

Developing Oregon's Statewide Wildfire Hazard Map

Oregon State University researchers are working with the nation's leading fire modeling and local subject matter experts to develop the Oregon Statewide Wildfire Hazard Map. The purpose of the map is to identify where wildfires pose the most hazard to structures and other human developments. Similar methods are being used across the nation to support strategic wildfire risk reduction programs. As a science-based tool, the wildfire hazard map and related data will help state agencies and individuals objectively prioritize risk mitigation actions in Oregon communities.

Modeling Wildfire Hazard

To create the wildfire hazard map, OSU researchers combined two primary datasets – burn probability and fire intensity. Both were modeled across Oregon using the best available data and with the help of state and local fire professionals. Burn probability and fire intensity are based on four criteria:



Data regarding these criteria were combined with data from historical fires and simulations of 10,000+ plausible fire seasons, accounting for fire likelihood and intensity under everything from mild to severe fire weather.



Hazard Classifications

Scientists will use data from the wildfire hazard models to assign a hazard classification to every property in Oregon. Data values are calculated at very fine scales, and then averaged across each tax lot. Each lot will then be assigned to one of three hazard zones: low, moderate or high.

Many factors contribute to a property's hazard zone classification. Some of those factors are visible just by looking at a property – for instance, the amount and type of vegetation which primarily affect fire intensity. Other factors can't be determined by looks alone. For instance, it is impossible to see the likelihood of experiencing a fire, or the effect that regional climate patterns may have on a location's burn probability.



These two properties illustrate different characteristics which might lead to high hazard designation. The property on the left is surrounded by dense timber which will create high fire intensity when it burns. By contrast, the properties on the right are not surrounded by dense timber, but regional climate and local landscape features (i.e., river corridors and ridgelines) may cause these properties to have high burn probability.

What Is the Wildland-Urban Interface (WUI)?

The wildland-urban interface (WUI) is the geographic area where structures and other human development meet or intermingle with forests, rangelands and other vegetation.

In some communities, the WUI is a transition zone between the more urban core and the wildlands. In these cases, structures in the WUI are threatened by fires spreading into communities, often via ember showers. In other areas, the WUI includes development intermixed with wildland vegetation such that communities are more directly exposed to flames when fires occur. In both cases, the WUI captures areas where there is enough wildland vegetation to support a wildfire AND enough development to result in significant damage to homes, critical infrastructure and human lives.



How Was the Wildland-Urban Interface (WUI) Mapped?

Researchers at OSU mapped the WUI by applying best available science and data to a set of definitions and rules developed by a diverse committee of stakeholders. First, in order to be in the WUI, there must be at least one structure per forty acres. Importantly, the rules also make some accommodations. For example, a collection of buildings (e.g., barns and garages) on a single property cannot constitute their own WUI just because there are enough buildings. Second, for areas that do have one structure per forty acres to be included in the WUI, they must also be surrounded by flammable vegetation or located within 1.5 miles of a large patch of flammable vegetation.

How Will the Wildfire Hazard and WUI Maps Be Used?

In accordance with Oregon law, the statewide hazard map and the WUI map are designed to be used together to help state agencies prioritize the communities with the highest need for hazard mitigation. To do that, agencies will use both maps to identify properties that are in the WUI *and* classified as high hazard. This will allow them to allocate state and federal funds to the areas with most need and determine where defensible space and/or fire hardening codes might apply.

Only properties meeting both criteria are potentially subject to defensible space and fire hardening rules required by state law. Fire hardening rules will not apply to existing structures unless significant home updates occur.

The map **WILL** be used to:

- ✓ Improve the safety and well-being of communities across Oregon.
- ✓ Help Oregonians understand the wildfire hazard in their community.
- ✓ Help public agencies objectively prioritize wildfire hazard reduction efforts.
- ✓ Implement a statewide strategy to improve wildfire resilience.
- ✓ Inform where statewide defensible space codes may apply in high hazard areas in the WUI.

The map **will NOT** be used to:

- ✗ Adjust insurance rates (by insurers).
- ✗ Make landowners modify the components of the building they live or work in unless significant updates are planned for structures within high hazard areas in the WUI.

The maps will also help agencies, communities and individuals across Oregon better understand their hazard and prepare for future wildfires. The data and maps will be shared publicly on the Oregon Explorer at <https://oregonexplorer.info/>.

Learn more about the maps developed by OSU:

- Visit beav.es/hazardmap.
- Email osuwildfirerisk@oregonstate.edu.