Photo © Ellen Morris Bishop

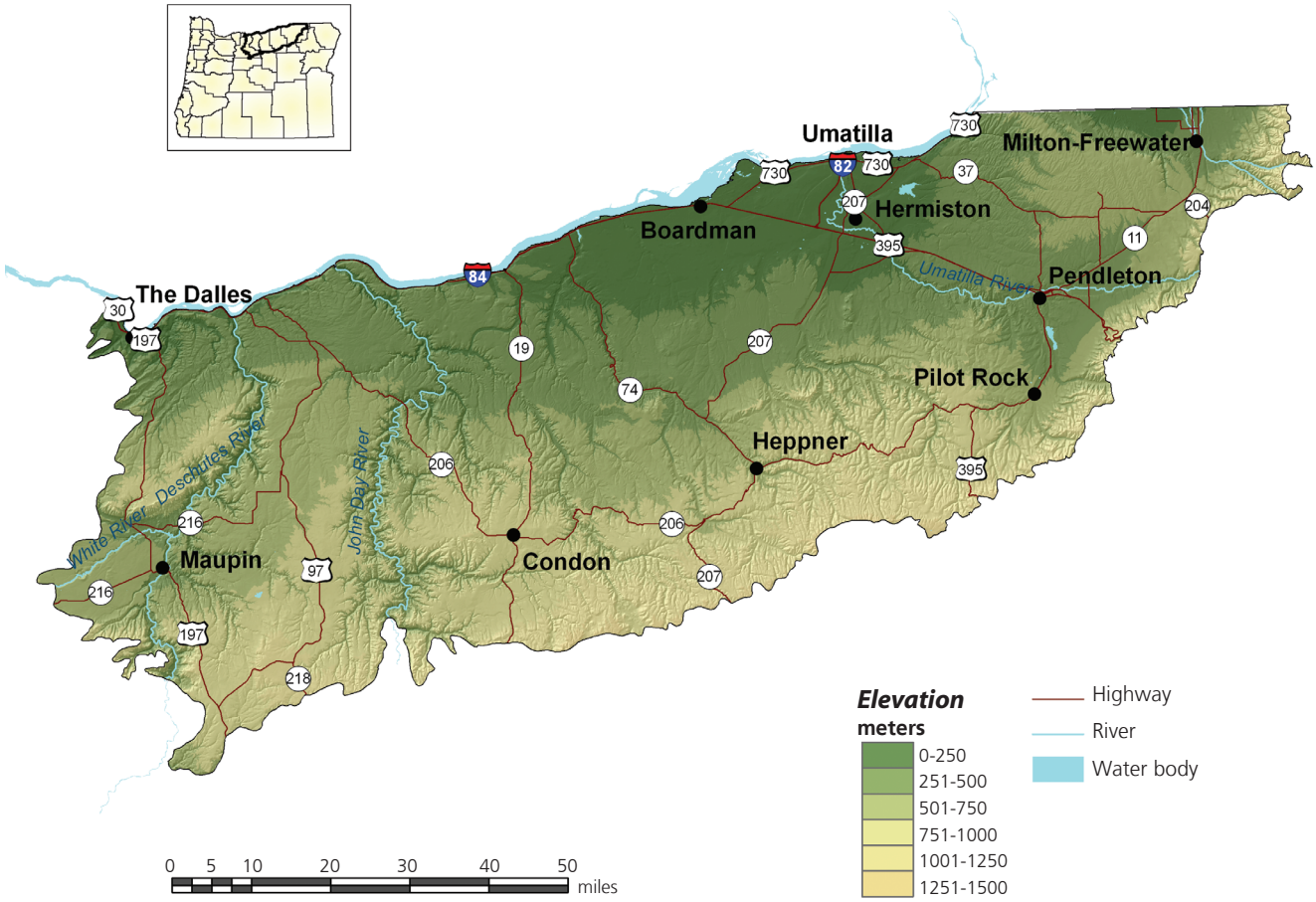
Columbia Plateau Ecoregion

Getting to Know the Columbia Plateau Region

Characteristics

The Columbia Plateau Ecoregion encompasses part of Oregon and most of eastern Washington. The Oregon portion of the ecoregion extends from the eastern slopes of the Cascades Mountains, south and east from the Columbia River to the Blue Mountains. Millions of years ago, the region was covered by lava flows up to two miles deep. The centerpiece of the ecoregion, the Columbia River, has greatly influenced the surrounding area, with cataclysmic floods and large deposits of windborne silt and sand. Over time, winds scoured the floodplain, depositing silt and sand across the landscape and creating ideal conditions for agriculture: rolling lands, deep soil, and plentiful flowing rivers including the lower parts of the Deschutes and John Day Rivers. The ecoregion is made up entirely of lowlands, with an arid climate, cool winters and hot summers.

