



## **Joint Venture Implementation Plans**

# **Northern Oregon Coast**

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**Prepared for:**

Pacific Coast Joint Venture

**Oregon Wetlands Joint Venture**  
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## **NORTHERN OREGON COAST FOCUS AREA**

### **Description of Area**

#### **The Land**

The Northern Oregon Coast Focus Area extends from the rocky headlands of Cape Falcon in the north to the towering sand dunes of the Oregon Dunes National Recreation Area on the south and includes Tillamook, Lincoln, and western Lane Counties. (To facilitate planning and public involvement, all portions of Clatsop County even the coastal areas are included within the Lower Columbia River Focus Area.) The area is bounded on the east by the heavily forested Coast Range mountains. Elevations in the Coast Range rarely exceed 760 meters (2,500 feet), but the terrain is rough and cut by numerous rivers and streams. The area's marine climate is generally moderate, with cool, dry summers and mild, wet winters. Average annual precipitation along the coast ranges from 150 to 200 centimeters (60 to 80 inches). Vegetation is dominated by forests of Douglas-fir and alder, but coast pine and Sitka spruce are common along the ocean. The coastline is marked by a number of headlands and steep cliffs separated by stretches of relatively flat coastal plain and drowned river-mouth estuaries. Major sand dune systems dominate the landscape south of Florence in Lane County and north of Sand Lake in Tillamook County. Freshwater lakes are scattered among the dunes behind the beaches in many areas.

The largest rivers include the Nehalem, Wilson, Trask, Nestucca, Siletz, Yaquina, Alsea, and Siuslaw. The Northern Oregon Coast Focus Area has 11 major estuaries and 9 minor estuaries. The largest estuaries are formed by the group of streams that converge in Tillamook Bay (3,700 hectares - 9,200 acres), and the Yaquina (1760 hectares - 4,350 acres) and Siuslaw (1,240 hectares - 3,060 acres) Rivers.

#### **The People**

The population of Tillamook, Lincoln, and western Lane Counties in 1990 was less than 75,000, with the largest concentrations in Newport, Lincoln City, Florence, Tillamook, Toledo, and the nearly continuous strip of small communities along the beaches of Lincoln County. The region's economy has traditionally been heavily dependent on forest products, fisheries, tourism, and agriculture. In recent years, employment in forest products manufacturing has declined, but there has been increased emphasis on the service industries related to tourism and a substantial influx of retirees.

Land use on the North Coast is dominated by commercial timber production, with pockets of agricultural land located along the lower river valleys and estuaries. There is extensive residential development along much of the coastal strip, but commercial development tends to be concentrated in the coastal communities along U.S. Highway

101. Heavy industrial development is limited to a few areas around Tillamook Bay and the lower Yaquina River.

### The Wildlife Resources

The Northern Oregon Coast Focus Area supports diverse and abundant populations of wildlife. The area's biological richness results from the moderate climate, abundant food resources of the sea and estuaries, availability of protected seabird nesting sites, numerous free-flowing streams, and extensive conifer forests. The area is heavily used by marine and shorebirds and provides key wintering and migratory habitat for waterfowl.

The area has large, dense colonies of nesting seabirds, including common murre, three species of cormorants, western gulls, tufted puffins, pigeon guillemots, Leach's, and fork-tailed storm-petrels, and others that breed on the numerous rocks, islands, and isolated headlands. Three Arch Rocks was the first national wildlife refuge established west of the Mississippi River and supports the largest common murre nesting colony south of Alaska with more than 200,000 birds. The North Coast is heavily used by shorebirds and provides key wintering habitat for waterfowl of the Pacific Flyway. Its wetlands also provide habitat for a number of threatened and endangered species, including the western snowy plover (proposed), Aleutian Canada goose, brown pelican, bald eagle, peregrine falcon, and northern sea lion. Other threatened or endangered species are present in the area that are not dependant on wetlands. These include the Oregon silverspot butterfly, the northern spotted owl, and the marbled murrelet. All of the estuaries on the North Coast support nesting bald eagles, and the area includes the only peregrine falcon nests on the Oregon coast. Virtually all of the rivers and streams that enter the ocean support runs of anadromous fish, including stocks of coho, chum and chinook salmon, steelhead, and sea-run cutthroat trout.

