MOHAWK RESEARCH NATURAL AREA

Supplement No. 23[1]

Alan B. Curtis[2]

The Research Natural Area described in this supplement is administered by the Bureau of Land Management, U.S. Department of the Interior. Bureau of Land Management Research Natural Areas are administered by District Offices that are organizational subdivisions of their State Offices. Scientists wishing to use these Research Natural Areas (RNA) should contact the Bureau's State Director. Because this tract is located in Oregon, the responsible individual is the Oregon State Director (Bureau of Land Management, PO. Box 2965, Portland, Oregon 97208). The manager of the district in which the Research Natural Area is located will be informed of mutually agTeed on activities by the State Director. Nevertheless, a scientist should visit the administering District Office when beginning a study and explain the nature, purpose, and duration of activities planned. Permission for brief observational visits to Research Natural Areas can be obtained fi'om District Managers.

Mohawk Research Natural Area is part of a Federal system of such tracts established for research and educational purposes. Each RNA 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;
1. Sites for study of natural processes in undisturbed ecosystems; and
1. 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 96 Federal Research Natural Areas established in Oregon and Washington, 45 al'e 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 gTazing 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 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;"
1. Abide by the administering agency's ref,'l.llations governing use, including specific limitations on the type of research, sampling methods, and other procedures; and
1. Inform the administering agency on progress of the research, published results, and disposition of collected materials.

[1] Supplement No. 23 to "Federal Research Natural Areas in Oregon and Washington: A Guidebook f()r Scientists and Educators;' by Jerry F. Franklin, Frederick C. Hall, C.T DYl'l1ess, and Chris Maser (Portland, OR: U.S. Department of Agriculture, FOl'est Service, Pacific Northwest Forest and RI1l1ge Experiment Station; 1972. 498 p.).

[2] Alan B. Curtis is a retired forester/botanist, U.S. Department of the Interior, Bureau of Land Management, Eugene, Oregon .

" Federal Committee on Ecological Reserves. A direetory of the Hesearch Natural Areas on Federal lands of the United States of America. Washington, DC: U.S. Department of Agriculture, Forest Service; 1977.

. , Six agencies cooperate in this program in the Pacinc North· west: 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; U.S. Department of Enel'gy; and U.S. Department of Defense.

The purpose of these limitations is to:

1. Ensure 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.

3.

MOHAWK RESEARCH NATURAL AREA

Old-growth *Pseudotsuga menziesii* and *Tsuga heterophylla* forest with areas of young growth on foothills east of the Willamette Valley.[5]

The Mohawk Research Natural Area (RNA) was established in January 1984 to provide an example of old-growth *Psellclotsuga Inenzlesii* and *TSllga heterophylla* forest in the Willamette Valley foothills. The site also incorporates several small marsh communities and areas that were previously logged bue now support young trees (fig. 1). This 113-ha area in Lane County, Oregon, is administered by the Mohawk Resource Area of the Eugene District of the Bureau of Land Management (BLM). The RNA is situated in section 19, T. 16 S., R. 2 W., Willamette Meridian (lat. 44°10' N.; long. 122°58' W.).

Figure 1—Northeasterly view across a portion of the Mohawk RNA. Old-growth timber in the background provides a sharp contrast to the young trees restocking a previously cut area.

Access and Accommodations

To reach the RNA, take U.S. Interstate 5 to its junction with Interstate 105 at Eugene-Springfield exit 194. Drive east on 1-105 2.4 mi to the Marcola exit. Travel north on Marcola Road, cross the McKenzie River, and dTive 6.2 mi to the community of Mohawk. Take Donna Road north 0.6 mi to its intersection with McGowan Creek Road, BLM 16-2-27. Follow this paved road west 3.4 mi, turn left onto gravel road BLM 16-2-20 and drive 0.7 mi, turn left at the junction, and continue another 0.3 mi to the old-gTowth timber (fig. 2).

Commercial accommodations are available in the Eugene-Springfield metropolitan area. Commercial air service is available in Eugene.

