


# Appendix E

## Wildlife: Species Lists, Status, and Habitat



This appendix is a matrix that lists the amphibian, reptile, bird, and mammal wildlife species likely to be present in the planning area, by common name and species name. The matrix provides basic information on the status of each species, and the habitats used by the species. The categories used in the matrix are defined on the next several pages. This appendix includes the following subsections.

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# Sources

A number of sources were used in developing the matrix. The references used are given on pages E-8 and E-9, and also in Appendix B, References. The list of species was compiled by Charles Bruce, wildlife biologist (shared employee, Oregon Department of Fish and Wildlife and Oregon Department of Forestry), with the assistance of the Oregon Department of Fish and Wildlife (Boechler 1996; Marshall et al. 1996). Important literature references include: for amphibians: Leonard et al. 1993; for reptiles: Nussbaum, Brodie, and Storm 1983; for mammals: Hall 1981, Burt and Grossenheider 1972, and Christy and West 1993; for birds: Puchy and Marshall 1993, and Gilligan et al. 1994.

The Oregon Species Information System database provided the data on special status, and on species occurrence in the Coast Range and Cascades (West Slope and Crest) provinces within the counties in the planning area (Oregon Department of Fish and Wildlife 1995).

The Oregon Department of Fish and Wildlife's *Oregon Wildlife Diversity Plan* provided most information on the relative abundance of a species within the Coast Range or Cascades provinces, and its specific use of riparian/aquatic habitats, snags, and down wood for breeding, feeding, or shelter/cover (Puchy and Marshall 1993). Some comments are also from this source.

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# Status

## **Federal or State of Oregon Endangered or Threatened Species (FE, FT; SE, ST)**

- **Endangered** — Species in danger of extinction throughout all or a significant portion of their range.
- **Threatened** — Species likely to become endangered in the foreseeable future.

(Federal Endangered Species Act of 1973, as amended; Oregon Endangered Species Act of 1987, ORS 496.172; OAR 635-100-100 to 635-100-130.)

## **Federal Species of Concern**

The U.S. Fish and Wildlife Service (USFWS) previously maintained a list of species that were being reviewed for possible listing (Category 2). These species are now being identified as federal species of concern (FOC) for which additional studies are required to resolve their conservation status.

## State Sensitive Species (SSC, SSV, SSP, SSU)

Sensitive species are those likely to become threatened or endangered throughout all or any significant portion of their range in Oregon. This list is updated biennially. Sensitive species are broken into the four categories listed below (Puchy and Marshall 1993).

- **Critical (SSC)** — Species for which listing as threatened or endangered is pending; or those for which listing as threatened or endangered may be appropriate if immediate conservation actions are not taken. Also considered critical are some peripheral species which are at risk throughout their range, and some disjunct populations.
- **Vulnerable (SSV)** — Species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring. In some cases the population is sustainable and protective measures are being implemented; in others, the population may be declining and improved protective measures are needed to maintain sustainable populations over time.
- **Peripheral or naturally rare (SSP)** — Peripheral species refer to those whose Oregon populations are on the edge of their range. Naturally rare species are those which had low population numbers historically in Oregon because of naturally limiting factors. Maintaining the status quo for the habitats and populations of these species is a minimum requirement. Disjunct populations of several species which occur in Oregon should not be confused with peripheral.
- **Undetermined Status (SSU)** — Species for which status is unclear. They may be susceptible to population decline of sufficient magnitude that they could qualify for endangered, threatened, critical, or vulnerable status, but scientific study will be required before a judgment can be made.

(ORS 496.012 (1); OAR 635-100-040.)

## Other Designations

**Neotropical migratory birds (NTMB)** — These species breed mainly in temperate North America and winter primarily south of the border between the United States and Mexico. The federal Migratory Bird Treaty Act protects not only neotropical migratory birds, but also nearly all other native birds; this designation is not shown.

**State game species (SG)** — Designated game species can be hunted. State laws regulate the hunting season, allowable methods of capture, and bag limits.

