Society of Amer[illegible]resters Committee on Natu[illegible]as

NA[illegible] AREA NOMINATION FORM

Instructions Complete and forward to Committee along with a sketch type map of the area and a location map (highway map) indicating general location of proposed area Information on past ownership and management, scientific or educational use, hydrologic features, rare plants or animals or other pertinent facts should be included Please type Photos, if available, will be welcomed

Name of Proposed Natural Area Abbot Creek Natural Area

Location State Oregon County Jackson and Douglas Total Area 2660 Acres

Nearest Town and Distance Prospect (Name) 12 (Miles)

Agency/Owner USDA Forest Service

Administrative Unit Rogue River National Forest
Natl Forest, Natl Park, Wildlife Refuge, State, Univ , etc

Address Federal Building, 333 W Eighth St , P O Box 520, Medford, OR 97501

Permanence Afforded How U-4 (36 CFR 251 23)
Laws, Regulation, Will, Endowment, Letter of Agreement, etc

Primary Forest Type

SAF 243 (Type Number) Ponderosa pine-Sugar pine-Fir (Type Name) 2055 (Type Area) Acres

Dominant Trees D B H _____ Hgt _____ Age _____

Other Important Types or Vegetation

	Dominant Trees	Name	D B H	Hgt	Age	Area
SAF Type, Number and Name	1966 K-~~033~~ 029	chaparral				605

Barren, Water, Buffer Zone, etc none Acres
Area and Nature

Description of Vegetation and Other Distinguishing Characteristics Mixed Sierran type conifer stands with particularly fine specimens of sugar pine (pinus lambertiana), White fir is major climax species

Elevation 3300-6131 (Range and Average) Feet Topography Steep (Level, Rolling, Steep, etc)

Geology and Soils Andesitic pumice
Alluvial, Volcanic, Moraine, Podsol, Serpentine, Etc

Justification Briefly outline why this tract should be designed an SAF natural area

The tract provides innumerable opportunities for research on southwestern Oregon mixed-conifer forests due to its size and stand diversity Studies of hydrologic and nutrient cycling in essentially virgin drainage, life histories of small fauna, and variations in composition, productivity and successional development of plant communities would be appropriate It is an excellent location for studies of sugar pine under near-optimum conditions as well as for ecological studies of other tree species

Submitted by Russell M Burns Title Forest Service RNA Coordinator Date

Mailing Address P O Box 2417

Washington, D C 20013

Approved

Section Natural Area Chairman or
Natural Area Liaison Officer

Approved for Listing in Register of SAF Natural Areas

Chairman,
Committee on Natural Areas Date

Committee on Natural Areas, Society of American Foresters,

5400 Grosvenor Lane, Washington, D C 20014

U

CLASSIFICATION - Rogue River
Natural Areas
Abbott Creek

Report on Abbott Creek Natural Area (Proposed)

I. Description of Area

This area, known as the Abbott Creek Natural Area, is located on a tributary of the main Rogue River, Jackson and Douglas Counties, Rogue River National Forest, Oregon.

Description of the boundaries of the area is as follows:

"Beginning at the intersection of the Golden Stairs Trail and the south line of Sec. 31, T. 30 S., R. 3 E., W.M., thence northerly along the Golden Stairs Trail to the Rogue River-Umpqua Divide; thence westerly along the divide to Abbott Butte; thence southerly approximately one-half mile to the head of the middle branch of Abbott Creek; thence southerly along the main branch of Abbott Creek to the south line of Sec. 36, T. 30 S., R. 2 E., W.M.; thence east along this line to the point of beginning."

Total acreage of the tract is 2,660 acres, all of which is national forest land. Of this area 2,055 acres are timbered, the remaining acreage being in brush, grassland, barren and small burns.

II. Special Features

Special features of this area, sufficient to justify its classification as a natural area, are the volumes and stands of sugar pine (Pinus lambertiana). The bulk of the heavier pine stands are located near the center of the area, well protected from outside influences. In these areas, the volume of sugar pine far exceeds the amount recognized for type classification in this region, in instances running over 40 per cent of the stand by forty-acre tracts. As characteristic of these stands, the volume is mainly in the large diameter classes, 50 to 60 inches and over, thus presenting a truly optimum stand of Southern Oregon sugar pine. Reproduction and advanced growth in this species will also be found over the area in general.

Another feature of the area fitting into its desirability for natural area purposes is the absence of roads or trails, and the fact that none are contemplated. The Golden Stairs Trail, which forms the eastern boundary of the tract, serves as a ready access to the area, but does not enter it.

The area is under the direct view of Abbott Butte Lookout, which is located on the northwest boundary of the tract.

Recopy put R-6, 1-14-47 SBY

III. Cover Types and Cruise Volumes

Cover types found on the area, in their approximate order of acreage, are Douglas-fir, sugar pine, white fir, shasta red fir, brush, incense cedar, ponderosa pine, and grassland.

Species volumes, by sections, are as follows:

	Acres	D-F	IC	WF	SP	PP	H	WP	SRF	Totals
T. 30 S., R. 2 E.										
Sec. 23	160	2,458	512	972	205		51		922	5,120
24	430	6,490	1,405	2,664	556		116	44	2,470	13,745
25	515	12,425	900	1,059	3,156	10	186	144		17,880
26	80	1,230	256	486	102		26		460	2,560
36	295	4,597	169	487	1,849	72	82	72		7,328
T. 30 S., R. 3 E.										
19	120	1,842	384	730	154		38		692	3,840
30	200	4,830	350	420	1,260		70	70		7,000
31	255	4,256	589	405	782	100				6,132
Totals	2055	38,128	4,565	7,223	8,064	182	569	330	4,544	63,605

IV. Physical Conditions

The area is moderately rough, being broken up into numerous ridges. Rock outcrops are found on some of the ridges. Elevations run from a minimum of 3,250 to approximately 6,000 feet on the highest point of the divide.

V. Wildlife Factors

Game occurs in all the native species, in normal amounts and bears no particular relation to the prime purpose of the natural area. The streams are small and lie above any fishing possibilities. No lakes are located within the area.

VI. Present Occupancy

None.

VII. Recreational and Other Values

No recreational values exist. Other than an occasional hunter or hiker using the trail bounding the tract on the east, the area will probably not be visited for recreational purposes.

At present there is no known mining claim location within the area. Due to its higher elevation and small streams, there is very little likelihood of placer locating, the popular mining venture in this general vicinity. Apparently the area lies outside the ore deposit zone, and no other entry of this nature can now be foreseen.

VIII. Recommended Management Policy

No recreational structures are required in the area.

Protection and administration structures will not be required. Detection coverage is directly supplied by the Abbott Butte Lookout located on the boundary of the area. Suppression coverage, in addition to that obtainable from the nearby lookout, is supplemented by roads within a mile of the exterior limits, and boundary trails readily travelable from central fire fighting forces.

Foot trails from the Golden Stairs Trail into the heavier sugar pine stands within the area would be desirable.

Drift grazing by cattle is permitted within the tract and is not believed to be detrimental to the purposes of the natural area.

No water storage or other possible use is foreseen for the area.

The matter of blister rust control in and adjacent to the natural area has been considered. There has been some thought that the rust should be allowed to run its course in the area, thereby permitting a truly natural area with its natural enemies. On the other hand, if ribes control proves to be effective, it could well be the only thing which would result in the perpetuation of sugar pine in this area. Pending a survey by the Bureau of Etomology and Plant Quarantine to determine the need and cost of rust control in this vicinity, it is recommended that final decision on blister rust control be held in abeyance.

Approved 11/4/46
Karl L. Janouch
Forest Supervisor

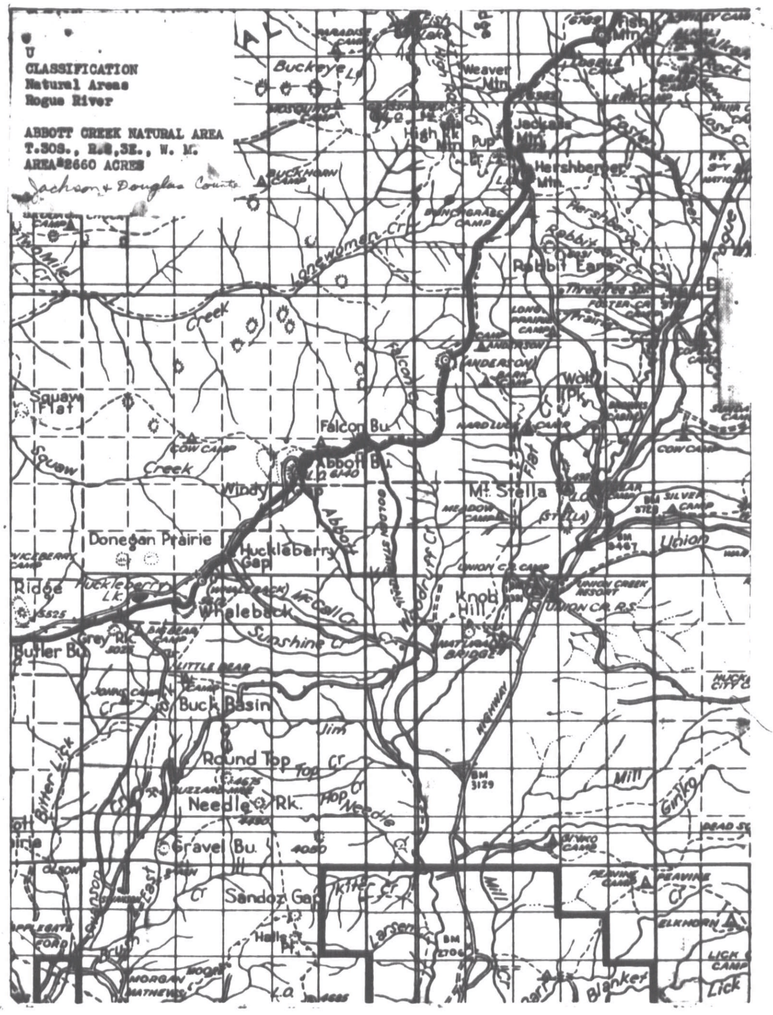
Approved H. J. Andrews
Nov 18 1946
Regional Forester

Approved [signature] Nov. 25 '46
Director, Pacific N.W. Forest Range & Experiment Station

By virtue of the authority vested in me by Regulation U-4 (251.23 CFR) of the Secretary of Agriculture, I do hereby designate as the ABBOTT CREEK NATURAL AREA the lands described in a report dated 11/4/46 by Karl L. Janouch, Forest Supervisor; said area shall hereafter be administered as a Natural Area, subject to the provisions of said regulation and the instructions thereunder.

Jan 2-1947
(Date)

[signature]
Acting Chief, Forest Service



ABBOTT CREEK RESEARCH NATURAL AREA[1/]

Southwestern Oregon mixed conifer forest with especially fine examples of sugar pine occupying a large (1,077 ha) mountain stream drainage

Jan 2, 1947 Rusbarns

Abbott Creek Research Natural Area was established on ~~November 18, 1946~~, to exemplify the Sierran-type mixed conifer forests found in southwestern Oregon The tract was specifically selected because of the excellent representation of sugar pine (*Pinus lambertiana*) in many of the stands The 1,077 ha (2,660 acre) natural area is located in Douglas and Jackson Counties, Oregon and is administered by the Prospect Ranger District (Prospect, Oregon), Rogue River National Forest It occupies portions of Sections 23, 24, 25, 26, and 36, R 2 E , T 30 S , and of Sections 19, 30, and 31, R 3 E , T 30 S , Willamette meridian The majority of the boundaries follow physiographic features (fig AC-1) the dividing ridge between the Rogue and Umpqua Rivers on the north, the Golden Stairs trail, which essentially follows a ridgetop on the east, and the main and west branches of Abbott Creek along much of the west edge The natural area is located at 42°56' N latitude and 122°31' W longitude

Access and Accommodations

The natural area is approached via Oregon State Highway 26 Personnel at Prospect Ranger Station can provide directions through the network of graveled forest roads which lead from the highway to the southwestern corner (Forest Road 3047) and eastern edge (Forest Road 3016) of the tract (fig AC-1) Unimproved dirt roads also lead to Abbott Butte Lookout at the northwestern corner (Forest Road 2923) and along the west side of the main branch of Abbott Creek, the latter road is drivable for only a short distance The unmaintained Golden Stairs trail forms the western boundary

Cross-country foot travel provides the only access within the natural area, there are no trails or roads inside the boundaries Because of its large size and rugged character such travel is time consuming and often difficult and hazardous

Commercial accommodations are available at Prospect and Union Creek located approximately 16 to 24 km (10 to 15 miles) from the natural area There are also numerous improved forest campgrounds in the vicinity

Environment

The Abbott Creek Research Natural Area is a relatively large mountainous tract which occupies the entire drainage of the main branch of Abbott Creek as well as portions of tributary drainages (fig AC-1) Topography is generally rugged with moderate to steep slopes and numerous rock outcrops and escarpments Small benches along Abbott Creek and more extensive benchy areas below the summit peak of Abbott Butte provide the only gentle relief Elevations range from about 1,000 m (3,300 ft) to 1,869 m (6,131 ft) at Abbott Butte Lookout

The natural area is located in the geologically older Western Cascades and is composed entirely of volcanic materials Bedrock at higher elevations is composed of middle and upper Miocene andesite flows, probably belonging to the Sardine formation (Peck 1961) At lower elevations Oligocene and lower Miocene pyroclastic rocks occur and may include tuffs, breccias, and conglomerates The summit area of Abbott Butte itself is mapped as basalt of Pliocene or Pleistocene age Finally, some Eocene to Pliocene felsic intrusive rocks may occur along the west boundary

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1/ Description prepared by Dr J F Franklin, U S Forest Service, Forestry Sciences Laboratory, Corvallis, Oregon

White fir appears to be the major climax tree species in most of the forest stands Seedlings and saplings of this species are typically more common than reproduction of Douglas-fir or incense-cedar under closed forest canopies However, most of the stands are in relatively long-lasting seral stages many decades, or perhaps several centuries, away from climax condition even in the absence of wildfire or other disturbances Severe environmental conditions on many sites retard successional processes and there are typically numerous small openings which allow less shade-tolerant species, such as Douglas-fir, incense-cedar, and sugar pine, to reproduce (fig AC-2)

The composition of all layers of the forest communities varies markedly with moisture and temperature gradients, which are roughly correlated with soil-land form and elevation, respectively, and with stand history Mature forests on mid and lower slopes are dominated by a mixed overstory of Douglas-fir, incense-cedar, sugar pine, and white fir Common understory species include *Corylus cornuta* var *californica, Pachistima myrsinites,* golden chinkapin, *Rosa gymnocarpa,* and *Vaccinium membranaceum* in the shrub layer and *Chimaphila umbellata, Achlys triphylla, Berberis nervosa, Pyrola picta, Iris chrysophylla, Trientalis latifolia,* and *Carex* sp in the herb layer There are many variations on this basic theme, however For example, incense-cedar and Douglas-fir increase in relative importance and ponderosa pine and a variety of hardy intolerant shrubs and herbs including many typical of the nonforest communities discussed below make their appearance in drier phases of this community

Stands on stream terraces typically have more white fir and less incense-cedar and sugar pine in the overstory Douglas-fir remains a major dominant Several species are found solely or in greatest abundance in these terrace communities western hemlock and western white pine in the tree layer, western yew, *Acer circinatum* and *Cornus nuttallii* in the shrub layer, and *Asarum caudatum, Trillium ovatum, Disporum hookeri, Clintonia uniflora, Viola glabella, Linnaea borealis, Calypso bulbosa, Anemone deltoidea, Rubus nivalis,* and *Viola sempervirens* in the shrub layer These species sharply distinguish the terrace communities from those found on more xeric habitats

Higher elevation forest stands include some dominated by white fir with relatively lush forby or weedy understories Typical understory plants are *Ribes viscosissimum, Mertensia paniculata, Smilacina sessilifolia,* and several grasses and a variety of other broad-leaved herbs Small stands dominated by Shasta red fir singly or in mixture with white fir or mountain hemlock, are also present These characteristically have sparse understories

The nonforested communities are also highly variable in character including several rock outcrop types and subalpine mosaics of relatively lush herbaceous stands and tree and shrub patches Communities on rock outcrops and scree slopes reflect the extremely xeric nature of the habitat (fig AC-2) Typical plant species include *Ceanothus prostratus, Arctostaphylos nevadensis, Senecio integerrimus* var *exaltatus, Pellaea* sp , *Cheilanthes gracillima, Cystopteris fragilis, Stipa columbiana, Collonia heterophylla, Cynoglossum grande, Delphinium* spp , *Ribes cereum, Marah oreganus,* and *Epilobium minutum* On some nonforested sites, as well as in open forest stands larger evergreen shrubs such as *Arctostaphylos patula, Ceanothus velutinus* and *Garrya fremonti*

The meadows at high elevations are dominated by herbaceous species such as *Veratrum viride, Pteridium aquilinum* and various grasses and sedges Small perennial herbs such as *Erythronium grandiflorum* and *Claytonia lanceolata* are also common Intermixed with the herbaceous stands are large *Sorbus* bushes and individuals and groups of young trees--incense cedar, white fir, and Shasta red fir There is strong evidence of extensive meadow invasion by tree species during the last century