The area provides important wintering and migratory habitat for a number of waterfowl species and supports the highest diversity in the flyway. Species using the Oregon coastal wetlands include trumpeter and tundra swans, brant, snow geese, white-fronted geese, and four distinct races of Canada geese. Dabbling ducks include mallards, gadwalls, northern pintails, American wigeon, green-winged and cinnamon teal, northern shovelers, and wood ducks. Diving ducks include redheads, canvasbacks, scaup, ring-necked ducks, goldeneyes, buffleheads, and ruddy ducks. Other ducks include scoters, harlequins, oldsquaws, and mergansers.

The heaviest waterfowl use is typically during fall and spring migrations, when many birds use the coastal wetlands as staging areas. Wintering populations are smaller, but coastal habitat becomes more important for many ducks and geese when drought or icy conditions limit habitat availability at inland locations.

The North Coast includes several areas of particular importance to brant and Aleutian and dusky Canada geese. Netarts, Yaquina and Tillamook bays all have wintering populations of brant attracted by the estuaries' eelgrass. Pasturelands around Nestucca Bay support the largest of the few remaining coastal wintering populations of dusky Canada geese and provide wintering habitat for a unique subpopulation Aleutian Canada geese.

Key areas for migrating shorebirds include Tillamook, Netarts, Siletz, Yaquina and Alsea bays, the Siuslaw River estuary and the deflation plains in the Oregon Dunes National Recreation Area.

Coastal wetlands and riparian forests also provide important migratory and breeding habitat for a wide variety of neotropical migrant bird species.

The estuaries of the northern Oregon coast provide essential habitat for many of the region's most important fisheries, including salmon, steelhead, flounder, sole, perch, crabs, and shellfish. Estuaries provide important nursery and rearing habitat for young salmon and steelhead, and adults use them as temporary holding areas during their return migration from the ocean to upstream spawning areas. Dungeness crabs breed in estuaries, and marine fish such as starry flounder, perch, and English sole use the estuaries for breeding and feeding. North Coast bays are also significant producers of oysters, clams, mudshrimp and mussels that are harvested both commercially and recreationally.

The northern Oregon coast's anadromous fisheries have declined substantially in recent decades. Although hatchery stocks continue to produce commercially harvestable numbers of fish, wild stocks of salmon, steelhead and sea-run cutthroat trout have been depleted dramatically in many areas. The American Fisheries Society issued a report in 1991 identifying 29 native, naturally spawning stocks on the northern Oregon coast that have a high or moderate risk of extinction or are of special concern because of their vulnerability or unique character. Most of the area's coho salmon stocks were deemed at moderate risk of extinction. Three chum salmon stocks (Alsea, Siletz, and Yaquina) were placed in the "high risk" category. Several North Coast chinook salmon stocks were classified as "special concern" along with winter steelhead stocks in most of the smaller coastal rivers. Oregon coastal cutthroat stocks were collectively identified as being at "moderate risk of extinction."

Factors contributing to the decline of these anadromous fish stocks include habitat loss and degradation, overfishing (primarily of weak stocks taken in mixed-stock fisheries), and genetic interactions with non-native hatchery salmon and steelhead.

Estuarine habitat loss and degradation have contributed to the problems of the region's anadromous fisheries. Pollution, diking of tidal marshes, and loss of shallow subtidal and deep channel habitats through sedimentation have significantly reduced the

biological productivity of many estuaries. However, the relative impacts on different species of anadromous fish appear to vary. Chinook and chum salmon are believed to be the most estuarine-dependent species, yet Oregon coastal chinook stocks have remained relatively strong while chum salmon are among the stocks most seriously threatened.

### Wetland Habitats

The most significant large blocks of wetland habitat in the Northern Oregon Coast Focus Area are found in association with estuaries and freshwater lakes. Although heavily modified by human activities, Tillamook Bay and the Nehalem, Nestucca, Siletz, Yaquina, Alsea and Siuslaw estuaries all provide substantial blocks of estuarine habitat with high value for a broad range of wildlife. Adjacent diked and undiked agricultural lands in many areas provide important seasonal habitat for waterfowl, shorebirds and other species. Netarts Bay, Sand Lake, and the Salmon River estuary are all relatively undeveloped and retain substantial natural values. Devil's Lake and the numerous lakes in the Lane County dunes area receive significant waterfowl use.

