WASCO COUNTY

2022

COMMUNITY WILDFIRE PROTECTION PLAN

Prepared By
Wasco County Planning Department

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Signature Page

The contents of this document have been agreed upon and endorsed by the Wasco County Board of Commissioners, the District Forester of the Central Oregon District for the Oregon Department of Forestry (ODF), the Wasco County Fire Defense Board Chief, and the South Wasco County Fire Defense Chief. This plan is not legally binding as it does not create or place mandates or requirements on individual jurisdictions. It is intended to serve as a planning tool for the fire and land managers of Wasco County, and to provide a framework for those local agencies associated with wildfire suppression and protection services to assess the risks and hazards associated with wildland urban interface areas and to identify strategies for reducing those risks. This is a working document to be reviewed by members of the Steering Committee and updated as necessary.

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Kathy Schwartz, Wasco County Commissioner Date

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Credits

ABOUT THE COMMUNITY PLANNING ASSISTANCE FOR WILDFIRE PROGRAM

The Community Planning Assistance for Wildfire (CPAW) program works with communities to reduce wildfire risks through improved land use planning. It is supported through grants from the U.S. Forest Service, the LOR Foundation, and other private foundations. It is a program of Headwaters Economics and Wildfire Planning International. Wasco County was a 2018 CPAW Community.

ACKNOWLEDGMENTS

Our team would like to thank everyone who contributed their time to this CWPP update, including representatives from Wasco County Planning Department, Wasco County Office of Emergency Management, Oregon Military Departments Office of Emergency Management, Wasco County Rural Fire Districts and Rangeland Fire Protection Associations, Oregon Department of Forestry, Oregon State Fire Marshal, Wasco County Board of County Commissioners, USDA Forest Service, Bureau of Land Management, Cities of The Dalles, Mosier, Shaniko, Antelope, Dufur, and Maupin, Confederated Tribes of Warm Springs, and all other participating agencies and community members. This project was funded in part by a FEMA Fire Management Assistance Grant (FMAG).

Cover Photo Credits: Inciweb, White River Fire Incident:
https://inciweb.nwcg.gov/incident/photographs/7013/0/

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List of Acronyms

AARFPA – Antelope Ashwood Rangeland Fire Protection Association
BLM – Bureau of Land Management (U.S.)
BOCC – Board of County Commissioners (Wasco County)
BSRPA – Bakeoven-Shaniko Rangeland Protection Association
CRGNSA – Columbia River Gorge National Scenic Area
CRPA – Columbia Rural Protection Association
CWPP – Community Wildfire Protection Plan
DFD – Dufur Fire Department
FAC – Fire Adapted Communities
FSS – Fire Safety Standards
HIZ – Home Ignition Zone
HFRA – Healthy Forest Restoration Act
IBHS – Insurance Institute for Business and Home Safety
JFRFPD – Juniper Flat Rural Fire Protection District
MCFR – Mid-Columbia Fire and Rescue
MFD – Mosier Fire District
NHMP – Natural Hazard Mitigation Plan
NIST – National Institute of Standards and Technology
NRCS – National Resource Conservation Service
NSA – National Scenic Area
NSALUDO – National Scenic Area Land Use & Development Ordinance

NWS – National Weather Service
ODF – Oregon Department of Forestry
ODFW – Oregon Department of Fish and Wildlife
OEM – Office of Emergency Management (Wasco County)
SWCD – Soil and Water Conservation District
TVRFPD – Tygh Valley Rural Fire Protection District
USFS – United States Forest Service
WCLUDO – Wasco County Land Use & Development Ordinance
WRFPD – Wamic Rural Fire Protection District
WUI – Wildland-Urban Interface

Mosier Creek Fire burning brush, oak, and timber southeast of Mosier, Oregon. August 2020.
Credit: inciweb
https://inciweb.nwcg.gov/incident/photographs/6955/12

Executive Summary

Introduction

In August 2020, Wasco County received a Fire Management Assistance Grant from FEMA as part of the Hazard Mitigation Grant Program to update their 15 year old Community Wildfire Protection Plan (CWPP)—a community-based plan that identifies local wildfire risk, what is at risk, and actions the community must take to address its wildfire risk. Less than a week later, on August 13, 2020, the Mosier Creek fire broke out, burning 28 structures, including eight homes; a conflagration was declared. Though it was contained in about a week, almost 1,000 acres of rural residential and forest lands were impacted. A few days later, another fire sparked evacuations in the west end of The Dalles, and the White River fire reached 17,442 acres in the Mt Hood National Forest and adjacent private lands prompting evacuation alerts in South County. After a relatively quiet early summer, Fire Season was off and running in Wasco County. These served as a powerful reminder of fire's role on the landscape. They also brought a host of challenges to local communities: residents experienced weeks of air quality impacts and evacuations; first responders were on the front lines of protecting property and other community values at risk; and land managers and home owners will be dealing with the long-term effects of post-fire landscape restoration for decades. Although wildfire has shaped the region's landscapes for millennia, the 2020 wildfire season underscored the importance of planning, collaboration, and action to address future incidents.

Community Wildfire Protection Plan as a Tool for Risk Reduction

Wasco County adopted its first CWPP in 2005, which incorporated input from numerous stakeholders. Since that time, many changes have occurred across the county, including new housing and roads, fires on the landscape, and forest fuel treatments near communities. These changes affect the way a community plans for fire and prompted the need for revisions.

This CWPP builds on the expertise and information contained in the 2005 CWPP, and provides important updates, including:

- Refined definition of the wildland-urban interface (WUI) for Wasco County;
- An updated risk and hazard assessment;
- New action table and maintenance plan;
- Refreshed content to align with national policy and strategies.

Updated information in this CWPP was gathered through engagement with a multidisciplinary stakeholder group and public comment process.

CWPP Minimum Requirements

CWPPs have been in practice across the country since 2003, when the Healthy Forests Restoration Act (HFRA)[1] was signed into law and gave statutory incentives for the United States Forest Service (USFS) and the Bureau of Land Management (BLM) to consider the priorities of local communities who developed and implemented forest management and hazardous fuel reduction projects.

The HFRA requires that CWPPs must meet three minimum requirements:

1. Show collaboration between local and state agencies, in consultation with federal agencies and other interested parties;
2. Identify and prioritize fuel treatments to reduce hazardous fuel areas;

[1] https://www.fs.fed.us/emc/applit/includes/hfr2003.pdf

3. Recommend strategies to reduce the ignitability of structures.

Many CWPPs also cover a range of other relevant topics, such as public education and outreach activities, potential mitigation resources, and other local community information. Unlike codes or ordinances, CWPPs are not legally-binding documents. However, given future uncertainties such as national budgets and changing climatic conditions, CWPPs are an effective local tool to help communities plan for unknowns and increase wildfire resilience.

LEARN MORE: WHY DOES MY COMMUNITY NEED A CWPP?

CWPPs are the primary mechanism that communities use to identify local priorities for wildfire risk reduction and resilience. These plans serve as the "glue" that brings together multiple sources of information, activities, and interests into one document.

CWPPs have many economic, social, and environmental benefits, including:

- Reducing the direct and indirect social, economic, and environmental costs of wildfire;
- Coordinating wildfire risk reduction with other community values and priorities;
- Influencing where federal agencies (USFS, BLM) prioritize fuel treatments;
- Bringing together diverse interests to tackle local wildfire challenges and opportunities;
- Identifying potential resources and funding for mitigation activities;
- Increasing community awareness and engagement in risk reduction.

How to Read This Plan

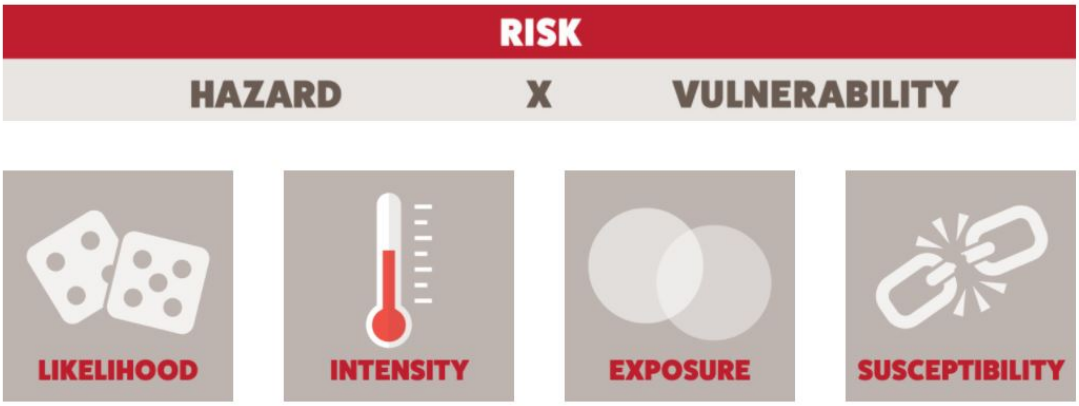
This CWPP is intended for multiple audiences. While every reader is encouraged to read and use the entire plan, specific sections may be of higher interest and relevance. The following overview provides a quick guide to each section:

Part 1: Understanding the Local Environment

Part 1 provides an area description of the county with relevant data on topography and climate. It also describes the local environment and ecology, land ownership, and key demographic information. A primary focus of this section is on the fire environment and fire history in Wasco County. Finally, Part 1 also provides both a general definition and specific spatial delineation of the wildland urban interface in Wasco County.

Part 2: Risk Assessment

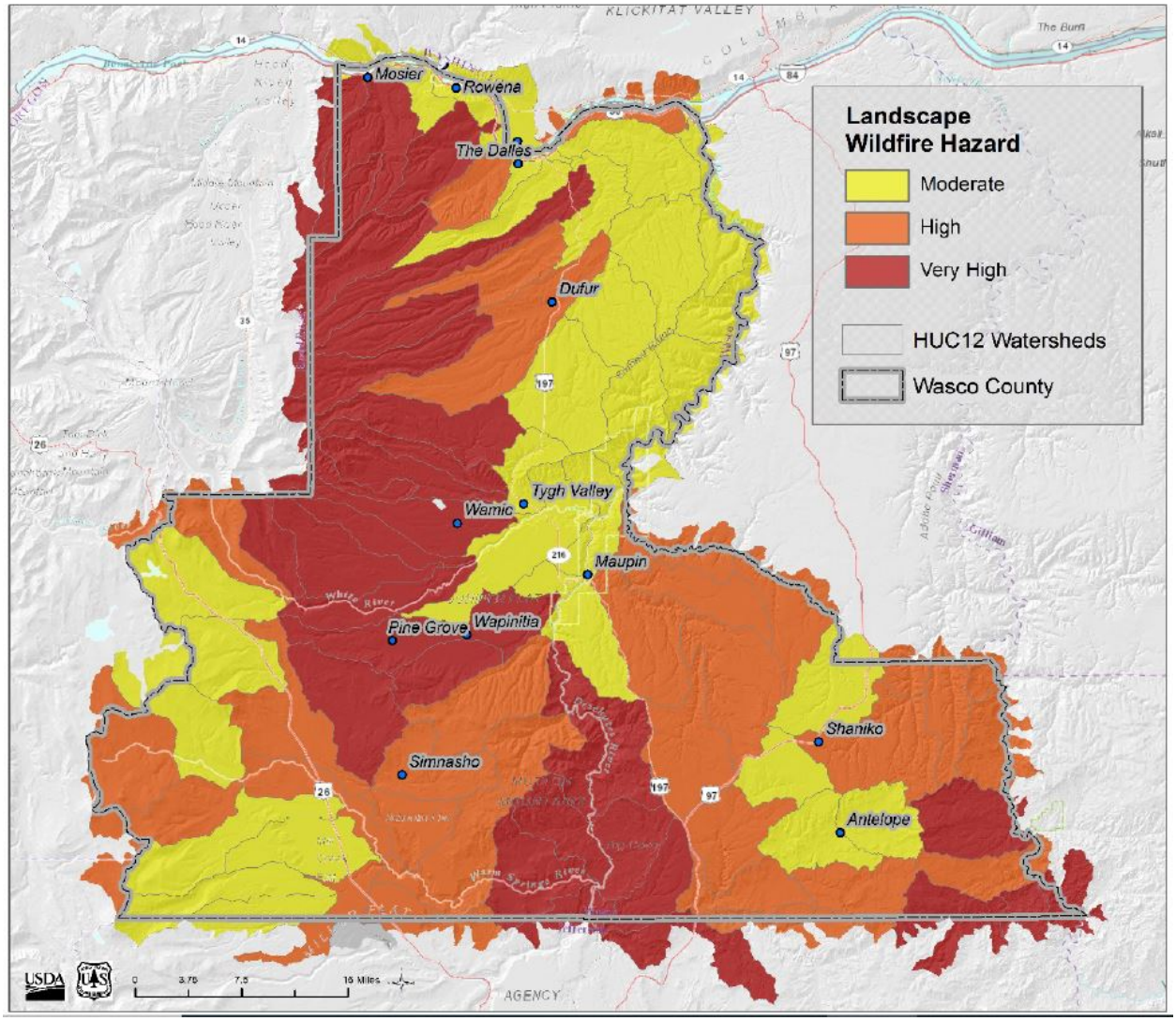
Risk is the intersection of hazard and vulnerability. Hazard components include the relative likelihood of occurrence and potential intensity of wildfire, whereas vulnerability components include how exposed a community asset is and how susceptible it is to being impacted by the hazard.