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# Plant Communities

## **Red Alder Forest (RA)**

Red alder forest is generally considered to be a community that will be succeeded by western hemlock or western redcedar. However, red alder can dominate sites in nearly pure stand conditions for long periods of time and thus create distinctive wildlife habitat that can be maintained by silvicultural treatment. Red alder must compose at least 70 percent of the stand.

The red alder forest stand is dominated by red alder, but may have some bigleaf maple or some climax coniferous trees such as western hemlock, western redcedar, or Sitka spruce. Ground vegetation is commonly dominated by salmonberry, sword-fern, and herbs.

Red alder stands go through only the stand initiation and stem exclusion processes. Unlike other types of forest communities, they do not continue on through the understory reinitiation process. (Brown 1985)

## **Temperate Coniferous Forest (TC)**

These low to mid-elevation coniferous forests are in the western hemlock zone and are generally associated with big game winter range. Conifers must exceed 70 percent of the crown cover for the stand. More than one conifer species is common, and the species are typical of the areas west of the Cascade Range.

Commonly dominant trees are Douglas-fir, western hemlock, white and grand firs, western redcedar, and Sitka spruce. Some Pacific silver fir or Shasta red fir may be found at upper limits of the elevation zone. Common shrubs are vine maple, salal, evergreen huckleberry, Pacific rhododendron, Oregon boxwood, red bilberry, salmonberry, thimbleberry, giant chinkapin, Oregon grape, Pacific yew, and hazelnut. Common herbs are sword-fern, vanilla leaf, trillium, twinflower, bedstraw, oxalis, deer-fern, inside-out flower, violet, and lady-fern. (Brown 1985)

## **High Temperate Coniferous Forest (HTC)**

These mid-elevation to moderately high elevation coniferous forests are in the silver fir zone and are generally associated with big game summer range. This plant community has a closed canopy. Conifers must exceed 70 percent of the crown cover for the stand. When more than one conifer species is common, the type is dominated by upper elevation species.

Commonly dominant trees are Douglas-fir, Pacific silver fir, noble fir, Shasta red fir, and mountain hemlock. Some pioneer species may be present, such as sugar pine, white pine, and lodgepole pine. At times subalpine pine or Engelmann spruce may be present. Common shrubs are big huckleberry, Alaska huckleberry, whortleberry, vine maple, salal, Oregon grape, Pacific

rhododendron, copper-bush, and rusty-leaf. Common herbs are beargrass, woodrush, twinflower, prince's pine, bunchberry, vanilla leaf, clintonia, false Solomon's seal, trillium, oak-fern, and twisted-stalk.

High temperate coniferous forests are the common mid-elevation to upper elevation types west of the Cascade Range — the general upper forest zone. (Brown 1985)

### **Deciduous Hardwood (DH)**

This plant community has tree heights greater than 15 feet at maturity, crown cover greater than 40 percent, but less than 30 percent cover of conifers, and less than 50 percent evergreen hardwoods.

Tree species may be Oregon white oak or California black oak with some Douglas-fir, ponderosa pine, Jeffrey pine, incense-cedar, Pacific madrone, and tanoak. Shrub species may be poison-oak, snowberry, hazelnut, ceanothus, manzanita, blackberry, bitter cherry, and ocean spray. Herbaceous species may be grasses, forbs, or both, at times rather sparse.

Deciduous hardwood stands characteristically occur in the interior valleys, and may occur on the fringes of the Willamette Valley. Historically, only a small percentage of state forest lands was deciduous hardwood stands. (Brown 1985)

### **Conifer-Hardwood Forest (CH)**

This plant community is comprised of a mixture of coniferous trees and hardwood trees, where 30 to 70 percent of the crown cover is hardwoods. The hardwoods may be deciduous, evergreen, or any combination. When hardwoods exceed 70 percent of the crown cover, the type is "hardwood"; when they are less than 30 percent, the type is "conifer."

