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Coast Range Ecoregion

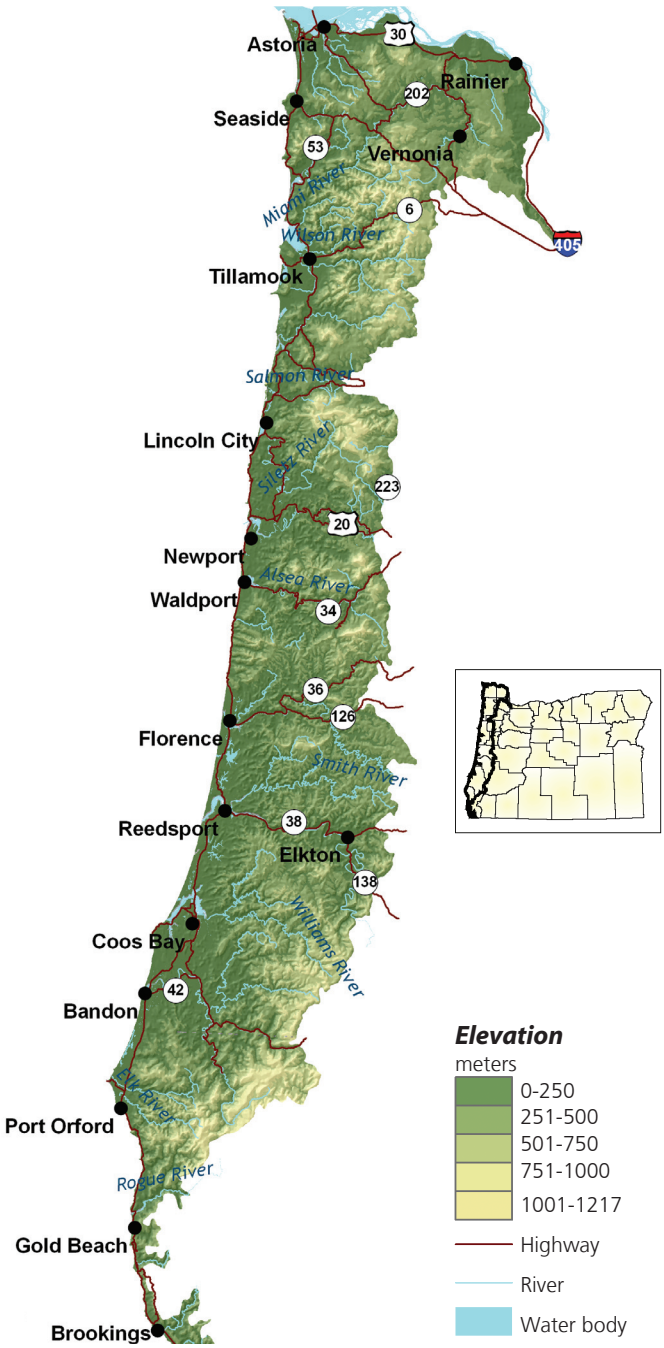
Getting to Know the Coast Range Ecoregion

Characteristics

Oregon's Coast Range is known for its dramatic scenery. It also is extremely diverse, with habitats ranging from open sandy dunes to lush forests and from tidepools to headwater streams. This section of the Conservation Strategy focuses on the Coast Range ecoregion, including the coastline and extending east through coastal forest to border the Willamette Valley and Klamath Mountains ecoregions. In a separate effort, ODFW will address conservation needs for nearshore marine species and habitats (see below).

In general, the topography is characterized by steep mountain slopes and sharp ridges. Elevation varies from the ocean shoreline to Mary's Peak, which is about 4,100 feet; however, main ridge summits are 1400 – 2500 feet. The Coast Range's climate is influenced by cool, moist air from the ocean and is the wettest and mildest in the state. The Coast Range's mild, moist climate creates conditions for highly productive temperate rainforests, which are important ecologically and for local economies. Most of the ecoregion is dominated by coniferous forests. Large forest fires are very infrequent, but are severe when they occur. For example, the Tillamook Burn, which is actually a series of wildfires that occurred from 1939 - 1951, burned approximately 350,000 acres. The Coast Range includes the highest density of streams found in the state, and deciduous riparian vegetation is distinct from surrounding coniferous forests. Along the coastal strip, habitats are influenced by the marine environment and include beaches, estuaries, and headlands.

Some towns in Oregon's Coast Range ecoregion include: Tillamook, Yachats, Astoria, Bandon, Cannon Beach, Elkton, Florence, Gold Beach, Lincoln City, Newport, and Waldport. The largest urban area on the coast is the Coos Bay/North Bend. Because of the bay and the Coos River, this area is a hub for fishing, shellfish, forest products and transportation. Forestry remains the primary industry in the interior portion



"At a Glance"- Characteristics and Statistics

Land use (% of ecoregion):

Agriculture	0.1%
Forest and woodland	90.7%
Other (lakes, wetlands, cliffs, etc.)	6.1%
Range, pasture, and grassland	2.6%
Towns and rural residential	0.3%
Urban and suburban	0.2%

Land ownership:

Private	60%
Public, federal	28%
Public, state and local	12%
Native American	<1%

Human population, government and transportation statistics:

Estimated population in 2000	245,000
% of Oregon's population in 2000	7.3%
Number of cities	38
Number of counties	13
(includes parts of Benton, Columbia, Coos, Curry, Douglas, Lane, Multnomah, Polk, Washington, Yamhill counties and all of Clatsop, Lincoln, Tillamook counties.)	
Number of watershed councils	40
(A watershed council is considered present if at least 10% of its area is located within the ecoregion.)	
Miles of road	39,500

Economics:

Important industries: timber, agriculture, commercial fishing, fish processing, tourism and recreation (including hunting and recreational fishing), retirement services

Major crops: dairy cattle

Important nature-based recreational areas: Coos Bay; Tillamook Bay; Oregon sand dunes; Siuslaw National Forest; Clatsop, Elliot, and Tillamook State Forests; Mary's Peak; numerous state parks and waysides

Ecology:

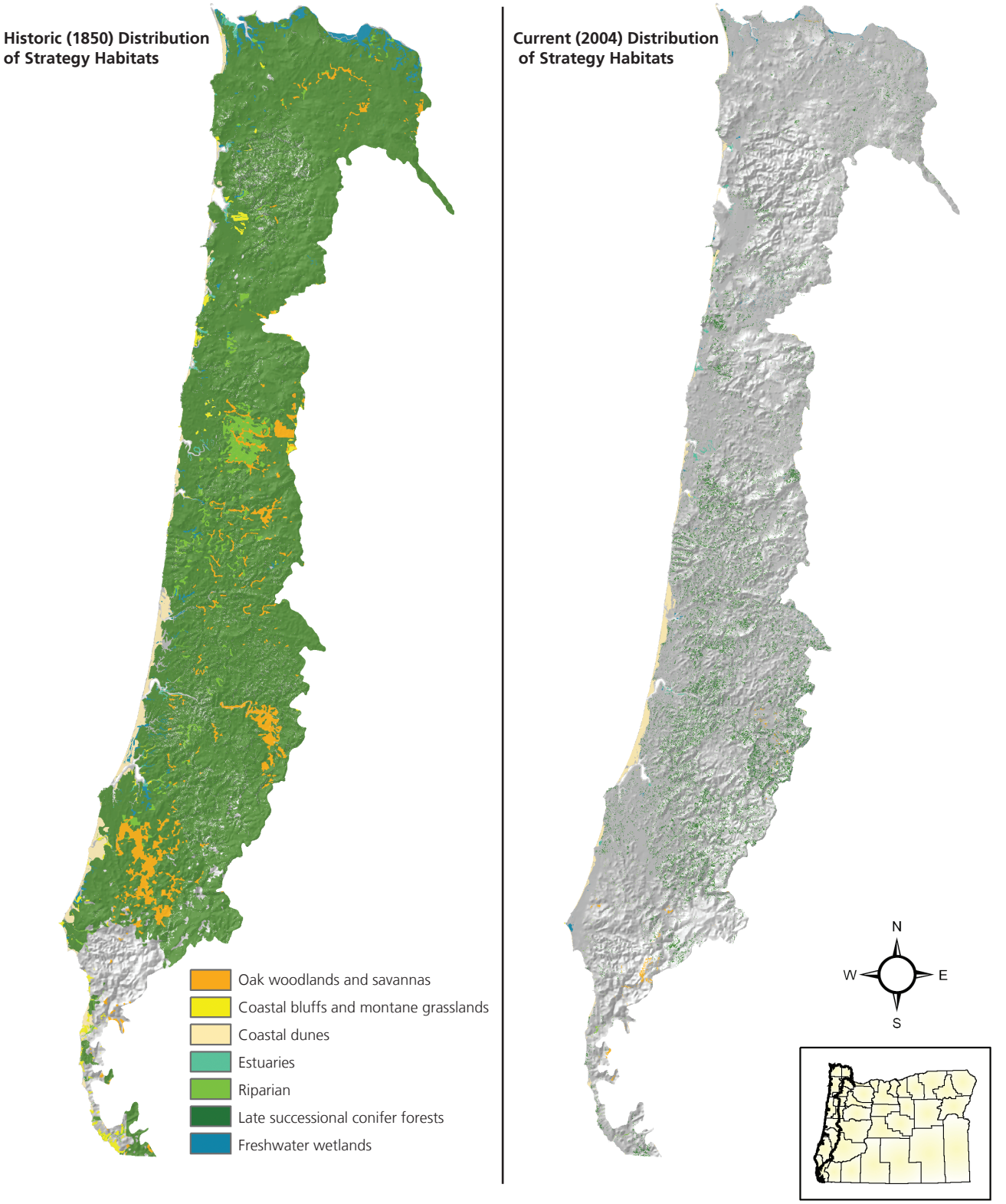
Average annual precipitation	60" – 98" (snowfall <1" - 2")
Average July high temperature (1971-2000)	85ºF – 102ºF
Average January low temperature (1971-2000)	11ºF – 25ºF
Elevation	from zero to 4,100 feet
Number of regularly occurring vertebrate wildlife species	378
Important rivers	Alsea, Chetco, Coos, Coquille, Illinois, Lewis and Clark, Necanicum, Nehalem, Nestucca, Rogue, Siletz, Siuslaw, Trask, Umpqua, Yaquina, Youngs

