Woodcock Bog RNA and West Fork Illinois River

Leaders: Marcia Wineteer and Rachel Showalter, Medford District BLM botanists,

Elevation: 1480 – 1800 feet. **Elevation Gain:** – 400 feet

Difficulty: Easy 2 - 3 miles round trip hiking on road and off trail.

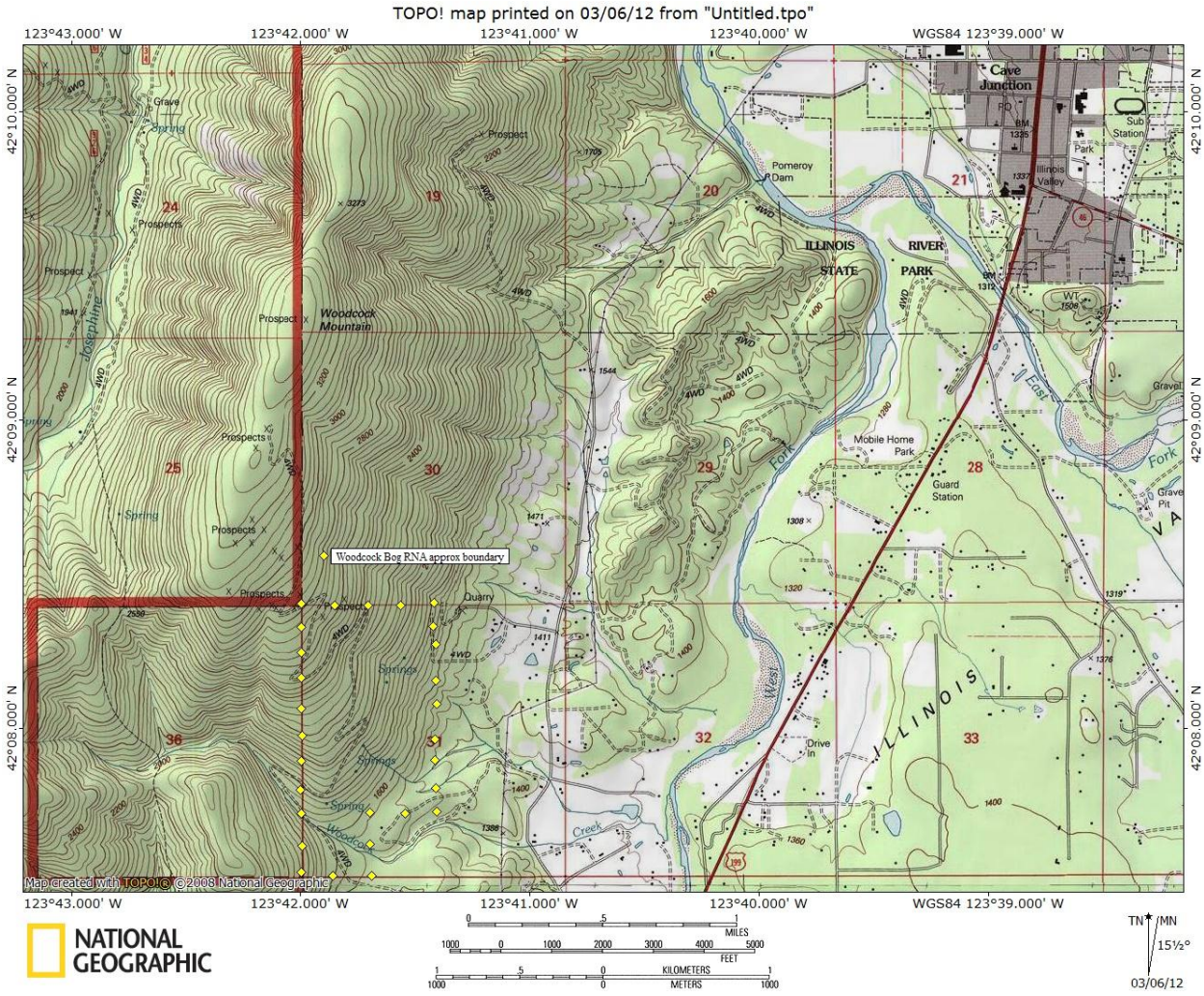
Description: Join Marcia and Rachel on an easy hike to the BLM's Woodcock Bog Research Natural Area. This area represents an outstanding example of a hanging fen on serpentine soils, as well as open forest stands of *Pinus jeffreyi* (Jeffrey pine) and denser stands of *Chamaecyparis lawsoniana* (Port-Orford cedar). Most rare species occurring there bloom in the spring, but in July we'll still see the vegetative leaves of *Darlingtonia californica* (cobra lily), and blooming *Epilobium oreganum* (Oregon willow-herb), *Gentian setigera* (elegant gentian), possibly *Calochortus howellii* (Howell's mariposa lily), *Viola primulifolia* ssp. *occidentalis* (Western bog violet), and other later blooming species. After spending a couple of hours wandering around the fens at Woodcock Bog, we'll head south to Obrien and FS Road 4402, which follows the West Fork Illinois River. We'll stop at another BLM parcel that contains an abundance of rare serpentine species, where we can wander and search for the rare species *Arabis koehleri* (Koehler's rockcress), *Monardella purpurea* (Siskiyou monardella), *Epilobium rigidum* (stiff willow-herb), *Castilleja brevilobata* (short-lobe Indian paintbrush), and *Eriogonum pendulum* (Waldo buckwheat), as well as more common later-blooming species.

Start time: 8:30 am. **Estimated finish time:** 3:00 pm.

RT Mileage: Approximately 40 miles round trip driving from Deer Creek Center.

Group Size Limit: 12

Woodcock Bog RNA – Approximate Boundary



Next Page, cover to Guidebook Supplement 40, Woodcock Bog Research Natural Area. PNW-GTR-824. 2010. 21 pages. Species lists from the document follows.

United States
Department of
Agriculture

Forest Service

Pacific Northwest
Research Station

General Technical Report
PNW-GTR-824

June 2010

Woodcock Bog Research Natural Area

Guidebook Supplement 40

Reid Schuller, Susan J. Fritts, Mark Mousseaux

Authors

Reid Schuller is a plant ecologist, Western Stewardship Science Institute, P.O. Box 1173, Bend, OR 97709. **Susan J. Fritts** is a botanist, U.S. Department of the Interior, Bureau of Land Management, Grants Pass Resource Area, 2164 NE Spalding Ave., Grants Pass, OR 97526. **Mark Mousseaux** is a district botanist, U.S. Department of the Interior, Bureau of Land Management, Medford District, 3040 Biddle Road, Medford, OR 97504.

The PNW Research Station is publishing this guidebook as part of a continuing series of guidebooks on federal research natural areas begun in 1972.

Cover Photo: Hanging fen with Jeffrey pine (*Pinus jeffreyi*), incense cedar (*Calocedrus decurrens*), Port-Orford-cedar (*Chamaecyparis lawsoniana*) widely scattered among sedges (*Carex* spp.), cobra lily (*Darlingtonia californica*), and a wide variety of herbaceous species, Woodcock Bog Research Natural Area, southwestern Oregon.

Abstract

Schuller, Reid; Fritts, Susan J.; Mousseaux, Mark. 2010. Woodcock Bog Research Natural Area: guidebook supplement 40. Gen. Tech. Rep. PNW-GTR-824. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 21 p.

