INDIAN CREEK RESEARCH NATURAL AREA

Supplement No. 14 [1]

Sarah E. Greene [2]

The Research Natural Area described in this supplement is administered by the Forest Service, an agency of the U.S. Department of Agriculture. Forest Service Research Natural Areas are located within Ranger Districts, which are administrative 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 responsibility 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 Experiment 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 cooperative agreement between the scientist and the Forest Service may be necessary. The Forest Supervisor and the District Ranger administering 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 undisturbed ecosystems; and
3. Gene pool preserves for all types of organisms, especially rare and endangered types.

The Federal system is outlined in "A Directory of the Research Natural Areas on Federal Lands of the United States of America."[3]

Of the 70 Federal Research Natural Areas established in Oregon and Washington, 45 are described in "Federal Research Natural Areas in Oregon and Washington: A Guidebook for Scientists and Educators" (see footnote 1). Supplements to the guidebook describe additions to the system.

The guiding principle in management of Research Natural Areas is to prevent unnatural encroachments or activities that directly or indirectly modify ecological processes. Logging and uncontrolled grazing are not allowed, for example, nor is public use that might impair scientific or educational values. Management practices necessary for maintenance of ecosystems may be allowed.

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

[1] Supplement No. 14. to "Federal Research Natural Areas in Oregon and Washington: A Guidebook for Scientists 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 Documents, U.S. Government Printing Office, Washington, D.C. 20402, stock number 001-001-00225-9.

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[3] Federal Committee on Ecological Reserves. A directory of the Research Natural Areas on Federal lands of the United States of America. Washington, D.C.: U.S. Department of Agriculture, Forest Service; 1977.

to logging, land development, or similar activities. In return, a scientist wishing to use a Research Natural Area is obligated to:

1. Obtain permission from the appropriate administering agency before using the area;[4]
2. Abide by the administering agency's regulations governing use, including specific limitations on the type of research, sampling methods, and other procedures; and
3. Inform the administering agency on progress 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 knowledge 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 excavation 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 Natural Areas are determined by the administering agency.

[4] Six agencies cooperate in this program in the Pacific Northwest: U.S. Department of Agriculture - Forest Service; U.S. Department of the Interior - Bureau of Land Management, Fish and Wildlife Service, and National Park Service; the U.S. Department of Energy; and the U.S. 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 engelmannii-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, T. 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 features.

Access and Accommodations

To reach the natural area, travel 24 km (15 mi) 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% mi) where it turns into Forest Service Road 6220. Proceed 9.6 km (6 mi) 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 commercial accommodations are in Cove; camping facilities are available at Moss Springs Campground.

[5] Scientific and common names of plant species are listed in table 1.

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 snowpacks are more important environmental factors 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	1.8°C	(35.2°F)
Mean January temperature	-7.8°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 cm	(43.02 in)
Mean precipitation June through August	9.9 cm	(3.90 in)

Average maximum snow depth in April, recorded at Moss Springs [4 km (2% mi) south at 1767 m (5,800 ft) elevation], is approximately 1.5 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 em (9.0, 14.7, 19.9, 24.1, and 21.2 in) respectively. Snow usually melts by early June but, in years with a heavy snowpack, snowbanks may remain throughout the summer, especially on steep northeast slopes.

[6] Temperature data are 3-year (1971-73) means; precipitation data are means of 7 to 9 years, beginning in 1965.

Table IC-1 — Plants found in Indian Creek Research Natural Area[1]