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

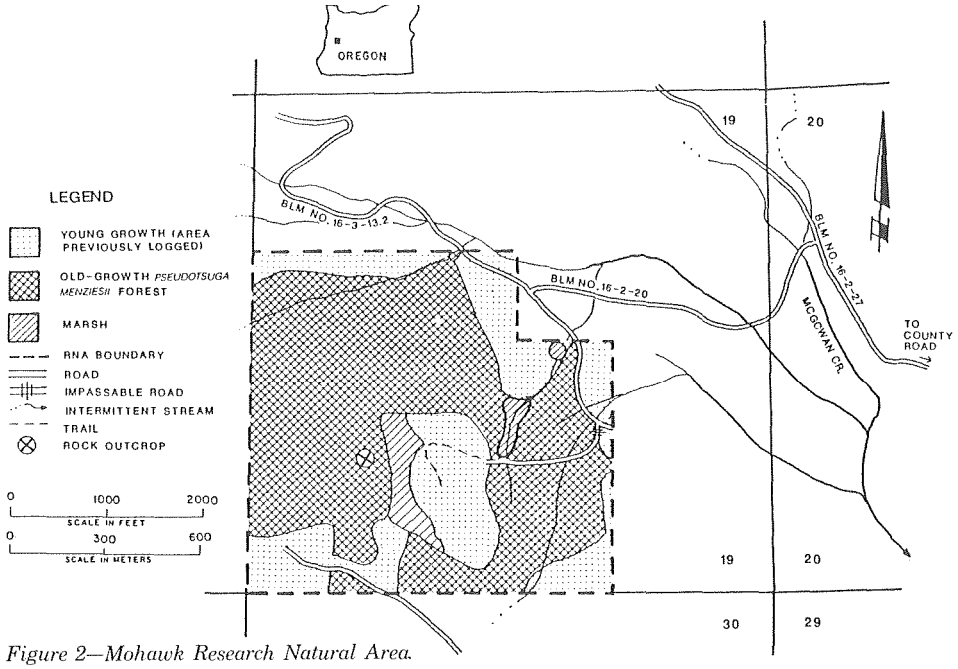

Figure 2—Mohawk Research Natural Area.

Environment

The Mohawk RNA lies east of the Willamette Valley and is part of the western Cascades physiographic province. East of the valley, low, rounded foothills change rapidly into mountainous, deeply dissected terrain with steep slopes.

The northern and eastern portions of the RNA consist of moderately sloping benches. Several intermittent streams, tributaries of McGowan Creek, flow through or originate here. West of the benches is a steep slope with a small rock outcrop. The topogTaphy changes again toward the southwest boundary of the RNA, and above the steep slope is a flat ridgetop. Most of the RNA has a north to northeast exposure. Elevations range from 451 to 707 m.

The RNA is uniformly forested with large, old-growth conifers and a few deciduous trees. A few small areas previously logged to remove blowdown are now covered by young trees.

The Pacific Ocean is 57 miles west of Mohawk RNA. It gives the area a temperate marine climate-cool, wet winters and warm, dry summers. At the closest weather station 12 mi to the west at Eugene, temperatures average 3.8 °C (39 OF) in January and 19.4 °C (67 OF) in July, and the mean annual temperature is 11.1 °C (52 OF) (National Oceanic and Atmospheric Administration 1983). Precipitation at the RNA averages 127 cm per year (Pacific Northwest River Basins Commission 1970). About 70 percent of the precipitation falls from November through March, 2.nd only 5 percent from June through August. Nearly all of it falls as rain; on rare occasions, a few centimeters of snow may accumulate, but it usually melts in 3 to 4 days. In summer the relative humidity at Eugene is usually between 35 and 50 percent, but it occasionally drops below 30 percent. Evaporation at this time far exceeds precipitation and leads to ch·ought.

Stable high-pressure summer airmasses bring clear skies and light winds from the north. In the summer and fall, temperature inversio'1s sometimes OCCU1' in valleys of the Eugene area. In late fall, winter, and spring, unstable low-pressme aiI'm asses bring fi'equent storms from the Pacific Ocean. Prevailing winds are out of the southwest, and their force sometimes causes extensive windthrow of trees. Dming the 1962 Columbus Day storm, windspeeds of 98 mJh were recorded in Eugene.

Soils

Mohawk RNA is situated on three distinct landforms: (1) a moderate slope composed of a series of slump benches (northern and eastern portions); (2) a steep slope-scarp face (middle portion); and (3) a relatively broad ridgetop (southwest corner). The ridgetop and steep slope-scarp are underlain by andesitic basalt, and the slump benches are underlain by pyroclastics and breccia.

More than half of the RNA is composed of slump benches that are a result of rotational slope failures. These benches have a complex of welld1'ained and poorly ch'ained soils and sag ponds. Drainage patterns are developing on the benches, and most sag ponds have ch'ainage channels. Soils at the back of the benches are poorly drained because of sag ponds. These soils are gleyed, have mottles within 15 cm of the surface, and can be classified in the Minniece soil series. The welldrained soils (Peavine soil series and a variant with 15 to 40 percent coarse fragments) are located on the convex positions and slope breaks of the slump benches; these soils typically 21'e moderately deep (76 to 102 cm) red clays with coarse fragment contents ranging from 5 to 40 percent.