The Columbia Plateau produces the vast majority of Oregon's grain, and grain production is the heart of the agricultural economy. The Columbia Plateau produces the second-highest agricultural sales per year for any ecoregion in Oregon. More than 80 percent of the ecoregion's population and employment is located in the Umatilla County portion of the ecoregion, which includes Pendleton and Hermiston. Other population centers include The Dalles, Condon, and Heppner.



"At a Glance"- Characteristics and Statistics

Land use (% of ecoregion):

Agriculture	36.6%
Forest and woodland	0.7%
Other (lakes, wetlands, cliffs, etc.)	4.7%
Range, pasture, and grassland	57.4%
Towns and rural residentia	0.3%
Urban and suburban	0.4%

Land ownership:

Private	85%
Public, federal	11%
Public, state and local	2%
Native American	2%

Human population, government and transportation statistics:

Estimated population in 2000	103,000
% of Oregon's population in 2000	3.1%
Number of cities	21
Number of counties	6
(includes part of Jefferson, Morrow, Umatilla, Wasco counties and all of Gilliam, Sherman counties)	
Number of watershed councils	17
(A watershed council is considered present if at least 10% of its area is located within the ecoregion.)	
Miles of road	8,663

Economics:

Important industries: agriculture; mobile home production; cattle; retail and services; construction

Major crops: Grain; barley; potatoes; onions; fruit

Important natural recreational areas: Cold Springs National Wildlife Refuge (NWR), Umatilla NWR, the canyons of the lower Deschutes and John Day Rivers

Ecology:

Average annual precipitation	12.3 inches per year
Range of average July temperatures (1971-2000)	66ºF –76ºF
Range of average January low temperature (1971-2000)	30ºF –35ºF
Elevation	100 feet (The Dalles) to 3,000 feet (Northern slopes)
Number of regularly occurring vertebrate wildlife species	322
Important rivers	Columbia, Deschutes, John Day, Umatilla, Walla Walla.

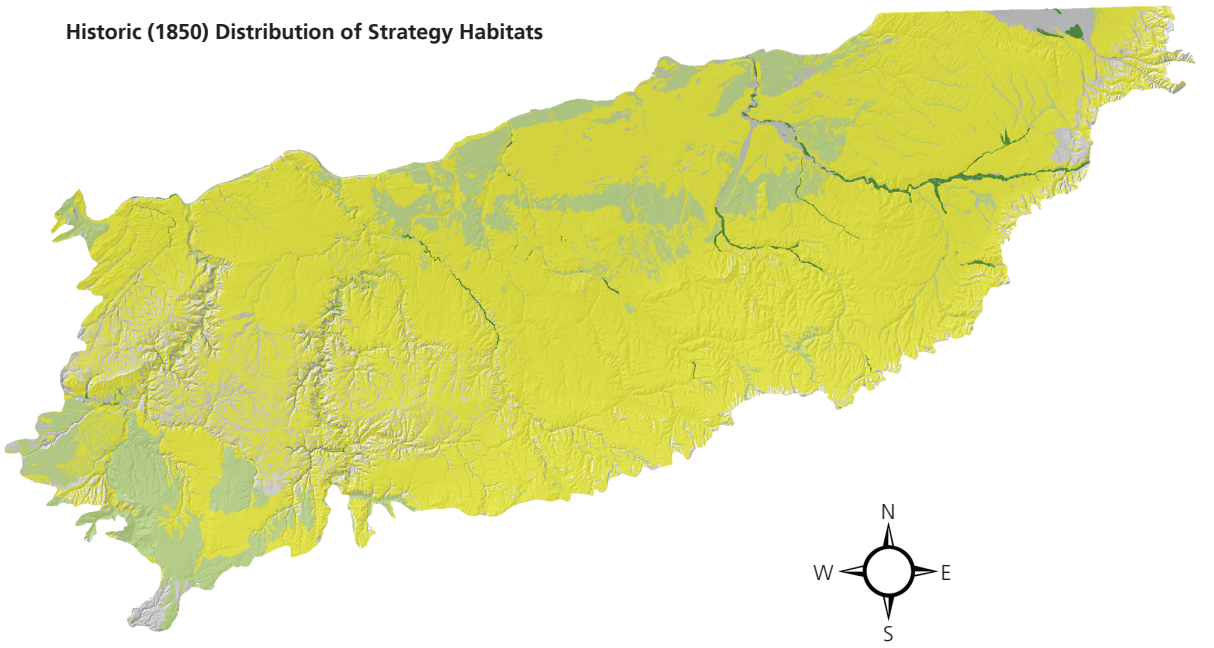
Information Sources: Oregon Blue Book (2003-04), Oregon Climate Service data (1971-2000), Oregon State of the Environment Report (2000), Oregon Watershed Enhancement Board (2001), Oregon Wildlife Diversity Plan (1993), U.S. Census Bureau (2000).