Source: wildfirerisk.org

The CWPP steering committee used the Oregon Wildfire Risk Explorer tool to examine the wildland fire risk to the County and gauge the relative risk and hazard due to wildland fire for the lands and communities within the planning area. This tool (created in partnership with the Oregon Department of Forestry (ODF) and the Institute for Natural Resources at Oregon State University (OSU)) is intended to direct the implementation of wildfire mitigation activities to the highest priority areas and promote cross-boundary coordination. The full risk assessment can be found in Appendix A. This tool, along with the 2018 Community Planning Assistance for Wildfire Hazard Assessments, provided the committee a valuable starting point to assess risk in Wasco County, which was augmented through community discussions and partner agency input. Part 2 provides a summary of how these risk components were assessed and includes several maps.

Figure 1. Landscape Wildfire Hazard in Wasco County (Source: 2018 CPAW)



Part 3: Taking a Cohesive Strategy Approach in Wasco County

Part 3 is organized into three subsections:

- Restoring and Maintaining Resilient Landscapes in Wasco County
- Promoting a Fire Adapted Wasco County
- Increasing Wildfire Response Throughout Wasco County

These subsections align with the National Cohesive Wildland Fire Management Strategy—a multi-phased effort engaging partners from federal, state, local, and tribal governments, non-governmental organizations, and public stakeholders to examine how the nation can plan for its wildfire future. Each subsection also provides local context and information on each topic. In addition, each subsection contains a list of potential strategies to address relevant challenges and opportunities.

Part 4: Putting the CWPP into Action

Part 4 focuses on implementation. This section provides an action plan to guide stakeholder activities to ensure the CWPP process moves forward in tangible ways that reduce Wasco County's wildfire risk. This section includes

guidance on future CWPP updates and an overview of stakeholders associated with this CWPP to promote understanding of roles and responsibilities.

Appendices

Appendix A: Oregon Wildlife Risk Explorer Advanced Report for Wasco County is a tool (created in partnership with the Oregon Department of Forestry (ODF) and the Institute for Natural Resources at Oregon State University (OSU)). It is intended to direct the implementation of wildfire mitigation activities to the highest priority areas and promote cross-boundary coordination.

Appendix B: Primary Plans Related to CWPP Action Table provides a list of wildfire and/or WUI-related actions from the Wasco County Comprehensive Plan (2020) and the Wasco County Natural Hazards Mitigation Plan (2019). This appendix serves as a quick reference to help readers see the linkages between this CWPP and other county and city plans.

Appendix C: Stakeholder and Public Engagement during CWPP Update provides an overview of the CWPP stakeholder and public engagement during the plan update.

Appendix D: Wasco County Forest Collaborative Priority Areas for Fuel Reduction provides a summary of the fuel treatment status, critical egress areas, and fuel treatment priorities.

Appendix E: Fire Agency Priorities and Needs identifies those current and long-range goals and needs for all local, state, and federal fire agencies in Wasco County.

Relationship to Other Plans, Policies, and Regulations

This CWPP relates to many other local plans, policies, and regulations, which are referenced throughout the document. Generally, local plans, policies, and regulations informed the development of this CWPP in multiple ways, including:

- Drawing on existing information to inform sections of this CWPP;
- Supporting or building on relevant wildfire goals and policies previously adopted in other plans, and;
- Leveraging existing regulatory approaches (e.g., subdivision regulations) or exploring new mechanisms (e.g., zoning codes) to move applicable actions forward through this plan.

The most frequently referenced plans are identified below.

Natural Hazard Mitigation Plan (NHMP) for Wasco County and the City of The Dalles

The 2019 update to the Multi-jurisdictional NHMP for Wasco County and the City of The Dalles provides a community profile, including information on critical facilities and infrastructure, population trends, housing stock, socioeconomic patterns, and land use and future development projections. Wildfire hazard was analyzed as one of the seven primary natural hazards faced in Wasco County and five broad goals relating to wildfire were adopted within the NHMP. These mitigation strategies include goals and objectives to reduce wildfire risk within the WUI, and are further referenced throughout this CWPP.

Wasco 2040

Wasco 2040 is a complete update to the original 1983 Wasco County Comprehensive Plan and was adopted in November 2020. The updated plan identifies community challenges and priorities, including the growing wildland-urban interface, and gathers community information to guide planning decisions for the county's future growth. County goals and objectives relevant to this CWPP address development in hazardous areas, promoting resiliency, adapting to climate change, and conserving vital natural resources and environmental functions.

This state-acknowledged Comprehensive Plan guides growth and development decisions in the City over the next 20 years. These policies include references to wildfire and the wildland-urban interface throughout the document. This includes a section on Oregon Statewide Planning Goal 7 – Areas Subject to Natural Hazard.

Fire Safety Standards (2007)

The Fire Safety Standards (FSS) were adopted in 2007, soon after the original CWPP was completed. This document is incorporated into the Wasco County LUDO, as well as the NSA LUDO, and requires that all new development complies with fire safe regulations related to Siting Standards, Construction Standards, Defensible Space, Access Standards, and On-Site Water requirements. In the event that a development cannot meet these criteria, a Fire Safety Mitigation Plan is required. These standards were state of the art at the time of adoption, but should be updated with new findings from more recent research.

Locally-Adopted CWPPs

This plan also would support local CWPPs. As of the writing of this version, no districts or cities within Wasco County have adopted their own CWPP. Because CWPPs can be effectively implemented at many different scales—neighborhood, fire district, town, city, and county—they can also "overlap" in their boundaries. Each different scale can help address unique concerns. For example, neighborhood CWPPs often contain more detail related to a residential area than a countywide CWPP. If multiple CWPPs exist, they can be designed to complement and strengthen the objectives of other CWPPs' jurisdictions and scales.

Additional CWPPs may be adopted in the future by other fire districts or jurisdictions. The county encourages the development of local CWPPs that provide additional detail not included in this CWPP to further help communities plan for wildfire.

Summary of CWPP Update

The value of a CWPP is in a three-step process of development, adoption, and implementation:

1. **During development, stakeholders increase communication among agencies, organizations, and local community representatives to discuss and mutually agree on wildfire risk reduction goals and strategies.**
2. **The adopted plan provides an informative and action-oriented framework to guide a process of implementation.**
3. **Through ongoing and long-term actions, stakeholders work to achieve the goals set forth in the CWPP and make adjustments to improve actions, as necessary.**

This CWPP update provides essential updates to the county's first CWPP (developed in 2005) in response to changes that have taken place across the county, including new development, wildfires, and fuel treatments. Updated information includes a new science-based hazard assessment, an alignment of information with national planning priorities, and a balanced approach to actions. This update was collaboratively developed by many stakeholders representing different areas of expertise and perspectives. Upon adoption of this CWPP update, stakeholders—including the public—are ready to launch into the critical phase of implementation to ensure that Wasco County increases its capacity for resilient landscapes, fire adapted communities, and efficient response capabilities.

Part 1: Understanding the Local Environment

Overview

Wasco County has diverse landscapes and communities that are shaped by a variety of influences—including geologic, weather, climate, fire, and development patterns. These influences play a role in how the county assesses and plans for future wildfire events. To better understand these influences, Part 1 provides general background information on relevant aspects of the county, such as annual precipitation and temperature ranges, topographic features, and key demographic information.

A smoke column looms over Pine Grove as the White River Fire moves from Federal land to private (2020). Credit: Inciweb, White River Fire Incident: *https://inciweb.nwcg.gov/incident/photographs/7013/0/*

Part 1 also discusses a critical term, the wildland-urban interface (WUI, or "Woo-ee") to help readers understand this concept and how it applies to Wasco County. A countywide Wildfire Hazard Assessment shows where the WUI is located and current wildfire risk and hazard concerns. This information informs Parts 3 and 4 (including the CWPP Action Plan).

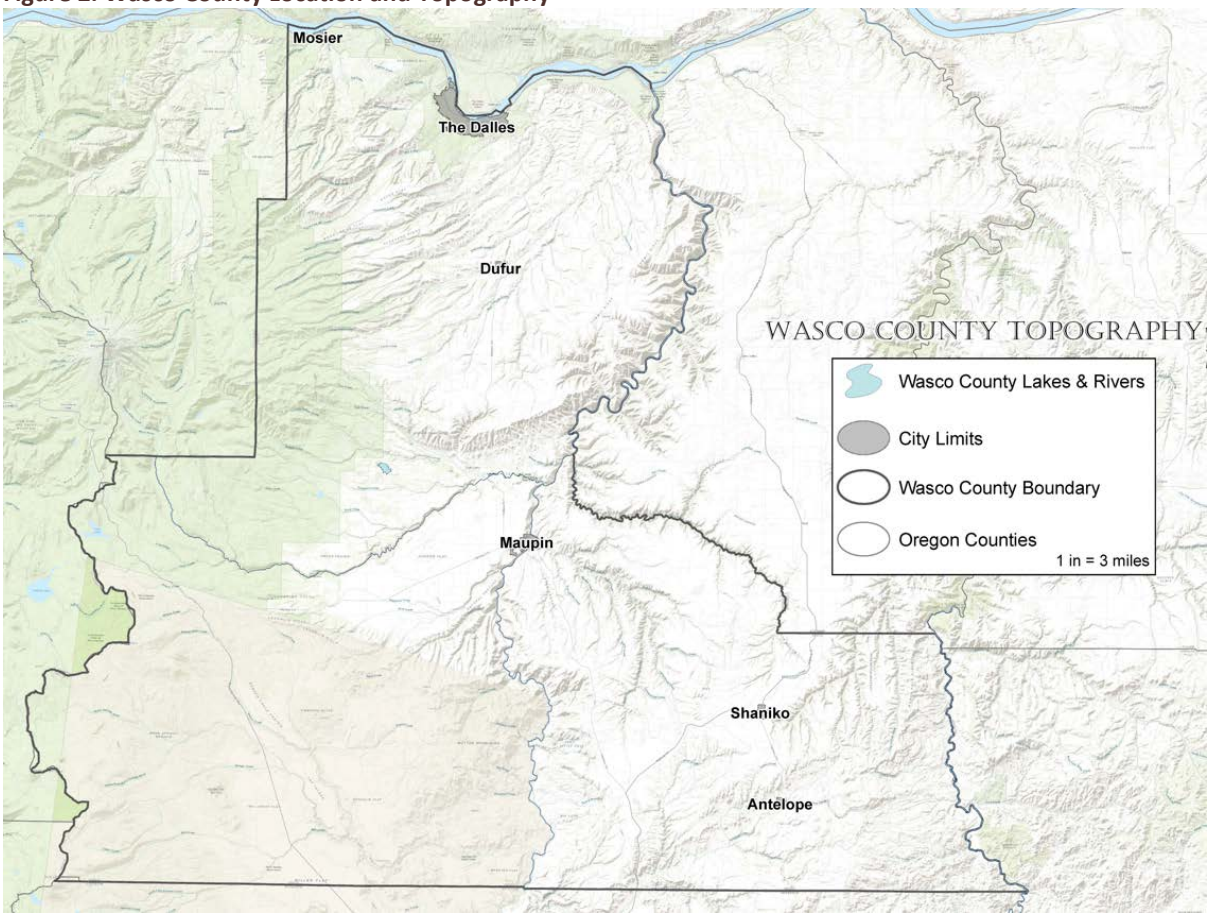
Area Description of Wasco County

Location

The County of Wasco was organized by the territorial legislature in 1854. This 250,000 square mile county, the largest ever established in the United States, has since been pared to its current size of 2,387 square miles. The county lies east of the Cascade Range along the Columbia River, and is bounded on the west by the forests of Mt. Hood National Forest, on the north by the Columbia River, and on the east by the Deschutes and John Day Rivers (Figure 2).