Other important wetland habitat areas are more scattered or lineal. Neskowin and Beaver Creek Marshes represent small but relatively intact examples of natural freshwater wetland systems with unique ecological values. The deflation plain wetlands in the dunes of Lane and Tillamook Counties offer a dynamic mosaic of wetland habitats. Above the estuaries, narrow streamside wetlands and riparian forests provide key habitat corridors for anadromous fish and a wide variety of terrestrial wildlife.

### Existing Habitat Protection

The State of Oregon's comprehensive planning requirements and local zoning ordinances provide substantial protection for estuarine wetlands subject to tidal action. Development in estuaries classified as "natural" (i.e., Sand Lake, Salmon River, Big Creek--Lincoln County; Tenmile Creek, Big Creek--Lane County; Berry Creek, Siltcoos River, Sutton Creek) is generally limited to that necessary for maintenance of existing uses and facilities. Estuaries classified as "conservation" (i.e., Netarts Bay, Nestucca River, Siletz Bay, Alsea Bay) may include some areas subject to more intensive development such as boat ramps and marinas and dredging. Estuaries classified as "shallow draft development" (Nehalem Bay, Tillamook Bay, Siuslaw River) or "deep draft development" (Yaquina Bay) may be subject to a range of commercial and industrial development. However, even in "development" estuaries, such uses are limited to relatively small portions of the estuary, with the bulk of the area remaining in "natural" or "conservation" management units.

Varying degrees of protection for wetlands outside of the estuaries are provided by a variety of federal, state, and local laws and regulations, including:

- Section 404 of the federal Clean Water Act, which regulates filling of wetlands.
- The state of Oregon's statewide land use planning program and city and county land use plans, which address wetlands under a number of policies, including Goals 5 (Open Spaces, Scenic and Historic Areas, and Natural Resources), 16 (Estuarine Resources), and 17 (Coastal Shorelands).
- The state of Oregon's Removal-Fill Law, which regulates removal and filling of material in waters of the state, including wetlands.
- The state of Oregon's Forest Practices Act, which limits timber harvests in "significant wetlands."

The focus area presently contains approximately 850 hectares (2,100 acres) of secure habitat.

Aside from tidelands, formal protection for wetland habitats on the northern Oregon Coast is limited. The U.S. Fish and Wildlife Service manages refuges at Nestucca River (150 hectare - 374 acres) and Siletz Bay (20 hectare - 46 acres). The U.S. Forest Service's Cascade Head Scenic-Research Area includes 510 hectares (1,260 acres) of the Salmon River estuary and associated wetlands. State parks encompass another 230 hectares (580 acres) of wetlands. The Oregon Department of Fish and Wildlife also owns several small areas with significant wetland values, including Cape Meares Lake (40 hectares - 93 acres), Eckman Lake (30 hectares - 80 acres), and Siuslaw River-Johnson (6 hectares - 15 acres) Public Access areas. Protected areas in private ownership include a variety of duck hunting clubs and The Nature Conservancy's Bradley Bog (20 hectares - 53 acres) and Cox Island (75 hectares - 187 acres) Preserves.

### Threats to Wetland Habitats

The northern Oregon coast historically provided a wide variety of wetland habitats in its estuaries, lakes, rivers, and freshwater marshes. Shoreline development, harbor dredging, diking, and drainage of tidal marshes, channelization of rivers, clearing of riparian forests, filling, ditching and drainage of freshwater marshes, road building, and logging in upper watersheds have significantly reduced the quantity and quality of the area's coastal wetlands.

Development pressures along parts of the northern Oregon coast have increased dramatically in recent years. Residential and commercial development associated with the area's growing tourism and recreation economy has been concentrated in the coastal strip, much of it around the estuaries and lowland lakes that comprise much of the most important wetland habitat in Lane and Lincoln Counties. Loss of riparian habitat is a particular concern. Rising land prices and growing development pressure could threaten the economic viability of some agricultural operations that support significant waterfowl use on the diked former tidelands, and conversion to hybrid cottonwood plantations is a possibility in some areas. Oyster mariculture is expanding and could result in degradation or destruction of eelgrass beds.