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 Coast Range ecoregion include: coastal dunes, estuaries, grasslands (including coastal bluffs and montane grasslands, late successional forests, oak woodlands, riparian, wetlands, and freshwater aquatic habitats.

Change in Strategy Habitats



Data Source: Oregon Natural Heritage Information Center, 2004.

Summary List of Strategy Species

Mammals

- American marten
- California myotis (bat)
- Columbian white-tailed deer (Columbia River Distinct Population Segment)
- Fringed myotis (bat)
- Hoary bat
- Long-legged myotis (bat)
- Red tree vole
- Silver-haired bat
- Townsend's big-eared bat

Amphibians and reptiles

- Clouded salamander
- Coastal tailed frog
- Columbia torrent salamander
- Cope's giant salamander
- Foothill yellow-legged frog
- Southern torrent salamander
- Western toad
- Northwestern pond turtle

Birds

- Aleutian Canada goose (Semidi Island population only; note: AOU name is Aleutian cackling goose)
- American bald eagle
- American peregrine falcon
- Band-tailed pigeon
- Black brant
- Black oystercatcher
- California brown pelican
- Caspian tern
- Fork-tailed storm-petrel
- Leach's storm-petrel
- Marbled murrelet
- Northern spotted owl
- Olive-sided flycatcher
- Rock sandpiper
- Tufted puffin
- Western snowy plover

Plants

- Cascade Head catchfly
- Coast Range fawn-lily
- Nelson's checker-mallow
- Pink sand-verbena
- Saltmarsh bird's-beak
- Silvery phacelia
- Western lily
- Wolf's evening-primrose

Invertebrates

- Haddock's rhyacophilan caddisfly
- Hoary elfin (butterfly)
- Insular blue butterfly (greenish blue)
- Newcomb's littorine snail (Newcomb's periwinkle)
- Oregon silverspot butterfly
- Roth's blind ground beetle
- *Terrestrial mollusks:*
  - Sister's Hesperian
  - Salamander slug
  - Tillamook westernslug
  - Green sideband
  - Spotted taildropper
  - Pacific walker
- *Aquatic snails:*
  - Robust walker

Fish

- Chinook salmon (Lower Columbia River ESU, spring run)
- Chinook salmon (Lower Columbia River ESU, fall run)
- Chinook salmon (Snake River ESU, spring/summer run)
- Chinook salmon (Snake River ESU, fall run)
- Chinook salmon (Southern Oregon/ Northern California Coast ESU, fall run)
- Chinook salmon (Upper Willamette River ESU, spring run)

Fish Cont.

- Chum salmon (Pacific Coast ESU)
- Coastal cutthroat trout (Oregon Coast ESU)
- Coastal cutthroat trout (Southern Oregon/California Coasts ESU)
- Coastal cutthroat trout (Southwest Washington/ Columbia River ESU)
- Coastal cutthroat trout (Upper Willamette River ESU)
- Coho salmon (Lower Columbia/South-west Washington Coast ESU)
- Coho salmon (Oregon Coast ESU)
- Coho salmon (Southern Oregon/Northern California Coasts ESU)
- Green sturgeon
- Millicoma dace
- Pacific lamprey
- Steelhead (Klamath Mountains Province ESU, summer run)
- Steelhead (Klamath Mountains Province ESU, winter run)
- Steelhead (Lower Columbia River ESU, summer run)
- Steelhead (Lower Columbia River ESU, winter run)
- Steelhead (Middle Columbia River ESU, summer run)
- Steelhead (Middle Columbia River ESU, winter run)
- Steelhead (Oregon Coast ESU, summer run)
- Steelhead (Oregon Coast ESU, winter run)
- Steelhead (Snake River Basin ESU)
- Steelhead (Southwest Washington ESU, winter run)
- Steelhead (Upper Willamette, winter ESU)
- Umpqua chub
- Western brook lamprey

opportunities, and tourism is important to local communities. Fishing, both commercial and recreational, and fish processing are significant components of the economy. People are increasingly moving to the coast to retire, so retirement services are growing in importance to coastal communities.

Conservation Issues and Actions

Overview

Demand for waterfront property is increasing, along with numbers of people recreating, relocating and retiring along the coast. Careful resource planning helps to balance these increasing demands with maintaining coastal fish, wildlife and habitats. Coordinated, broad-scale planning is especially important given the diversity of the Coast Range ecoregion, and several efforts are briefly summarized in Appendix II. For example, the Northwest Forest Plan covers much of the region's forests. (See Northwest Forest Plan description in Appendix II a:13). However, the adaptive management component of the Northwest Forest Plan has not been fully implemented. Although many plans currently exist, there is a continuing need to consider the unique needs of transitional zones such as estuaries, and to integrate marine and inland conservation planning.

Much of the ecoregion is publicly owned and managed to balance recreation, tourism and conservation. However, ownership in the northern part of the ecoregion is particularly fragmented. Moreover, steep and variable terrain has resulted in many towns located near estuaries, increasing the demands on these systems. Restoration of watershed processes and functions and restoration of habitat complexity (i.e., woody debris) to stream and riparian areas, are major concerns throughout the entire Coast Range ecoregion. Restoring connected flows to headwater streams maintains ecological connections important for many species.

Oregon Department of Fish and Wildlife's Marine Resources Program is preparing the Oregon Nearshore Strategy to provide a comprehensive, sustainable approach to marine species and habitat management. The Oregon Nearshore Strategy will address fully marine species, including saltwater fish, shellfish, and marine mammals, and their habitats. This Coast Range Ecoregion section addresses anadromous fish, estuaries, and terrestrial habitats such as sand dunes. This chapter also addresses seabird species that nest and/or roost on Oregon coastal terrestrial habitats.

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, land use changes and invasive species are described further in this section, considering the Coast Range's ecoregional characteristics. In addition to the statewide issues, oil spills, loss of estuarine habitats, and recreational use are of particular concern in this ecoregion.

Factor: Land use conversion and urbanization. Some areas of the Coast Range are developing rapidly, especially along the coastline. Steep slopes limit the amount of land available for development and concentrates it in sensitive areas such as near rivers and estuaries. Residential development contributes to habitat loss, and can threaten traditional land uses such as agriculture and commercial forestlands.

Approach: Work with community leaders and agency partners to encourage planned, efficient growth. Support existing land use regulations to preserve farmland and forestland, open spaces, recreation areas, wildlife refuges, and natural habitats.

Factor: Oil spills. Oil spills along the coast can have devastating effects on coastal habitat, fish and wildlife. Tidal flux can spread oil or other hazardous materials around sensitive habitat very quickly, so rapid response is essential. Additionally, spills of hazardous materials or oil from vehicles traveling on roads along the coast could potentially impact nearby rivers and aquatic species.

Approach: Ensure rapid response and preparedness for spills of hazardous substances. Oregon Department of Environmental Quality's Marine Oil Spill Prevention Program, and the Pacific States/British Columbia Oil Spill Task Force, work with multiple parties and interested partners to address these concerns and quickly identify appropriate actions.

Factor: Alterations to estuarine and wetland habitats. Coastal rivers, wetlands and estuaries were altered long ago when side channels were diked, marshes drained, and channels deepened. These changes impacted fish and wildlife dependent on estuarine habitats.