Steep rolling hills and sharp cliffs and canyons are characteristic landforms of Wasco County. Elevations vary from 5,700 feet at Flag Point in the western part of the county to 150 feet on the Columbia River. From the higher elevations of the Cascade Range, a general slope occurs to the north and east. Tributary streams carve steep canyons as they make their way to the Columbia, Deschutes and John Day Rivers.

Figure 2. Wasco County Location and Topography

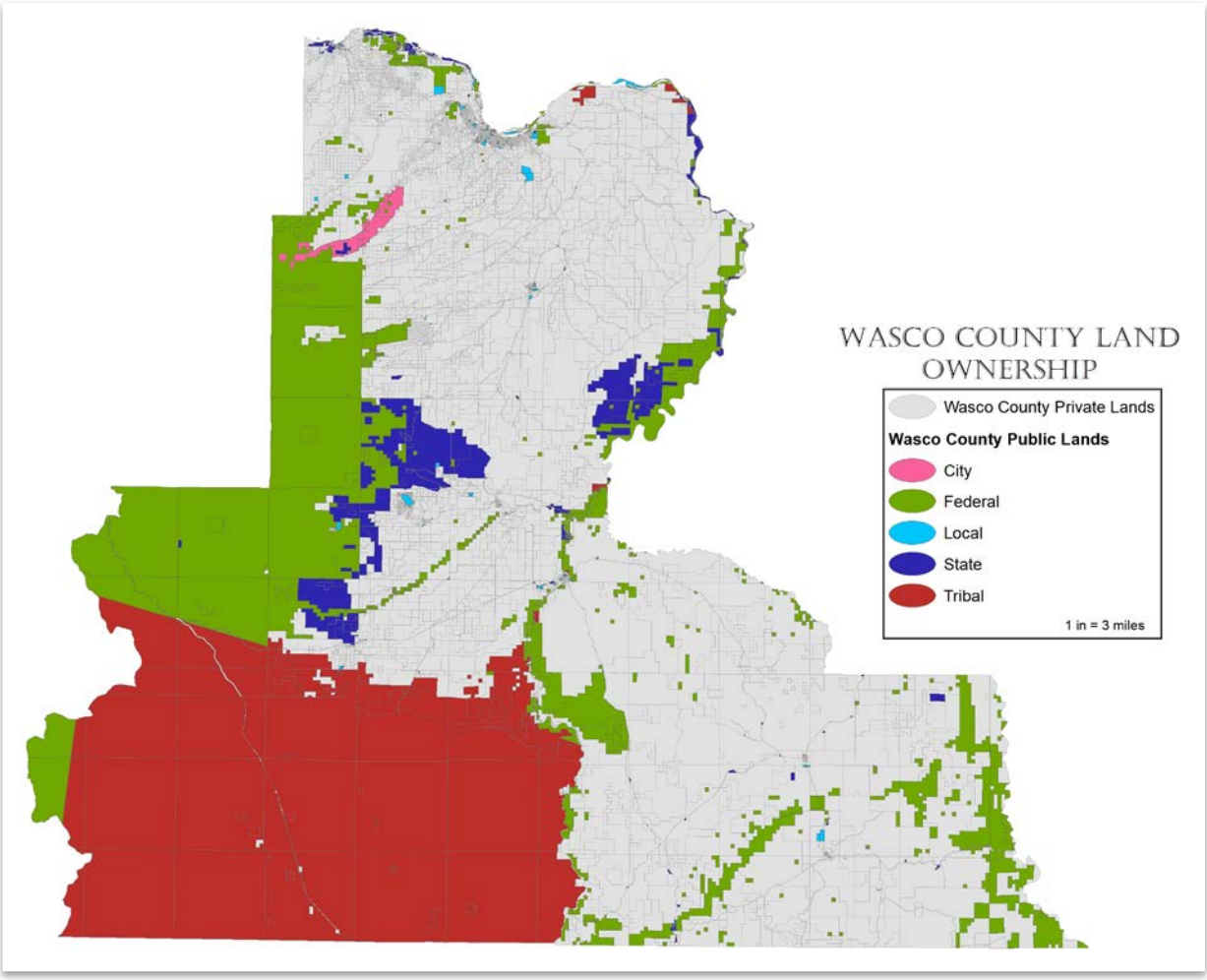


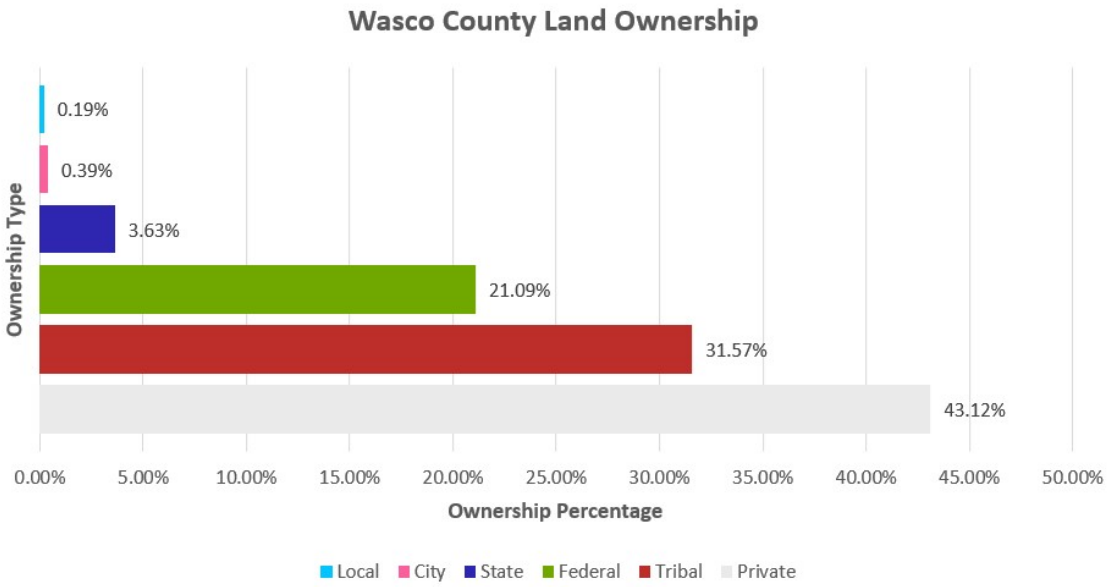
Local Land Ownership

Oregon, like most of the Western States, is largely owned by the federal government with a vast majority of federal lands administered by the Bureau of Land Management (BLM) and the U.S. Forest Service.[2] In Wasco County 43.12% of the land is privately owned (roughly 823,906.65 acres), whereas 21.09% of the land is owned by the Federal Government (roughly 256,230.71 acres), 3.63% by the State of Oregon (roughly 44,138.66 acres) and .3% by local government (roughly 2,357.06 acres).[3] Most of the land owned by BLM is adjacent to the Deschutes and John Day rivers, while US Forest Service land is primarily limited to the Mt Hood National Forest. A majority (approximately 98% of non-scenic area lands) of the private land in the county is either agricultural land, forest, or an agriculture/forest mix. A large portion of the southern half of the county is comprised of the Warm Springs Indian Reservation, and the entire county is classified as rural except for land within the City of The Dalles.[4]

[2] Allan, Stuart et al., Atlas of Oregon. Pg. 83
[3] Wasco County Assessor Data, August 2017
[4] Census Bureau, 2010 Census, Oregon's 68 Urban Areas

Figure 3: Wasco County Land Ownership Map and Chart





Demographics

The Population Research Center estimates the population of Wasco County in 2020 equaled 27,295, with an 8.3% increase in population over a decade. This is slightly behind the state growth increase at 11.4%.

The county is primarily rural and as of 2020, the 22nd most populated in the State of Oregon. The population of the county is slightly larger than neighboring Hood River County and Jefferson Counties, and significantly larger than neighboring Sherman, Gilliam and Wheeler counties. Table C.2 describes the population change for these communities between 2010 and 2016.

Table 1: Regional Change in County Populations:

County	Population Estimates base, April 1, 2010	Population Estimates base, July 1, 2020	Population Change (2010-2020)	Percent Change April 1, 2010 to July 1, 2020
Wasco	**25,211**	**27,295**	**2,084**	**8.3%**
Clackamas	375,998	426,515	50,517	13.4%
Gilliam	1,873	1,990	117	6.2%
Hood River	22,346	25,640	3,294	14.7%
Jefferson	21,719	24,105	2,386	10.9%
Sherman	1,766	1,795	29	1.6%
Wheeler	1,439	1,440	1	.06%
Oregon	3,831,072	4,268,055	436,983	11.4%

Source: U.S. Census Bureau, 2010 Census, 2020 estimates, Wasco County estimates from PSU Population Research Forecast Report

The largest populated area in Wasco County is The Dalles, where just over half of County residents reside. Table C.3 describes the population change since 2010 within the cities and unincorporated areas of Wasco County compared to county as a whole. The Dalles and Mosier, both located along the Columbia River and Interstate 84, had a larger rise in population. The rest of the county's population is dispersed between smaller towns, unincorporated communities and on farms and ranches.

