Climate Change Projections for the Mid-Coast of Oregon

Temperature

Average temperature in Newport is projected to increase 4.5°F on average by the 2050s and 6.8°F on average by the 2080s compared to the historical baseline. All models project warming. These projections for Newport are representative of the entire Mid-Coast region.

Wildfire

The average annual number of "very high" fire danger days in Newport is expected to **increase from 36.5 days in 1971–2000 to 50.8 days (with a range of 33.2 days to 84.2 days) by the 2050s.** This represents a percentage increase of about 39% with a range of 9% to 131%. Four models project slight decreases by the 2050s.

Precipitation

On average and using the higher emissions scenario, **annual precipitation in in the region is projected to increase 1.5% by the 2050s and 4.2% by the 2080s.**

On average and using the higher emissions scenario, **Summer precipitation is expected to decline by 16.2% by the 2050s and by 18% by the 2080s.**

Precipitation will fall increasingly as rain. **Snow on the coast will become increasingly rare. Extreme precipitation events are expected to become more frequent and intense.**

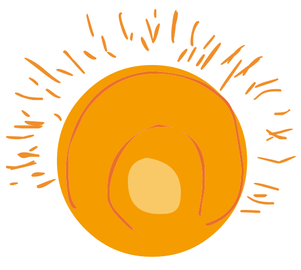
Sea Level Rise

Local sea level at Newport has risen about four inches during 1967–2013 and is **projected to rise by 1.7 to 5.7 feet.** The projected increase in local sea levels along the Oregon coast raises the starting point for storm surges and high tides making coastal floods more severe and more frequent. The multi-year likelihood of a 4-foot flood event—water reaching four feet above mean high tide—ranges from 45%–83% by the 2030s, 93%–100% by the 2050s, and 100% by 2100. These projections represent a real, eventual **future flood risk for people and assets within the 4-foot flood area.**

Floods

Streamflow is projected to increase during winter (November–March). By the late-21st century, **winter streamflow is projected to increase by about 18% on average.** This projected increase in peak winter flows could increase the risk of flooding.

Drought



Coastal Oregon is projected to experience a decrease in summer soil moisture, but to a lesser degree than the Oregon Cascades. Severe drought is rare in the rainy winters on the mid-Oregon coast, but the region is prone to periods of summertime water scarcity, especially when precipitation is lower than average in the shoulder seasons (e.g., spring, fall). This is exacerbated by the lack of natural storage (e.g., snowpack) and built storage (e.g., reservoirs). Additionally, warmer than normal summer temperatures can increase water demand, particularly in the agricultural sector arising from increased evapotranspiration. In Newport, four low-flow years had warm, dry summers. The Mid-Coast is expected to experience a **decrease in spring (March–May) runoff, and a 4-12% decrease by mid-century (2040–2069) in summer (June–August).**

Ocean Acidification

Coastal waters off the Mid-Coast are projected to reach chronically stressful water conditions by 2050. The Yaquina Bay and Alsea River estuaries rank moderately low in the estuary eutrophication score indicating a relatively smaller contribution to local coastal acidification conditions. However, upstream the Alsea River is ranked Medium for its riverine contribution to coastal acidification. The Siletz River and estuary have not been assessed.

Note: The information summarized on this page is from Dalton et al. 2019. Please refer to that study for the specifics on models used to provide the estimates described here, as a range of models were used to estimate outputs.