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Name	lev.		Long -		Fa	cilitie	-					Act	ivities	314 1		1
		Map Location	Tent Sites	Trailer Sites	Picnic Sites	Water*	Other**	Stay Limit (No. of Days)	Fishing	Hunting	Hiking	Berry Picking	Boating Ramps	Swimming	Water Sports	Horse Facilities
HORSE FACILITIES AT TRAILHEADS																PE
Boulder Park	5000	G-6							x	×	x	×			2.862	100
Cornucopia	4800	G-6							×	x	x	x			19736	
Lillyville	5200	G-4							×	x	×	x		_	21.30	
North Catherine Creek	4200	F-5							×	×	×	×				
Sheep Creek	6500	H-5							×	x	x	x				
West Eagle Meadow	5450	F-6							×	×	X	×				14
HELLS CANYON RES. BOAT CAMPS																
Kirby Creek	1725	1-5	4			Pi			x	x	x		×	x	1000	2.10
Leep Creek	1725	1-5	3		3	0			×	x	x		×	x		100
Lynch Creek	1725	1-5	3		1	Pi			×	x	x		×	x		Sec.
Vermillion Bar	1725	1-5	2		1	0			×	x	x		×	x		-
SNAKE RIVER BOAT CAMPS																
Lookout Creek	1100	J-2	3			St			×	x	x		×	1	199	
Salmon Bar	1000	1-1	3			St			x	x	x		x		-	of the
Salt Creek	1210	J-3	3			St			×	x	x		x			112
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Other Recreation Sites

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Name	Elev.				Fa	acilitie	5					Act	ivities			
		Map Location	Tent Sites	Trailer Sites	Picnic Sites	Water*	Other**	Stay Limit (No. of Days)	Fishing	Hunting	Hiking	Berry Picking	Boating Ramps	Swimming	Water Sports	Horse Facilities
STATE PARKS:																12.00
Catherine Creek	3200	E-5	10		59	Pi	FT		x	-	x					
Hilgard	3000	C-4	18		26	Pi			×	x	х					
Minam	2600	E-2	12						x		x		x	x		
Red Bridge	3200	C-4			33	Pi			х	×	x					
Unity Lake	3900	C-10	10		21	Pi	BL, FT		х	×	х		×	×	x	
Wallowa Lake	4640	G-4	89	121	166	Pi	CK,BL,BI	R	×	×	×		×	×	×	×
IDAHO POWER CO.							11,011									
Copperfield Park	1720	1-6		100	×	Pi	FT	7	×	х	×		х	х	x	
Hells Canyon Park	1660	1-6	x	x	x	Pi	BL, FT	7	×	x	×		x	x	x	
McCormick Park	2000	H-7	×	×	×	Pi	BL, FT	7	×	x	×		х	x	x	

\$ – Pay Area

- # Water & electrical hookups
- **O B

1/2 0

Pu – Pump Sp – Spring St – Stream La – Lake

*Water

Pi - Piped

**Other BL - Boat Launch

- CK Comm. Kitchen
- FT Flush Toilet
- Sh Shelter BR – Boat Rental



U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE JOHN R. McGUIRE - CHIEF

WALLOW A-WHITMAN National Gorest (WEST HALF)

> OREGON WILLAMETTE MERIDIAN

> > SCALE IN MILES

2 LEGEND







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DESIGNATION ORDER

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By virtue of the authority vested in me by the Secretary of Agriculture under regulation 7CFR 2 60(a) and 36CFR 251 23, I hereby designate as the Indian Creek Research Natural Area the lands described in the preceding report by Philip Musgrove dated December 6 1977 Said lands shall hereafter be administered as a research natural area subject to the said regulations and instructions thereunder

AUG 2 9 1980	Iliona C helom
Date	ade Chief

RECOMMENDATIONS

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

2/16/79 Date nichal Submitted Timber Management 21 FEB 1979 Recommended Date Forest Supervisor Wallowa_Whitman National Forest <u>3-7-80</u> Date Recommended Director PNW Experiment Station <u>10 - 11- 79</u> Recommended Date Regional Forester Region 6 80 Approved Diretor Division of Recreation AUG 2 6 1987 Approved Deputy Chief Date Research Theore C Velor AUG 2 9 1980 Approved Date

March 27, 1978

INDIAN CREEK RESEARCH NATURAL AREA STATUS OF MINERAL WITHDRAWAL

By phone conversation with Kelly Huff of the Regional Lands and Minerals Office, the following information was obtained concerning the status of the Indian Creek Research Natural Area Mineral Withdrawal

- 1 The area cannot be withdrawn until it is established
- 2 No lands are being withdrawn at this time
- 3 The report of mineral character for the area in question has been done (by Roger Minnich 9/24/76)
- 4 When the Regional Office receives instruction of the new withdrawal procedures, these procedures will be forwarded to the Union District Withdrawal procedures will begin at that time
- 5 At this time, all that can be realistically done for the mineral withdrawal of the proposed Indian Creek R N A has been done

PHIL MUSGROVE

210 Musyron 3-27-78

<u>TITLE</u>

ESTABLISHMENT REPORT

FOR THE

INDIAN CREEK RESEARCH NATURAL AREA

WALLOWA-WHITMAN MATIONAL FOREST

UNION COUNTY, STATE OF OREGON

ESTABLISHMENT REPORT

Indian Creek Research Natural Area Wallowa-Whitman National Forest

Principal Distinguishing Features

The Indian Creek Research Natural Area occupies approximately 990 acres (396 ha) of subalpine forest and associated talus, rock outcrops, rock domes, cliffs, meadows and perennial streams northeast of Mt Fanny, a 7 153 foot (2180 m) peak in the Wallowa Mountains of eastern Oregon (Figure 1) Two forest types are dominant The lodgepole pine (Pinus contorta)¹/ type is extensive and occupies all topographic situations The mountain hemlock (Tsuga mertensiana) type occurs in relatively pure stands on steep to very steep northeast slopes The species is often a major component within the lodgepole type Subalpine fir (Abies lasiocarpa) and Engelmann spruce (Picea engelmanni) are codominant with lodgepole pine in several areas

All slope situations are present from gentle rounded ridges and benches to vertical rock cliffs 550 feet (168 m) in height resulting in numerous rock outcrops and rock domes

Two perennial streams one-quarter to $\frac{1}{2}$ mile (4-8 km) in length flow through meadows near the center of the Research Natural Area and join to form Indian Creek which then flows north about one mile (1 6 km), through a series of falls and small meadows to its exit at the north boundary In addition, there are grass-sedge meadows not associated with perennial streams and subject to vernal ponding One small subalpine permanent pond is also present

Justification

The tract was originally located by members of the Pacific Northwest Natural Area Committee and the Wallowa-Whitman National Forest Their chief interest in the area was to set aside a representative area of a subalpine forest mosaic in the Blue Mountains dominated by lodgepole pine in which the mountain hemlock type was represented Further evaluation by the Wallowa-Whitman National Forest and representatives of the Pacific Northwest Forest and Range Experiment Station expanded the original boundaries to include a small pond and a larger pure stand of mountain hemlock With these additions the Indian Creek Research Natural Area contains more diverse habitats and therefore

1/ All scientific names from Hitchcock, C Leo and Arthur Cronquist 1973 Flora of the Pacific Northwest Univ of Wash Press Seattle, Washington 730 p is a good candidate to fill or represent several Research Natural Area (RNA) needs in subalpine forest types in the Ochoco, Blue and Wallowa Mountain province of eastern Oregon $\frac{2}{2}$

The RNA contains representative stands of the lodgepole pine/dwarf huckleberry (Vaccinium scoparium)/pinegrass (Calamagrostis rubescens) community type (SAF type 218) 37 Several successional stages of the type are present from essentially pure lodgepole with minimal or no reproduction of other conifers to mixed conifer forests where subalpine fir mountain hemlock, and Engelmann spruce are codominant associates with lodgepole and one or more of these species are the dominant reproduction species in the understory These stands occur on various combinations of soil depths slope and aspect and have different fire and associated grazing histories Consequently, understory plant communities vary greatly in composition and productivity Similar successional stages of the lodgepole type are common throughout the Blue and Wallowa Mountains and the stands within the RNA provide excellent representation of these forest conditions

Although not extensive the mountain hemlock type (SAF type 205) is represented with several relatively pure stands ranging from 5 to 20 acres This will be the first representation of the species in the mountainous area of eastern Oregon and Washington and will compliment the mountain hemlock stands in established RNA's (Steamboat Mountain Wildcat Mountain Ollalie Ridge) in the Oregon and Washington Cascades

The Indian Creek Research Natural Area will also provide examples for other terrestrial and fresh water systems not presently available in established RNA's in eastern Oregon Cliffs, massive rock domes, and rock outcrops provide additional terrestrial types with specific plants in more or less depauperate plant communities These types are an integral part of the subalpine forest biotic system, they are particularly important activity centers for small vertebrates and birds and provide protective and desirable environments for several species of plants

Including the headwaters of the Indian Creek within the RNA provides an example of a perennial subalpine stream drainage (fresh water cell #11)² Their permanent and vernal subalpine ponds (fresh water cells #5 and #8 respectively) will be the first examples within RNA's in eastern Oregon

2/ Dyrness C T Jerry F Franklın Chris Maser Stanton A Cook James D Hall and Glenda Faxon 1975 Research natural area needs in the Pacific Northwest USDA For Serv Gen Tech Rep PNW-38 Pacific Northwest For and Range Exp Stn Portland Oreg p 139

 $\frac{3}{1}$ Society of American Foresters 1954 Forest Cover Types of North America (Exclusive of Mexico) Washington D C 67 p illus

These water systems together with the meadows with their various grass grass-forb sedge, bog, and riparian communities enrich the flora and fauna and are the significant focal points for faunal activity within the RNA

The RNA has additional features which favor its establishment and makes it highly suitable for ecological research First, no other subalpine area in the Wallowa Mountains (1) has the variety of terrestrial and fresh water systems available in the Indian Creek Research Natural Area (2) is as equally accessible by road (3) although accessible has an apparent low level of use by man during the summer Use is primarily confined to occasional summer traffic along months the main north-south road, Forest Service Road S245 In the autumn however, a moderate number of elk and deer hunters hunt in the RNA (4) Adjoins the Big Canyon Creek drainage which possesses many of the same plant communities and fresh water cells contained in the proposed This area is presently designated as Wilderness and could serve RNA as control for the proposed area (5) Monthly temperature and precipitation data are available from the Mt Fanny TV translator station located one-half mile southwest of the RNA at 7100 feet (2164 m) This proximity to climatic data and its accessibility make the Indian Creek RNA particularly attractive for future research

Location

The Indian Creek Research Natural Area occupies approximately 990 acres (396 ha) on the crest of the mountain range lying between the Grande Ronde Valley and the Minam River (Figure 2) The RNA includes all the headwaters of Indian Creek which drains north and west into the Grande Ronde River It lies approximately one-half mile (0 8 m) northeast of Mt Fanny (7153 feet 2170 m) a significant landmark in the area and five air-line miles (8 km) east of the town of Cove Oregon

There is good to fair access to the RNA during summer months via several county and Forest Service roads The best access (Figure 1) is east of Cove on Forest Service Road S23 to the Moss Springs campground thence north approximately five miles on Forest Service Road S245 to the south boundary of the Natural Area Access is also available from the north via Forest Service Road S220 (the "Mt Harris road") to its junction with the Forest Service Road S245 approximately 5 miles (8 km) north of the RNA However, this road, S245, as well as Forest Service Road N116 from Moss Springs is very unsuitable for use by sedans, station wagons, small vans, etc , there is no difficulty using pickup and 4-wheel drive type vehicles

The RNA is located primarily in Sections 5 and 8, T 3 S , R 41 E , W M Small portions of Sections 4, 6 7 and 9 within the same township and range are also included

All the RNA is within Union County, is federally owned and administered by the Union Ranger District, Wallowa-Whitman National Forest

Boundaries

The boundaries of the Indian Creek Research Natural Area are located mainly on roads and topographic features (Figure 2) Beginning at the junction of Forest Service Road S245 and Road S245A, the south boundary proceeds approximately l_{4}^{1} miles (2 km) west along the Mt Fanny road, past the Indian Creek camp, to the ridge west of the Indian Creek camp It then proceeds north about $1 \frac{1}{8}$ miles (1 8 km) along the top of the ridge to a rocky point terminating the ridge From this point the boundary proceeds along a line north 45° proper east for about 3/8 mile (0 6 km) to a rocky knoll (elevation 6440 feet, 1962 m), just east of the section boundary between Sections 5 and 6 From this point the boundary proceeds across Indian Creek north 850 east for approximately 1 1/8 miles (1 8 km) to Forest Service Road S245 in the northwest corner of Section 4 It then proceeds south along Forest Service Road S245 to the point of origin at the junction of S245 with the Mt Fanny Road, S245A All critical turning points along the northwest and north boundaries will be monumented

Where boundaries follow roads the actual RNA boundary is posted 200 feet (60 9 m) from the centerline of the road to allow safe maintenance of a roadside strip

Physical and Climatic Conditions

The Indian Creek Research Natural Area occupies 990 acres (**40***i* ha) on the top of the westernmost mountain range of the Wallowa Mountains Elevations range from 6,200 feet (1890 m) at the northern boundary where Indian Creek leaves the RNA to 7,015 feet (2138 m) on the ridge which is the western boundary About half of the RNA occurs on gentle to moderate slopes on undulating topography (less than 30 percent) particularly in the central portion which includes the headwaters of Indian Creek The remaining area occupies steep to very steep slopes and several massive rock domes, which rise to elevations above 7 000 feet (2133 m)

The proposed research natural area is a diverse landscape composed of all slope aspects and nearly all degrees of slope Gradients range from gentle streamsides of 2 to 7 percent to sidehills of 70 percent, where mountain hemlock has been observed, to vertical barren andesite

cliffs 200 feet (60 9 m) high Elevations range from 6 120 feet (1865 m) at the north end of Indian Creek adjacent to the proposed boundary to 6 960 feet (2121 m) atop the central massive andesite outcroppings and to 7,015 feet (2138 m) along the sharp ridgeline along the southwest and western boundary of the area To the east, Dunn's Bluff forms an impressive monolith rising 7,160 feet (2182 m) Most of the topography however, is moderately sloping which is more typical of the landscape this area is to represent

Most of the area is covered with varied stands of lodgepole pine The larger openings are wet meadow bottoms which are often dotted or striated by scattered trees where pockets or bands of soil exist Remnants of old stream channels occur within timbered areas associated with drainage basins They are distinguished by surface gravel accumulations

Soil parent materials are of volcanic or igneous origin The volcanic materials are silt size Mazama ash (6 500 years old) which blanket most of the area ranging in thickness from 2 to 22 or more inches (5-56 cm) This ash layer is the primary soil-vegetation influence over the area as is typical of the region The ash may be underlain by weathered andesite residuum or andesite colluvium Thickness of the buried layer has not been determined The ash soils are typified by an A, AC and C profile generally dark brown in the surface grading to light yellowish brown or white in the C horizon Organic surface layers are commonly 1 inch (2 5 cm) thick or less The ash layer is usually of silt loam texture throughout grading to gravelly silty clay loam in the buried soil layer The latter is commonly dark reddish brown in color These soils are of the Tolo series (Typic Vitrandepts) A very weakly developed A2 horizon is sometimes encountered The ash layer is weakly platy structured in upper portions and structureless below Some horizon waviness and mixing occurs due to tree windthrow

The igneous material is a fine grained gray andesite of late Miocene age which occurs over the whole area either as an outcropping or as underlayment It is highly weather resistant, although accumulations of weathered materials mixed with volcanic ash occur and may be 27 inches (68 6 cm) or more deep on side slopes below large rock outcroppings The andesite fragments are $\frac{1}{4}$ to 1 inch (0 6 to 2 5 cm) in size and are sharply angular Accumulations are banded in 2 to 6 inch (5 to 15 cm) layers which exhibit differing colors, varying from dark brown to yellowish brown Soils of this origin have not been named

Soils of the meadow bottoms have also not been named although related soils of the Veazie series (Cumulic Haploxeroll) have been mapped on the Starkey Experimental Forest and Range, 30 miles (49 km) southwest of La Grande Oregon The Veazie soils are, however subject to warmer and drier conditions than the meadow soils in the proposed area Observations indicate that the latter range from a few inches to

several feet thick are alluyium of ash and adnesitic origin Finer textures are moderately well developed usually very dark brown to black in the surface to dark brown subsoils Medium moderate granular structure predominate Textures vary from silt loam to silty clay loam in the surface to silty clay loam and clay loam in the subsoll Lighter colors below the Al horizion in some profiles may be a genetic A2 horizon with A3 and B horizons below These are apparently associated with subsurface lateral drainage and water table fluctuations Slumping occurs near spring sources and along small streams feeding Indian Creek Such slumps are caused by underground water movement undermining supporting subsoil materials