Table 2: Change in Population in Wasco County Cities/Areas:

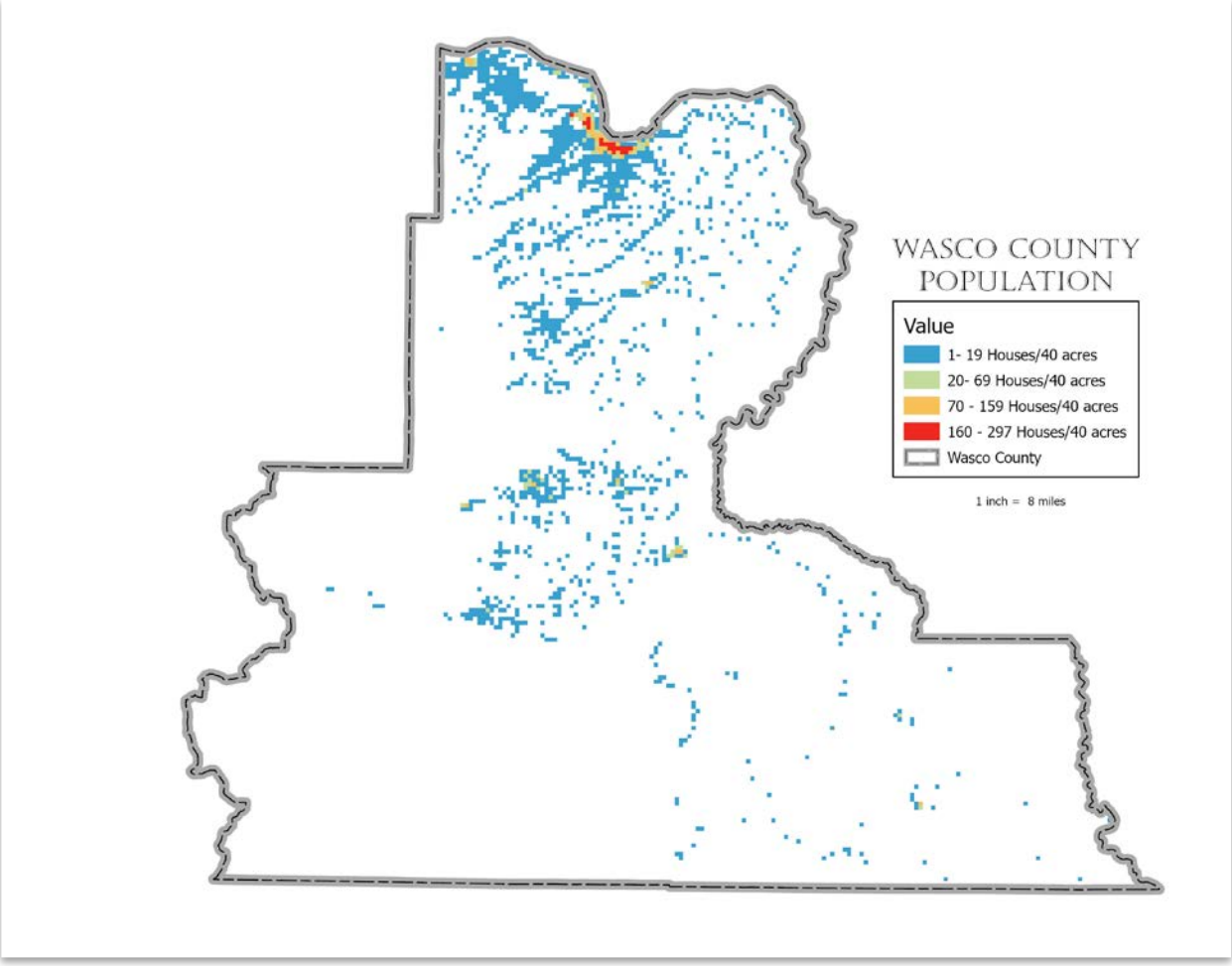
County	Population Estimates base, April 1, 2010	Population Estimates base, July 1, 2020	Population Change (2010-2020)	Percent Change April 1, 2010 to July 1, 2020
Wasco	**25,211**	**27,295**	**2,084**	**8.3%**
Antelope	46	50	4	8.7%
The Dalles	13,620	14,845	1,225	9.0%
Dufur	604	625	21	3.5%
Maupin	418	435	17	4.1%
Mosier	433	490	57	13.2%
Shaniko	36	35	-1	-2.8%
Unincorporated Areas	10,054	10,815	761	7.5%

Source: U.S. Census Bureau, 2010 Census, 2020 estimates, Wasco County estimates from PSU Population Research Forecast Report

It is worth noting that many of the small jurisdictions have limited resources with respect to fire, police and emergency medical. In most cases, the residential populations are served by volunteer fire fighters and emergency medical technicians. In areas with a positive population growth, it will be important to continue to promote volunteer service that will be responsible as first responders in the event of a natural hazard.

Figure 4 illustrates the distribution of structure density patterns across the county (according to county address point data).

Figure 4: Wasco County Structure Density Patterns



Defining the Wildland-Urban Interface

Background

The formal definition of WUI is rooted in the Federal Register, dating back to 2001. The definition describes conditions under which vegetation and structures meet or intermix[5]. This definition uses levels of structure density or population density to subdivide WUI into *Interface* and *Intermix* categories. Interface refers to areas where structures directly abut wildland fuels, but there is a clear line of demarcation between developed and wildland areas. Intermix refers to areas where structures are scattered throughout a wildland area. While the Federal Register guidelines for structure density are helpful, the definitions are still fairly vague in terms of geographically defining WUI with a set of mappable criteria.

[5] Forest Service, USDA, 2001. Urban wildland interface communities within the vicinity of federal lands that are at high risk from wildfire. Thursday, January 4, 2001.Federal Register 66(3): 751-777.

Wasco County CWPP WUI Definition

This Wasco County CWPP (2022) defines the concept of WUI as:

> ***Any area where the combination of human development and vegetation have a potential to result in negative impacts from wildfire on the community.***

For a specific geographic definition of WUI, this CWPP is generally adopting the approach used by the USDA Forest Service in mapping WUI for the conterminous U.S. from 2010 U.S. Census data.[10] Based on the Federal Register definitions, this approach combines structure density data and land cover data depicting wildland vegetation to map the categories of WUI. To increase the local relevancy of this effort, structure density was derived from county-level address point data, as opposed to structure density numbers at the Census Block polygon level used in the national mapping work. Also, to tie the mapped WUI to fire behavior modeling included in this CWPP, any areas mapped as having burnable wildland fuels for the purposes of modeling were considered to be wildland vegetation for the purposes of WUI.

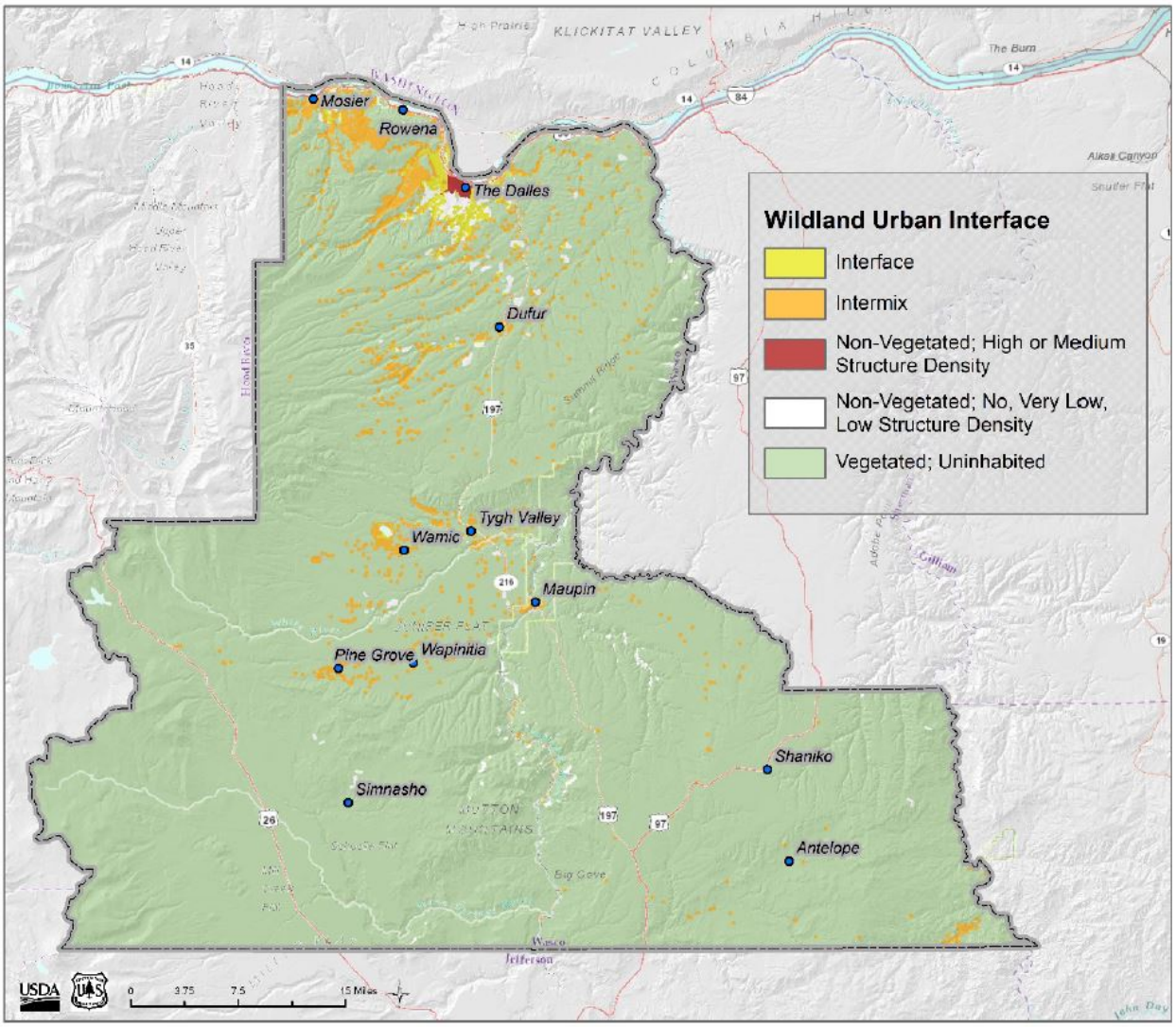
An important difference between the WUI mapping criteria adopted here and what was used for WUI mapping nationally is the lower structure density threshold used to define WUI. In the Federal Register and the national WUI mapping, areas must have at least 6.18 structures per km^2 (1 per 40 acres) to be considered WUI. This leaves out sparsely populated areas with less than this density from the defined WUI area. As a conservative approximation of where future development could occur, and recognizing that fire protection efforts are often undertaken for any structure regardless of density, the decision was made to include any area with structure density greater than zero in the spatial definition of WUI for Wasco County.

The spatial criteria for mapping WUI in Wasco County in this CWPP are:

1. **WUI Intermix** = Areas with structure density > 0, and ≥ 50% cover of wildland vegetation within a 40-acre radius. These are places where structures and wildland vegetation are interspersed.
2. **WUI Interface** = Areas with structure density > 0, and < 50% cover of wildland vegetation within a 40-acre radius, located within 1.5 miles of a large, contiguous area of wildland vegetation (i.e., > 1,235 acres with ≥ 75% wildland vegetation). These are developed areas with less cover of natural vegetation, but within a distance where embers from wildfire in adjacent wildlands could cause wildfire impacts.
3. **Non-WUI Inhabited** = Areas with structure density > 0, and < 50% cover of wildland vegetation within a 40-acre radius, located further than 1.5 miles from a large, contiguous area of wildland vegetation. These are developed areas far enough from wildland vegetation that they have reduced likelihood of wildfire impacts.
4. **Non-WUI Uninhabited** = Areas with structure density = 0. These are areas with burnable fuels and no development.

A map of WUI for Wasco County based on these criteria is shown in Figure 5.

Figure 5. The Wildland Urban-Interface (WUI) in Wasco County (Source 2018 CPAW)



Clearly defining the WUI through a general definition, supported by a map that is spatially delineated into WUI categories and cross-referenced with the risk assessments, will provide a community-scale reference regarding potential wildfire exposure. This will aid in implementing future land use policies or regulations that require a tiered application.

Senate Bill 762 (2021) required the Oregon Department of Forestry (ODF) to define the WUI and conduct statewide fire risk mapping that identified statewide WUIs. ODF defines the WUI as: ***a geographical area where structures and other human development meets or intermingles with wildland or vegetative fuels***. This definition informed their process and will serve as the primary definition for work, including defensible space and WUI codes, provided by the Office of State Fire Marshal (OFSM) and State Buildings Codes Services, as well as the statewide wildfire risk map.

While there are some nuanced differences between Wasco County's guiding definition and the newly adopted ODF definition, on principle both definitions serve as a basis for land use policies and regulations. Both the statewide wildfire risk map and Figure 4 have similarly identified WUIs for Wasco County.

Fire Environment

It is important to both understand and analyze the factors that threaten homes and communities during a wildfire. Those factors include the topography, vegetation (often referred to as fuels in a fire context), general climate, and specific fire weather patterns. Broadly, these physical characteristics combine to comprise the fire environment. The combination of the fire environment and ignition sources (both lightning and human) are responsible for the long history of wildfire activity in Wasco County. This section aims to describe the general characteristics of the fire environment and a summary of recent fire activity, with the goal of providing an understanding of the role of wildfire in the landscapes of Wasco County.