The steep slope-scarp has soils in the Hembre and Klickitat soil series. Hembre soils are deep, well-ch'ained, reddish-brown clay loams; coarse fragment content ranges from 0 to 15 percent in the A horizons and increases to 40 percent in the B3 horizons. Klickitat soils are similar to Hembre, except that coarse fragment content ranges from 25 to 50 percent and the solum is typically 51 to 102 cm thick.

Soils on the ridgetop are well-drained red clays that are developmg in place (residuum). The A horizons are dark reddish-brown clay loams, and the B horizons are reddish-brown clays. The C horizons typically occm at depths greater than 91 cm. These ridgetup soils contain as much as 15 percent coarse fragments and are classified in the Honeygrove and McCully soil series.

Biota

Vegetation

The old-growth forest at Mohawk RNA covers 71 ha. It is dominated by large *Pseudotsuga menziesii,* but *Tsuga heterophylla* is present in substantial amounts (fig. 3); this corresponds to Society

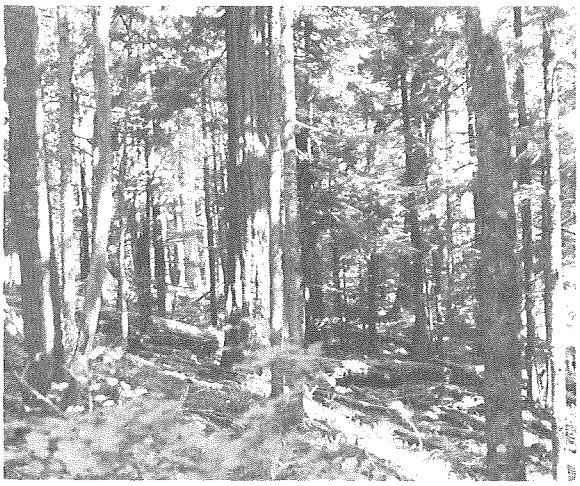

Figure 3—Large scattered Pseudotsuga menziesii *in the Mohawk RNA dominate the overstory, whereas* Tsuga heterophylla *is the most prevalent understory tree.*

of American Foresters (SAF) cover type 230 Pacific Douglas-fir-Western Hemlock (Eyre 1980). The area falls within the *T. heteroph'ylla* zone of Franklin and Dyrness (1973).

On benches in the northern and eastern portions of the RNA, the oldest *P menziesii* are about 400 years old, and the largest tree seen was 196 cm in diameter at breast height (d.b.h.). The tallest tree was 65 m tall and 107 cm in d.b.h. *Pseudl}tsuga menziesii* is the dominant tree, and growth conditions are near optimum for this species. Barring major disturbance, *T. heterop1wlla* will be the major climax species. There is no *P menzwsu* reproduction at present.

The dense understory is eomprised of *Tsuga heteroph'ylla* and *Thl~ja plicata.* These shadetolerant species are typically 30 to 61 cm in d.b.h., yet individual *T heteroph'ylla* as large as 127 cm and *T. plicata* as large as 145 cm in d.b.h. and 46 m tall have been found. Seedlings and saplings of *T heteroph'ylla* are found throughout this portion of the RNA. A few *Abies grandis* are present. *Taxus brevifOlia* is a very common understory tree, f:,JTowing as large as 53 cm in d.b.h. and 16 m in height. *Acer macroph'yllum* grows to a large size, and the trunks of these trees are commonly covered with epiphytes, including *Po(ypodiwn g(YL.)frrhiza* and mosses.

Common shrubs are *Acer circinatwn, Berberis nervosa, Gaultheria shallon,* and *Vaccinium parvifOlilll11. Fb(ystichum nwnitwn* and *Oxalis oregana* dominate the perbaceous understory community at this very moist site.

Figure 4—Cavity excavated by pileated woodpeckers in a Thuja plicata *trunk. The birds were seeking carpenter ants that lived in the slightly rotted heart of this 61 cm in d.b.h. tree. Broad evergreen leaves at the base of the tree are those of* Gaultheria shallon, *a very common shrub.*

There are many large snags and large down logs, which provide habitat for wildlife. Some of the oldest trees are showing sig:1s of decadence (fig. 4). This part of the RNA fulfills the definition of an old-growth forest.

