

Because the Columbia Basin Ecoregion constitutes the relevant ecological boundary for assessing the significance of and impacts to species of concern, information relative to each species for Oregon is provided when available to supplement the Washington data. For some taxa or specific species, the information is not as complete. In general, however, the tabular information that follows represents the best information available.

Species data are provided first by taxa. Additional tabular information includes culturally and ecologically important species not otherwise identified as species of concern. Finally, information is provided on species recently discovered at Hanford that are either new to science, new to Washington, or new to Hanford. For the first two new species categories, federal and/or state listing statuses still need to be determined. To facilitate review of the tabular information, this section begins by providing definitions of federal and state listing and priority species categories, protection priorities, and rarity statuses. This information is common to many of the tables. By providing it in one place, the need to repeat the information for each table is avoided.

#### **D.2.5.1 Common Reference Information for Species of Concern Data Tables**

##### **Federally Listed and Federal Candidate Species: References**

U.S. Fish and Wildlife Service. August 20, 1994. Endangered and Threatened Wildlife and Plants. 50 CFR 17.11 and 17.12.

U.S. Fish and Wildlife Service. February 28, 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species. 61 FR 7595–7613.

[www.fws.gov/r9endspp/endspp.html](http://www.fws.gov/r9endspp/endspp.html)

##### **Federally Listed and Federal Candidate Species: Category Definitions**

**Endangered** - a species which is likely to become extinct throughout all or a significant portion of its range.

**Threatened** - a species which is likely to become endangered in the foreseeable future.

**Proposed** - a species for which a proposed rule to list as endangered or threatened has been published in the Federal Register.

**Candidate** (previously defined as candidate category 1) - a species for which there is sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list it as endangered or threatened but issuance of the proposed rule is precluded (i.e., by other listing activity or lack of funding).

Added definition for the purposes of BRMaP:

**Former Candidate** - a species previously proposed for listing (whether or not a proposed rule was ever published in the Federal Register) or a species for which information at one time indicated that proposing to list it as endangered or threatened was possibly appropriate, but for which sufficient information on biological vulnerability and threat(s) were not available to support a proposed rule to list.

##### **Washington State Listed, Candidate, and Monitor Species: References**

#### **Plants**

Washington Department of Natural Resources. 1994. Endangered, Threatened & Sensitive Vascular Plants of Washington. Washington Department of Natural Resources, Washington Natural Heritage Program, Olympia, Washington.

[www.wa.gov/dnr/](http://www.wa.gov/dnr/)  
[www.wa.gov/wdfw/hab/phspage.htm](http://www.wa.gov/wdfw/hab/phspage.htm)

#### **Animals**

Washington Department of Wildlife. 1994. Species of Special Concern in Washington. Washington Department of Wildlife, Olympia, Washington, as amended by a listing and candidate notice update by the now Washington Department of Fish and Wildlife, dated April 2, 1996.

[www.wa.gov/wdfw](http://www.wa.gov/wdfw)

##### **Washington State Listed, Candidate, and Monitor Species: Category Definitions**

#### **Plants**

**Endangered** - a species which is likely to become extinct throughout all or a significant portion of its range within the state.

**Threatened** - a species which is likely to become endangered in the foreseeable future.

**Sensitive** - a species which is likely to become endangered or threatened in a significant portion of its range within the state.

**Review 1** - a species in need of additional field work before a status can be assigned.

**Review 2** - a species with unresolved taxonomic questions.

**Watch List Species** - a species more abundant and/or less threatened in Washington than previously assumed.

### Animals

**Endangered** - wildlife species native to the state of Washington that are seriously threatened with extinction throughout all or a significant portion of its range within the state.

**Threatened** - wildlife species native to the state of Washington that are likely to become endangered in the foreseeable future throughout significant portions of their ranges within the state without cooperative management or the removal of threats.

**Sensitive** - wildlife species native to the state of Washington that are vulnerable or declining and are likely to become endangered or threatened throughout significant portions of their ranges within the state without cooperative management or the removal of threats.

**Candidate** - wildlife species that are under review by the Washington Department of Wildlife for possible listing as endangered, threatened, or sensitive.

**Monitor** - Wildlife species native to the state of Washington that:

- 1 - were at one time classified as endangered, threatened, or sensitive
- 2 - require habitat that has limited availability during some portion of its life cycle
- 3 - are indicators of environmental quality
- 4 - require further field investigations to determine population status
- 5 - have unresolved taxonomy which may bear upon their status classification

6 - may be competing with and impacting other species of concern

7 - have significant popular appeal.

### Washington State Species Protection Priorities: References

#### Plants

Washington Department of Natural Resources. 1995. State of Washington Natural Heritage Plan: 1993/1995 Update. Washington Department of Natural Resources, Washington Natural Heritage Program, Olympia, Washington.

#### Animals

Washington Department of Fish and Wildlife. 1996. Priority Habitats and Species List. Washington Department of Fish and Wildlife, Habitat Program, Olympia, Washington.