This guidebook describes Woodcock Bog Research Natural Area (RNA), a 114-ha (281-ac) area located within the Klamath-Siskiyou ecoregion in southwestern Oregon. The RNA includes a hanging fen and stream segment on ultramafic rock and derived soils. Numerous plant species occur within the fens that are endemic to the Klamath-Siskiyou Mountains of southwestern Oregon and northwestern California. Cobra lily (*Darlingtonia californica*), and sedges (*Carex* spp.) characterize the area. The site also supports very dry, open serpentine forest stands of Jeffrey pine (*Pinus jeffreyi*), along with denser stands of Port-Orford-cedar (*Chamaecyparis lawsoniana*), Douglas-fir (*Pseudotsuga menziesii*), and other conifers typical of the region.

Keywords: Research natural area, area of critical environmental concern, hanging fen, serpentine fen, Klamath-Siskiyou ecoregion, *Darlingtonia* fen, cobra lily, Port-Orford-cedar, *Chamaecyparis lawsoniana*, Jeffrey pine, *Pinus jeffreyi*, serpentine endemism.

Preface

The research natural area (RNA) described in this supplement[1] is administered by the Medford District, Bureau of Land Management (BLM), U.S. Department of the Interior.

Woodcock Bog RNA is part of a federal system[2] of natural areas established for research and educational purposes (Federal Committee on Ecological Reserves 1977). Of the 183 federal RNAs established in Oregon and Washington, 45 are described in *Federal Research Natural Areas in Oregon and Washington: A Guidebook for Scientists and Educators* (1972). This report is a supplement to the guidebook.

Each RNA is a site where elements[3] are protected or managed for scientific purposes and natural processes are allowed to dominate. Their main purposes are to provide:

- Baseline areas against which effects of human activities can be measured or compared.
- Sites for study of natural processes in undisturbed ecosystems.
- Gene pool preserves for all types of organisms, especially for those that are rare and endangered.

The guiding principle in managing RNAs is to maintain natural ecological processes or conditions for which the sites were designated. Timber harvesting and uncontrolled grazing are not allowed, nor is public use that might impair scientific or educational values. Management practices necessary to maintain or restore ecosystems may be allowed (see footnote 2).

[1] Supplement No. 40 to Franklin, J.F.; Hall, F.C.; Dyrness, C.T.; Maser, C. 1972. Federal research natural areas in Oregon and Washington: a guidebook for scientists and educators. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 498 p.

[2] Six federal agencies cooperate in this program in the Pacific Northwest: U.S. Department of the Interior, Bureau of Land Management, Fish and Wildlife Service, and National Park Service; U.S. Department of Agriculture, Forest Service; U.S. Department of Energy; and U.S. Department of Defense. In addition, the federal agencies cooperate with state agencies and private organizations in Oregon and Washington in the Pacific Northwest Interagency Natural Area Committee. Taken from Wilson, T.M.; Schuller, R.; Holmes, R.; Pavola, C.; Fimbel, R.A.; McCain, C.N.; Gamon, J.G.; Speaks, P.; Seevers, J.I.; DeMeo, T.E.; Gibbons, S. 2009. Interagency strategy for the Pacific Northwest Natural Areas Network. Gen. Tech. Rep. PNW-GTR-798. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 33 p.

[3] Elements are the basic units to be represented in a natural area system. An element may be an ecosystem, community, habitat, or organism. Adapted from Oregon Natural Heritage Program [ONHP]. 2003. Oregon natural heritage plan. Salem, OR: Department of State Lands. 167 p.; and Dyrness, C.T.; Franklin, J.F.; Maser, C.; Cook, S.A.; Hall, J.D.; Faxon, G. 1975. Research natural area needs in the Pacific Northwest: a contribution to land-use planning. Gen. Tech. Rep. PNW-38. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 231 p.

Federal RNAs 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. Scientists and educators wishing to visit or use the Woodcock Bog RNA for scientific or educational purposes should contact the Medford BLM District office manager in advance and provide information about research or educational objectives, sampling procedures, and other prospective activities. Research projects, educational visits, and collection of specimens from the RNA all require prior approval. There may be limitations on research or educational activities.

A scientist or educator wishing to use the RNA is obligated to:

- Obtain permission from the appropriate administering agency before using the area (see footnote 2).
- Abide by the administering agency's regulations governing use, including specific limitations on the type of research, sampling methods, and other procedures.
- Inform the administering agency on progress of the research, published results, and disposition of collected materials.

The purpose of this approval process is to:

- Ensure that the ecological integrity, and scientific and educational values of the tract are not compromised.
- Allow the agency to document research or educational use of the tract.
- Help promote the dissemination and use of information collected at the site.
- Avoid conflict between ongoing studies and activities.

Appropriate uses of RNAs are determined by the administering agency. Destructive analysis of vegetation is generally not allowed, nor are studies requiring extensive substrate modification such as extensive soil excavation. Collection of plant and animal specimens is generally restricted to voucher specimens or approved research activities. Under no circumstances may collecting significantly reduce species populations. Collecting must also be carried out in accordance with all other federal and state agency regulations.

Contents

Introduction

Woodcock Bog Research Natural Area (RNA) is a 114-ha (281-ac) area located in Josephine County, Oregon, near the town of Cave Junction (fig. 1). The site was established as a research natural area in 1981 by the Bureau of Land Management (BLM) (USDI BLM 1981). The designation was reaffirmed in the Medford District resource management plan (USDI BLM 1995).

In spite of its name, Woodcock Bog represents an outstanding example of a hanging fen[1] on ultramafic rock and derived soils. The site also supports an example of a very dry serpentine site, with open forest stands of Jeffrey pine (*Pinus jeffreyi*), and denser stands of Port-Orford-cedar (*Chamaecyparis lawsoniana*), Douglas-fir (*Pseudotsuga menziesii*), and other conifers typical of the Siskiyou

[1] A fen is a groundwater-fed wetland ecosystem that has neutral or alkaline water chemistry. A hanging fen occurs on sloping topographic surfaces. Fens differ from bogs, which are fed primarily by rainwater and have acidic water chemistry.

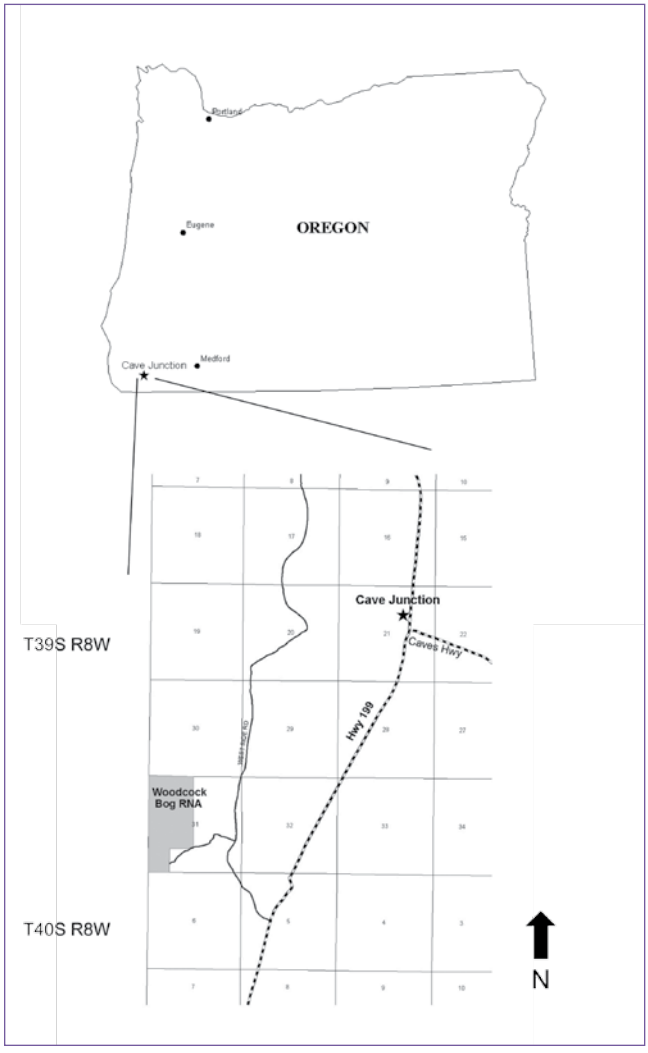


Figure 1–Woodcock Bog Research Natural Area location and access.

