



Introduction and General Description

Oregon is an ecologically diverse State encompassing ten ecoregions including the Coast Range, Klamath Mountains, West Cascades, East Cascades, Basin and Range, Owyhee Uplands, Blue Mountains, Lava Plains, Columbia Basin, and Willamette Valley Ecoregions. This ecological diversity is the result of a complex geology that has been influenced by the Missoula floods, alpine glaciation, volcanic activity, and recent tectonic activity. This combination of geologic influences has resulted in a wide array of soil types and plant communities and continues to influence the climate within the different ecoregions in Oregon. For example, precipitation within the State ranges from over 120 inches a year in some areas of the Coast Range to less than 10 inches a year in parts of the Columbia Basin and the Basin and Range Ecoregions. Plant communities range from temperate coniferous rainforest in the Coast Range to wetland and upland prairies in the Willamette Valley and on to sage brush/bunch grass communities in the Basin and Range Ecoregion.

Habitats of Special Concern

The Partners for Fish and Wildlife Program in Oregon has been focused on the restoration of wetlands, wet prairie and savanna,

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and stream and riparian habitats. Nearly all of the 56 listed,



proposed, and candidate species in Oregon rely on one or more of these habitats. This includes all of the listed fish and amphibians, and most of the listed mammals, plants and invertebrates. In addition to providing habitat for listed species, these habitats of concern have been identified in the Partners in Flight Landbird Conservation Planning process as conservation and restoration priorities for migratory birds, many of which have been experiencing significant population declines.

Threats

Habitat Loss

The primary factor affecting Service trust species in Oregon is habitat loss and degradation. Nearly 70 percent of estuarine (tidally-influenced areas) and 40 percent of freshwater wetlands have been lost in Oregon. Over 99 percent of the native savanna and wet prairie habitats have been converted for agriculture and urban development. In most areas of the State, as much as 80 percent

of the riparian habitat has been lost. In the Willamette Valley, for instance, over 80 percent of riparian habitats have been converted for agriculture, forestry, and urban uses and river channel complexity has been reduced by up to 80 percent through channel confinement and removal of large woody debris. As a result of these impacts, thousands of miles of our streams and rivers are water quality impaired for one or more factors, including temperature, sediment, and excessive water withdrawal. These changes have significantly impacted fish and wildlife resources with resulting declines in migratory birds, anadromous fish, and other species.

Conservation Strategies

Wetlands

The emphasis on wetland restoration is due to the importance of wetland habitat to many of the Service's trust species, including migratory birds, anadromous fish, and many listed, threatened and endangered species. The Partners Program in Oregon has focused on the restoration of wetlands near the Service's National Wildlife Refuges in the Klamath and

Malheur Basins, the Willamette Valley, and on the Oregon Coast. Much of the recent Partners Program activity has been concentrated in the Klamath Basin, the Willamette Valley and along the Oregon Coast.

Many of our restoration efforts have centered on restoring floodplain wetland complexes. Coastal floodplain wetland restoration generally includes removing tidegates, breaching levees, restoring tidal channels, and replanting native trees and shrubs along tidally-influenced rivers. These floodplain wetland complexes provide significant benefits to migratory birds while restoring crucial habitat for juvenile coho and steelhead salmon, which have been listed as threatened under the Endangered Species



Salmonid fry

Act.

The cost for these projects has averaged roughly \$1,000 per acre, including the restoration of tidal channels.

Wet Prairie and Savanna

These habitats are home to a number of declining plant species, including 4 listed threatened and endangered species, and provide important habitat for 22 species of

migratory birds which are showing significant population declines. Restoration work has focused on rehabilitation of existing savanna and wet prairie remnants.

Historically, Native Americans used fire as a management tool in many of these areas. The removal of fire from the landscape and the introduction of non-native grasses has altered the plant communities in these remnant prairies. The principal restoration techniques employed on these sites have been the reintroduction of fire and the removal of invasive species. Recent monitoring results show that controlled burning of degraded wet prairie sites result in a significant increase in the population of Bradshaw's lomatium, a federally endangered plant species.

