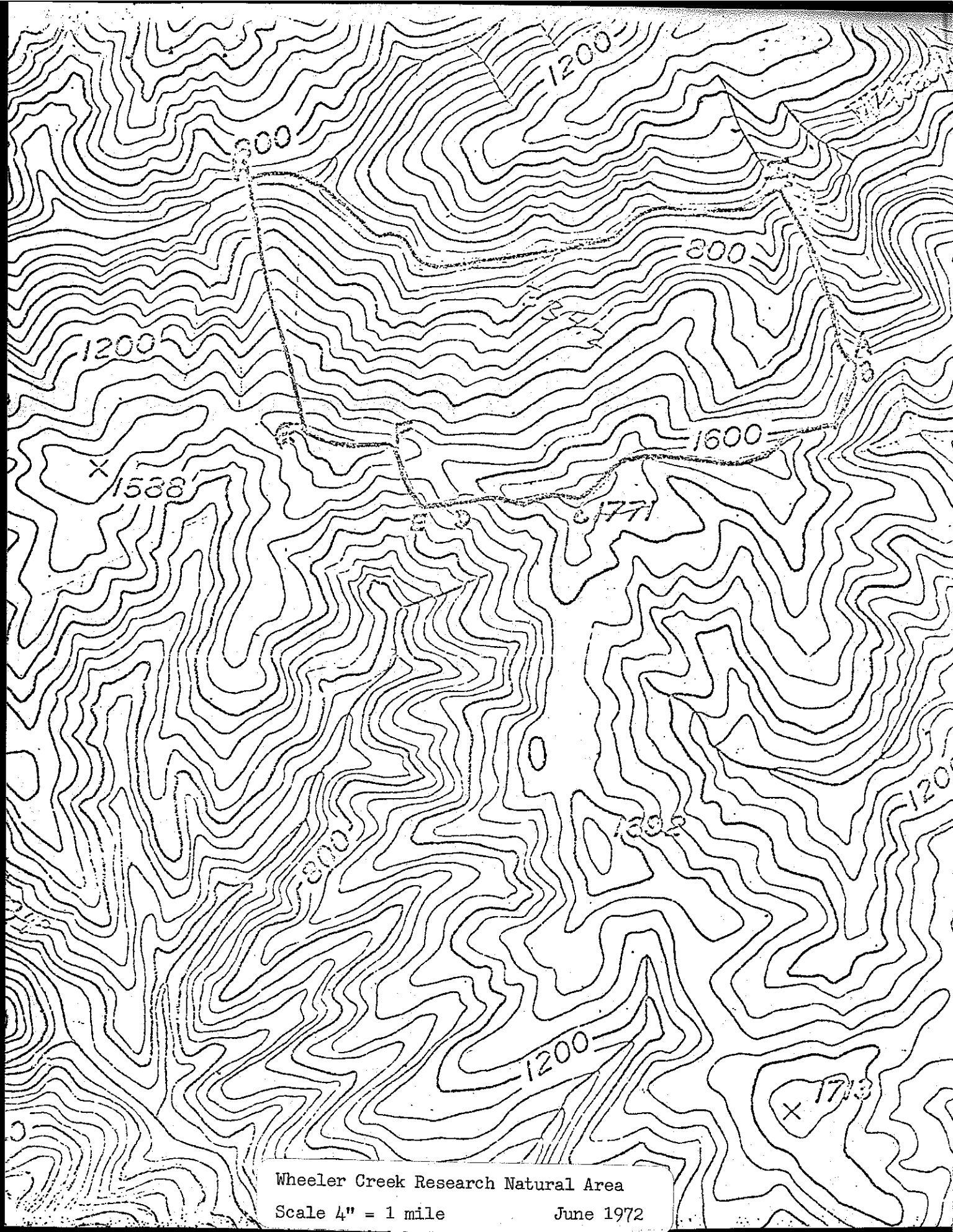
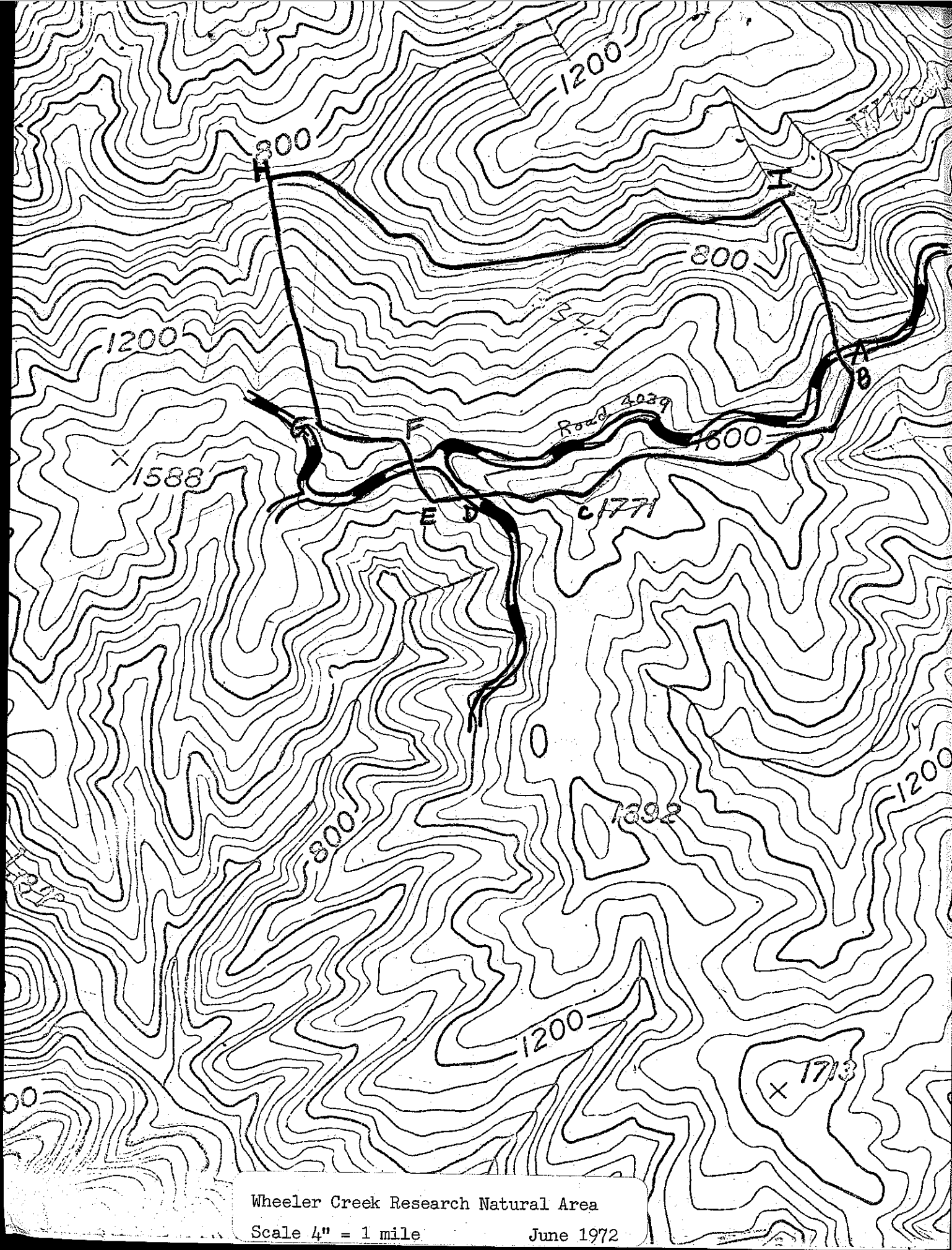


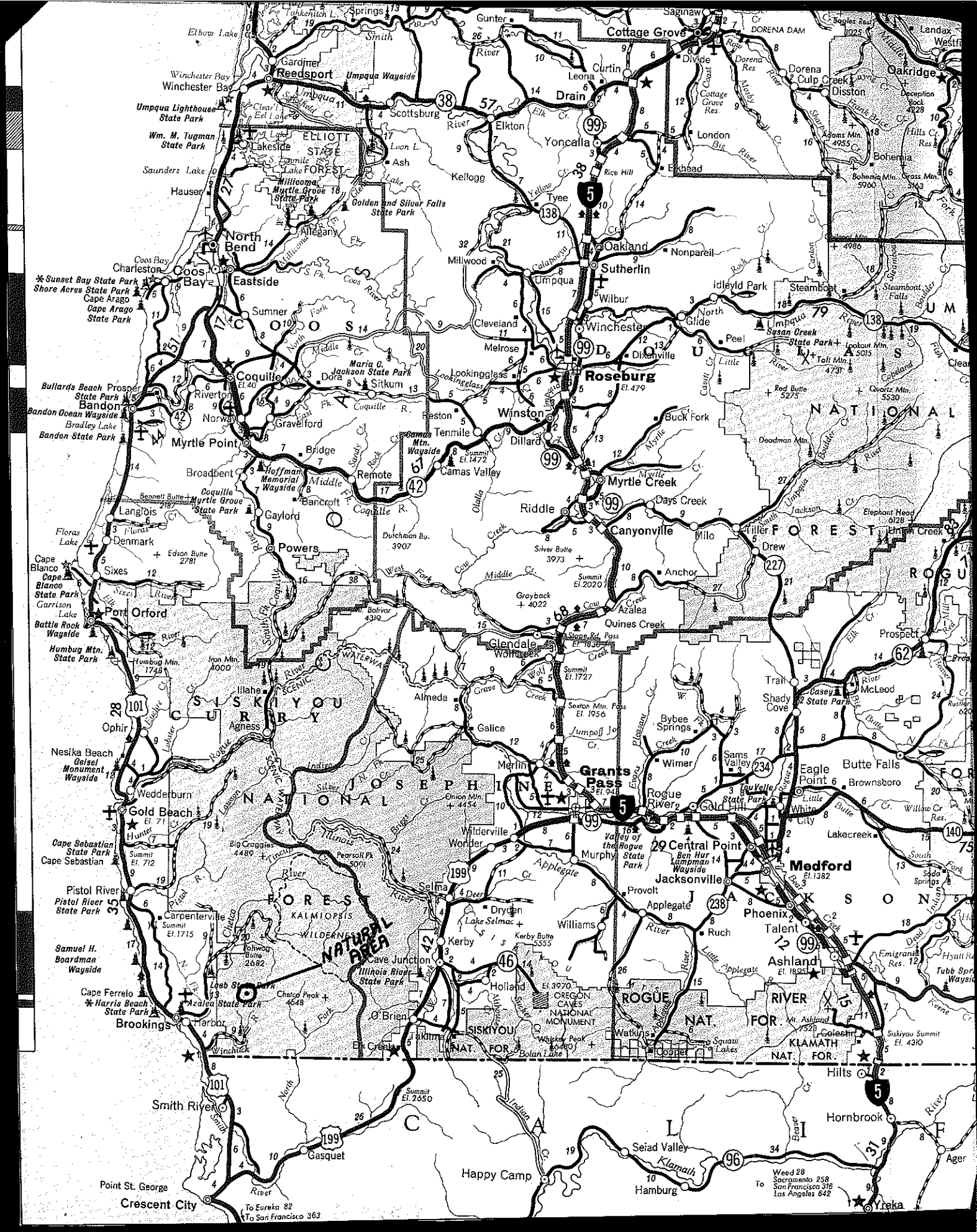
Wheeler Creek Research Natural Area

Scale 4" = 1 mile June 1972



Wheeler Creek Research Natural Area

Scale 4" = 1 mile June 1972


Springs
Gunter
Saginaw
Cottage Grove
DORENA DAM
Landax
Westfi
Elbow Lake
Smith
River
Gardiner
Reedsport
Umpqua Wayside
Winchester Bay
Winchester Bay
Curtin
Leona
Divide
Dorena Culp Creek
Oakridge
Disston
Umpqua Lighthouse State Park
Wm. M. Tugman State Park
Scottsburg
Drain
Elkton
Yoncalla
London
Bohemia
Lakeside
ELLIOTT STATE FOREST
Ash
Rice Hill
Elkhead
Saunders Lake
Hauser
Millicoma Myrtle Grove State Park
Golden and Silver Falls State Park
Kellogg
Tyee
North Bend