In the western portion of the RNA, slopes are steep, but a small area on top is nearly flat. *H;eudotsuga menziesii* is the dominant tree here, and the stand is somewhat open. These trees are 150-200 years old and average 61 to 91 cm in diameter. Occasional large *Calocedrlls decurrens* with diameters as large as 152 cm have survived fires. Many smaller C. *decurrens,* from saplings to those 46 cm in diameter, form a lower canopy with scattered *Acer macroph'yllum. Tsuga heteroph'ylla* is not eommon at this location. Shrubs present are *COlylus conllda* val'. *californica, Acer circinatwn, Berberis nervosa, Gaultheria shallon,* and *Holodiscus discolor. Fbl.Ystichum munitwn* is a very common component of the herbaceous community.

Figure 5—One of several small marshy areas that are dominated by Lysichitum americanum *and* Athyrium filix-femina.

There are several small marshy areas that contain standing water throughout the year. The largest one is 4 ha in size and is located near the center of the RNA at the bottom of a steep slope. *Fraxinus lati(olia* and *Alnus rubra* are common trees. *Acer circinatum* and *Rubus spectabilis* are frequently encountered shrubs, along with the following herbaceous species: *Atlwrillln filix(emina, Carex obnupta, Equisetum hyemale, Juncus* spp., *Lysichitllm americanum, Mitella oualis,* and *Rudbeckia occidentalis.*

The smaller marshy areas total 0.4 ha and are the result of land slumps that occmred in the past (fig. 5). *Thllja plicata* occms on the edges of these areas, along with the other species mentioned above.

Fauna

Reptiles and amphibians believed to frequent the RNA are listed in table 2, birds in table 3, and mammals in table 4.

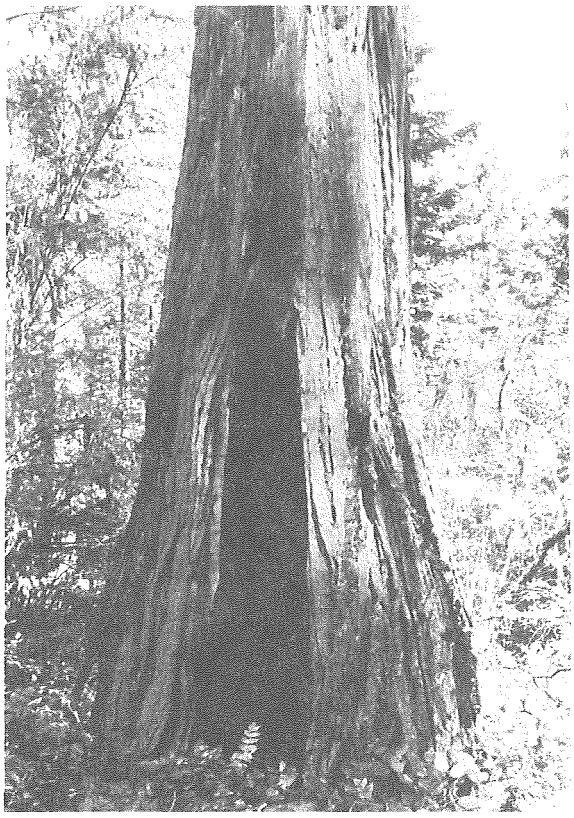

Figure 6—A forest fi:e burned a deep scar into the trunk of this Calocedrus decurrens, *which now provides a unique habitat for wildlife. Vultures have been observed using such cavities for nesting and rearing their young.*

History of Disturbance

Several major forest fires have occurred on the RNA. The last fire appears to have bmned 100-150 years ago. Earlier fires burned deep scars into trunks of *Calocedrus decllrrens* (fig. 6) and other species. Since the initiation of fire suppression in the last 50 years, no fires are known to have bmned in the RNA, except for a O.4-ha area where timber was destroyed in 1985 when a slash fire on adjacent land bmned out of control.

The 1962 Columbus Day storm caused scattered blowdown throughout the RNA. Trees were salvaged where the topography was favorable; 38 ha were clearcut where damage was most extensive, and individual trees were removed on the benches. The clearcuts were planted with young *Pseudo-tSliga menziesii* in 1965.

Research

No research studies are known to be in pr06)TeSS on the RNA. The area is an excellent site for studying growth and succession in a mixed coniferous forest of the Willamette Valley foothills.