Some sites require more intensive work which is being done experimentally on sites are extremely degraded and do not possess significant remnants of the native plant communities. A current project of this type includes the reintroduction of Kincaid's lupine, a federally threatened plant, which is the primary host plant for



Federally endangered Bradshaw's lomatium.

the larval stage of the federally

threatened Fender's blue butterfly. The cost for these projects has ranged from \$500 per acre for rehabilitation to \$1,000 per acre for intensive restoration.



The Kincaid's lupine is a federally threatened plant.

Streams and Riparian Areas

While streams and riparian (streamside) areas comprise less than 15 percent of the land area in Oregon, they are the most productive, diverse, and essential habitats for both aquatic and upland species.

Riparian areas contain elements of both aquatic and terrestrial systems and provide a transition between these two habitats that supports species that depend on both. About 85 percent of Oregon's terrestrial vertebrate species depend on riparian habitat at some stage in their life history. This includes many migratory birds and most threatened and endangered



Forty acre floodplain wetland restored to tidal influence.

species.

Stream restoration activities have included restoring fish passage and the installation of structures and large woody debris in order to enhance fish habitat complexity and function. The cost of these projects has averaged \$3 per linear foot for fish passage restoration with an additional \$3 per linear foot for those projects that include habitat enhancement. Stream reconstruction projects, which involve returning a ditched and channelized stream back to its natural state, cost an average of \$50 per linear foot.

Riparian restoration is accomplished through a number of other restoration techniques. Fencing is used to exclude livestock from sensitive riparian areas and off-channel water is provided for livestock. In other areas, where poor harvest practices have removed spruce, cedar, and other conifers from the riparian area, revegetation and silvicultural treatments are used to restore the habitat. The presence of large conifers in these areas are important for wildlife as well as for their future contribution to aquatic habitat complexity.

Partners

Oregon Watershed Enhancement Board
 Oregon Department of Fish and Wildlife
 Oregon Department of Agriculture

Oregon Department of Parks and Recreation
 Numerous Watershed Councils
 Conservation Districts throughout Oregon
 Corvallis City Parks
 Ashland Parks and Recreation

Friends of Buford Park
 Oregon State University Extension Service
 The Nature Conservancy
 Ducks Unlimited
 Rocky Mountain Elk Foundation
 Trout Unlimited
 Oregon Trout
 Audubon Society
 Deschutes Resource Council
 Oregon Water Trust
 South Coast Land Conservancy
 Northwest Ecological Research Institute
 Northwest Habitat Institute
 Confederated Tribes of Warm Springs
 Fort Bidwell Indian Community
 Confederated Tribes of the Umatilla
 Burns Paiute Tribe
 Klamath Indian Tribe
 Natural Resources Conservation Service
 U.S. Forest Service
 Bureau of Land Management
 Bureau of Reclamation

Accomplishments

- < Fish access to in-stream habitat restored to over 50 miles of stream by removing fish passage barriers
- < 121 miles of in-stream improvements
- < 105 miles of riparian (streamside) restoration
- < 10,000 acres of wetlands restored and enhanced
- < 4,700 acres of native grasslands restored and enhanced



Native brook trout.

Future Needs

- < Restore or enhance 430,000 acres of freshwater wetlands, primarily in the Klamath Basin, Basin and Range, and Willamette Valley due to the importance of these areas to migratory birds.
- < Restore or enhance 6,000 acres of tidal wetlands in the Coast Range and Lower Columbia River which would provide crucial habitat for declining and listed anadromous fish and migrating waterfowl and shorebirds.
- < Restore and enhance 35,000 acres of wet prairie and 55,000 acres of oak savanna in the Willamette Valley, where 99 percent of these habitats have been lost or degraded and 22 species of migratory birds and 50 species of plants are experiencing significant declines.
- < Restore and enhance 12,000 miles of stream habitat and 400,000 acres of riparian habitat, which are important habitats for over 80 percent of the vertebrate species in the State, including migratory birds, as well as 37 candidate, threatened, and endangered species.



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