The tract provides innumerable opportunities for research on southwestern Oregon mixed-conifer forests because of its size and the diversity of stand conditions and environments present These could include studies of hydrologic and nutrient cycling in an essentially virgin drainage, life histories of all but the largest animals, and variations in composition, productivity and successional development of plant communities It is an excellent location for studies of sugar pine growing under near-optimum conditions as well as for ecological studies of many other tree species The accidentally-created clearcuts also provide opportunities to study secondary succession

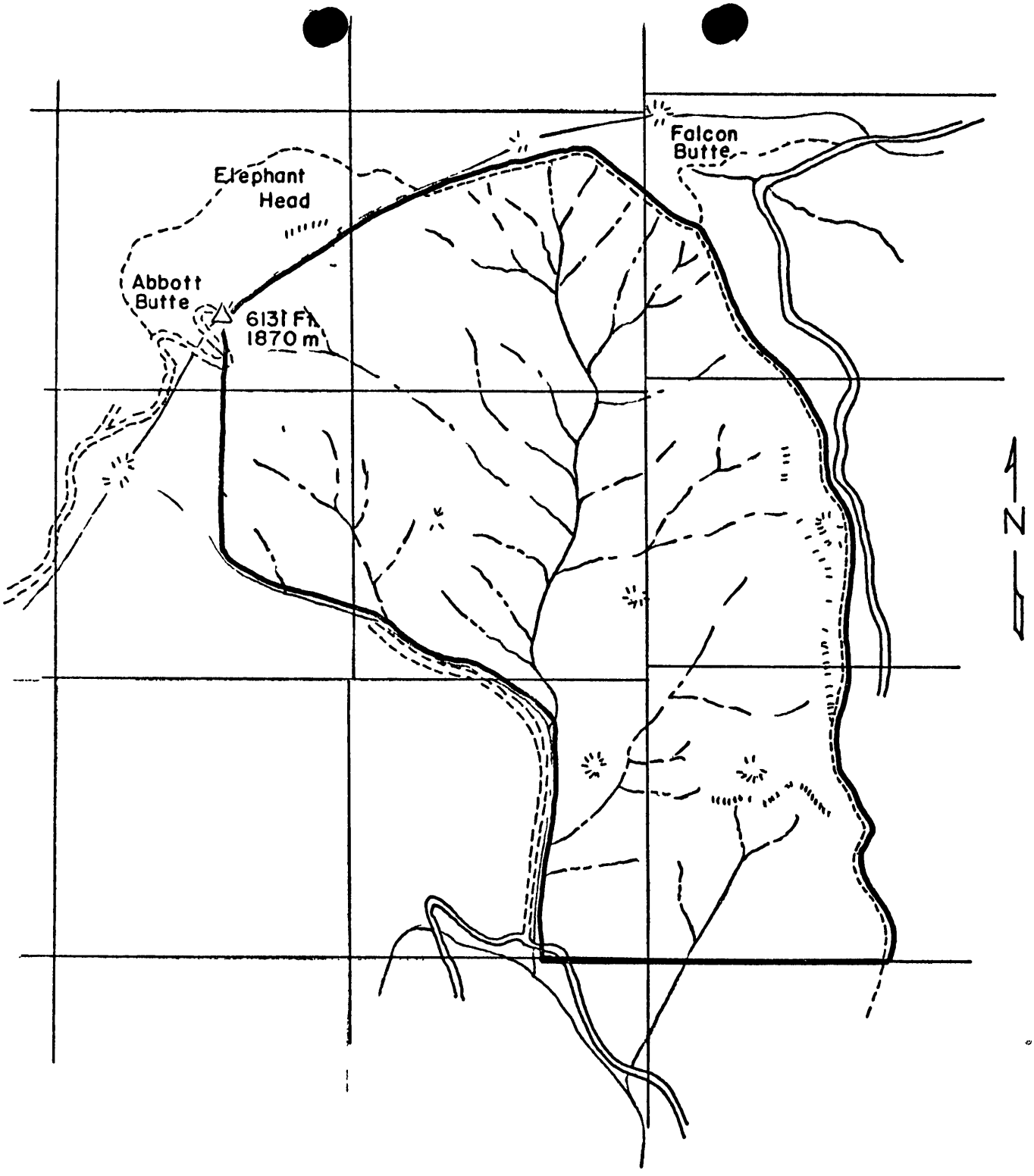
Maps and Aerial Photographs

Special maps applicable to the natural area include Topography--15' Abbott Butte, Oregon quadrangle, scale 1 62,500 issued by the U S Geological Survey in 1944, and geology--Geologic Map of Oregon West of the 121st Meridian, scale 1 500,000 (Peck 1961) Either the District Ranger (Prospect Ranger District) or Forest Supervisor (Rogue River National Forest, Medford, Oregon) can provide details on the most recent aerial photo coverage of the area

Figure Captions

Figure AC-1 --Abbott Creek Research Natural Area, Jackson and Douglas Counties, Oregon

Figure AC-2 --Natural Features of Abbott Creek Research Natural Area Upper left Looking north over the northwestern quarter of the natural area from a rocky promotory in Section 31, all the area visible is within the natural area Upper right Typical old-growth specimen of sugar pine, a species well represented in the natural area Center left Community of *Arctostaphylos nevadensis* and *Ceanothus prostratus* growing on an open scree slope Lower left Typical south slope stand of Douglas-fir, incense cedar and scattered sugar pine Lower right Forest opening occupied by reproduction of Douglas-fir and sugar pine, frequent openings of this type provide sites for reproduction of less shade-tolerant tree species



LEGEND

BOUNDARY, ABBOTT CREEK RESEARCH NATURAL AREA

SECTION LINE

STREAM

RIDGE LINE

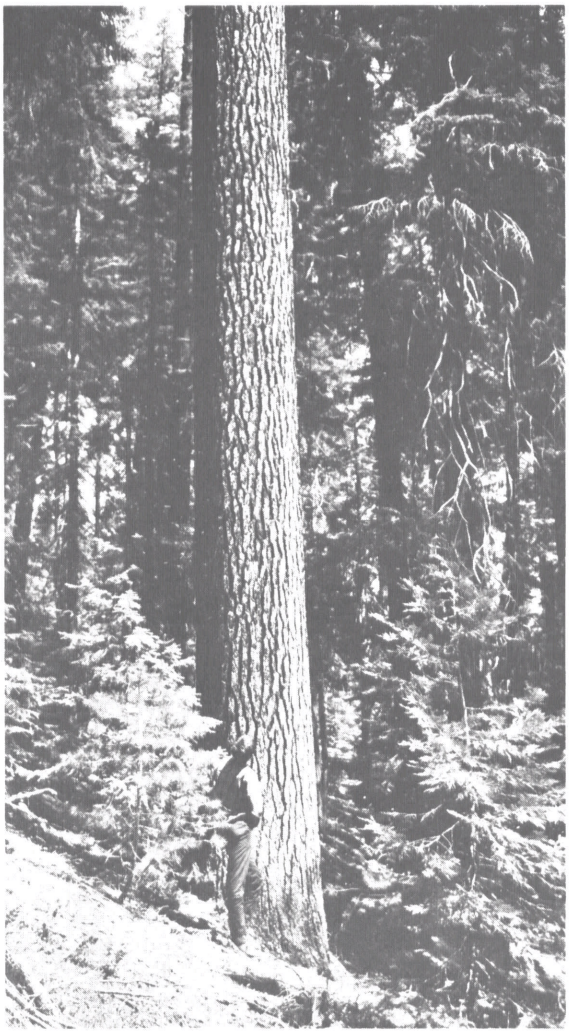
GOOD ROAD

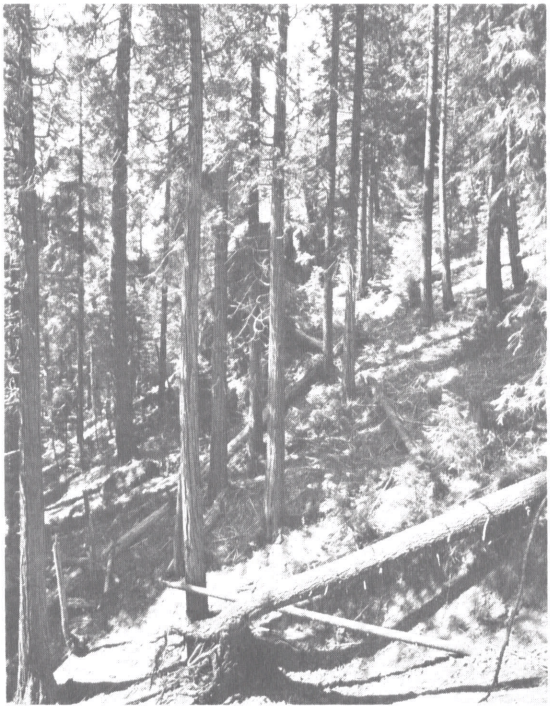
POOR ROAD

TRAIL

0 1/4 1/2 1 Mi

0 1/2 1 2 Km.





Rod Mitchell

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Vegetation of the Abbott Creek Research Natural Area, Oregon

Abstract

This study identifies the different forest communities present in Abbott Creek Natural Area Oregon It also describes the floristic composition of each community type and comments on the relative relationships of the communities The five forest community types described are *Abies magnifica Abies concolor/Ribes* spp *Abies concolor Tsuga Heterophylla/Acer circinatum Taxus brevifolia Abies concolor/Linnaea borealis Abies concolor Pseudotsuga menziesii/Whipplea modesta* and *Pseudotsuga menziesii Libocedrus decurrens/Arctostaphylos nevadensis* To accomplish the above objectives 124 reconnaissance and eleven analytical sample plots were taken These data were analyzed using SIMORD a two dimensional ordination procedure

Introduction

This paper gives the results of vegetation classification studies in the Abbott Creek Natural Area located about 29 km (18 mi) west of Crater Lake in southwestern Oregon Interest in this area stems from a report by H J Andrews (1946) who noticed that special features of this area are the volume and stands of sugar pine (*Pinus lambertiana*) As characteristic of these stands this volume is mainly in the large diameter classes 50 to 60 inches and over thus presenting a truly optimum stand of Southern Oregon sugar pine Andrews also stated that reproduction and advanced growth of the sugar pine was of general occurrence in the natural area When we revisited here some 25 years after Andrews report we were impressed by the complexity of forest communities and by the heavy reproduction of white fir (*Abies concolor*) which on most sites appeared to be the climax tree

The forest communities of the upper drainage basin of the East Fork of Abbott Creek are quite different from those described from other regions of the Western Cascade Province (Franklin and Dyrness 1969) The forest types in the Abbott Creek area however are within the *Abies concolor* and *Abies magnifica shastensis* zones The only vegetation studies in these zones are those of Whittaker (1960) and Waring (1969) in the Siskiyou Mountains where the community types are quite different Therefore the description of habitats plant communities and tree successional relationships at Abbott Creek Natural Area contributes to our knowledge of the natural vegetation of the Cascade Range

We also began these studies for purposes of stratifying the vegetation of this research natural area and initiating a measurement system and baseline documentation within each community type for future comparisons and additional scientific research (Moir 1972)

Study Area

Abbott Creek Natural Area is located 19 km (12 mi) west of Crater Lake National Park in the Rogue River National Forest of southern Oregon (Fig. 1). Its boundaries enclose parts of Douglas and Jackson counties and the total area is 1076 hectares (2660 a).

The western border of the natural area is defined by the main branch of Abbott Creek and is the location of easiest access to major portions of the area. An unmaintained logging road parallels the more southerly half. This road is easily accessible from US Highway 26 via forest road 3047. The northern border is defined by a ridge which divides the Rogue and Umpqua River drainages. The main access to this border is via Abbott Butte fire lookout which is serviced by forest road 2923 and the remnants of a trail which follows this ridge. The eastern edge of the area follows the Colden Stairs Trail for the most part which is accessible at its southern end by forest road 3017 and by forest road 3016 at a more northerly point. The southern border is short and is accessible from forest road 3017. There are no trails or roads within the area the major topographic features of which are shown in Figure 2.

Physiography and Geology

Three drainages make up the major portion of the area with the northernmost containing almost half of the total acreage. The general topography is quite rugged with much of the area consisting of slopes of 25 percent or more. There are some portions of gentle to almost no relief along the western edge of the area near Abbott Creek and some benches at high elevations below Abbott Butte. Many of the ridges between and along the borders of drainages contain rock outcroppings with little vegetation.

The highest point in the area is Abbott Butte elevation 1869 m (6131 ft). Io

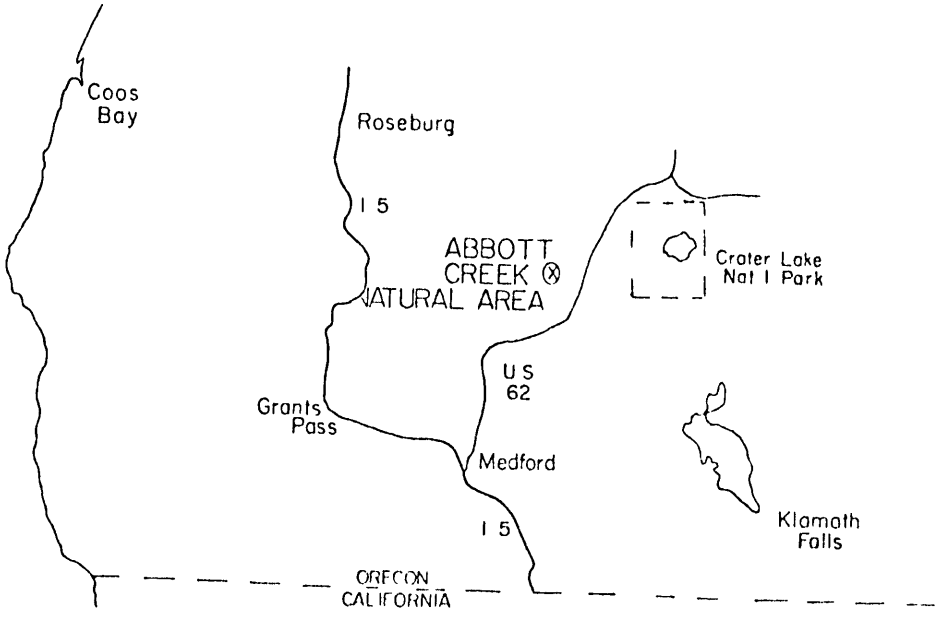

Figure 1. Location of Abbott Creek Natural Area.

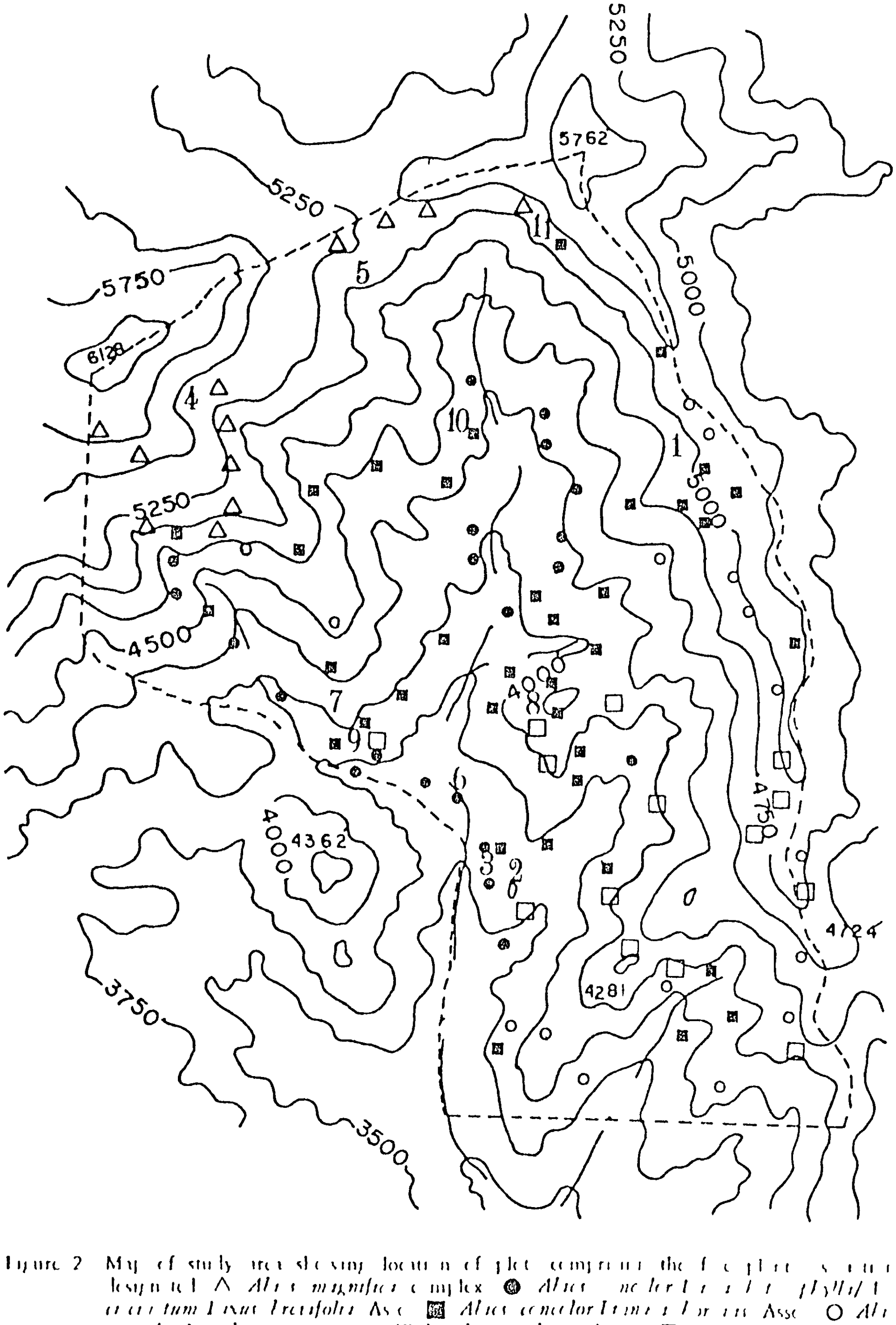

Figure 2. Map of study area showing location of plots comprising the five plant associations designated: △ *Abies magnifica* complex; ◉ *Abies concolor/*[illegible]*/*[illegible]*tum/Taxus brevifolia* Asso.; ▣ *Abies concolor/*[illegible] Asso.; ○ *Abies concolor/Pseudotsuga menziesii/Whipplea modesta* Asso.; □ *Pseudotsuga menziesii/Calocedrus decurrens/Arctostaphylos nevadensis* Asso.

cated in the northwestern corner. The crest of the ridge that parallels the northern border and much of the crest of the ridge paralleling the eastern border are above 1524 m (5000 ft). The southwestern corner is the lowest point at about 1006 m (3300 ft).