Summary List of Strategy Habitats

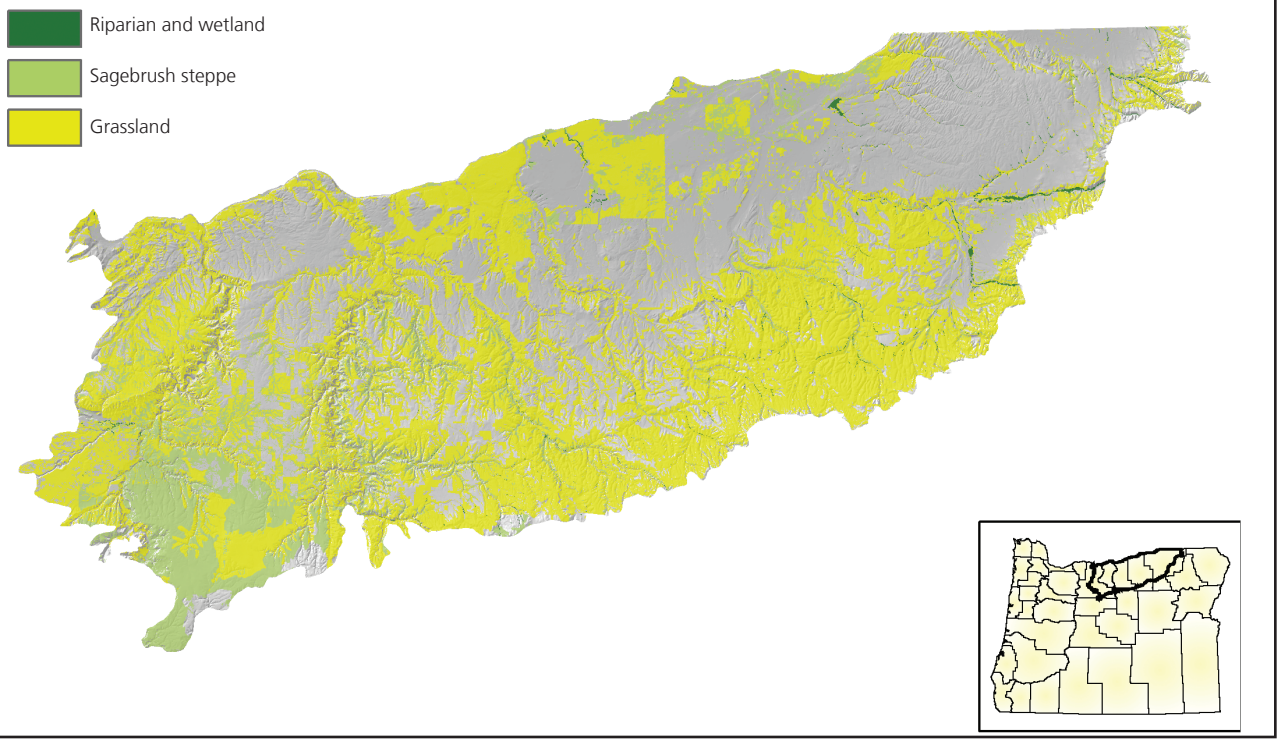
Strategy Habitats in the Columbia Plateau Ecoregion include: grasslands, sagebrush steppe, wetlands, riparian and wetland habitats, and aquatic habitats.

Change in Strategy Habitats

Historic (1850) Distribution of Strategy Habitats



Current (2004) Distribution of Strategy Habitats



Source: Oregon Natural Heritage Information Center (2004)

Conservation Issues and Actions

Overview

Almost all of the Columbia Plateau ecoregion is privately owned. Conservation opportunities for native vegetation are limited because it is difficult to maintain connectivity among high quality habitat patches.

Water availability is a concern in this ecoregion, and demands for water include agricultural, irrigation, and domestic use. Water quality in the Columbia Plateau ecoregion is affected by these demands, particularly in summer months when flows are reduced. Restoring flow with headwater streams is essential to maintain ecological connections. Maintaining aquifers also is critical.