The climate is typically wet and cold in winter with a dry and warm summer season beginning in late June and extending into late September The following climatic data are from the weather station on Mt Fanny, at 7,100 feet (2164 m) elevation $\frac{1}{2}$ mile (0 8 km) southwest of the RNA boundary (U S Weather Bureau Oregon Summaries 1965-1973) $\frac{4}{7}$

Mean	annual temperature	35	2 ⁰	F 1	80	С		
Mean	January temperature	18	00	F -7	80	С		
Mean	July temperature	57	10	F 13	90	С		
Mean	August temperature	60	10	F 15	60	С		
Mean	annual precipitation	43	02	inches	•	10	92	\mathtt{cm}
Mean	precipitation June through August	3	90	inches		9	9	\mathtt{cm}

Average maximum snow depth in April at Moss Springs 2½ miles (4 km) south at 5 800 feet (1767 m) elevation is approximately 5 feet (1 5 m) Water content of the snowpack for the months January through May average 9 0, 14 7 19 9 24 1 and 21 2 inches (22 8 37,34 50 55 61 21 and 53 85 cm), respectively Snow melt is generally completed in early July in some years small snow banks will remain through the summer season under dense mountain hemlock on steep northeast slopes

Vegetation

The tree species in the RNA are as follows

N

Lodgepole pine (<u>Pinus contorta Dougl</u>) Mountain hemlock (<u>Tsuga mertensiana</u> (Bong) Carr) Subalpine fir (<u>Abies lasiocarpa</u> (Hook) Nutt) Engelmann spruce (<u>Picea engelmannii</u> Parry) Grand fir (<u>Abies grandis</u> (Dougl) Lindl) Rocky Mountain Douglas-fir (<u>Pseudotsuga menziesii</u> var glauca Beissen) Franco) Western larch (Larix occidnetalis Nutt)

4/ Temperature data are 3-year (1971-1973) means, precipitation data are means of 7 to 9 years beginning in 1965

The first three species are common and more or less dominant in the forest stands Engelmann spruce is primarily found along streams bogs, and at the foot of rock talus Grand fir reproduction and poles occur under mixed stands of lodgepole pine, subalpine fir and Engelmann spruce in the northwest and northern portions of the RNA Douglas-fir and western larch are rarely encountered

Ecologically the plant communities within the RNA are typical of the subalpine fir forest zone in the Blue and Wallowa Mountains of northeastern Oregon and southeastern Washington, however climax stands of subalpine fir were not found within the RNA Instead, most stands are in lower successional stages with lodgepole pine the conspicuous dominant seral species Aproximately 50 percent of the RNA hectares can be classified as in the lodgepole pine/grouse whortleberry community type (Figure 3) Characteristic stands of this seral type occur on the moderate slopes around Indian Creek camp and on both north and south slopes of the ridge which lies just north of the Mt Fanny road (south boundary) Most of the reproduction in the stands is lodgepole pine but small individuals of subalpine fir and mountain hemlock are occasionally found

The community type also occurs on the moderate slopes west of Indian Creek, but as one encounters the steep slopes of the ridge along the western boundary of the RNA, subalpine fir and mountain hemlock increase in number and eventually are cocominant with or even dominant over lodgepole pine in the stands The understory is generally characterized by mountain hemlock and alpine fir reproduction In the eastern portion of the Indian Creek watershed subalpine fir is codominant with lodgepole and figures prominently in the reproduction

Near the northern boundary and west of Indian Creek, Engelmann spruce enters the lodgepole community and the understory reproduction is primarily lodgepole pine and Engelmann spruce with some grand fir These stands are at the lowest elevation within the RNA and are approaching or appear to approach the seral type communities that are found within the upper grand fir zone a mid-slope forest zone common in the Blue Mountains of eastern Oregon The presence of thinleaf huckleberry (Vaccinium membranaceum) is further evidence that the grand fir zone is present within the RNA and the stands may be seral communities of either the subalpine fir/grouse whortleberry or the grand fir/thinleaf huckleberry types

The lodgepole stands with other conifers codominant account for approximately 25 percent of the hectares in the RNA (see Figure 3 and Table at end of report)

Because of their seral nature the various lodgepole pine community types present a wide diversity of understory plant communities Ubiquitous in all stands is grouse whortleberry (Vaccinium scoparium)

With few exceptions it is the dominant understory species Associates in most stands are Hieracum albiflorum Arnica cordifolia Calamagrostis rubescens Carex geyeri and Lupinus species As stand density increases and canopies close, Chimaphila umbellata Lonicera utahensis Polemonium pulcherriumum and Pyrola secunda become prominent in the understory As the stands become more open with decreasing canopy cover, such species as Hieracium cynoglossoides, H Glacile Arnica mollis, A Parryi, Epilobium engustifolium Carex Ligusticum tenuifolium and Anaphalis margaritacea enter the rossii herbaceous plant community In the shrub layer are Amelanchier alnifolia, Berberis repens Sorbus scopulina, Prunus emarginata and Penstemon fruticosus but the few plants found are generally well hedged by elk or deer

A second forest community type of relatively small acreage (about 5 percent of the RNA) but conspicuous in the Research Natural Area is dominated by mountain hemlock The hemlock appears to be the climax species in these communities An occasional mature subalpine fir is found but the overstory and the understory reproduction is dominated almost exclusively by mountain hemlock, particularly in stands restricted to steep and very steep northeast slopes Grouse whortleberry as in the lodgepole pine type, is the prominent understory plant but occurs only as widely scattered individuals total shrub and herbaceous cover commonly is less than 5 percent under the dense mountain Occasional associate species are Arnica cordifolia, hemlock canopy Hieracium albiflorum Pyrola secunda and Cyrpripedium montanum

As the forest types give way to grasslands on shallower soils, rock outcrops, and rocky ridges <u>Antennaris umbrinella</u> <u>Penstemon spatulatus</u>, <u>Juncus parryi</u> <u>Polygonum phytolaccaefolium</u>, <u>Arenaria capillaris</u>, <u>Eriogonum flavum Festuca viridula and Poa species are most commonly</u> encountered Growing between the rocks and on the cliff faces are various members of the <u>Polygonum</u> including <u>Cheilanthes gracillima</u> and <u>Polystichum lonchitis</u> These plant communities and those of the meadows described below occur on about 20 percent of the RNA hectares

The meadows exhibit a wide variety of plants in response to local variations in environmental conditions such as soil and water table depths duration of snow cover and shade or in response to the effects of historical grazing and present use of these meadows by elk. In the lush vegetation along flowing streams are various <u>Mimulus</u> <u>Dodecatheon</u> <u>Erigeron Allium</u> <u>Juncus</u> and <u>Carex</u> species. As the water table drops other species become prominent, particularly <u>Sibaldia</u> procumbens <u>Valeriana</u> sitchensis and <u>Senecio</u> hydrophiloides the latter a dominant and characteristic species in small meadow-like openings within the forest types

The historical use of these meadows by livestock is evident on the shallow and drier soils of the meadows in the form of large barren areas and successional plant communities At this time use is so

minimal that it does not justify prohibition Scattered plants of <u>Deschampsia</u> <u>Juncus</u>, and <u>Carex</u> are likely relics of an original climax community On the more barren and often eroded sites species observed on the upland grasslands and rocky outcrops and ridges are also found here notably <u>Juncus parryi</u>, <u>Arenaria capillaris Antennaria umbrinella</u>, and <u>Poa</u> species Some plants of <u>Festuca viridula</u> were also found on these drier meadows and, considering the number of plants found in protected sites around boulders and rocky outcrops, it is speculated that this species dominated the warmer and drier habitats of the grassland openings and meadows prior to the historical sheep grazing in the late 1800's

TERRESTRIAL AND AQUATIC COMMUNITIES

INDIAN CREEK RNA

KEY see	<pre># Community and Cell figure 3 Name</pre>	Kuchler Type, SAF Type & Cell Numbers	Hectares	Acres
TER	RESTRIAL	1966 K		
1	<u>Pinus contorta/Vaccinıum scoparium</u>	K-15 <u>5</u> / 8 SAF 218 Cell-22 <u>6</u> /	204	505
2	Pinus contorta, Abies lasiocarpa, Tsuga mertensiana, Picea engelmanii/Vaccınium scoparıum, V membranaceum	K-14, 15 14 SAF 206 Cell-10	100 5	248
3	<u>Tsuga</u> <u>mertensiana/Vaccinium</u> <u>scoparium</u>	K-4 SAF 205 Cell no t lısted	20	50
4	Pinus contorta/Vaccinium scoparium savannah, Grass/Forb basalt cliff talus, dome, and boulder ridge communities	K-14, 52 Cell-10,13,14,19,22 special talus cliff grassy bald cells	60 cells	148
5	Meadow, moist and wet	Cell-24,25	8	20
AQU	<u>IATIC 7/</u>			
6	Subalpine permanent ponds	Ce11-5	5	1
7	Subalpine vernal ponds	Ce11-8	4	9
8	Subalpine stream, bogs	Cell-11,13	4	9

- 5/ Kuchler, A W 1964 Potential natural vegetation of the conterminous United States American Geographical Society Special publication No 36 illus
- 6/ Dyrness C T Jerry F Franklın Chris Maser Stanton A Cook James D Hall and Glenda Faxon 1975 Research natural area needs in the Pacific Northwest USDA For Serv Gen Tech Rep PNW-38 Pac Northwest For and Range Exp Stn Portland Oreg Table 71 p 139

7/ Ibid Table 72 p 141

IMPACTS AND POSSIBLE CONFLICTS

- 1 Cultural Values There is no indication of any prehistoric archaeological sites in the area, nor is there any sign of historic materials
- 2 Mineral Values The area is nominal in mineral character Therefore, the effect on minerals and mining from the establishment of the proposed RNA will be simply the withdrawal of this area from the purview of the general mining laws
- 3 Grazing At this time grazing use is so minimal that it does not justify prohibition
- 4 Timber Timber resources are low on this area The annual allowable cut will be reduced by 118 M bd ft /yr This represents 0 5 of 1 percent of the Union Ranger Districts normal allowable cut The effects of this have been incorporated into the Grande Ronde Land Use Plan
- 5 Watershed Values The effect on water quality and features is expected to be of a neutral nature Disturbance to the watershed will be minimal from the activities allowed in the RNA
- 6 Recreation Value Recreation use for the most part will be unchanged The low numbers of hunters that utilize the area are not expected to interfere with the use of the areas for scientific and educational purposes If the numbers of people to use the area for recreation increases sharply to the point of significantly modifying the area action will be taken to discourage or prohibit recreational use
- 7 Wildlife Values The effects on wildlife will be of a neutral nature The habitat that is present will remain intact
- 8 Wilderness This area is not in a wilderness
- 9 Transportation Plans Forest Service Road S245A which runs along the east and south boundaries receives minimal use and should have no impact on the RNA



SOCIETY OF AMERICAN FORESTERS

Representing the Forestry Profession in America

5400 GROSVENOR LANE WASHINGTON D C 20014

(301) 897 8720

April 15, 1982

Mr Albert G Oard Forest Supervisor Wallowa-Whitman National Forest Forest Service, USDA P O Box 907 Baker, Oregon 97814

Dear Mr Oard

It is a pleasure to inform you that the Indian Creek Research Natural Area has been approved for listing in the National Register of Natural Areas maintained by the Society of American Foresters

At an appropriate upcoming event we will present a Certificate of Registration in recognition of participation in the program We urge that this certificate be framed and placed in the District Ranger Station, Experimental Forest Office, Visitor Center, or other appropriate location

Natural Area boundary markers are available for posting this SAF registration on the tract itself If you wish to use them, please advise

Congratulations, and thank you for your support of the Natural Areas Program of the Society of American Foresters

Sincerely,

Keith A Argow, Chairman SAF Committee on Natural Areas

KAA mb

cc Dr Russell M Burns Dr Robert L Ethington UNITED STATES DEPARTMENT OF AGRICUTURE

WO

REPLYTO 4060 Research Facilities

SUBJECT Approval of the Indian Creek Research Natural Area





Again, congratulations to you and the RNA Committee on a job well done

Two copies of the establishment report and an EAR are enclosed

RUSSELL M BURNS

RUSSELL M BURNS, Coordinator Forest Service Research Natural Area Program

Enclosure

RMBurns dlh 9-4-80

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U ED STATES DEPARTMENT OF AGRICULT

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REPLY TO 4060 Research Facilities

subject Proposed Indian Creek Research Natural Area

TO Director, PNW

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JAN 17 1980

Thank you for the opportunity to review the establishment report and environmental assessment report (EAR) for the proposed Indian Creek Research Natural Area (RNA) The three copies submitted for review are herewith returned for revision

The signature page indicates that the establishment report was prepared prior to mid-February and submitted under Cooper's cover letter dated November 2, 1979 The amended and much revised FSM 4063 was issued in March of 1979 The revised FSM 4063 contains detailed instructions and an outline for preparing an establishment report The enclosed proposed Indian Creek RNA establishment report does not contain all of the information required in the revised FSM 4063 for the aforementioned reason

To expedite the review and approval process I asked concerned staffs for their comments Most can be resolved by following the detailed instructions in FSM 4063 A few specifics might illustrate some of their concerns

- 1 Need the Director's signature, dated
- 2 Designation order incomplete as written
- 3 Figures should be numbered and referenced in the text \checkmark
- 4 Vegetation type map not included -
- 5 Metric equivalents lacking for english units "
- 6 Sources used for scientific names of flora and fauna not footnoted V
- 7 What are the "fresh water cells" mentioned on page 3 and the "cells" mentioned on page 13?
- 8 Need discussion of plans for the moderate number of hunters that camp in the proposed RNA
- 9 Discrepancies in the elevations of Mt Fanny (text 8,153' vs map 7,153') and the radio station/weather station (7,100' vs 7,153') see pages 4 and 8
- 10 Plans to monument critical turning points along the NW and N \checkmark boundaries? Posting?
- 11 Page 11 (last paragraph) " historical use of these meadows by livestock " Are they still being used? Plans?