Topography

Wasco County is located on the east slopes of the North Oregon Cascade Mountains and captures a transition from higher elevation mountains in the west, to dryland agriculture and open range in the east. Most of the drainage features in the county align west to east and feed into the Deschutes and Columbia River systems. The southeast portion of the county does feed into part of the John Day River. Higher elevations in the county reach 5,500 to 5,700 feet, and lowest elevations in the river bottoms are at 50 to 150 feet.

Another major topographic feature that impacts the county is the Columbia River Gorge. The River itself originates in British Columbia, Canada and flows south through Eastern Washington before turning west and forming the Oregon, Washington border and eventually terminates in the Pacific Ocean. Over time the river has carved out a large gorge along the Oregon, Washington border which is defined by steep canyon walls and large rock cliffs. At river level, elevations in Wasco County can be as low as 50 feet, and higher points of the gorge reach 1,500 to 2,000 feet.

During the summer months, regional weather patterns and topography combine to create strong winds that blow mainly west to east in the gorge. The wind, steep slopes, and light flashy fuels create an environment for large fire growth, and hazardous firefighting conditions. The winds and topography also attracts a lot of recreational users to the region. Wind surfers and kite boarders flock to the area in the summer chasing the wind and waves up and down the gorge. The gorge also provides a great corridor for passage west of the Cascade Mountains dating back centuries. Major commerce routes through the area include train, barge, commercial vehicles on I-84, and major power transmission lines from the surrounding dams. All these uses bring an increased potential for human caused fires to the area.

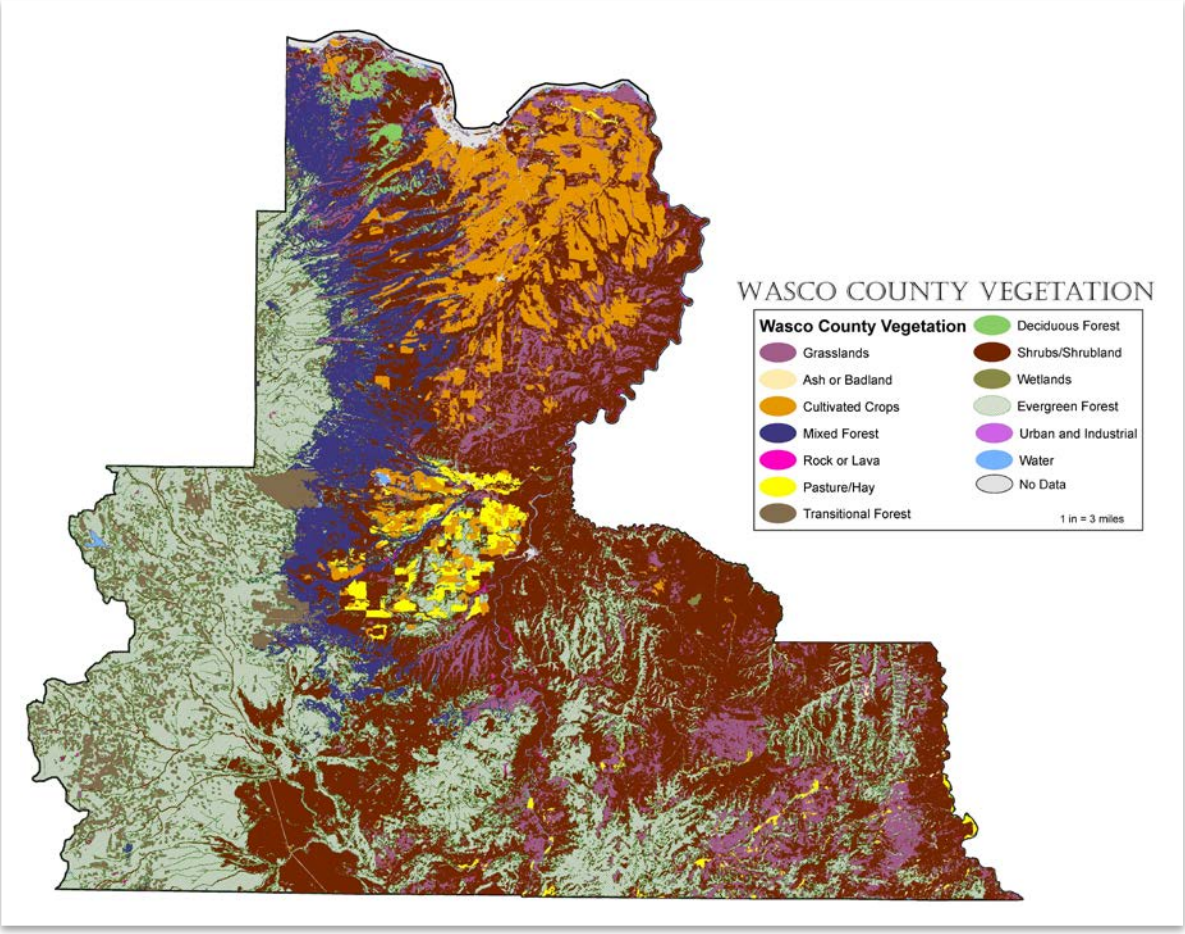
Vegetation and Fire Ecology

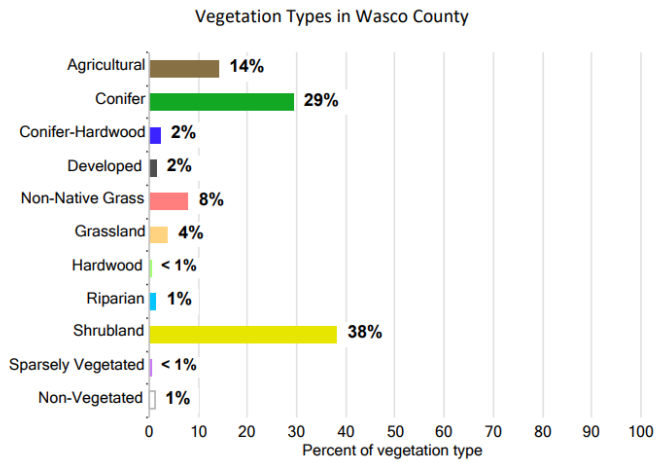
Vegetation in this section will be covered on a broad scale and refers to the most dominant species type over a larger area. These vegetation types can help us understand the frequency, and severity of fires in those areas. Fire frequency refers to how often a wildfire may occur. Severity tells us the impact fire may have on vegetation and other factors in that environment.

Areas that see higher fire frequency will normally experience lower fire intensities. More regular burns can keep excess fuels from accumulating, and most of the native species in these areas are fire adapted. Higher severity fires can occur in these areas but have a longer return interval. Conversely, areas that see lower fire frequency will experience higher severity fires. These fires normally cover large areas and with longer lasting effects for recovery of the ecosystem. This is one example of a Replacement Event, where most of the dominant vegetation is removed by the fire, but still has the ability to grow back.

According to the Oregon Wildfire Risk Explorer, Wasco County spans 1,532,385 acres. Below is a breakdown of some of the more abundant vegetation types across the county.

Figure 6. Major Vegetation Groups in Wasco County





Shrub Land

The shrub land vegetation type makes up the highest percentage of cover (38%) in Wasco County. Most of the 584,000 acres is found in the south and east portions of the county. These areas are mostly dominated by sagebrush with grass intermixed. Shrub lands are found on relatively lower elevation, and drier sites throughout the county. The main carrier of fire is typically grass, but can also be carried by the brush depending on its continuity and density across the landscape. Historic fire frequency would have generally ranged from 10 to 40 years. Fire intensity would have been mostly low intensity, but would cause a replacement event.

Sage shrub land is the largest vegetation category in the County. Source: Wasco County Planning

Conifer Forests

This group encompasses approximately 450,000 acres, (29%) and is mainly found along the western edge of the county. The group includes a diverse set of conifer species found at middle elevation. Relative moisture at these sites is between the dryer ponderosa pine and Douglas-fir forests and the wetter, high-elevation subalpine forests. Dominant tree species include Douglas-fir, western larch, lodge pole pine, subalpine fir, Engelmann spruce, and mountain hemlock. Dense understories can develop in these forests, but some stands can be devoid of understory vegetation due to a dense tree canopy. Historic fire frequency was highly variable within this group, with fire return intervals in the 10-25 year range on relatively dry sites, and up to 300+ years at wetter sites. Fire of all intensities would have occurred historically, with intensity at any location driven by time since the previous fire and amount of fuel accumulation.

Conifer forests are predominant on the western side of the County. Source: Wasco County Planning

Grasslands

This group is seen across 12% of the county with 8% (120,750 acres) dominated by non-native species, and 4% (56,000 acres) dominated by native species. They are found throughout the eastern part of the county usually mixed in with shrub land and agriculture. These areas can carry fire throughout different parts of the year, but extended periods of fire threat happen in the late spring through early fall. Historic fire frequency would have been less than 40 years, with lower fire intensities but usually causing replacement events. In places where these grasslands have burned more frequently, native species aren't able to fully repopulate the area, and have become invaded by non-native species such as cheat grass. These non-native species can become cured out easily and may be susceptible to burning both hotter and more frequently than the area would have seen historically.

Agriculture

Although this vegetation group is not usually associated with fire, dryland wheat farming in Wasco County does carry a fire hazard during the summer months. Other practices in the area include cherry orchards and irrigated

crop circles. This group covers around 217,000 acres, (14%) of the county and is found in the central and northeast portions. Since this group is not naturally occurring there is no historical fire regime data to include. Fires have occurred in areas of mixed wheat, shrub land, and grassland groups over the years with some becoming large. Most notably in 2018 the Substation, Long Hollow, and South Valley Fires all created large fire footprints across the northeastern part of the county.

Agricultural vegetation cover 14% of Wasco County's land area. Source: Wasco County

A recent farming practice change in the area referred to as "no-till" or "direct drill" has seemed to contribute to the ability of large fires to grow in the wheat, shrub land, and grassland mix areas. The wheat crops are harvested every other year in alternating fields. Historically when a field was not to be planted and harvested it would be tilled to dirt, which could serve as large fire breaks scattered across the landscape. In using no-till, these fields are left with the remaining post-harvest stubble and provide more continuous fuel through those portions of the county. This practice provides great soil benefits such as helping to reduce erosion and improve productivity. Local efforts are ongoing to maintain these benefits, and help mitigate the potential fire effects.

Other

There are a few other groups that make up the other 7% of the county. These groups include Conifer-Hardwood, Riparian, Hardwood, Sparsely Vegetated, Developed, and Non-Vegetated. All of these either carry little to no fire threat, or are small enough and spread out that they have minimal effects on the county.

Climate

Since Wasco County sits east of the Cascade Mountains, its climate is similar to other dry inland areas situated on the leeward side of mountain ranges. Due to the rain shadow of Mount Hood, there is a sharp transition in precipitation across the county with the higher elevations in the west receiving more precipitation than the lowlands to the east. The county is unique in the fact that the strong winds generated in the Columbia River Gorge are created as on-shore flow from the Pacific Ocean is forced inland, and funneled between the gaps in Cascade Mountains created by the river. Wasco County's climate is also characterized by pressure systems generated in the Pacific Ocean, influencing precipitation trends and weather patterns.

LEARN MORE: CLIMATE CHANGE

Climate change is affecting multiple components of the wildfire system: fire behavior, ignitions, and vegetation fuels. Annual average temperatures in Oregon have increased by 2.0-3.0° Fahrenheit (F) since 1950 and could continue to increase by another 4.0-6.0°F by 2050, while precipitation across the state is projected to decrease during the summer. These climate changes will lead to earlier snowmelt, lower humidity, increased chance of drought, and decreased fuel moisture. As a result, the Oregon Climate Change Research Institute predicts that the change in Very High Fire Danger days will increase by 10-14 days by 2050 from the average established between 1971 and 2000.

Source: Future Climate Projections Wasco County. A Report for the Oregon Department of Land Conservation and Development by the Oregon Climate Change Research Institute (2018).

