Oregon Department of Transportation

FACT SHEET

Climate Change Impacts and Wildfires in Oregon

Hazard Overview

Wildfires are a chronic problem in Oregon, and recent events indicate this risk is reaching historic levels of impact. Wildfires can cause road closures and extensive damage to roadway infrastructure, impose logistical challenges to evacuation routes, and threaten human safety through both the fires themselves and the associated air quality impacts. The frequency and extent of wildfires is expected to increase across the state.

Recent Notable Wildfires

2015 Canyon Complex Fire

110,000 acres burned

Approximately $5M in costs to ODOT

2017 Eagle Creek Fire

48,000 acres burned

Approximately $20 Million in costs to ODOT

September 2020 Fires

Over 1 million acres burned

Costs could exceed $1 Billion

Impacts and Consequences on Transportation

- Evacuations, including in densely populated urban areas
- Short- and longer-term road closures
- Potential threats to evacuations due to fallen trees and other immediate fire-related impacts
- Disruption of freight shipping and individual travel
- Widespread destruction of hardware (e.g. guardrails, traffic control devices)
- Damaged bridge and pavement
- Costs for extensive tree and debris removal and slope stabilization
- Increased future risk for landslides and debris flows

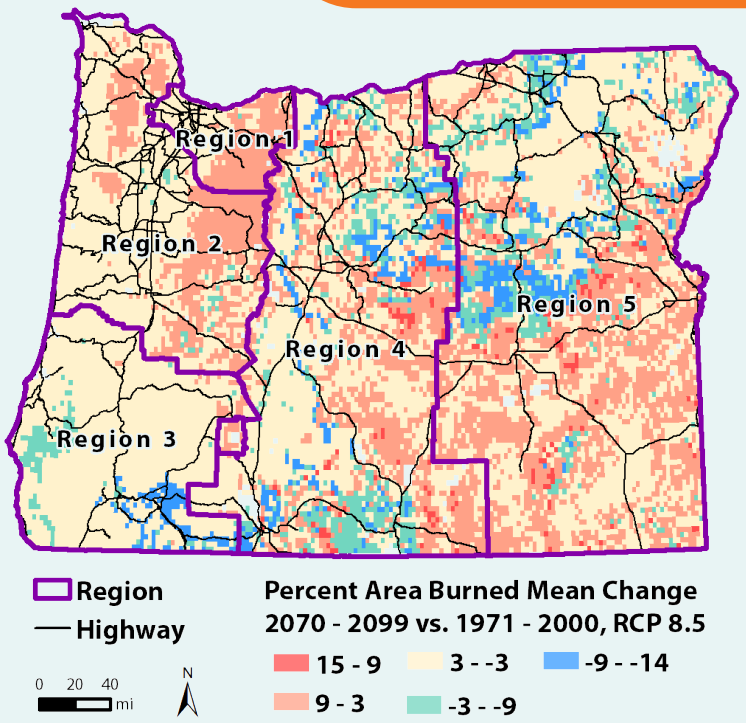
Oregon Department of Transportation

How will climate change affect wildfires in Oregon?

The wildfire season in Oregon is expected to become longer, and fires may occur more frequently, more extensively, and more severely.

This increase in activity is expected to occur across Oregon. The biggest increases are projected in the eastern part of the state, but even the wetter (and more populous) region west of Cascades will likely see increases, as demonstrated by the Eagle Creek fire in 2017 and the 2020 fire season.

Projected increase of area burned by end of century, under RCP 8.5.



Making Oregon's Highway System More Resilient to Wildfire

Strategies to Mitigate Immediate Impacts

ODOT plays a critical role in evacuating residents and maintaining access for emergency personnel. As wildfire events increase, ODOT will need to maintain and improve plans for:

- Detour planning and communication
- Effective communication with emergency responders
- Effective monitoring and closing of roadways unsafe to travel
- Coordination with other state and local agencies involved in wildfire emergency response

Fortifying a highway against a large wildfire is difficult. However, potential physical measures could include:

- Use of fire-resistant materials for hardware such as traffic control devices and guardrail posts
- Increased vegetation management and erosion control in critical areas
- Proactive tree removal along certain routes, as the impacts from fallen trees can be widespread and significant