Maps and Aerial Photographs

The topographic map applicable to the RNA is the 15' Marcola, Oregon, quadrangle, scale 1:62,500, issued by the U.S. Geological Survey in 1950. The Bureau of Land Management, Eugene District Office, can supply information on the most recent aerial photogTaphs and forest type maps for the area. Older aerial photographs are available for reference at the University of Oregon libniry map room. For geologic information, consult the reconnaissance geologic map and sections of the western Cascade Range, Oregon, north of latitude 43^0 N. (Peck 1964).

Metric and English Equivalents

1 kilometer (km)	=	0.6 mile
1 meter (m)	=	3.3 feet
1 centimeter (cm)	=	0.4 inch
1 hectare (ha)	=	2.47 acres

Table 1—Plants found in Mohawk Research Natural Area[1]

Scientific name	Common name
Abies grandis (Dougl.) Forbes	Grand fir
Acer circinatum Pursh	Vine maple
Acer macrophyllum Pursh	Bigleaf maple
Achillea millefolium L.	Common yarrow
Achlys triphylla (Smith) DC.	Vanillaleaf
Adenocaulon bicolor Hook.	Pathfinder
Adiantum pedatum L.	Maidenhair fern
Alnus rubra Bong.	Red alder
Amelanchier alnifolia Nutt.	Western serviceberry
Anaphalis margaritacea (L.) B. & H.	Pearly-everlasting
Anemone deltoidea Hook.	Threeleaf anemone
Arbutus menziesii Pursh	Pacific madrone
Asarum caudatum Lindl.	Wild ginger
Athyrium filix-femina (L.) Roth	Lady-fern
Berberis nervosa Pursh	Oregongrape
Blechnum spicant (L.) Roth	Deer-fern
Calocedrus decurrens (Torr.) Florin	Incense-cedar
Calypso bulbosa (L.) Oakes	Calypso orchid
Campanula scouleri Hook.	Scouler's bellflower
Cardamine oligosperma Nutt.	Little western bittercress
Cardamine pensylvanica Muhl.	Pacific bittercress
Cardamine pulcherrima Greene var. *tenella* (Pursh) Hitchc.	Slender toothwort
Carex obnupta Bailey	Slough sedge
Carex sp.	Sedge
Castanopsis chrysophylla (Dougl.) DC.	Golden chinquapin
Ceanothus velutinus Dougl.	Sticky-laurel
Cerastium viscosum L.[2]	Sticky chickweed
Chrysanthemum leucanthemum L.[2]	Oxeye-daisy
Circaea alpina L.	Circaea
Cirsium arvense (L.) Scop. var. *horridum* Wimm. & Grab.	Canada thistle
Cirsium vulgare (Savi) Tenore[2]	Bull thistle
Coptis laciniata Gray	Cutleaf goldthread
Corallorhiza maculata Raf.	Spotted coral-root
Cornus nuttallii Aud.	Pacific dogwood
Corylus cornuta Marsh var. *californica* (DC.) Sharp	Hazelnut or California hazel

See footnotes at end of table.

Table 1—Plants found in Mohawk Research Natural Area[1] (continued)

Scientific name	Common name
Cystopteris fragilis (L.) Bernh.	Brittle bladderfern
Cytisus scoparius (L.) Link. [2]	Scot's broom
Daucus carota L.[2]	Queen Anne's lace
Dicentra formosa (Andr.) Walp.	Pacific bleedingheart
Disporum hookeri (Torr.) Nicholson	Hooker fairy-bell
Dryopteris arguta (Kaulf.) Watt.	Coastal shield-fern
Epilobium angustifolium L.	Fireweed
Epilobium paniculatum Nutt.	Autumn willow-weed
Equisetum hyemale L.	Scouring-rush
Equisetum telmateia Ehrh.	Giant horsetail
Fragaria vesca L.	Woods strawberry
Fraxinus latifolia Benth.	Oregon ash
Galium triflorum Michx.	Sweetscented bedstraw
Gaultheria shallon Pursh	Salal
Geranium molle L.[2]	Dovefoot geranium
Goodyera oblongifolia Raf.	Rattlesnake-plantain
Heuchera micrantha Dougl. var. *micrantha*	Small-flowered alumroot
Hieracium albiflorum Hook.	White-flowered hawkweed
Hierochloe occidentalis Buckley	Sweetgrass
Holcus lanatus L.[2]	Velvet-grass
Holodiscus discolor (Pursh) Maxim.	Ocean-spray
Hydrophyllum tenuipes Heller	Pacific waterleaf
Hypericum perforatum L.[2]	Common St. Johns-wort
Hypochaeris radicata L.[2]	False dandelion
Iris tenax Dougl.	Oregon iris
Juncus effusus L.	Soft rush
Juncus sp.	Rush
Lamium purpureum L.[2]	Red dead-nettle
Ligusticum apiifolium (Nutt.) Gray	Celery-leaved lovage
Lilium columbianum Hanson	Tiger lily
Linnaea borealis L.	Twinflower
Listera cordata (L.) R. Br.	Heart-leaf twayblade
Lonicera ciliosa (Pursh) DC.	Orange honeysuckle
Lotus sp.	Deervetch
Lysichitum americanum Hultén & St. John	Skunk cabbage
Marah oreganus (T. & G.) Howell	Oregon bigroot
Mimulus alsinoides Dougl.	Chickweed monkey-flower
Mitella caulescens Nutt.	Leafy mitrewort
Mitella ovalis Greene	Oval-leaved mitrewort