Mountains of southwestern Oregon. A population of purple-flowered rush-lily (*Hastingsia atropurpurea*) is present along with numerous other plant species endemic to southwestern Oregon (Becking 1986, 1997) (see appendix 1 for scientific names) (table 1).

From a statewide perspective, Woodcock Bog contains examples of elements listed in the Oregon Natural Heritage Plan (ONHP 2003). Elements present at Woodcock Bog that are listed in the plan as requiring representation within the Klamath-Siskiyou ecoregion include:

- Darlingtonia fen on serpentine-peridotite, with western azalea and camas along margins.
- Riparian on serpentine-peridotite, with Port-Orford-cedar, western azalea and cobra lily—a 0.4-km (0.25-mi) stream segment.
- Jeffrey pine with incense cedar and dry shrubs—a small stand.

Access and Accommodations

The site is located 3 miles (5 km) south-southwest of Cave Junction, Oregon, in Josephine County (fig 1). Access into the RNA crosses private land and is coordinated by the BLM. Permission to access the area for research or educational purposes should be obtained from the Medford District office prior to visiting the site. Access details will be provided by the BLM upon approval of a request. Lodging is available in Cave Junction, and Grants Pass, Oregon.

Environment

The RNA is situated along the lower slopes of Woodcock Mountain. Elevations within the site range from 448 m (1,470 ft) in the southeast to 856 m (2,810 ft) in the

Table 1–Special status, rare, and locally endemic plant species of Woodcock Bog Research Natural Area, Josephine County, Oregon

Scientific name	Common name
Calochortus howellii	Howell's mariposa lily
Epilobium oreganum	Oregon willow-herb
Erythronium citrinum var. *citrinum*	Howell's fawn lily
Gentiana setigera	Elegant gentian
Hastingsia atropurpurea	Purple-flowered rush-lily
Hastingsia serpentinicola	Serpentine rush-lily
Lomatium cookii	Agate desertparsley
Microseris howellii	Howell's silverpuffs
Packera hesperia	Siskiyou butterweed
Poa piperi	Piper's bluegrass
Quercus garryana var. *breweri*	Brewer's white oak
Salix denortensis	Del Norte willow
Viola x primulifolia	Western bog violet

northeast. Slopes are oriented east to southeast and are moderately inclined (20 to 50 percent). Woodcock Creek is a perennial stream and flows southeast through the southern portion of the RNA (fig 2).

Underlying rocks include the 100-million-year-old Jurassic Galice formation, which is best exposed along Woodcock Creek (Wells 1953). Jurassic peridotite, about 136 to 190 million years old, occurs on the lower slopes of Woodcock Mountain. The peridotite is partially altered to serpentine. The peridotites are highly weathered and contribute to the rocky soils present on the site today. Several faults occur within the peridotites and are marked by zones of intensely sheared serpentine with freshwater springs that rise along the faults (Ramp 1978).

Serpentine substrate

Soil parent material is colluvium and residuum derived from serpentinite and peridotite. Gently inclined slopes are mapped in the Eightlar series and the Brockman series. Steeper slopes are mapped as the Pearsoll-Rock outcrop complex. A typical profile of the Eightlar extremely stony clay, with 20- to 35-percent slopes is as follows (USDA NRCS 2009): 0 to 254 mm (0 to 10 in) extremely stony clay; 254 to 1549 mm (10 to 61 in) very stony clay.

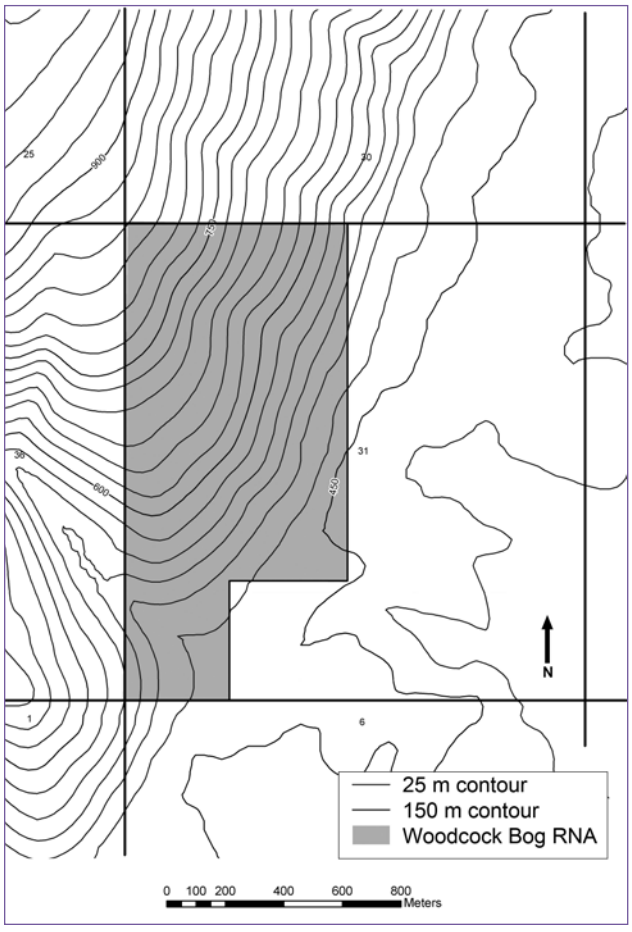


Figure 2–Woodcock Bog Research Natural Area boundary and topography.

Climate

The climate is typical of inland valleys within the Klamath ecoregion of southwestern Oregon (Franklin and Dyrness 1988, ONHP 2003). Summers are warm to hot, and dry. Extended periods of drought during the summer months are common. Winters are cool and moist. Some winter precipitation occurs as snow, although the snowpack at lower elevations is often of short duration. The weather station nearest to the RNA is the Cave Junction, Oregon (351448) weather station, located about 5 miles to the north of Woodcock Bog at similar elevation. Average summer maximum temperatures of 32.1 ˚C (89.8 ˚F) occur in July. Average winter minimum temperatures of 0.4˚ C (32.7˚F) occur in January. Average annual precipitation is 1553 mm (61.14 in). Six percent of annual precipitation occurs during the 4-month growing period from May through August. Snowfall may occur from November through April, but the majority of snowfall occurs between December and the end of February. Average annual snowfall is 384 mm (15.1 in) (Western Regional Climate Center 2009).