Temperature

According to weather data from The Dalles Municipal Airport, (1981-2010) the warmest months on average for The Dalles are July and August. High temperature averages are 88 and 89°F respectively, and lows are 58 and 57°F. Temperatures, at their extremes, vary from below 0°F in the winter to above 100°F in the summer. Temperatures

across the county will vary depending on elevation and vegetative cover. It is not uncommon to see temperatures at higher elevations be 5-10°F cooler.

Precipitation

Average annual rainfall for The Dalles is 14.55 inches, with an average annual snowfall of 6 inches. However, there are large variations in precipitation and snowfall between higher elevation forests, and low elevation rangeland. For example, annual snowfall for parts of the Mount Hood National Forest can accumulate over multiple feet. Historically, December accumulates the most precipitation of the year, averaging 3.1 inches throughout the month. June through September see an average of less than .5 inches of rain each month. Most precipitation these months comes during frontal passages that usually bring thunderstorm activity.

Relative Humidity

Average daily relative humidity, (i.e., the amount of moisture in the air) in June through September is in the mid to low 30's. Daily lows often reach the lower teens in the late afternoon and the highs overnight/early morning are in the 50's and 60's.

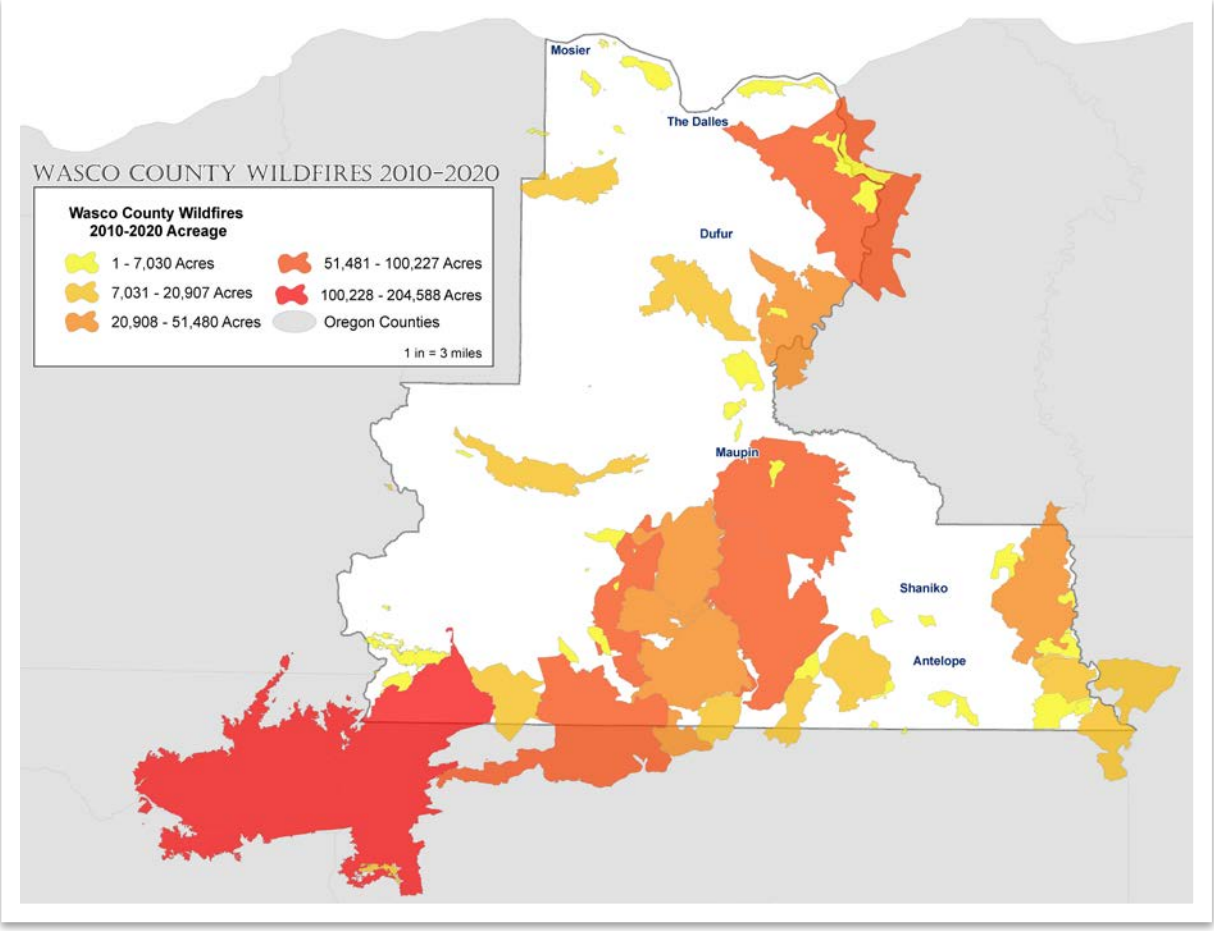
Wind

Predominant winds in the county, especially in the summer, are out of the west. These winds can be strong and sustain at 20-30 mph over several days, especially in the Columbia River Gorge. These strong west winds in the gorge can create more NW or N winds as you move south through Wasco County. As larger weather systems move across the area we can also see NW or SW wind patterns form. Dry east winds can also move over the region, but usually show up in early fall and winter.

Fire History

An analysis of wildfire activity in Wasco County over the past 10 years is also useful for understanding current patterns of wildfire activity. From 2008 to 2018, there were a total of 691 recorded fires that burned 761,799 acres. The average number of fires per year was 69, with many of these fires being small. Only about 10% of all fires were larger than 1,000 acres. Fire cause for the county was 34% lightning and 66% human. The statistics used in this analysis may not be all inclusive for the area. Data pulled includes all fires that involve Federal and State protection, but may not be all inclusive in areas that are solely Rural Fire District protection, or unprotected lands in the Eastern half of the county. Please refer to the Oregon Wildfire Risk Explorer - Advanced Report for more details.

Figure 7. Location and Fire Size Class of Wildfires in Wasco County, 2010-2020



Local Environment Summary

Prescribed fire is one of the tools land managers use to manage and restore the natural fire environment. Credit: Jacob Hastings, OSFM.

Wildfire has been a natural process shaping the landscapes of Wasco County for thousands of years, but it has the potential to cause significant damage to human developments. The native vegetation communities described above have all developed adaptations to wildfire and receive long-term ecological benefits from fires at most intensities. Ignitions from lightning will occur, and in most summers there will be weeks or months during which wildfire will readily spread.

Wasco County has a widely variable population density that is expected to grow over the next few decades. Heavy recreation and commercial traffic is expected to continue, and be a contributing factor in fire ignitions in the future. The fire environment combined with increased growth will likely exacerbate the potential for damage to human developments if left unchecked by appropriate mitigation strategies.

Eliminating wildfire from Wasco County is not possible or desirable. However, by understanding the fire environment, reducing the number of unwanted human ignitions, using prescribed fire as a tool when appropriate, and taking other measures to reduce wildfire spread and intensity around developed areas, it is possible to eliminate or reduce the loss of life and property from the wildfires that will burn in Wasco County.

Part 2. Risk Assessment

Overview

Figure 8. The Wildfire Risk Triangle

Wildfire risk is a measure of both the probability and consequences of uncertain future wildfire events.[6] For any location within Wasco County, wildfire risk depends on the chances of a fire occurring there, the likely intensity of the fire, and the vulnerability of something of value at that location. Scientists describe these three components of risk using a triangle where the sides are likelihood, intensity, and susceptibility (Figure 9).[7] These three factors, and the resultant wildfire risk, vary across the county. In this section, we describe tools currently available to assess this risk in Wasco County. This provides spatial context for where different wildfire management and mitigation strategies will be most effective.

By understanding the components that contribute to wildfire risk and engaging in a coordinated and collaborative planning effort, the county can take steps to influence each side of the risk triangle in different ways. For example, prevention measures that reduce human-caused fires can reduce the likelihood of fire occurrence, particularly in areas of human activity. Vegetation treatments focused on reducing fuel loads can reduce the intensity of fires that do occur, and efforts to reduce the flammability of building materials and increase defensible space around structures and communities can reduce susceptibility of homes and other structures to wildfire.

[6] Thompson, M.P., T. Zimmerman, D. Mindar, and M. Taber. 2016. Risk Terminology Primer: Basic Principles and a Glossary for the Wildland Fire Management Community. Fort Collins, CO: USDA Forest Service Rocky Mountain Research Station. Gen. Tech. Rep. RMRS-GTR-349.
https://www.fs.usda.gov/treesearch/pubs/50912

[7] Scott, J.H., M.P. Thompson, and D.E. Calkin. 2013. A wildfire risk assessment framework for land and resource management. Fort Collins, CO: USDA Forest Service Rocky Mountain Research Station. Gen. Tech. Rep. RMRS-GTR-315.
https://www.fs.fed.us/rmrs/publications/wildfire-risk-assessment-framework-land-and-resource-management

Mapping Wildfire Likelihood, Intensity and Hazard

Computer simulation modeling of hypothetical wildfires provides a robust and defensible means of mapping wildfire likelihood and potential intensity. Fire models use weather data from long-term stations in the county along with detailed spatial data depicting topography and aspects of vegetation that characterize wildland fuels to simulate fire spread across the landscape from semi-random ignition points.[8] Simulations can be run for a specific set of weather conditions over a single burning period (i.e., a day) using a model called FlamMap.[9] Results from these types of simulations can provide insight into fire intensities that could be expected under "typical" or "near worst-case" conditions during fire season. Simulations can also be run for an entire suite of statistically possible weather scenarios across thousands of iterations of a whole fire season using a model called FSim.[10] The outputs from FSim include maps of the annual probability of fire occurrence and the most likely intensity for every pixel in the modeled landscape.

Simulations from both FlamMap and FSim that cover the entire county were completed in 2018 by CPAW. This modeling was done by the U.S. Forest Service Rocky Mountain Research Station (RMRS) as part of a wildfire hazard assessment. These efforts used input data representing landscape fuel conditions, and weather data from Remote Automated Weather Stations (RAWS) in and around Wasco County. Additional details about the CPAW project is described in the 2018 CPAW Final Report from December 2018.

LEARN MORE: UNDERSTANDING RISK

Risk assessments delineate risk into classes (e.g., low, moderate, and high) based on a number of inputs. Community stakeholders, including first responders, policymakers, elected officials, and neighborhood groups, use this information to inform their activities.

It's important to keep in mind that classifications such as "low" and "moderate" risk do not mean that there is *no* risk. Many wildfires occur in areas other than "high" or "extreme" risk areas, and can have negative consequences. For this reason, communities should consider all risk when discussing potential wildfire impacts.

Ultimately, a community must determine what level of risk is acceptable, and make appropriate risk reduction decisions.

[8] Location of ignition points is computer-generated but informed by the generalized spatial pattern of actual ignitions in recent decades.

[9] https://www.firelab.org/project/flammap

[10] Finney, M.A., C.W. McHugh, I.C. Grenfell, K.L Riley, and K.C. Short. 2011. A simulation of probabilistic wildfire risk components for the continental United States. Stochastic Environmental Research and Risk Assessment 25: 973-1000. https://www.fs.usda.gov/treesearch/pubs/39312

The outputs from both modeling efforts are integrated and summarized here to provide an overview picture of spatial variation in wildfire risk components in Wasco County. The raw outputs from modeling are raster, or pixel-based, datasets that divide the landscape into evenly-sized square cells. For the FlamMap modeling, these cells were 30m (97ft) on a side. The increased complexity of FSim modeling required larger cells, each 180m (583ft) on a side. Summarizing these pixel-based datasets into larger polygon areas is important because any one spot on the landscape is inevitably impacted by the values of its neighbors. Displaying results by summary polygons makes them more easily interpretable, and allows for broad-scale patterns to emerge that may not be immediately visible in the pixel datasets. Therefore, outputs of wildfire likelihood and intensity are summarized in Figure 12 using fine-scale watershed polygons, referred to as catchments.[11] There are several thousand catchment polygons that intersect Wasco County, ranging in size from about 40 to 9,900 acres. The CPAW team calculated the average likelihood and intensity values for each catchment, as well as the integrated wildfire hazard, which combines likelihood and intensity into a single index.