Common tree species are Douglas-fir, incense cedar, ponderosa pine, sugar pine, Pacific madrone, tanoak, red alder, bigleaf maple, and at times Oregon white oak, western hemlock, Port Orford-cedar, and white fir. Shrubs vary, and include salmonberry, manzanita, poison-oak, salal, ceanothus, hazelnut, ocean spray, and Oregon grape. Herbs are generally common.

Conifer-hardwood forest is a reasonably stable plant community in which hardwoods maintain a significant status. Often these types remain as conifer-hardwood mixtures after regeneration cutting because new hardwood trees sprout from the stumps of the old hardwoods. These stands grade into mixed conifer types, hardwood types, and red alder. (Brown 1985)

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# Stand Type Definitions

Over the years, data on wildlife use of different habitats has been collected using various definitions of stand types. Therefore, the data does not always fit perfectly with the stand type definitions used in the *Northwest Oregon State Forests Management Plan*. The matrix uses stand type definitions that best fit the available data on wildlife use of stand types. The first four definitions (regeneration, closed single canopy, understory, and layered) are approximately the same as the stand type definitions in the forest plan. However, there is no data on wildlife use of the older forest structure stand type. Instead, the wildlife matrix shows use of old growth stands, as defined in Brown 1985. Wildlife use of older forest structure stands may or may not be similar to wildlife use of old growth.

## Stand Type 1 — Regeneration (REG)

### Stand Development Process — Stand Initiation

This stand type occurs when a disturbance such as timber harvest, fire, or wind has killed or removed most or all of the larger trees, or when brush fields are cleared for planting. The site is occupied primarily by tree seedlings or saplings, and herbs or shrubs. The trees can be conifers or hardwoods. Competition among the trees and other vegetation is not yet resulting in widespread loss of herb or shrub layers. In the following matrix, regeneration stands are taken to be equivalent to the following three stand conditions described in Brown 1985.

- **Grass-forb stand condition** — Shrubs less than 40 percent crown cover and less than 5 feet tall; unit may range from mainly devoid of vegetation to dominance by herbaceous species (grasses and forbs); tree regeneration generally less than 5 feet tall and 40 percent crown cover.
- **Shrub stand condition** — Shrubs greater than 40 percent crown canopy; they can be any height; trees less than 40 percent crown canopy and less than 1 inch DBH (diameter breast height). When the average tree diameter for the stand exceeds 1 inch DBH, the stand should be classified in the “open sapling” or “closed sapling” category.
- **Open sapling-pole stand condition** — Average stand diameter greater than 1 inch DBH and tree crown canopy less than 60 percent. Saplings are 1 to 4 inches DBH; poles 4 to 9 inches DBH.

## Stand Type 2 — Closed Single Canopy (CSC)

### Stand Development Process — Stem Exclusion

This stand type occurs when new trees, shrubs, and herbs no longer appear in the stand, and some existing ones begin to die, due to shading and other competitive factors. Trees fully occupy the site and form a single, main canopy layer. There is little or no understory development. Closed single canopy stands are approximately equivalent to the “closed sapling-pole-sawtimber” stand condition in Brown 1985.

- **Closed sapling-pole-sawtimber stand condition** — Average stand diameters between 1 and 21 inches DBH and crown cover exceeding 60 percent.

## **Stand Type 3 — Understory**

### **Stand Development Process — Understory Reinitiation**

This stand type occurs after the stem exclusion stage, when enough light and nutrients become available to allow herbs, shrubs, and new trees to grow again in the understory. These stands have developed more diverse herb or shrub layers than CSC stands and have trees larger than sapling size. Tree canopies may range from a single species, single-layered, main canopy with associated dominant, codominant, and suppressed trees; to multiple species canopies. However, significant layering of tree crowns has not yet developed. Average tree size is at least 6 to 10 inches DBH, and tree heights are generally approaching 40 to 50 feet.