Tidal wetlands are afforded a substantial degree of protection under current State and local laws and land use regulations, but protection of riparian habitat, freshwater marshes and agricultural lands with wetland values is less assured.

### **Habitat Objectives**

Within this Northern Oregon Coast Focus Area the Joint Venture is dedicated to ensuring that the following habitat objectives are met and sustained. These objectives are based on the recommended actions for individual target areas contained in the draft plan. The figures represent estimates of what the Joint Venture hopes to accomplish, given the resource needs and opportunities identified through the planning process and the financial, political and logistical constraints the Joint Venture will have to deal with:

- Permanently protect, through easements or fee title acquisition, an additional 850 hectares (2,150 acres) of tidal wetlands, 1080 hectares (2,700 acres) of freshwater wetlands, and approximately 640 hectares (1,600 acres) of uplands that are important to maintaining the habitat values of the wetlands that they are associated with.
- Restore 840 hectares (2,100 acres) of tidal wetlands.
- Enhance wildlife habitat on 80 hectares (200 acres) of tidal wetlands and 630 hectares (1,580 acres) of freshwater wetlands.

### **Population Objectives**

There are no well defined population goals for most wildlife species. The needs are best addressed in terms of habitat goals. The overall waterfowl objective is to maintain populations equal to the greatest population since 1970. Objectives are to:

- To maintain habitat capable of supporting a peak population of 3,000 brant.

- To maintain habitat capable of supporting a peak population of 200 tundra swans.
- To maintain habitat capable of supporting a peak population of 1,000 Canada geese
- To maintain habitat capable of supporting a peak population of 37,000 ducks.
- To maintain habitat capable of supporting a peak population of 20,000 shorebirds.
- To maintain nesting populations of colonial birds at or above their present numbers.

### **Recommended Actions**

The following discussion is broken down into sections identifying recommendations for specific target areas and broader proposals that are directed toward securement, restoration, enhancement, and management of wetland habitats throughout the Northern Oregon Coast Focus Area.

### **Area-wide Recommendations**

The general actions that would apply to wetland habitats throughout the Northern Oregon Coast Focus Area include the following recommendations:

- Restore diked former tidelands where feasible and appropriate.
- Secure conservation easements on agricultural lands where sellers are willing and it is necessary to maintain open field habitat for waterfowl and other migratory birds.
- Cooperate in programs to assist in reducing the effects of crop depredations by waterfowl and other wildlife
- Pursue land exchanges to block-up Federal land ownership in upstream watersheds along stream corridors to protect sensitive riparian areas with high habitat values.
- Initiate active seasonal management of tidegates to enhance existing wetland habitat where feasible and appropriate.

- Support research to evaluate estuarine habitat needs of anadromous fish and identify criteria and potential sites for habitat rehabilitation.
- Inventory, map, and monitor eelgrass beds in estuaries; establish eelgrass "sanctuaries"; strengthen administrative protection for eelgrass in mariculture and tidelands permit processes.
- Seek changes in State law to eliminate tax-related and other disincentives for wetlands conservation, restoration or enhancement by private landowners.
- Work with local governments to develop and implement Wetland Conservation Plans.
- Support creation of wetlands for wastewater treatment where feasible and appropriate.
- Encourage public use of publicly owned wetland habitat areas at levels consistent with protection of resource values.
- Support "coordinated resource management planning" and other efforts to control purple loosestrife and other invasive exotic plants.
- Encourage coordination of estuarine resource management policies by state agencies.
- Support active effective enforcement of existing laws and regulations for wetlands protection.