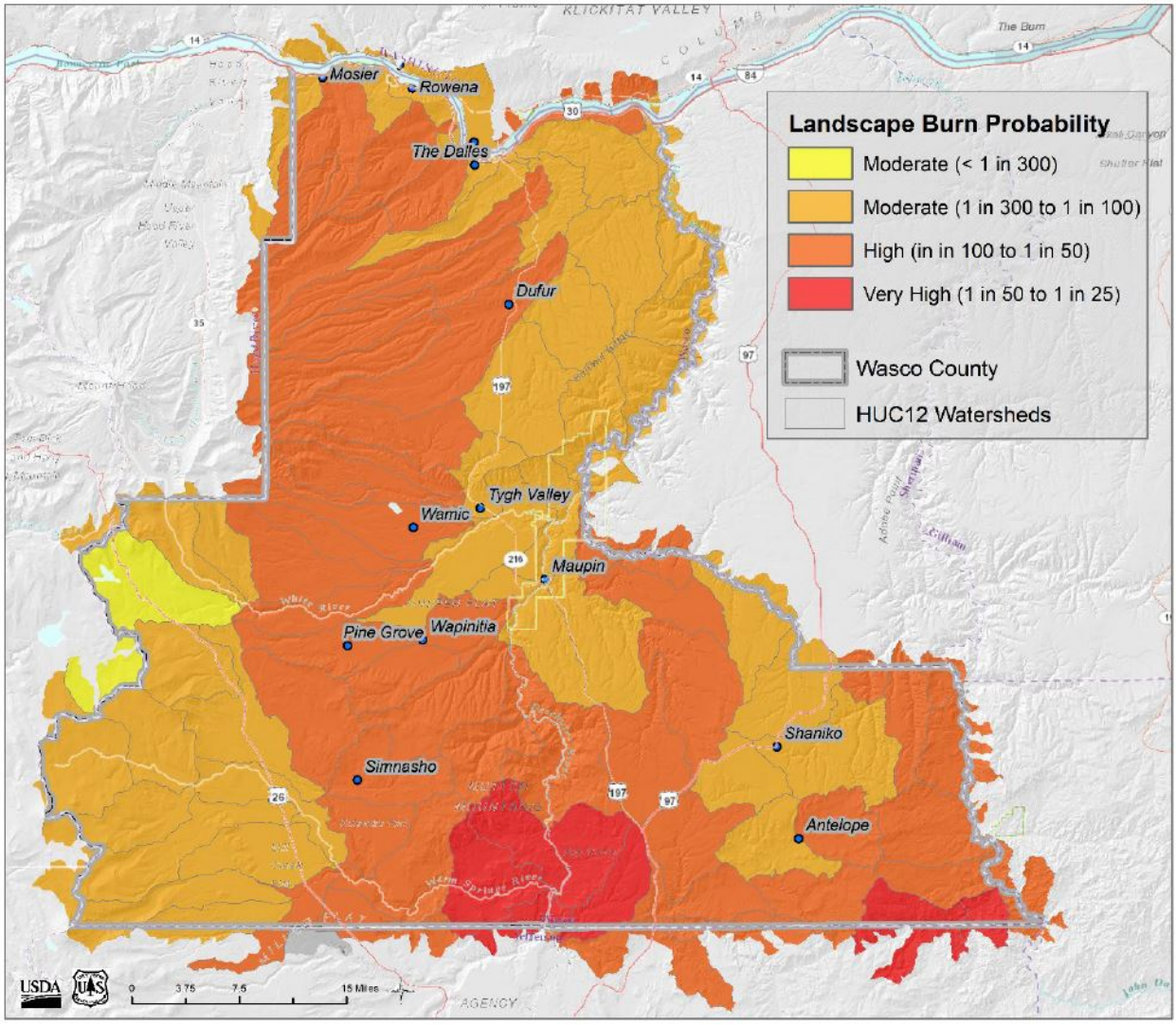
Likelihood

The best data product available to represent wildfire likelihood in Wasco County is the burn probability (BP) output from the FSim modeling done by the CPAW team in 2018. It represents a true annual burn probability that considers all possible weather scenarios. This provides a long-term perspective on the relative likelihood of fire for any location in the county in any given year.

To produce a map of relative likelihood for the county, the average BP for each catchment was calculated, and those averages were classified those into four classes of low, moderate, high and very high (Figure 12). The classes are relative to the distribution of catchment averages only within Wasco County, and are based on quartiles. Therefore, the high and very high classes represent all catchments with an average BP value above the county median. The average BPs for watersheds range from 0 to 0.025, with a mean of 0.01. This means, on average, any *specific location* (i.e., 180-m pixel) has about a 1 in 100 chance of burning in any given year.

[11] Source: US EPA and USGS National Hydrography Dataset Plus v2. https://www.epa.gov/waterdata/nhdplus-national-hydrography-dataset-plus. Catchment polygons smaller than 40 acres were merged into adjacent polygons.

Figure 9. Relative Likelihood of Wildfire in Wasco County, Source: 2018 CPAW



In general, wildfire likelihood is highest in the forested western portions of the County, and the sage grasslands to the south and east. Agricultural lands in the north eastern portion of the County have lower likelihood, but as seen in the 2018 fires, can be extremely fast moving and damaging. This area contains vast swaths of dryland wheat and is some of the densest agricultural land in the County. When mapped on a standard national scale for burn probability, it is clear that most of the county is in the moderate to high range of burn probability. Indeed, the average of annual burn probability for the county is quite high compared to many other areas of the country.

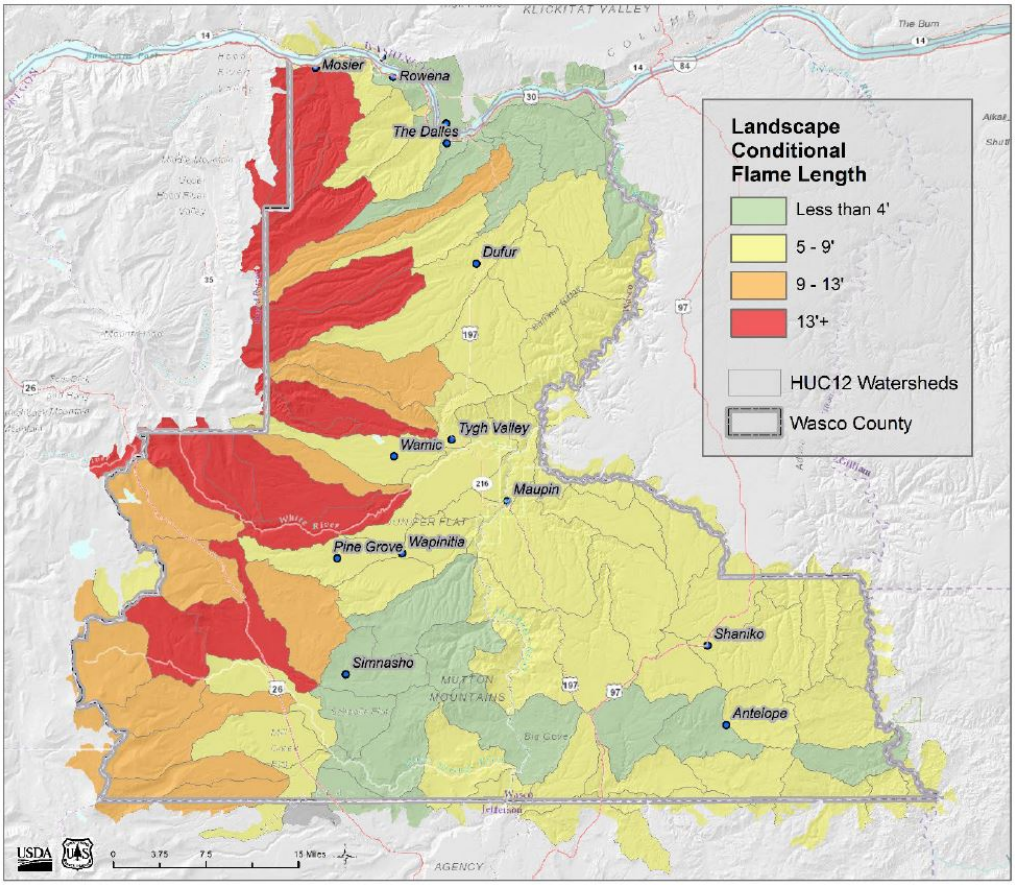
Intensity

The datasets available to represent potential wildfire intensity include the flame length modeled for a typical fire day (90th percentile) using FlamMap, and the conditional flame length from FSim that represents the average intensity for each pixel from many simulated fires. The two products are fairly similar, but the intensity from FlamMap may be more appropriate for the purposes of the CWPP. The fact that FSim intensities are averaged across many fires representing a range of conditions causes less variation from one catchment to another and

fewer catchments showing potential for higher intensity fire. Therefore, the flame length map from FlamMap is presented here.

The map of relative wildfire intensity for the county was created by calculating the average 90th percentile flame length for each catchment and grouping those into four classes (Figure 14). In this case, the classes are based on standard flame length categories of 0 to 4 feet, 5 to 9 feet, 9 to 13 feet, and 13 feet and greater. The average flame lengths for catchments range from 0.01 to 14, with a mean of 3.8 feet.

Figure 10. Potential Flame Length for a Typical Fire Day in Wasco County (Landscape level), Source: 2018 CPAW



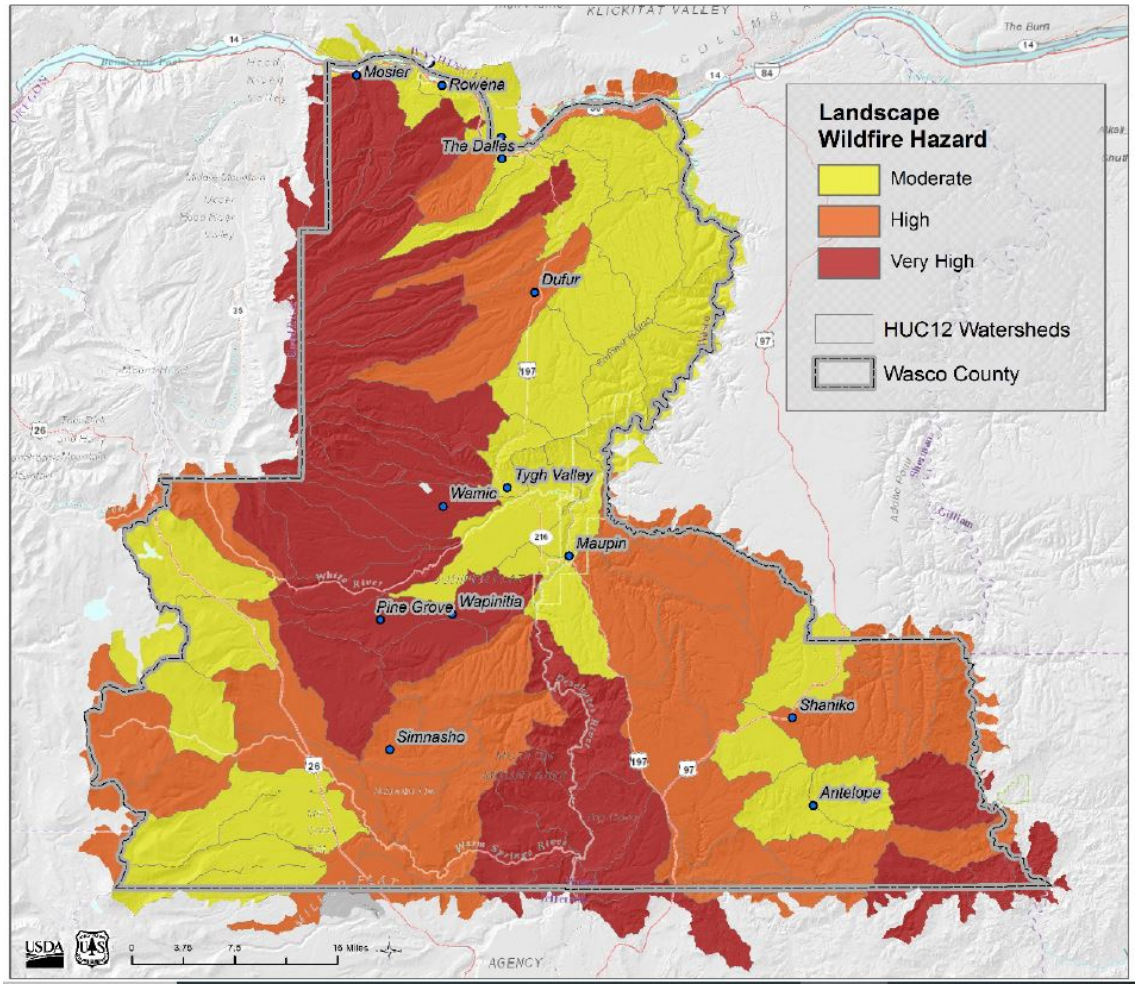
The majority of the county has low to moderate potential flame lengths under the modeled 90th percentile conditions.

