



OWEB Focused Investment Partnership Priority COASTAL ESTUARIES IN OREGON

Summary Statement of Priority

The OWEB Board will consider proposals for investment in Oregon's **coastal estuaries**. The focal area for this Priority is coastal estuaries, including both the current and historical habitat range and associated riparian and upland habitats, which support a multitude of fish and wildlife species. Proposals should outline initiatives that address habitat conservation and restoration needs to achieve ecological outcomes over time at the landscape scale¹.

OWEB's Focused Investment Priority for Oregon's coastal estuaries guides voluntary actions that protect and/or restore estuarine habitat at a scale that ensures watershed functions and processes that support fish and wildlife dependent on this habitat type. **Actions will address the habitat, limiting factors, ecological outcomes, and conservation approaches that yield the greatest productivity across species. The importance of estuaries is noted in several plans, which are listed at the end of this document.**

Background

Where it occurs

Oregon's estuaries exist at the confluence of freshwater rivers and the ocean. The extent of estuarine habitat at these confluences can be determined by the range upon which the ocean maintains a tidal influence on these freshwater rivers (see map).

Currently, over 70% of Oregon's estuarine wetlands have been lost, while tidal swamp habitat losses stand at roughly 90% (for estuaries where applicable data is available). A history of anthropogenic alterations to habitat and natural hydrologic processes, including diking, tide gates, dredging, and channelization, among other impacts, has contributed to these habitat losses and impairments.

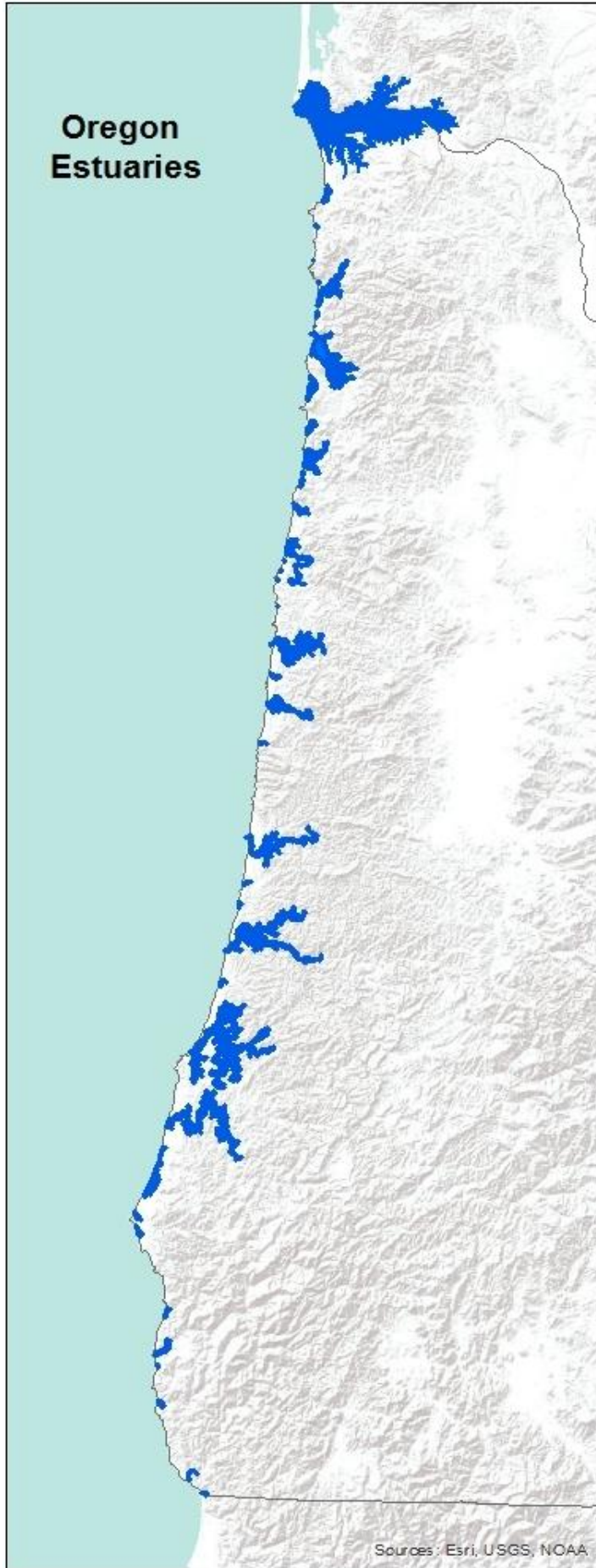
There are four main subsystems associated with estuaries, including: marine, bay, slough, and riverine. Estuary habitats experience regular fluctuations in salinity, water levels, sunlight, and oxygen. This priority includes restoration and protection of habitat and watershed function and process associated with each habitat type.