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Some of the information needed appears to be contained in the EAR During the rewrite the typist also will want to correct typos on pages 7, 9, 10, and 13 I anticipate no problems in the review and approval process in the WD providing that the new format is followed in all details

It is unfortunate that this report spanned the time during which FSM 4063 was being revised and reissued

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Thank you again for the opportunity to review the enclosed reports

RUSSELL M BURNS

RUSSELL M BURNS Coordinator, Forest Service Research Natural Area Program

Enclosures

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RMBurns/dlh 1-17-79

UNITED STATES DEPARTMENT OF AGRICULTU FOREST SERVICE Forestry Sciences Laboratory 3200 Jefferson Way Corvallis, Oregon 97331

REPLY TO 4060

April 25, 1980

SUBJECT Indian Creek Research Natural Area

70 Russell Burns WO, RES, TM



Enclosed are copies of the final establishment report for the Indian Creek Research Natural Area I have included the original and one other copy Also included is a copy of the Impacts and Possible Conflicts section to insert in your copy #3 As for the Environmental Assessment Report I can find no sign of that anywhere Jerry says that he received nothing from you after your conversation with him on 3/31

I hope everything else is in order

rlene

SARAH GREENE Research Forester

Enclosure

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Pacific Northwest Forest & Range Experiment Station 809 N E Sixth Avenue Portland, OR 97232

REPLYTO 4060 Research Facilities

NOV 2 1979

subject Indian Creek RNA Proposal



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70 Chief

Submitted for your consideration and approval is the enclosed establishment report for the Indian Creek Research Natural Area The environmental assessment report is also enclosed The area is 990 acres (401 ha) of subalpine forest and associated features on the Wallowa-Whitman National Forest in eastern Oregon

Regional Forester R E Worthington and I recommend your approval

GLENN A COOPER Acting Director

Enclosures 3 cys Establishment Rpt 3 cys Environmental Assessment Rpt

cc Regional Forester, R-6 WO-TMR




INDIAN CREEK RESEARCH NATURAL AREA

Supplement No 14¹ Sarah E Greene²

The Research Natural Area described in this supplement is administered by the Forest Ser vice an agency of the US Department of Ag riculture Forest Service Research Natural Areas are located within Ranger Districts which are ad ministrative subdivisions of National Forests Normal management and protective activities are the responsibility of District Rangers and Forest Supervisors Scientific and educational uses of these areas however are the responsibil ity of the research branch of the Forest Service Scientists interested in using areas in Oregon and Washington should contact the Director of the Pacific Northwest Forest and Range Experi ment Station (809 N E 6th Avenue Portland Oregon 97232) and outline activities planned If extensive use of one or more Forest Service Research Natural Areas is planned a coopera tive agreement between the scientist and the Forest Service may be necessary The Forest Supervisor and the District Ranger administer ing the affected Research Natural Area will be informed by the Experiment Station Director of mutually agreed on activities When initiating work a scientist should visit the administering Ranger Station to explain the nature purpose and duration of planned studies Permission for brief visits to observe Research Natural Areas can be obtained from the District Ranger

The Research Natural Area described in this supplement is part of a Federal system of such tracts established for research and educational purposes Each Research Natural Area constitutes a site where natural features are preserved for scientific purposes and natural processes are allowed to dominate Their main purposes are to provide

- 1 Baseline areas against which effects of human activities can be measured
- 2 Sites for study of natural processes in undis turbed ecosystems and

3 Gene pool preserves for all types of or gamisms especially rare and endangered types

The Federal system is outlined in A Direc tory of the Research Natural Areas on Federal Lands of the United States of America³

Of the 70 Federal Research Natural Areas es tablished in Oregon and Washington 45 are de scribed in Federal Research Natural Areas in Oregon and Washington A Guidebook for Sci entists and Educators (see footnote 1) Supple ments to the guidebook describe additions to the system

The guiding principle in management of Re search Natural Areas is to prevent unnatural encroachments or activities that directly or in directly modify ecological processes Logging and uncontrolled grazing are not allowed for example nor is public use that might impair sci entific or educational values Management practices necessary for maintenance of ecosys tems may be allowed

Federal Research Natural Areas provide a unique system of publicly owned and protected examples of undisturbed ecosystems where sci entists can conduct research with minimal in terference and reasonable assurance that in vestments in long term studies will not be lost

Supplement No 14 to Federal Research Natural Areas in Oregon and Washington A Guidebook for Scien tists and Educators by Jerry F Franklin Frederick C Hall C T Dyrness and Chris Maser (Pacific Northwest Forest and Range Experiment Station 1972) The guidebook is available from the Superintendent of Docu ments U S Government Printing Office Washington D C 20402 stock number 001 001 00225 9

Sarah E Greene is a research forester Forestry Sci ences Laboratory Pacific Northwest Forest and Range Experiment Station Corvallis Oregon

Federal Committee on Ecological Reserves A direc tory of the Research Natural Areas on Federal lands of the United States of America Washington D C US De partment of Agriculture Forest Service 1977

to logging land development or similar ac tivities In return a scientist wishing to use a Research Natural Area is obligated to

- 1 Obtain permission from the appropriate ad ministering agency before using the area ⁴
- 2 Abide by the administering agency's regula tions governing use including specific limi tations on the type of research sampling methods and other procedures and
- 3 Inform the administering agency on prog ress of the research published results and disposition of collected materials The purpose of these limitations is to
- 1 Insure that the scientific and educational values of the tract are not impaired
- 2 Accumulate a documented body of knowl edge about the tract and
- 3 Avoid conflict between studies

Research must be essentially nondestructive destructive analysis of vegetation is generally not allowed nor are studies requiring extensive modification of the forest floor or extensive ex cavation of soil Collection of plant and animal specimens should be restricted to the minimum necessary to provide voucher specimens and other research needs Under no circumstances may collecting significantly reduce population levels of species Collecting must also be carried out in accordance with applicable State and Federal agency regulations Within these broad guidelines appropriate uses of Research Natu ral Areas are determined by the administering agency

Six agencies cooperate in this program in the Pacific Northwest US Department of Agriculture — Forest Service US Department of the Interior — Bureau of Land Management Fish and Wildlife Service and Na tional Park Service the US Department of Energy and the US Department of Defense

INDIAN CREEK RESEARCH NATURAL AREA

Subalpine forest with tarns rock outcrops rock domes cliffs meadows ponds and perennial streams

The Indian Creek Research Natural Area (RNA) was established in September 1980 as an example of the subalpine forest mosaic in the Blue Mountains Province of Oregon The 396 ha (900 acre) RNA also includes vernal subalpine ponds the headwaters of Indian Creek a pure stand of mountain hemlock and rocks and cliffs Important plant communities are *Picea engel mannu Abies lasiocarpa/Vaccinium scoparium* and *Pinus contorta/V scoparium* ⁵

Indian Creek RNA is in the Union Ranger District Wallowa Whitman National Forest in Union County Oregon 24 km (15 mi) east of La Grande and 0.8 km (0.5 mi) northeast of Mount Fanny and is located primarily in sections 5 and 8 with small portions in sections 4.6.7 and 9.7.3 S R 41 E Willamette meridian (lat 45 19 30 N long 117 45 30 W) It is bounded on the east and south by Forest Service roads and on the west and north by topographic fea tures

Access and Accommodations

To reach the natural area travel 24 km (15 m1) east from La Grande on Highway 237 to Cove From Cove follow the Mill Creek Road (County Road 65) southeast for 3 6 km ($2^{1/4}$ m1) where it turns into Forest Service Road 6220 Proceed 9 6 km (6 m1) on 6220 past the Moss Springs Campground to the junction of 6220 and Forest Service Road 6220160 This is the southeast corner of the RNA The nearest com mercial accommodations are in Cove camping facilities are available at Moss Springs Campground

Environment

Indian Creek RNA is in the *Abies lasiocarpa* zone (Franklin and Dyrness 1973) This is the coolest and moistest of the forested zones cool summers cold winters and heavy winter snow packs are more important environmental fac tors than total precipitation A dry and warm summer season begins in late June and runs into late September The following climatic data are from the Mount Fanny weather station at 2164 m (7 100 ft) elevation (U S Weather Bureau Oregon Summaries 1965 1973)⁶

Mean annual

temperature	18C	(35 2 F)
Mean January		
temperature	78 C	(18 0 F)
Mean July		
temperature	13 9 C	(57 1 F)
Mean August		
temperature	15 6 C	(60 1 F)
Mean annual		
precipitation	$10.92\mathrm{cm}$	(43 02 in)
Mean precipitation		

June through August 99 cm (390 in)Average maximum snow depth in April re corded at Moss Springs [4 km (2¹/₂ mi) south at 1767 m (5 800 ft) elevation] is approximately 15 m (5 ft) The monthly average water content of the snowpack from January through May is 22 8 37 3 50 5 61 2 and 53 8 cm (9 0 14 7 19 9 24 1 and 21 2 in) respectively Snow usu ally melts by early June but in years with a heavy snowpack snowbanks may remain throughout the summer especially on steep northeast slopes

Scientific and common names of plant species are listed in table 1 $\ensuremath{\mathsf{1}}$

Temperature data are 3 year $(1971\ 73)$ means pre cipitation data are means of 7 to 9 years beginning in 1965

Scientific name	Common name
Abies grandis (Dougl) Forbes	Grand fir
Abies lasiocarpa (Hook) Nutt	Subalpine fir
Allium spp	Wild onion
Amelanchier alnifolia Nutt	Serviceberry
Anaphalis margaritacea (L) B & H	Pearly everlasting
Antennaria umbrinella Rydb	Umber pussy toes
Arenaria capillaris Poir	Mountain sandwort
Arnıca cordıfolıa Hook	Heartleafarnıca
Arnıca mollıs Hook	Hairy arnica
Arnıca parryı Gray	Nodding arnica
Berberis repens Lindl	Creeping barberry
Calamagrostis rubescens Buckl	Pinegrass
Carex sp	Sedge
Carex geyeri Boott	Elk sedge
Carex rossu Boott	Ross sedge
Cheilanthes gracillima D C Eat	Lıp fern
Chimaphila umbellata (L) Bart	Prince s pine
Cypripedium montanum Dougl	Mountain lady s slipper
Deschampsia spp	Hairgrass
Dodecatheon spp	Shootingstar
Epilobium angustifolium L	Fireweed
Erigeron spp	Erigeron
Eriogonum flavum Nutt	Yellow buckwheat
Festuca viridula Vasev	Green fescue
Hieracium albiflorum Hook	White flowered hawkweed
Hieracium cynoglossoides Ary Touy	Houndstongue hawkweed
Hieracium gracile Hook	Slender hawkweed
Juncus spp	Rush
Juncus parry, Engelm	Parry s rush
Larix occidentalis Nutt	Western larch
Liqueticum tenuifolium Wats	Fern leafloyage
Lonicara utahansis Wats	Utah honeysuckle
I ununue spp	Lunne
Mumulus spp	Monkey flower
Panstamon fruticosus (Pursh) Greene	Shrubby penstemon
Penstemon spatulatus Pennell	Wallowa penstemon
Piece and almanny Parry	Engelmenn spruce
Pinus contorta Dougl	Lodgenole nine
Pog sp	Bluegrass
Polemonium pulcherrimum Hook	Skunkleafnolemonuum
Polygonum phytologogafolyum Meyen	Pokeweed fleeceflower
Polygonum phytolaccaejonum Meisin	Mountain holly fern
Polystichum tonchills (L.) Roth	Bittoraborry
rrunus emarginaia (Dougi) walp	Douglos fir
r seudoisuga menziesii var giauca (Deissn) Franco	Douglas III One suded with tension
ryroia secunaa L	One slaca wintergreen
Senecio foetidus var nyarophiloides	Sweetmarsn Dutterweed
Sibbalaia procumbens L	Greeping siddaidia

Table IC 1 — Plants found in Indian Creek Research Natural Area¹

Table IC 1 — Plants found in Indian Creek Research Natural Area¹ — Continued

Scientific name	Common name
Sorbus scopulina Greene	Cascade mountain ash
Tsuga heterophylla (Raf) Sarg	Western hemlock
Tsuga mertensiana	Mountain hemlock
Vaccinium membranaceum Dougl	Big huckleberry
Vaccinium scoparium Leiberg	Grouseberry
Valeriana sitchensis Bong	Sitka valerian

Nomenclature follows Hitchcock and Cronquist (1976) Plants listed have been verified a complete survey has not been made

Indian Creek RNA is located on the top of the westernmost range of the Wallowa Mountains Slopes range from steep to gentle The more gentle to moderate slopes are primarily in the southern half of the RNA and at the headwaters of Indian Creek Slopes up to 70 percent are also common especially on northwest aspects and where there are vertical barren andesite cliffs and rock domes All aspects are present in the RNA (fig IC 1) Soil parent materials are of vol canic or igneous origin

The surface of the volcanic soils is a layer of predominantly silt size Mazama ash varying in thickness from 5 to 56 cm (2 to 22 in) commonly 50 cm thick Most layers are underlain by weathered andesite residuum or colluvium The ash layers which include A AC and C hori zons grade from dark brown on the surface to light yellowish brown or white in the C horizon Occasionally a weak A2 horizon occurs The or ganic (01 02) layers are generally less than 2 5 cm (1 in) thick The ash soils are andepts related to the Tolo Glot Boardtree and Helter series

A fine grained light colored andesite of late Miocene age is associated with the entire area either as underlay or outcrop This material ap pears quite weather resistant but weathered materials do accumulate where topographic situations permit such as below large rock out crops Here angular andesite fragments 0 6 to $25 \text{ cm} (\frac{1}{4} \text{ to } 1 \text{ in})$ thick mixed with volcanic ash at least 70 cm (27 in) deep were observed Such accumulations are banded in 5 to 15 cm (2 to 6 in) layers exhibiting variable composition of ash and fragments of andesite Variable colors are associated with these bands Soils of this ori gin are probably related to the Hall Ranch and Klicker series

The meadow associated soils derived from al luvium of andesite and ash origin range from 2 5 to 60 cm (1 in to 2 ft) thick Textures vary from silt loam to silty clay loam on the surface to silty clay loam and clay loam in the subsoil There appears to be significant internal lateral drainage and fluctuation in the water table Slumping often occurs near springs and along small tributaries to Indian Creek These soils are most likely related to the Veazie and Voats series

None of the soils have been correlated with established or tentative series by the National Cooperative Soil Survey⁷

Two perennial streams 0 4 to 0 8 km ($\frac{1}{4}$ to $\frac{1}{2}$ mi) long flow through meadows near the center of the natural area (fig IC 2) They join to form Indian Creek which flows north about 1 6 km (1 mi) through a series of falls and small meadows to the north boundary of the natural area There are also grass sedge meadows not associated with the perennial streams that are subject to vernal ponding There is one small vernal subalpine pond (fig IC 3)

J Michael Geist soil scientist Range and Wildlife Habitat Laboratory La Grande Oregon personal com munication 1982 on file at Pacific Northwest Forest and Range Experiment Station Portland Oregon



IC 1 Topographic map of Indian Creek Research Natural Area



IC-2. One of two perennial streams in the meadow area.

Biota

Vegetation

The subalpine forests of Indian Creek RNA are dominated by *Pinus contorta*, with *Tsuga mertensiana* and *Abies lasiocarpa* common (fig. IC-4). *Picea engelmannii* is found along streams, in boggy areas, and at the foot of rock talus slopes. *Abies grandis* occurs as saplings and poles under mixed stands of *Pinus contorta*, *Abies lasiocarpa*, and *Picea engelmannii* in the northern portions of the natural area. *Larix occidentalis* and *Pseudotsuga menziesii* var. *glauca* are rare.

The major community, which covers more than half the natural area, is a *Pinus contortal Vaccinium scoparium* type (fig. IC-5). This is the same as Society of American Foresters (SAF) cover type 218 Lodgepole Pine (Eyre 1980). Presently there are no climax *Abies lasiocarpa* stands. Reproduction is primarily *Pinus contorta* with very few *Abies lasiocarpa* and *Tsuga mertensiana*. This community occurs around Indian Creek Camp, on the north- and south-facing slopes of the ridge north of Mount Fanny, and on the moderate slopes west of Indian Creek. As slopes steepen, the amount of *Abies lasiocarpa* and *Tsuga mertensiana* in-



IC-3. Vernal subalpine pond.

creases in both overstory and understory (fig. IC-6). Abies lasiocarpa is codominant with *Pinus contorta* in the eastern portion of the watershed. Along the northern portions of the RNA and west of Indian Creek, *Picea engelmannii* occurs with *Pinus contorta*, with an occasional *Abies grandis* in the understory. This area is the same as SAF cover type 206 Engelmann Spruce-Subalpine Fir (Eyre 1980). These stands, part of the upper reaches of the grand fir zone, are probably seral to *Abies lasiocarpa/Vaccinium scoparium* and *Abies grandis/V. membranaceum* habitat types.

About one-fourth the natural area is covered by *Pinus contorta* stands with other conifers codominant. Because these stands are mostly seral, they support a wide diversity of understory plants. *Vaccinium scoparium* occurs in all stands and is usually the dominant species. *Hieracium albiflorum, Arnica cordifolia, Calamagrostis rubescens, Carex geyeri,* and *Lupinus* spp. are commonly associated with *Vaccinium scoparium. Chimaphila umbellata, Lonicera utahensis, Polemonium pulcherrimum,* and *Pyrola secunda* are found where stands are denser and canopies more closed. Where stands are more open, such herbs as *Hieracium cynoglossoides, H. gracile, Arnica*



IC-4. View of forest looking northwest across the headwaters of Indian Creek. Basin is dominated by Pinus contorta.

mollis, A. parryi, Epilobium angustifolium, Carex rossii, Ligusticum tenuifolium, and Anaphalis margaritacea are common. The shrub layer — Amelanchier alnifolia, Berberis repens, Sorbus scopulina, Prunus emarginata, and Penstemon fruticosus — is generally well hedged by elk (Cervus canadensis) or deer (Odocoileus hemionus).

Small areas are almost totally dominated by *Tsuga mertensiana* [SAF cover type 205 Mountain Hemlock (Eyre 1980)], which is climax (fig. IC-7). These stands are found on steep northeast slopes and support very little understory. *Vaccinium scoparium* is widely scattered and total cover rarely exceeds 5 percent. Occasional herb species are *Arnica cordifolia*, *Hieracium albiflorum*, *Pyrola secunda*, and *Cypripedium montanum*.