Approach: Where possible, remove dikes and tide gates to restore estuarine habitats. Where tide gates need to be retained, replace older gates with new innovations such as side-hinged and aluminum gates that improve fish passage and hydrologic functions.

Factor: Increasing recreational use. Recreation contributes positively to the Coast Range's economy and local communities and is managed carefully in many areas. However, increasing numbers of recreationalists can impact sensitive areas such as shorebird nesting areas and tidepool habitats. There are concerns with off-leash dogs and uncontrolled off-highway use in some areas.

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 native fish and wildlife and their habitats. This section identifies the species with the greatest current and potential impact in the Coast Range. 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

- Asian clam
- Bluegill
- Brook trout
- Brown bullhead
- Bullfrog
- Carp
- Channel catfish
- Crappie
- Eastern snapping turtle
- European green crab
- European starling
- Fathead minnow
- Feral pig
- Goldfish
- Grass carp
- Green crab
- Griffen's isopod
- House sparrow
- Japanese mitten crab
- Largemouth bass
- Mosquito fish (*Gambusia*)
- New Zealand mudsnail
- Norway rat
- Nutria
- Smallmouth bass
- Striped Bass
- Virginia opossum
- Wiper
- Yellow perch
- Virginia opossum
- Walleye
- Yellow perch

Documented Invasive Plants

- American beach grass
- Armenian (Himalayan) blackberry
- Black locust
- Bull thistle
- Butterfly bush
- Canada thistle
- Carolina fanwort (aquatic)
- Common (or salt meadow) Cordgrass
- Common reed (aquatic)
- Curly leaf pondweed (aquatic)
- Elodea (Brazilian waterweed) (aquatic)
- English holly
- English ivy
- Eurasian milfoil (aquatic)
- European beachgrass
- Fragrant water lily (aquatic)
- False brome
- Foxglove
- German ivy (Cape ivy)
- Gorse
- Japanese eelgrass (aquatic)
- Knotweeds (Japanese, giant)
- Leafy spurge
- Matgrass
- Meadow hawkweed
- Pampas grass
- Parrot's feather (aquatic)
- Portuguese broom
- Purple loosestrife
- Reed canarygrass
- St. John's wort
- Scotch broom
- Silver wattle
- Spotted knapweed
- Tansy ragwort
- 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 fish and 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)
- Banded killfish
- Black carp
- Fishhook waterflea
- Chinese mitten crab
- Japanese oyster drill
- Leidy's comb jelly
- Muskellunge, northern pike
- Quagga mussel
- Rainwater killfish
- Round goby
- Ruffe
- Rusty crayfish
- Sea squirt
- Shimofuri goby
- Snakeheads
- Spiny waterflea
- Threadfin shad
- Veined rapa whelk
- Zebra mussel

Potentially Invasive Non-native Plants

- Caulerpa seaweed (aquatic)
- Coltsfoot (*Tussilago*)
- Cordgrasses (smooth, English, dense-flowered)
- Dead man's fingers (aquatic)
- Dotted duckweed (aquatic)
- European water chestnut (aquatic)
- Giant hogweed
- Giant salvia (aquatic)
- Hydrilla (aquatic)
- Marsh deflower (aquatic)
- Narrow leaf cattail (aquatic)
- Orange hawkweed
- Pondwater starwort (aquatic)
- Purple nutsedge
- Rush skeletonweed
- Saltmeadow rush (aquatic)
- Salt sandspurry (aquatic)
- Saragassum algae (aquatic)
- Scotch thistle
- Squarrose knapweed
- Sulfur cinquefoil
- Tall oatgrass
- Uruguay seedbox (aquatic)
- Watermint (aquatic)
- Water bentgrass (aquatic)
- Water primrose (aquatic)
- Yellow floating heart (aquatic)

Approach: Work with local communities to plan recreational use and to increase education and outreach for recreationalists and associated businesses. Where needed, direct activities to particular seasons or away from sensitive areas.

Factor: Invasive species. Non-native plant and animal invasions disrupt native communities, diminish populations of at-risk native species, and threaten the economic productivity of resource lands.

Approach: Emphasize prevention, risk assessment, early detection and quick control to prevent new invasives from becoming fully established. Prioritize management and control efforts to focus on key invasive species in high priority areas, particularly where Strategy Habitats and Species occur. Where needed, use multiple site-appropriate tools (mechanical, chemical and biological) to control the most damaging non-native species. Work with partners to implement measures to prevent unintentional introduction of non-native species (e.g., implement existing ballast water treatment regulations). Provide information to the public about the ecologic and economic damage that invasives cause.

Conservation Success Story: Organic Dairy Farm Cultivates Conservation

Doug and Sharon Sinko believe they have a responsibility to steward the land that supports their livelihood and lifestyle. This philosophy is amply visible on the Sinkos' 360 acre organic dairy farm in Myrtle Point, Oregon.

After Doug bought the land from his father in the 1970s, he and Sharon put their heart and soul into Myrtle Crest farm. They also initiated what would be a multi-year effort to restore severely degraded habitat along the Coquille River, which meanders through their property. Long before the Sinkos arrived on the scene, the Coquille's banks were rendered unstable following the conversion of surrounding wetlands to pastureland by early farmers. This practice altered the hydrology of the floodplain, contributing to serious bank erosion when the river flooded its banks.

Overcoming initial procedural hurdles to stabilize the bank, the Sinkos have successfully restored 200 acres of wetlands along stretches of the river, which now runs deeper and cooler and supports healthy populations of salmon. With technical assistance from two local organizations – the South Coast Land Conservancy and Ducks Unlimited – the Sinkos voluntarily enrolled their wetlands in the federally administered Wetlands Reserve Program. In return, the Sinkos were compensated for the appraised value of the enrolled land.

The Sinkos' commitment to stewardship also is evident in the way they farm their land. In the early 1990s, Myrtle Crest was the first farm in the Pacific Northwest to be recognized and certified as organic. Today, they are part of Organic Valley Family of Farms, one of the nation's leading organic brands and a cooperative of 689 organic dairy, meat, egg and produce farmers operating in 20 states, including 14 member farms in Oregon. Fueled by growing consumer demand, organic crop, meat and dairy production is one of the fastest growing agricultural sectors in the country. In Oregon alone, the number of organic acres certified by Oregon Tilth, a leading third-party certifier of organic farms, has risen by 39 percent since 2000.

Farms like Myrtle Crest are certified organic because they voluntarily implement "best agricultural practices" approved by the U.S. Department of Agriculture. These practices, or National Organic Program (NOP) Standards, disallow the use of chemical pesticides and fertilizers and genetically modified seed or crops on farms certified as organic. In addition, organic farms must maximize soil quality and minimize soil erosion by practicing low-impact tillage or planting cover crops. USDA authorizes third party organizations like Oregon Tilth to issue certificates and carry out annual audits of organic operations.

The Sinkos have cultivated a path to stewardship by demonstrating a sincere and sustained interest in habitat restoration and natural resource conservation. The stewardship they exhibit also is reflected in their farming practices and rewarded by consumers who pay a premium for organic dairy products.

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).

Conservation actions in the Coast Range Ecoregion 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
Maintain existing late successional habitat and initiate actions to develop or restore late successional forest where appropriate	Coast Range forest	Oregon-Washington Partners in Flight Westside Coniferous Forests Conservation Strategy (Altman 2000) [recommended target: more than 15% of large landscapes in late successional forests]
Maintain connectivity, structural complexity and heterogeneity of landscapes	Coast Range; directed at priority sites based upon species surveys	Northwest Forest Plan (1994; continual updates) [recommended target: Specific recommendations for reserves and other features in light of species surveys]
Consider the impact of recreational activities (e.g., motorized watercraft; shoreline activities; road usage) on water quality and watershed function	All locations (as appropriate)	State of the Environment Report; Oregon Plan (OWEB) Total Maximum Daily Load Planning (ODEQ)
Focus conservation attention on critical aquatic habitats identified (i.e., work in Tillamook State Forest on Salmon Anchor Habitats –Talabere and Jones, ODFW)	Within the Tillamook forest, Nehalem; Kilchis; Wilson and Trask Rivers have been identified as Salmon Anchor Habitats	See: NOAA and NMFS biologists; ODFW; watershed councils; OWEB for further information.
Improve fish passage. For example, modify barriers or use spans where appropriate.	All locations (as appropriate)	Columbia Estuary subbasin plan; State of the Environment Report; ODFW Fish Passage team; Oregon Biodiversity Project; Oregon Plan (OWEB)
Work with forest managers to meet large wood loading benchmarks, reduce sediment, maintain water quality and continue to provide functional riparian habitat	All locations (as appropriate)	Columbia Estuary subbasin plan; Oregon Plan (OWEB); Senate Bill 1010 Plans (ODA); Total Maximum Daily Load Planning (ODEQ)
Work with agricultural landowners to maintain water quality	All locations on agricultural lands (as appropriate)	Senate Bill 1010 Plans (ODA) and Total Maximum Daily Load Planning (ODEQ)
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).*