Vegetation

Rock and soil chemistry strongly influence vegetation patterns within the Klamath-Siskiyou Mountains (Coleman and Kruckeberg 1999) and within the RNA. Hanging fens occur along the east and southeast slopes of Woodcock Mountain (fig. 3). Fen vegetation is distinguished by cobra lily (*Darlingtonia californica*) (fig. 4). The groundwater fen wetlands originate from springs and seeps that emerge from fractures in the serpentine bedrock. The fens are interspersed with dry, forested areas dominated by Jeffrey pine (*Pinus jeffreyi*), Port-Orford-cedar (*Chamaecyparis lawsoniana*), and in places, incense cedar (*Calocedrus decurrens*). Brewer's white oak (*Quercus garryana* var. *breweri*), a shrub endemic to the Klamath-Siskiyou ecoregion, occupies small ridges along the lower slopes.

The serpentine fens support one of the most distinctive plant communities of the Klamath-Siskiyou ecoregion in southwest Oregon and northwest California. These communities, typically dominated by the insect-trapping cobra lily, occur in areas where cold water flows year-round over soils derived from ultramafic or serpentine parent materials. Serpentine-derived substrates cover large areas in the Siskiyou Mountains and support a unique and diverse vascular flora including a high proportion of edaphic, endemic species (Coleman and Kruckeberg 1999, Frost et al. 2004). These patchy habitats occur as relatively small "green islands" surrounded by dry forest communities that support strikingly different types of vegetation (Frost et al. 2004).

Figure 3–Woodcock Bog Research Natural Area vegetation types.

Figure 4–Cobra lily (*Darlingtonia californica*), a distinctive insectivorous plant of Woodcock Bog Research Natural Area fen.

Serpentine fens are particularly valuable as research natural areas because they provide habitat for concentrations of locally endemic plant species having limited natural ranges and narrow habitat requirements (table 1).

Fen vegetation

Three, 80-m (262 ft)-long transects were established in 2009 to monitor long-term trends of plant species. Both physical attributes and vegetation were documented (tables 2 and 3). Trees were widely scattered throughout the fens (front cover). Tree seedlings were very sparse, and tree regeneration in these areas appeared to be episodic. Shrubs were a conspicuous component in two of the three transects. The showy western azalea (fig. 5) was the only shrub present in all three transects, ranging from less than 1 to 14 percent cover, respectively. Cobra lily was a major herbaceous species present on all three transects, along with Josephine horkelia (*Horkelia congesta* ssp. *nemorosa*), western burnet (*Sanguisorba annua*), and three sedge species: Mendocino sedge (*Carex mendocinensis*), star sedge (*C. echinata*), and slenderbeak sedge (*C. athrostachya*). Trees are widely scattered, and low to tall shrubs, sedges, and a variety of showy herbaceous species occupy the area (fig. 6). The overall aspect of the fen is an open, elongated green garland that follows seepage courses downslope from their spring source areas.

A concentration of regionally endemic, special status plant species also occurred within the RNA (table 1). Some populations occur along vegetation-monitoring transects (tables 2, 3). A list of vascular plant species documented to occur within the RNA is provided in appendix 1.

Table 2–Physical attributes of three permanent transects within Woodcock Bog Research Natural Area

	Transect		
Attribute	**987**	**988**	**989**
Elevation (m)	1671	1628	1609
Aspect (°)	331	310	5
Slope grade (°)	22	20	12
Slope position	mid 1/3	mid 1/3	mid 1/3

Table 3–Shrub and herb vegetative cover and frequency within three permanent transects in Woodcock Bog Research Natural Area

	Transect					
	987		988		989	
Species	**Cover[a]**	**Frequency[b]**	**Cover**	**Frequency**	**Cover**	**Frequency**
Shrubs						
Arctostaphylos viscida	1	-		-		-
Ceanothus pumilus	1	-		-		-
Rhamnus californica ssp. *occidentalis*	3	-	4	-		-
Rhododendron occidentale	5	-	14	-	+	-

Table 3–Shrub and herb vegetative cover and frequency within three permanent transects in Woodcock Bog Research Natural Area (continued)

	Transect					
	987		988		989	
Species	**Cover[a]**	**Frequency[b]**	**Cover**	**Frequency**	**Cover**	**Frequency**
Herbs and grasses						
Darlingtonia californica	5	18	2	20	+	25
Carex mendocinensis	6	45	4	45	10	23
Carex echinata	1	10	1	18	1	30
Horkelia congesta ssp. *nemorosa*	6	65	+	8	5	20
Sanguisorba officinalis	1	10	17	85	4	30
Carex athrostachya	1	8	2	13	8	30
Danthonia californica	3	43	7	33		
Hastingsia serpentinicola	4	73				
Achnatherum lemmonii	1	25				
Aspidotus densa	1	8				
Allium sp.	+	10				
Calystegia atriplicifolia	+	8				
Epilobium minutum	+	3				
Festuca roemeri var. *klamathensis*	+	3				
Lomatium triternatum var. *triternatum*	+	8				
Microseris howellii	+	8				
Polygala californica	+	5				
Ranunculus occidentalis	+	3				
Toxicoscordion venenosum	+	5			+	3
Hastingsia atropurpurea			6	68	4	75
Helenium bigelovii			2	35	1	23
Carex klamathensis			+	3	2	75
Viola primulifolia			1	30	+	3
Triantha glutinosa			1	8	+	5
Narthecium californicum			+	3	3	15
Hypericum anagalloides			+	3	+	3
Juncus covillei			+	3	+	3
Elymus glaucus			+	3		
Platanthera sparsiflora			+	3		
Rudbeckia glaucescens			+	3		
Symphyotrichum spathulatum			+	3		
Dichantelium acuminatum var. *fasiculatum*					+	15

[a] Cover is expressed as percentage of foliar cover averaged across the total number of 2 x 5 dm microplots occurring along each transect. Zero values are not included.

[b] Frequency is expressed as a percentage of occurrence within the total number of 2 x 5 dm microplots occurring along each transect. Frequency is not recorded for shrubs.

Figure 5–Western azalea (*Rhododendron occidentale*), a widely scattered and showy tall shrub of Woodcock Bog Research Natural Area.

Figure 6–Cobra lily, a conspicuous fen dominant, along with Josephine horkelia (*Horkelia congesta* ssp. *nemorosa*), western burnet (*Sanguisorba annua*) and a variety of sedges (*Carex mendocinensis*, *C. echinata*, and *C. athrostachya*).

Fauna

Reptiles, amphibians, birds, and mammals known or expected to occur within the RNA are listed in appendix 2. These lists were derived from both field observation and published literature (Csuti et al.1997).

Disturbance History

Port-Orford-cedar root disease is present at Woodcock Bog. It is highly contagious and caused by the fungus *Phytophthora lateralis.* Unlike many other fungal spores that are spread by wind, *P. lateralis* depends on free water for spread and infection. It can also be unintentionally transported by humans through contact with clothing and footwear. Infection of trees can be avoided by minimizing and isolating sources of infection, preventing the movement of soil and water from infected to uninfected areas, and by reducing human contact (Roth et al. 1987). Restricting movement and activities of humans is the primary control method used at Woodcock Bog RNA. This includes closing roads to travel and sanitizing boots, tools, and clothing when leaving infected areas.

Lightning-ignited fire is a common occurrence in the forests of southwestern Oregon (Martin 1997). Although the fire landscape has changed since Native Americans burned prairies and woodlands prior to Euro-American settlement of the region, fire remains an integral part of the ecology of many terrestrial vegetation types, including fens surrounded by dry, Jeffrey pine forest.