Allegany
Oakland
Nonpareil
Millwood
Sutherlin
Coos Bay
Charleston
Coos Bay
Eastside
Sunset Bay State Park
Shore Acres State Park
Cape Arago
Cape Arago State Park
Umpqua
Wilbur
Idleyld Park
Steamboat
Sumner
COOS
Cleveland
Winchester
Glide
Umpqua River
Susan Creek State Park
Lookout Mtn. 5015
Toll Mtn. 4731
Melrose
Dixonville
Peel
Maria G. Jackson State Park
Coquille
Dora
Sitkum
Lookingglass
Roseburg
El. 479
Bullards Beach State Park
Prosper
Riverton
Bandon
Bandon Ocean Wayside
Bradley Lake
Bandon State Park
Norway
Gravelford
Reston
Winston
Buck Fork
Tenmile
Dillard
Myrtle Point
Bridge
Camas Mtn. Wayside
Summit El. 1472
Camas Valley
Broadbent
Hoffman Memorial Wayside
Remote
Myrtle Creek
Coquille Myrtle Grove State Park
Bancroft
Riddle
Days Creek
Langlois
Gaylord
Canyonville
Milo
Tiller
Drew
Floras Lake
Denmark
Edson Butte 2781
Powers
Dutchman Bu. 3907
Silver Butte 3973
Cape Blanco
Cape Blanco State Park
Sixes
Anchor
Garrison Lake
Port Orford
Battle Rock Wayside
Humbug Mtn. State Park
Humbug Mtn. 1748
Iron Mtn. 4000
Mt. Bolivar 4319
Greyback 4022
Azalea
Quines Creek
Glendale
Wolf Creek
Prospect
Illahe
SISKIYOU
Almeda
Trail
Shady Cove
McLeod
Ophir
CURRY
Agness
Galice
Sexton Mtn. Pass El. 1956
Bybee Springs
Nesika Beach
Geisel Monument Wayside
Merlin
Grants Pass
El. 948
Wimer
Sams Valley
Eagle Point
Butte Falls
Wedderburn
JOSEPH
Rogue River
Gold Hill
Brownsboro
Gold Beach
El. 71
Onion Mtn. 4454
Wilderville
Lakecreek
Cape Sebastian State Park
Cape Sebastian
Big Craggies 4489
Pearsoll Pk 5001
Central Point
Medford
El. 1382
Pistol River
Pistol River State Park
Selma
Murphy
Jacksonville
Provolt
Carpenterville
Dryden
Lake Selmac
Applegate
Phoenix
Talent
Samuel H. Boardman Wayside
Kerby
Williams
Ruch
Cave Junction
Illinois River State Park
Kerby Butte 5555
Ashland
Holland
Loeb State Park
Cape Ferrelo
Harris Beach State Park
Azalea State Park
Chetco Peak 4648
ROGUE
RIVER
Brookings
Harbor
O'Brien
Takilma
Whiskey Peak 6080
Watkins
Hilts
Siskiyou Summit El. 4310
Smith River
Hornbrook
Summit El. 2650
Seiad Valley
Gasquet
Happy Camp
Point St. George
Crescent City
Hamburg
Weed 28
Sacramento 258
San Francisco 316
Los Angeles 642
Yreka
To Eureka 82
To San Francisco 363