Ecoregion-level limiting factors and recommended approaches

All six of the key conservation issues apply statewide, as do the approaches outlined in the Statewide Perspectives and Approaches chapter. However, water quality and quantity and invasive species are described further in this section, considering the Columbia Plateau's ecoregional characteristics. In addition to the statewide issues, soil erosion and habitat fragmentation are of concern in this ecoregion.

Factor: Water availability. Water quantity is a limiting factor for fish, wildlife, and livestock. In streams, seasonal low flows can limit habitat suitability and reproductive success for many fish and wildlife species. As the demand for water increases, the supply of groundwater is decreasing. Water quality also can limit species and habitats.

Approach: Provide incentives and information about water usage and sharing during low flow conditions (e.g., late summer). Increase awareness and manage timing of applications of potential aquatic contaminants. Improve compliance with water quality standards and pesticide use labels (Oregon Department of Environmental Quality [ODEQ] and U.S. Environmental Protection Agency). Work on implementing Senate Bill 1010 (Oregon Department of Agriculture) and ODEQ Total Maximum Daily Load water quality plans.

Factor: Soil erosion. Soil loss through erosion and decreases in soil quality jeopardize the productivity of habitats and agricultural lands. Water infiltration, which is essential for productive habitats and groundwater recharge, decreases on bare land soils. Sandy soils along the Columbia River are particularly susceptible to erosion from high winds.

Approach: Use incentives to promote no-till farming and agricultural

Summary List of Strategy Species

Mammals

- Pallid bat
- Townsend's big-eared bat
- Washington ground squirrel

Birds

- Brewer's sparrow
- Ferruginous hawk
- Grasshopper sparrow
- Lewis' woodpecker
- Loggerhead shrike
- Long-billed curlew
- Sage sparrow
- Swainson's hawk
- Western burrowing owl

Fish

- Bull trout (Columbia Distinct Population Segment [DPS])
- Chinook salmon (Snake River ESU, spring/summer run)
- Chinook salmon (Snake River ESU, fall run)
- Coho salmon (Lower Columbia/Southwest Washington Coast ESU)
- Inland Columbia Basin redband trout
- Margined sculpin
- Pacific lamprey
- Steelhead (Middle Columbia River ESU, summer run)
- Steelhead (Middle Columbia River ESU, winter run)
- Steelhead (Snake River Basin ESU)
- Western brook lamprey

Plants

- Lawrence milk-vetch
- Northern wormwood
- Tygh Valley milk-vetch

Amphibians and Reptiles

- Northern sagebrush lizard
- Western painted turtle

Invertebrates

Snails:

- Bulb juga
- Columbia Gorge hesperian
- Columbia Gorge Oregonian
- Dalles mountainsnail
- Oregon snail (Dalles sideband)
- Purple-lipped juga (Deschutes juga)
- Shortface lanx (giant Columbia River limpet)

practices that do not allow lands to lay bare for long periods of time. Encourage participation and support for programs such as the NRCS Conservation Reserve Program, which promote practices that can offset or minimize soil erosion and degradation.

Factor: Habitat fragmentation. The remaining Strategy Habitats for at-risk native plant and animal species are limited and largely confined to small and often isolated fragments such as roadsides and sloughs. These remaining parcels could be converted to agriculture, and there are few opportunities for large-scale protection or restoration of native landscapes. Existing land use and land ownership patterns present challenges to large-scale ecosystem restoration.

Approach: Provide incentives (e.g., financial assistance, conservation easements) and information about the benefits of maintaining bird and other wildlife habitat. Broad-scale conservation strategies will need to focus on restoring and maintaining more natural ecosystem processes and functions within a landscape that is managed primarily for other values. This may include an emphasis on more "conservation-friendly" management techniques for existing land uses, and restoration of some key ecosystem components such as riparian function. "Fine-filter" conservation strategies that focus on needs of individual Strategy Species and key sites are particularly important in this ecoregion. Because approximately 84 percent of the Columbia Plateau ecoregion is privately-owned, voluntary cooperative approaches are the key to long-term conservation using tools such as financial incentives, regulatory assurance agreements, and conservation easements. Where appropriate, plan development carefully to maintain existing fish and wildlife habitats.

Factor: Invasive species. Invasive plant and animal species disrupt native communities, diminish populations of at-risk native species, and threaten the economic productivity of resource lands including farmland and rangeland. Differences in county policies and funding availability regarding invasive species have resulted in some inconsistencies in approach.