Geologically the entire area is volcanic in origin. The soil of the natural area is described as belonging to the Freezener-Coyote soil series (Power and Simonson 1969). Typically these soils are deep and well drained with dark reddish brown friable loam surface layers and clay loam moderately blocky subsoils. Rock fragments range in abundance from 0 to 30 percent or more by volume. The soils are moderately acid in reaction.

Climate

The climate in the natural area is characterized as modified maritime. Most of the precipitation is a result of low pressure systems which move eastward across western Oregon from the Pacific Ocean. During the summer this dominant climatic feature is modified by high pressure systems which shift fronts northward resulting in clear dry weather. This phenomenon results in cool wet winters and warm dry summers.

Methods

During the summer of 1971 the forest vegetation was sampled by reconnaissance plots (Franklin, Dyrness, and Moir 1970) and five forest classification units were distinguished (Mitchell 1972). In the summer of 1972 permanent additional plots were established within each of these types. These plots were 25 x 15 m. All trees within the plots were tallied by species and size class. Understory vegetation was measured by canopy coverage class in each of fifty 2 x 5 dm quadrats systematically placed along two 25 m strips within the plot (Daubenmire 1968, p. 17 ff. and figs. 13 & 26). All vascular plants in each of the quadrats were measured either in early (June-July) or late (August) summer to insure that each species was observed near its time of maximum foliage. Species not in the quadrats but occurring inside the 25 x 15 m plot were recorded for constance; species of the homogeneous vegetation just outside the plot were recorded for presence.

The plant names (Peck 1961) of this study are based upon voucher specimens deposited in herbaria at Oregon State University and the U.S. Forest Service at Fort Collins, Colorado.

Permanently marked camera locations were established at each of the 25 x 15 m plots. Here photographs were taken of the existing vegetation within (and sometimes in the vicinity of) the plots.

Data from both reconnaissance and permanent plot samples were analyzed by similarity and ordination procedures using SIMORD, a reference stand ordination technique (Dick-Peddie and Moir 1970). We selected reference plots used to define the X and Y axes of the ordination from among the reconnaissance plots that represented in our judgment typical and distinctive environments. After several trials of reference plot selection, the resultant ordination distributed the plots in what we considered to be a realistic pattern (Mitchell 1972 and discussion below). The arrangement of the plots on the ordination plane together with synecological and physical site data (*e.g.* slope, exposure, elevation, landform) not used in ordination were all criteria

which aided us in the definition of the major forest types (Franklin, Dyrness and Moir 1970; Daubenmire 1968).

The vegetation of several herbaceous communities along the Golden Stairs Trail was sampled by systematic location of 25 2 x 5 dm quadrats along a line within each homogeneous vegetation type. The vascular plants in each quadrat were estimated by canopy coverage class in the manner similar to the understory vegetation of the forest plots. The 25 m line in each community is permanently marked by stakes at each end. The measurements were taken the third week of June 1972.

Results

From the analysis of the original reconnaissance data, five forest community types were designated (Table 1) and named according to their major overstory and understory indicators.

When both the reconnaissance and analytical plots (Fig. 2) were subjected to the SIMORD program, the two dimensional ordination pattern depicted in Figure 3 resulted. It can be seen that the plots designated as belonging to the same community type tended to group with each other and that the analytical plots chosen to represent each group fell well within the borders of their specific groups.

One factor of great importance to the designation of overstory indicators was their position in the successional sequence of a given community type. To evaluate this factor, the age structure of these overstory species was determined in each plot (Fig. 4). Of the major overstory species evaluated, *Pseudotsuga menziesii* was unique in that a

TABLE 1. Some major characteristics of the forest communities at Abbott Creek. The asterisk indicates distinguishing features.

CLASSIFICATION TYPE	TREE SPECIES Climax	Late Seral	UNDERSTORY VEGETATION Total Cover (PERCENT)	Evergreen (PERCENT)	Major Species
Abies magnifica Complex	Abma (Psme)	Abco	90 100+	3 10	[illegible] *Achlys triphylla* *Rubus parviflora* *Bromus vulgaris*
Abies concolor-Tsuga heterophylla/Acer circinatum-Taxus brevifolia Association	Abco Tshe	Psme	90 100+	15 70	*Acer circinatum* *Taxus brevifolia* *Vaccinium membranaceum* *Linnaea borealis*
Rhododendron Phase	Abco Tshe	Psme	90 100+	50+	[illegible] *macrocarpum*
Abies concolor/Linnaea borealis Association	Abco (Tshe)	Psme Lide	60 90	60	*Linnaea borealis* *Castanopsis chrysophylla* (shrub)
Whipplea modesta Phase	Abco Lide	Psme	20 75		[illegible] *Linnaea borealis*
Abies concolor-Pseudotsuga/Whipplea modesta Association	Abco Lide	Psme	0 20	0 30	*Whipplea modesta* *Castanopsis chrysophylla*
Pseudotsuga-Libocedrus/Arctostaphylos nevadensis Association	Psme Lide	Pila	10 40	40 60	*Arctostaphylos nevadensis* *Ceanothus prostratus*
Castanopsis chrysophylla Phase	Psme Abco	Lide Pila	30 50	60	*Castanopsis chrysophylla* (tree) *Arctostaphylos nevadensis*

majority of the stands contained old dominant individuals but no younger individuals In essence *Pseudotsuga menziesii* is not reproducing itself in older stands (probably due to its relatively low shade tolerance) and represents a late seral stage species *Abies concolor* and to a lesser extent *Libocedrus decurrens* by contrast were repre

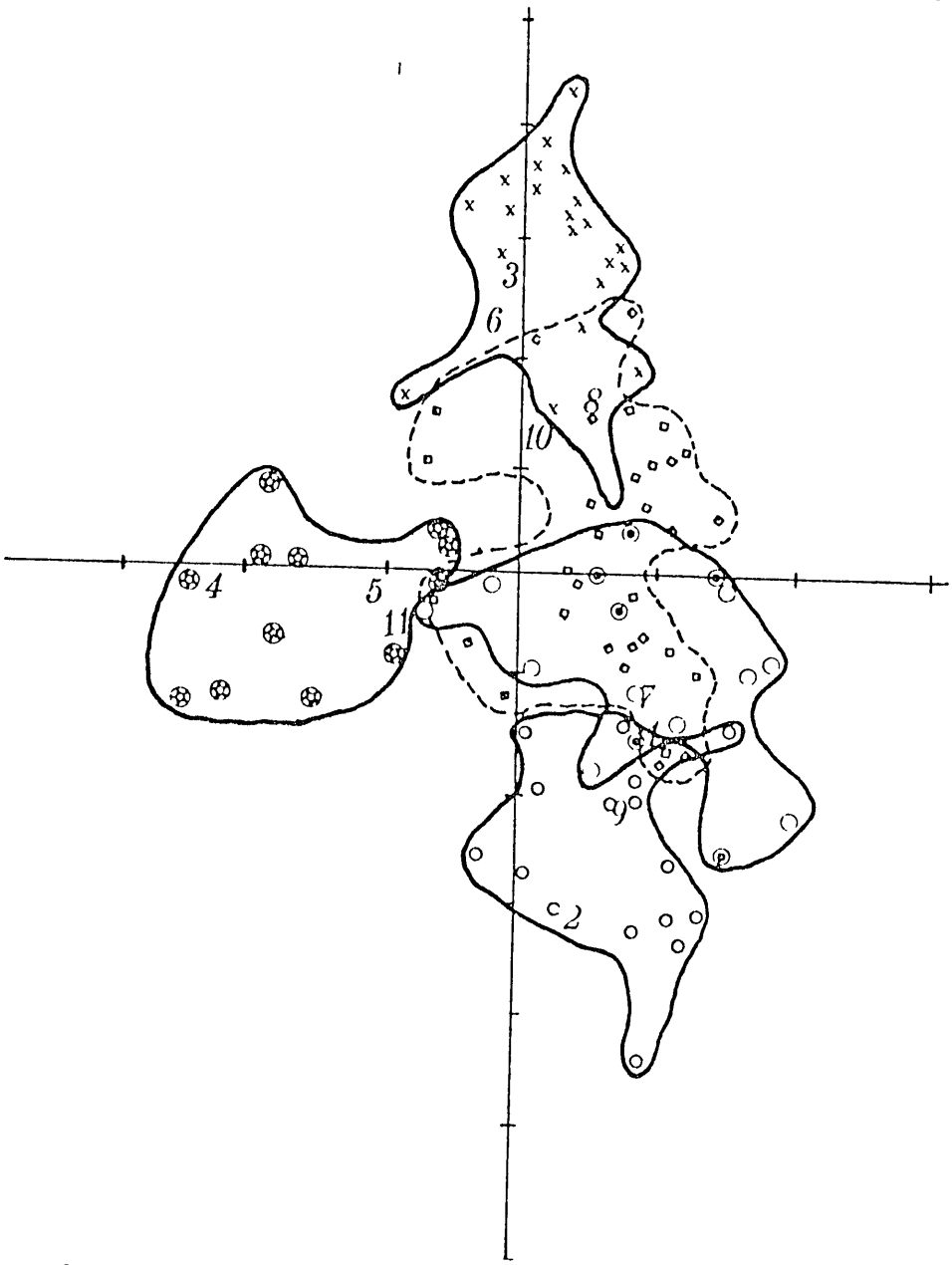

Figure 3 Two dimensional ordination of forest plots of the Abbott Creek Natural Area All symbols complex X *Abies concolor Lithocarpus densiflorus/Arctostaphylos* Assn [] *Abies concolor Linnaea borealis* Assn O *Abies concolor Pseudotsuga menziesii/Whipplea modesta* Assn O *Pseudotsuga menziesii Libocedrus decurrens/Arctostaphylos nevadensis* Assn

entirely absent. Trees in the stands in which they occur and might be considered dominant climax species. However, a climax situation in an area such as Abbott Creek may not be a real situation. Due to the periodic fires which occur and the opening of the forest by fallen trees *Pseudotsuga menziesii* may be able to compete successfully and remain the permanent dominant overstory species.

The Vegetation Types

1. The *Abies magnifica* complex is the most extensive in the northwest corner of the natural area below Abbott Butte and Elephant Head. A variety of contrasting, high elevation forest and open meadow communities occur here and in the vicinity of Falcon Butte. The present forests invariably feature *Abies magnifica* in reproductive stages of the understory. The associated climax tree species vary according to local habitat differences. In plots 4 and 5 *Abies concolor* has strong reproduction and is either a late seral species or shares climax status with *Abies magnifica*. Large specimens of *Libocedrus decurrens* as well as its prominence as an early meadow invader indicate the seral nature of this species. Plots 4 and 5 occur on southeast facing exposures of moderate and steep slopes respectively. Plot 11 on steep southwest facing slopes also has abundant reproduction of *Abies concolor* in both young and advanced size classes (Fig. 5). On cool wet sites sheltered by the cliffs of Elephant Head *Tsuga mertensiana* exhibits abundant young and advanced regeneration with *Abies concolor* absent or accidental. Elsewhere almost level benches feature very large *Abies magnifica* and rich herb and shrub understories.

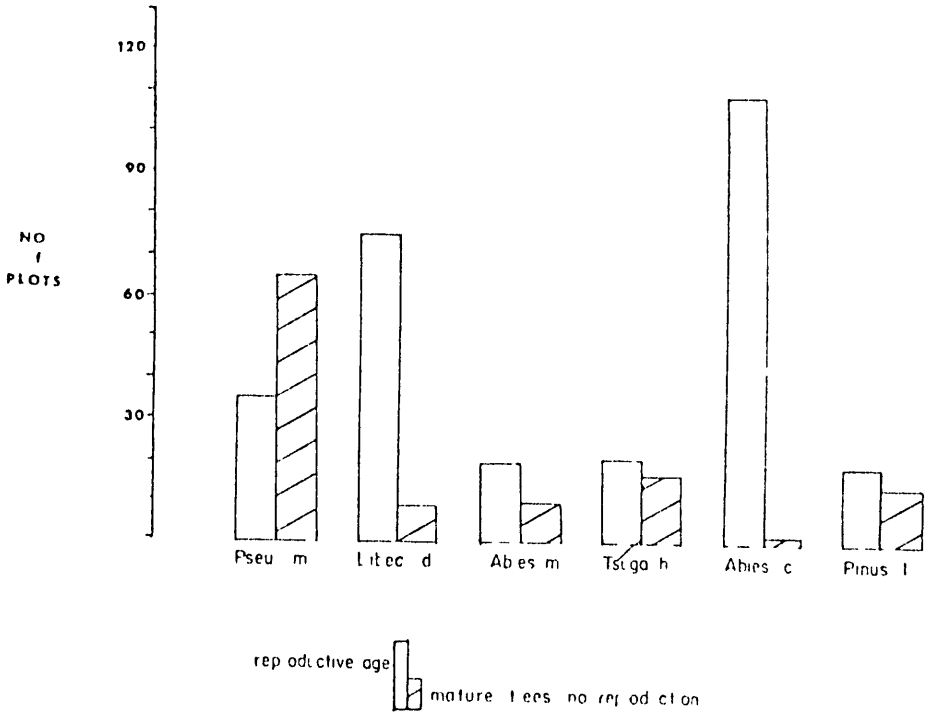

Figure 4. Reproductive and mature tree classes of selected tree species.

Figure 5. Rich understory vegetation dominated by *Rubus parviflorus* and *Ribes* [illegible] in plot 11 of the high elevation *Abies magnifica-Abies concolor/Ribes* spp. complex.

The *Abies magnifica* complex is floristically quite distinct from remaining forest types of Abbott Creek drainage (Table 2). Species such as *Ribes binominatum*, *Rubus lasiococcus*, *Erigeron aliceae*, *Rubus parviflorus*, *Galium oreganum* and *Actaea rubra* are generally limited to this high elevation complex; those such as *Adenocaulon bicolor*, *Osmorhiza chilensis*, *Montia sibirica*, *Circaea alpina*, *Vancouveria hexandra*, *Ribes viscosissimum* and *Bromus vulgaris* may achieve their greatest cover or density.

In each of the plots of Figure 4 within this complex the total coverage of understory herbs and shrubs is very high, averaging well over 80 percent. *Ribes binominatum*, *Vicia americana*, *Smilacina sessilifolia*, *Galium oreganum* and *Bromus vulgaris* all have over 5 percent canopy coverage in plot 1; *Adenocaulon bicolor*, *Achlys triphylla* and *Vancouveria hexandra* in plot 5; and *Rubus parviflorus*, *Ribes* [illegible], *Achlys* and *V. hexandra* in plot 11 also each have cover values between 7-80 percent. It is noteworthy that the numerous understory species in these plots are mostly decidu-

TABLE 2. List of understory species from permanent plots by percent cover. + Indicate presence of species in the plot at less than one percent cover.