See footnotes at end of table.

Table 1—Plants found in Mohawk Research Natural Area[1] (continued)

Scientific name	Common name
Monotropa uniflora L.	Indian-pipe
Montia sibirica (L.) Howell var. *sibirica*	Western springbeauty
Nemophila parviflora Dougl.	Smallflowered nemophila
Oenanthe sarmentosa Presl	Pacific water-parsley
Osmorhiza chilensis H. & A.	Mountain sweet-root
Oxalis oregana Nutt.	Oregon oxalis
Philadelphus lewisii Pursh	Lewis mockorange
Physocarpus capitatus (Pursh) Kuntze	Pacific ninebark
Plantago lanceolata L.[2]	English plantain
Polypodium glycyrrhiza D.C. Eat.	Licorice-fern
Polystichum munitum (Kaulf.) Presl	Sword-fern
Prunella vulgaris L. var. *lanceolata*[2]	Self-heal
Prunus emarginata (Dougl.) Walp.	Bitter cherry
Pseudotsuga menziesii (Mirb.) Franco	Douglas-fir
Pteridium aquilinum (L.) Kuhn	Bracken fern
Pyrola sp.	Pyrola
Rhamnus purshiana DC.	Cascara
Rhus diversiloba T. & G.	Poison oak
Ribes sanguineum Pursh	Red-flowered currant
Rosa gymnocarpa Nutt.	Baldhip rose
Rosa nutkana Presl	Nootka rose
Rubus discolor Weihe & Nees[2]	Himalayan blackberry
Rubus laciniatus Willd.[2]	Evergreen blackberry
Rubus leucodermis Dougl.	Blackcap
Rubus nivalis Dougl.	Snow bramble
Rubus parviflorus Nutt.	Thimbleberry
Rubus spectabilis Pursh	Salmonberry
Rubus ursinus Cham. & Schlecht.	Pacific blackberry
Rudbeckia occidentalis Nutt.	Black head
Rumex sp.	Dock
Salix lasiandra Benth.	Pacific willow
Salix scouleriana Barratt	Scouler willow
Salix sp.	Willow
Sambucus racemosa L. var. *arborescens* (T. & G.) Gray	Pacific red elder
Sambucus cerulea Raf.	Blue elderberry
Satureja douglasii (Benth.) Briq.	Yerba buena
Scirpus microcarpus Presl	Small-fruited bulrush
Scirpus sp.	Bulrush

See footnotes at end of table.

Table 1—Plants found in Mohawk Research Natural Area[1] (continued)

Scientific name	Common name
Sedum sp.	Stonecrop
Senecio jacobaea L.[2]	Tansy ragwort
Senecio triangularis Hook. var. *triangularis*	Arrowleaf groundsel
Sisyrinchium angustifolium Mill.	Blue-eyed grass
Smilacina racemosa (L.) Desf.	False Solomon's seal
Smilacina stellata (L.) Desf.	Star-flowered Solomon-plume
Stachys cooleyae Heller	Cooley's hedge-nettle
Stachys rigida Nutt.	Rigid hedge-nettle
Stretopus amplexifolius (L.) DC. var. *americanus* Schult.	Clasping-leaved twisted-stalk
Symphoricarpos albus (L.) Blake	Common snowberry
Synthyris reniformis (Dougl.) Benth.	Snow-queen
Taraxacum officinale Weber[2]	Dandelion
Taxus brevifolia Nutt.	Pacific yew
Tellima grandiflora (Pursh) Dougl.	Fringecup
Thuja plicata Donn	Western redcedar
Tiarella trifoliata L. var. *trifoliata*	Trefoil foamflower
Trientalis latifolia Hook.	Western starflower
Trifolium sp.	Clover
Trillium chloropetalum (Torr.) Howell	Giant trillium
Trillium ovatum Pursh	Trillium
Tsuga heterophylla (Raf.) Sarg.	Western hemlock
Typha latifolia L.	Cat-tail
Vaccinium parvifolium Smith	Red huckleberry
Vancouveria hexandra (Hook.) Morr. & Dec.	White inside-out-flower
Veratrum californicum Durand var. *caudatum* (Heller) Hitchc.	California false hellebore
Veronica arvensis L.[2]	Common speedwell
Veronica serpyllifolia L. var. *serpyllifolia*[2]	Thyme-leaved speedwell
Vicia gigantea Hook.	Giant vetch
Viola glabella Nutt.	Stream violet
Viola sempervirens Greene	Evergreen violet