Approach: Emphasize prevention, risk assessment, early detection and quick control to prevent new invasives from becoming fully established. Use multiple site appropriate tools (mechanical, chemical and biological) to control the most damaging invasive species. Focus on key invasive species in high priority areas, particularly where

Solutions to Environmental and Economic Problems (STEEP)

Cropland soil erosion is one of the most significant problems facing industries in the Columbia Plateau Ecoregion. Cropland soil erosion can lead to decreased farmland productivity and to degradation of downstream riparian and aquatic habitats. Scientists and educators from the University of Idaho, Oregon State University, Washington State University, and the USDA-Agricultural Research Service are cooperating with growers and agricultural support industries and agencies to develop state-of-the art methods to control erosion and to protect environmental quality. The STEEP (Solutions To Environmental and Economic Problems) program combines research and education, focusing on developing profitable cropping systems technologies. Since 1975, Congress has funded grants for this multi-disciplinary program. Researchers, growers, conservation district associations, and other agricultural interest associations participate in running the programs. The program produces several publications reporting new developments in conservation farming techniques specific to the Columbia Plateau (for example, the Pacific Northwest Conservation Farming Handbook) and organizes a variety of meetings to share information on resources and technologies. The program helps producers implement and evaluate erosion management practices through "On Farm Testing" (OFT), engaging farmers in newly developed technologies and their application. Farmer participation through on-farm testing leads to more appropriate site-specific technology, broader and faster adoption, and increased producer ability to adapt and innovate environmentally sound and profitable conservation farming practices. OFT has the potential to fill a missing link in conservation farming innovation, adaptation, and adoption in the Pacific Northwest. OFT helps producers evaluate and adapt improved erosion management practices to accelerate implementation of their conservation plans and improve profitability. For more information on the program, see: http://pnwsteep.wsu.edu.

Invasive Non-native Species

Invasive species currently are considered to be one of the primary causes of species becoming threatened and endangered, second only to habitat conversion. Many species are as threatening to people's livelihoods as they are to fish and wildlife and their habitats. This section identifies the species with the greatest current and potential impact in the Columbia Plateau. These species were determined through an analysis of Oregon Department of Agriculture's Noxious Weed List, ODFW's Wildlife Integrity Rules, ODFW's Introduced Fish Management Strategies report, information from Portland State University Center for Lakes and Reservoirs, and local expert review. Although some of these species also cause significant economic damage to farms, ranches, and managed forests, this list is focused on those that cause the most severe ecological damage. Impacts from introduced game fish vary from species to species and within ecoregions. As a result, the impacts need to be evaluated more locally (ODFW Introduced Fish Management Strategies Report).

Known invasive non-native animal and plant species

These species are established or documented in this ecoregion, and are known to impact native fish and wildlife populations and habitats. They may range from small, controllable populations to widespread infestations.

Documented Invasive Animals

- Bluegill
- Brook trout
- Brown bullhead
- Bullfrog
- Carp
- Channel catfish
- Crappie
- European starling
- House sparrow
- Largemouth bass
- Mosquito fish (*Gambusia*)
- Norway rat
- Nutria
- Shad
- Smallmouth bass
- Virginia opossum
- Yellow perch

Documented Invasive Plants

- Cheatgrass
- Curly leaf pondweed (aquatic)
- Diffuse knapweed
- Eurasian milfoil (aquatic)
- Fragrant water lily (aquatic)
- Iberian starthistle
- Intermediate wheatgrass
- Knotweeds (Japanese, giant)
- Medusahead rye
- Rush skeletonweed
- Russian olive
- Russian thistle
- Scotch thistle
- Silverleaf nightshade
- Spotted knapweed
- Tamarisk
- Watercress (aquatic)
- Yellow flag iris (aquatic, riparian)
- Yellow starthistle

Non-native animals and plants of potential concern

Preventing the establishment of invasive non-native species is far more cost-effective and practical than trying to eradicate them once they are established. To make the best use of financial and personnel resources, prevention efforts need to be prioritized to address the greatest threats, especially since many non-native species do not pose a significant threat to wildlife populations and habitats. Potentially harmful non-native species can be identified by examining biological factors, potential impacts and invasion patterns in similar climates. The species listed here are included because: 1) they are not known to occur in this ecoregion, but could pose a threat to fish and wildlife populations and habitats if they become established; or 2) they are known to occur in this ecoregion but the extent to which they impact native species and disrupt ecological processes is unclear at this time.