## **Target Areas**

### TILLAMOOK COUNTY

**Nehalem Bay** - Despite extensive diking and conversion of wetlands to pastures, the Nehalem River estuary retains substantial tidal marshes on Lazarus Island and south and west of Dean Point. Adjacent tidal mudflats are used extensively by waterfowl. These habitats are complimented by upstream pasturelands that function as freshwater wetlands and attract waterfowl when shallow flooding occurs due to heavy rainfall. Waterfowl numbers in recent years have ranged from 600 to 3,600 birds. The estuary is also important for a variety of other migratory birds, including shorebirds. The diked Gallagher Slough area still functions as a wetland and is known to birders throughout the Northwest for the diversity of birds seen there. The Nehalem River system supports some of the Oregon coast's most important anadromous fish runs. The American

Fisheries Society has identified the Nehalem estuary as a high priority corridor for protection and restoration under its proposed strategy for maintenance of aquatic diversity.

Recommended actions:

- Increase tidal circulation in estuarine wetlands near the boat ramp adjacent to Highway 101 bridge.
- Secure private tidelands where there are willing sellers.
- Enhance wetland habitat in Nehalem Meadows area.
- Maintain early seral stage in deflation plain wetlands on Nehalem spit.
- Protect eelgrass beds from conflicting uses.

**Tillamook Bay** - Tillamook Bay is the northern Oregon coast's most important area for waterfowl and shorebirds. The large expanses of open water, mudflats, salt marsh, and eelgrass beds along with diked pasturelands that serve as fresh water wetlands combine to provide a diversity and abundance of habitat for migratory waterfowl, shorebirds, and other species. The peak count of wintering waterfowl since 1985 exceeds 19,600 birds, and on average the area supports almost one-quarter of all waterfowl on the Oregon coast. Tillamook Bay is one of only three remaining locations where brant, an eelgrass-dependent bird, winter in Oregon. As in other locations along the Oregon coast, large numbers of dabbling ducks move off the estuary and onto pasturelands when they become flooded during heavy rainfall. There appears to be a preference for this freshwater wetland type, but the habitat is short-lived due to drainage systems. Waterfowl hunting and observation are important activities around Tillamook Bay. Bay Ocean Spit supports one of the three largest breeding areas of western snowy plovers (a proposed threatened species) on the Oregon coast. Tillamook Bay is also a major feeding area for spring- and fall-staging migrant shorebirds and one of the half-dozen most important feeding areas for shorebirds between San Francisco Bay and British Columbia. Threatened and endangered species using Tillamook Bay include Aleutian Canada geese, bald eagles, Steller sea lions, peregrine falcons, and brown pelicans. Tillamook Bay's five major tributaries (the Tillamook, Trask, Wilson, Kilchis, and Miami Rivers) all support significant salmon and steelhead stocks.

The U.S. Environmental Protection Agency has targeted Tillamook Bay for a major planning effort under the National Estuary Program. The project -- a cooperative effort involving federal, state and local agencies, elected officials and agriculture, fishing, timber, environmental and business interests -- will develop a comprehensive conservation and management strategy for the bay and its watershed.

Recommended actions:

- Participate in planning efforts for Tillamook Bay under National Estuary Program.
- Pursue opportunities for cooperative wetland enhancement projects with private landowners on agricultural lands around Tillamook Bay.
- Secure privately owned tidelands at mouths of rivers entering Tillamook Bay when there are willing sellers.
- Develop a protective management plan for and provide interpretive and educational opportunities on Bay Ocean Spit.
- Support maintenance of current zoning to protect existing habitat values on agricultural lands.
- Protect eelgrass beds from conflicting uses.

**Netarts Bay** - Unusual among Oregon estuaries for its relative lack of freshwater inflows, Netarts Bay remains one of the least developed of the northern Oregon coast's estuaries. Netarts Bay has extensive aquatic beds and is one of the most important areas for brant in the state. A March 1992 aerial survey counted 843 brant, more than half of the total for the Oregon coast. The peak waterfowl count since 1985 is 2,976 birds. The bay's shellfish and crab fisheries attract substantial recreational use, and the small streams at the south end of the bay support a chum salmon run. Netarts Bay is also the state's leading commercial producer of mud shrimp. Mud shrimp harvests and oyster production in eelgrass beds have reduced wildlife habitat values in some areas of the bay.

Recommended actions:

- Protect eelgrass beds from conflicting uses.