No extensive fires have burned into the Woodcock Bog RNA in recent years. However, large wildfires, such as the Biscuit Fire (Cramer 2005), have recently burned extensive areas within the Klamath-Siskiyou region. Important decisions regarding the role of fire in maintaining natural processes will define stewardship management of research natural areas into the future (Wilson et al. 2009).

Research History

Data have been collected at Woodcock Bog RNA by researchers from a variety of disciplines, including ethnobotany (Lang 1997), plant systematics (Becking 1986), and plant ecology (Becking 1997, Coleman and Kruckeberg 1999, Cramer 2005, Frost et al. 2004).

Maps

Maps applicable to Woodcock Bog RNA: Topographic—Cave Junction, Oregon 7.5 minute, 1:24,000 scale, 1996; Transportation—Medford District Bureau of Land Management Grants Pass resource area transportation map. 2006 (rev).

Acknowledgments

We thank Jason Riley, wildlife biologist, for reviewing the list of wildlife likely to occur within the area (app. 2). We thank Todd Wilson, wildlife biologist and research natural area coordinator, U.S. Forest Service, Pacific Northwest Research Station; Anthony Kerwin, planning and environmental coordinator, Bureau of Land Management Medford District; and Ron Halvorson, (retired) BLM Prineville District botanist for reviewing the manuscript. We also acknowledge the Medford District BLM for funding this project and the USFS PNW Research Station for publishing this guidebook supplement.

English Equivalents

1 hectare (ha) = 2.47 acres (ac)
1 kilometer (km) = 0.62 mile (mi)
1 meter (m) = 3.28 feet (ft)
1 centimeter (cm) = 0.394 inch (in)
1 millimeter (mm) = 0.0394 inch
Degrees Celsius (˚C) = 0.56(degrees Fahrenheit – 32)

References

Becking, R.W. 1986. *Hastingsia atropurpurea* (Liliaceae: Asphodeleae), a new species from southwestern Oregon. Madroño. 33(3): 175–181.

Becking, R.W. 1997. The *Darlingtonia* bog communities of the Klamath Mountains: NW California–SW Oregon. In: Beigel, J.K.; Jules, E.S.; Snitkin, B., eds. Proceedings of the first conference on Siskiyou ecology. Grants Pass, OR: Siskiyou Regional Education Project: 1–7.

Coleman, R.G.; Kruckeberg, A.R. 1999. Geology and plant life of the Klamath-Siskiyou ecoregion. Natural Areas Journal. 19(4): 320–340.

Cramer, J.R. 2005. The Biscuit Fire and the flora of serpentine fens: differences in species composition between burned and unburned fens. Burlington, VT: Department of Botany, University of Vermont. 91 p. M.S. thesis.

Csuti, B.; Kimerling, A.J.; O'Neil, T.A.; Shaughnessy, M.M.; Gaines, E.P.; Huso, M.M.P. 1997. Atlas of Oregon wildlife. Corvallis, OR: Oregon State University Press. 427 p. + map.

Flora of North America. 1993+. Partial nomenclature of vascular plants, ferns, and fern allies within Oregon. http://www.efloras.org/flora_page.aspx?flora_id=1. (September 3, 2009).

Franklin, J.F.; Dyrness, C.T. 1988. Natural vegetation of Oregon and Washington. 2nd ed. Corvallis, OR: Oregon State University Press. 452 p.

Frost, E.J.; Sweeney, R.J.; Bigg, W.L. 2004. Distribution and environmental/habitat relations of five endemic plants associated with serpentine fens in southwest Oregon and northwest California. 64 p. Unpublished manuscript. On file with: Medford District office, Bureau of Land Management, 3040 Biddle Road, Medford, OR 97504.

Lang, F.L. 1997. Plant explorers of the Siskiyous (and vicinity). In: Beigel, J.K.; Jules, E.S.; Snitkin, B., eds. Proceedings of the first conference on Siskiyou ecology. Grants Pass, OR: Siskiyou Regional Education Project: 82–83.

Martin, R.E. 1997. Fire as an integral component of Siskiyou ecology. In: Beigel, J.K.; Jules, E.S.; Snitkin, B., eds. Proceedings of the first conference on Siskiyou ecology. Grants Pass, OR: Siskiyou Regional Education Project: 86–89.

Oregon Flora Project. 2009. The Oregon plant atlas. http://www.oregonflora.org/oregonplantatlas.html. (September 23, 2009).

Oregon Natural Heritage Program [ONHP]. 2003. Oregon natural heritage plan. Salem, OR: Department of State Lands. 167 p.

Ramp, L. 1978. Investigation of nickel in Oregon. Misc. Paper 20. Salem, OR: Oregon Department of Geology and Mineral Industries. [No pagination].

Roth, L.F.; Harvey, R.D., Jr.; Kliejunas, J.T. 1987. Port-Orford-cedar root disease. R6 FPM PR 010 91. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 11 p.

U.S. Department of Agriculture, Natural Resources Conservation Service [USDA NRCS]. 2009. Official soils series descriptions Web site. http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi. (September 17, 2009).

U.S. Department of Agriculture, Natural Resources Conservation Service [USDA NRCS]. 2010. Plants database. http://plants.usda.gov. (January 29, 2010).

U.S. Department of the Interior, Bureau of Land Management [USDI BLM]. 1981. Designation of Woodcock Bog Research Natural Area. Memo Number 8223 (420): Washington, DC.

U.S. Department of the Interior, Bureau of Land Management. [USDI BLM]. 1995. Medford District record of decision and resource management plan. Medford, OR: Medford District. 248 p.

Wells, F.G.; Walker, G.W. 1953. Geologic map of the Galice Quadrangle, Oregon. GQ-25. Washington, DC: U.S. Geological Survey. [No pagination].

Western Regional Climate Center. 2009. Oregon climate data. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?orcave. (September 1, 2009).

Wilson, B.L.; Brainerd, R.; Lytjen, D.; Newhouse, B.; Otting, N. 2008. Field guide to the sedges of the Pacific Northwest. Corvallis, OR: Oregon State University Press. 431 p.

Wilson, T.M.; Schuller, R.; Holmes, R.; Pavola, C.; Fimbel, R.A.; McCain, C.N.; Gamon, J.G.; Speaks, P.; Seevers, J.I.; DeMeo, T.E.; Gibbons, S. 2009. Interagency strategy for the Pacific Northwest Natural Areas Network. Gen. Tech. Rep. PNW-GTR-798. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 33 p.

