



Report shows detailed projections for rising seas in Washington state

Impact of global warming

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SEATTLE — A new report provides the most detailed projections for how fast sea levels are expected to rise along Washington state shorelines over the next decades.

The projections released Monday show what to expect at 171 sites in Puget Sound and along the state's outer coast as sea levels rise due to global warming. The information is more local and specific than previous assessments.

Scientists with Washington Sea Grant and the University of Washington Climate Impacts Group calculated the likelihood that sea levels will reach or exceed a certain level for each location and under different greenhouse gas scenarios.

Harriet Morgan, a research consultant at UW Climate Impacts Group and report co-author, said previous projections for the state have been "too zoomed out to be useful." Now, local planners and others can click on a map and download estimates for their locations.

"Because we zoomed in, we captured local variations and land movement along the coast," she said. "This is something that we heard from local decision makers. We need numbers that are specific for our communities and local areas."

Sea level rise is caused by warming of the ocean and melting from glaciers and ice sheets.

Washington state has more than 3,000 miles of coastline. Rising sea level is a concern because it can increase the risk of flooding, storm surges, coastal bluff and shoreline erosion and loss of wetlands or other habitat. It can also damage roads and buildings and impact fisheries.

The estimates give a full range of possible future sea level changes, allowing planners to weigh the risks of different scenarios as they locate hospitals, roads or septic tanks.

The report incorporates the latest science and takes into account variations in the estimated land movement, whether land is sinking or uplifting, in each location.

“There are places in Washington state and elsewhere the land is uplifting and that will counteract absolute sea level change. And there are places that are subsiding,” said Ian Miller, a coastal hazards specialist at Washington Sea Grant who co-authored the report.

Areas such as Neah Bay on the northwest Washington coast are estimated to be uplifting, or rising, and have lower projected changes in sea level compared to areas of central Puget Sound, including Seattle, that are sinking.

In general, most communities are expected to see between 2 feet and 3 feet by 2100 under a scenario where greenhouse gas emissions continue to rise, Miller said.

By 2100 in Seattle, sea level is projected to rise between 1.7 feet and 3.1 feet under a scenario where greenhouse gas emissions continue to rise over time. Meanwhile, by 2100, sea level is estimated to rise between 1 foot and 2.6 feet in Taholah and 1.3 feet to 2.7 feet in Bellingham.

“This finer level of detail allows us to do better planning,” said Jim Parvey, the chief sustainability officer in Tacoma, who is working with the authors to incorporate the projections into city planning.

“We’re trying to get our minds around the problem and figure out how to build infrastructure that’s going to last. We need to do our best to guess what the conditions are going to be like in the future that we have to cope with,” he said.

The report is part of the three-year Washington Coastal Resilience Project to help communities prepare for natural events that threaten the coast due to rising sea levels.