**Sand Lake** - Like Netarts Bay, Sand Lake is dominated by saltwater influences, draining a watershed of only 36 square kilometers (14 square miles). More than half of Sand Lake is tidal marsh. Adjacent wetlands include high-quality cedar marsh and several areas with high botanical values. The estuary is one of only two major estuaries designated "natural" by the State of Oregon. The Nature Conservancy maintains a reserve at the north end of the area, and the U.S. Forest Service has designated a research natural area along Renecke Creek to the southeast. Construction of the

causeway and bridge to Whalen Island has sharply reduced tidal flows in the eastern portion of the estuary.

Recommended actions:

- Expand tidal flows through modification of bridge and causeway to Whalen Island.
- Restore or enhance existing wetlands behind Beltz Dike.

**Neskowin Marsh** - Approximately 80 hectares (200 acres) in size, Neskowin Marsh is the largest relatively undisturbed freshwater tule marsh on the Oregon coast. The marsh supports a rich diversity of plant and animal life and includes several peat bogs at varying stages of succession. There is strong local support for efforts to secure permanent protection for Neskowin Marsh, and congressional representatives have expressed interest in seeking federal acquisition of the area.

Recommended actions:

- Pursue securement, from willing sellers, of Neskowin Marsh through acquisition or easements to maintain natural habitat values.

**Nestucca Bay** - Nestucca Bay and its surrounding wetlands support a broad diversity of wildlife populations. The Nestucca River is one of the top salmon and steelhead producers on the Oregon coast, and migratory birds make significant use of the open bay and mudflats from September through April. The area attracts one of the most diverse groups of geese (seven subspecies) in the Pacific Flyway. This is the only Aleutian Canada goose wintering area outside the Central Valley of California and it is the principle wintering area for the entire Semidi Island population of Aleutian Canada geese. The area also supports the largest wintering population of dusky Canada geese on the coast, a flock that now numbers more than 500 birds. Dabbling ducks and diving ducks are common on the bay and make extensive use of the pasturelands when they are flooded. Bald eagles nest near the bay, and peregrine falcon sightings are increasing.

The U.S. Fish and Wildlife Service's Nestucca Bay National Wildlife Refuge was established primarily to protect wintering habitat for the dusky and threatened Aleutian Canada geese, which make extensive use of the short-grass pastures of area dairy farms, but the area's tidal wetlands and adjacent uplands also have high habitat value for a broad range of wildlife. A 1992 agreement between the U.S. Fish and Wildlife Service and a local landowners' association calls for existing dairy lands to be maintained in agricultural use.

### Recommended actions:

- Encourage cooperative efforts by the U.S. Fish and Wildlife Service and private landowners to protect and enhance estuarine habitat values.
- Secure lands with high habitat values from willing sellers, for addition to Nestucca Bay National Wildlife Refuge. Such acquisitions will be consistent with agency agreements with local landowners.
- Restore diked tidelands where feasible and appropriate.
- Maintain existing zoning on agricultural lands.
- Maintain natural habitat in Bob Straub State Park.

## LINCOLN COUNTY

**Salmon River** - The lower Salmon River area includes one of only two designated "natural" major estuaries on the Oregon coast. Although relatively small in size (180 hectares - 438 acres), more than half the estuary remains tidal marsh. The entire estuary and its associated wetlands are included in the U.S. Forest Service's Cascade Head Scenic-Research Area. About 200 acres of diked lands owned by the Forest Service have been restored to tidal action, with the results monitored by researchers for more than a decade, and additional restoration work is planned. The American Fisheries Society has identified the Salmon estuary as a high priority corridor for protection and restoration of aquatic diversity.

### Recommended actions:

- Support U.S. Forest Service acquisition and restoration of diked tidelands in estuary area of Cascade Head Scenic Research Area.
- Continue research on long-term effects of tideland restoration efforts.

**Devil's Lake** - This 340-hectare (850-acre) lake has historically supported large wintering duck populations, but its location in an area of rapid urbanization has led to extensive development of its shoreline. Bald eagles nest near the lake, and tributary streams support runs of coho salmon and cutthroat trout. The introduction of grass carp to control aquatic vegetation has reduced the lake's value as waterfowl habitat. The Devils Lake Water Improvement District is pursuing long-term solutions to the lake's water quality problems.