Appendix 1: Plants[1 2]

Scientific name	Common name
Trees	
Arbutus menziesii Pursh	Pacific madrone
Calocedrus decurrens (Torr.) Florin	Incense cedar
Chamaecyparis lawsoniana (Murray) Parl.	Port-Orford-cedar
Pinus attenuata Lemmon	Knobcone pine
Pinus jeffreyi Balf.	Jeffrey pine
Pinus lambertiana Dougl.	Sugar pine
Pinus monticola Dougl. ex D. Don	Western white pine
Pinus ponderosa Laws.	Ponderosa pine
Pseudotsuga menziesii (Mirb.) Franco Nutt.	Douglas-fir
Shrubs	
Amelanchier pallida Greene	Pale serviceberry
Arctostaphylos viscida Parry	Sticky whiteleaf manzanita
Ceanothus cuneatus (Hook.) Nutt.	Buckbrush
Ceanothus pumilus Greene	Dwarf ceanothus
Lonicera hispidula (Lindl.) Douglas ex Torr. & A. Gray	Pink honeysuckle
Quercus garryana Dougl. ex Hook. var. *breweri* (Engelm.) Jeps.	Brewer's white oak
Rhamnus alnifolia L'Hér.	Alder buckthorn
Rhamnus californica Eschsch. ssp. *occidentalis* (Howell) C.B. Wolf	California buckthorn
Rhododendron occidentale (Torr. & A. Gray) A. Gray	Western azalea
Salix delnortensis C.K. Schneid.	Del Norte willow
Toxicodendron diversilobum (Torr. & A. Gray) Greene	Pacific poison oak
Grasses and grass-like plants	
Achnatherum lemmonii (Vasey) Barkw.	Lemmon's needlegrass
Bromus carinatus Hook. & Arn.	California brome
Calamagrostis koelerioides Vasey	Fire reedgrass
Carex athrostachya Olney	Slenderbeak sedge
Carex densa (L.H. Bailey) L.H. Bailey	Dense sedge
Carex echinata Murray	Star sedge
Carex klamathensis B.L. Wilson & L.P. Janeway	Klamath sedge
Carex mendocinensis Olney ex W. Boott	Mendocino sedge
Danthonia californica Bol.	California oatgrass
Deschampsia cespitosa (L.) P. Beauv.	Tufted hairgrass
Dichanthelium acuminatum (Sw.) Gould & C.A. Clark ssp. *fasciculatum* (Torr.) Freckmann & Lelong	Western panicgrass
Eleocharis palustris (L.) Roem. & Schult.	Common spikerush
Elymus elymoides (Raf.) Swezey	Bottlebrush squirreltail
Elymus glaucus Buckley	Blue wildrye
Eriophorum crinigerum (A. Gray) Beetle	Fringed cottongrass
Festuca californica Vasey	California fescue

Scientific name	Common name
Festuca roemeri (Pavlick) E.B. Alexeev var. *klamathensis* B.L. Wilson	Roemer's fescue
Festuca rubra L.	Red fescue
Holcus lanatus L.	Velvetgrass
Hordeum brachyantherum Nevski	Meadow barley
Juncus arcticus Willd. var. *balticus* (Willd.) Trautv.	Baltic rush
Juncus covillei Piper	Colville's rush
Koeleria macrantha (Ledeb.) Schult.	Prairie junegrass
Lolium multiflorum Lam.	Italian ryegrass
Luzula sp. DC.	Woodrush
Melica geyeri Munro ex Bol.	Geyer's oniongrass
Poa piperi Hitchc.	Piper's bluegrass
Schedonorus arundinaceus (Schreb.) Dumort.	Tall fescue
Vulpia microstachys (Nutt.) Munro	Small fescue
Herbs	
Achillea millefolium L.	Common yarrow
Adiantum pedatum L.	Northern maidenhair
Allium amplectens Hook.	Narrowleaf onion
Allium falcifolium Hook. & Arn.	Scytheleaf onion
Angelica arguta Nutt.	Lyall's angelica
Arabis aculeolata Greene	Waldo rockcress
Arnica cernua Howell	Serpentine arnica
Asclepias sp. L.	Milkweed
Aspidotis densa (Brack.) Lellinger	Indian's dream
Balsamorhiza sericea W.A. Weber	Silky balsamroot
Blepharipappus scaber Hook.	Blepharipappus
Calochortus howellii S. Wats.	Howell's mariposa lily
Calochortus tolmiei Hook. & Arn.	Oregon mariposa lily
Calochortus uniflorus Hook. & Arn.	Monterey mariposa lily
Calystegia atriplicifolia Hallier f. ssp. *atriplicifolia*	Night-blooming false bindweed
Calystegia occidentalis (A. Gray) Brummitt ssp. *occidentalis*	Chapparal false bindweed
Camassia quamash (Pursh) Greene	Camas
Castilleja brevilobata Piper	Short-lobed paintbrush
Castilleja elata Piper	Siskiyou paintbrush
Castilleja rubicundula (Jeps.) T.I. Chuang & Heckard ssp. *lithospermoides* (Benth.) T.I. Chuang & Heckard	Cream sacs
Cerastium arvense L.	Field chickweed
Chlorogalum pomeridianum (DC.) Kunth	Wavyleaf soap plant
Clarkia sp. Pursh	Clarkia
Collinsia heterophylla Buist ex Graham	Purple Chinese houses
Crepis pleurocarpa A. Gray	Nakedstem hawksbeard
Cypripedium californicum A. Gray	California lady slipper
Darlingtonia californica Torr.	Cobra lily
Delphinium glaucum S. Wats.	Mountain larkspur
Dichelostemma congestum (Sm.) Kunth	Cluster lily
Dodecatheon hendersonii A. Gray	Henderson's shooting star

Scientific name	Common name
Epilobium minutum Lindl. ex Lehm.	Small-flowered willow-herb
Epilobium oreganum Greene	Oregon willow-herb
Epipactis gigantea Dougl. ex Hook.	Stream orchid
Eriophyllum lanatum (Pursh) Forbes	Common woolly sunflower
Erythronium citrinum S. Wats. var. *citrinum*	Howell's fawn lily
Fritillaria affinis (Schult.) Sealy	Checker lily
Galium ambiguum W. Wright ssp. *siskiyouense* (Ferris) Dempster & Stebbins	Siskiyou bedstraw
Galium aparine L.	Stickywilly
Gayophytum diffusum Torr. & A. Gray ssp. *diffusum*	Spreading groundsmoke
Gentiana setigera A. Gray	Elegant gentian
Gilia capitata Sims ssp. *capitata*	Globe gilia
Hastingsia atropurpurea Becking	Purple-flowered rush-lily
Hastingsia bracteosa S. Wats. var. *bracteosa*	Large-flowered rush-lily
Hastingsia serpentinicola Becking	Serpentine rush-lily
Helenium bigelovii A. Gray	Tall sneezeweed
Hieracium sp. L.	Hawkweed
Horkelia congesta Dougl. ex Hook. ssp. *nemorosa* D.D. Keck	Josephine horkelia
Horkelia sericata S. Wats.	Silky horkelia
Hypericum anagalloides Cham. & Schltdl.	Tinker penny
Iris bracteata S. Wats.	Siskiyou iris
Lathyrus delnorticus C.L. Hitchc.	Del Norte pea
Lewisia oppositifolia (S. Wats.) B.L. Rob.	Opposite-leaved lewisia
Lilium bolanderi S. Wats.	Bolander's lily
Lilium pardalinum Kellogg ssp. *vollmeri* (Eastwood) M.W. Skinner	Vollmer's lily
Limnanthes gracilis Howell ssp. *gracilis*	Slender meadowfoam
Lomatium cookii J.S. Kagan	Agate desertparsley
Lomatium macrocarpum (Nutt. ex Torr. & A. Gray) J.M. Coult. & Rose	Large-fruited lomatium
Lomatium nudicaule (Pursh) J.M. Coult. & Rose	Barestem lomatium
Lomatium triternatum (Pursh) J.M. Coult. & Rose ssp. *triternatum*	Nineleaf biscuitroot
Lomatium utriculatum (Nutt. ex Torr. & A. Gray) J.M. Coult. & Rose	Pomocelery lomatium
Lupinus johannis-howellii C.P. Sm.	Howell's lupine
Madia sp. Molina	Tarweed
Microseris howellii A. Gray	Howell's silverpuffs
Mimulus guttatus DC.	Seep monkeyflower
Monardella purpurea Howell	Serpentine monardella
Narthecium californicum Baker	Bog asphodel
Navarretia intertexta (Benth.) Hook.	Needleleaf navarretia
Oreostemma alpigenum (Torr. & A. Gray) Greene var. *andersonii* (A. Gray) G.L. Nesom	Tundra aster
Packera cana (Hook.) W.A. Weber & A. Löve	Woolly groundsel
Packera hesperia (Greene) W.A. Weber & A. Löve	Siskiyou butterweed
Parnassia californica (A. Gray) Greene	California grass of Parnassus