## **Stand Type 4 — Layered**

### **Stand Development Process — Understory Reinitiation**

The vertical organization and structure of the living plant community are more complex than in the understory type. Vertical layering of herbs, shrubs, and tree crowns is extensive. Plant communities are complex in terms of numbers of species and in vertical arrangement. Shrub or herb layers and tree canopies in two or more layers are present. The amount of understory brush and herbaceous species is minimal at the beginning of the stage, but increases to a substantial component of the stand by the end of the stage. The overstory is dominated by trees of 18 inches or larger DBH and approximately 100 feet or more tall. At least 30 percent of the stand is comprised of layered patches. Layered stands are approximately equivalent to the “large sawtimber” stand condition in Brown 1985.

- **Large sawtimber stand condition** — Stand with average diameters exceeding 21 inches DBH; crown cover may be less than 100 percent, decay and decadence required for old growth characteristics are generally lacking, successional trees required by old growth may be lacking, and dead and down material required by old growth is lacking.

## **Stand Type 5 — Older Forest Structure**

### **Stand Development Process — Understory Reinitiation**

This stand type occurs when layered forest stands attain structural characteristics such as numerous large trees; a multi-layered canopy; a substantial number of large, down logs; and large snags. It is not intended to be old growth, although it is intended to provide some or all of the structural components commonly associated with old growth. Brown 1985 does not include this habitat. Instead, the matrix shows wildlife use of old growth. Wildlife use of older forest structure may or may not be similar to wildlife use of old growth.

- **Old growth stand condition** — Stands over 200 years old with at least two tree layers (overstory and understory), decay in living trees, snags, and down woody material. Some of the overstory layer may be composed of long-lived successional species (that is, Douglas-fir, western redcedar).

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# References for Appendix E

The following references were used in developing this appendix. Listings are alphabetical. The following format is used.

**Author's name in bold.** Year published. Title of publication. Publisher, publisher's location, any additional information.

The abbreviations below are used in the references. Standard two-letter postal abbreviations are used for the names of states.

GTR	General Technical Report
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ONHP	Oregon Natural Heritage Program
PNW	Pacific Northwest Research Station (part of USDA Forest Service)
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior

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**USDI Fish and Wildlife Service.** 1994. Endangered and Threatened Wildlife and Plants. 50 CFR 17.11 & 17.12.

**USDI Fish and Wildlife Service.** 1996. Notice of Review. Federal Register Vol. 61, No. 40, February 28, 1996.

## **Legal References**

Federal Endangered Species Act of 1973, as amended.

Oregon Endangered Species Act of 1987.

ORS 496.012 (1).

ORS 496.172.

OAR 635-100-040.

OAR 635-100-100 to 635-100-130.

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# Key to the Matrix

## Status

<b>FE</b>	Federal endangered species
<b>FT</b>	Federal threatened species
<b>FOC</b>	Federal species of concern
<b>SE</b>	State endangered species
<b>ST</b>	State threatened species
<b>SSC</b>	State sensitive species: critical status
<b>SSV</b>	State sensitive species: vulnerable status
<b>SSP</b>	State sensitive species: peripheral or naturally rare
<b>SSU</b>	State sensitive species: undetermined status
<b>SG</b>	State game species
<b>NTMB</b>	Neotropical migratory bird

## Plant Community

<b>RA</b>	Red alder forest (defined as stand initiation and stem exclusion only)
<b>TC</b>	Temperate coniferous forest
<b>HTC</b>	High temperate coniferous forest (winter snow cover)
<b>DH</b>	Deciduous hardwood
<b>CH</b>	Conifer-hardwood forest
<b>*</b>	Species either not listed in Brown 1985, or a species “whose habitat requirements are such that there is only a slight chance of forestry related impacts”, or a rare species in the planning area (Brown 1985).

## Stand Types

<b>REG</b>	Regeneration
<b>CSC</b>	Closed single canopy
<b>UDS</b>	Understory
<b>LYR</b>	Layered
<b>OFS</b>	Older forest structure
<b>OG</b>	Old growth
<b>X</b>	General occurrence in the stand, for breeding, feeding, cover or resting.
<b>S</b>	Occurs if special or unique habitat is available.