Recommended actions:

- Encourage efforts to improve water quality.
- Continue studies of the effects on waterfowl populations resulting from using grass carp to control aquatic vegetation.

**Siletz Bay** - Although substantially filled with sediment since the 19th century, Siletz Bay continues to provide a rich and diverse array of valuable habitats for wildlife. Its extensive mudflats are heavily used by shorebirds. The Siletz River and the bay's other major tributaries, Drift and Schooner Creeks, support significant anadromous fish populations. Siletz River is the Oregon coast's second largest producer of cutthroat trout, and ranks third and fourth for coho salmon and summer steelhead, respectively.

The bay's extensive tidal marshes, mudflats, and diked pasturelands receive significant waterfowl use, and the area is used by several threatened and endangered species, including bald eagles, peregrine falcons, and brown pelicans. The western snowy plover historically nested on the Siletz spit.

Establishment of the Siletz Bay National Wildlife Refuge in 1991 within a 770-hectare (1,900-acre) study area set the stage for acquisition and protection of the bay's most important wildlife values, but the area is facing intense development pressures.

Recommended actions:

- Implement U.S. Fish and Wildlife Service proposals for acquisition and management of lands within Siletz Bay National Wildlife Refuge study area.

**Yaquina Bay** - The northern coast's second largest estuary and most heavily developed port, Yaquina Bay has extensive tidal mudflats and eelgrass beds that attract large numbers of waterfowl and shorebirds. The bay receives the second highest use by wintering waterfowl on the Oregon coast, with a peak number of 9,293 birds recorded in December 1986. It is also Oregon's second most important wintering area for brant, with numbers ranging from 375 to 500 birds. Yaquina Bay is one of the state's leading shellfish producers. The bay supports the state's only commercial herring fishery, and its tributaries support anadromous fish runs. Deep draft shipping extends upriver to the industrial areas at Toledo, but large portions of the estuary and adjacent uplands remain relatively undeveloped. Oregon State University's Hatfield Marine Science Center and the Oregon Coast Aquarium on the south side of the bay offer significant opportunities for public education and interpretation.

Recommended actions:

- Secure title to private tidelands when sellers are willing; work with Port of Newport to protect port-owned tidelands.
- Pursue restoration opportunities in Boone Slough and other diked former tidelands.
- Protect eelgrass beds from conflicting uses.

**Beaver Creek Marsh** - The large undiked freshwater marsh above the estuary and open pastureland along this small stream between Newport and Waldport receive significant use by ducks and have been ranked as a high priority for protection of waterfowl habitat. Bald eagles use the area and the creek supports significant runs of wild coho, steelhead, and cutthroat trout. The area's relatively small size, diversity of wildlife values, and public ownership of the creek's upper watershed make it a good candidate for testing cooperative ecosystem management strategies.

Recommended actions:

- Secure undiked freshwater marsh along lower Beaver Creek from willing sellers.
- Enhance wildlife values on agricultural lands through cooperative efforts with private landowners.
- Develop coordinated resource management plan for private lands, National Forests, and other public lands in the watershed to demonstrate cooperative ecosystem management strategies.

**Alsea Bay** - Its broad tidal flats and extensive aquatic beds and tidal marshes make Alsea Bay an important area for waterfowl and shorebirds. A pair of bald eagles nests adjacent to the bay and peregrine falcons are seen during the winter. The Alsea River also supports significant runs of salmon, steelhead, and cutthroat trout. The American Fisheries Society has identified the Alsea estuary and Drift Creek as high priority corridors for protection and restoration of aquatic diversity. The Bureau of Land Management has proposed designation of a 10-acre island in the bay as an "Area of Critical Environmental Concern."

Recommended actions:

- Block-up public ownership of lands along lower Drift Creek.

- Enhance wetlands owned by Oregon Department of Fish and Wildlife at Lint Slough.
- Pursue acquisition of islands and private tidelands in Alsea Bay.