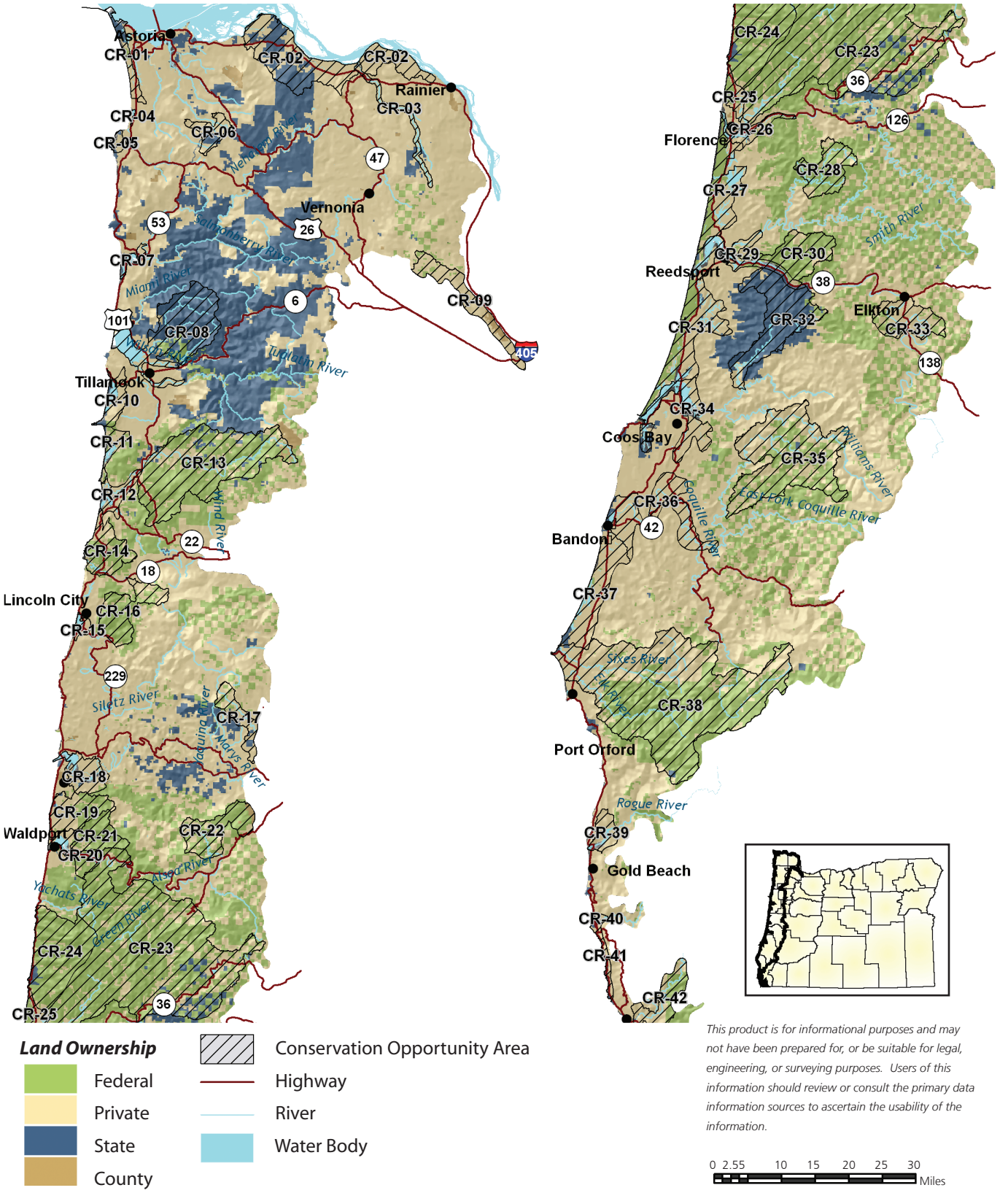
The Conservation Opportunity Area profiles include information on recommended conservation actions, special features, key species, key habitats, and if the area has been identified as a priority by other planning efforts. These profiles highlight some priority actions to implement in individual COAs, 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.

Oregon Beach Clean-up

Oregon has often been at the forefront of innovative approaches to conservation, with first-in-the-nation efforts such as the Oregon Bottle Bill, land use planning, Oregon Plan for Salmon and Watersheds, and the Great Oregon Beach Cleanups. The first beach cleanup was held in 1984 in response to concerns about the effects of beach litter on the environment and local economies. In addition to being unappealing to humans, litter can be dangerous to wildlife. Birds and marine mammals sometime mistake plastic bags, balloons and other trash for food. Or they can become tangled in discarded rope or fishing nets. Also, some garbage contains oil, creosote, or other pollutants. Each year, a spring and fall clean-up is organized by SOLV, a statewide non-profit organization that promotes community building through volunteerism. In 2004, more than 4,800 volunteers removed 39.6 tons of trash during the spring cleanup and 2,700 volunteers removed 21 tons during the Fall. The clean-ups are made possible by a partnership between SOLV, Oregon Parks and Recreation Department, local garbage haulers, business sponsors, and thousands of volunteers. For more information, visit SOLV's website, http://www.solv.org/.

Photos © (top) Rod Klein, SOLV; (bottom-left) Rod Klein, SOLV; (bottom-right) SOLV, USFS

Coast Range 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.

Conservation Opportunity Area Profiles

CR-01. Clatsop Plains

Special Features:

- *Area contains Gearhart Fen, the largest contiguous wetland of its kind remaining on the Oregon coast. The bog features several rare plant communities.*
- *The Clatsop beaches provide a concentration point for shorebirds (mostly sanderlings) and gulls.*

Key Habitats:

- Coastal Dunes
- Freshwater Wetlands

Key Species:

- Caspian Tern
- Shorebirds

Identified in other planning efforts:

- Oregon's Important Bird Areas (Clatsop beaches)
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Maintain existing habitat values
- Manage public use to minimize disturbance for shorebirds
- Plan development to maintain key ecological functions and habitats

CR-02. Columbia-Clatskanie area

Special Features:

- *Area encompasses the Julia B. Hanson Refuge for the Columbian white-tailed deer*
- *Area extends to the Blind Slough Swamp Preserve, the best example of a Sitka spruce swamp remaining in Oregon*
- *There are ongoing restoration efforts to eradicate invasive plant species in the Blind Slough Swamp Preserve*
- *Ducks Unlimited has been working with a private landowner to restore large blocks of wetlands on a former cottonwood plantation.*
- *Area is heavily used by migrating and wintering waterfowl.*
- *Area includes critical habitat for Columbian white-tailed deer.*

Key Habitats:

- Freshwater Wetlands
- Oak Woodlands And Savannas
- Riparian

Key Species:

- Olive-sided Flycatcher
- Coho Salmon
- Fall Chinook Salmon
- Winter Steelhead
- Columbian White-tailed Deer

Identified in other planning efforts:

- Joint Venture Plan
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Restore floodplain wetlands, tidal wetlands, and bottomland forests

CR-03. Clatskanie River

Special Features:

- *In 2000, OWEB provided funding for the Lower Columbia River Watershed Council and partners to reconnect the Westport Slough to the Clatskanie River, restoring waterflow and fish passage.*
- *The Lower Columbia River Watershed Council is working with private landowners to reduce water temperatures through streamside planting.*

Key Habitats:

- Aquatic
- Freshwater Wetlands
- Riparian

Key Species:

- Chum Salmon
- Coastal Cutthroat Trout
- Coho Salmon
- Fall Chinook Salmon
- Winter Steelhead
- Columbian White-tailed Deer

CR-04. Necanicum Estuary

Special Features:

- *Necanicum estuary is designated as a Conservation estuary*
- *The city of Seaside and the North Coast Land Conservancy have acquired a network of tidal wetlands along Neawanna Creek estuary that are designated as a natural history park.*
- *The North Coast Land Conservancy purchased (2004) the 365-acre Circle Creek Preserve along Necanicum River that includes one of largest blocks of spruce swamp on the Oregon coast*

Key Habitats:

- Estuary
- Riparian

Key Species:

- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment (Necanicum River)
- Recommended Conservation Actions:
- Restore riparian habitats along Necanicum River

CR-05. Tillamook Head

Special Features:

- *Area contains Ecola State Park.*
- *Offshore rocks provide important nesting habitat for seabirds.*

Key Habitats:

- Coastal Dunes
- Late Successional Conifer Forests

Key Species:

- Tufted Puffin

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment (Clatsop Plains-Necanicum River site)