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
Arnica cordifolia Hook.	Heartleaf arnica
Arnica mollis Hook.	Hairy arnica
Arnica parryi Gray	Nodding arnica
Berberis repens Lindl.	Creeping barberry
Calamagrostis rubescens Buckl.	Pinegrass
Carex sp.	Sedge
Carex geyeri Boott	Elk sedge
Carex rossii Boott	Ross sedge
Cheilanthes gracillima D. C. Eat.	Lip-fern
Chimaphila umbellata (L.) Bart.	Prince's-pine
Cypripedium montanum Dougl.	Mountain lady's-slipper
Deschampsia spp.	Hairgrass
Dodecatheon spp.	Shooting star
Epilobium angustifolium L.	Fireweed
Erigeron spp.	Erigeron
Eriogonum flavum Nutt.	Yellow buckwheat
Festuca viridula Vasey	Green fescue
Hieracium albiflorum Hook.	White flowered hawkweed
Hieracium cynoglossoides Arv.-Touv.	Houndstongue hawkweed
Hieracium gracile Hook.	Slender hawkweed
Juncus spp.	Rush
Juncus parryi Engelm.	Parry's rush
Larix occidentalis Nutt.	Western larch
Ligusticum tenuifolium Wats.	Fern-leaf lovage
Lonicera utahensis Wats.	Utah honeysuckle
Lupinus spp.	Lupine
Mimulus spp.	Monkey-flower
Penstemon fruticosus (Pursh) Greene	Shrubby penstemon
Penstemon spatulatus Pennell	Wallowa penstemon
Picea engelmannii Parry	Engelmann spruce
Pinus contorta Dougl.	Lodgepole pine
Poa sp.	Bluegrass
Polemonium pulcherrimum Hook.	Skunkleaf polemonium
Polygonum phytolaccaefolium Meisn.	Pokeweed fleeceflower
Polystichum lonchitis (L.) Roth	Mountain holly-fern
Prunus emarginata (Dougl.) Walp.	Bittercherry
Pseudotsuga menziesii var. *glauca* (Beissn.) Franco	Douglas-fir
Pyrola secunda L.	One-sided wintergreen
Senecio foetidus var. *hydrophiloides*	Sweetmarsh butterweed
Sibbaldia procumbens L.	Creeping sibbaldia

Table IC-1 — Plants found in Indian Creek Research Natural Area[1] — 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

[1]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-!). Soil parent materials are of volcanic 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 horizons, grade from dark brown on the surface to light yellowish brown or white in the C horizon. Occasionally a weak A2 horizon occurs. The organic (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 HeIter series.