Potentially Invasive Non-native Animals

- Asian carp (bighead, silver)
- Black carp
- Feral pigs
- Fishhook waterflea
- Grass pickerel
- Muskelluge, northern pike
- Round goby
- Ruffe
- Rusty crayfish
- Snakeheads
- Zebra mussels

Potentially Invasive Non-native Plants

- Camelthorn
- Hydrilla (aquatic)
- North Africa grass
- Pondwater starwort (aquatic)
- Purple knapweed
- Skeletonleaf bursage
- Syrian bean caper
- Texas blueweed
- Uruguay seedbox (aquatic)
- Water primrose (aquatic)
- Yellow hawkweed

Conservation actions identified through other planning efforts

Landowners and land managers can benefit a variety of fish and wildlife species by managing and restoring Strategy Habitats. The following recommendations are relevant to Strategy Habitats. They were identified through a review of existing plans.

Actions	Strategy Habitat and General Location	Source Document
In cooperation with interested landowners and agencies, maintain and/or initiate shrub-steppe restoration and management on private and public land.	Grasslands and shrub-steppe throughout ecoregion	Eastside All-Bird Implementation Plan (Ivey 2000) [recommended targets: Boardman Grasslands 55,000 ac; Lower Umatilla 10,000 ac]
Initiate actions (e.g., restoration, maintenance) in large areas of sagebrush habitat to maintain complex, continuous habitat.	Sagebrush habitat throughout the ecoregion	Partners in Flight Columbia Plateau Conservation Strategy (Altman and Holmes 2000) [recommended targets: maintain more than 50% of landscape in mid to late seral stage with canopy cover more than 15% and at least one contiguous tract more than 1,000 ac]
In cooperation with interested landowners and agencies, maintain and/or initiate grassland restoration and management on private and public land.	Grasslands	Eastside All-Bird Implementation Plan (Ivey 2000) [recommended target: Boardman Grasslands 15,000 ac]
In cooperation with interested landowners and agencies, maintain, manage or restore riparian habitat on private and public land.	Riparian woodland habitat in Lower Umatilla	Eastside All-Bird Implementation Plan (Ivey 2000) [recommended target: 500 ac woodland, 600 ac shrub]
Plan riparian conservation and restoration to maintain conditions that support healthy (i.e., source) populations of Strategy species.	Riparian habitat throughout ecoregion	Partners in Flight Columbia Plateau Conservation Strategy (Altman and Holmes 2000) [recommended target: maintain more than 30% of historical extent of riparian habitat]
Improve fish passage. For example, modify barriers or use spans where appropriate.	Aquatic; All locations (as appropriate)	NWPCC Subbasin Plans, 2004; Oregon Biodiversity Project
Restore instream flows and restore riparian habitat. Partners include: tribes, landowners, state and federal agencies.	Aquatic; Focus on Lower Umatilla River and Wanaket Wildlife Area (Confederated Tribes of the Umatilla Indian Reservation).	Oregon Biodiversity Project
Modify practices in forests, agriculture and urban areas to meet stream large woody debris needs, reduce sediment, and improve fish passage.	Aquatic; All locations (as appropriate)	NWPCC Subbasin Plans, 2004
Establish integrated framework for wetland restoration assessment, priority setting, and actions at three scales: watersheds, ecoregions and project sites.	Wetlands	Recommendations for a nonregulatory wetland restoration program for Oregon. J.W. Good and C.B. Sawyer. 1998. Prepared for Oregon Division of State Lands and U.S. EPA Region X.
Increase incentives for proactive, nonregulatory wetland restoration and enhancement on private land, focusing on a combination of financial assistance, tax benefits, technical assistance, and education.	Wetlands	Recommendations for a nonregulatory wetland restoration program for Oregon. J.W. Good and C.B. Sawyer. 1998. Prepared for Oregon Division of State Lands and U.S. EPA Region X.
Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology. - Plant vegetation to stabilize banks; leaving stumps, fallen trees and boulders in waterways - Maintain or enhance off channel or side channel meanders, habitat and pools	Aquatic habitats (streams, pools)	Oregon Aquatic habitat restoration and enhancement guide. The Oregon Plan for Salmon and Watersheds May 1999. See guide for specific technical recommendations, sources of information and assistance, and other guidelines.
Maintain riparian and wetlands function: - Manage grazing, riparian vegetation planting and fencing, and livestock water facilities according to best practices, current techniques and with respect to natural hydrological conditions.	Riparian and wetlands habitats	Oregon Aquatic habitat restoration and enhancement guide. The Oregon Plan for Salmon and Watersheds May 1999. See guide for specific technical recommendations
Upslope erosion control: - Create water and sediment control basins to contain runoff, wastewater - Use windbreaks (tree and shrub rows - using native plants) to reduce erosion and deposition - Upland terracing	Aquatics, riparian and wetland habitats	Oregon Aquatic habitat restoration and enhancement guide. The Oregon Plan for Salmon and Watersheds May 1999. See guide for specific technical recommendations