Indicator species and/or species of interest supported by this habitat

Estuaries provide habitat for a multitude of plant and animal species. The unique biophysical conditions found in estuaries as a result of tidal influence and variation in salinity fosters a complex diversity of vegetation and animal species. Such species include salmon and steelhead, crabs and other shellfish, marine mammals, seabirds and migratory birds. It is estimated that the Lower Columbia River estuary alone provides wintering habitat for peak counts of 150,000 waterfowl birds along the Pacific Flyway. In terms of fish species, estuaries provide critical breeding and nursery areas for rockfish, lingcod, and greenling, as well as rearing grounds for juvenile coho, Chinook, and chum salmon. Estuaries also foster large populations of staghorn sculpin, which are a critical food source for foraging migratory and shorebirds. Roughly 75% of Oregon's harvested fish species utilize estuary habitat during some portion or all of their life cycle.

¹ The landscape scale refers to the scale at which environmental, economic, and social factors intersect.

**Oregon
Estuaries**



Sources: Esri, USGS, NOAA

Why it is significant to the state

Estuaries are significant to the state of Oregon for a wide range of reasons. First, in terms of planning efforts, Oregon's Statewide Planning Goal 16, titled "Estuarine Resources", strives: "To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity, and benefits of Oregon's estuaries." Further, the Lower Columbia River estuary and Tillamook Bay estuaries are each designated as an "estuary of national significance" by the U.S. Environmental Protection Agency (two of 28 National Estuary Programs managed under the Clean Water Act). Many Oregon estuaries have Total Maximum Daily Loads developed for water quality in these habitats, as estuaries play an important role in filtering sediment, nutrients, pathogens, and other contaminants from aquatic environments.

Second, estuaries are a necessary habitat that is integral to the existence and success of various ESA listed fish and wildlife species. There are numerous species that are adapted to the unique habitat conditions that estuaries provide and are thus dependent on this habitat type. For example, nearly one-third of the west coast's nesting seabird colonies are located off Oregon's south coast. Additionally, the Klamath Bird Observatory maintains a list of 39 "Important Aquatic Bird Sites," with 24 of these sites located along the Oregon coast in and around estuary habitat.

Lastly, estuaries provide critical services for the people of Oregon. For example, estuaries serve to buffer storm wave damage and help stabilize shorelines from erosion.

Key limiting factors and/or ecological threats, with a focus on ecosystem function and process

- Increasing development and land-use conversions;
- Alteration of natural hydrological processes and streamflow, including limited salt- and fresh-water exchange due to such issues as tidegates;
- Water-quality degradation (including increased bacterial loads; decreased dissolved oxygen; and toxic contaminants from industry, agriculture, and urban development);
- Loss of habitat complexity and connectivity degraded tidal areas;
- Invasive aquatic plant and animal species;
- Impacts of climate change (e.g., sea-level rise, increased acidification); and
- Nutrient cycling and sediment transport.

Reference plans

- 1) Oregon Conservation Strategy
(http://www.dfw.state.or.us/conservationstrategy/read_the_strategy.asp)
- 2) NOAA Fisheries Columbia River Estuary ESA Recovery Plan Module for Salmon and Steelhead, 2011
(http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/estuary-mod.pdf)
- 3) ODFW Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon and Steelhead, 2010
(http://www.dfw.state.or.us/fish/CRP/lower_columbia_plan.asp)
- 4) Oregon Coastal Multi-Species Conservation and Management Plan, 2014
(http://www.dfw.state.or.us/fish/CRP/coastal_multispecies.asp)