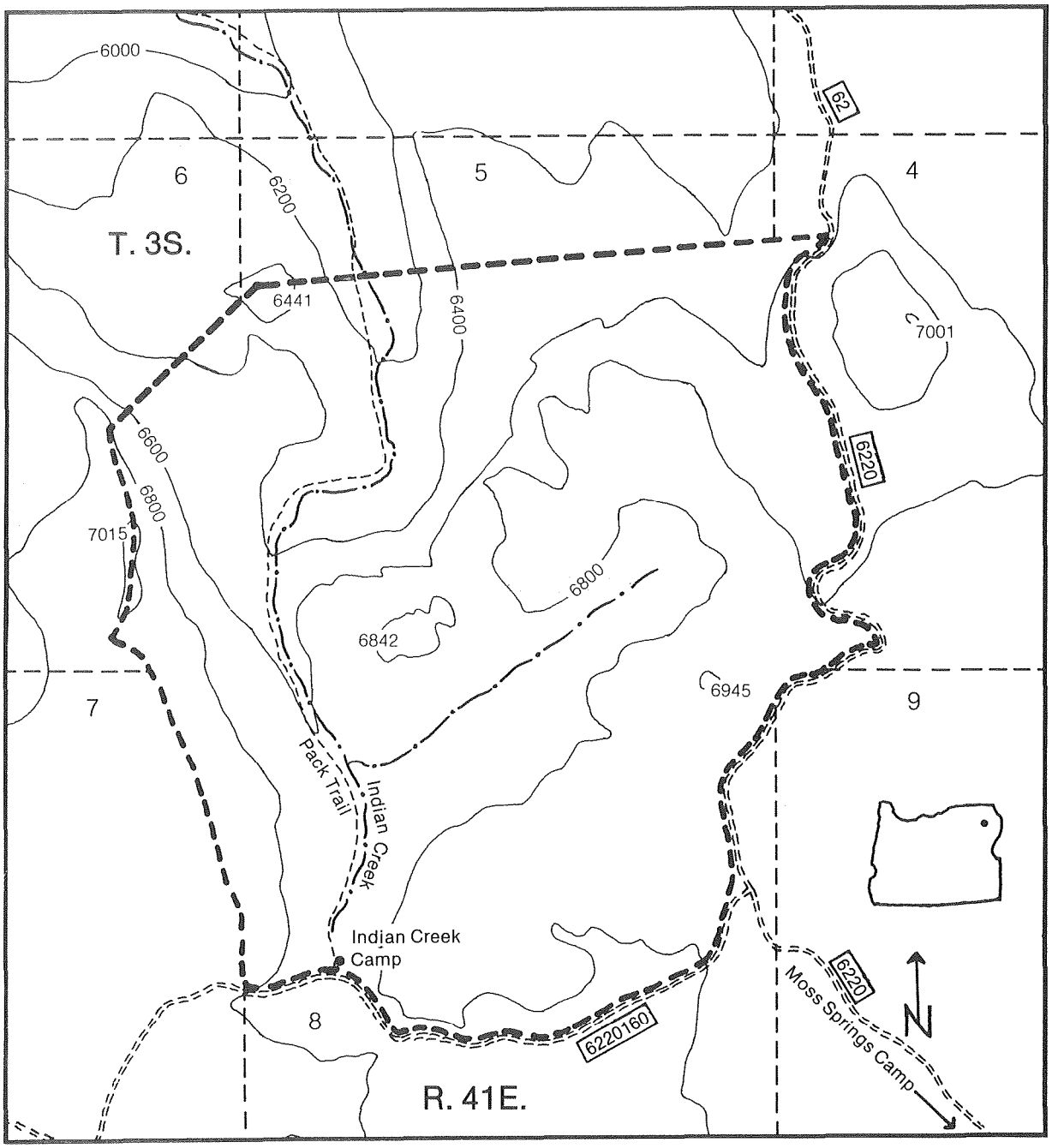
A fine-grained, light-colored andesite of late Miocene age is associated with the entire area, either as underlay or outcrop. This material appears quite weather resistant, but weathered materials do accumulate where topographic situations permit, such as below large rock outcrops. Here, angular andesite fragments 0.6 to 2.5 cm (% to 1 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 6in) layers exhibiting variable composition of ash and fragments of andesite. Variable colors are associated with these bands. Soils of this origin are probably related to the Hall Ranch and Klicker series.

The meadow-associated soils, derived from alluvium 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 Survey.[7]

Two perennial streams, 0.4 to 0.8 km (% to % 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).

[7] J. Michael Geist, soil scientist, Range and Wildlife Habitat Laboratory, La Grande, Oregon, personal communication 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.

IC-3. Vernal subalpine pond.