	Abies magnifica Complex			*Abies concolor*/*Tsuga heterophylla*/*Acer circinatum*/*Taxus brevifolia*		*concolor*/*Linnaea borealis*		*Abies concolor*/*Pseudotsuga menziesii*/*Whipplea modesta*		*Pseudotsuga menziesii*/*Libocedrus decurrens*/*Arctostaphylos nevadensis*	
Plot Numbers	4	5	11	3	6	8	10	1	7	2	9
Shrubs Deciduous											
Ribes viscosissimum	3										
Ribes binominatum	16	4	1								
Rosa gymnocarpa	+	2		1	1		+	+	+	+	
Corylus cornuta		3	+		+	+	2		+		
Acer circinatum				14	74						
Vaccinium membranaceum				7	+	6	+				
Symphoricarpos mollis				2	1			+		+	
Shrubs Evergreen											
Taxus brevifolia				40	4		2				
Berberis nervosa		3		5	+	6		+	2	+	
Pachystima myrsinites				2	2	1	+		+		+
Castanopsis chrysophylla				+	+	8	+		+	1	+
Gaultheria ovatifolia				+		3					
Rubus nivalis							10				
Arctostaphylos nevadensis										15	13
Ceanothus prostratus										10	+
Garrya fremontii								+		2	
Suffrutescent Deciduous											
Rubus ursinus		4	30	3	3	1	8	+	+		
Suffrutescent Evergreen											
Linnaea borealis				5	8	12	25				
Chimaphila umbellata	1	+	3	1	2	5	13		1	1	+
Pyrola secunda						+	1				
Forbs											
Rubus parviflorus	+	+	27	+							
[illegible] unculatum	2		7				1				
[illegible] bicolor	1	17	4		+			1	+		
M[illegible]	1	3									
Smilacina sessilifolia	12	1	3	1							
Osmorhiza chilensis	3	4	1		+				+		
C[illegible]	4	6	2		+				+	+	
Vi[illegible]	23	5	6	+	+	+		+		1	
[illegible]	3										
C[illegible]	9										
Galium triflorum	2	1	2		+		+				
[illegible] hexandra	1	7	7	1	+		1				
[illegible]	7			+			1				
[illegible] microphylla	3	2	1			+		1	+	1	+
Hieracium albiflorum	2	2	+	+		+	+	+	+	+	+
Trientalis latifolia	+	5	+	+	+	1	2	+	+	1	+
Trillium ovatum	+	1	+	+	+	1	+				
Anemone deltoidea		2	1	1	1	+	+				
D[illegible]				2							
Disporum hookeri		+	+	+	+	1	+	+	+		+
[illegible] phylla		1		+	+		+	+	1		
Clintonia uniflora				+		1	1				
[illegible]		+						+			
S[illegible]					1					+	
Whipplea modesta				2	+	4	9	1	[illegible]	8	+

ous and that the evergreen life form is very poorly represented This suggests that low winter temperatures are more critical than seasonal summer drought in the survival of understory species (e g Mooney and Dunn 1970 Mooney 1969)

2 Plots 3 and 6 belong to the *Abies concolor Tsuga heterophylla/Acer circinatum Taxus brevifolia* association Stands of this association are almost exclusively located in or near the bottom of major drainages usually those with permanent streams The overstory generally contains large *Pseudotsuga menziesii Pinus lambertiana* and less often *P monticola* The presence of all reproductive size classes of *Abies concolor* indicates this to be a climax tree *Tsuga heterophylla* is the second climax species its reproductive abundance is especially evident in plot 3 but scattered individuals of young or advanced regeneration are evident nearly throughout this valley bottom habitat

The tall shrub layer is extensive and well developed Both *Acer circinatum* and *Taxus brevifolia* may dominate either singly or in combination (Fig 6) Other tall shrubs (or low trees) of this understory stratum are *Corylus cornuta Cornus nuttallii* and *Castanopsis chrysophylla* Lower understory strata may have *Vaccinium membranaceum Pachistima myrsinites Linnaea borealis Achlys triphylla* and *Berberis nervosa* as major species Evergreens comprise 16 69 percent of the understory (depending mostly on relative proportions of *Acer* and *Taxus*) with nine evergreen species occurring in the two plots

3 The *Abies concolor/Linnaea borealis* association is represented by plots 8 and 10 These plots occur on mesic lower slopes of northerly or easterly exposure adjacent to the drainages supporting vegetation of the above association Stands of the *Abies concolor/Linnaea borealis* association are found on mesic slopes and draws and are very common in the East Fork Abbott Creek drainages *Abies concolor* is the sole climax tree on most sites (Fig 7) although occasional *Tsuga heterophylla* are present in draws and *Abies magnifica* is an accidental *Pseudotsuga menziesii* and *Libocedrus decurrens* contribute to the reproduction in minor quantities on drier or more open forest conditions The total understory cover of plots 8 and 10 is quite high (59 and 86% respectively) and rich in evergreen constituents Major species are shrubby *Castanopsis chrysophylla* and low shrubby or suffrutescent evergreens including *Linnaea borealis Chimaphila umbellata Pachistima myrsinites Rubus nivalis Gaultheria ovatifolia* and *Viola sempervirens* The well expressed understory vegetation is a feature of this community it contrasts with the drier *Abies concolor Pseudotsuga menziesii/Whipplea modesta* community discussed below However a tall shrub stratum of *Acer circinatum Taxus brevifolia Cornus nuttallii* and others is not nearly as continuous and conspicuous as in the *Abies concolor Tsuga heterophylla/Acer Taxus* comunity Nevertheless several important species are shared between these two community types including *Vaccinium membranaceum Linnaea borealis* and *Tsuga heterophylla* The *Abies concolor/Linnaea borealis* association also has some floristic similarity to the high elevation *Abies magnifica* complex including high canopy coverage of *Achlys triphylla/Trientalis latifolia* an infrequent *Abies magnifica* in the forest reproduction and the presence of such species as *Arnica cordifolia* and *Pedicularis racemosa* in both types

On slightly drier sites such as upper draws or easterly or northerly mid slopes the understory vegetation decreases *Linnaea borealis* or other evergreen species may be subdominant minor or absent Total ground cover may decline to as low as about

Figure 6. View into plot 6 showing typical *Acer circinatum* dominated tall shrub layer of the *Abies concolor/Tsuga heterophylla/Acer circinatum-Taxus brevifolia* community type.

20 percent. *Abies concolor* continues to be the sole climax tree for *Tsuga heterophylla* is absent and *Pseudotsuga menziesii* is uncommon in the competing reproduction of *Abies*. We recognize this variation of the *Abies concolor/Linnaea borealis* association as the *Whipplea modesta* phase for this species often becomes one of the major dominants of the reduced understory flora.

The contribution of evergreen species (about 60% of the understory cover in plots 8 and 10) in many sites of the *Abies concolor/Linnaea borealis* association suggests a higher evergreen understory component than is found on sites of the *Abies magnifica* complex (Mooney and Dunn 1970, Mooney 1969).

The *Abies concolor-Pseudotsuga menziesii/Whipplea modesta* association is characterized by the presence often in appreciable number of *Pseudotsuga menziesii* and *Libocedrus decurrens* as persistent late seral or co-climax species. Plots 1 and 7 exhibit all sizes of *Pseudotsuga menziesii* in reproduction (Fig. 8). Another distinc

Figure 7. All sizes of *Abies concolor* are found in plot 10 of the *Abies concolor/Linnaea borealis* community type. Ground vegetation here consists of *Linnaea borealis*, *Chimaphila umbellata*, *Rubus nivalis*, *Rubus ursinus* and *Whipplea modesta*. Note lack of any well developed tall shrub layer.

tion of this community type is the sparseness of the understory (1 and 11% total cover in respective plots 1 and 7). Shrubs (*Castanopsis chrysophylla*, *Amelanchier florida*, *Garrya fremontii* and others) are only occasional or infrequent; the herb layer, mostly dominated by *Whipplea modesta* or *Iris chrysophylla* in patches, is sporadic and weakly expressed by low density populations. *Linnaea borealis* is absent or minor. The lack of any significant understory cover results from the buildup and accumulation of coniferous litter.

Stands of the *Abies concolor-Pseudotsuga menziesii/Whipplea modesta* community type are found on comparatively dry sites such as upper or midslopes of south facing exposures or west facing slopes near crests and ridges at various elevations. The soils are often shallow and stony but have moderately developed A1 horizons. The stands often border those of the *Abies concolor/Linnaea borealis* community type in more mesic

Figure 8 Young regeneration of abundant *Pseudotsuga menziesii* and *Abies concolor* under a canopy of mature *Pseudotsuga menziesii* and *Libocedrus decurrens* in plot 1 on a high elevation east facing steep slope. The sparse understory exhibits *Whipplea modesta* in patches (*Abies concolor/Pseudotsuga menziesii/Whipplea modesta* community type)

areas and those of the *Pseudotsuga menziesii-Abies concolor/Arctostaphylos nevadensis* or *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* community types in drier sites.

5. The *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* association is represented by plots 2 and 9 located on shallow lithosols near ridge tops. *Abies concolor* is absent or minor; instead *Pseudotsuga menziesii* and *Libocedrus decurrens* are the edaphic climax species. The forest is open which may account for the presence here of *Pinus lambertiana* as a late seral species. *Pinus ponderosa* is represented in mature and advanced reproductive size classes. The understory features mats of *Arctostaphylos nevadensis* and *Ceanothus prostratus* which may be quite extensive (Fig. 9). On the surface of rock slabs the crustose lichens *Lecidea atrobrunnea* and *Rhizocarpon geographicum* are conspicuous.

Figure 6. View into plot 2. *Arctostaphylos nevadensis* dominates the ground layer and the forest is characteristically open or semi-open.

On somewhat more developed soils this habitat has more *Abies concolor* reproduction. Also the understory tree stratum includes significant amounts of *Castanopsis chrysophylla* and *Arbutus menziesii*. We recognize this as the *Castanopsis* phase of the *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* association.

This forest habitat is the driest and subjected to the most severe summer drought intensities. Many species (e.g. *Arctostaphylos nevadensis, Ceanothus prostratus, Carex fremontii*) are evergreen sclerophylls.

The relative position of the different community types on the ordination is significant in that it supports vegetative and topographic observations made in the field. The original or X ordination divides the plots into two groups. The first, which consists of the *Abies magnifica-Abies concolor/Libocedrus* spp. plots, is associated with the *Abies magnifica* var. *shastensis* zone (Dennis 1959, Whittaker 1960, Franklin and Dyrness 1969). The second group consists of the other four community types described and is associated with the Mixed Conifer zone (Dennis 1959, Waring 1969, Franklin and Dyrness 1969).

The uniqueness of the *Abies magnifica-Abies concolor/Libocedrus* spp. community type can be attributed mainly to its location at higher elevations. All of the plots in this group are located above 5000 ft. The high elevation has a snow pack that in many instances has not melted until July. This factor is a major cause for the presence of

many species not found in the other community types and absence of other species found in these community types

The Y axis tends to separate the four community types associated with the Mixed Conifer zone along a moisture gradient A similar moisture gradient has been described in other mixed conifer or montane type forested areas of southwestern Oregon (Waring 1969 Whittaker 1960 West 1966) These gradients have been designated as toporaphic moisture gradients with the more mesic sites being found in ravines and sheltered areas while the more xeric are found on open southwest facing slopes The site locations along the gradient associated with the Y axis have a similar distribution At many location it is possible to pass down slope from an *Abies concolor Pseudotsuga menziesii/Whipplea modesta* or *Pseudotsuga menziesii Libocedrus decurrens/Arctostaphylos nevadensis* community type into an *Abies concolor/Linnaea borealis* and then an *Abies concolor Lonicera hetcrophylla/Acer circinatum Taxus brevifolia* community type However caution must be used in such generalizations The community types infrequently extend uninterrupted over great expanses of the natural area This fact coupled with the rugged topography would make the assembling of a community type map quite a formidable task

TABLE 3 Key to the forest communities of the East Fork Abbott Creek Drainage Abbott Creek Research Natural Area

1	*Abies magnifica* in reproductive strata 2	
1	*Abies magnifica* reproduction absent 3	
2	*Tsuga mertensiana* or *Ribes binominatum* present	ABMA Complex
2	*Tsuga mertensiana* and *Ribes binominatum* both absent 3	
3	*Acer circinatum* and/or *Taxus brevifolia* collectively over 10% cover	ABCO TSHE/ ACCI TABR Association
3	Acer and Taxus both minor or absent 4	
4	*Linnaea borealis* over 10% cover	ABCO/LIBO Association
4	*Linnaea borealis* less than 10% cover 5	
5	*Pseudotsuga menziesii* absent in young regeneration	ABCO/LIBO WHMO Phase
5	*Pseudotsuga* present in young regeneration 6	
6	Total understory cover less than 15% and *Whipplea modesta* the most important species	ABCO PSMI/WHMO Association
6	Total understory cover often over 15% with or without *Whipplea modesta* as a major species 7	
7	*Arctostaphylos nevadensis* absent or minor	ABCO/LIBO WHMO Phase
7	*Arctostaphylos nevadensis* dominant or codominant 8	
8	*Abies concolor* over 20% reproduction *Arbutus menziesii* often present	PSMI LIDI/ ARNI *Castanopsis* Phase
8	*Abies concolor* minor or absent	PSMI LIDI ARNI Association

Conclusions

1 Over most of Abbott Creek Natural Area the forests will eventually be dominated by *Abies concolor* whose dense reproduction is already apparent At high elevations *A magnifica shastensis* may share climax status with *A concolor* or replace it on cooler wetter sites Sugar pine is a late seral species only on drier sites at lower elevations and under present trends will become only a minor tree in the area The forest openings necessary for successful establishment of this and other seral species were probably brought about by fire The role of fire in natural area management at Ab

bott Creek needs to be given more attention if the seral forests are to be maintained or reestablished. Natural fire boundaries exist along the high ridge to the east and in the form of mesic forb communities along the divide at the north boundary.

2. The *Abies concolor/Tsuga heterophylla/Acer circinatum/Taxus brevifolia* community has high floristic similarity to several forest types of the western hemlock zone in the western Cascade Range of central Oregon (Dyrness, Franklin and Moir 1972; Hawk 1972). However, the remaining forest types at Abbott Creek Research Natural Area are more similar to California Sierran forests. While these types contain important Cascadian floristic elements, they nevertheless are clearly of the *Abies concolor* and *Abies magnifica shastensis* zones as described by Franklin and Dyrness (1969). The dominance of such evergreen sclerophyll taxa as *Ceanothus*, *Arctostaphylos*, or *Garrya* on drier habitats or in seral stands is suggestive of a Mediterranean type climate (mild wet winters and hot droughty summers) in the Cascade Range of southern Oregon.

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1 Abbott Creek Research Natural Area Forest opening occupied by reproduction of Douglas-fir and sugar pine, frequent openings of this type in this Sierran-type mixed conifer forest provide sites for reproduction of less shade-tolerant tree species FS, Oregon

R-6

ABBOTT CREEK RESEARCH NATURAL AREA, ROGUE RIVER NATIONAL FOREST, OREGON

R-6

1. General view of the upper part of the natural area which is dominated by mixed conifer forests of Douglas-fir, [redacted], sugar pine, incense-cedar, grand fir, and ponderosa pine

2 Small stand opening with dense reproduction of Douglas-fir, grand fir and sugar pine Such openings are typical of mature forests in the area and ~~provide opportunities for~~ Reorder less tolerant species to reproduce and ~~maintain themselves~~ Reorder

Order Finished _____

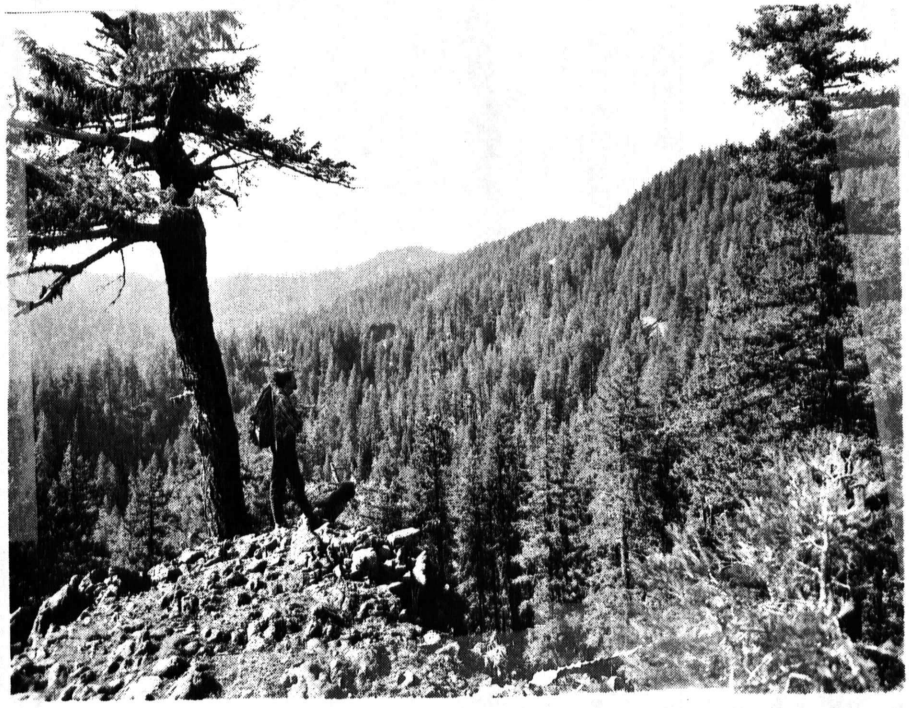
Retouched _____

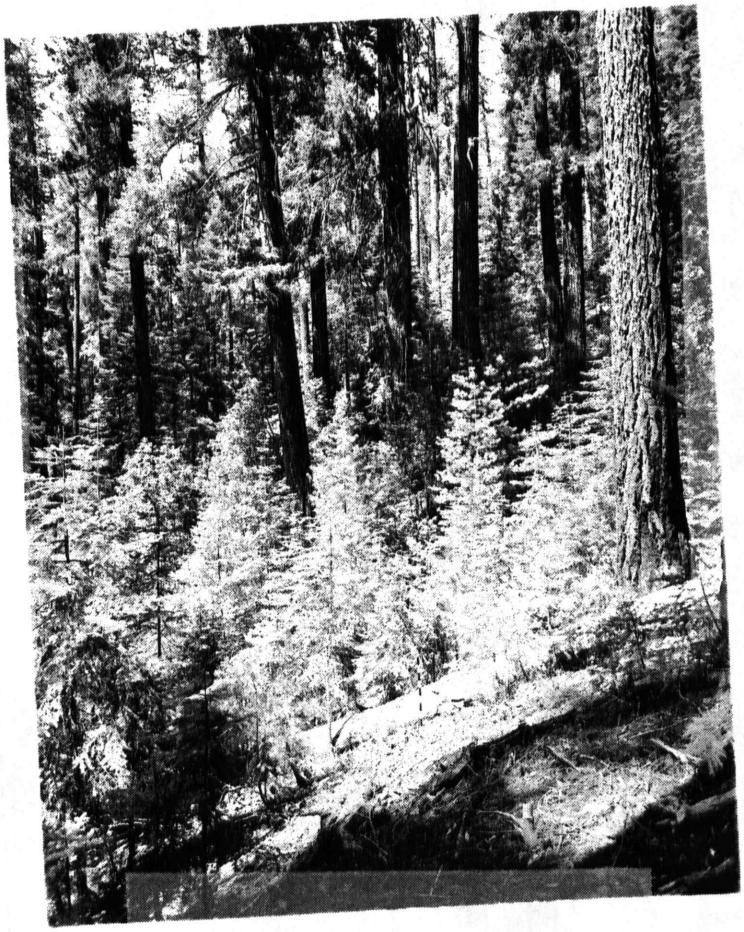
Remarks _____

Order _____

Name _____

No. _____





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A CHECKLIST OF THE VASCULAR PLANTS IN ABBOTT CREEK RESEARCH NATURAL AREA OREGON[1]

by

Rod Mitchell *Colorado Women s College Denver Colorado* ?