[1]Nomenclature follows Hitchcock and Cronquist (1976).

[2]Introduced species.

Table 2—Reptiles and amphibians in Mohawk Research Natural Area[1]

Order	Scientific name	Common name
Caudata	*Ambystoma gracile*	Northwestern salamander
	Aneides ferreus	Clouded salamander
	Dicamptodon ensatus	Pacific giant salamander
	Ensatina eschscholtzii	Oregon salamander
	Plethodon dunni	Dunn's salamander
	Plethodon vehiculum	Western red-backed salamander
	**Taricha granulosa*	Roughskin newt
Anura	*Hyla regilla*	Pacific treefrog
	Rana aurora	Red-legged frog
Squamata	*Charina bottae*	Rubber boa
	Coluber constrictor	Racer
	Diadophis punctatus	Ringneck snake
	Eumeces skiltonianus	Western skink
	Gerrhonotus coeruleus	Northern alligator lizard
	Gerrhonotus multicarinatus	Southern alligator lizard
	Pituophis melanoleucus	Pacific gopher snake
	Sceloporus occidentalis	Western fence lizard
	Thamnophis elegans	Western terrestrial garter snake
	Thamnophis ordinoides	Northwestern terrestrial garter snake
	Thamnophis sirtalis	Common garter snake

[1]Nomenclature follows Collins and others (1978). Reptiles and amphibians listed are believed to use the area at some time of year. Information supplied by Charles Thomas, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management, Eugene, Oregon, and Chris Maser, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management, Forestry Sciences Laboratory, Corvallis, Oregon.

*Indicates presence verified by sight, sound, or sign.

Table 3—Birds in Mohawk Research Natural Area[1]

Order	Scientific name	Common name
Ciconiiformes	*Ardea herodias*	Great blue heron
	Butorides striatus	Green-backed heron
Falconiformes	*Accipiter cooperii*	Cooper's hawk
	Accipiter gentilis	Northern goshawk
	Accipiter striatus	Sharp-shinned hawk
	Aquila chrysaetos	Golden eagle
	**Buteo jamaicensis*	Red-tailed hawk
	Cathartes aura	Turkey vulture
	Falco sparverius	American kestrel
Galliformes	*Bonasa umbellus*	Ruffed grouse
	Dendragapus obscurus	Blue grouse
	Oreortyx pictus	Mountain quail
Columbiformes	*Columba fasciata*	Band-tailed pigeon
	Zenaida macroura	Mourning dove
Strigiformes	*Aegolius acadicus*	Saw-whet owl
	Bubo virginianus	Great horned owl
	Glaucidium gnoma	Pygmy owl
	Otus asio	Western screech owl
	Strix occidentalis	Spotted owl
	Tyto alba	Barn owl
Apodiformes	*Chaetura vauxi*	Vaux's swift
	**Selasphorus rufus*	Rufous hummingbird
	Stellula calliope	Calliope hummingbird
Piciformes	*Colaptes auratus*	Common flicker
	**Dendrocopos villosus*	Hairy woodpecker
	**Dryocopus pileatus*	Pileated woodpecker
	Picodes pubescens	Downy woodpecker
	Sphyrapicus varius	Yellow-bellied sapsucker
Passeriformes	*Carpodacus purpureus*	Purple finch
	Catharus guttata	Hermit thrush
	Catharus ustulata	Swainson's thrush
	Certhia familiaris	Brown creeper
	Contopus sordidulus	Western wood pewee

See footnotes at end of table.

