

Constructing Oregon's Diked Lands Vulnerability Inventory to Support Strategic Planning for the Impacts of Sea Level Rise

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Now is not the first time that Oregon's coast line has undergone great change. The pioneering spirit of the late 1800s and early 20th century led many farmers to alter estuaries to their own agricultural advantage. Many tidally influenced wetlands surrounding the estuaries were thus drained, diked, and filled so as to be used as flatlands, mainly for cattle grazing. Dikes and tidegates were built to prevent tidal inundation and ditches were dug to drain these diked areas. While this created ideal conditions for Oregon's dairy farming businesses, more than 68% of Oregon's estuarine habitat was lost. Lost with these habitats were vital estuarine functions and tidal volume.

Today, interest in dikes and diked lands does not just have to do with reclaiming these estuarine habitats, but also has to do with new changes in Oregon's coast due to climate change. The effects of climate change are likely to include a rise in tidal elevations as well as increased flooding and storms. Knowing where Oregon's dikes are located, what condition they are in, and who is responsible for them is therefore critical in decision-making about where dikes should be breached in order to restore tidal wetlands and where they need to be maintained in order to protect private and public infrastructure.

The primary objectives of the project are to 1) create a GIS-based product that includes an inventory of hydromodification structures in Oregon's estuaries, along with their associated attributes such as property ownership and structure vulnerability, and; 2) distribute this tool, along with other methods, to both increase awareness of sea level rise issues in tidal areas and to support improved planning on the use and maintenance of structures and lands susceptible to tidal influence amongst local planners and stakeholders.