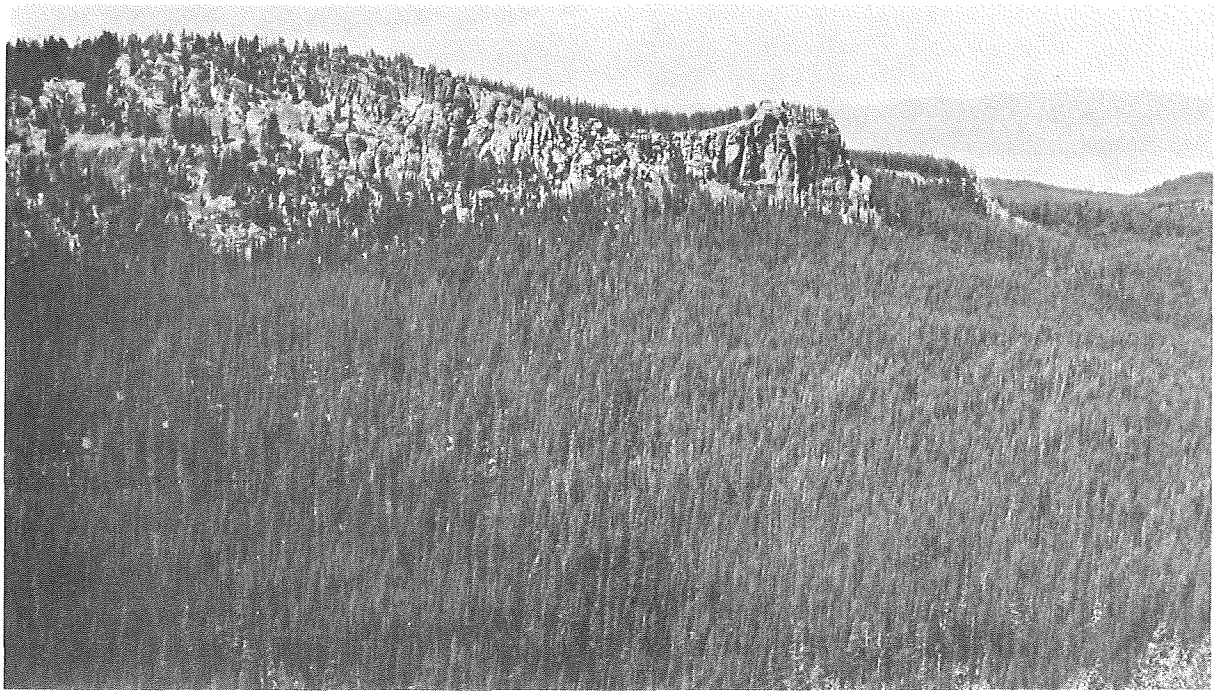
Biota

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 contorta/ 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* increases in both overstory and understory (fig. IC-6). *Abies lasiocarpa* is co-dominant with *Pinus contorta* in the eastern portion of the watershed. Along the northern portions of the RN A 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 co-dominant. 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.

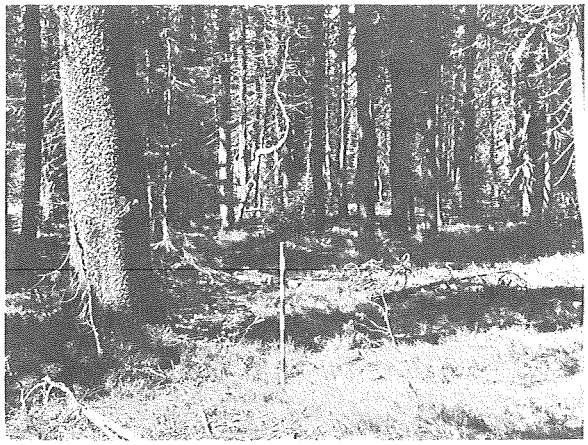
mollis, A. parryi, Epilobium angustifolium, Carex rossii, Ligusticum tenuifolium, and *Anaphalis margaritacea* are common. The shrub layer - *Amelanchier alnifolia, Berberis repens, Sorbus scopulina, Prunus emarginata,* and *Penstemon fruticosus* - is generally well hedged by elk *(Ceruus canadensis)*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

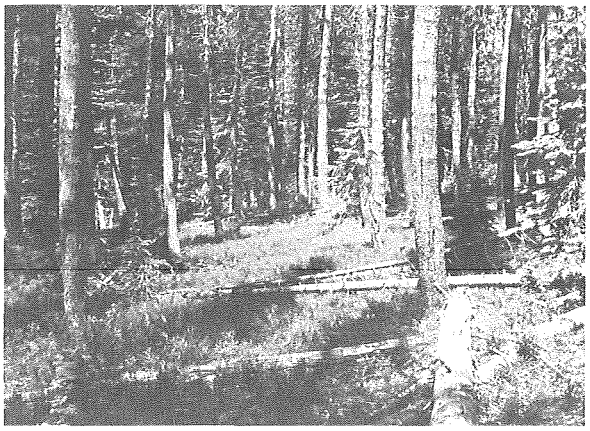
The remaining parts of the natural area are covered by grasslands on shallow soils, rock outcrops, rocky ridges, and meadows. Species encountered on the first three areas are *Antennaria umbrinella, Penstemon spatulatus, Juncus parryi, Polygonum phytolaccaefolium, Arenaria capillaris, Eriogonum flavum, 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, meadow like openings within the forest.

