

# Oregon faces sustained and novel risks and opportunities as climate changes, new assessment shows

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Coastal erosion at Gleneden Beach in Lincoln County, Oregon. Credit: Hailey Bond

Oregon continues to face new and enduring hazards related to climate change, but opportunities for adaptation and mitigation are also expanding, the latest assessment released today by the Oregon Climate Change Research Institute indicates.

"In general, the qualitative climate projections haven't changed appreciably," said Erica Fleishman, director of the institute, which is housed at Oregon State University and is charged with producing the biennial assessment. "It is becoming hotter and an increasing proportion of precipitation is falling as rain rather than snow, which affects the availability of water."

The assessment, the first since the June 2021 heat dome event that smashed temperature records and led to dozens of heat-related deaths in the Pacific Northwest, notes that the number and intensity of heat waves are likely to increase.

Oregon saw more days per year topping 90 degrees and more nights per year warmer than 65 degrees between 2011 and 2020 than between 1951 and 2010. Over the past 20 years, the incidence, extent and severity of droughts also has grown. Increasing aridity is leading to increases in the average total annual area burned in wildfires. Glacier retreat has also accelerated, with 20 of Oregon's glaciers disappearing since the mid-late 1900s and no glaciers remaining in the Wallowa Mountains.

But the assessment also indicates there are opportunities. For example: In the wake of the 2020 wildfires that killed at least nine people and burned hundreds of homes, a survey of Oregonians showed that 90% of participants had taken at least one personal action to prepare for future disasters, such as putting together an evacuation kit or signing up for emergency alerts. Survey responses also indicated strong support for policies to advance [climate change](#) adaptation and mitigation.

Adaptation efforts are underway in coastal Oregon communities where sea level rise, flooding and erosion threaten infrastructure and buildings. Community scientists' observations of rain and snow are improving precipitation models. Visual artists are using their work to inform and engage audiences in discussions about climate change.

"Regardless of their [political views](#) or personal identity, Oregonians care about each other and their environment," Fleishman noted. "Our state's residents are taking diverse actions to preserve livelihoods and well-being as climate changes."

OCCRI is housed in Oregon State University's College of Earth, Ocean, and Atmospheric Sciences. More than 60 collaborators affiliated with OCCRI, including researchers with OSU, Oregon Institute of Technology, Portland State University, University of Oregon, governmental labs and departments and tribal groups contributed to the sixth Oregon Climate Assessment.

The legislatively mandated assessment provides lawmakers and the public with a biennial assessment of the state of Oregon-related climate change science and the likely effects of climate change on the state's natural and human systems.

The sixth assessment includes a series of evaluations of three key areas: the state of climate science, climate-related natural hazards and adaptation sectors. Each section of the report is based on peer-reviewed research.

"Oregon is a leader in climate response strategies and worker protections," Fleishman said. "We hope this assessment will support the state's ongoing efforts to advance climate equity and evidence-based investments in adaptation and mitigation."

Among the assessment's highlights:

- Disproportionately rapid warming in the Arctic, a phenomenon known as Arctic amplification, may be contributing to summer heat waves and hot, dry autumn weather in Oregon.
- Extreme winter wind speeds may increase, while annual mean wind speeds and the frequency of strong easterly winds in summer and autumn are expected to decrease slightly. Wind patterns impact electricity delivery, transportation safety and the spread of wildfire and pollutants.
- As the number of hot days increases, so will the extreme heat index values in Oregon. Heat index values are a driver of the Oregon Occupational Safety and Health Administration's new regulations on workplace heat exposure.
- Community observation of precipitation through programs such as the Community Collaborative Rain, Hail and Snow network; Community Snow Observations; and Mountain Rain and Snow is a powerful means of increasing understanding of climate and water availability.
- Climate change may significantly affect key economic drivers in Oregon by changing the availability and use of water by the agricultural sector and the composition of the state's timberlands. Evaluating the social and ecological trade-offs of mitigation and adaptation policies will inform economic adaptation.
- State and local land use laws, which control how and where development occurs, play a key role in climate change response, including reduction of greenhouse gas emissions and increasing the capacity of natural and working lands to sequester carbon. Full integration of climate science and equity considerations into land use plans and actions could better align Oregon's land use system with the current and foreseeable effects of climate change.
- Exposure to the complex components of wildfire smoke can lead

to negative respiratory and cardiovascular health outcomes and adverse birth outcomes and strain the capacity of the health care system. Risks to farmworkers, firefighters and other outdoor workers who are disproportionately exposed are substantial.

- Marginalized populations such as Oregon's tribes are more likely to be exposed to climate extremes and associated negative health effects. But ongoing experience of tribal adaptation to environmental and [social change](#) can also lead to high resilience to future impacts of climate change. Tribal communities are responding to [climate](#) change through political action, workforce development, environmental stewardship and youth education and fellowship.

The full report is available online at

<https://blogs.oregonstate.edu/occri/oregon-climate-assessments/>.

Provided by Oregon State University

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