

Willamette Basin

Description

Covering nearly 12,000 square miles, the Willamette is one of the state's largest drainage basins. It is also one of the most urbanized – over two-thirds of Oregon's population lives in the Willamette Valley. Just over 60% of the basin is privately owned.

Geographically, the basin comprises a broad, relatively level valley flanked by the forested slopes of the Coast and Cascade mountain ranges. The Willamette River, which originates in these mountain ranges and meanders nearly 200 miles before reaching its confluence with the Columbia, contributes much to the character of the valley floor. Historically, the Willamette was the key feature in a broad floodplain of sloughs, wetlands, and bottomland forests surrounded by an open valley dominated by prairie and savanna vegetation. Since European settlement, the Willamette Valley has undergone extensive urban, suburban and agricultural development, and today its ecosystem is highly altered.

The Willamette River and its tributaries support threatened native populations of chinook salmon, steelhead trout and bull trout, as well as rainbow and cutthroat trout. Large dams on many of the Willamette's tributaries have significantly altered stream flow regimes.

Conservation issues in the basin vary depending on geography. A significant amount of relatively healthy, intact, protected forest habitat remains in the upland regions of the basin. In the Willamette Valley, habitat loss, fragmentation and degradation have led to the identification of numerous plants and animals as species of concern. According to the Oregon Biodiversity Project, three general habitat types – oak savannas and woodlands, wetlands, and bottomland hardwood forests – stand out as broad-scale conservation priorities based on an assessment of historical changes and current management status. Other conservation issues in the valley include the introduction and spread of non-native species such as bullfrogs, Scot's broom, and many non-native fish and perennial grasses; a simplified river channel (including the disconnection of the river from its floodplain); declining habitat complexity; declines in water quality; and lack of fire.

Recommended acquisition priorities reflect the character of the basin and current conservation concerns, and are consistent with the recommendations of a number of other agency and conservation organizations. The size, diversity and level of development in the basin yield lengthy initial lists of systems and species of concern. These initial lists are shortened significantly by the application of screening criteria. First, many species of concern in the basin are found in forested upland areas, where their conservation needs can be adequately addressed on extensive public land holdings. Second, because the challenges to conservation in the Willamette Valley are so great, the needs of some species are better addressed in other basins.

A number of the systems and species on the final lists of priorities are found only in the Willamette Valley. One system type, chaparral, is increasing in distribution, but is

included because of its importance as habitat for multiple wildlife species and because it occurs largely on non-public lands.

The conservation acquisition principles are of particular importance to Willamette Valley projects. Some of the principles – such as those emphasizing size, intactness, and connectivity – will be hard to employ because of the extent of habitat fragmentation and loss in the valley. These limiting factors will tend to emphasize projects that address priority species and systems in the context of complementing or building on existing conservation reserves and refuges. Acquisition may also be an important tool in helping reconnect the river with its floodplain in key areas, provided there is evidence that such projects are part of a larger, coordinated effort. Projects seeking to establish wholly new protected areas should be scrutinized carefully to determine whether the scale and context of the project will support the long-term health and functioning of the habitats, systems and species expected to benefit. However, even small restoration projects will help retain some of the natural diversity remaining in the basin.

Priority Ecological Systems

Autumnal freshwater mudflats
Chaparral
Coniferous forested wetlands
Depressional wetland broadleaf forests
Depressional wetland shrublands
Freshwater aquatic beds
Freshwater emergent marsh
Herbaceous balds and bluffs
Oak woodland
Ponderosa pine woodland
Riparian forests and shrublands
Sphagnum bogs and fens
Vernal pools
Western Oregon upland prairie and oak savanna
Western Oregon wet prairie

Rare or At-Risk Plant Communities

Bigleaf maple - red alder / sword fern - fringe cup
Black cottonwood - red alder / salmonberry
Black cottonwood / creek dogwood / touch - me - not
Brodiaea prairie
California oatgrass valley grassland
Columbia sedge marsh
Common downingia vernal pool
Coyote-thistle - low gumweed vernal pool
Coyote-thistle - smooth lasthenia vernal pool
Creeping lovegrass - lowland cudweed vernal pool

Creeping spikerush - one-sided sedge marsh
Creeping spikerush - water purslane marsh
Dense sedge - tufted hairgrass prairie
Douglas spiraea / sphagnum fen
Fragrant popcorn-flower vernal pool
Geyer willow - Piper willow
Grand fir - bigleaf maple / vine maple - hazelnut
Lemmon needlegrass / wavy-cell moss bald
Lobb buttercup aquatic bed
Martindale lomatium rock garden
Nootka rose / tufted hairgrass brush prairie
Nootka rose / water parsley shrub swamp
One-sided sedge - meadow barley prairie
Oregon ash / Dewey sedge - stinging nettle
Oregon ash / spreading rush
Pacific willow / stinging nettle
Quaking aspen / slough sedge
Roemer fescue valley prairie
Tufted hairgrass - California oatgrass valley prairie
Water purslane - waterpepper marsh
White oak - black oak / poison oak
White oak / Idaho fescue savanna
White oak / poison oak / blue wildrye
White oak / snowberry / sword fern

Willamette Basin – Priority Species

| <i>Fish</i> | <i>Birds</i> | <i>Mammals</i> | <i>Amphibians and Reptiles</i> | <i>Invertebrates</i> | <i>Plants</i> |
|---|---|---|---|--|---|
| <p>Chinook Oregon Chub Pacific Lamprey Searun Coastal Cutthroat Trout Steelhead</p> | <p>Acorn Woodpecker American Bittern American Kestrel (natural nest sites only) Chipping Sparrow (valley only) Dunlin Dusky Canada Goose Harlequin Duck Hooded Merganser Oregon Vesper Sparrow Purple Martin (natural nest sites only) Short-Eared Owl (nest and roost habitat only) Streaked Horned Lark Western Meadowlark White-Breasted Nuthatch Yellow Warbler</p> | <p>Black-Tailed Jackrabbit Townsend’s Big-Eared Bat Western Gray Squirrel</p> | <p>Foothill Yellow-Legged Frog Painted Turtle Red-Legged Frog Western Pond Turtle</p> | <p><i>Icaricia icarioides fenderi</i> (Fender’s Blue Butterfly) <i>Acupalpus punctulatus</i> (Marsh Ground Beetle) <i>Driloleirus macelfreshi</i> (Oregon Giant Earthworm) <i>Euphydryas editha taylori</i> (Taylor’s Checkerspot Butterfly)</p> | <p><i>Aster curtus</i> (White-Topped Aster) <i>Aster vialis</i> (Wayside Aster) <i>Castilleja levisecta</i> (Golden Indian-Paintbrush) <i>Delphinium leucophaeum</i> (White Rock Larkspur) <i>Delphinium pavonaceum</i> (Peacock Larkspur) <i>Erigeron decumbens</i> var <i>decumbens</i> (Willamette Valley Daisy) <i>Erythronium elegans</i> (Coast Range Fawn-Lily) <i>Howellia aquatilis</i> (Howellia) <i>Lomatium bradshawii</i> (Bradshaw’s Lomatium) <i>Lupinus sulphureus</i> ssp <i>kincaidii</i> (Kincaid’s Lupine) <i>Sidalcea nelsoniana</i> (Nelson’s Sidalcea)</p> |