The remaining parts of the natural area are covered by grasslands on shallow soils, rock outcrops, rocky ridges, and meadows. Species encountered on the first three areas are Antennaria umbrinella, Penstemon spatulatus, Juncus parryi, Polygonum phytolaccaefolium, Arenaria capillaris, Eriogonum flavum, Festuca viridula, and Poa spp. Growing between rocks and on the cliff faces are various members of the Polypodiaceae — Cheilanthes gracillima and Polystichum lonchitis.

The plants found on the meadows vary with local site conditions such as type of soil, depth of water table, duration of snow cover, amount of shade, and response to cattle grazing and elk use. Along streams are various *Mimulus*, *Dodecatheon, Erigeron, Allium, Juncus*, and *Carex* species. Away from streams, where the water table drops, other species are prominent — *Sibbaldia procumbens, Valeriana sitchensis*, and *Senecio hydrophiloides*. The latter plant appears in small, meadowlike openings within the forest.

A vegetation map appears in Figure IC-8.



IC-5. Old-growth Pinus contorta/Vaccinium scoparium habitat on a poor site. Little regeneration of Abies lasiocarpa or Pinus contorta appears.



IC-6. Pinus contorta/Vaccinium scoparium habitat with old-growth breaking up and Abies lasiocarpa regeneration increasing, due to the northerly aspect and lack of fire in the recent past.



IC-7. Old-growth Tsuga mertensiana showing depauperate understory.



IC-8. Vegetation map of Indian Creek Research Natural Area.

Key to vegetation communities and natural features

- 1. Pinus contorta/Vaccinium scoparium
- 2. Pinus contorta, Abies lasiocarpa, Tsuga mertensiana, Picea engelmanii/Vaccinium scoparium, V. membranaceum
- 3. Tsuga mertensiana/Vaccinium scoparium
- 4. Pinus contorta/Vaccinium scoparium savannah; grass/ forb; basalt cliff, talus dome and boulder ridge communities
- 5. Meadow, moist and wet
- Subalpine permanent pond
 Subalpine vernal pond
- 8. Subalpine stream, bogs

Fauna

The combination of subalpine timber types meadows small ponds cliffs and talus fields provides diverse wildlife habitat A list of mam mals believed to frequent the natural area is in table 2 A list of birds appears in table 3 Only two amphibians have been verified as inhabit ants of the natural area the Pacific treefrog (Hyla regilla) and the western toad (Bufo boreas)

History of Disturbance

In the meadows large barren areas and the successional stage of the plant communities are evidence of past and present grazing Scattered plants of Deschampsia Juncus and Carex species are probably relics of the original plant community before grazing Some of the same species found on the upland grasslands rocky outcrops and ridges are found on the barren and eroded grazing sites — Juncus parryi Arenaria capillaris Antennaria umbrinella and Poa sp Festuca viridula grows in the drier meadow areas and may have dominated the warmer and drier habitats of the grassland openings and meadows prior to sheep grazing which began in the late 1800 s Grazing by domestic livestock is presently minimal there is evidence of elk use

No fires have occurred in the area recently although fire has been an important factor in maintaining the plant communities

Research

There is no ongoing research within Indian Creek Research Natural Area but the area is suitable for studies of regional forest and soil classification and a variety of ecological pro cesses including rates of decomposition of forest floor litter and logs succession of plant communities and nutrient cycling within a subalpine stream drainage The cliffs rock domes and rock outcrops provide excellent areas for studies of small vertebrates and birds

Maps and Aerial Photographs

Special maps applicable to Indian Creek RNA are **Topographic** — $7\frac{1}{2}$ Mount Fanny Oregon quadrangle scale 1 24 000 issued by the U S Geological Survey in 1965 and **Geologic** — Ore gon east of the 121st meridian scale 1 500 000 (Walker 1977) Either the District Ranger or the Forest Supervisor (Wallowa Whitman National Forest Baker Oregon) can provide information about the most recent aerial photographs and forest type maps for the area

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Walker W

Geologic map of Oregon east of 121st meridian Misc Inventory Series Map I 902 1 500 000 United States Geological Survey 1977

Franklin Jerry F Dyrness C T

Order	Scientific name	Common name
Insectivora	*Scapanus orarius	Pacific mole
mboonvora	Sorer palustris	Northern water shrew
	Sorex preblei	Malheurshrew
	Sorex vagrans	Vagrant shrew
Chiroptera	Eptesicus fuscus	B1g brown bat
	Lasionycteris noctivagans	Silver haired bat
	Lasıurus cinereus	Hoary bat
	Myotis californicus	California myotis
	Myotis evotis	Long eared myotis
	Myotıs lucıfungus	Little brown myotis
	Myotıs volans	Long legged myotis
	Plecotus townsendi	Western big eared bat
Lagomorpha	*Lepus americanus	Snowshoe hare
Rodentia	*Cıtellus columbıanus	Columbian ground squirrel
	Cıtellus lateralıs	Golden mantled squirrel
	Clethrionomys gapperi	Boreal redback vole
	*Erethizon dorsatum	Porcupine
	Eutamias amoenus	Yellow pine chipmunk
	Glaucomys sabrinus	Northern flying squirrel
	Microtus longicaudus	Longtailed vole
	Microtus montanus	Mountain vole
	*Mıcrotus rıchardsonı	Richardson vole
	*Neotoma cinerea	Bushytail woodrat
	Peromyscus manıculatus	Deer mouse
	Phenacomys intermedius	Mountain phenacomys
	*Tamıascıurus hudsonıcus	Red squirrel
	*Thomomys talpoides	Northern pocket gopher
	Zapus princeps	Western jumping mouse
Carnivora	*Canıs latrans	Coyote
	Felis concolor	Cougar
	Lynx rufus	Bobcat
	Martes americana	Marten
	Mustela ermınea	Shorttail weasel
	Mustela frenata	Longtail weasel
	Ursus americanus	Black bear
Artiodactyla	*Cervus canadensıs	Elk
•	*Odocoileus hemionus	Muledeer

Table IC 2 — Mammals in Indian Creek Research Natural Area¹

nd te p sence f d by ght ng und gn

N m n l tu f ll w Burt nd G nh d (1976) Mamm l l t d bele ed to us th t m t m f y Inf m t n suppl d by Ch M w ldl f b ologist USD p rtm nt f the Interio Bu u f L nd Management (F t y S n Labo at ry C rv ll O g n)

Order	Scientific name	Common name
Anseriformes	Bucephala ıslandıca	Barrow s goldeneye
Falconiformes	*Buteo jamaicensis	Red tailed hawk
	Accipiter striatus	Sharp shinned hawk
	Accipiter cooperi	Cooper s hawk
	Accipiter gentilis	Goshawk
	Falco columbarius	Pigeon hawk or merlin
	Falco peregrinus	Peregrine falcon
	*Falco sparverius	Kestrel or sparrow hawk
Gallıformes	Dendragapus obscurus	Blue grouse
	Bonasa umbellus	Ruffed grouse
	*Canachites canadensis	Spruce grouse
Strigiformes	Bubovirginianus	Great horned owl
0	Glaucidium gnoma	Pygmy owl
	Aegolius acadicus	Saw whet owl
	Asiootus	Long eared owl
	Strix nebulosa	Great grey owl
	Strix varia	Barred owl
	Otus flammeolus	Flammulated owl
Caprimulgiformes	Chordeıles mınor	Common nighthawk
Apodiformes	Chaetura vaux	Vaux s swift
		Hummingbird species
Piciformes	*Colaptes auratus	Yellow shafted flicker
	*Dryocopus pileatus	Pileated woodpecker
	*Dendrocopos villosus	Hairy woodpecker
	*Picoides tridactylus	Northern three toed
	Dandrocopos pubascans	Downy woodnecker
	Dendrocopos albolarvatus	White headed woodnecker
	Picoides arcticus	Black backed three toed woodpecker
	Asyndesums lewis	Lewis woodpecker
	Sphyrapicus varius	Yellow bellied sapsucker
	Sphyrapicus thyroideus	Williamson s sapsucker
	~p.vj.apveaovvj.ovaeuo	,, manual company

Table IC 3 — Birds in Indian Creek Research Natural Area¹

Order	Scientific name	Common name
Deggewfermer	NT	
Passeriiormes	Nullatiornis oorealis	Olive sided llycatcher
	*Emplaonax nammonali	Hammond s flycatcher
	Contopus soraiaulus	Western wood pewee
	Parus rujescens	Chestnut backed chickadee
	*Parus gambeli	Mountain chickadee
	*Perisoreus canadensis	Grayjay
	*Cyanocitta stelleri	Steller sjay
	Picapica	Black billed magpie
	Corvus corax	Common raven
	Nucifraga columbiana	Clark s nutcracker
	Sıtta carolınensıs	White breasted nuthatch
	Sıtta pygmaea	Pygmy nuthatch
	*Sıtta canadensıs	Red breasted nuthatch
	Certhia familiaris	Brown creeper
	Troglodytes troglodytes	Winter wren
	Cinclus mexicanus	Dipper
	*Ixoreus naevius	Varied thrush
	Turdus migratorius	Robin
	Hylocichla guttata	Hermit thrush
	Hylocichla ustulata	Swainson s thrush
	Hylocıchla fuscenscens	Veery
	Sialia mexicana	Western bluebird
	Sialia currucoides	Mountain bluebird
	*Regulus calendula	Ruby crowned kinglet
	Regulus satrapa	Golden crowned kinglet
	*Dendroica petechia	Yellow warbler
	Vermivora ruficapilla	Nashville warbler
	Dendroica townsendi	Townsend swarbler
	Oporornis tolmiei	MacGillivray swarbler
	*Carpodacus cassinu	Cassin s finch
	Carpodacus purpureus	Purple finch
	Leucosticte tephrocotis	Grav crowned rosy finch
	Spizella passerina	Chipping sparrow
	Zonothrichia leucophrys	White crowned sparrow
	Passorolla iliaca	Fox sparrow

Table IC 3 — Birds in Indian Creek Research Natural Area¹ — Continued

Order	Scientific name	Common name
	Melospıza lıncolnu	Lincoln s sparrow
	Melospiza melodia	Song sparrow
	Pınıcola enucleater	Pinegrosbeak
	Pheucticus melanocephalus	Black headed grosbeak
	Hesperiphona vespertina	Evening grosbeak
	Loxia curvirostra	Red cross bill
	Loxía leucoptera	White winged crossbill
	Pıpılo erythrophthalmus	Rufous sided towhee
	*Junco hyemalıs	Slate colored junco
	Spinus pinus	Pine siskin
	Passer domesticus	House sparrow
	Anthus spinoletta	Water pipit
	Vıreo solıtarıus	Solitary vireo
	Euphagus cyanocephalus	Brewer s blackbird
	Pıranga ludovıcıana	Western tanager
Charadruformes	*Tringa solitaria	Solitary sandpiper

Table IC 3 — Birds in Indian Creek Research Natural Area¹ — Continued

nd t p n f d by ght und

Nomnltu fllw Pt n(1961) Bdltd bl dtu th tmtm fy Infrmat nuppled by Evlyn Bullwldlfblgit USD prtm nt fAgrultu PfNrthw tFt nd Rng Eprim nt Sttn LG and Ogn





INDIAN CREEK RESEARCH NATURAL AREA ENVIRONMENTAL ASSESSMENT REPORT

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INDIAN CREEK RFSEARCH NATURAL AREA ESTABLISHMENT and MINERAL WITHDRAUAL E A R

SUMMARY

A PROPOSED ACTION

The proposal is to place approximately 990 acres of National Forest land into a Research Natural Area This proposal would also require the same area to be withdrawn from the purview of the General Mining Laws

The proposed action is in accordance with the Grande Ronde Land Use Plan which is to be approved and implemented in May 1978

B ENVIRONMENTAL IMPACTS AND UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The greatest impact of this proposal will be on the timber resource by reducing the annual allowable cut for the Wallowa-Whitman National Forest

No minerals or mining claims are known to be present in the proposal area Therefore the impact to mining and mineral exploration will be the loss of this area being available to mining Impacts on the other resources will be of a neutral nature The type of studies that will be done in the Research Natural Area will have a minimum of disturbance associated with them

C ALTERNATIVES

Alternative #1 - Establish 1660 acres of Research Natural Area This would include approximately 700 acres east of forest road S245 (See Appendix A) <u>-lternative #2</u> - Not establish a Research Natural Area in this

Alternative #3 - Chosen Alternative

D BASIS FOR SELECTION

The proposal was selected from the possible alternatives for these reasons (1) The Indian Creek area is made up of forest types that are needed for the Research Natural Area system (2) It is the policy of the USFS to establish and maintain the needed Research Natural Areas (3) The wilderness contained in the 1600 acre proposal was felt to be protected to an acceptable degree for research by being in wilderness status presently (4) It was also felt that the difficulty involved in removing area from wilderness may jeopardize the establishment of the Research Natural Area which is not in wilderness

E CONSULTATION

Information concerning this proposal was supplied to

Marilyn Cripe PO Box 1518 Pendleton OR 97801

In connection with M E O W (Maintain Eastern Oregon Wilderness) An archaeological reconnaissance of the proposed area was done by

George R Meade Ph D Rt 1 Box 54 Syphon Road Pocatello Idaho 83201

Thomas Cinadr (M A Candidate) Department of Anthropology Idaho State University Pocatello Idaho 83209

PARTICIPATION F

Analysis and Report by

Murgan 12-20-77

le have participated in this analysis and believe that all significant

environmental issues have been identified and addressed Date Resource Specialty Roger Munueli 12/20/37 Seologist tudeler 12/22/17 Certoget Reservely Mi Gent 12/21/77 Research Sord Scantust 122177 Rogert Locales

Recommended by

<u>Intuman C. Puckhaun</u> District Ranger Date

<u>2-14-79</u> Date Brues MMMillen Environmental Management Officer

Approved by, FEB 1979 Date

Wallowa-Whitman Forest Supervisor

Member of Regional Environmental Review Committee

Date

G ENVIRONMENTAL STATEMENT

On the basis of the environmental analysis documented by this report I have determined that the proposed action will not result in a significant impact on the quality of the human environment nor is it expected to become highly controversial Therefore an environmental statement will not be prepared for this proposal

Astruct Ronger

I INTPODUCTION

A ORIGIN AND PURPOSE OF PROPOSAL

The purpose of this proposal is the establishment and maintenance of the Indian Creek Research Natural Area and the withdrawal of this land from the purview of the General Mining Laws From the needs expressed in the publication Research Natural Alea Needs in the Pacific Northwest USDA Forest Service Technical Report PNW-38 the proposed area was identified as being capable of fulfilling some of these needs The policy of the Forest Service is to establish and maintain an adequate number and variety of research natural areas (Appendix B) The Grande Ronde Land Use Plan has incorporated the proposed establishment of this Research Natural Area into all of its proposals At this time the Grande Ronde Land Use Plan has not been approved The environmental management officer of the Wallowa-Whitman National Forest Bruce McMillan in a letter to District Rangers dated November 14 1977 established May 1978 as his best estimate for the final decision on the Grande Ronde Land Use Plan

B PROPOSED ACTION

The proposed action is to place 990 acres into the Natural Research Area system Research Natural Areas are to provide a uniquely valuable system of field sites for education in natural sciences The investigator can conduct his study with minimum interference and reasonable assurance that investments in long term studies will not be lost to logging _overgrazing by domestic livestock land developments or similar activities

Page 5

C SPECIFIC A ET DIPLOIIC

The guiding pi rcipal of Reslarch Natural Area management is preservation Logging activities including salvage of dead of diseased trees are prohibited Uncontrolled livestock grazing is not allowed Stock may be used expressly to simulate a once natural large ruminant population such as buffalo In this case it must be prescribed as a manipulative treatment for maintenance of some natural feature or features of interest If considered essential to suitable research or education uses physical improvements such as roads buildings etc are allowed Boundary fences for livestock are acceptable but will not be required in Wildfires will be extinguished as soon as possible this case but no post fire activities such as reforestation and hazard reduction are allowed Prescribed burning may be used with approval as a manipulative treatment for the maintenance of some natural Insect or disease control programs are not carried feature(s) out except in rare circumastances where the situation may threaten adjacent forest or will drastically alter natural ecological processes within the tract

Public use of Research Natural Areas that might contribute to significant modification are discouraged Activities such as camping berry picking and self-guided nature trails are to be discouraged

The amount of use will determine whether or not activities like hunting fishing and trapping fur bearers is allowed. At this time for this area, these activities are allowed according to state regulations. Public use of Research Natural Areas should be discouraged through lack of publicity or interpretative signs informing the public of the tracts primary objectives