Scientific name	Common name
Penstemon cf. *azureus* Benth.	Azure penstemon
Perideridia gairdneri (Hook. & Arn.) Mathias ssp. *borealis* T.I. Chuang & Constance	Common yampah
Phacelia corymbosa Jeps.	Serpentine phacelia
Phlox speciosa Pursh	Showy phlox
Platanthera sparsiflora (S. Wats.) Schltr.	Sparse-flowered bog orchid
Polygala californica Nutt.	California milkwort
Polygonum sp. L.	Knotweed
Potentilla glandulosa Lindl.	Sticky cinquefoil
Potentilla gracilis Dougl. ex Hook. var. *fastigiata* (Nutt.) S. Wats.	Graceful cinquefoil
Prunella vulgaris L. var. *lanceolata* (W. Bartram) Hultén	Native heal all
Pteridium aquilinum (L.) Kuhn	Western brackenfern
Ranunculus occidentalis Nutt.	Western buttercup
Rudbeckia californica A. Gray	California coneflower
Rudbeckia glaucescens Eastwood	Waxy coneflower
Sanguisorba annua (Nutt. ex Hook.) Nutt. ex Torr. & A. Gray	Western burnet
Sanguisorba officinalis L.	Official burnet
Sanicula bipinnatifida Dougl. ex Hook.	Purple sanicle
Sanicula peckiana J.F. Macbr.	Peck's blacksnakeroot
Scutellaria sp. L.	Skullcap
Sedum laxum (Britton) A. Berger	Roseflower stonecrop
Sidalcea malviflora (DC.) A. Gray ex Benth ssp. *elegans* (Greene) C. L. Hitchc.	Dwarf checkerbloom
Silene hookeri Nutt.	Hooker's silene
Sisyrinchium bellum S. Wats.	Western blue-eyed grass
Streptanthus howellii S. Wats.	Howell's jewelflower
Symphyotrichum spathulatum (Lindl.) G.L. Nesom	Western mountain aster
Toxicoscordion venenosum (S. Wats.) Rydb.	Meadow deathcamas
Triantha glutinosa (Michx.) Baker	Sticky tofieldia
Trillium rivale S. Wats.	Brook wakerobin
Triteleia hyacinthina (Lindl.) Greene	White brodiaea
Viola cuneata S. Wats.	Wedgeleaf violet
Viola hallii A. Gray	Oregon violet
Viola x primulifolia (pro sp.)	Western bog violet

[1] Compiled from numerous sources.

[2] Scientific nomenclature for vascular plants, ferns, and fern-allies follows the Flora of North America (1993+), and the Oregon Flora Project Web site (2009). Scientific names for sedges (*Carex* species) follow Wilson et al. (2008). Common names follow the USDA Plants Database (USDA NRCS 2010).

Appendix 2: Amphibians, Reptiles, Birds, and Mammals[1 2 3]

Family	Scientific name	Common name
Amphibians		
Ambystomatidae	*Rhyacotriton variegatus*	Southern torrent salamander
Bufonidae	*Bufo boreas*	Western toad
	Pseudacris regilla	Pacific chorus frog
Dicamptodontidae	*Dicamptodon tenebrosus*	Pacific giant salamander
Leiopelmatidae	*Ascaphus truei*	Tailed frog
Plethodontidae	*Aneides ferreus*	Clouded salamander
	Aneides flavipunctatus	Black salamander
	Ensatina eschscholtzii	Ensatina
	Plethodon elongatus	Del Norte salamander
Ranidae	*Rana aurora*	Red-legged frog
	Rana boylii	Foothill yellow-legged frog
	Rana catesbeiana	Bullfrog
Salamandridae	*Taricha granulosa*	Roughskin newt
Reptiles		
Anguidae	*Elgaria coerulea*	Northern alligator lizard
	Elgaria multicarinata	Southern alligator lizard
Boidae	*Charina bottae*	Rubber boa
Colubridae	*Coluber constrictor*	Racer
	Contia tenuis	Sharptail snake
	Diadophis punctatus	Ringneck snake
	Lampropeltis zonata	California mountain kingsnake
	Pituophis melanoleucus	Gopher snake
	Thamnophis couchii	Western aquatic garter snake
	Thamnophis elegans	Western terrestrial garter snake
	Thamnophis ordinoides	Northwestern garter snake
	Thamnophis sirtalis	Common garter snake
Iguanidae	*Sceloporus graciosus*	Sagebrush lizard
	Sceloporus occidentalis	Western fence lizard
Scincidae	*Eumeces skiltonianus*	Western skink
Viperidae	*Crotalus viridis*	Western rattlesnake
Birds		
Accipitridae	*Accipiter cooperii*	Cooper's hawk
	Accipiter striatus	Sharp-shinned hawk
	Aquila chrysaetos	Golden eagle
	Buteo jamaicensis	Red-tailed hawk
Aegithalidae	*Psaltriparus minimus*	Bushtit
Apodidae	*Chaetura vauxi*	Vaux's swift
Bombycillidae	*Bombycilla cedrorum*	Cedar waxwing
Caprimulgidae	*Chordeiles minor*	Common nighthawk
	Phalaenoptilus nuttallii	Common poorwill
Cathartidae	*Cathartes aura*	Turkey vulture
Certhiidae	*Certhia americana*	Brown creeper
Charadriidae	*Charadrius vociferus*	Killdeer
Cinclidae	*Cinclus mexicanus*	American dipper
Columbidae	*Columba fasciata*	Band-tailed pigeon
	Zenaida macroura	Mourning dove