### Washington State Species Protection Priorities: Category Definitions

#### Plants

**Priority 1** - These taxa are in danger of becoming extinct throughout their ranges. These taxa's populations are at critically low levels or their habitats are degraded or depleted to a significant degree. These taxa are the highest priorities for preservation.

**Priority 2** - These taxa will become endangered in Washington if factors contributing to their population decline or habitat degradation or loss continue. These taxa are high priorities for preservation efforts.

**Priority 3** - These taxa are vulnerable or declining and could become endangered or threatened in the state without active management or removal of threats. These taxa should be important in the analysis of potential preserve sites.

#### Animals

**Criterion 1 (State Listed and Candidate Species)** - State listed species are those native fish and wildlife species legally designated as Endangered (WAC 232-12-014), Threatened (WAC 32-12-011), or Sensitive (WAC 232-12-011). State Candidate species are those fish and wildlife species that will be reviewed by the department (POL-M-6001) for possible listing as Endangered, Threatened, or Sensitive according to the process and criteria defined in

WAC 232-12-297. Federal Candidate species are evaluated individually to determine their status in Washington and whether inclusion as a priority species is justified.

**Criterion 2 (Vulnerable Aggregations) -**

Vulnerable aggregations include those species or groups of animals susceptible to significant population declines, within a specific area or statewide, by virtue of their inclination to aggregate. Examples include heron rookeries, seabird concentrations, marine mammal haulouts, shellfish beds, and fish spawning and rearing areas.

**Criterion 3 (Species of Recreational, Commercial, and/or Tribal Importance) -** Native and non-native fish and wildlife species of recreational or commercial importance and recognized species used for tribal ceremonial and subsistence purposes that are vulnerable to habitat loss or degradation.

**Oregon State Listed, Sensitive, and Candidate Species: References**

**Plants**

Oregon Department of Agriculture. 1995. Oregon Administrative Rules 603, Division 73. Plants: Endangered, Threatened, and Candidate Species. Oregon Department of Agriculture, Salem, Oregon.

**Animals**

Oregon Department of Fish and Wildlife. 1993. State List of Sensitive Species. Oregon Department of Fish and Wildlife, Portland, Oregon.

Oregon Department of Fish and Wildlife. 1994. Oregon Administrative Rules (635-100-125): State List of Threatened and Endangered Species. Oregon Department of Fish and Wildlife, Portland, Oregon.

Oregon Department of Fish and Wildlife. 1994. Oregon Administrative Rules (635-100-100): Definition of Terms. Oregon Department of Fish and Wildlife Portland, Oregon.

**Oregon State Listed, Sensitive, and Candidate Species: Category Definitions**

**Plants**

**Endangered** - a species which is likely to become extinct throughout all or a significant portion of its range within the state.

**Threatened** - a species which is likely to become endangered in the foreseeable future.

**Candidate** - a species under review for listing as endangered or threatened.

**Animals**

**Endangered** - a species which is likely to become extinct throughout all or a significant portion of its range within the state.

**Threatened** - a species which is likely to become endangered in the foreseeable future.

**Sensitive** species are divided into the following categories:

**Sensitive/critical** - a species for which listing as threatened or endangered is pending or one for which listing as threatened or endangered may be appropriate if conservation actions are not taken.

**Sensitive/vulnerable** - a 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.

**Sensitive/peripheral and sensitive/naturally rare** (considered one category) - a species whose Oregon populations are on the edge of their range and which had low population numbers historically in Oregon because of naturally limiting factors, respectively.

**Sensitive/undetermined status** - a species whose status is unclear and for which scientific study is required before its status can be determined.

**Global and State Rarity Status: References**

**Plants**

Washington Department of Natural Resources. 1994. Endangered, Threatened & Sensitive Vascular Plants of Washington. Washington Department of Natural Resources, Washington Natural Heritage Program, Olympia, Washington.

The Nature Conservancy of Oregon. 1995. Oregon Natural Heritage Program, Rare Plant and Animal Data Base. The Nature Conservancy, Portland, Oregon.

## Animals

Washington Department of Natural Resources. 1995. Washington National Heritage Information System. Washington Department of Natural Resources, Washington Natural Heritage Program, Olympia, Washington.

The Nature Conservancy of Oregon. 1995. Oregon Natural Heritage Program, Rare Plant and Animal Data Base. The Nature Conservancy, Portland, Oregon.

**Global and State Rarity Status: Category Definitions**

### Plants

**G** - indicator of global, i.e., rangewide, status.

**T** - indicator of status of infraspecific taxa, always used in conjunction with a global rank.

**S** - indicator of state status (for both Washington and Oregon):

**1** - critically imperiled because of extreme rarity or because it is particularly vulnerable to extinction or extirpation, typically 5 or fewer occurrences

**2** - imperiled because of rarity or because it is vulnerable to extinction or extirpation, typically 6 to 20 occurrences

**3** - either very rare and local throughout its range or found locally (even abundantly) in a restricted range, typically 21 to 100 occurrences

**4** - apparently secure, typically more than 100 occurrences

**5** - demonstrably widespread, abundant and secure.

**X** - presumed extinct or extirpated.

**H** - historically known with the expectation that it may be rediscovered.

**U** - status uncertain, additional information is needed.

**SR** - reported from the state but without persuasive documentation.

**SRF** - reported falsely (in error) from the state, but the error persists in the literature.

**?** - indicates uncertainty about the assigned rank.

**Q** - indicates uncertainty about the taxonomic status.

Note: Washington State references were used to assign global rarity status in each of the species of concern data tables.

