

## **John Day Basin**

### Description

The John Day River drains 8100 square miles, making it the fourth-largest river basin in Oregon. The basin encompasses portions of two ecoregions - the Columbia Basin ecoregion to the north and west, and the Blue Mountains ecoregion in the south and east. The upper basin is characterized by coniferous forests and meadows at higher elevations, and by grasses, sagebrush and junipers at lower elevations. The level to rolling terrain of the lower basin is underlain by Columbia basalt and deeply dissected by the John Day and its tributaries. Nearly 40 percent of the basin is public land.

Ponderosa pine forests in the Ochoco and Blue mountains dominate the John Day River headwaters. The north and middle forks of the John Day meander through open meadows and prairie ranchland. Historic overgrazing and wildfire suppression have led to a decrease in native grasses such as wheatgrass, bunchgrass and bluegrass and fescues, while exotics have increased. As in other eastern Oregon basins, juniper has become a significant problem in the John Day.

The John Day is the longest free-flowing river supporting wild anadromous salmon and steelhead in the Columbia Basin. It is also relatively free of hatchery influences. The John Day basin's populations of spring chinook and summer steelhead are two of the last remaining intact wild populations of anadromous fish in the Columbia Basin. The South Fork of the John Day River includes eight aquatic diversity areas identified by the American Fisheries Society for their high ecological function and value to anadromous fish. The Middle and North Forks also support relatively healthy salmon runs.

For these reasons, the John Day system is widely regarded as a bright spot in Columbia Basin anadromous fish recovery efforts. At the same time, both the spring chinook and summer steelhead populations are depressed relative to historic levels. Summer steelhead and bull trout in the basin are listed under the federal Endangered Species Act.

Low streamflows are also a concern in the John Day. Total basin discharge is adequate to satisfy all water rights on an average annual basis, but there is insufficient flow on many streams in late summer to satisfy all water rights holders and meet instream needs.

Conservation priorities in the John Day reflect its importance to anadromous fish in the region. Over the past 15 years there has been a tremendous increase in stream restoration work involving multiple agencies and numerous private landowners, and there are indications that these efforts have led to improved habitat quality in some areas.

Acquisition priorities identified for this project include systems contributing to improved hydrologic function (wetlands and riparian areas) and prairie grasslands, which have declined significantly from historic levels and are underrepresented on public lands. Ponderosa pine woodlands and big sagebrush steppe also have been included on the list even though their distribution has not decreased as much as that of other types and they

are relatively well-represented on public lands. The John Day basin is a good area in which to address the statewide decline in these types because of the nature of their current distribution and opportunities to expand or connect existing conservation areas to greater effect.

### Priority Ecological Systems

Alkaline wetlands  
Badlands  
Big sagebrush steppe  
Black greasewood  
Foothill and lower montane riparian woodland  
Freshwater emergent marsh  
Lowland riparian forest and shrubland  
Montane riparian forest and shrubland  
Montane wet meadow  
North Pacific hardpan vernal pool  
Palouse prairie grassland  
Ponderosa pine woodland  
Semi-desert shrub steppe  
Subalpine or montane wet meadow

### Rare or At-Risk Plant Communities

Annual hairgrass – branched popcorn flower vernal pool  
Basin big sagebrush/ basin wildrye  
Basin big sagebrush/ needle-and-thread  
Basin big sagebrush/ Sandberg bluegrass – bluebunch wheatgrass Palouse  
Basin wildrye bottomlands  
Bitterbrush/ Idaho fescue (bluebunch wheatgrass)  
Bitterbrush / needle-and-thread  
Bitterbrush / Sandberg bluegrass  
Black cottonwood - white alder  
Black cottonwood / black hawthorn  
Black cottonwood / coyote willow  
Black cottonwood / Pacific willow riparian  
Black hawthorn - common snowberry  
Black hawthorn - common snowberry / Idaho fescue  
Black hawthorn - woods rose  
Bluebunch wheatgrass - Idaho fescue Palouse  
Bluebunch wheatgrass - needle-and-thread grass  
Bluebunch wheatgrass - Sandberg bluegrass Palouse  
Chokecherry  
Coyote willow - Pacific willow  
Mountain alder - western birch  
Ponderosa pine / black hawthorn

Sand dropseed  
Slender-branched popcorn-flower - purslane speedwell vernal pool  
Western birch - black hawthorn  
Western birch - creek dogwood  
Western birch - mockorange  
White alder / chokecherry  
White alder / hackberry  
White alder / mockorange  
White alder / serviceberry  
White alder / water birch  
White alder / woods rose  
Wyoming big sagebrush / needle-and-thread

John Day Basin – Priority Species

<i>Fish</i>	<i>Birds</i>	<i>Mammals</i>	<i>Amphibians and Reptiles</i>	<i>Invertebrates</i>	<i>Plants</i>
Bull Trout Chinook Salmon Redband Trout Steelhead Pacific Lamprey Westslope Cutthroat Trout	Burrowing Owl (burrow nest sites only) Grasshopper Sparrow Greater Sage Grouse Lewis Woodpecker Loggerhead Shrike Long-Billed Curlew Mountain Quail Swainson's Hawk (nest sites only) Willow Flycatcher	California Bighorn Sheep Pygmy Rabbit Townsend's Big-Eared Bat Washington Ground Squirrel White-Tailed Jackrabbit	Columbian Spotted Frog	<i>Gomphus lynae</i> (Lynn's Clubtail) <i>Monadenia fidelis minor</i> (Dalles Sideband)	<i>Astragalus diaphanus</i> var. <i>diurnus</i> (South John Day Milk-Vetch) <i>Thelypodium eucosmum</i> (Arrowleaf Thelypody)