Table 3—Birds in Mohawk Research Natural Area[1] (continued)

Order	Scientific name	Common name
Passeriformes (continued)	*Corvus branchyrhynchos*	American crow
	Corvus corax	Common raven
	Cyonocitta stelleri	Steller's jay
	Dendroica coronata	Yellow-rumped warbler
	Dendroica nigrescans	Black-throated gray warbler
	Dendroica occidentalis	Hermit warbler
	Dendroica townsendi	Townsend's warbler
	Empidonax difficillis	Western flycatcher
	Empidonax oberhalseri	Dusky flycatcher
	Hesperiphona vespertina	Evening grosbeak
	Ixoreus naevius	Varied thrush
	**Junco hyemalis*	Dark-eyed junco
	Loxia curvirostra	Red crossbill
	Melospiza melodia	Song sparrow
	Nuttallornis borealis	Olive-sided flycatcher
	Parus atricapillus	Black-capped chickadee
	Parus rufescens	Chestnut-backed chickadee
	Perisoreus canadensis	Gray jay
	Pheucticus melanocephalus	Black-headed grosbeak
	Pipilo erythrophthalmus	Rufus-sided towhee
	Piranga ludoviciana	Western tanager
	Psaltriparus minimus	Bushtit
	Regulus calendula	Ruby-crowned kinglet
	Regulus satrapa	Golden-crowned kinglet
	Sitta canadensis	Red-breasted nuthatch
	**Spinus pinus*	Pine siskin
	**Troglodytes troglodytes*	Winter wren
	Turdus migratorius	Robin
	Vireo gilvus	Warbling vireo
	Vireo huttoni	Hutton's vireo
	Vireo solitarius	Solitary vireo
	Wilsonia pusilla	Wilson's warbler

[1]Nomenclature follows Bertrand and Scott (1979). Birds listed are believed to use the area at some time of year. Information supplied by Charles Thomas, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management, Eugene, Oregon, and Chris Maser, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management, Forestry Sciences Laboratory, Corvallis, Oregon.

*Indicates presence verified by sight, sound, or sign.

Table 4—Mammals in Mohawk Research Natural Area[1]

Order	Scientific name	Common name
Marsupialia	*Didelphis virginiana*	Common opossum
Insectivora	*Neurotrichus gibbsii*	Shrew-mole
	**Scapanus orarius*	Pacific Coast mole
	Sorex trowbridgii	Trowbridge's shrew
	Sorex vagrans	Vagrant shrew
Chiroptera	*Antrozous pallidus*	Pallid bat
	Eptesicus fuscus	Big brown bat
	Lasionycteris noctivagans	Silver-haired bat
	Lasiurus cinereus	Hoary bat
	Myotis californicus	California myotis
	Myotis evotis	Long-eared myotis
	Myotis lucifugus	Little brown myotis
	Myotis thysanodes	Fringed myotis
	Myotis volans	Long-legged myotis
	Myotis yumanensis	Yuma myotis
	Plecotus townsendii	Townsend's big-eared bat
Lagomorpha	*Lepus americanus*	Snowshoe hare
	**Sylvilagus bachmani*	Brush rabbit
Rodentia	**Aplodontia rufa*	Mountain beaver
	Arborimus longicaudus	Red tree vole
	**Castor canadensis*	Beaver
	**Clethrionomys californicus*	California red-backed vole
	Erethizon dorsatum	Porcupine
	**Eutamias townsendii*	Townsend's chipmunk
	Glaucomys sabrinus	Northern flying squirrel
	Microtus oregoni	Oregon vole
	**Microtus townsendii*	Townsend's vole
	**Neotoma fuscipes*	Dusky-footed woodrat
	**Peromyscus maniculatus*	Deer mouse
	Sciurus griseus	Western gray squirrel
	**Tamiasciurus douglasii*	Chickaree
	Zapus trinotatus	Pacific jumping mouse

See footnotes at end of table.

Table 4—Mammals in Mohawk Research Natural Area[1] (continued)

Order	Scientific name	Common name
Carnivora	*Canis latrans*	Coyote
	Felis rufus	Bobcat
	Mustela erminea	Shorttail weasel
	Mustela frenata	Long-tailed weasel
	Mustela vison	Mink
	**Procyon lotor*	Raccoon
	Spilogale putorius	Spotted skunk
	Urocyon cinereoargenteus	Gray fox
	Vulpes vulpes	Red fox
Artiodactyla	*Cervus canadensis roosevelti*	Roosevelt elk
	**Odocoileus hemionus*	Blacktail deer

[1]Nomenclature follows Jones and others (1975). Mammals listed are believed to use the area at some time of year. Information supplied by Charles Thomas, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management, Eugene, Oregon, and Chris Maser, wildlife biologist, U.S. Department of the Interior, Bureau of Land Management, Forestry Sciences Laboratory, Corvallis, Oregon.

*Indicates presence verified by sight, sound, or sign.

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