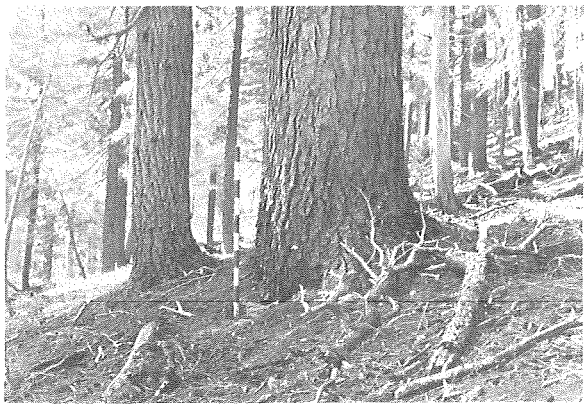
A vegetation map appears in Figure IC-S.



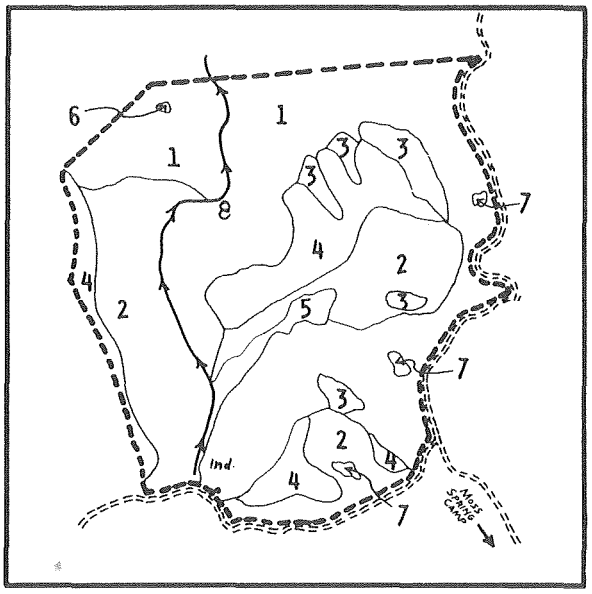
IC-5. Old-growth Pinus contorta/Vaccinium scoparium *habitat on a poor site. Little regeneration of* Abies lasiocarpa *or* Pinus contorta *appears.*



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*
6. *Subalpine permanent pond*
7. *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 mammals 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 inhabitants of the natural area: the Pacific tree frog *(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 processes, 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%' Mount Fanny, Oregon, quadrangle, scale 1:24,000, issued by the U.S. Geological Survey in 1965; and **Geologic** - Oregon 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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Table IC-2 — Mammals in Indian Creek Research Natural Area[1]

Order	Scientific name	Common name
Insectivora	**Scapanus orarius*	Pacific mole
	Sorex palustris	Northern water shrew
	Sorex preblei	Malheur shrew
	Sorex vagrans	Vagrant shrew
Chiroptera	*Eptesicus fuscus*	Big brown bat
	Lasionycteris noctivagans	Silver-haired bat
	Lasiurus cinereus	Hoary bat
	Myotis californicus	California myotis
	Myotis evotis	Long-eared myotis
	Myotis lucifungus	Little brown myotis
	Myotis volans	Long-legged myotis
	Plecotus townsendi	Western big-eared bat
Lagomorpha	**Lepus americanus*	Snowshoe hare
Rodentia	**Citellus columbianus*	Columbian ground squirrel
	Citellus lateralis	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
	**Microtus richardsoni*	Richardson vole
	**Neotoma cinerea*	Bushytail woodrat
	Peromyscus maniculatus	Deer mouse
	Phenacomys intermedius	Mountain phenacomys
	**Tamiasciurus hudsonicus*	Red squirrel
	**Thomomys talpoides*	Northern pocket gopher
	Zapus princeps	Western jumping mouse
Carnivora	**Canis latrans*	Coyote
	Felis concolor	Cougar
	**Lynx rufus*	Bobcat
	Martes americana	Marten
	Mustela erminea	Shorttail weasel
	Mustela frenata	Longtail weasel
	Ursus americanus	Black bear
Artiodactyla	**Cervus canadensis*	Elk
	**Odocoileus hemionus*	Mule deer

*indicates presence verified by sighting, sound, or sign.