CR-06. Saddle Mountain

Special Features:

- *Contains Saddle Mountain State Natural Area, the only significant block of old-growth forest in Clatsop County*
- *Rare sensitive plants*

Key Habitats:

- Aquatic
- Late Successional Conifer Forests

Key Species:

- Peregrine Falcon
- Identified in other planning efforts:
- American Fisheries Society Aquatic Diversity Areas (Lewis and Clarke River portion)
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Maintain existing habitat values

CR-07. Nehalem River Estuary

Special Features:

- *Lower Nehalem Community Trust is acquiring former dairy along lower Alder Creek for habitat restoration and public use.*
- *Nehalem Meadows area has long been considered a hot spot for diversity of migratory birds.*
- *Nehalem Bay State Park protects undeveloped north spit.*
- *Area contains a mineral site used by band-tailed pigeons.*

Key Habitats:

- Estuary
- Freshwater Wetlands

Key Species:

- Band-tailed Pigeon
- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Restore tidal and freshwater wetlands, riparian habitats along lower Alder Creek

CR-08. Tillamook Bay and tributaries

Special Features:

- *Tillamook County has acquired about 400 acres of diked former tidelands in the river delta area at south end of the bay through collaborative effort with Tillamook Estuary Partnership, USFWS, OWEB, Trust for Public Land, and ODFW.*
- *Tillamook Pioneer Museum acquired key 150-acre property at Kilchis Point with extensive tidal marshes, forested wetlands, undeveloped shoreline*
- *Opportunities to link lowland conservation efforts with upland forest management*

- *Important migration stopover for shorebirds and waterfowl*
- *Heavy use by wintering waterfowl, including brant.*
- *Undeveloped Bayocean Spit could provide habitat for western snowy plover.*
- *Large remnant spruce swamp habitats on Hoquarton and Squeedunk sloughs*
- *Tillamook Bay supports an important mineral site for band-tailed pigeons.*

Key Habitats:

- Estuary
- Freshwater Wetlands
- Riparian

Key Species:

- Peregrine Falcon
- Shorebirds
- Waterfowl
- Chum Salmon
- Coastal Cutthroat Trout
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas (N. Fork Wilson River)
- Joint Venture Plan
- Oregon Biodiversity Project Conservation Opportunity Areas
- Oregon's Important Bird Areas (Tillamook Bay)
- Salmon Anchor Habitat Strategy
- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

Recommended Conservation Actions:

- Improve water quality
- 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
- Maintain undeveloped character of Bayocean Spit
- Reconnect cutoff sloughs in lowlands around bay
- Restore tidal wetlands in river delta at south end of Tillamook Bay

CR-09. Portland's Forest Park

Special Features:

- *Area includes Forest Park, the largest forested urban park in the United States.*
- *There have been ongoing habitat protection and restoration, acquisition, and education projects by Friends of Forest Park. [www.friendsofforestpark.org]*
- *Area provides an important wildlife corridor between the Coast Range and Willamette Valley ecoregions.*

Key Habitats:

- Aquatic
- Late Successional Conifer Forests
- Riparian

Key Species:

- Olive-sided Flycatcher
- Cutthroat Trout

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment

CR-10. Netarts Bay

Special Features:

- *Wintering site for significant populations of brant*
- *Designated Conservation estuary*
- *Cape Lookout State Park protects the undeveloped south spit*

Key Habitats:

- Estuary

Key Species:

- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Manage public use to minimize disturbance of wintering brant

CR-11. Sand Lake area

Special Features:

- *Marine-dominated estuary with little freshwater inflows is one of Oregon's least developed estuaries*
- *State Parks purchased Whalen Island, a large, undeveloped island with extensive high quality tidal marshes, in 2000.*
- *Designated Natural Estuary*
- *Area contains some of the most extensive dunes on the northern coast.*

Key Habitats:

- Coastal Dunes
- Freshwater Wetlands

Key Species:

- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon Biodiversity Project Conservation Opportunity Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Control key invasive species (European beachgrass)
- Plan development to maintain key ecological functions and habitats
- Restore and maintain tidal marshes and freshwater wetlands on southern spit (Beltz Marsh)

CR-12. Nestucca Bay

Special Features:

- *Nestucca Bay National Wildlife Refuge protects a major wintering area for the bulk of the Semidi Island population of the Aleutian and Dusky Canada Goose and includes extensive tidal marshes.*
- *There are ongoing projects by USFWS and Ducks Unlimited to acquire land on the Little Nestucca River to increase goose and tidal marsh habitat*
- *Neskowin Marsh Unit of the Nestucca Bay NWR protects a large freshwater coastal wetland that includes bogs and other rare plant communities.*
- *Designated Conservation Estuary*

Key Habitats:

- Estuary
- Freshwater Wetlands
- Riparian
- Key Species:
- Aleutian Canada Goose
- Dusky Canada Goose
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

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

Recommended Conservation Actions:

- Improve water quality
- Maintain short-grass pastures to benefit wintering goose populations
- Restore tidal wetlands

CR-13. Nestucca River Watershed

Special Features:

- *Identified by Oregon Plan and American Fisheries Society as an extremely important area for native salmonids*
- *Much of this area designated by Siuslaw National Forest as an Adaptive Management Area, focusing on conservation values*

Key Habitats:

- Freshwater Wetlands
- Late Successional Conifer Forests
- Riparian

Key Species:

- Harlequin Duck
- Marbled Murrelet
- Northern Spotted Owl
- Coho Salmon
- Winter Steelhead
- American Marten

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Oregon Biodiversity Project Conservation Opportunity Areas

- Siuslaw National Forest High Priority Restoration Areas
- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

Recommended Conservation Actions:

- Improve water quality
- 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
- Manage federal lands to enhance development of late successional forests

CR-14. Salmon River Estuary and Cascade Head

Special Features:

- Recent restoration work by USFS on recent acquisitions on the Salmon River Estuary
- USFS restoration work at Cascade Head Scenic Research Area
- Designated Natural estuary
- Rare plants; native prairie grasses
- Ongoing restoration efforts by the Nature Conservancy
- *Camp Westwind owned by YWCA on south side of Salmon River has effectively protected natural values on 600 acres.*
- *Area is a Western Sandpiper migration stopover.*

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Estuary

Key Species:

- Peregrine Falcon
- Tufted Puffin
- Western Sandpiper
- Chum Salmon
- Coho Salmon
- Winter Steelhead
- Oregon Silverspot Butterfly

Recommended Conservation Actions:

- Enhance meadows to benefit Oregon silverspot butterfly
- Maintain grasslands on Cascade Head to maintain native prairie community
- Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology
- Maintain or restore riparian habitat and ecological function
- Maintain undeveloped character of Camp Westwind property
- Manage public access to Cascade Head, Hart Cove to minimize impacts of human disturbance

CR-15. Siletz Bay

Special Features:

- *Many acquisition and restoration projects; partners include USFWS, Ducks Unlimited; Confederated Tribes of the Siletz Indians, US Forest Service*
- *Bay and tidelands are used extensively by shorebirds and waterfowl, and support significant salmonid populations [Oregon Habitat Joint Venture].*
- *Area includes Siletz Bay National Wildlife Refuge*
- *Designated Conservation estuary*

Key Habitats:

- Estuary
- Freshwater Wetlands
- Riparian

Key Species:

- California Brown Pelican
- Caspian Tern
- Chum Salmon
- Coastal Cutthroat Trout
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment
- Recommended Conservation Actions:
- Plan development to maintain key ecological functions and habitats
- Restore tidal wetlands along Drift Creek

CR-16. Drift Creek (Siletz)

Special Features:

- *Ongoing restoration by USFS to thin forests*

Key Habitats:

- Aquatic
- Late Successional Conifer Forests

Key Species:

- Marbled Murrelet

- Northern Spotted Owl
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Siuslaw National Forest High Priority Restoration Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Manage public lands to enhance development of late-successional forests

CR-17. Luckiamute River

Key Habitats:

- Aquatic
- Riparian

Key Species:

- Riparian Birds
- Winter Steelhead

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment

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

CR-18. Yaquina Bay

Special Features:

- *Restoration work currently underway to restore tidal wetlands in the estuary; partners include The Wetlands Conservancy, the Central Coast Land Conservancy, OWEB, Pacific States Marine Fisheries Commission, the Midcoast Watersheds Council, USFWS*
- *Important migration stopover for shorebirds and waterfowl, including wintering brant.*

Key Habitats:

- Estuary

Key Species:

- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Limit disturbance of wintering brant
- Maintain and restore tidal wetlands

CR-19. Beaver Creek

Special Features:

- *Area includes a small estuary within Ona Beach State Park.*
- *Provides important habitat for wintering and migrating waterfowl and supports native stocks of chinook and coho salmon, steelhead and sea-run cutthroat trout. [Oregon Habitat Joint Venture]*
- *Most of Beaver Marsh was purchased by the Wetlands Conservancy*
- *Restoration work being done by The Wetlands Conservancy, USFWS, Friends of Beaver Creek Marsh, and the US Forest Service*

Key Habitats:

- Coastal Dunes
- Freshwater Wetlands
- Late Successional Conifer Forests
- Riparian

Key Species:

- Waterfowl
- Coastal Cutthroat Trout
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Joint Venture Plan
- The Nature Conservancy Ecoregional Assessment
- Recommended Conservation Actions:
- Maintain and restore freshwater wetlands along lower Beaver Creek

CR-20. Alsea River Estuary

Special Features:

- *Concentration site for shorebirds and waterfowl including Caspian terns and brown pelicans*
- *Restoration work being done on Lint Slough (south end of estuary) by partnership between Ducks Unlimited, Midcoast Watersheds Council, OWEB, ODFW, USFWS*
- *MidCoast Watershed Councils and Wetlands Conservancy are developing strategies to implement recommendations of estuarine habitat prioritization funded by OWEB.*

Key Habitats:

- Estuary

Key Species:

- California Brown Pelican
- Caspian Tern
- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Restore tidal wetlands

CR-21. Drift Creek (Alsea) area

Special Features:

- *Includes Drift Creek wilderness*

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Late Successional Conifer Forests
- Riparian

Key Species:

- Bald Eagle
- Northern Spotted Owl
- Chinook Salmon
- Coastal Cutthroat Trout
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Siuslaw National Forest High Priority Restoration Areas
- The Nature Conservancy Ecoregional Assessment

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
- Restore coastal prairie

CR-22. Mary's Peak area

Special Features:

- *Highest point in Oregon's coast range*
- *Important plant diversity area; over 200 flowering plants have been identified on the summit [Native Plant Society]*

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Late Successional Conifer Forests

Key Species:

- Northern Goshawk
- Northern Spotted Owl
- Coho Salmon

Recommended Conservation Actions:

- Maintain and enhance meadows, late-successional forests

CR-23. Siuslaw River Area

Special Features:

- *Significant for aquatic resources*
- *One of the highest concentrations of core salmon areas in the state*
- *Many American Fisheries Society Aquatic Diversity Areas*

Key Habitats:

- Late Successional Conifer Forests
- Riparian

Key Species:

- Marbled Murrelet
- Northern Spotted Owl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Oregon Biodiversity Project Conservation Opportunity Areas
- Siuslaw National Forest High Priority Restoration Areas
- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

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
- Manage young forests on public lands to accelerate development of late-successional characteristics

CR-24. Heceta Head

Special Features:

- *Offshore rocks and headlands provide nesting sites for seabirds.*
- *Area encompasses the Cummins Creek Wilderness, a remnant of the giant spruce/hemlock rainforests, and Rock Creek Wilderness. Both have no roads or trails.*

Key Habitats:

- Aquatic
- Late Successional Conifer Forests
- Riparian

Key Species:

- Marbled Murrelet
- Northern Spotted Owl
- Tufted Puffin
- Coastal Cutthroat Trout
- Coho Salmon
- Winter Steelhead
- Oregon Silverspot Butterfly

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Oregon Biodiversity Project Conservation Opportunity Areas (Alsea-Siuslaw conservation opportunity area)
- The Nature Conservancy Ecoregional Assessment (Cummins-Rock Creek)

CR-25. Sutton Lake area

Key Habitats:

- Coastal Dunes
- Estuary
- Freshwater Wetlands

Key Species:

- Black Oystercatcher
- Western Snowy Plover
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Remove European beach grass in targeted areas to enhance habitat for western snowy plover

CR-26. Siuslaw River Estuary

Special Features:

- *Western Sandpiper migration stopover*
- *Includes Nature Conservancy's Cox Island Preserve, large Wetlands Reserve Program easement with restored tidal marshes on Duncan Island, US Forest Service wetland, stream and riparian restoration project at Karnowsky Creek.*
- *Good potential for additional large-scale restoration of tidal marshes.*
- *Key habitat for high-productivity salmon populations*

Key Species:

- Shorebirds
- Waterfowl
- Chum Salmon
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment
- Recommended Conservation Actions:
- Monitor and control or eliminate spartina at Cox Island
- Restore tidal marshes

CR-27. Siltcoos/Tahkenitch Basin

Special Features:

- *Contains a complex of seven different lakes*
- Area encompasses 3 important bird areas including the

Tahkenitch Creek estuary, the Siltcoos River estuary, and Siltcoos Lake

- *Siltcoos Lake hosted 40-89% of Oregon's coastal winter population of American Coots during 1986-2002 surveys [Important Bird Area website]*
- *Wintering and migrating area for waterfowl.*
- *Area contains approximately 19% of the ecoregion's coastal dunes.*

Key Habitats:

- Coastal Dunes
- Freshwater Wetlands
- Oak Woodlands And Savannas

Key Species:

- Black Oystercatcher
- Waterfowl
- Western Snowy Plover
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas (Siltcoos River/Lake)
- Joint Venture Plan
- Oregon's Important Bird Areas
- Siuslaw National Forest High Priority Restoration Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Manage growth and development in sensitive shoreline areas
- Remove European beach grass in targeted areas to enhance habitat for western snowy plover

CR-28. North Fork Smith River

Special Features:

- *Area contains the Kentucky Falls SIA (see Forest Land Restoration Proposal, April 2002)*
- *Area contains relatively intact terrestrial and aquatic habitat*
- *Willingness by tribes to do watershed and upland restoration work*

Key Habitats:

- Late Successional Conifer Forests

Key Species:

- Marbled Murrelet
- Northern Spotted Owl
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Siuslaw National Forest High Priority Restoration Areas
- The Oregon Plan Core Salmon Areas

Recommended Conservation Actions:

- Consider land exchanges to benefit fish, wildlife, landscape ecological integrity

CR-29. Umpqua River Estuary

Special Features:

- *Leeds Island has long been identified as high potential for estuary restoration. Dean Creek viewing area also has potential for some restoration of tidal wetlands.*
- *Area is an important shorebird and waterfowl site*

Key Habitats:

- Estuary
- Freshwater Wetlands
- Black Oystercatcher
- Shorebirds
- Waterfowl
- Western Snowy Plover
- Coho Salmon
- Summer Steelhead
- Umpqua Dace
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment
- Recommended Conservation Actions:
- Restore tidal wetlands at Leeds Island, portions of Dean Creek Elk Viewing Area

CR-30. Wassen Creek

Special Features:

- *Proposed wilderness area*

Key Habitats:

- Late Successional Conifer Forests

Key Species:

- Northern Spotted Owl
- Coho Salmon
- Winter Steelhead
- American Marten
- Red Tree Vole

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Siuslaw National Forest High Priority Restoration Areas (Lower Smith River)
- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

CR-31. North Bend dunes

Special Features:

- *Includes BLM's Coos Bay Shorelands Area of Critical Environmental Concern, key habitat for western snowy plover.*
- *Area contains 33% of the ecoregion's coastal dunes.*
- *Area represents a large percentage of the ecoregion's western snowy plover habitat.*

Key Habitats:

- Coastal Dunes
- Freshwater Wetlands

Key Species:

- Black Oystercatcher
- Western Snowy Plover
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Maintain deflation plain wetlands in early seral conditions
- Manage recreational use to limit disturbance to sensitive habitats
- Remove European beach grass in targeted areas to enhance habitat for western snowy plover

CR-32. Elliot State Forest

Key Habitats:

- Late Successional Conifer Forests

Key Species:

- Marbled Murrelet
- Northern Spotted Owl
- Coho Salmon
- Winter Steelhead
- American Marten

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

CR-33. Umpqua River area

Key Habitats:

- Late Successional Conifer Forests
- Oak Woodlands And Savannas

Key Species:

- Northern Goshawk
- Northern Spotted Owl
- Coho Salmon
- Summer Steelhead
- Umpqua Dace
- Winter Steelhead
- Columbian White-tailed Deer
- Northwestern Pond Turtle

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment (Umpqua River tributaries site)

Recommended Conservation Actions:

- Consider land exchanges to benefit fish, wildlife, and landscape ecological integrity
- Consider the impact of recreational activities (e.g., motorized watercraft; shoreline activities; road usage) on water quality and watershed function

CR-34. Coos Bay area

Special Features:

- Includes South Slough National Estuarine Research Reserve (5,000+ acres), Shore Acres State Park
- Rare plant species
- Important area for wintering and migrating waterfowl, shorebirds

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Estuary
- Freshwater Wetlands

Key Species:

- Shorebirds
- Waterfowl
- Coho Salmon
- Winter Steelhead
- Western Lily

Identified in other planning efforts:

- Joint Venture Plan
- Oregon's Important Bird Areas
- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Restore freshwater wetlands
- Restore tidal wetlands and reconnect tidal sloughs where feasible and appropriate

CR-35. North Fork Coquille; Cherry Creek area

Key Habitats:

- Aquatic
- Late Successional Conifer Forests

Key Species:

- Northern Goshawk
- Northern Spotted Owl
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- The Nature Conservancy Ecoregional Assessment (Cherry Creek Area)
- The Oregon Plan Core Salmon Areas

CR-36. Lower Coquille River

Special Features:

- *Includes national wildlife refuges at Coquille Point and Bandon Marsh*
- *Ni-les-tun Unit of Bandon Marsh NWR has potential for restoration of up to 400 acres of estuarine wetlands.*
- *Bandon Marsh is key stop for migrating shorebirds*
- *Large populations of nesting seabirds at Coquille Point*
- *Coquille Valley attracts largest numbers of wintering waterfowl on the Oregon coast, particularly important for dabbling ducks*
- *Coquille River is one of most productive coastal river systems for coho and other salmon.*
- *Several properties are enrolled in Wetlands Reserve Program with extensive restored wetlands.*
- *Wintering site for waterfowl and migratory stopover for shorebirds.*

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Coastal Dunes
- Estuary
- Freshwater Wetlands

Key Species:

- Black Oystercatcher
- Shorebirds
- Waterfowl
- Western Snowy Plover
- Coho Salmon
- Winter Steelhead

Identified in other planning efforts:

- Joint Venture Plan

Recommended Conservation Actions:

- Manage visitor use to minimize impacts of human disturbance on nesting seabirds on offshore rocks
- Restore freshwater wetlands, natural stream channels, riparian habitats along tributary streams within the river floodplain
- Restore tidal wetlands

CR-37. New River area

Special Features:

- Long stretch of coastal lowlands with diverse habitats, minimal development and limited access
- Staging area for most of recently delisted Aleutian Canada goose population
- Important habitat for western snowy plover
- Rare plant species
- *Heavily used by migrating and wintering waterfowl, shorebirds, and migrating songbirds*
- *Supports significant production of wild chinook, coho salmon, steelhead*

- *Bogs support ESA-listed western lily and other at-risk and endemic plants*
- *Includes BLM's New River Area of Critical Environmental Concern*
- *US Fish and Wildlife Service has proposed establishment of New River National Wildlife Refuge*

Key Habitats:

- Aquatic
- Coastal Bluffs And Montane Grasslands
- Coastal Dunes
- Estuary
- Freshwater Wetlands
- Riparian

Key Species:

- Aleutian Canada Goose
- Black Oystercatcher
- Tufted Puffin
- Western Snowy Plover
- Coho Salmon
- Fall Chinook Salmon
- Winter Steelhead
- Western Lily

Identified in other planning efforts:

- Joint Venture Plan
- Oregon Biodiversity Project Conservation Opportunity Areas
- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

Recommended Conservation Actions:

- Limit livestock grazing in seasonal wetlands; manage for diversity of early seral conditions to provide habitat for shorebirds, waterfowl
- Maintain upland pastures in short-grass conditions and accommodate use by staging Aleutian Canada geese
- Minimize human disturbance on beach to benefit western snowy plover
- Re-establish floodplain forests, shrub swamp along estuary; restore and enhance bogs
- Remove European beachgrass in targeted areas to enhance habitat for western snowy plover
- Restore and maintain riparian areas along estuary and tributary streams
- Restore estuary's natural hydrograph (avoid breaching of foredune)

CR-38. Cape Blanco area

Special Features:

- *Includes the Elk and Sixes Rivers, Grassy Knob Wilderness Area, and Cape Blanco State Park*
- *High value for both aquatic and terrestrial diversity*
- *Rare plant species*
- *Key location on coastal corridor for wide variety of migratory birds*
- *Several large ranches at the lower end of Elk River have already undertaken significant conservation measures, including livestock exclusion from riparian and wetlands area, enrollment in Conservation Reserve Enhancement Program, and wetland restoration.*
- *Area contains potential habitat for western snowy plover.*
- *Area contains 45% of the ecoregion's oak woodland habitat.*

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Freshwater Wetlands
- Oak Woodlands And Savannas

Key Species:

- Marbled Murrelet
- Northern Goshawk
- Peregrine Falcon
- Western Snowy Plover
- Coho Salmon
- Fall Chinook Salmon
- Winter Steelhead
- Pallid Bat
- Western Lily

Identified in other planning efforts:

- American Fisheries Society Aquatic Diversity Areas
- Oregon Biodiversity Project Conservation Opportunity Areas
- The Nature Conservancy Ecoregional Assessment
- The Oregon Plan Core Salmon Areas

Recommended Conservation Actions:

- Control gorse
- Manage to maintain grasslands
- Plan development to maintain key ecological functions and habitats
- Restore floodplain wetlands and riparian forests

CR-39. Rogue River Estuary

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Estuary
- Riparian

Key Species:

- Tufted Puffin
- Fall Chinook Salmon
- Summer Steelhead
- Winter Steelhead

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Plan development to maintain key ecological functions and habitats
- Restore floodplain habitats and functions

CR-40. Pistol River Estuary

Special Features:

- *Shorebird and waterfowl habitat*
- *Includes Crook Point, part of Oregon Islands NWR and one of most important seabird nesting sites on the West Coast*
- *Designated Natural Estuary*
- *Offshore rocks provide nesting habitat for seabirds.*

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Estuary

Key Species:

- Seabirds
- Fall Chinook Salmon
- Winter Steelhead
- Recommended Conservation Actions:
- Limit impacts of human disturbance on nesting seabird sites

CR-41. Cape Ferrelo

Special Features:

- Adjacent to Oregon Islands, Whalehead Island, and associated Important Bird Areas
- Important shorebird habitat

Key Habitats:

- Coastal Bluffs And Montane Grasslands
- Riparian

Key Species:

- Black Oystercatcher
- Tufted Puffin
- Winter Steelhead

Identified in other planning efforts:

- The Nature Conservancy Ecoregional Assessment

Recommended Conservation Actions:

- Manage recreation use to minimize impacts of human disturbance on offshore rocks and intertidal habitats
- Plan development to maintain key ecological functions and habitats
- Remove invading conifers to maintain grasslands

CR-42. Chetco River

Special Features:

- *Upper reaches of the Chetco designated as having outstanding remarkable values for water quality and fish habitat on a national level.*
- *Designated Natural Estuary*

Key Habitats:

- Estuary

Key Species:

- Northern Goshawk
- Fall Chinook Salmon
- Winter Steelhead

Identified in other planning efforts:

- The Oregon Plan Core Salmon Areas

Recommended Conservation Actions:

- Maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology

CR-43. Winchuck River Estuary

Special Features:

- Ecologically diverse area
- Designated Natural Estuary

Key Habitats:

- Estuary

Key Species:

- Coho Salmon
- Fall Chinook Salmon
- Winter Steelhead

Photo © Bruce Newhouse

Tidepools and ecology along the rocky Oregon coastline

The ebb and flow of the tides are the daily rhythm of life for animals that live in tidepools along Oregon's rocky coastline. Every day, tidepools experiences dramatic changes in water levels, salt levels, light, and other variables. Natural weathering or wave action creates tidepools, and they provide habitat for hundreds of species. Tidepools can be small (the size of a coffee mug) or large (the size of a gymnasium). Tidepools located high up on the coastline experience the greatest variations in salt, temperature and other variables. For example, rainwater can create a water layer with relatively low salinity, but this environment is subject to abrupt change with weather conditions. However, there are usually fewer marine predators in these upper tidepools. In contrast, tidepools lower down on the coastline are more commonly visited by predators, but have less variation in other environmental conditions, such as salt levels. Animals that thrive in tidepools include rockfish, sculpins, crabs, mussels, whelks, limpets, urchins, seastars, barnacles, anemones, nudibranchs, and sponges. Cornerstone concepts of ecology, such as how animals compete for food or prey upon each other, and how they respond to environmental disturbances, have been explored by studying this diverse community. For more information on tidepools and intertidal species, see ODFW's Nearshore Marine Strategy (in preparation, 2005).

In Oregon, excellent sites for observing tidepools include Strawberry Hill, Boiler Bay, Otter Crest, Canon Beach, Cape Perpetua, and Bandon.

At Yaquina Head, the Bureau of Land Management has created tidepools that are accessible by wheelchair: observers have access to view pools at a convenient level that are connected by paved pathways. Pools at convenient locations were created by drilling down to sea level in the basalt floor along the coastline, and marine biologists are now monitoring animals as they colonize the new habitat and develop their food chain. Visiting some of Oregon's tidepools is an opportunity to see a fragile but fascinating habitat.