### Animals

**G** - indicator of global, i.e., rangewide, status, always followed by another character.

**T** - a global rank for subspecific taxa.

**S** - indicator of state status:

**1** - extremely rare, typically 5 or fewer estimated occurrences in the state, or only a few remaining individuals, may be especially vulnerable to extirpation

**2** - very rare, typically between 5 and 20 estimated occurrences, or with many individuals in fewer occurrences, often susceptible to becoming extirpated

**3** - rare to uncommon, typically 20 to 100 estimated occurrences, may have fewer occurrences but with a large number of individuals in some populations, may be susceptible to large-scale disturbances

**4** - common, apparently secure under present conditions, typically 100 or more estimated occurrences, but may be fewer with many large populations, may be restricted to only a portion of the state, usually not susceptible to immediate threats

**5** - very common, demonstrably secure under present conditions.

**X** - apparently extinct or extirpated.

**H** - historically known from the state, but not verified for an extended period, usually 15 years.

**U** - status uncertain, often because of low search effort or cryptic nature of the element, uncertainty spans a range of 4 to 5 ranks as defined above.

**R** - reported from the state, but without persuasive documentation that would provide a basis for either accepting or rejecting (e.g., misidentified specimen) the report.

**SRF** - reported falsely (in error) from the state, but the error persists in the literature.

**A** - accidental (occurring only once or a few times) or casual (occurring more regularly although not every year) in state; a few of these species (typically long-distance migrants such as some birds, butterflies, and cetaceans) may have even bred on one or more of the occasions when they were recorded.

**E** - exotic (introduced through human actions) in the state.

**P** - likely to occur or to have occurred (but having not been previously documented) in the state.

**Z** - not of significant conservation concern in the state, although the taxon is native and appears regularly in the state for a reason other than being exotic (E) or accidental/casual (A) or absent.

**Q** - a qualifying "Q" with a global rank indicates that a taxonomic question concerning the taxon exists.

**C** - a qualifying "C" with a GH or GX rank indicates that the taxon is extant in captivity or cultivation, although it is not known to still exist in nature.

**?** - indicates uncertainty about the assigned rank.

Note: Washington State references were used to assign global rarity status in each of the species of concern data tables. For those tables that lack an Oregon State rarity status, a state rarity status was not assigned for those species by the Oregon Natural Heritage Program.

### D.2.5.2 Plants

Legal protections for species of concern differ between plant and animals. Although legal protections for federally listed or proposed plant species, insofar as they address plants found on federal property, are similar to that for animals, protection is limited on non-federal lands (i.e., state and private) to situations in which either federal funding or the requirement for a federal permit is involved. Legal protection for state-listed species in Washington is even more limited. There are no state of Washington laws that specifically recognize endangered or threatened plants or afford them any protection

on any lands; however, WDNR's Natural Heritage Program does identify and track the status of species deserving of such status (WDNR 1994).

Table D.4 provides information about plant species of concern potentially found on or near the Hanford Site. There are currently no federal endangered, threatened, or proposed species, or species that are currently candidates for listing found at Hanford. Nineteen species, however, have been documented to be present on Hanford that are either sensitive, threatened, or endangered in the state of Washington (TNC 1996). Five of these species are federally listed by the USFWS as species of concern in the Columbia River Basin Ecoregion.

Figure D.23 shows approximate locations of sub-populations and populations of the plant species of concern that have been entered so far into the Ecosystem Monitoring Project's data base (see Table 4.2 for Level III species categories). Data are a combination of both TNC survey (J. Soll, correspondence and digital data, 1995, 1996, and 1998) and recent Ecosystem Monitoring Project survey results (recent survey information is reported in Cadwell 1994 and 1995). Location data was acquired either by GPS or by digitizing locations originally recorded on USGS topographic maps. All 1994 and earlier data are shown.

Figure D.23 is not intended to represent all areas where plant species of concern may be present; rather, the figure shows only general locations where the presence of individual plant subpopulations or populations have been documented. Even areas that have been surveyed potentially could contain other plant species of concern; for example, certain rare annual and/or early flowering plants that are sensitive to the drought conditions that were present during the early part of 1994 may have been missed during the TNC surveys (TNC 1995). Those areas searched by TNC during 1994, 1995, and 1997 are depicted in TNC (1995; Figure 4), Caplow and Beck 1996 (Figure 3), and Hall (1998), respectively. These reports also can be referenced for more detail about specific species.

Table D.15 provides information on newly identified plant species or varieties at Hanford. In total, survey results indicate that the Hanford Reach, ALE Unit, Gable Mountain and vicinity, and Umtanum Ridge all contain significant numbers of populations of Level III plant species of concern (Figure D.23). Much of the central core of Hanford still remains to be surveyed for plant species of concern. It is