Page 6

A total preservation management policy is meither in ended nor desirable for all Natural Research Areas Stands in the area can be treated as necessary to preserve some representation of a plant community At the present time no treatments have been approved for Research Natural Areas on National Forest land in Region 6 Nanagement practices are to be applied only where they provide a closer approximation of the natural vegetation and environmental processes Suitability of the techniques must be determined by research and testing prior to application and a portion of the tract must be kept as an untreated control All treatments and management plans must be approved by the Research Station Directors prior to implementation

II DESCRIPTION

A LOCATION

The proposed Indian Creek Research Natural Area occupies approximately 990 acres on the crest of the mountain range lying between the Grande Ronde Valley and the Minam River The RNA contains the head waters of Indian Creek which drains north and west into the Grande Ronde River It lies approximately 1-mile northeast of Mt Fanny (7 153 ft) a significant landmark in the area The proposed RNA is located primarily in sections 5 and 8 T 3S , R 41E Small portions of sections 4 6 7 and 9 within the same township are also included All of the proposed area is in Union County is National Forest land and is administered by the Union Rnager District Wallowa-Whitman National Forest The proposed Research Natural Area is contained in two TRI Compartments 890 acres in the Castle Ridge Compartlent 8104 and 100 acres in (Appendix A) the Switchback Compartment 8202 The boundaries of the Indian Creek Research Natural Area are located mainly on roads and topographic features Beginning at the junction of Forest Service Road S245 and the road to Mt Fanny on the south boundary proceeds approximately 1^{\downarrow} -mile west along the Mt Fanny road past the Indian Creek campground to the ridge west of the Indian Creek campground It then proceeds north for about 1 1/8-mile along the top of the ridge to a rocky point terminating the riage proper From this point the boundary proceeds along a line north 45° east for about 3/8mile to a rocky knoll (elevation 6 440 ft) just east of the section boundary between sec 5 and 6 From this point the boundary proceeds across Indian Creek north 85° east for approximately 1 1/8mile to Forest Service Road S245 in the northwest corner of sec 4 It then proceeds south along Forest Service Road S245 to the point of origin

Where boundaries follow roads the actual RNA boundary is 200 feet from the center line of the road to allow safe maintenance of a roadside strip

B TOPOGRAPHY AND ELEVATION

The proposed research natural area is a diverse landscape composed of all slope aspects and nearly all degrees of slope Gradients range from gentle streamsides of 2 - 7 percent to sidehills of 70 percent to vertical barren andesite cliffs 200 feet high Elevations ran e from 6 120 feet at the north end of Indian Creel adjacent to he propo ed boundary, to 6 960 feet atop the central massive andesite outcroppings and o 7,015 feet along the shaip ridgeline along the SW and western boundary of the area To the east Dunn s Bluff forms an impressive monolith rising to 7 160 feet The representative topography however is moderately sloping

C SOILS

Soil parent materials are of volcanic or igneous origin The volcanic materials are silt size Mazama ash (6 500 years old) ranging in thickness from 2 to 22 or more inches This ash layer blanketing most of the area is the primary soil - vegetation influence over the area and is typical of the region The ash may be underlain by weathered andesite residuum or andesite Thickness of the buried layer has not been determined colluvium The ash soils are typified by an A AC, C profile generally dark brown at the surface grading to light yellowish brown or white in Organic surface layers are commonly 1-inch thick the C horizon The ash layer is usually of silt loam texture throughout or less grading to gravelly silty clay loam or clay loam in the buried The latter is commonly dark reddish brown in color soil layer These soils are of the Tolo series (Typic Vitrandepts) A very weakly developed A2 horizon is sometimes encountered The ash layer is weakly platy structured in upper portions and structureless Some horizon wavyness and mixing occurs due to tree below windthrow

The igneous material is a fine grained gia and coste of late flocene age occuring over the whole area either as an outcropping or an underlayment It is highly veather resistant although accumulations of weathered materials mixed with volcanic ash occur and may be 27 inches or more deep on side slopes below large rock outcroppings The andesite fragments are ¹-1-inch in size and are sharply angular Accumulations are banded in 2-6inch layers which exhibit differing colors varying from dark brown to yellowish brown Soils of this origin are unnamed Soils of the meadow bottoms are unnamed although related soils of the Veazle series (Cumulic Haploxeroll) have been mapped on the Starkey Experimental Forest and Range, 30 miles SW of La Grande Oregon The Veazle soils are however, subject to warmer and drier conditions than the meadow soils in the proposed area Observations indicate that the latter range from a few inches to several feet thick are mixed alluvium of ash and andesitic origin Finer textures in the surface grade to gravel layers in the topsoil Upper horizons are moderately well developed usually very dark brown to black in the surface to dark brown subsoils Medium moderate granular structure predominate Textures vary from silt loam and silty clay loam in the surface to silty clay loam and clay loam in the subsoil Lighter colors below the Al horizon in some profiles may be a genetic A2 horizon with A3 and B horizons below These are apparently associated with subsurface lateral drainage and water table fluctuations Sluffing occurs near spring sources and along small streams feeding Indian Creek

 Such sluffing is caused by underground water movement undermining supporting subsoil materials

Page 10

C IL BER STANDS AND PLANT COMPUNITIES

In the development of the establishment report a technical description of the plant communities and vegetation was The description given here will not include the detail prepared (Appendix C) that s available in the establishment report The tree species on the RNA are Lodgepole pine mountain hemlock subalpine fir Englemann spruce grand fir Rocky Mountain Douglas fir and western larch The first three species are common and the dominate species of the area Englemann spruce is primarily found along streams and in the bogs of the area Grand fir is present as poles and reproduction under mixed stands of lodgepole pine subalpine fir and spruce in the northeast corner of the RNA Douglas fir and western larch are rarely encountered on the area Approximately 50/ of the area can be classified as lodgepole pine/ grouse wortleberry community type Characteristic stands of this type can be found on the moderate slopes around Indian Creek campground and on the ridge just north of the southern boundary Most of the reproduction in these stands is lodgepole pine but subalpine fir and mountain hemlock are occasionally found Near the northern boundary and west of Indian Creek Englemann spruce enters the lodgepole community and the understory reproduction is primarily lodgepole pine and Englemann spruce with some grand These stands are at the lowest elevation within the Research fir Natural Area and are approaching or appear to approach the seral type communities that are found within the upper grand fir zone, a mid-slope forest zone common in the Blue Mountains

Lodgepole s ands with o her conifers codomirate account for approximately 25/ of the Research Natural Area Because of their seral nature the various lodgepole pine community types present a wide diversity of understory plant communities

Constantly encountered in all stands is grouse whortleberry (Vaccinium scoparium) with few exceptions it is the dominate understory species A listing and description of the understory plants is provided in the establishment report (Appendix C) About 5/ of the Research Natural Area has been classified as mountain hemlock/grouse whortleberry (Tsuga mertensiana/ The hemlock appears to be the climax Vaccinium scoparium) species in these communities Occasionally a mature sub alpine fir is found but overstory and understory reproduction is dominated almost exclusively by mountain hemlock particularly in stands restricted to steep and very steep northeast slopes Grouse whortleberry is the dominate understory plant but is widely The total shrub and herbaceous cover is less than scattered 5/ under the dense mountain hemlock canopy Approximately 20/ of the Research Natural Area is typed as meadows and rock outcrops and rocky ridges On the rocky areas and areas of shallow soil (Antennaria umbbrinella Penstemon spatulatus Juncus parry1 Festuca viridula and Poa species are most commonly encountered

The meadow vegetation varies in response to local variation in environmental conditions such as soil and water depth duration of snow and shade and past grazing history The wet areas along streams support various <u>Mimulus</u>, <u>Dodecatheon</u> <u>Evigeron</u> <u>Allium</u> Page 12,

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uncus and <u>Carex</u> species The drier sites are occupied by <u>Sibaldia procumbens</u> <u>Valeriana sitchensis</u> and <u>Seneco</u> nydrophiloides

The past use of the meadows by livestock is evident on the shallow and drier soils of the meadows in the form of large barren areas and earlier serial stages of plant communities

E WATER FEATURES AND QUALITY

Two perennial streams $\frac{1}{2}$ - $\frac{1}{2}$ -mile in length flow through meadows near the center of the Research Natural Area These join to form Indian Creek flowing north about 1 mile through a series of falls and small meadows and exits at the north boundary In addition there is one grass-sedge meadow not associated with perennial streams and a meadow subject to vernal ponding One small subalpine permanent pond is also present The stream classification for Indian Creek and its feeders in the Research Natural Area is Class IV Descriptions and management goals for the stream classes are available in Appendix B1

F CULTURAL FEATURES

A professional cultural survey was performed on the proposed area A copy of the report from this survey is included in the Appendix (Appendix D)

G UNIQUE FEATURES

The unique features of the proposed Research Natural Area are of both topographic and vegetational nature The wide variety of topographic features such as rock outcrops rock domes cliffs

Page 13

meadows an alpine lake and a pe ernial stieam are distinguishing fcatures. When these features are all contained in one area (the RNA) it creates an unusual situation that deserves recognition The most unique vegetational feature of the area is the climax mountain hemlock stands. The successional stages of the lodgepole pine communities also are distinguishing features for the proposal

H ENDANGERED OR THREATENED PLANT OR ANIMAL SPECIES

Plant and animal surveys were conducted on the area for the establishment report (Appendix C) The following species are in the Forest Rare and Endangered categories

Animals

Species not seen but may be expected to be found in the area

Peregrine	falcon	Endangered
-----------	--------	------------

Flammulated	01/1	Para
riannulated	UWI	каге

Great grey owl Rare

White winged grossbill Rare

Plants Found in Area

Penstemon spatulatus Wallowa penstemon Endangered

I RANGE MANAGEMENT PROGRAM

The Indian Creek Research Natural Area is contained in the Castle Ridge Allotment This allotment is not presently being grazed and there are no plans for future grazing

J WILDLIFE

A wildlife survey was performed The results of this survey have been placed in the Appendix (Appendix C)

Page 14

K RECPEATION

During the preparation of the establishment report it vas found that there is a low level of use by the public during the summer season. This summer use is primarily confined to the northsouth traffic along the Forest Service road S245. Moderate numbers of deer and elk hunters camp and hunt in or adjacent to the proposed Research Natural Area. This type of use is centered on the trail which runs along Indian Creek.

L VISUAL RESOURCES

The area of the proposal is classified as

JA
PRSensitivity Level 3Variety Class A
Quality Objective-
Partial Retention

3C
MMSensitivity Level 3Variety Class CQuality Objective-Maximum Modification

(For map see Appendix E)

M FUELS MANAGEMENT AND FIRE CONSIDERATIONS

The proposed Indian Creek Research Natural Area is located in the Systematic Dispatch Block UN-2 Fire suppression and fuel management is under the jurisdiction of the Union District Ranger and is performed by the Grande Ronde Fire Organization

III ENVIRONMENTAL EFFECTS, MITIGATING MEASURES AND CONSTRAINTS

A EFFECIS ON THE RESOURCES

1 The timber resources are low on this area Timber harvesting has not been done in this area It is calculated that the establishment of the Indian Creek Research Natural Area will reduce the annual allowable cut on the Wallowa-Whitman Page 15 a lonal "orest by 118 M bd ft /yr This is based on the calculation of the annual net growth of 30 cubic ft /ac /vr times 790 acres of commercial forest land and using the conversion of 5 bd ft /cubic ft This loss in cut represents 0 5 of 1 percent of the Union Ranger District s normal annual allowable cut The establishment of this RNA and its effects on the annual allowable cut have been incorporated into the Grande Ronde Land Use Plan

The proposed area does not contain possible landings or road locations that are critical to the management of adjacent areas at this time The proposed area is bounded on the west and north by the Castle Ridge Roadless Study Area and on the east by the Eagle Cap Wilderness

2 Water

From the management and use of the proposed Research Natural Area the effect on the water quality and features is expected to be of a neutral nature Disturbance to the watershed will be minimal from the activities allowed in the RNA

3 Soils

The effect on the soils of the areas will also be of a neutral nature for the same reasons spoken to for the water features and quality

4 Cultural Features

The archeological survey of the area states that no significant prehistoric archaeological sites or historic materials were found in the proposed area (Appendix D) The report also states that there are no materials of archaeological nature that can be disturbed by any type of activity the Forest Service wished to Page 16 e sage 1 in his arca. The pres rvation management objective of the RNA will benefit any cultural features if in fact they are present but not found in the survey

5 Unique Features

The unique vegetation features are the underlying basis for the establishment of the Indian Creek RNA These features will be preserved or maintained by the establishment of the RNA

6 Endangered or Threatened Plant and Animals

The endangered or threatened plants and animals that were found or suspected to inhabit the RNA will not be adversly affected by the preservation management of the RNA The benefit to these organisms will be the assurance that the habitat in the RNA will not be disturbed

7 Wildlife

The effects on wildlife will be of a neutral nature The habitat that is present will remain intact But by the same token management activities to produce or enhance habitat will not be possible within the RNA

8 Recreation

Recreational use will for the most part be unchanged The low numbers of hunters that utilize the area are not expected to interfer with the use of the areas for scientific and educational purposes If the numbers of people to use the area for recreation increases sharply to the point of significantly modifying the area action will be taken to discourage or prohibiting recreational use

9 Visual Resources

The preservation type management for the RNA will assure a neutral effect on the visual resource Timber harvesting to modify or

enhance the visual quality will not be allowed

10 Fuels lanagement and Fire Corsiderations

The e tablishment of the proposed RNA will have no effect on the control of wildtires There is a foreseen effect on fuel loading and arrangement Management of the RNA prohibits post fire and fire hazard treatments For the stands in the RNA that are not in a climax stage fuel loading and arrangement will change over long periods of time as these plant communities approach climax From the establishment report (Appendix C) the lodgepole pine plant communities are in lower successional stages 5/ of the timbered acres is described as <u>Tsuga mertensiana/Vaccinium</u> scoparium which is classified as a climax community Therefore long term effect on the fuels situation over the bulk of the timbered areas can be expected to fluctuate

11 Minerals and Mining

From the report of mineral character (Appendix C) the lands involved were found to be nominal in character Therefore the effect on minerals and mining from the establishment of the proposed RNA will be simply the withdrawal of this area from the purview of the general mining laws

B RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

With preservation being the guiding light of management for the established RNA and the uses of the area being education and research the long term productivity of the area will remain unchanged Management activities to enhance or destroy the long term producitivity of the areas are not permitted in an established RNA Page 18

C IRREVEPSIBLE AND IRRETPIENABLE CC " IT'ENT OF PESOURCES

1 <u>Irreversible Commitment of Resources</u> The establishment of the RNA will not commit the resources in a manner that is irreversible

2 Irretrievable Commitment of Resources

Over time the e tablishment of the proposed RNA will place the increase in growth of timber and forage available from management and the volume of salvageable timber in an irretrievable situation The point being that once a growing season has past and the dead tree has rotted realization of these is not possible

IV RESOURCE CAPABILITY

The resource capability of the areas has been evaluated and the decisions concerning it made in the Grande Ronde Land Use Plan

V ALTERNATIVES

- A <u>Alternative #1</u> Establish 1660 acres of Research Natural Area This would include the proposed area of 990 acres and approximately 700 acres to the east of Forest Service road S245 which is presently designated as wilderness (See Map #1 Appendix A) The additional 700 acres is made up of the same plant communities and aquatic systems. It would add to the RNA a second watershed and lake and two vernal ponds for control of research. The unique talus habitat below Dunns buff is also a benefit contained in 700 acre addition
- B <u>Alternative #2</u> Would be not to establish a RNA in this vicinity at this time
- C Alternative #3 Chosen

Page 19
VI BASIS FOR SELECTING THE PFOPOSED LIERNATIE

The policy of the US Forest Scivice is o establish and maintain an adequate number and variety of Research Natural Areas (Appendix B) A representation of a sub-alpine forest in the Blue Mountains dominated by lodgepole pine in which mountain hemlock is represented is the chief interest in establishment of Indian Creek Research Natural Area This proposal will fill or represent several Research Natural Area needs in the sub-alpine forest types in the Ochoco Blue and Wallowa Mountain province of Eastern Oregon $\frac{1}{}$

<u>1</u>/ Research Natural Area needs in the Pacific Northwest- contribution to land-use planning Prepared by C T Dyrness Jerry Franklin Chris Maser Stanton A Cook James D Hall Report on Natural Area Needs Workshop review draft April 25 1974