Photo © (bottom-right) Bruce Newhouse

Oregon silverspot butterfly recovery efforts: Captive breeding, habitat restoration is silver lining for at-risk buttterfly

The Oregon silverspot butterfly is named for the shiny metallic spots on the undersides of its wings. Oregon silverspots once ranged from northern California to Washington, but now survive at only 4 sites in Oregon and 1 in California. Oregon silverspots are found in coastal salt spray meadows, stabilized dunes, or montane meadow habitats where they breed, feed and seek shelter from Pacific Ocean wind storms. The butterfly's larvae are dependent on a single food plant, early blue violet. The silverspot's decline is linked to the disappearance of this host plant and general habitat loss. Early blue violets require grassland habitats that are not too overgrown with shrubs or other woody plants. Historically, early blue violets probably benefited from fires set by Native Americans. The fires maintained grassland habitats by reducing competing plants, removing dead vegetation, and stimulating violet seed germination. Early blue violets are outcompeted and outshaded by more aggressive nonnative grasses and other invasive plants. In addition to these impacts, much of the violet's grassland habitat has been lost to development along Oregon's Coast.

One of the Oregon silverspot's strongholds has been The Nature Conservancy's Cascade Head Preserve, north of Lincoln City. However, Cascade Head's silverspot population plummeted from approximately 1,000 butterflies in 1992 to 57 in 1998. In response to the steep decline, The Nature Conservancy partnered with Lewis & Clark College and the Oregon Zoo to experiment with captive rearing and to undertake habitat restoration at Cascade Head. For the captive rearing project, 8 - 26 adult female butterflies were most years since 1999. The females were captured after they had been flying for some time to give them as much opportunity as possible to lay eggs in the wild.

At the Oregon Zoo, researchers cared for the adult females and collected eggs as they were laid. After the eggs hatched, the caterpillars were put in a refrigerator to simulate their normal winter hibernation. The following spring, the caterpillars were fed violet leaves until they formed pupa, an intermediate stage in a butterfly's metamorphosis. The pupae were then returned back to Cascade Head so the adults could emerge and resume their life cycle.

During the same period, researchers have examined effects of mowing and burning on violet populations and have planted early blue violet plants to determine the best methods of restoring the silverspot's natural habitat. Despite these efforts, Cascade Head's silverspot population has yet to fully recover. This may indicate that the size of the violet population is still too small to support the butterflies or may reflect a time lag until young violets mature. Additional habitat work and research is planned for the future.

This use of captive rearing is a short-term, stop-gap measure intended to prevent genetic inbreeding problems that often arise in small populations. It buys time for land managers to restore or otherwise manage habitats essential to a species survival. Captive rearing is usually a last resort and used when a population is at risk of going extinct. Generally, captive-raised individuals are released only at the source population, but occasionally they may be used to bolster other populations considered to be dangerously small and susceptible to inbreeding. However, translocating rare species to new areas raises concerns about genetic

pollution and disease transmission so this practice should be carefully considered before proceeding.

In the long term, only adequate amounts of the right kind of habitat will improve the survival of rare species. In addition to Cascade Head, Oregon silverspot butterfly habitat is being restored at other sites along the Coast, providing hope for the long-term survival of this coastal butterfly.

Photo © Rick Van Buskirk

Ecotourism

Ecotourism is a rapidly growing sector of the hospitality industry. While all of Oregon's ecoregions have excellent ecotourism opportunities, the Coast Range currently has the greatest economic activity directly linked to healthy fish and wildlife populations. Nestled against the Pacific Ocean, the Coast Range has diverse habitats that people enjoy through hiking, camping, bird watching, wildlife viewing, fishing and hunting. Here are just a few of the Coast Range's most popular wildlife-based recreational activities, events and sites.

Whale watching - Twice each year, gray whales migrate through Oregon's waters, traveling between summer feeding grounds near Alaska and winter nursery areas near Mexico. Oregon Park and Recreation Department's "Whale Watching Spoken Here" helps coastal visitors spot, enjoy, and learn about the whales. During winter and spring school vacations, more than 200 trained volunteers are stationed at 28 locations along the coast. The program is popular: volunteers talked to more than 16,000 people during the 2004-05 winter whale watching week. In addition to land-based viewing, coastal visitors can go on whale-watching boat and airplane tours offered by private charter operations (more information is available from ODFW's Marine Resources Program).

Oregon Shorebird Festival - During late summer, shorebirds gather on Oregon's mudflats and beaches, resting and refueling during their long migrations. The number and variety of birds attract birders from all over the northwest. Each September, the Oregon Shorebird Festival, held in Charleston at the Oregon Institute of Marine Biology, offers lectures, guided field trips, charter boat trips, and family activities. People come to find a rare bird, to sharpen their skills and knowledge, or just to enjoy a bird-themed trip to the Coast.

Exhibits – The Oregon Coast Aquarium and Oregon State University's Mark O. Hatfield Marine Visitor Science Center, both located in Newport, have live animal exhibits, interactive displays, films, guided tours and other educational programs. For more information, visit Oregon Coast Aquarium's website at *www.aquarium.org* and OSU Hatfield Marine Science Visitor Center's website at *hmsc.oregonstate.edu/visitor*.

Tidepool viewing - Along the rocky portion of Oregon's coastline, tidepools harbor fascinating creatures that live in a world of shifting light, water and salinity. Tidepool viewing is a popular activity, especially for families. Several areas provide educational programs and information on low-impact tidepooling. At the Yaquina Head Outstanding Natural Area, the Quarry Cove Tidepools are the world's first human-made, naturally functioning tidepools that are accessible to everyone. The site's interpretive center, interactive displays, and accessible trails allow people to safely explore and enjoy tidepool life.

Recreational fishing, clamming and crabbing - One of the biggest reasons people visit the coast is to go fishing or to harvest shellfish. Salmon, steelhead, Pacific halibut, surfperch, flatfish, groundfish, albacore tuna, razor clams, bay clams, and Dungeness crabs offer diverse recreational opportunities. In 2002, Oregon Department of Fish and Wildlife estimates 800,000 bay crab and clam user trips, and estimates 990,000 ocean, bay and estuary user trips.

Elk viewing - During the winter months, elk often congregate in large numbers where plentiful forage is available. At ODFW's Jewell Meadows Wildlife Area (located northwest of Portland) and Dean Creek Wildlife Area (located east of Reedsport), visitors are treated to up-close views of 120-200 elk. Paved parking lots, viewing areas and interpretive signs help make these sites popular tourist stops.

Sea lions and sea lion caves – for example, north of Florence and at Strawberry Hill and numerous other locations. Sea lion viewing is a popular activity with many coastal visitors.

When implemented carefully, with properly managed harvest levels and low-impact viewing practices, ecotourism is allowing local communities to capitalize on their natural resources in a sustainable way. These recreational opportunities and the hospitality jobs they support depend on healthy wildlife populations and habitats, which Oregonians can maintain and restore by working together.

Pink sand-verbena

Pink sand-verbena's genus name, *Abronia*, is derived from the Greek word meaning delicate or graceful. With clusters of small pink, trumpet-like flowers, pink sand-verbena is a graceful resident of Oregon's open, sandy dune habitats. The first plant collected and named west of the Mississippi, pink sand-verbena once occurred along the entire Oregon Coast. But it has declined dramatically since the introduction of European beachgrass caused the loss of open sandy habitats. By the 1970's, there were approximately ten populations left, but only five remained by the late 1990's. It is currently listed as endangered under the Oregon Endangered Species Act.

Sometimes natural resource conflicts can present unanticipated conservation opportunities. In the early 1990's, pink sand-verbena was discovered at Port Orford when the Army Corps of Engineers was negotiating the extension of their permit to dump dredged sand on the beach. The dredging was necessary to keep navigation lanes open to fishing boats. However, placing the sand on the beach violated the Coastal Zone Management Act, so an alternative solution was needed. Botanists noted that pink sand-verbena might benefit from the dumped sand. State and federal agency partners decided to extend the permit and dump dredge spoils in a pattern to best suit the plant. This solution benefited the plants, allowed botanists to study the pink sand-verbena in new sandy habitat, and maintained dredging while authorities searched for an alternate location for dumping dredged sand.

Other conservation efforts have benefited pink sand-verbena. Since 1997, the Institute for Applied Ecology, Bureau of Land Management and other partners have conducted seeding and transplantation experiments at 13 sites along the southern Oregon Coast. This research has provided information on the plant's ecology, germination rates, and population trends, and the results will guide management to help recover the species.

Along with pink sand-verbena, other species have declined with the introduction of European beachgrass, including snowy plover, silvery phecelia, and Wolf's evening primrose. A coordinated approach to European beachgrass control and open sand dune habitat restoration will benefit a suite of species.