Strategies to Reduce Longer-term Consequences

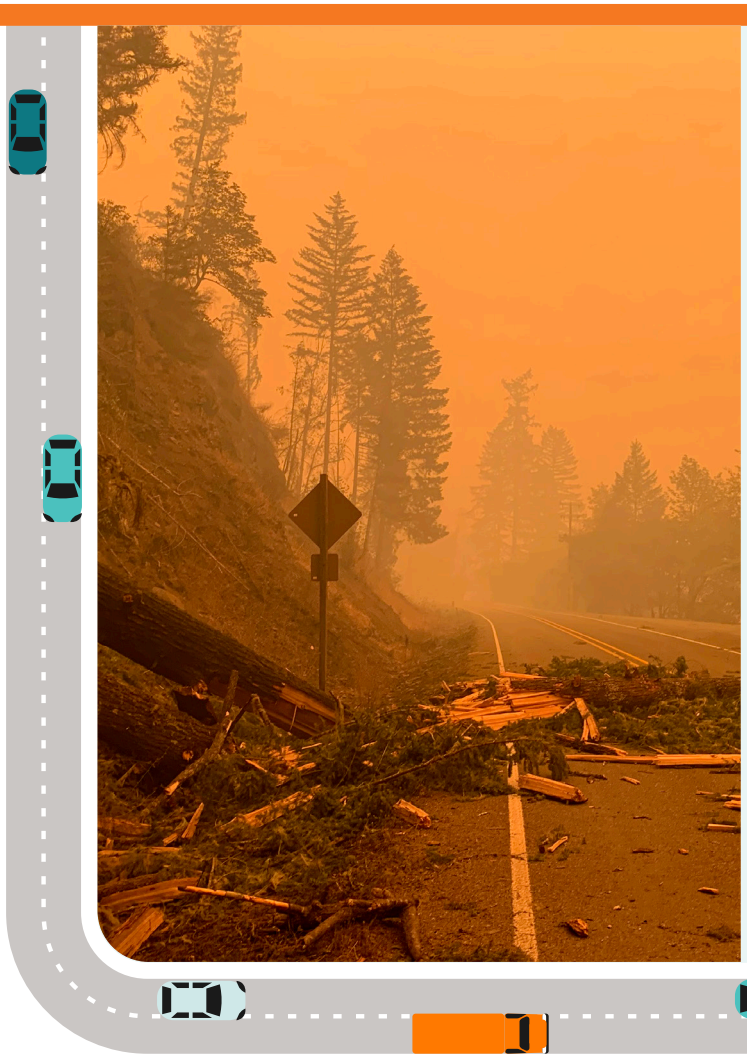
For wildfire, ODOT should focus on ensuring effective and rapid recovery from wildfires. After an event, ODOT may need to conduct:

- Extensive tree and debris removal
- Stabilization of slopes
- Repair and restriping of roads
- Replacement of signs, traffic signals, and other hardware
- Increased culvert maintenance after an event
- Identification of areas at higher risk of slides after an event, and potential increased monitoring of those sites

To ensure effective and rapid response, ODOT may consider:

- Ensuring materials are sufficiently stockpiled for repairs, and strategically located to ensure access following large-scale events
- Increased investment in equipment and staffing to increase speed of clearing trees and other debris
- More holistic cost tracking that captures both direct and indirect costs, including costs of downstream impacts like future slides or culvert maintenance
- Process for debriefing after events to continually improve planning and response
- Sharing of lessons learned across ODOT regions and with other states
- Continual evaluation of health & safety measures for workers

Oregon Department of Transportation



Adaptation Barriers to Overcome

- Unlike hazards such landslides that tend to be concentrated in specific locations when an event occurs, large portions of the highway system can be affected by a single wildfire event.
- Strategies discussed above would need to be applied to the entire ODOT highway system, since wildfire is a potential hazard everywhere. The costs could be substantial. Prioritization of upgrades and changes in some locations may be necessary, based on risk.
- Besides costs, the amount of time to clear fallen trees, stabilize slopes, and repair guardrails along potentially hundreds of miles of roadway means that some highway segments could be closed for months.
- Budgeting cycles and timing can make proactive, but expensive, changes difficult. Federal aid often comes after the fact.
- Multiple, large wildfire events occurring at the same time strains ODOT's ability to respond.

Sources Cited

The information in this fact sheet was primarily drawn from:

Mote, P.W., J. Abatzoglou, K.D. Dello, K. Hegewisch, and D.E. Rupp, editors. 2019. Fourth Oregon climate assessment report. Oregon Climate Change Research Institute, Oregon State University, Corvallis, Oregon.

ODOT-sponsored analysis of climate change projections and interviews with ODOT staff