Family	Scientific name	Common name
Corvidae	*Aphelocoma californica*	Western scrub-jay
	Corvus brachyrhynchos	American crow
	Corvus corax	Common raven
	Cyanocitta stelleri	Steller's jay
Emberizidae	*Dendroica coronata*	Yellow-rumped warbler
	Dendroica nigrescens	Black-throated gray warbler
	Dendroica occidentalis	Hermit warbler
	Dendroica petechia	Yellow warbler
	Euphagus cyanocephalus	Brewer's blackbird
	Geothlypis trichas	Common yellowthroat
	Icteria virens	Yellow-breasted chat
	Icterus bullockii	Bullock's oriole
	Junco hyemalis	Dark-eyed junco
	Melospiza melodia	Song sparrow
	Molothrus ater	Brown-headed cowbird
	Oporornis tolmiei	Macgillivray's warbler
	Passerculus sandwichensis	Savannah sparrow
	Passerella iliaca	Fox sparrow
	Passerina amoena	Lazuli bunting
	Pheucticus melanocephalus	Black-headed grosbeak
	Pipilo crissalis	California towhee
	Pipilo maculatus	Spotted towhee
	Piranga rubra	Western tanager
	Pooecetes gramineus	Vesper sparrow
	Spizella passerina	Chipping sparrow
	Vermivora celata	Orange-crowned warbler
	Vermivora ruficapilla	Nashville warbler
	Wilsonia pusilla	Wilson's warbler
	Zonotrichia leucophrys	White-crowned sparrow
Falconidae	*Falco sparverius*	American kestrel
Fringillidae	*Carduelis pinus*	Pine siskin
	Carduelis psaltria	Lesser goldfinch
	Carduelis tristis	American goldfinch
	Carpodacus cassinii	Cassin's finch
	Carpodacus mexicanus	House finch
	Carpodacus purpureus	Purple finch
	Coccothraustes vespertinus	Evening grosbeak
	Loxia curvirostra	Red crossbill
Hirundinidae	*Hirundo pyrrhonota*	Cliff swallow
	Hirundo rustica	Barn swallow
	Stelgidopteryx serripennis	Northern rough-winged swallow
	Tachycineta bicolor	Tree swallow
	Tachycineta thalassina	Violet-green swallow
Muscicapidae	*Catharus guttatus*	Hermit thrush
	Catharus ustulatus	Swainson's thrush
	Chamaea fasciata	Wrentit
	Ixoreus naevius	Varied thrush
	Myadestes townsendi	Townsend's solitaire
	Regulus satrapa	Golden-crowned kinglet
	Sialia mexicana	Western bluebird
	Turdus migratorius	American robin

Family	Scientific name	Common name
Paridae	*Parus atricapillus*	Black-capped chickadee
	Parus gambeli	Mountain chickadee
	Parus inornatus	Plain titmouse
	Parus rufescens	Chestnut-backed chickadee
Passeridae	*Passer domesticus*	House sparrow
Phasianidae	*Bonasa umbellus*	Ruffed grouse
	Callipepla californica	California quail
	Dendragapus obscurus	Blue grouse
	Meleagris gallopavo	Wild turkey
	Oreortyx pictus	Mountain quail
Picidae	*Colaptes auratus*	Northern flicker
	Dryocopus pileatus	Pileated woodpecker
	Melanerpes lewis	Lewis' woodpecker
	Picoides albolarvatus	White-headed woodpecker
	Picoides arcticus	Black-headed woodpecker
	Picoides pubescens	Downy woodpecker
	Picoides villosus	Hairy woodpecker
	Sphyrapicus ruber	Red-breasted sapsucker
Sittidae	*Sitta canadensis*	Red-breasted nuthatch
	Sitta carolinensis	White-breasted nuthatch
Strigidae	*Aegolius acadicus*	Northern saw-whet owl
	Bubo virginianus	Great horned owl
	Glaucidium gnoma	Northern pygmy-owl
	Otus flammeolus	Flammulated owl
	Otus kennicottii	Western screech-owl
	Strix varia	Barred owl
Sturnidae	*Sturnus vulgaris*	European starling
Trochilidae	*Calypte anna*	Anna's hummingbird
	Selasphorus rufus	Rufous hummingbird
	Stellula calliope	Calliope hummingbird
Troglodytidae	*Salpinctes obsoletus*	Rock wren
	Thryomanes bewickii	Bewick's wren
	Troglodytes aedon	House wren
	Troglodytes troglodytes	Winter wren
Tyrannidae	*Contopus sordidulus*	Western wood-pewee
	Empidonax difficilis	Pacific-slope flycatcher
	Empidonax hammondii	Hammond's flycatcher
	Empidonax oberholseri	Dusky flycatcher
	Empidonax traillii	Willow flycatcher
	Sayornis nigricans	Black phoebe
	Tyrannus verticalis	Western kingbird
Vireonidae	*Vireo gilvus*	Warbling vireo
	Vireo huttoni	Hutton's vireo
	Vireo solitarius	Solitary vireo
Mammals		
Aplodontidae	*Aplodontia rufa*	Mountain beaver
Canidae	*Canis latrans*	Coyote
	Urocyon cinereoargenteus	Common gray fox

Family	Scientific name	Common name
Cervidae	*Cervus elaphus*	Elk
	Odocoileus hemionus var. *columbianus*	Black-tailed deer
Erethizontidae	*Erethizon dorsatum*	Common porcupine
Felidae	*Felis concolor*	Mountain lion
	Lynx rufus	Bobcat
Geomyidae	*Thomomys bottae*	Botta's pocket gopher
	Thomomys mazama	Western pocket gopher
Leporidae	*Lepus californicus*	Black-tailed jackrabbit
	Sylvilagus bachmani	Brush rabbit
Muridae	*Clethrionomys californicus*	Western red-backed vole
	Microtus californicus	California vole
	Microtus longicaudus	Long-tailed vole
	Microtus oregoni	Creeping vole
	Microtus townsendii	Townsend's vole
	Mus musculus	House mouse
	Neotoma cinerea	Bushy-tailed woodrat
	Neotoma fuscipes	Dusky-footed woodrat
	Ondatra zibethicus	Muskrat
	Peromyscus maniculatus	Deer mouse
	Peromyscus truei	Piñon mouse
	Phenacomys albipes	White-footed vole
	Phenacomys longicaudus	Red tree vole
	Reithrodontomys megalotis	Western harvest mouse
Mustelidae	*Martes pennanti*	Fisher
	Mephitis mephitis	Striped skunk
	Mustela erminea	Ermine
	Mustela frenata	Long-tailed weasel
	Mustela vison	Mink
	Spilogale gracilis	Western spotted skunk
Procyonidae	*Bassariscus astutus*	Ringtail
	Procyon lotor	Common raccoon
Sciuridae	*Glaucomys sabrinus*	Northern flying squirrel
	Sciurus griseus	Western gray squirrel
	Spermophilus beecheyi	California ground squirrel
	Spermophilus lateralis	Golden-mantled ground squirrel
	Tamias amoenus	Yellow-pine chipmunk
	Tamias siskiyou	Siskiyou chipmunk
	Tamiasciurus douglasii	Douglas' squirrel
Soricidae	*Sorex sonomae*	Fog shrew
	Sorex trowbridgii	Trowbridge's shrew
	Sorex vagrans	Vagrant shrew
Talpidae	*Neurotrichus gibbsii*	Shrew-mole
	Scapanus latimanus	Broad-footed mole
	Scapanus orarius	Coast mole
	Scapanus townsendii	Townsend's mole
Ursidae	*Ursus americanus*	Black bear

Family	Scientific name	Common name
Vespertilionidae	*Myotis californicus*	California myotis
	Antrozous pallidus	Pallid bat
	Eptesicus fuscus	Big brown bat
	Lasionycteris noctivagans	Silver-haired bat
	Lasiurus cinereus	Hoary bat
	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

[1] Taken from range maps and habitat descriptions in Csuti et al. 1997.

[2] Species known or suspected to occur within the area based on species range and habitat characteristics.

[3] Species are arranged in taxonomic order by evolutionary relationship, then alphabetically by common name within family.

Pacific Northwest Research Station

Web site	http://www.fs.fed.us/pnw/
Telephone	(503) 808-2592
Publication requests	(503) 808-2138
FAX	(503) 808-2130
E-mail	pnw_pnwpubs@fs.fed.us
Mailing address	Publications Distribution Pacific Northwest Research Station P.O. Box 3890 Portland, OR 97208-3890

Printed on
Recycled Paper

U.S. Department of Agriculture
Pacific Northwest Research Station
333 SW First Avenue
P.O. Box 3890
Portland, OR 97208-3890