## LANE COUNTY

**Siuslaw River** - The Siuslaw estuary has retained a relatively large proportion of its tidal marshes (310 hectares - 764 acres) and it receives significant waterfowl use. The Oregon Department of Fish and Wildlife has identified the Waite Ranch (90 hectares - 225 acres) along the river's main stem as a high priority for protection of waterfowl habitat because of its high value for Canada geese and dabbling ducks. The South Jetty wetlands adjacent to the lower river are one of the two most important wintering areas for tundra swans on the Oregon coast. The Siuslaw system supports a variety of anadromous fish stocks. Diked former tidal marshes along the main river and North Fork have high potential for habitat restoration.

### Recommended actions:

- Secure Waite Ranch property for restoration of tidal wetlands or enhancement of existing freshwater wetlands.
- Provide educational and interpretive opportunities at Waite Ranch property.
- Pursue restoration of tidal wetlands along main stem and North Fork where feasible and appropriate.

**Dunes Area (North)** - The numerous lakes, streams, and marshes among and along the margins of the sand dunes south of Heceta Head to the Lane-Douglas County line provide a wide variety of freshwater wetland habitats and support diverse populations of wildlife.

The area's lakes (including Lily, Sutton, Mercer, Clear, Munsel, Cleawox, Woahink, and Siltcoos Lakes) and seasonal standing water in the deflation plains among the dunes provide substantial waterfowl and shorebird habitat, and many of the streams have significant fisheries values. The area also supports several nesting pairs of bald eagles and a number of nesting osprey. Snowy plovers nest in the North Dunes Area.

Stabilization of foredunes as a result of the introduction of European beach grass has created many deflation plain wetlands, but rapid succession will increasingly limit examples of the early stages that are most attractive to waterfowl and shorebirds.

A variety of factors may be contributing to a lowering of surface water levels in the area in recent years. The legislation that established the Oregon Dunes National Recreation Area required development of a surface water management plan to address the issue, but those provisions of the act have yet to be implemented.

#### Recommendations:

- Support U.S. Forest Service acquisition of private inholdings with significant wetland habitat within the Oregon Dunes National Recreation Area.
- Enhance freshwater wetland habitat on national forest lands in Enchanted Valley and along tributaries to Siltcoos and other lakes.
- Develop wetlands interpretive areas at Siuslaw South Jetty and the Siltcoos corridor.
- Preserve and enhance habitat for western snowy plover at Sutton Creek and Siltcoos spit.
- Develop surface water management plan to identify surface water values and determine water levels necessary to maintain habitat values.
- Restore wetlands degraded by recreational uses within Oregon Dunes National Recreation Area.
- Work with the U.S. Forest Service to ensure that revisions to the Oregon Dunes National Recreation Area Management Plan provide for protection and management of wetland habitat.

#### OTHER AREAS NOT ASSOCIATED WITH SINGLE COUNTIES

**Offshore Rocks and Islands** - Virtually all of the northern Oregon Coast's offshore rocks, reefs, and islands are included in two national wildlife refuges. Three Arch Rocks National Wildlife Refuge, the oldest national wildlife refuge west of the Mississippi River, includes three large rocks and six smaller rocks (a total of 7 hectares [17 acres]) about 1 kilometer (half-mile) offshore from Oceanside in Tillamook County. Oregon Islands National Wildlife Refuge includes more than 1,400 other rocks, reefs, and islands off the Oregon Coast. Together, the two refuges protect habitat for the majority of Oregon's estimated 1.1 million nesting seabirds and most of the haul-out sites for seals and sea lions along the Oregon Coast. The offshore rocks and islands provide habitat for several listed threatened and endangered species, including bald eagles, peregrine falcons, California brown pelicans, Aleutian Canada geese, and Steller sea lions. Three

Arch Rocks National Wildlife Refuge is the largest seabird nesting colony in Oregon, with an estimated breeding population of more than 226,000 birds. Thirteen species of seabirds nest on the refuge's rocks, including the largest colony of common murrelets south of Alaska.

Disturbance of nesting birds and pinnipeds on the offshore rocks and islands by low-flying aircraft, nearby boats, and other human uses is a growing problem.

Recommended actions:

- Support education and interpretive efforts to increase public awareness of effects of human disturbance on nesting seabirds and marine mammals.
- Support establishment of permanent and seasonal buffer zones to exclude non-emergency human uses within 500 feet of sensitive offshore rocks and islands.