The lodgepole pine/dwarf huckleberry/pine grass community type (SAF type 218) in the area is presently in several successional stages These stands are present on various slopes soil depths and aspects and have different fire and grazing histories. Similar successional stages of the lodgepole type are common throughout the Blue and Wallowa Mountains and the stands in the proposed RNA will provide representation of these forest conditions

The mountain hemlock type (SAF type 205) in the proposed areas will be the first representation of the species in mountainous areas of eastern Oregon and Washington

Terrestrial and fresh water systems not present in Eastern Oregon s established Research Natural Areas are present in the proposed Indian Creek Research Natural Area These include cliffs massive rock domes

Page 20

ard rock outcrops a perennial ub alpine sream drainage permanent and vernal sub alpine ponds

The access by road to the area is favorable for research and educational purposes

The close proximity to the Mt Fanny TV translator station where monthly temperature and piecipitation data is available make the pioposed RNA attractive for future research The decision to establish 990 acres versus 1660 acres was made based

on several considerations

- 1 Removing the additional 700 acres from wilderness would produce problems and delays that may jeopardize the establishment of any Research Natural Area
- 2 It was felt that the 700 acres in wilderness is being protected to much the same degree a Research Natural Area would with the exception of the mineral withdrawal
- 3 The information collected for the establishment of the Indian Creek Natural Area did not cover the entire 1660 acres for all the disciplines
- 4 It was felt that if after establishment at the 990 acre tract if the need to establish the additional 700 acres presents itself it could be done

VII CONSULTATION WITH OTHERS

Written correspondence was made with the two individuals listed in the Summary The Oregon State Game Commission Loren Hughes of La Grande Oregon and Frank Conley of Cove Oregon were supplied with verbal information concerning the proposal The inclusion of the proposed Research Natural Area in the Grande Ronde Land Use Plan

Page 21

ould suggest that the contacts de reparding it be applicable to the Indian Creek Research Natural Area



US ROUTE
STATE ROUTE
STATE ROUTE
STATE SERVICE ROUTE

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Name	lev.		Facilities					Activities								
		Map Location	Tent Sites	Trailer Sites	Picnic Sites	Water*	Other **	Stay Limit (No. of Days)	Fishing	Hunting	Hiking	Berry Picking	Boating Ramps	Swimming	Water Sports	Horse Facilities
HORSE FACILITIES AT TRAILHEADS																
Boulder Park	5000	G-6							×	×	x	x				
Cornucopia	4800	G-6							×	×	x	×				
Lillyville	5200	G-4							×	x	×	×				
North Catherine Creek	4200	F-5							×	×	х	×				
Sheep Creek	6500	H-5							×	x	x	х				
West Eagle Meadow	5450	F-6							×	×	×	×				
HELLS CANYON RES. BOAT CAMPS																
Kirby Creek	1725	1-5	4			Pi			×	×	×		×	x		
Leep Creek	1725	1-5	3		3	0			×	×	×		×	x		
Lynch Creek	1725	1-5	3		1	Pi			×	×	×		×	x		
Vermillion Bar		1-5	2		1	0			×	×	×		×	×		
SNAKE RIVER BOAT CAMPS																1
Lookout Creek	1100	J-2	3		1	St			×	x	×	1	×			1.14
Salmon Bar	1000	1-1	3			St			×	×	×	23	×	1		
Salt Creek 12		J-3	3			St			×	×	x		×			

Other Recreation Sites

T 5 S.

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Name	Elev.		Facilities				Activities									
		Map Location	Tent Sites	Trailer Sites	Picnic Sites	Water*	Other**	Stay Limit (No. of Days)	Fishing	Hunting	Hiking	Berry Picking	Boating Ramps	Swim.ning	Water Sports	Horse Facilities
STATE PARKS:																-
Catherine Creek	3200	E-5	10		59	Pi	FT		×		x					
Hilgard	3000	C-4	18		26	Pi			×	×	x					
Minam	2600	E-2	12						x		×		×	×		
Red Bridge	3200	C-4			33	Pi			×	×	×					
Unity Lake	3900	C-10	10		21	Pi	BL, FT		x	×	x		x	×	×	
Wallowa Lake	4640	G-4	89	121	166	Pi	CK,BL,BI	R	×	×	x		×	x	×	×
IDAHO POWER CO.							11,011									
Copperfield Park	1720	1-6		100	x	Pi	FT	7	×	x	×		x	x	x	
Hells Canyon Park	1660	1-6	×	×	x	Pi	BL, FT	7	×	×	x		x	×	×	
McCormick Park	2000	H-7	×	×	×	Pi	BL, FT	7	x	x	x		x	×	×	

\$ - Pay Area # - Water & electrical hookups *Water Pi – Piped Pu – Pump Sp - Spring St - Stream La – Lake

**Other

BL – Boat Launch CK – Comm. Kitchen FT – Flush Toilet

Sh - Shelter

BR - Boat Rental



U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE JOHN R. McGUIRE - CHIEF

WALLOW A-WHITMAN National Gorest (WEST HALF)

> OREGON WILLAMETTE MERIDIAN









Appendix B

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SERIES 4000 - RESEARCH

for proposing establishment and district rangers for protection The scientific and educational uses made of natural areas by Forest Service and other scientists will normally be a research responsibility

4063 3 - Size Research natural areas should be large enough to provide essentially unmodified conditions in their interior portions -usually over 300 acres Exceptions to the usual minimum of 300 acres should be limited to truly outstanding cases Seldom can tracts smaller than 300 acres be expected to maintain essentially unmodified conditions unless they are buffered by scenic or other areas that are maintained in relatively unmodified conditions

4063 4 - Protection and Management A research natural area must be protected against activities which directly or indirectly modify ecological processes if the area is to be of value for observation and research on plant and animal succession, habitat requirements of species insect and fungus depredations soil microbiology phenology and related phenomena Logging activities and uncontrolled grazing by domestic livestock are not permitted The criterion for management of research natural areas is for protection against unnatural encroachments

4063 41 - Identification Research natural areas should be identified in the administrative records as to location, purpose and objectives, and the boundary marked in the field Signs which would tend to attract sightseers recreationists and casual visitors should be avoided However if roads or trails pass along the boundary or through the research natural area limited posting may be needed to protect the area

4063 42 - Fences Research natural area boundaries need not be fenced unless necessary for protection against livestock or excessive human use

4063 43 - Publicity Publicity is generally limited to professional groups at either national, State or university levels and mainly to inform scientists and educators of the location, vegetation types, and administering agency in order to make the fullest proper use of the research natural areas Other publicity should be avoided

at any man in the سو 4063 44 - Physical Improvements Generally speaking, no physical improvements such as roads, trails, fences, or buildings should be permitted within a research natural area Temporary facilities needed for research such as instrument shelters, may be installed with the approval of the Station Director Except as essential to fire protection of adjoining lands no buildings, roads, or trails should be permitted at or on the boundaries of a research natural area ---

4063 45 - Protection. Fires within a research natural area should be extinguished as quickly as possible, but no cleanup, fire hazard reduction or reforestation should be undertaken

4063 2

SERIES 4000 - RESEARCH

4062 64 - Game Refuges Experimental forests and ranges will not be established within game refuges nor will game refuges be set up in experimental forests or ranges because of the probability that excessive populations will develop and result in damage to experiments Game management areas worked out in cooperation with State game regulatory agencies are much preferred (FSM 2643 11)

4062 65 - Special Uses Special uses which do not contribute to the program of research are prohibited on experimental forests and ranges on National Forests unless approved by the Station Director

For delegation of authority to issue land use permits see FSM 2710 46

4063 - RESEARCH NATURAL AREAS

4063 1 - Policy The Forest Service will cooperate with other public agencies and such private and professional organizations as the Nature Conservancy Society of American Foresters American Society of Range Management and Ecological Society of America to establish and maintain an adequate number and variety of research natural areas The use of Forest Service research natural areas by scientists within and outside the Forest Service and use for certain educational purposes is encouraged

Research natural areas should represent as many as possible of the major natural timber types or other plant communities in unmodified condition Other forest or range conditions that have special or unique characteristics of scientific or educational interest such as outliers of grass or timber types, unique bog associations or unusual combinations of flora may also be set aside To whatever extent is feasible, animal life also should be present in unmodified condition

As a general guide these areas should show evidence of no major disturbance by man such as timber cutting for at least the past 50 years On rare occasions however, in a valuable plant community that should be preserved the most suitable area that approaches these conditions should be selected Certain valuable second-growth timber types may also be preserved as research natural areas if sufficient need can be shown

*- In the management of Research Natural Areas, due consideration should be given to protestion of habitats of endangered and threatened species If the area is identified as a critical habitat or was specifically established for protection of a species, activities that would adversely affect the critical habitat must be foregone

4063 2 - Responsibility Selection and establishment of research natural areas on National Forest land may be initiated either in the research or National Forest resource management organization Forest Supervisors and research project leaders are responsible

Forest Service Manual

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SERIES 4000 - RESEARCH

No control of insects or disease should be instituted unless the infestation or infection threatens adjacent forests or will drastically alter the natural ecological processes within for example white pine blister rust Insect- or disease-killed trees are a part of the natural forest and should not be felled or removed

4063 46 - Public Use Picnicking camping collecting plants gathering nuts and herbs picking berries and other public uses which contribute to modification of a research natural area should be discouraged or expressly prohibited if such uses threaten serious impairment of research or educational value Hunting fishing and trapping should be prohibited only if the removal of game fish and furbearers is likely to be on a scale sufficient to affect the biotic communities

4063 47 - Scientific and Educational Use The Forest Service encourages use of research natural areas by responsible scientists and educators Generally the educational use should be at the college upper classman or graduate level Research on natural areas will be essentially nondestructive in nature Studies that require timber felling seedbed modification or extensive soil excavation should be done on the experimental forests and ranges or similar areas

Because of the fragile character of most research natural areas cooperative agreements will normally be prepared between the Forest Service and non-Forest Service scientists outlining briefly the mechanics of field research and the limitations thereto Forest Service scientists should cooperate in the research whenever possible in order to derive the greater benefit from the work

4063 48 - Vegetation Management Station Directors may authorize such management practices as are necessary to preserve some representation of the vegetation for which the natural area was created originally including Ribes eradication in white pine types, control of excessive animal populations or prescribed burning or grazing to maintain a grass community Only tried and reliable techniques will be used and then only where the vegetative type would otherwise be lost without management The criterion here is that the management must provide a closer approximation of the vegetation and the processes governing the vegetation than would be possible without management If doubt exists about the need for vegetation management or the reliability of the techniques then nothing should be done Where management practices are necessary a portion of natural areas should be kept untreated as a "green

Forest Service Manual

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March 75, AMEND 27

<u>4063</u> <u>49</u> - <u>Mineral Entry</u> Research natural areas should be withdrawn from mineral entry (FSM 2860)

4063 5 - Procedure for Establishment Every research natural area must be documented by an approved establishment report, signed copies of which will be kept permanently at the Washington Office Regional Office and Station headquarters

Three copies of the report are required, signed by the Forest Supervisor Regional Forester and Station Director and transmitted by the Station Director to the Washington Office for approval by the Director Recreation Management Staff and the Deputy Chief for Research prior to the Chief's signature Each copy is to be enclosed in a Forest Service manuscript cover (form 6200-7) One signed copy is retained in the Washington Office the other two are returned to the Regional Forester and Director

The Forest Supervisor District Ranger and Research Project Leader will be provided with one copy of establishment reports for research natural areas within their area of responsibility The copies supplied to the Supervisor Ranger and Project Leader will show dates when signed and names of the signing officers

- The copies provided for the Washington Office will be filed with the Timber Management Research Staff The Timber Management Research Staff will maintain records to show name, Region and Forest, Station, area in acres, date of establishment, and major vegetational cover types

4063 51 - Establishment Report Outline

l Map Each report should include a map showing location boundaries and ownership status of the proposed experimental area A scale of 2 inch per mile is preferred

2 Photographs Although not mandatory illustrations may be included to show typical conditions

Both the map and photographs should be fastened to the left inside of the manuscript cover The remainder of the report will be on the right side with the designation order on top followed by the main text

Forest Service Manaul

-March 75 AMEND 27-

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SERIES 4000 - RESEARCH

3 Designation Order

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Es	tablı	shme	nt Report for	
Re	sear	ch Na	tural Area Within	
INA	LIONA	1 1 01	(County)	(State)
5	Te	<u>xt</u>		
	a	Pri	ncıpal dıstınguıshın	g features
	Ъ	Loc	ation (Include a m	ap)
	с	Are	a by cover types	
	d	Phy	sical and climatic o	conditions
	е	Des	cription of values	The following items are sug-
ges sci use	stive ientif e s	Dis ic stu	udies (4) (5) (6),	and (7) in relation to conflict:
ges sci use	stive ientif es	Dis fic stu (1)	Flora (1) (2) and (1)	and (7) in relation to conflict:
ges sci use	stive ientif es	Dis fic stu (1) (2)	Flora Geology	and (7) in relation to conflict
ges sci use	stive ientif es	Dis fic stu (1) (2) (3)	Flora Geology Fauna	and (7) in relation to utility for
ges sci use	stive ientif es	Dis fic stu (1) (2) (3) (4)	Flora Geology Fauna- Minerals	and (7) in relation to utility for ,
ges sci use	stive ientif es	Dis fic stu (1) (2) (3) (4) (5)	Flora Geology Fauna- Minerals Recreation '	and (7) in relation to utility for ,
ges	stive ientif es	Dis (1) (2) (3) (4) (5) (6)	Flora Geology Fauna Minerals Recreation Water use	and (7) in relation to utility for ,

Forest Service Manual

-February 1971 " Amendment No 20-

SERIES 4000 - RESEARCH

4063 6 - Modification or Disestablishment Follow the procedure outlined for experimental forests and ranges (FSM 4062 3 and 4062 4)

4063 7 - Records The principal custodian of the research natural area files usually a research project leader should assemble the important historical records concerning the vegetation and fauna on the area These include sets of aerial and terrestial photographs vegetation type maps descriptions of fires and insect epidemics species lists publications based on research in the natural area and other information that will aid in the subsequent interpretation of vegetative and faunistic changes

4064 - RESEARCH EQUIPMENT

4064 1 - Radioisotopes and Radiological Equipment All use of radioisotopes and radiation emanating equipment by employees of the Department is governed by the Radiological Safety Committee The area of responsibility of the Committee includes not only radioisotopes but other sources of potential radiation hazard such as X-ray equipment electron microscopes gas chromatograph radium and neutron sources Familiarity with and observance of the rules is mandatory for all who use such materials and equipment

4064 11 - Radiological Safety Committee A Radiological Safety Committee shall be responsible to the Administrator Agricultural Research Service for such regulations instruction and other measures as are necessary to the administration of radiological safety within the Department

l Functions

a Review requests for approval to use radioactive material and radiation emanating equipment and approve or disapprove such requests from the standpoint of radiological safety

b Prescribe general rules, procedures facility and equipment requirements for the safe use of radioactive material and radiation equipment including such special conditions as physical examinations training disposal of radioactive waste material etc

c Review prior to issuance such instructions concerning radiological safety as are prepared by agencies of the Department

U & GOVERNMENT PRINTING OFFICE 1971-434 946/FS 132

February 1971 Amendment No 20 Forest Service Manual

TITLE 2100 - MULTIPLE USE MANAGEMENT

5. Ephomeral Stranus

a. Carry only surface reaoff and hence flow only during and immediately after periods of precipitation or the melting of snow.

b. Norm in slight depressions in the natural contour of the ground surface but do not normally develop sufficient flow to wash or scour their channels.

c. Can usually be identified by the presence of needles or other litter in the depressions.

<u>Coordination</u>. In classifying streams, the best resource data available should be utilized. This usually means soliciting input from outside resource agencies such as State Fish and Game, Ecology and Environmental Quality, Dureau of Sport Fisheries and Wildlife, National Marine Fiel eries Service, Envirormental Protection Agency, etc. Coordination and cooperation with other agencies, individuals, and groups will be an early and continuing effort. Proposed stream class delineations and management practices for activities within the ShUs will be reviewed with, and recommendations solicited from, appropriate State and Federal agencies. This will be done prior to on-the-ground application when there is a possibility that such practice(s) may have an adverse effect upon the water or squatic resources.

Strern Class. The present and foreseeable uses made of the water, and the potential effects of on-size changes on dounstream uses, are the

> July 1972 R-6 Supplement No.

Forest Service Manua

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TITLE 2100 - MULTIPLE USE MANAGEMENT

criteria for defining four stream classes. The importance of use will be relative to the general area. Consequently, size is not necessarily a criterion for classification. Mhole streams or parts of streams can be classified. One stream may be sectionalized into several classes.