ABSTRACT

This paper is a checklist of 277 vascular plant taxa that have been collected or encountered in Abbott Creek Research Natural Area, Oregon a brief description of five forested and two nonforested vegetation types is included

KEYWORDS Vascular plants, checklists (vascular plants), Oregon (Abbott Creek Research Natural Area)

INTRODUCTION

Abbott Creek Research Natural Area is located 19 km (12 miles) west of Crater Lake National Park in the Rogue River National Forest of southern Oregon (fig 1) This Research Natural Area was established on November 18, 1946, as representative of the southwestern Oregon, Sierra-type mixed conifer forests and specifically because it contained excellent stands of sugar pine (*Pinus lambertiana*) (Franklin et al 1972) The purpose of this note is to document the vascular flora of this Research Natural Area (RNA) to aid future scientific research (Franklin 1970, Moir 1972) and to complement a previous study of forest community composition in the Research Natural Area (Mitchell and Moir 1976)

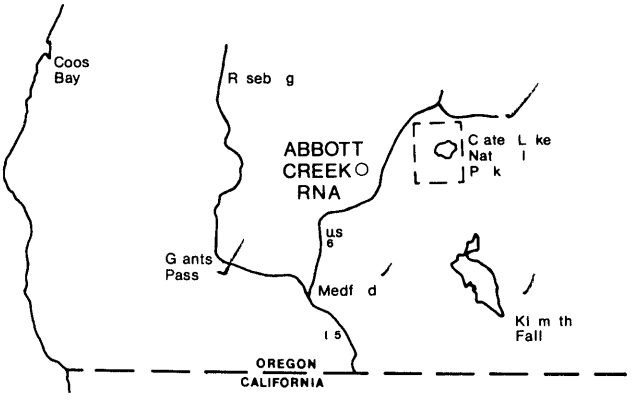

Figure 1 --Location of Abbott Creek Research Natural Area

[1]This work was supported by a contract from the Pacific Northwest Forest and Range Experiment Station and the Pacific Northwest Natural Area Committee

STUDY AREA

Abbott Creek Research Natural Area is located in Douglas and Jackson Counties, and has a total area of 1 076 ha (2,660 acres) Its western border, defined by the main branch of Abbott Creek, provides the easiest access to major portions of the area An unmaintained logging road parallels the southwestern boundary This road is reached from U S Highway 26 via Forest Road 3047 (fig 2) The northern border is defined by a ridge between the Rogue and Umpqua River drainages The main access to this ridge is via trail remnants from Abbott Butte fire lookout, served by Forest Road 2923 The eastern edge of the area generally follows the Golden Stairs Trail, accessible at its southern end by Forest Road 3017 and by Forest Road 3016 at a more northern point There are no maintained trails or roads within the RNA

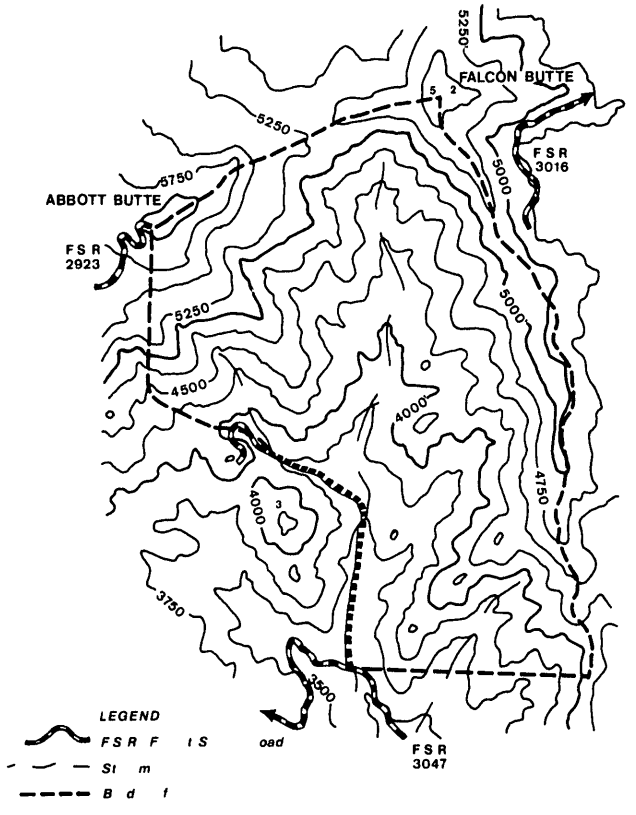

Figure 2 --Features of the Abbott Creek Research Natural Area and vicinity

Physiography and Geology

The topography is quite steep, much of the area consists of slopes of 25 percent or more Gentler terrain is found near Abbott Creek and on some high elevation benches south of Abbott Butte and between Abbott and Falcon Buttes Abbott Butte is the highest point (1 869 m, 6,128 ft) in the Research Natural Area the lowest point (1 006 m, 3,300 ft) is located in the southwest of the RNA

The entire area is volcanic in origin Soils belong to the Freezener-Coyata soil series (Power and Simonson 1969) Typically the soils are acid in reaction and well drained with dark reddish-brown, friable, loam surface layers Rock fragments range from abundant to less than 30 percent by volume

Climate

A modified maritime climate characterizes the Research Natural Area Most of the precipitation results from low pressure systems that move eastward across western Oregon from the Pacific Ocean During the summers, this dominant climatic feature is modified by high pressure systems that shift fronts northward, resulting in clear, dry weather This phenomenon results in cool, wet winters and warm, dry summers

Grazing

The Research Natural Area lies within the Woodrull Cattle and Horse Allotment and presently experiences light grazing on its eastern border [2] The USDA Forest Service has issued permits in the area since 1923 As early as the 1860's settlers used the area for grazing It can be speculated that this grazing has affected the present flora, both through the introduction of species not originally found in the area and through a disproportionate amount of foraging on some of the original species

VEGETATION TYPES

In the forested locations, 119 reconnaissance plots (Franklin et al 1970) were used to sample vegetation (Mitchell 1972) and develop a classification These included transects to determine the percentage of ground cover and frequency of understory species (Daubenmire 1968) Five major forest and two nonforested vegetation types have been recognized (Mitchell and Moir 1976) About 80 percent of the Research Natural Area is forested

1 The *Abies magnifica* vegetation type located at higher elevations in the northwest corner of the RNA is floristically distinct and belongs to the *Abies magnifica* var *shastensis* Zone (Dennis 1959, Whittaker 1960, Franklin and Dyrness 1973) The overstory consists of *Abies magnifica, Libocedrus decurrens, Abies concolor* and *Tsuga mertensiana* The understory averages over 80-percent cover and is dominated by *Adenocaulon bicolor, Bromus vulgaris, Circaea alpina, Erigeron aliceae, Montia sibirica Osmorhiza chilensis, Trientalis latifolia, Ribes viscosissimum, Rubus parviflorus Smilacina sessilifolia Vancouveria hexandra* and *Vicia americana* which occur in over 67 percent of the locations sampled The ecoclass is CR F9 (Hall 1978)

2 The *Abies concolor-Tsuga heterophylla/Acer circinatum-Taxus brevifolia* vegetation type is on the moist end of the gradient that includes the three other forested vegetation types that are part of the Mixed-Conifer Zone as it occurs in the RNA (Mitchell and Moir 1976) This vegetation type is found at the bottom of the major drainages, usually where there is a permanent streamflow *Pseudotsuga menziesii, Abies concolor, Tsuga heterophylla Pinus lambertiana* and *Pinus monticola* comprise the overstory The shrub layer is very well developed *Acer circinatum, Taxus brevifolia, Castanopsis chrysophylla, Corylus cornuta,* and *Cornus nuttallii* are the most important representatives The understory is quite dense and is dominated by *Achlys triphylla, Berberis nervosa Chimaphila umbellata, Linnaea borealis Pachystima myrsinites Trientalis latifolia, Vaccinium membranaceum,* and *Whipplea modesta,* all of which occurred in over 78 percent of the locations sampled The ecoclass is CH 32 (Hall 1978)

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[2] Walker, Gorden J , Range Technician, Prospect Ranger Station, Prospect, Oregon personal communication, 1979

3 The *Abies concolor/Linnaea borealis* vegetation type occurs on mesic slopes at lower elevations in the RNA The overstory consists of *Pseudotsuga menziesii, Abies concolor,* and *Libocedrus decurrens* The understory of this vegetation type is very well developed and is dominated by evergreen species The major understory species are *Achlys triphylla, Berberis nervosa Chimaphila umbellata, Corylus cornuta, Hieracium albiflorum, Linnaea borealis, Trientalis latifolia,* and *Whipplea modesta* which occur in over 71 percent of the locations sampled The ecoclass is CW F3 (Hall 1978)

4 The *Abies concolor-Pseudotsuga menziesii/Whipplea modesta* vegetation type is located on dry midslopes to upper slopes that face south or west The tree component is dominated by *Pseudotsuga menziesii* and *Libocedrus decurrens* The understory is poorly developed, often with less than 10-percent total cover *Castanopsis chrysophylla, Amelanchier alnifolia,* and *Garrya fremontii* occasionally provide a shrub layer *Whipplea modesta* is about the only understory plant with significant cover values in most locations *Berberis nervosa Chimaphila umbellata, Hieracium albiflorum Iris chrysophylla,* and *Trientalis latifolia* are found in 75 percent of the locations sampled The ecoclass is CW S6 (Hall 1978)

5 The *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* vegetation type is found mainly on south- and west-facing slopes near ridgetops where there are poorly developed slabby lithosols The overstory is open and dominated by *Pseudotsuga menziesii* and *Libocedrus decurrens Pinus lambertiana* is also present The shrub layer is quite well developed and dominated by *Arctostaphylos nevadensis, Castanopsis chrysophylla Ceanothus prostratus,* and *Garrya fremontii,* all of which occur in 63 percent or more of the sample locations The nonshrub component of the understory is quite sparse and is represented by *Arenaria macrophylla, Chimaphila umbellata, Hieracium albiflorum, Trientalis latifolia* and *Whipplea modesta* which are present in 81 percent or more of the locations sampled The ecoclass is CD C3 (Hall 1978)

6 A nonforested community occupies dry, rocky sites at midelevations on the western edge of the RNA This is a very drought resistant and heterogeneous vegetation type Most of the species are not found on other sites in the RNA *Brodiaea pulchella, Madia minima, Perideridia bolanderi,* and *Stipa occidentalis* are the only species that occur in over 30 percent of the locations sampled, the total cover never reaches 50 percent The ecoclass is GB 29 (Hall 1978)

7 There are several meadows on the northern edge of the Research Natural Area between Abbott and Falcon Buttes These meadows continue north of the RNA at higher elevations Snowpack remains as late as June and is followed by rapid growth of dense herbaceous vegetation *Bromus vulgaris, Erigeron aliceae Heracleum sphondylium Hydrophyllum fendleri Lonicera conjugialis, Melica spectabilis, Osmorhiza occidentalis, Pteridium aquilinum, Salix scouleriana,* and *Veratrum viride* are dominant members of this vegetation type There is evidence that these meadows are being invaded by trees, especially *Libocedrus decurrens* The ecoclass is FW 19 (Hall 1978)

CHECKLIST

Methodology

Specimens were collected of all vascular plants found within the Research Natural Area during the summers of 1971, 1972, and 1973 All specimens were verified by F J Hermann Curator of the USDA Forest Service Herbarium,

Fort Collins, Colorado, or by K L Chambers, Curator, Oregon State University Herbarium, Corvallis, Oregon Voucher specimens were deposited in both herbaria

The checklist of plants is arranged in alphabetical order by family The nomenclature follows Peck (1961) but in several instances is updated by Hitchcock and Cronquist (1973) The common names follow various authorities, primarily Franklin and Dyrness (1973) and Garrison et al (1976) Voucher specimens of most species are on file in the USDA Forest Service Herbarium, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado, or the Oregon State University Herbarium, Corvallis, Oregon

Most species are given abundance ratings by vegetation type Some species, however, occupy highly specialized habitats and cannot be related to the seven types

The checklist of the vascular plants indicate vegetation types where taxa are found voucher specimen numbers, and the herbaria where deposited The abbreviations for vegetation types are

S -- *Abies magnifica* (Shasta red fir)
H -- *Abies concolor-Tsuga heterophylla/Acer circinatum* (western hemlock)
W -- *Abies concolor/Linnaea borealis* (white fir)
D -- *Abies concolor-Pseudotsuga menziesii/Whipplea modesta* (Douglas-fir)
I -- *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* (incense-cedar)
R -- Drought-resistant, heterogeneous species
M -- Herbaceous meadow