[1]Nomenclature follows Burt and Grossenheider (1976). Mammals listed are believed to use the area at some time of year. Information supplied by Chris Maser, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management (Forestry Sciences Laboratory, Corvallis, Oregon).

Table IC-3 — Birds in Indian Creek Research Natural Area[1]

Order	Scientific name	Common name
Anseriformes	*Bucephala islandica*	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
Galliformes	*Dendragapus obscurus*	Blue grouse
	Bonasa umbellus	Ruffed grouse
	**Canachites canadensis*	Spruce grouse
Strigiformes	*Bubo virginianus*	Great horned owl
	Glaucidium gnoma	Pygmy owl
	Aegolius acadicus	Saw-whet owl
	Asio otus	Long-eared owl
	Strix nebulosa	Great grey owl
	Strix varia	Barred owl
	Otus flammeolus	Flammulated owl
Caprimulgiformes	*Chordeiles minor*	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 woodpecker
	Dendrocopos pubescens	Downy woodpecker
	Dendrocopos albolarvatus	White-headed woodpecker
	Picoides arcticus	Black-backed three-toed woodpecker
	Asyndesums lewis	Lewis woodpecker
	Sphyrapicus varius	Yellow-bellied sapsucker
	Sphyrapicus thyroideus	Williamson's sapsucker

Table IC-3 — Birds in Indian Creek Research Natural Area[1] — Continued

Order	Scientific name	Common name
Passeriformes	*Nuttallornis borealis*	Olive-sided flycatcher
	**Empidonax hammondii*	Hammond's flycatcher
	Contopus sordidulus	Western wood pewee
	Parus rufescens	Chestnut-backed chickadee
	**Parus gambeli*	Mountain chickadee
	**Perisoreus canadensis*	Gray jay
	**Cyanocitta stelleri*	Steller's jay
	Pica pica	Black-billed magpie
	Corvus corax	Common raven
	Nucifraga columbiana	Clark's nutcracker
	Sitta carolinensis	White-breasted nuthatch
	Sitta pygmaea	Pygmy nuthatch
	**Sitta canadensis*	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
	Hylocichla 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's warbler
	Oporornis tolmiei	MacGillivray's warbler
	**Carpodacus cassinii*	Cassin's finch
	Carpodacus purpureus	Purple finch
	Leucosticte tephrocotis	Gray-crowned rosy finch
	Spizella passerina	Chipping sparrow
	Zonothrichia leucophrys	White-crowned sparrow
	Passerella iliaca	Fox sparrow

Table IC-3 — Birds in Indian Creek Research Natural Area[1] — Continued

Order	Scientific name	Common name
	Melospiza lincolnii	Lincoln's sparrow
	Melospiza melodia	Song sparrow
	Pinicola enucleater	Pine grosbeak
	Pheucticus melanocephalus	Black-headed grosbeak
	Hesperiphona vespertina	Evening grosbeak
	Loxia curvirostra	Red cross bill
	Loxia leucoptera	White-winged crossbill
	Pipilo erythrophthalmus	Rufous-sided towhee
	**Junco hyemalis*	Slate-colored junco
	Spinus pinus	Pine siskin
	Passer domesticus	House sparrow
	Anthus spinoletta	Water pipit
	Vireo solitarius	Solitary vireo
	Euphagus cyanocephalus	Brewer's blackbird
	Piranga ludoviciana	Western tanager
Charadriiformes	**Tringa solitaria*	Solitary sandpiper

*indicates presence verified by sight or sound.

[1]Nomenclature follows Peterson (1961). Birds listed are believed to use the area at some time of year. Information supplied by Evelyn Bull, wildlife biologist, U.S. Department of Agriculture, Pacific Northwest Forest and Range Experiment Station, La Grande, Oregon.