1. <u>Class I</u>. Perennial or intermittent streams or segments thereof that have one or more of the following characteristics:

a. Direct source of water for domestic use (cities, recreation sites, etc.

b. Used by large numbers of fish for spawning, rearing or migration.

c. Flow enough water to have a major influence on water quality of a Class I stream.

2. <u>Class II</u>. Perennial or intermittent streams or segments thereof that have one or both of the following characteristics:

a. Used by moderate though significant numbers of fish for spawning, rearing or migration.

b. Flow enough water to have only a moderate and not clearly identifiable influence on downstream quality of a Class I stream, or have a major influence on a Class II stream.

Forest Service Manual

July 1972 R-6 Supplement No.

TITLE 2100 - MULTIPLE USE MANAGEMENT

3. <u>Class III</u>. All other perennial streams or segments thereof not meeting higher class criteria.

4. <u>Class IV</u>. All other intermittent streams or segments thereof not meeting higher class criteria.

Management Goals. Management activities within the SMU will be designed to meet goals established for each class of stream. The broad management goal for all streams is to meet water quality standards, and to protect the stream and its adjacent environment so as to maintain fish, ... and other aquatic resources at high natural levels. Specific management goals, as itemized below, recognize that some water quality changes may inevitably occur for certain classes of streams in order to obtain the best overall yield and mix of the many land and water resources. Resource planning shall be aimed at minimizing such changes, in accordance with cur environmental protection responsibilities.

1. <u>Class I</u>. The use of the water and downstream influence of this class of stream justify the highest level of protection and enhancement. <u>Management activities will not degrade water quality</u>, fish or aduatic resources below the existing or natural level, except for temporary changes resulting from:

a. Activities designed to improve the stream, e.g., restoration and habitat improvement.

b. Necessary transportacion system crossing; e.g., bridges, culverts.

Forest Service Manual

July 1972 R-5 Supplement No. TIME 2100 - MULTIPLE USE MANAGEMENT

3. <u>Class III</u>. The minor on-site use and downstream influence of such streams justifies a normal level of protection. <u>Manage-</u> <u>ment activities will not deteriorate water quality below exist-</u> <u>ing State and Federal water cuality standards except for changes</u> <u>resulting form short-term cetivities as provided for in the</u> standards.

4. <u>Class IV</u>. The minor on-site use and downstream influence justifies a normal level of protection. <u>Management activities</u> will not deteriorate water cuality below existing State and <u>Federal water cuality standards except for changes resulting from</u> <u>short-term activities as provided for in the standards.</u>

Changes in Class III and IV streams may involve some temperature and turbidity increases, provided these do not cause Class I or TT maters to fall below standards. Temperature effects will usually diminish when shade is reestablished, and turbidity when erosion control measures become effective.

Recommended Practices. The best lone management practices for the individual situation shall be used on all streams on a case-by-case basis. Examples of desirable practices that will normally be specified to achieve management scale follow. Additional references are: FSM 2203, 2455.5, 2182.2, 2522.11, and FSH 7709.11, Guides D-4 and D-5, the Environmental Protection Agency "Industrial Maste Guide on

Forest Service Manuel

July 1972 R-6 Supplement No. TIT : 2100 - LA LUIFLE UEL MANAGEMENT

c. Structures associated with putting the water to beneficial uses; e.g., irrigation diversions, domestic supply intakes.

Temporary changes are those which are transitory in nature; i.e., the effect ceases and water quality returns to its previous level when the permitted activity ceases. In any event, changes as a result of these activities must be minimal and adequately monitored.

2. <u>Class II</u>. The use of the water and downstream influence of these streams justify a high level of protection and enhancement. <u>Management activities will not deteriorate water quality below</u> <u>State and Federal water cuality standards, encept for temporary</u> <u>changes as provided for in the standards, resulting from</u> <u>essential short-tarm activities</u>.

Temporary changes include those defined for Class I streams but shall not include:

a. Increased water temperatures which take a minimum of several years for shale reestablishment, or

 b. Surbidity from long-term disturbances such as roads or large denuded areas that act as a recurring source of sediment for a period of time until stabilization is achieved.

Forest Service Manual

July 1972 R-S Supplement Nó. Appendix C

Fstablishment Report

<u>C</u>

ESTABLISHMENT REPORT

Indian Creek Research Natural Area Wałlowa-Whitman National Forest Note Revised to fit 990 ac proposal

Principal Distinguishing Features

The Indian Creek Research Natural Area occupies approximately 990 acres of subalpine forest and associated talus rock outcrops rock domes cliffs meadows and perennial streams northeast of Mt Fanny a 7 000 foot peak in the Wallowa Mountains of eastern Oregon Two forest types are dominant The lodgepole pine (Pinus contorta) type is extensive and occupies all topographic situations The Mountain hemlock (Tsuga mertensiana) type occurs in relatively pure stands on steep to very steep northeast slopes The species is often a major component within the lodgepole type Subalpine fir (Abies lasiocarpa) and Englemann spruce (Picea engelmannii) are codominant with lodgepole pine in several areas

All slope situations are present from gentle rounded ridges and benches to vertical rock cliffs 550 feet in height resulting in numerous rock outcrops and rock domes

Two perennial streams $\frac{1}{2} - \frac{1}{2}$ - mile in length flow through meadows near the center of the Research Natural Area and join to form Indian Creek which then flows north about 1 mile, through a series of falls and small meadows to its exit at the north boundary In addition there is one grass-sedge meadow not associated with perennial streams and subject to vernal ponding $\$ One small subalpine permanent pond is also present

Justification

The tract was originally located by members of the Pacific Northwest Natural Area Committee and the kallowa-Whitman National Forest Their chief interest in the area was to set aside a representative area of a subalpine forest mosiac in the Blue Mountains dominanted by lodgepole pine in which the mountain hemlock type was represented Further evaluation by the Wallowa-Whitman National Forest and representatives of the Pacific Northwest Forest and Range Experiment Station expanded the original boundaries to include a small pond and a larger pure stand of mountain hemlock. With these additions the Indian Creek Research Natural Area will contain more diverse habitats and therefore is a good candidate to fill or represent several Research Natural Area (RNA) needs in subalpine forest types in the Ochoco Blue and Wallowa Mountain province of eastern Oregon $\frac{1}{2}$

1/ Research Natural Area needs in the Pacific Northwest - contribution to land-use planning Prepared by C T Dyrness Jerry F Franklin Chris Maser Stanton A COok and James D Hall Report on natural area needs workshop review draft April 25 1974

The RNA contains representative stands of the lodgepole pine/dward huckleberry (Vaccinium scoparium)/pine grass (Calamagrostis rubescens) community type (SAF type 218) Several successional stages of the type are present from essentially pure lodgepole with minimal or no reproduction of other conifers to mixed conifer forests where subalpine fir, mountain hemlock and Engelmann spruce are codominant associates with lodgepole and one or more of these species are the dominant reproduction species in the understory These stands occur on various combinations

of soil depths slope and aspect and have different fire and associated grazing histories COnsequently understory plant communities vary greatly in composition and productivity Similar successional stages of the lodgepole type_are common throughout the Blue and Wallowa Mountains and the stands within the RNA provide excellent representation of these forest conditions

Although not extensive the mountain hemlock type (SAF) type 205) is represented with several relatively pure stands ranging from 5 to 20 acres This will be the first representation of the species in the mountainous area of eastern Oregon and Washington and will compliment the mountain hemlock stands in established RNA's (Steamboat Mountain, Wildcat Mountain Ollalie Ridge) in the Oregon and Washington Cascades

The Indian Creek Research Natural Area will also provide examples for other terrestrial and fresh water systems not presently available in established RNA's in eastern Oregon Cliffs, massive rock domes, and rock outcrops provide additional terrestrial types with specific plants in more or less depauperate plant communities These types are an intregal part of the subalpine forest biotic system they are particularly important activity centers for small vertebrates and birds and provide protective and desirable environments for several species of plants

Including the headwaters of Indian Creek within the RNA provides an example of a perennial subalpine stream drainage (fresh water cell #11) The permanent and vernal subalpine ponds (fresh water cells #5 and #8 respectively) will be the first examples within RNA's in eastern Oregon

These water systems together with the meadows with their various grass grass-forb sedge bog, and riparian communities enrich the flora and fauna and are the significant focal points for faunal activity within the <u>RNA</u>

The RNA has additional features which favor its establishment and makes it highly suitable for ecological research First no other subalpine area in the Wallowa Mountains (1) has the variety of terrestrail and fresh water systems available in the Indian Creek Research Natural Area (2) is as equally accessible by road (3) although accessable has an apparent low level of use by man during the summer Use is primarily confined to occasional summer traffic along months the main north-south road Forest Service Road S245 In the autumn however a moderate number of elk and deer hunters camp and hunt in (4) Adjoins the Big Canyon Creek drainage, which possesses the RNA many of the same plant communities and fresh water cells contained This area is presently designated as Wilderness in the proposed RNA (5) Monthly temperature and could serve as control for the proposed area and precipitation data are available from the Mt Fanny TV translator This proximity to station located 1/2-mile west of the RNA at 7153' climatic data and its accesibility make the Indian Creek RNA particularly attractive for future research

Location

The Indian Creek Research Natural Area occupies approximately 990 acres on the crest of the mountain range lying between the Grande Ronde Valley and the Minam River The RNA includes all the headwaters of Indian

Creek which drains north and west into the Grande Ronde River (figure 1) It lies approximately 1-mile northeast of Mt Fanny (7,153 ft) a significant landmark in the area and 5 air-line miles east of the town of Cove Oregon

There is good to fair access to the RNA during summer months via several county and Forest Service roads The best access is east from Cove on Forest Service Road S23 to the Moss Springs campgroung thence north approximately 5 miles on Forest Service Road S245 to the south boundary of the Natural Area Access is also available from the north via Forest Service Road S220 (the 'Mt Harris road) to its junction with Forest Service Road S245 approximately 5 miles north of the RNA However, this road, S245, as well as Forest Service Road S245 from Moss Springs is very unsuitable for use by sedans, station wagons, small vans, etc , there is no difficulty using pickup and 4-wheel drive-type vehicles

The RNA is located primarily in sections 5, and 8 T 3S, R 41E Small portions of sections 4 6, 7 and 9 within the same township and range are also included

All of the RNA is within Union County is federally owned, and administered by the Union Ranger District, Wallowa-Whitman National Forest

BOUNDARIES

The boundaries of the Indian Creek Research Natural Area are located mainly on roads and topographic features Beginning at the junction of Forest Service Road S245 and the road to Mt Fanny on the south boundary proceeds approximately 1½-mile west along the Mt Fanny road, past the Indian Creek campground, to the ridge west of the It then proceeds north for about $1 \frac{1}{8}$ -Indian Creek campground mile along the top of the ridge to a rocky point terminating the From this point the boundary proceeds along a line ridge proper north 45° east for about 3/8-mile to a rocky knoll (elevation 6 440 ft) just east of the section boundary between sec 5 and 6 From this point the boundary proceeds across Indian Creek north 85° east for approximately 1 1/8-mile to Forest Service Road S245 in the northwest corner of sec 4 It then proceeds south along Forest Service Road S245 to the point of origin at the junction of S245 with the Mt Fanny road (S245A)

Where boundaries follow roads the actual RNA boundary is 200 feet from the center line of the road to allow safe maintenance of a roadside strip

PHYSICAL AND CLIMATIC CONDITIONS

The Indian Creek Research Natural Area occupies 401 ha (990 acres) on the top of the westernmost mountain range of the Wallowa Mountains Elevations range from 1,890 m (6,200 ft) at the northern boundary where Indian Creek leaves the RNA to 2,138 m (7 015 ft) on the ridge which is the western boundary About half of the RNA occurs on gentle

to moderate slopes on undulating topography (less than 30 percent) particularly the central portion which includes the headwaters of Indian Creek The remaining area occupies steep to very steep slopes and several massive rock domes which rise to elevations above 2 133 m (7 000 ft) and their associated cliffs along the western and northern boundaries

The proposed research natural area is a diverse landscape composed of all slope aspects and nearly all degrees of slope Gradients range from gentle streamsides of 2 - 7 percent to sidehills of 70 percent where mountain hemlock has been observed to vertical barren andesite cliffs 200 feet high Elevations range from 6 120 feet at the north end of Indian Creek adjacent to the proposed boundary to 6 960 feet atop the central massive andesite outcroppings and to 7 015 feet along the sharp ridgeline along the SW and western boundary of the area To the east Dunn's Bluff forms an impressive monolith rising to 7 160 feet Most of the topography however, is moderately sloping which is more typical of the landscape this area is to represent

Most of the area is covered with varied stands of lodgepole pine The larger openings are wet meadow bottoms although numerous rock outcoppings also create openings which are often dotted or striated by scattered trees where pockets or bands of soil exist Remnants of old stream channels occur within timbered areas associated with drainage basins They are dintinguished by surface gravel accumulations

Soil parent materials are of volcanic or igneous origin The volcanic materials are silt size Mazama ash (6,500 years old) which blanket most of the area ranging in thickness from 2 to 22 or more inches This ash layer is the primary soil-vegetation influence over the area as is typical of the region The ash may be underlain by weathered andesite residuum or andesite colluvium Thickness of the buried layer has not been determined The ash soils are typified by an A, AC C profile generally dark brown in the surface grading to light yellowish brown or white in the C horizon Organic surface layers are commonly 1-inch thick or less The ash layer is usually of silt loam texture throughout grading to gravelly silty clay loam or clay loam in the buried soil layer The latter is commonly dark reddish These soils are of the Tolo series (Typic Vitrandepts) brown in color A very weakly developed A2 horizon is sometimes encountered The ash layer is weakly platy structured in upper portions and structureless below Some horizon wavyness and mixing occurs due to tree windthrow

The igneous material is a fine grained gray andesite of late Miocene age which occurs over the whole area either as an outcropping or as underlayment It is highly weather resistant although accumulations of weathered materials mixed with volcanic ash occur and may be 27 inches or more deep on side slopes below large rock outcroppings The andesite fragments are $\frac{1}{2}$ -l-inch in size and are sharply angular Accumulations are banded in 2-6-inch layers which exhibit differing colors varying from dark brown to yellowish brown Soils of this origin have not been named

Soils of the meadow bottoms have also not been named although related soils of the Veazie series (Cumulic Haploxeroll) have been mapped on the Starkey Experimental Forest and Range, 30 miles SW of La Grande, The Veazie soils are, however, subject to warmer and drier Oregon conditions than the meadow soils in the proposed area Observations indicate that the latter range from a few inches to several feet thick, are mixed alluvium of ash and andesitic origin Finer textures in the surface grade to gravel layers in the subsoil Upper horizons are moderately well developed, usually very dark brown to black in Medium moderate granular structure the surface to dark brown subsoils Textures vary from silt loam and silty clay loam in the predominate surface to silty clay loam and clay loam in the subsoil Lighter colors below the Al horizon in some profiles may be a genetic A2 horizon These are apprently associated with with A3 and B horizons below subsurface lateral drainage and water table fluctuations Slumping occurs near spring sources and along small streams feeding Indian Such slumps are caused by underground water movement under-Creek mining supporting subsoil materials

The climate is typically wet and cold 1n winter with a dry and warm summer season beginning in late June and extending into late September The following climatic data are from the weather station on Mt Fanny, 7 100 ft elevation $\frac{1}{2}$ -mile west of the RNA bounday (U S Weather Bureau Oregon Summaries, 1965-1973) $\frac{2}{2}$

 $\frac{2}{1}$ Temperature data are 3-year (1971 to 1973) means, precipitation data are means of 7 to 9 years beginning in 1965

Mean Annual Temperature	35 2 [°] F
Mean January Temperature	18 0 ⁰ F
Mean July Temperature	57 1°F
Mean August Temperature	60 1 [°] F
Mean Annual Precipitation	43 02 inches
Mean Precipitation June through August	3 90 inches

Average maximum snow depth in April at Moss Springs $2\frac{1}{2}$ -miles south at 5 800 ft elevation is approximately 5 feet. Water content of the snow pack for the months January through May average 9 0, 14 7, 19 9 \int_{J} 24 1 and 21 2 inches respectively. Snow melt is generally completed in early July in some years small snow banks will remain through the summer season under dense mountain hemlock on steep northeast slopes