**Note: Conservation Strategy monitoring indicators, linked with OSOER Key indicators, targets, and methods, will be identified in a statewide approach (See Monitoring chapter for more information).*

Strategy Habitats and Species occur. Ensure cooperation and collaboration between counties, landowners, land managers, and other entities with invasive species policies and interests. Promote the use of native "local" stock for restoration and revegetation.

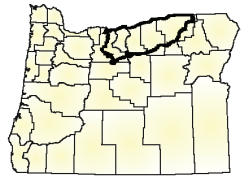
Deciding Where to Work

Conservation Opportunity Areas Map and Profiles

Landowners and land managers throughout Oregon can contribute to conserving fish and wildlife by maintaining, restoring, and improving habitats. Conservation actions to benefit Strategy Species and Habitats are important regardless of location. However, focusing investments in certain priority areas can increase likelihood of long-term success over larger landscapes, improve funding efficiency, and promote cooperative efforts across ownership boundaries. Conservation Opportunity Areas are landscapes where broad fish and wildlife conservation goals would be best met. Conservation Opportunity Areas were developed to guide voluntary, non-regulatory actions. This map and the associated data should only be used in ways consistent with these intentions. For more information on how Conservation Opportunity Areas were developed, see Appendix IV, "Methods" (beginning on page a:34).

The Conservation Opportunity Area profiles include information on recommended conservation actions, special features, key species, key habitats, and if the area has been identified as a priority by other planning efforts. These profiles highlight some priority actions to implement in individual COAs, which can range from restoration projects to monitoring for invasive species. These recommendations were identified through existing plans, spatial analysis, and expert review. They are not meant to be exhaustive, so other actions also will be appropriate, as influenced by local site characteristics and management goals. Actions need to be compatible with local priorities, local comprehensive plans and land use ordinances, as well as other local, state, or federal laws. Actions on federal lands must undergo federal planning processes prior to implementation to ensure consistency with existing plans and management objectives for the area.

Photo © Tupper Ansel Blake



Columbia Plateau Ecoregion Conservation Opportunity Areas

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data information sources to ascertain the usability of the information.

0 5 10 20 30
Miles

Conservation Opportunity Area Profiles

CP-01. The Dalles area

Special Features:

- *This area extends the Wasco Oaks Conservation Opportunity Area in the East Cascades ecoregion and shares many of the same features with that area.*

Key Habitats:

- Aquatic
- Grasslands
- Oak Woodlands

Key Species:

- Lewis' Woodpecker
- Coastal Cutthroat Trout
- Winter Steelhead

Identified in other planning efforts:

- Eastern Oregon Bird Conservation Plan
- Oregon Biodiversity Project Conservation Opportunity Areas
- The Nature Conservancy Ecoregional Assessment

CP-02. White River area

Special Features:

This portion of the White River is a designated Wild and Scenic river

Area includes ODFW's White River Wildlife Area

Many sensitive and unique plant species are endemic to this area.

Area contains a diverse mix of fir, pine, and oak forests

Key Habitats:

- Grasslands
- Riparian

Key Species:

- Lewis' Woodpecker
- Western Gray Squirrel

Identified in other planning efforts:

- Eastern Oregon Bird Conservation Plan
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Manage ODFW Wildlife Area to maintain and enhance priority habitats and species

CP-03. Lower Deschutes River

Special Features:

- *Encompasses the Lower Deschutes Wild and Scenic River corridor, designated for scenic and recreation values including its excellent steelhead and trout fisheries.*

Key Habitats:

- Aquatic
- Grasslands
- Riparian And Wetland
- Sagebrush Shrub-steppe

Key Species:

- Ferruginous Hawk
- Lewis' Woodpecker
- Bull Trout (Columbia River Population)
- Summer Steelhead
- Sagebrush Lizard

Recommended Conservation Actions:

- Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology
- Promote early detection and suppression of invasive weeds
- Restore and maintain complex, continuous sage habitat
- Restore and maintain riparian habitats

CP-04. Lawrence Grasslands

Located between Hwy 218 and Hwy 97 in the southwest corner of the ecoregion.