The abbreviations for abundance scale are

A -- Abundant
C -- Common
R -- Rare

Abbreviations for the herbaria where voucher specimens are located are

O -- Oregon State University Herbarium, Corvallis, Oregon
F -- USDA Forest Service Herbarium, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
ACERACEAE									
Acer circinatum Pursh (vine maple)		A						116	O/F
Acer glabrum Torr (Rocky Mountain maple)		R						248	O/F
Acer macrophyllum Pursh (bigleaf maple)		C						340	O/F
APOCYNACEAE									
Apocynum androsaemifolium L (spreading dogbane)						R		267	O
ARISTOLOCHIACEAE									
Asarum caudatum Lindl (wild ginger)	C	C	C	R	R			57	O/F
BERBERIDACEAE									
Achlys triphylla (Sm) DC (deerfoot vanillaleaf)	R	A	A	C	R			164	O/F
Berberis nervosa Pursh (Oregongrape)	R	A	A	A	C			120	O
Vancouveria hexandra (Hook) Moor & Dec (white inside-out-flower)	C	A	A		R			145	O/F
BETULACEAE									
Alnus sinuata (Regel) Rydb (Sitka alder)							R	187	O/F
Corylus cornuta var *Californica* (DC) Sharp (California hazel)	C	A	A	C				143	O/F
BORAGINACEAE									
Cryptantha affinis (Gray) Greene (slender cryptantha)						C		128	O/F
Cynoglossum grande Dougl ex Lehm (great hound's tongue)				R				28	O/F
Hackelia jessicae (McGregor) Brand (Jessica stickweed)							C	182	O/F
Mertensia ciliata (Torr) G Don (broadleaved lungwort)		C						16	O/F
CAMPANULACEAE									
Campanula prenanthoides Dur (California harebell)	R			R				255	O/F
Campanula scouleri Hook ex A DC (Scouler bellflower)	R							271	O
CAPRIFOLIACEAE									
Linnaea borealis var *longiflora* Torr (twinflower)		A	A					161	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Lonicera conjugialis Kell (purpleflower honeysuckle)							R	193	O/F
Sambucus racemosa L (black elderberry)				R				379	O
Symphoricarpos mollis Nutt (creeping snowberry)		C	C	R				361	O
CARYOPHYLLACEAE									
Arenaria aculeata Wats (needle-leaved sandwort)						R		200	O/F
Arenaria macrophylla Hook (bigleaf sandwort)	A		A	C	A			27	O/F
Silene campanulata Wats (slender campion)						R		102	O/F
CELASTRACEAE									
Pachystima myrsinites (Pursh) Raf (Oregon boxwood)	C	A	A			R		168	O/F
COMPOSITAE									
Achillea millefolium ssp *lanulosa* Piper (western yarrow)	C						C	140	O/F
Adenocaulon bicolor Hook (trail plant)	A	C	C	R	R			284	O/F
Agoseris aurantiaca (Hook) Greene (orange agoseris)							R	328	O/F
Agoseris glauca (Pursh) Raf (pale agoseris)							R	112, 202	O/F
Agoseris grandiflora (Nutt) Greene (large-flowered agoseris)							R	265	O
Anaphalis margaritacea (L) B & H (pearly everlasting)							C	259, 306	O/F
Antennaria racemosa Hook (slender everlasting)		C						24	O/F
Arnica latifolia Bong (broadleaf arnica)		C						144	O/F
Arnica spathulata Greene (spatulate arnica)				R				291	O
Aster ledophyllus Gray (Cascades aster)							R	319, 383	O/F
Balsamorhiza deltoidea Nutt (Puget balsamroot)							R	199	O/F
Cirsium centaurea (Rydb) K Schum (slender mountain thistle)					R			382	O/F
Cirsium vulgare (Savi) Airy-Shaw (common thistle)					R			363	O/F
Crepis occidentalis Nutt (western hawksbeard)						R		196	O
Erigeron aliceae Howell (Alice fleabane)	C						A	260, 211	O/F
Erigeron foliosus var *confinis* (Howell) Jeps (leafy fleabane)						R		71	O/F
Erigeron inornatus Gray (rayless fleabane)						C		77	O/F
Eriophyllum lanatum var *achillaeoides* (DC) Jeps (common woolly sunflower)						C		89	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Eupatorium occidentale Hook (western eupatorium)						R		380	O/F
Hieracium albiflorum Hook (white hawkweed)	C	C	A	A	A			163	O/F
Hieracium cynoglossoides Arv -Touv (houndstongue hawkweed)						R		324	O/F
Luina nardosmia (Gray) Cronq							R	154	O/F
Madia bolanderi Gray (Bolander's tarweed)							A	334	O/F
Madia gracilis (Smith) Keck (common tarweed)						C		37	O/F
Madia minima (Gray) Keck (least tarweed)						C		68	O/F
Petasites frigidus (L) Fries (alpine coltsfoot)							C	165	O/F
Rudbeckia occidentalis Nutt (western coneflower)	C						C	301	O/F
Senecio integerrimus Nutt (western groundsel)						R		35, 197	O/F
Senecio triangularis Hook (arrowleaf senecio)							C	283, 311	O/F
Solidago canadensis L (Canada goldenrod)							R	338	O/F
Taraxacum laevigatum (Willd) DC (smooth dandelion)						R		149	O
Taraxacum officinale Weber (common dandelion)						R		141	O
CORNACEAE									
Cornus nuttallii T & G (Pacific dogwood)	C	C	R	R				113	O/F
CRASSULACEAE									
Sedum oregonense (Wats) Peck (creamy stonecrop)						C		67	O/F
CRUCIFERAE									
Arabis holboellii var *retrofracta* (Grah) Rydb (Holboell rockcress)						C		79	O/F
Arabis microphylla Nutt (littleleaf rockcress)						R		381	O/F
Athysanus pusillus (Hook) Greene (sandweed)						C		126	O/F
Descurainia richardsonii (Sweet) Schulz (western tansy mustard)						C		315	O/F
CUCURBITACEAE									
Marah oregonus (T & C) Howell (Oregon wild cucumber)						R		38	O/F
CUPRESSACEAE									
Libocedrus decurrens Torr (incense-cedar)	C	C	C	C	C				
CYPERACEAE									
Carex bolanderi Olney (Bolander sedge)		C						2, 368	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Carex concinnoides Mack (northwestern sedge)						R		159	F
Carex fracta Mack (fragile-sheathed sedge)		R		R		R		14, 151, 167, 374	F
Carex hoodii Boott (Hood sedge)				R		R		61, 194, 320	O/F
Carex multicaulis Bailey (thick-fruited sedge)							R	244	F
Carex paucicostata Mack (few-ribbed sedge)							R	337	F
Carex rossii Boott (Ross sedge)						R		26, 279, 289, 375	O/F
Carex subfusca W Boott (rusty sedge)		R					R	10, 138, 335	F
EQUISETACEAE									
Equisetum arvense L (common horsetail)		C						341	O/F
ERICACEAE									
Arctostaphylos nevadensis Gray (pine-mat manzanita)			R		A	R		376	O/F
Arctostaphylos patula Greene (green manzanita)					C			377	O/F
Chimaphila menziesii (R Br) Spreng (little prince's pine)					R			277	O
Chimaphila umbellata (L) Bart (western prince's pine)	A	C	A	A	A			230	O/F
Gaultheria ovatifolia Gray (slender gaultheria)		R	C					285	O/F
Pterospora andromedea Nutt (pine drops)			R						
Pyrola aphylla Smith (leafless pyrola)						R		254, 276, 231	O/F
Pyrola asarifolia Michx (large pyrola)								342	O/F
Pyrola dentata Smith			R	R	R			153, 290	O/F
Pyrola picta Smith (whitevein pyrola)			R	R	R			224, 270	O
Pyrola secunda L (one-sided wintergreen)			R					177, 262	O
Rhododendron macrophyllum G Don (Pacific rhododendron)		R	R					359	O/F
Sarcodes sanguinea Torr (snow plant)		R	R					119	O/F
Vaccinium membranaceum Hook (big huckleberry)		A	A					162	O/F
FAGACEAE									
Castanopsis chrysophylla (Dougl) A DC (golden chinkapin)		A	A	A	C			252	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Quercus garryana Hook (Oregon white oak)				R				110, 248	O/F
FUMARIACEAE									
Dicentra formosa (Andr) Walp (Pacific bleeding-heart)							R	46	O/F
GARRYACEAE									
Garrya fremontii Torr (bear bush)					C			239	O/F
GENTIANACEAE									
Swertia umpquaensis (Peck & Appleg) St John (Umpqua swertia)	R						C	215, 299	O/F
GRAMINEAE									
Agropyron caninum (L) Beauv (bearded wheatgrass)						C		332	O
Agrostis exarata Trin (spike bentgrass)						C		367	O
Agrostis scabra Willd (winter bentgrass)							C	323	O/F
Bromus carinatus H & A (California brome)						C		210, 238, 295	O/F
Bromus orcuttianus Vas (Orcutt's brome)						R		241	O/F
Bromus tectorum L (cheatgrass brome)						C		237	O
Bromus vulgaris (Hook) Shear (Columbia brome)	C	R					C	233, 286, 317 388, 393, 268	
								278, 282	O/F
Bromus vulgaris var *eximius* Shear	R							178	O/F
Cinna latifolia (Trev) Griseb (drooping wood-reed)							R	353	O
Danthonia unispicata (Thurb) Macoun (one-spike danthonia)						C		40	O
Elymus glaucus Buckl (blue wildrye)	C						C	131, 218, 246, 281, 296 322, 369, 385	
								390	O/F
Festuca californica Vas (California fescue)				R		R		109	O/F
Festuca microstachys Nutt (Nuttall's fescue)					R			236	O
Festuca occidentalis Hook (western fescue)				R	R	R		123, 235, 269	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Festuca reflexa Buckl (twoflower fescue)						R		41	O/F
Festuca subulata Trin (bearded fescue)	R							371	O
Festuca subuliflora Scribn (crinkleawn fescue)								232, 287	O
Glyceria elata (Nash) Hitchc (tall manna-grass)		R						372	O
Glyceria striata (Lam) Hitchc (fowl manna-grass)		R						347	O
Hierochloe occidentalis Buckl (California sweetgrass)								153	O/F
Melica aristata Boland (bearded melic)								263, 389	O/F
Melica californica Scribn (western melic)						R		394	O/F
Melica harfordii Boland (Harford's melic)								156	O/F
Melica spectabilis Scribn (showy onion-grass)						R		198	O/F
Melica subulata (Griseb) Scribn (Alaska onion-grass)						R		30, 179 219 223, 356, 391	O/F
Phleum alpinum L (alpine timothy)						R		220	O
Poa pratensis L (Kentucky bluegrass)						R		330	O
Poa sandbergii Vas (Sandberg's bluegrass)								245	O/F
Poa scabrella (Thurb) Vasey (pine bluegrass)					R			33	O/F
Sitanion hystrix (Nutt) J G Sm (bottlebrush squirreltail)					C			87, 297, 325, 326, 327	O/F
Stipa lemmonii (Vas) Scribn (Lemmon needlegrass)						R		34, 354 355	O/F
Stipa occidentalis Thurb ex Wats (Western needlegrass)						C		311	O
Stipa occidentalis var *minor* ((Vas) Hitchc *S columbiana* Macoun) (Columbia needlegrass)						R		66	O/F
Trisetum canescens Buckl (tall trisetum)							R	280, 392	O
HYDRANGEACEAE									
Whipplea modesta Torr (whipple vine)	R	C	A	A	C			21	O/F
HYDROPHYLLACEAE									
Hydrophyllum fendleri (Gray) Heller (Fendler waterleaf)							C	192	O/F
Nemophila parviflora Benth (smallflower nemophila)		C						192	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Phacelia hastata Lehm (whiteleaved phacelia)						R		98	O/F
IRIDACEAE									
Iris chrysophylla Howell (slender-tubed iris)	R	C	C	C	R			25	O/F
JUNCACEAE									
Juncus orthophyllus Cov (straight-leaved rush)							R	139	O/F
Luzula comosa E Mey (hairy woodrush)							C	207 243	F
Luzula parviflora (Ehrh) Desv (millet woodrush)		C					C	17, 316	O/F
LABIATAE									
Agastache urticifolia (Benth) Kuntze (nettle-leaved giant-hyssop)						R		212, 300	O/F
Monardella odoratissima Benth (western balm)							R	292	O/F
Scutellaria antirrhinoides Benth (snapdragon skullcap)							R	107	O/F
Stachys cooleyae Heller (Cooley's hedge nettle)		R						351A, 356	O/F
Stachys rigida Benth (rigid hedge nettle)		R						351	O/F
LEGUMINOSAE									
Lathyrus polyphyllus T & G (Pacific peavine)		R						4	O/F
Lotus formosissimus Greene (Seaside lotus)							R	137	O/F
Lotus nevadensis (Wats) Greene (Nevada lotus)						R		99	O/F
Lupinus albifrons Lindl (white-leaved lupine)						R		94	O/F
Lupinus argenteus Pursh (silvery lupine)				R				217	O/F
Lupinus latifolius Agardh (broadleaf lupine)	C							213	O
Lupinus laxiflorus Lindl (spur lupine)				R				93	O/F
Trifolium howellii Wats (bigleaf clover)							C	344	O/F
Vicia americana var *villosa* (Kell) F J Herm (American vetch)	C	C	A	C	R			7	O/F
LILIACEAE									
Allium siskiyounense Owns (Siskiyou onion)						R		203, 204	O
Brodiaea congesta Smith							R	251	O/F
Brodiaea pulchella (Salisb) Greene (purplehead brodiaea)						R		74	O/F
Calochortus elegans Pursh (elegant mariposa lily)						R		32	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Disporum hookeri (Torr) Nichols (Hooker's fairybells)	C	C	C	R	R			62	O
Erythronium grandiflorum Pursh (lambstongue fawnlilly)								201	O/F
Fritillaria atropurpurea Nutt (purple fritillaria)							R	58	O
Lilium columbianum Hanson (Columbia lily)							R	157	O/F
Lilium washingtonianum Kell (Washington lily)							R	329	O
Smilacina racemosa (L) Desf	C	C	R					358	O
Smilacina stellata (L) Desf (starry solomonplume)	C	C	R					55	O/F
Trillium ovatum Pursh (white trillium)	C	A	R					51, 52	O/F
Veratrum viride Ait (American false hellebore)							C		
Xerophyllum tenax (Pursh) Nutt (common beargrass)							R	234	O/F
LINACEAE									
Linum Lewisii Pursh (Lewis flax)						R		293	
ONAGRACEAE									
Circaea alpina L (alpine circaea)	A	R	R	C	C			169, 222	O/F
Clarkia rhomboidea Hook (common clarkia)				R		R		90	O/F
Epilobium angustifolium L (fireweed)						R		294	O/F
Epilobium glaberrimum Barbey (smooth willowweed)		C						5, 362	O/F
Epilobium minutum Hook (small-flowered willowweed)						C		69, 106	O/F
Gayophytum humile Juss (dwarf gayophytum)						R		127	O
Gayophytum nuttallii Piper (Nuttall's gayophytum)						C		75, 395	O/F
ORCHIDACEAE									
Calypso bulbosa (L) Oakes (calypso)		R							
Corallorhiza maculata Raf (spotted coralroot)		C	C					261	O
Corallorhiza mertensiana Bong (Mertens' coralroot)		C	C					121, 225	O/F
Goodyera oblongifolia Raf (rattlesnake plantain)		C	R					275	O/F
Habenaria dilatata var *leucostachys* (Lindl) Ames (boreal bogorchid)							R	333	F
Habenaria elegans (Lindl) Boland (California hillside habenaria)		R						242	O/F
Habenaria saccata Greene (slender bog orchid)							R	346	O/F
Listera caurina Piper (western twayblade)								386	O