VEGETATION

Three species on the RNA are lodgepole pine (<u>Pinus contorta Dougl</u>) mountain hemlock (<u>Tsuga mertensiana</u> (Bong) Carr) subalpine fir (<u>Abies lasiocarpa</u> (Hook) Nutt) Englemann spruce (<u>Picea engelmannii</u> Parry) grand fir (<u>Abies grandis</u> Dougl) Lindl) rocky mountain Douglas fir (<u>Pseudotsuga menziesii</u> var glauca (Beissn) Franco) and western larch (<u>Larix occidnetalis</u> Nutt) The first three species are common and more or less dominant in the forest stands Englemann spruce is primarily found along streams bogs, and at the foot of rock talus Grande fir reproduction and poles occur under mixed stands of lodgepole pine subalpine fir and Englemann spruce in the northwest and northern portions of the RNA Douglas fir and western larch are rarely encountered Ecologically the plant communities within the RNA are typical of the subalpine fir forest zone in the Blue and Wallowa Mountains of northeastern Oregon and southeastern Washington however climax stands of subalpine fir were not found within the RNA Instead, most stands are in lower successional stages with lodgepole pine the conspicuous dominant seral species Approximately 50% of the RNA hectares can be classified as in the lodgepole pine/grouse whortleberry community type Characteristic stands of this seral type occur on the moderate slopes around Indian Creek campground and on both north and south slopes of the ridge which lies just north of the Mt Fanny road (south boundary) Most of the reproduction in the stands is lodgepole pine but small individuals of subalpine fir and mountain hemlock are occasionally found

The community type also occurs on the moderate slopes west of Indian Creek but as one encounters the steep slopes of the ridge along the western boundary of the RNA, subalpine fir and mountain hemlock increase in number and eventually are codominant with or even dominant over lodgepole pine in the stands The understory is generally characterized by mountain hemlock and alpine fir reproduction In the eastern portion of the Indian Creek watershed subalpine fir is codominant with lodgepole and figures prominently in the reproduction

Near the northern boundary and west of Indian Creek, Englemann spruce enters the lodgepole community and the understory reproduction is primarily lodgepole pine and Englemann spruce with some grand fir These stands are at the lowest elevation within the RNA and are

approaching or appear to approach the seral type communities that are found within the upper grand fir zone, a mid-slope forest zone common in the Blue Mountains of eastern Oregon The presence of thinleaf huckleberry (Vaccinium membranaceum) is further evidence that the grand fir zone is present within the RNA and the stands may be seral communities of either the subalpine fir/grouse whortleberry or the grand fir/thinleaf huckleberry types

The lodgepole stands with other conifers codominant account for approximately 25% of the hectares in the RNA

Because of their seral nature the various lodgepole pine community types present a wide diversity of understory plant communities Ubiquitous in all stands is grouse whortleberry (Vaccinium scoparium) With few exceptions it is the dominant understory species Associates in most stands are <u>Hieracium</u> albiflorum <u>Arnica cordifolia</u> Calamagrostis rubescens Carex geyeri and Lupinus species As stand density increases and canopies close Chimaphila umbellata Lonicera utahensis Polemonium pulcherriumum and Pyrola secunda beome prominent in the understory As the stands become more open with decreasing canopy cover such species as <u>Hieracium cynoglossoides H gracile</u> <u>Arnica mollis</u> <u>A</u> parryi Epilobium engustifolium, Carex rossii Ligusticum tenuifolium and Anaphalis margaritacea enter the herbaceous plant community In the shrub layer are Amelanchier alnifolia, Berberis repens Sorbus scopulina Prunus emarginata and Penstemon fruticosus but the few plants found are generally well hedged by elk or deer A second forest community type of relatively small acreage (about 5%

of the RNA) but conspicuous in the Research Natural Area is dominated by mountain hemlock. The hemlock appears to be the climax species in these communities. An occasional mature subalpine fir is found but the overstory and the understory reproduction is dominated almost exclusively by mountain hemlock particularly in stands restricted to steep and very steep northeast slopes. Grouse whortleberry, as in the lodgepole pine type is the prominent understory plant but occurs only as widely scattered individuals total shrub and herbaceous cover commonly is less than 5/ under the dense mountain hemlock canopy Occasional associate species are <u>Arnica cordifolia Hieracium</u> <u>albiflorum Pyrola secunda</u> and <u>Cypripedium montanum</u>

As the forest types give way to grasslands on shallower soils, rock outcrops, and rocky ridges, <u>Antennaris umbrinella</u>, <u>Penstemon spatulatus</u>, <u>Juncus parry1 Polygonum phytolaccaefolium</u>, <u>Arenaria capillaris</u>, <u>Eriogonum flavum Festuca viridula</u> and <u>Poa</u> species are most commonly encountered Growing between the rocks and on the cliff faces are various members of the <u>Polypodiace</u> including <u>Cheilanthes gracilluma</u> and <u>Polystichum lonchitis</u> These plant communities and those of the meadows described below occur on about 20 percent of the RNA hectares

The meadows exhibit a wide variety of plants in response to local variations in environmental conditions such as soil and water table depths duration of snow cover and shade, or in response to the effects of historical grazing and present use of these meadows by elk In the lush vegetation along flowing streams are various <u>Mimulus</u>, <u>Dodecatheon</u>, <u>Erigeron</u>, <u>Allium</u>, <u>Juncus</u> and <u>Carex</u> species As the water

table grops other species become prominent particularly <u>Sibaldia</u> procumbens, <u>Valeriana sitchensis</u> and <u>Senecio hydrophiloides</u> the latter dominant and characteristic species in small meadow-like openings within the forest types

The historical use of these meadows by livestock is evident on the shallow and drier soils of the meadows in the form of large barren areas and successional plant communities Scattered plants od <u>Deschampsia</u> <u>Juncus</u> and <u>Carex</u> are likely relics of an original climax '' community On the more barren and often eroded sites species observed on the upland grasslands and rocky outcrops and ridges are also found here notably <u>Juncus parryi</u> <u>Arenaria capillaris</u>, <u>Antennaria umbrinella</u>, and <u>Poa</u> species Some plants of <u>Festuca</u> <u>viridula</u> were also found on these drier meadows and considering the number of plants found in protected sites around boulders and rocky outcrops it is speculated that this species dominanted the warmer and drier habitats of the grassland openings and meadows prior to the historical sheep grazing in the late 1800's

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TERRESTRIAL AND AQUATIC COMMUNITIES

INDIAN CREEK NATURAL AREA

	SAF Type &	Hectares (estimated)	Acres	
Community and Cells	ALL NUMBER			
TERRESTRIAL				
Pinus contorta/Vaccinium scoparium	SAF 218 Cell-11	204	505	
<u>Pinus contorta Abies lasiocarpa</u> <u>Tsuga mertensiana Picea englemannii/</u> Vaccinium scoparium V membranaceum	SAF 206 Cell-12	100 5	248	
Tsuga mertensiana/Vaccinium scoparium	SAF 205 Cell-12	20	50	
<u>Pinus contorta/Vaccinium scoparium</u> savannah Grass/Forb basalt cliff talus dome and boulder ridge communities	Cell-11 12 13 14 and special talus cliff and grassy bald cells	90	148	
Meadow moist, and wet	Cell 16 25	8	20	
ΑQUATIC				
Subalpine permanent ponds	Cell 5	Ŋ	I	
Subalpine vernal ponds	Cell 8	4	6	
Subalpine stream bogs	Cell 11, 13	4	6	

D STA S D H R I LIT OF FU S SLAVIC CHICL T HE Vallowa- Titran National Torest P O Box 907 Baker Oregon 97814

4060 Research Facilities FEPLY TO 2300 Recreation

October 8 1975

Proposed Indian Creek Research Natural Area SUBJECT

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District Ranger Union то



At your request on September 4 1975 Chris Maser and Evelyn Bull from the PNW Station in La Grande and I conducted a very extensive search for wildlife species in this proposed research natural area The following is a result of this tentative list of mammals and amphibians - by Chris Maser

Tentative List of Mammals for the Proposed Indian Creek NRA

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	Insectivora	*Seapanus orarlus	Coast Mole N Water Shrew
		Sorex palustris	Preble Shrew
		Sorey vagrans	Wandering Shrew
		Joica vagrand	-
	Chiroptera	Eptesicus fuscus Lasionycteris noctivagans Lasiurus cinereus	Bıg Brown Bat Sılver-haired Bat Hoary Bat
		Myotis californicus	Calif Myotis
		Myotis evotis	Long-eared Myotis
		Myotis lucifugus	Little Brown Myotis
		Myotis volans	Long-legged Myotis
		Plecotus townsendi	Western Big-eared Bat
	Lagomorpha	*Lepus americanus	Snowshoe Hare
	Rodentia	Clethrionomys gapperi	Gapper Red-backed Vole
		*Erethizon dorsatum	Vollow-pine Chipmonk
		*Eutamias amoenus	N Flying Squirrel
		Glaucomys sabrinus	Tong-tailed Vole
N~N		Microtus Tongicaudus	Mountain Vole
DISTRI_T		*Microtus richardsoni	Richardson Vole
ON DR GUN		*Neotoma cinerea	Bushy-tailed Woodrat
1 4 1975		Permyscus maniculatus	Deer Mouse
10-1075		Phenacomys intermedius	Heather Vole
BEP		*Spermophilus columbianus	Columbian ground Squirre
		Spermophilus lateralis	Mantled Ground Squirrel
		*Tamiasciurus hudsomicus	Red Squirrel
		*Thomomys, talpoides	Northern Pocket Gopher
: *		Zapus princeps	western Jumping Mouse
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Carnivora	*Canis latrans	Coyte
	Felis concolor	Cougar
	*Lynx rufus	Bobcat
	Martes americana	Marten
	Mustela eriminea	Short-tailed Leasel
	Mustela frenata	Long-tailed Weasel
	Urus americanus	Black Bear
Artiodactyla	*Cervus canadensis	Vapiti
	*Odocoileus hemionus	Mule Deer

*Verified by sighting sound or sign

Amphibians

Order

r	*Hyla regilla	Pacific	Treefrog
	<u>Bufo boreas</u>	Western	toad

List of birds seen or heard on Proposed Research Natural Areas by Rod Miller and Evelyn Bull

Red-tailed Hawk Spruce Grouse Common Flicker Pileated Woodpecker Hairy Woodpecker Northern Three-toed Woodpecker Hammonds (?) Flycatcher Gray Jay Stellars Jay Mountain Chickadee Dipper Red-breasted Nuthatch Varied Thrush Ruby-crowned Kinglet Yellow-rumped Warbler Cassins Finch Chipping Sparrow Dark-eyed Junco American Kestrel Solitary Sandpiper

Other species of birds not seen or heard on September 4 1975, but which may be expected to frequently be found in the area at some time of the year

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Barrows Golden-eye Goshawk Sharp-shinned Hawk Cooper's Hawk

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Perigrine Falcon Possible infrequent visitor ---erlin Blue Grouse Ruffed Grouse Flammulated Owl Great Horned Owl Pygmy Owl Barred Owl Great Grev Owl Long-eared Owl San-whet Owl Common Nighthawk Vaux's Swift Hummingbird (All four listed in Wildlife Relationships - June 1975) Lewis Woodpecker Yellow-bellied Sapsucker Williamsons Sapsucker Downy Woodpecker White-headed Woodpecker Black-backed Three-toed Woodpecker Willow Flycatcher kestern Wood Pewee Olive-sided Flycatcher Black-billed Magpie Common Raven Clarks Nutcracker Chestnut-backed Chickadee White-breasted Nuthatch Red-breasted Nuthatch Pygmy Nuthatch Brown Creeper Winter Wren I American Robin Hermit Thrush Swainson Thrush Veery Western Bluebird Mountain Bluebird Golden-crowned Kinglet Water Pipit Solitary Vireo Nashville Warbler Townsends Warbler Mac Gillivrays Warbler / House Sparrow Brewers Blackbird 1 Western Tanager

Western Tanager Black-headed Grosbeak Evening Grosbeak Purple Finch Pine Grosbeak Gray-crowned Rosy Finch Pine Siskin Red Crossbill White-winged Crossbill Rufous-sided Towhee White-crowned Sparrow Fox Sparrow Lincoln s Sparrow Song Sparrow

I would certainly recommend the inclusion of that area east of the Summit Road shown on the attached aerial photo overlay This area included some unique wildlife habitat in the form of small caves talus slopes and cliffs A portion of this suggested addition lies inside the Eagle Cap Wilderness which is also delineated on the aerial photo

Some photographs were taken at the various locations keyed to the photo overlays

Certainly the combination of sub-alpine timber types meadows small bogs cliffs and talus slopes makes for an especially good diverse wildlife habitat The integrity of such should be maintained

If you have questions or would like additional information please let, file know

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Wildlife Management Officer

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REPORT OF MINERAL CHARACTER

Requested by Land Adjustments Lands & Minerals

Subject

Withdrawal of lands from the purview of the General Mining Laws

Lands Involved

Indian Creek Research Natural Area (see area description)

Mining Engineer

Roger Minnich

Dates of Examination

Various times June - September 1976

Location and Topography

The area is situated on the ridge between the Grande Ronde Valley and the Minam River about one mile northeast of Mt Fanny and five miles east of the town of Cove Oregon

The topography ranges from undulating slopes of less than 30% in the central part to very steep slopes with rock domes over 7 000 feet on the north west and east sides

Areal Geology

The principal rock exposures in the area are Miocene basalts of the Columbia River Group The rocks consist of accordantly layered basalt flows with minor platy andesites locally interbedded with tuffaceous lacustrine sediments Many of the steep sided cliffs are talus covered The tops of flows in some areas are marked by iron stained scoria

Economic Geology

No metalliferous mineralization was noted or was any evidence of mining activity found

Conclusions

I conclude that the lands involved are nonmineral in character

Date 9/24/76

ROGER MINNICH Mining Engineer

- 11 <u>lireral Sitution</u> (Indian Creek Fesearch Natural Frea)
 - A <u>Mining History</u>

There is no record or indication of past mining activity

B Search of County Records

Record search indicates no recorded mining activity

C Mineral Examiner s Report

See attached report

D Mining Economics of the Local Area

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No indication of mining activity was found and mining has not been and is not of importance to the local economy

Appendix D

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Archeological Survey

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ARCHAEOLOGICAL RECONNAISSANCE

INDIAN CREEK RESEARCH NATURAL AREA

CONTRACT 316-16-76

- For Forest Supervisor Wallowa-Whitman National Forest P O Box 907 Baker, Oregon 97814
- By George R Mead, Ph D Rt 1 Box 54, Syphon Road Pocatello, Idaho 83201

Thomas Cinadr (M A Candidate) Department of Anthropology Idaho State University Pocatello, Idaho 83209

George & Mead

Aug 5 1976

INTRODUCTION

The field work, defined as "strictly archaeological input on the area delineated" (memo dated 9/5/75), was conducted on the week-end of July 24-25, 1976 The field crew consisted of George R Mead (Senior Investigator) and Thomas Cinadr (Master's Candidate at ISU) The portions of the region specified that were surveyed (see Fig 1) were those that appeared to be most likely to have had habitation sites on them, that is, any of the meadows and surrounding benches which were relatively close to water These areas were pre-selected prior to field work utilizing USGS topographic maps and an areial photograph of the area supplied by the Forest Service These were initial determinations subject to modification by the conditions found once on the site

SETTING AND CONDITIONS

The meadows were still running water and quite soft and The higher ground was quite dry Scattered over muddy the area are naturally occuring basalt cobbles Basalt is the material used throughout the Grande Ronde Valley for artifacts (aboriginal) to the exclusion of almost any other type of lithic material (very few pieces of obsidian are found in any of the aboriginal sites) In spite of the abundance of this locally available material (basalt cobbles in and about the meadows) in the study area there was no sign of any of this material ever having In addition there was no been modified by human agencies sign of habitation (either aboriginal or historic) in the study area, although there were signs of recent historic activities tires tracks of trail bikes, an old 7-Up can, etc

ARCHAEOLOGICAL SITES (HISTORIC AND PREHISTORIC)

There was no indication of any prehistoric archaeological sites in the area, nor was there any sign of historic materials other than the above mentioned ones The data for Union County supplied by the State Parks and Recreation Division, Department of Transportation, does not indicate the possibility of there being any historic materials in this study area as well



Figure 1 Survey Area Showing Generalized Path of Survey Crew

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RECOMMENDATIONS

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As far as could be determined from on the ground inspection there are no materials of an archaeological nature that can be disturbed by any type of activity that the Forest Service wishes to engage in in this area Appendix E

Visual Resource Management Mapping

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