Special Features:

- *Area includes the Lawrence Memorial Grassland Preserve.*

Key Habitats:

- Grasslands

Key Species:

- Burrowing Owl
- Grassland Birds

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment

CP-05. Lower John Day River

Special Features:

- *Area encompasses the North Pole Ridge, Thirtymile, and Lower John Day Wilderness Study Areas.*

Key Habitats:

- Aquatic
- Grasslands
- Riparian And Wetland
- Sagebrush Shrub-steppe

Key Species:

- Burrowing Owl
- Ferruginous Hawk
- Grasshopper Sparrow
- Loggerhead Shrike
- Summer Steelhead
- Sagebrush Lizard

Identified in other planning efforts:

- Eastern Oregon Bird Conservation Plan (river corridor)
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology
- Promote early detection and suppression of invasive weeds
- Restore and maintain complex, continuous sage habitat
- Restore and maintain grassland habitat
- Restore and maintain riparian

CP-06. Boardman area

Special Features:

- *Area includes the Boardman Conservation Area, the Willow Creek Wildlife Area, the Lindsay Prairie Preserve, and the BLM's Horn Butte Area of Critical Environmental Concern.*
- *There are ongoing efforts by conservation groups to control noxious weeds in this area.*
- *The Nature Conservancy, Threemile Canyon Farms, ODFW, Water Watch, and Defenders of Wildlife are partnering to protect and restore the native habitats here.*
- *Threemile Canyon Farms has adopted a multi-species candidate conservation agreement covering 93,000-acre property.*
- *Some of the best remaining shrub steppe and grassland habitats in the ecoregion.*
- *This area represents the largest contiguous Washington ground squirrel habitat in Oregon.*
- *Some of the highest densities of breeding long-billed curlew in the world.*

Key Habitats:

- Grasslands
- Sageshrub Steppe

Key Species:

- Ferruginous Hawk
- Grassland Birds
- Loggerhead Shrike
- Long-billed Curlew
- Sage Sparrow
- Swainson's Hawk
- Washington Ground Squirrel
- Northern Sagebrush Lizard

Identified in other planning efforts:

- Eastern Oregon Bird Conservation Plan
- Oregon Biodiversity Project Conservation Opportunity Areas
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Control wildfires to protect native habitats from risk of conversion to cheatgrass
- Maintain and/or initiate shrub-steppe restoration and management
- Promote early detection and suppression of invasive weeds

CP-07. Lower Umatilla area

Special Features:

- *Includes the Cold Springs National Wildlife Refuge and Power City Wildlife Area*

Key Habitats:

- Aquatic
- Grasslands
- Riparian And Wetland
- Sagebrush Shrub-steppe

Key Species:

- Burrowing Owl
- Grassland Birds

- Sage Sparrow
- Margined Sculpin
- Redband Trout
- Summer Steelhead

Identified in other planning efforts:

- Eastern Oregon Bird Conservation Plan
- Oregon Biodiversity Project Conservation Opportunity Areas
- Oregon's Important Bird Areas (Cold Springs NWR)

Recommended Conservation Actions:

- Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology
- Maintain or restore riparian habitat and ecological function; ensure sufficient habitat complexity for wildlife
- Reestablish floodplain forests
- Restore and maintain complex, continuous sage habitat
- Restore wetlands and wet meadows

CP-08. Butter Creek grasslands

Special Features:

- *Area contains 9% of the ecoregion's grassland habitat.*

Key Habitats:

- Grasslands
- Riparian And Wetland

Key Species:

- Burrowing Owl
- Ferruginous Hawk
- Grasshopper Sparrow
- Loggerhead Shrike
- Pallid Bat

Recommended Conservation Actions:

- Maintain and enhance grassland habitats
- Promote early detection and suppression of invasive weeds
- Restore riparian habitats

Photo © Ellen Morris Bishop

CP-09. Walla Walla River

This area encompasses the Walla Walla River in the Columbia Plateau ecoregion, including the surrounding canyon areas near the North and South Forks.

Special Features:

- *The Walla Walla Basin Watershed Council and its partners are implementing a number of ongoing flow restoration projects to improve water quality and fish habitat in this highly impacted system.*

Key Habitats:

- Aquatic
- Grasslands
- Riparian And Wetland

Key Species:

- Bull Trout (Columbia River Population)
- Inland Columbia Basin Redband Trout
- Margined Sculpin
- Summer Steelhead

Recommended Conservation Actions:

- Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology
- Maintain or restore riparian habitat and ecological function; ensure sufficient habitat complexity for wildlife