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
PINACEAE									
Abies concolor Lindl & Gord (white fir)	A	C	A	A	C				
Abies magnifica var *shastensis* Lemm (Shasta red fir)	A								
Pinus lambertiana Dougl (sugar pine)		R	R	R	C				
Pinus monticola Dougl (western white pine)		R							
Pinus ponderosa Dougl (ponderosa pine)				R	R				
Pseudotsuga menziesii (Mirb) Franco (Douglas-fir)		C	A	A	A				
Tsuga heterophylla (Raf) Sarg (western hemlock)	R	A	C	R	R				
POLEMONIACEAE									
Collomia grandiflora Dougl (large-flowered collomia)						R		256	O/F
Collomia heterophylla Hook (varied-leaved collomia)				R	C			23	O/F
Gilia aggregata (Pursh) Spreng (scarlet gilia)							R	305	O/F
Gilia capitata Sims (globe gilia)						R		36	O/F
Linanthus harknessii (Curran) Greene (harkness linanthus)						R		100	O/F
Navarretia divaricata (Torr) Greene (short-stemmed navarretia)						C		43	O
Phlox adsurgens Gray (woodland phlox)								125	O/F
Phlox diffusa Benth (sens E Wherry) (spreading phlox)						R		205	O/F
Polemonium pulcherrimum Hook (showy polemonium)		R						53, 206	O/F
POLYGONACEAE									
Eriogonum compositum Benth var *compositum* (northern buckwheat)						C		88	O/F
Eriogonum nudum Benth (naked eriogonum)						C		78	O/F
Eriogonum umbellatum Torr var *umbellatum* (sulfur buckwheat)						C		130	O/F
Polygonum bistortoides Pursh (American bistort)							C	336	O/F
Polygonum cascadense W H Baker (Cascade knotweed)						C		42	O/F
Polygonum majus (Meisn) Piper (wiry knotweed)						R		70	O/F
Rumex acetosella L (sheep sorrel)							C	250	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
POLYPODIACEAE									
Athyrium filix-femina (L) Roth (ladyfern)	R	R						346, 364	O/F
Cheilanthes gracillima D C Eat (lace-fern)						R		76	O/F
Cryptogramma densa (Bracknr) Diels (Oregon cliffbreak)						R		82	O/F
Pellaea glabella Kuhn (cliffbreak)						R		73	O/F
Polystichum munitum (Kaulf) Presl (swordfern)	C	C						352	O/F
Pteridium aquilinum (L) Kuhn (bracken fern)	A	C	R				A		
PORTULACACEAE									
Claytonia lanceolata Pursh (lance-leaved spring beauty)							A	45	O/F
Montia parvifolia (Moc) Greene (Miner's lettuce)		R						96	O/F
Montia sibirica (L) Howell (western spring beauty)	A	C						9	O/F
Spraguea umbellata Torr (pussypaws)						R		64	O/F
PRIMULACEAE									
Trientalis latifolia Hook (starflower)	A	A	A	A	A			117	O/F
RANUNCULACEAE									
Actaea rubra (Ait) Willd (baneberry)							C	47, 313	O/F
Anemone deltoidea Hook (threeleaf anemone)	C	C	R					1	O/F
Aquilegia formosa Fisch (western columbine)						R		135	O/F
Delphinium glaucum Wats (pale larkspur)							R	304	O/F
Delphinium menziesii DC (Menzies' larkspur)	R						R	54	O/F
RHAMNACEAE									
Ceanothus integerrimus H & A (deerbrush)						C		80	O/F
Ceanothus prostratus Benth (squawcarpet)					A	C		378	O/F
Ceanothus velutinus Hook (varnishleaf ceanothus)					A	C		133	O/F
RIBESACEAE									
Ribes binominatum Heller (Siskiyou gooseberry)	A					R		171	O/F
Ribes cruentum Greene (shiny-leaved gooseberry)	R							132, 266	O/F
Ribes lacustre (Pers) Poir (prickly currant)	R							166	O/F
Ribes lobbii Gray (pioneer gooseberry)						R		181, 257	O/F
Ribes sanguineum Pursh (winter currant)						R		150	O/F
Ribes viscosissimum Pursh (sticky currant)	C				R	R		60, 174	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
ROSACEAE									
Amelanchier alnifolia Nutt (Saskatoon serviceberry)	R							272	O/F
Fragaria vesca L (western wood strawberry)	R	C	R					20, 175	O/F
Holodiscus discolor (Pursh) Maxim (creambush oceanspray)	C						R	108	O/F
Osmaronia cerasiformis (T & G) Greene (Indian plum)		R						387	O/F
Potentilla glandulosa Lindl (gland cinquefoil)								81	O/F
Prunus emarginata (Dougl) Walp (bitter cherry)								63	O/F
Rosa gymnocarpa Nutt (baldhip rose)	C	A	A	C	R			115	O/F
Rosa nutkana Presl (Nootka rose)	R							273	O
Rubus lasiococcus Gray (dwarf blackberry)	R							228	O/F
Rubus leucodermis T & G (western blackcap)						R		122, 264	O/F
Rubus nivalis Hook (snow dewberry)	C	R	C					360	O/F
Rubus parviflorus Nutt (thimbleberry)	R							160, 302	O/F
Sorbus scopulina Greene (Greene mountain-ash)		R					R	384	O/F
Sorbus sitchensis Roemer (Sitka mountain-ash)							R	274	O/F
RUBIACEAE									
Galium oreganum Britt (Oregon bedstraw)	A	C						176, 310	O/F
Galium triflorum Michx (sweetscented bedstraw)	A	C	C					13, 343	O/F
Kelloggia galioides Torr (kelloggia)						C		247	O/F
SALICACEAE									
Populus tremuloides Michx (quaking aspen)							C	186	O/F
Salix scouleriana Barratt (Scouler's willow)		R					C	8, 188	O/F
SAXIFRAGACEAE									
Boykinia major Gray (large-flowered boykinia)		R						365	O/F
Lithophragma sp cf *L tenella* Nutt									
Tellima grandiflora (Pursh) Dougl (Alaska fringecup)		R					R	6, 191	O/F
Tiarella unifoliata Hook (western coolwort)							C	126, 229	O/F
SCROPHULARIACEAE									
Castilleja miniata Hook (scarlet paintbrush)						R		208, 303	O/F
Castilleja pruinosa Fern (frosted paintbrush)						R		85	O/F
Collinsia parviflora Lindl (littleflower collinsia)								18, 44	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Nimulus breweri (Greene) Rydb (Brewer monkeyflower)						R		129	O/F
Mimulus guttatus DC (common monkeyflower)		R						125	O/F
Mimulus pulsiferae Gray							R	103	O/F
Mimulus tilingii Regel (clustered monkeyflower)		R						136	O/F
Orthocarpus imbricatus Wats (mountain owlclover)							C	195	O/F
Pedicularis bracteosa Benth (bracted pedicularis)							R	314	O
Pedicularis racemosa Hook (sickletop pedicularis)							C	288	O/F
Penstemon davidsonii (Greene) var *davidsonii* Piper (Davidson penstemon)						P		97	O/F
Penstemon deustus Lindl (scabland penstemon)						R		91	O/F
Synthyris reniformis (Dougl) Benth (snowqueen)		C	R					155	O/F
TAXACEAE									
Taxus brevifolia Nutt (western yew)		C							
UMBELLIFERAE									
Heracleum sphondylium L (cowparsnip)	R					C		189	O
Ligusticum apiifolium (Nutt) Gray (parsleyleaf licoriceroot)							C	209	O
Ligusticum grayi C & R (Gray's lovage)							C	209, 312	F
Lomatium nudicaule (Pursh) C & R (barestem lomatium)						C		72	O/F
Lomatium triternatum (Pursh) C & R (nineleaf lomatium)						R		111	O/F
Osmorhiza chilensis H & A (mountain sweetroot)	C	C					A	19	O/F
Osmorhiza occidentalis (Nutt) Torr (sweet anise)							C	190	O/F
Oxypolis occidentalis C & R (western oxypolis)								348	O/F
Perideridia bolanderi (Gray) Nels & Macbr (mountain false caraway)						A		39	O/F
Sanicula graveolens Poepp ex DC (Sierra snake-root)						R		56, 134	O/F
Sphenosciadium capitellatum Gray (range wolleyhead-parsnip)							C	339	O/F
VALERIANACEAE									
Valeriana sitchensis Bong (Sitka valerian)							R	221, 308	O/F
VIOLACEAE									
Viola glabella Nutt (wood violet)	C	A	R	R				49, 226	O/F
Viola sheltonii Torr (Shelton violet)	R							22	O/F

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Within this overall mission the Station conducts and stimulates research to facilitate and to accelerate progress toward the following goals

1 Providing safe and efficient technology for inventory protection and use of resources

2 Developing and evaluating alternative methods and levels of resource management

3 Achieving optimum sustained resource productivity consistent with maintaining a high quality forest environment

The area of research encompasses Oregon Washington Alaska and in some cases California Hawaii the Western States and the Nation Results of the research are made available promptly Project headquarters are at

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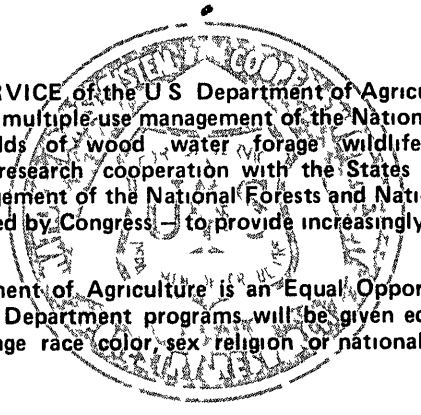
Portland Oregon 97232



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INTERNATIONAL BIOLOGICAL PROGRAMME

SECTION CT CONSERVATION OF TERRESTRIAL BIOLOGICAL COMMUNITIES

CHECK SHEET (Mark VII) FOR SURVEY OF IBP AREAS*

To be completed with reference to the GUIDE TO THE CHECK SHEET

Serial Number

For Data Centre Use only

1 1 Name of surveyor Jerry F Franklin

2 Address of surveyor
FORESTRY SCIENCES LABORATORY
PACIFIC NORTHWEST FOREST AND
RANGE EXPERIMENT STATION
P O BOX 887
CORVALLIS OREGON 97330

3 Check Sheet completed (a) on site ✔ (b) from records ✔

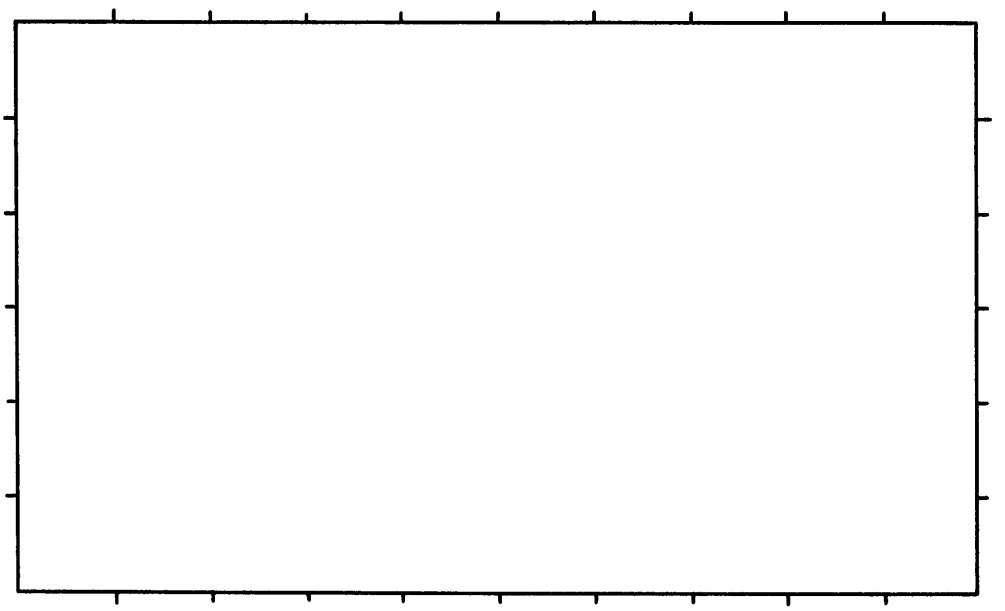
4 Date Check Sheet completed 5/1/71

2 1 Name of IBP Area ABBOTT CREEK RESEARCH NATURAL AREA

2 Name of IBP Subdivision (or serial letter)

3 Map of IBP Area* showing boundaries attached? Yes ✔ No

4 Sketch map of IBP Area* Please mark direction of north the scale and grid numbers where applicable



* For IBP Area read IBP Area and/or IBP Subdivision

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3 **Location of IBP Area***

1 Latitude 42 ° 56 ' N/S Longitude 122 ° 31 ' E/W

2 Country UNITED STATES OF AMERICA

State or Province OREGON County JACKSON & DOUGLAS

(State or Province County)

4 **Administration**

National 1 Official category FEDERAL RESEARCH NATURAL AREA

2 Address of administration

Pacific Northwest Forest &
Range Experment Station
P O Box 3141
Portland, Oregon 97208

International Class

3

Included in U N List	Rejected from U N List	Area with formal conservation status	No formal cons status
(A)	(B)	(C) ✓	(D)

5 **Characteristics of IBP Area***

1 Surface area (state units of measurement) 1,077 HA

2 Altitude (state units of measurement) Maximum 1,869 M

Minimum 1,000 M

6 **Climate**

Nearest climatological station

1 Name PROSPECT, OREGON

2 Climatological station on IBP Area*? Yes No ✓

3 If (2) not distance from edge of IBP Area* (state units) 19 KM

4 Direction from IBP Area* SE

5 Additional data sheet attached? Yes ✓ No

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7 **Vegetation and Soil**

1 **Vegetation**

Community Reference Number	Vegetation Code: Primary Structural Group	Class	Group	Formation	Sub Formation	Plant communities (give usual name using full Latin names of a species where applicable)	Area (state units)
1	1	A	1	7	a	PSEUDOTSUGA MENZIESII – PINUS LAMBERTIANA – ABIES CONCOLOR	832 HA
2	1	B	1	4	a	Ceanothus velutinus – Arctostaphylos patula – Garrya fremonti	245 HA
3	1	C	1	2	a	Ceanothus prostratus – Arctostaphylos uva-ursi	
4	1	M	2			Gramineae	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Please give information about further communities on a separate sheet

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7 (cont) 2

Soil

Community Reference Number	Soil type	Other notes
1	F_4	Brown forest soil, typically shallow stony profiles with little A-horizon
2	I_2	
3	I_2	Primarily rock fragments
4	F_3	
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

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8 **Similar Communities in Country (or State)**

Community Reference Number	Protected					Protected and Unprotected				
	Abundant	Infrequent	None known	Decreasing	Increasing	Abundant	Infrequent	None known	Decreasing	Increasing
1		✔				✔			✔	
2		✔				✔				
3		✔				✔				
4			✔			✔			✔	
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

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9 **Landscape**

1 General Landscape (give brief description) STEEP MOUNTAIN DRAINAGE WITH FREQUENT SIDE RIDGES AND COMMON ROCK OUTCROPS

2 Relief Type

	Flat	Undulating (0) 200 m	Hilly 200 1000 m	Mountainous > 1000 m	%
Sharply dissected				100	100
Gently dissected					
Incised					
Skeletonised					
%				100	100 %

3 Special landscape features (list)

10 **Coastline of IBP Area*** NONE

1 Protected bays and/or inlets Many [ ] Few [ ] None [ ]

2 Substratum % of coast

Rock	Boulder Beach	Shingle Beach	Sand Beach	Shell Beach	Mud	Coral	Ice

3 Physiography / of coast

Cliffed	Sloping	Flat

4 Special Coastal Features (list)

5 Tide Maximum range (state units of measurement)

6 Total length of coastline

Less than 1 km [ ] 1 10 km [ ] Above 10 km [ ]

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11 **Freshwater within IBP Area***

1

	Permanent	Intermittent
General		
Standing	~~NIL~~ no	
Running	✓	

2 Standing Water

	Permanent	Intermittent	Unproductive	Productive
Swamps				
Ponds				
Lakes				

3 Running Water

	Permanent	Intermittent
Springs cold		
Springs hot		
Streams	✓	
Rivers		

4 Special freshwater features

12 **Salt and Brackish Water within IBP Area*** NONE

Salt Lakes		Lagoon		
Estuaries		Salt pools		

13 **Adjacent Water Bodies (not within IBP Area*)**

1 Fresh ✓ Lake ☐ River ✓ Stream ☐

2 Salt and Brackish

Estuary	Salt lake	Salt pool	Lagoon	Ocean		

15 **Exceptional Interest of IBP Area*** List items and salient facts (e g botanical ornithological teaching area site of classic research since 1930)

16(1) **Significant Human Impact General** Check one line

(2) **Particular** types of significant human impact Types of human impact additional to the 16 types listed should be entered in the vacant rows Where the impact does not operate today but has operated in the past check past Where it does operate now but did not operate before 1900 check Present only Where a present day impact operated before 1900 check both past and present For all types of present impact check off the trend Only check increasing or decreasing if this is certain otherwise check no certain change

(3) **Additional details on each type of impact attached? Yes/No** Check

17 **Conservation Status** Refers to human influence on material objects within the IBP Area* This influence may be partial in space time or manner

Protection (from exploitation) Refers to current legal position regarding deleterious influence of man If practice falls significantly short of theory this fact should be noted in 19

Utilisation Restrained exploitation to take a long term crop The extent and period of utilisation may be legally limited (Controlled) or not (Uncontrolled)

Conservation Management Utilisation with the primary object of maintaining restoring or creating an ecosystem which has some special interest to biologists Status refers to biological status which may be equated with vegetation type for the purposes of this survey

Permitted Research Observational research does not interfere with the ecosystem Experimental research usually involves interference of some sort

18(1) **List major biological/geographical references for the IBP Area*** Attach list and check

(2) **List main maps available for the IBP Area*** Attach list and check

(3) **Aerial photographs for the IBP Area* available?** Check one space

19 **Other relevant information** Can also be used when there is insufficient space for the answer to another question

Additional Information

In a number of sections surveyors are asked to attach additional information when this is available on separate sheets These sections are

2(4) Map of IBP Area*

6(5) Climatological Data

16(3) Significant Human Impact Explanatory notes

18(1) Major biological/geographical references

(2) List of main maps available

Data Centre

Completed Check Sheets should be returned to the national organiser or direct to the Data Centre whose address is

IBP/CT Survey
Biological Records Centre
The Nature Conservancy
Monks Wood Experimental Station
Abbots Ripton
Huntingdon England

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14 **Outstanding Floral and Faunal Features**

1 None

2 Fauna

	Species diversity	Abundance of individuals	Superabundance of individuals	Rare species	Threatened/Relict species	Spp of biogeographical interest	Exceptional Associations	Breeding or Nesting Populations	Migrating Populations	Wintering Populations		
Mammalia												
Aves												
Reptilia												
Amphibia												
Pisces												
Insecta												

3 Names of main threatened endemic relict and rare species

Sloping Cliffed coastlines in which no part is inaccessible to land animals

Flat Coastlines which lack cliffs and sloping cliffs

(4) **Special coastal features** should be listed accordingly to widely terms (e g reefs sand bars)

(5) **Tide Maximum Range** State units

(6) **Total length of coastline** Check appropriate value

11 **Freshwater within IBP Area***

(1) (2) and (3) Check in the spaces the features which are present Surveyors may insert indications of abundance e g many few etc provided it is clear which features are present and which absent

Definitions

General	All types of freshwater
Standing	Water not flowing continuously in a definite direction
Running	Water flowing in a definite direction
Swamp	A lake pond or other site of such small depth that it is occupied ± com pletely by emergent vegetation
Pond	A body of standing water whose area of open water is less than 10 000 m^2
Lake	A body of standing water whose area of open water is greater than 10 000 m^2
Spring	A site at which water is issuing through a natural opening in such quantity as to form an appreciable current A hot spring has an average temperature more than 10°C above the yearly mean for the surrounding air
Stream	A watercourse or part of a watercourse whose mean width is less than 5 m
River	A watercourse or part of a watercourse whose mean width is greater than 5 m
Permanent	Never or very rarely disappears All other situations are regarded as Inter mittent
Productive	Eutrophic waters and those with relatively high biological productivity which are morphometrically oligotrophic
Unproductive	Other oligotrophic waters and those of relatively low biological productivity

(4) **Special freshwater features** should be listed according to widely known terms (e g rapids geysers seasonally inundated land)

12 **Salt and Brackish Water within IBP Area*** Check

13 **Adjacent water bodies,** i e those whose margins form part or all of the boundary of the IBP Area* which are therefore not within the IBP Area*

