

## Understanding Our Changing Climate – Oregon Climate Change Research Institute Report

Last January, the Oregon Climate Change Research Institute (OCCRI) published their Fifth Oregon Climate Assessment. OCCRI is a consortium of universities, researchers and professionals located at Oregon State University. Every few years, they publish an assessment on climate change to help our communities, agencies, businesses, and citizens better understand, prepare, and adapt to our changing climate. The report is summarized statewide but built on a county-by-county approach. A section on Umatilla County describes predictions for the 2020's and 2050. These findings and trends are common for our region and can help us better prepare for our future.

For our region, the outlook in general is for warmer, droughty summers, and less predictable rainfall in winters. Although other factors, such as wind events, blowing dust, and loss of wetlands will be factors, they are predicted to not see the dramatic changes of summer droughts and heavy winter rain events.

Summer droughts and heat waves are expected to increase in frequency and intensity. We are currently experiencing earlier spring snow melt and runoff, leading to earlier wildfire seasons, and reduced late summer water availability.

The report states “Wildfire risk, as expressed through the frequency of very high fire danger days, is projected to increase under future climate change. In Umatilla County, the frequency of very high fire danger days per year is projected to increase on average by about 40% (With a range of -14 to +101%) by the 2050s under the higher emissions scenario compared to the historical baseline.

Under future climate change, the risk of wildfire smoke exposure is projected to increase in Umatilla County. The number of “smoke wave” days—days with high concentrations of wildfire-specific particulate matter—is projected to increase by 141% and the intensity of “smoke waves” is projected to increase by 82% by 2046–2051 under a medium emissions scenario compared with 2004–2009.”

Warming summer temperatures will challenge agriculture and increase public health issues, including heat related illness and respiratory issues caused by poor air quality from wildfire smoke.

Although the amount of winter rains may be normal or slightly more, the timing will be less predictable. The intensity of extreme precipitation events is expected to increase in the future as the atmosphere warms and can hold more water vapor. Low to mid elevations, a zone where snow comes and goes, will be more prone to rain-on-snow events that pose high flood risks.

The report also states, “Warming temperatures, altered precipitation patterns, and increasing atmospheric carbon dioxide levels increase the risk for invasive species, insect, and plant pests for forest and rangeland vegetation and cropping systems.”

So, as our climate continues to change, how can we best prepare, adapt, and mitigate the expected risks? With the recent passage of the national infrastructure bill, there may be opportunities to assure our roads, culverts, and bridges are designed to withstand intense flooding. In addition, there may be ways to improve community resilience to high water events.

We have opportunities to plant more shade trees as a response to future heat waves, especially in underserved communities. Along with this, we should expect to deal with more heat wave events and find ways to provide cooling shelters for people exposed to the elements or unable to afford or have air conditioning. For those of us who rely on water to irrigate crops and fields, we will need to find more efficient ways of conserving water, monitor our ground water supplies closely, and in some cases, convert to more drought resistant crops.

While many climate change problems are being addressed at the national and state level, we all share in the responsibility of doing what we can to reduce our personal impacts. Monitoring and reducing our food waste, purchasing sustainable products, including those with recyclable packaging, along with traveling less and reusing more are just some of the options we can consider as individuals. Xeriscaping our yards and taking advantage of incentives for residential solar installations will also help. Voting for candidates willing to take action to reduce the effects of a changing climate, especially at the local level, is a powerful tool as well.

There are always opportunities to share ideas and collaborate with agencies, tribes, and communities to pool expertise and resources. The more we know and the more we all share, the better prepared we will be to face the future that will impact us all.

The OCCRI report is an important tool to help us and our communities prepare and adapt to a changing climate. Similar reports are completed for Grant, Baker, and Wallowa counties. The report is available by contacting Oregon Climate Change Research Institute, College of Earth, Ocean, and Atmospheric Sciences, 104 CEOAS Admin Building, Oregon State University, Corvallis, OR 97331. Or you can download the report from this website: <https://blogs.oregonstate.edu/occri/oregon-climate-assessments/>

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