

# RESTORING Oregon's Estuaries

Oregon's estuaries are home to highly productive tidal marshes that provide many benefits, despite limited acreage. Here we explore perspectives expressed by Oregonians about marshes and estuaries and consider how to restore them and regain their benefits.

Tidal marshes historically accounted for more than 50,000 acres of habitat in Oregon<sup>1</sup>, contributing critical rearing habitat to fish, migratory birds, and invertebrates.

They provide a unique habitat that performs a myriad of ecological functions. Some of these habitat functions are found only in tidal marshes, but they are required for the proliferation of fish, wildlife, and the humans who rely on them.

An estimated **68%** of this critically important habitat has been lost and will face compounding challenges under future climate change conditions<sup>2</sup>.

Sea level rise, warming seas and air temperatures, and changes in weather patterns will all challenge the survival ability of salmonids, shellfish, and other wildlife communities that are important to local communities.



Six perspectives about tidal marsh restoration emerged from the groups of Oregonians we talked with in our coastal cities. The quotations shared here convey the essence of each perspective.

Image background: View from Tunnel Trail over South Slough. Coos Bay Area, South Slough National Estuarine Reserve, OR. Photo credit: NERRA Photos.

# Benefits of Estuaries

## Marsh habitats:

- Provide stop-over habitat for waterfowl
- Support animals that provide important functions (e.g., oysters that can improve water quality)



- Thousands of fish used restored tidal marsh channels, including use soon after restoration<sup>6,7</sup>.
- Growth rates of juvenile coho salmon using a restoration marsh in South Slough were higher than anywhere else in that part of the estuary<sup>8</sup>

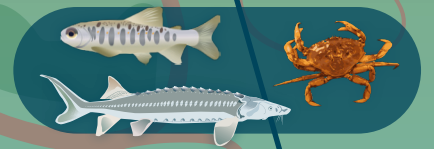
**7 out of the 9** Oregon restoration projects surveyed showed a **decrease in non-native plant species** after restoration and **8 projects** showed an **increase in native species**.

## Marsh vegetation:

- Provides habitat for wildlife
- Protects the shoreline from storms and disturbances (including sea-level rise)<sup>3</sup>
- Reduces pollution in our coastal watersheds<sup>4</sup>
- Captures and stores carbon<sup>5</sup>

## Sinuuous channels:

- Provide increased habitat area for fish and other wildlife (e.g, nursery habitats for commercial fishery and recreational species, like salmon)



**8 out of the 9** Oregon restoration projects surveyed showed **increased channel sinuosity** after restoration

The most common values about tidal marsh restoration expressed by Oregonians are shown in the blue circles, with the highest ranked value on the left.

Illustration of salmon, sturgeon, and oysters are by Tracey Saxby, Integration and Application Network ([ian.umces.edu/media-library](http://ian.umces.edu/media-library)). Dungeness crab from [pngwing.com](http://pngwing.com)

Increasing habitat for fish and wildlife

Increasing ecological function in general

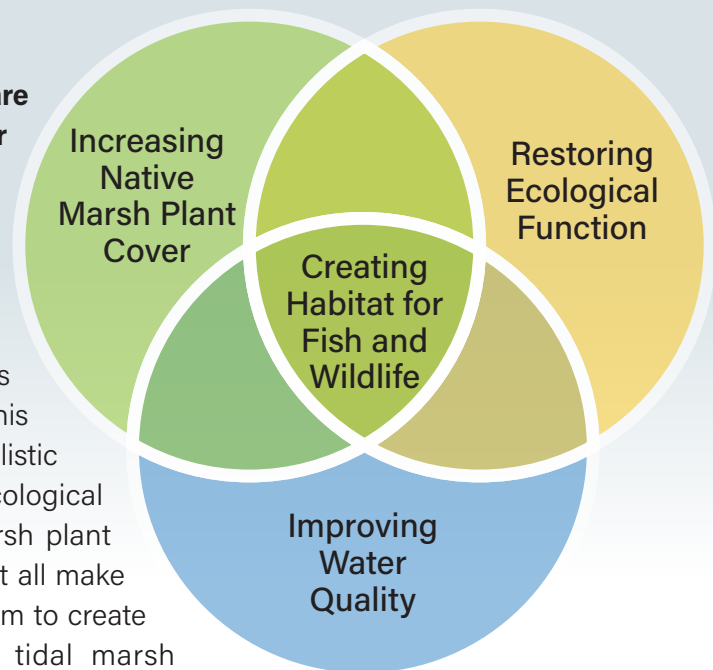
Enhancing water quality and reducing pollution

Minimizing the impacts of sea level rise

Increasing native vegetation

# Oregon Coastal Tidal Marsh Values

**Communities across Oregon's coast share interests in creating critical habitat for fish and wildlife** (see figure). The user groups interviewed for the project were restoration professionals, others involved with aspects of managing estuaries and their ports, and other area residents. The overlap among different user groups shows unity in support for increasing habitat. This allows for conservation to occur in a holistic way. Other interests include general ecological function, water quality, and native marsh plant cover. These elements of estuary habitat all make up the greater whole and work in tandem to create the unique, dynamic functions that tidal marsh habitats provide.



## How You Can Be Involved

**Conserve private lands:** Private landowners can conserve their land by creating protective easements or by working with local watershed groups to perform restoration.

**Volunteer with Organizations:** Members of the public can volunteer their time with local organizations that facilitate public participation in restoration activities such as invasive species removal, data collection, or native flora plantings. You can contribute to habitat improvement and learn more about how restoration works.

This image shows a marsh that has had restoration actions applied to half of it. The right/upper side of the marsh has been restored and the left/lower side has not, and remains hydrologically disconnected. Lower Drift Slough, Alsea Bay, OR. Photo credit: Paul Engelmeyer.

## Sources Used for This Publication

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Image of a tidal marsh that has been restored by the South Slough NERR (SSNERR). Sitka spruce can be seen adjacent to the tidal marsh on the right side of the image, and would historically be more prolific in Pacific Northwestern marshes, forming true swamps. South Slough Coos Bay, OR. *Photo credit: Ian Poellet, 2000, self published image.*

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