Definitions as follows

Freshwater	Salinity generally within the range 15 300 p p m
Salt and Brackish water	Salinity above the normal range of freshwater
Ocean	Should only be used for the interconnected oceans
Salt Lake	A body of standing salt water whose area of open water is greater than 10 000 m^2
Salt Pool	A body of standing salt or brackish water whose area of open water is less than 10 000 m^2
Lagoon	Shallow lake formed in association with coral
Estuary	Tidal portion of a river mouth

14(1) **Outstanding Floral and Faunal Features** Check if none known

(2) and (4) Only the presence of outstanding features should be noted by checking the appropriate box No other information is required here we do not want for example the number of bird species present inserted under Aves — species diversity because this is not in itself an indication that this number is outstanding Columns have been left vacant for additional types of outstanding feature and additional taxonomic groups may be added in the vacant rows The vacant rows may also be used to give more precise data for the groups listed e g if the outstanding interest centres on the Carnivora of the Mammalia Carnivora may be inserted in a vacant row Always designate taxonomic groups by their Latin name

(3) and (5) **Names of main threatened, endemic, relict and rare species** List the species by their Latin names Vernacular names in addition are welcome but not obligatory

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4 Flora

	Species diversity	Abundance of particular species	Rare species	Threatened/relict species	Spp of biogeographical interest	Exceptional associations	Outstanding specimens				
Angiospermae											
trees											
shrubs											
herbs											
grass											
Gymnospermae	✓	✓				✓	✓				
Pteridophyta											
Bryophyta											
Lichens and Algae											

5 Names of main threatened endemic relict and rare species

15 **Exceptional Interest of IBP Area***

MIXED SIERRAN-TYPE CONIFER STANDS WITH PARTICULARLY FINE SPECIMENS OF PINUS LAMBERTIANA

7(2) **Soil**

Soil Type Enter the code number for the soil type which occurs under each Community These can be identified in Appendix 2 Where more than one soil type occurs under one Community either the definition of the Community should be revised or an explanatory note should be added under Other notes

Other Notes Sub types present should be mentioned together with short descriptions of significant features e g colour humus content depth

8 **Similar Communities in Country (or State)**

This Section will normally refer to the entire Country but in the case of large countries (Australia Brazil Canada China India U S A U S S R) it should refer to states or provinces (primary administrative subdivisions) All Communities should be considered here -- in exactly the same order as in 7 using the Community Reference Number for cross reference

Insert up to four checks in each row

Protected refers to sites of A B and C (see 4(3) above)

Protected and Unprotected refers to all sites within the Country (or State)

None known The Community does not occur elsewhere in the country/state

Infrequent Other examples of the Community exist in the country/state but the loss of any one of them would be a grave depletion of its type

Abundant Other examples of the Community are sufficiently common and widespread that the loss of any one of them would not be a significant depletion of its type

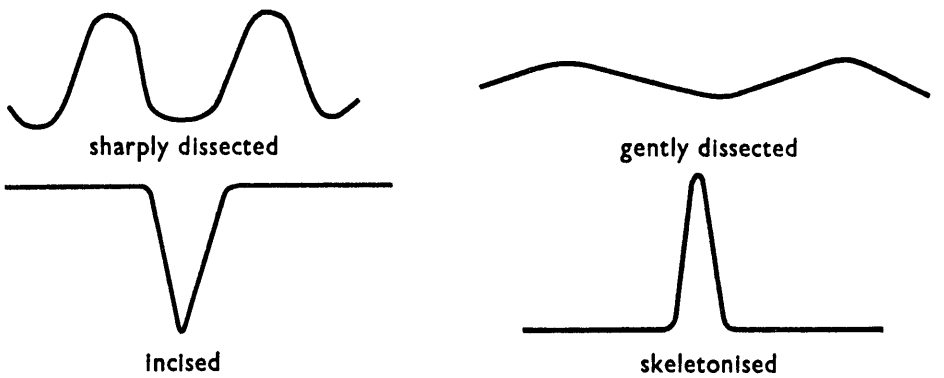
Decreasing/Increasing Insert a check only when the change observed appears to be leading to a permanent change in the status of the Community

9(1) **General Landscape** Describe in less than 50 words Confine description to geomorphological features It is permissible to consider land outside the IBP Area* (see Part 3)

(2) **Relief Type** Check off type(s) present It is possible to consider land outside the IBP Area* (see Part 3)

Altitudinal range divided into four classes of which the lowest is flat in which there is very little variation in altitude

Erosion Types may be illustrated as follows



(3) **Special Landscape Features** should be listed according to widely known terms (e g cliff ice fields dunes recent vulcanism) Interpret special liberally

10(1) **Protected Bays and Inlets Many/Few/None** Check

(2) **Substratum** Insert approximate percentage value for the length of coast occupied by each type of substratum It is possible for the total to exceed 100 % Definitions are as follows

Rock Fixed stable unweathered rock

Beach Mobile or potentially mobile material of which the particle size ranges from very large (boulder) to minute (mud)

(3) **Physiography** Insert approximate percentage value for the length of coast occupied by each type These values should total 100%

Definitions are as follows

Cliffed Wholly or partially vertical with at least some part inaccessible to land animals

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16 **Significant Human Impact**

1 General None in entire IBP Area*

None in part of IBP Area* ✓

Impact on entire IBP Area*

2 Particular

	Past impact	Present impact	Trend			
			Increasing	Decreasing	No change	No information
Cultivation						
Drainage						
Other soil disturbance						
Grazing		✓			✓	
Selective flora disturbance						
Logging	✓			✓		
Plantation						
Hunting		✓				✓
Removal of predators		✓				✓
Pesticides						
Introductions — plants						
Introductions — animals						
Fire	✓			✓		
Permanent habitation						
Recreation and tourism						
Research						

3 Additional details on each type of impact attached?

Yes ✓ No

(2) **Name of IBP Subdivision** To be used **only** when the IBP Area is divided into two or more IBP Subdivisions IBP Subdivisions for which there is no suitable name should be given a reference letter (a b c etc) thus distinguishing them from other IBP Subdivisions in the same IBP Area **This question should only be left blank if the Check Sheet refers to an IBP Area**

(3) **Map of IBP Area* showing boundaries attached?** Yes/No Check

(4) **Sketch map of IBP Area*** This should show

— the shape of the IBP Area*

— its relation to compass directions

— boundaries common with the boundary of the IBP Area (for IBP Subdivisions only)

— major features of the land form and vegetation (e g peaks rivers woods etc)

— sites of field stations and other permanent habitations

3(1) **Latitude and Long tude** Delete the N or S E or W which does not apply

(2) **Country, State or Province, County** Insert names of administrative areas in which the IBP Area* is situated The following levels are recognised

— National or Territorial embracing the whole contiguous area under one political sovereignty **(Country)**

— Regional or Provincial units intermediate between national and local levels **(State or Province)**

— Local e g **county,** parish commune gemeinde etc

Spaces are provided for IBP Areas* which overlap Province or County boundaries

4(1) **National Category,** e g National Park Strict Nature Reserve etc

(2) **Address of Administration** responsible for the IBP Area* Full postal address

(3) **International Class** The following four classes have been adopted Check under the appropriate class

Class A Included in U N List

Class B Considered for inclusion in U N List but rejected These sites are mentioned in Chapter V of the U N List

Class C Other sites at present protected

Class D Unprotected sites of interest to conservationists and biologists

5(1) **Surface area,** may be inserted in any units but please state units

(2) **Altitude Maximum and Minimum** Please state units used

6(1) **Name of Nearest Climatological Station** As used in publications of national climatological organisations

(2) **Climatological Station on IBP Area* Yes/No** Check

(3) **Distance from edge of IBP Area* if outside** State units

(4) **Direction from IBP Area*** Insert compass direction from centre of IBP Area* Use 16 point compass notation (N NNE NE NNW) or degrees (0° 10° 350°)

(5) **Additional data sheet attached? Yes/No** Check

7(1) **Vegetation**

Plant Communities List these by their usual names using Latin names for all species mentioned Space is provided for 20 Communities further Communities should be listed on a separate sheet There is no restriction on the methods by which Communities may be defined so long as the Communities so formed can be easily recognised by local scientists Community Reference Numbers are provided to facilitate cross reference between 7(1) 7(2) and 8

Vegetation Code The Formation (and sub formation) to which each Community belongs should be entered These Formations (and sub formations) may be identified in Appendix 1 A key is provided to facilitate identification Enter only the code numbers for each Formation (and sub formation) placing one digit in each square

Area of each Community should be entered to maximum available accuracy

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17 **Conservation Status**

	Protection			Utilisation			Conservation Management			Permitted Research		
	none	partial	total	none	controlled	uncontrolled	none	to alter status	to maintain status	experimental	observational	prohibited
Flora		✓		✓					✓		✓	
Fauna		✓			✓		✓				✓	
Non living			✓	✓	✓				✓		✓	

18 **References**

1 List major biological/geographical references for the IBP Area

Sheet attached? Yes ✓ No

2 List main maps available for the IBP Area

List attached? Yes ✓ No

3 Aerial photographs for the IBP Area available?

For whole area ✓ For part of area None

19 **Other Relevant Information**

Signed Derry J Saunders
(Surveyor)

GUIDE TO THE CHECK SHEET

by G F Peterken

PART FOUR

FIELD INSTRUCTIONS

This part is designed to assist the surveyor to fill in the Check Sheet and thereby facilitate the task of the Data Centre in transferring the contents of each Check Sheet to the computer tape It contains all definitions and instructions necessary for completing the Check Sheet except the classi fications of plant formations and soils which are presented in Appendices 1 and 2 respectively Together with these appendices it can be used in isolation from the remainder of the Guide and is therefore suitable for translation in those countries where it is not possible to translate the entire Guide Previous parts explain the purpose and objectives of the survey (Part 1) the selection of sites (Part 2) and the meaning and purpose of each question on the Check Sheet (Part 3) Following this part are four appendices dealing with the classification of Plant Formations classification of soils the Geocode and an example of a completed Check Sheet

Incomplete Information

It is likely that for many IBP Areas* the surveyor will not have enough information to complete every question To a limited extent this does not matter for even incomplete returns will contain valuable information Nevertheless there is a minimum number of sections which must be com pleted before a returned Check Sheet can be accepted as adequate **Sections 1, 2, 3, 4, 5, and 7(1) must be completed before it is worth sending in a Check Sheet to the Data Centre**

A returned Check Sheet containing only the bare minimum of information will possess only limited worth In practice it is expected that for most IBP Areas* much more information will be available any ecologist reasonably familiar with an IBP Area* should have no difficulty in answering Sections 6 7(2) 9 10 11 12 and 13 in addition to those listed above The remaining Sections — 8 14 15 16 17 and 18 — ask for more detailed information which may not be readily available Since these later sections largely correspond with the conservation content of the Check Sheet it i hoped that surveyors will make every effort to obtain the additional information necessary to com plete the Check Sheet As the number of unanswered questions increases so does the value of the survey decrease

IBP Area and IBP Subdivision

IBP Area An IBP Area is a site of class A B C or D as defined below under 4(3)

IBP Subdivision An IBP Subdivision is part of an IBP Area It is an area variable in extent which is of interest to conservationists and biologists and which is of such size and uniformity that its features can be meaningfully set out on a single Check Sheet

Notes on Sections

In the paragraphs below the numbers correspond with the section (question) numbers on the Check Sheet

General rules

(a) Where quantitative information is requested (e g area) this should be given as accurately as possible Estimates are acceptable in the absence of accurate values

(b) In general only positive statements should be made (i e **presence** of a particular feature) but when a feature is known **with certainty** to be absent this may be stated

1(1) **Name of surveyor**

(2) **Address of surveyor**

(3) **Check Sheet completed on site/from records** Check (i e ✓) one or both as applicable

(4) **Date Check Sheet completed**

2(1) **Name of IBP Area** If the IBP Area is Class A B or C (see 4(3) below) insert the name as it appears in the U N List (A and B) or in national lists of protected sites (B and C) For Class D IBP Areas insert the name by which the IBP Area is generally known If the U N List is not available for Classes A and B fill in the name by which the IBP Area is generally known

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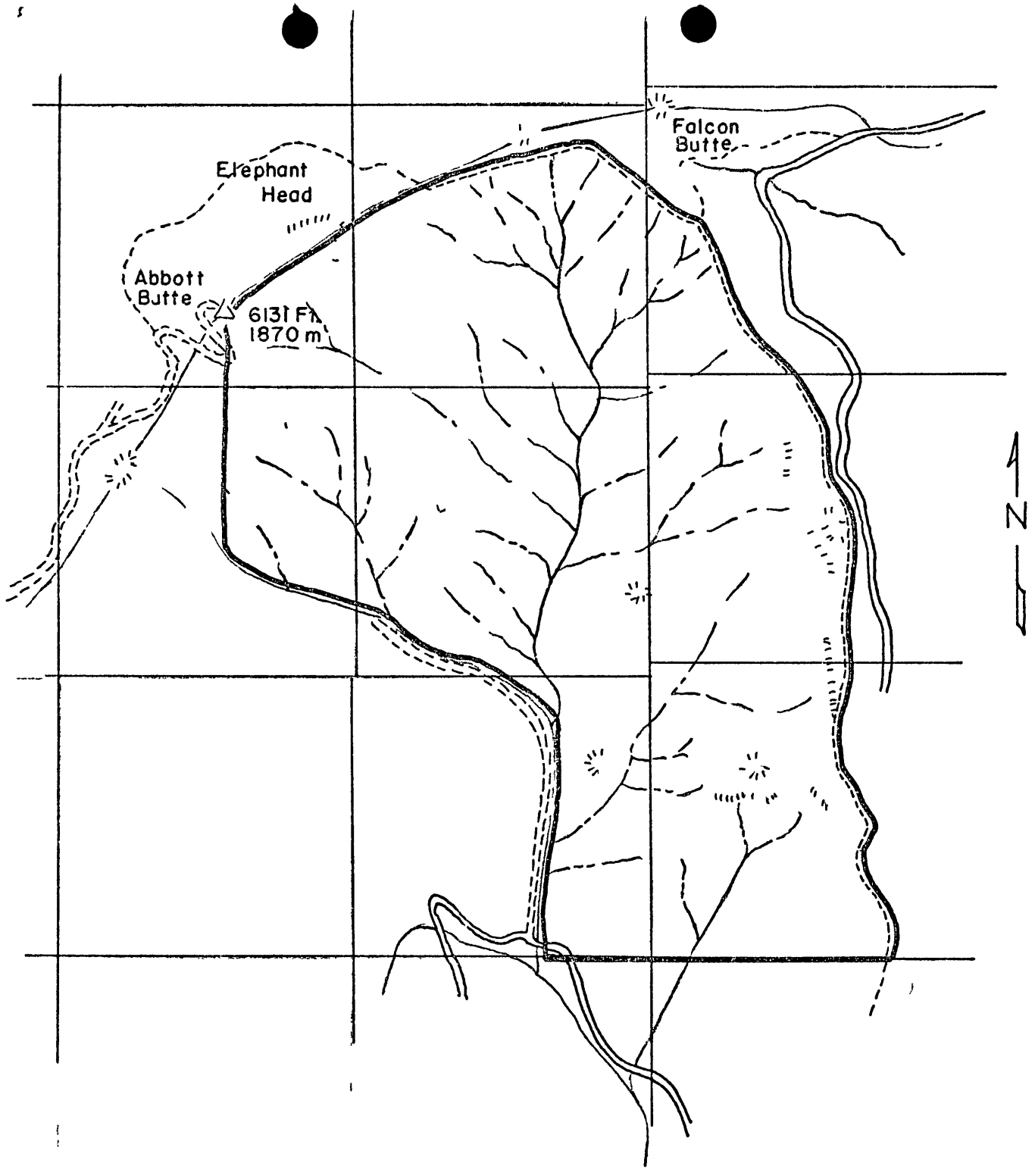
N B * IBP Areas and IBP Subdivisions



LEGEND

BOUNDARY, ABBOTT CREEK RESEARCH NATURAL AREA

SECTION LINE

STREAM

RIDGE LINE

GOOD ROAD

POOR ROAD

TRAIL

0 1/4 1/2 1 Mi

0 1/2 1 2 Km.

NATURAL AREA INFORMATION FORM

1. Name of Natural Area Abbott Creek Natural Area

2. Administering Agency U S Forest Service *January 2, 1947*

3 Supervising Field Unit Rogue *River* National Forest

4 State and County Oregon, Jackson County

5 Latitude and Longitude *122° 31' 42° 56'*
(This information will not be given to the general public)

6. Primary type on areas SAF-243, 2,055 Acres
(Ponderosa Pine - Sugar Pine - Fir)

7. Other important types represented on area:

7a. Botanic ~~K 52,~~ 605 Acres*, meadows and barren (not alpine)*

7b. Zoologic *Z-17 black-tailed deer, bears, cattle*

7c. Geologic G-13, Andesitic pumice and andesite, *G-16 igneous extrusive rocks*

7d. Aquatic *A-12 2 miles swiftly flowing streams*

8. Acreage 2660 Acres

9 Elevation and Topography Max 6,~~100', Min~~ *6131* ~~3,500'~~ *3300*, *see ... 13B*
Steep

10. For information contact Director
PNW Forest Experiment Station
6th Avenue
P O Box 3141
Portland, Oregon 97208

This form should be filled out in accordance with the instructions on the accompanying information sheet.