Hazard

Taken together, the likelihood and intensity sides of the wildfire risk triangle represent wildfire hazard. An index of hazard, therefore, can be calculated by multiplying burn probability by the expected flame length. We did this at the pixel level by multiplying the burn probability from FSim by the 90th percentile flame length values modeled by FlamMap. The result represents the relative degree of wildfire hazard for each pixel under 90th percentile weather conditions. The average of this hazard index within each catchment polygon is presented here (Figure 15). As with likelihood, the average hazard values for catchments were grouped into four classes based on quartiles of the distribution across the county. The actual numeric values of hazard are less directly interpretable than BP or flame length, but they do provide a relative depiction of hazard across a landscape.

In comparing all three maps, the contributions of likelihood and intensity are both apparent in the hazard map. As with likelihood, the areas of highest hazard are in the western and southern portions of Wasco County, but there are pockets of high to very high hazard in each sub basin.

Figure 11. Relative Wildfire Hazard in Wasco County, Source: CPAW 2018



Susceptibility and Risk

Information about susceptibility (or vulnerability) of specific assets is more difficult to map. A partnership among Oregon Department of Forestry, Oregon State University Institute for Natural Resources, OSU Libraries and Press, the US Forest Service, and a wide variety of stakeholders throughout Oregon created the Oregon Explorer website, and specifically the Oregon Wildfire Risk Explorer tool for this purpose.

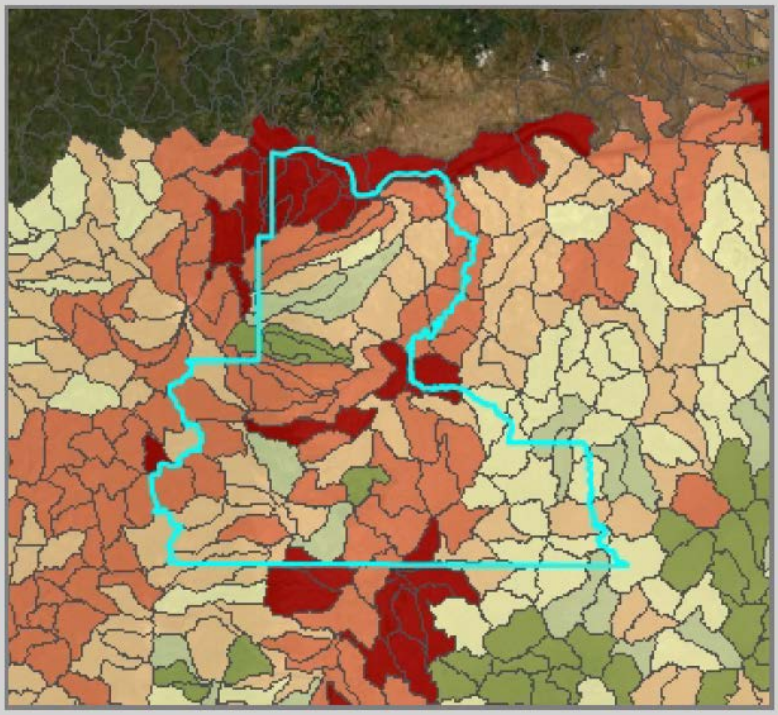
The Oregon Wildfire Risk Explorer is designed to increase wildfire awareness, give a comprehensive view of wildfire risk and local fire history, and educate users about wildfire prevention and mitigation resources. The site provides decision support for homeowners, communities, and professionals to identify and prioritize local fire prevention and mitigation efforts.

The Advanced Wildfire Risk Explorer serves professional planners to inform updates to Community Wildfire Protection Plans (CWPP) and Natural Hazard Mitigation Plans (NHMP), with extensive data resources, detailed

summaries, and full wildfire risk inventory report. The following sections represent excerpts from the full report that was pulled for Wasco County on December 28, 2020. It can be viewed in its entirety in Appendix A.

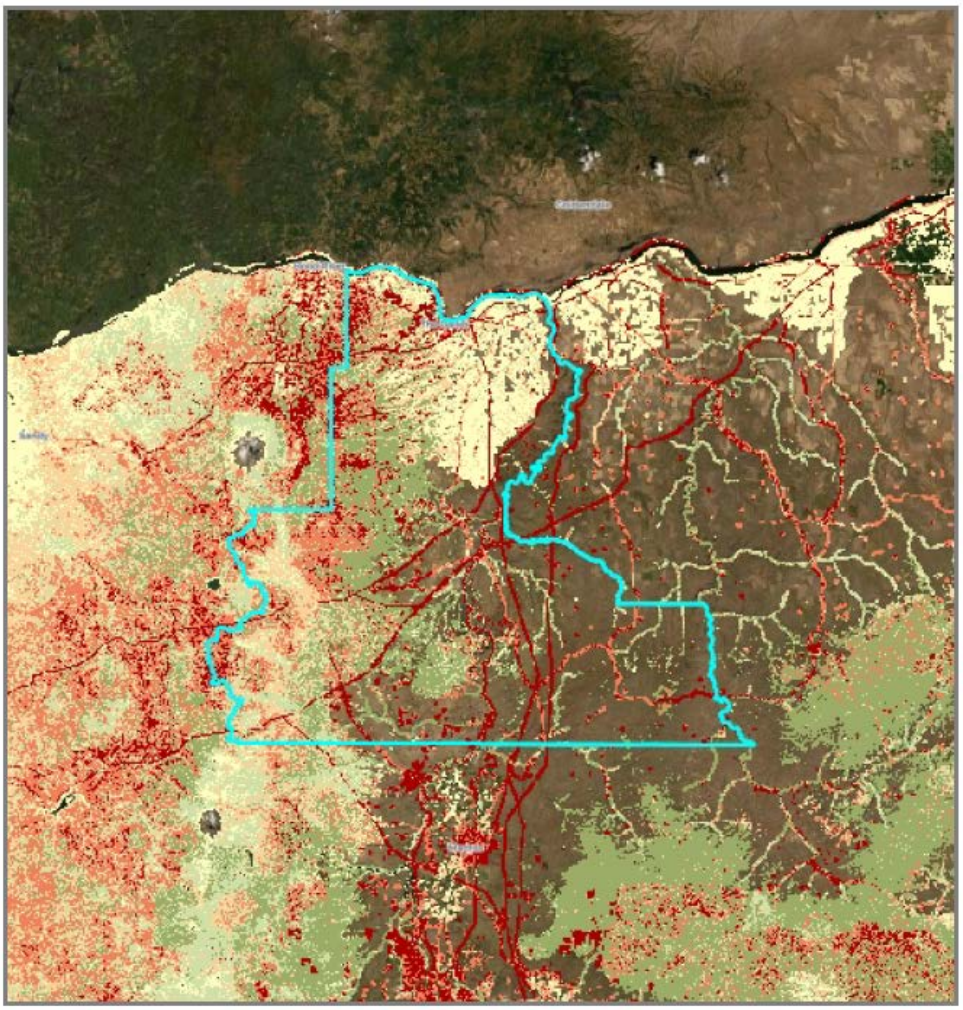
The Advanced Oregon Wildfire Risk Explorer (OWRE) map viewer organizes data into folders based on wildfire risk concepts. All OWRE advanced reports will include information about Overall wildfire risk, Burn probability, Flame length, overall potential impact, Hazard to potential structures, Fire history, Land management, and estimated housing density. For the Wasco County report, additional data layers of interest were selected, which appear after the layers listed above in the full report.

Overall wildfire risk in Wasco County: sub-watershed summary map. Overall wildfire risk is summarized at the sub-watershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



Wildfire Risk

Overall wildfire risk takes into account both the likelihood of a wildfire and the exposure and susceptibility of mapped valued resources and assets combined. The dataset considers (1) the likelihood of wildfire >250 acres (likelihood of burning), (2) the susceptibility of resources and assets to wildfire of different intensities, and (3) the likelihood of those intensities. Blank areas either have no currently mapped assets or resources and/or are considered a non-burnable fuel in terms of wildfire. Note that agricultural lands are considered non-burnable in this map, even though fires can occur in these areas and may spread into more typically considered burnable areas such as forested lands. Data layers include: Overall wildfire risk, Wildfire risk to assets, and Wildfire risk to people and property.



Overall wildfire risk: Legend	
Very High	Wildfire risk is very highly negative (top 5% of values).
High	Wildfire risk is highly negative (80th to 95th percentile).
Moderate	Wildfire risk is moderately negative (50th to 80th percentile).
Low	Wildfire risk is slightly negative(29th to 50th percentile).
Low Benefit	Wildfire is slightly beneficial (14.5 to 29th percentile).
Benefit	Wildfire is beneficial overall (0-14.5th percentile).
Non-burnable	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable (urban, agriculture, etc).

Wildfire Threat

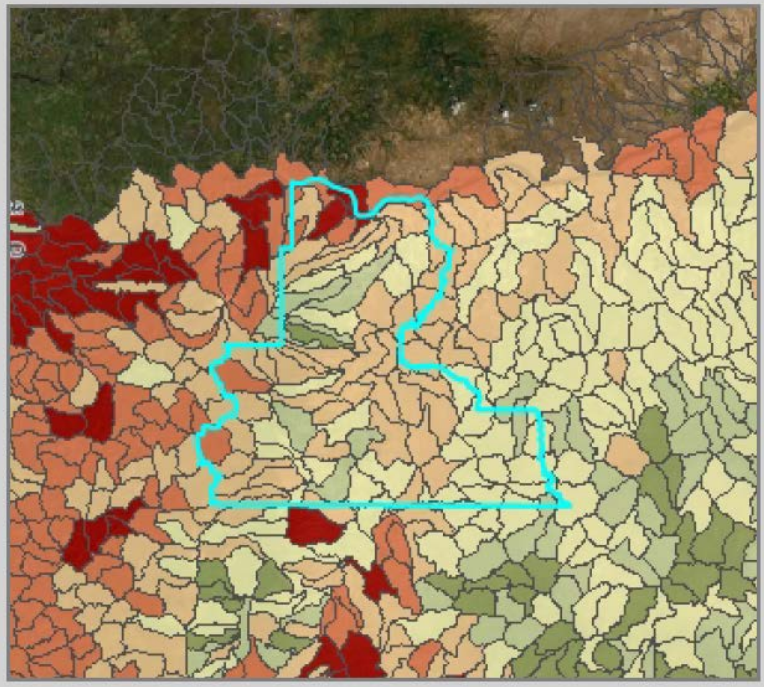
Wildfire threat shows the likelihood of a large wildfire, the average intensity and the likelihood of higher intensities, conveyed by flame length. Data layers include: Burn probability, Average flame length, Probability of exceeding 4'flames, and Probability of exceeding 8' flames. Additional data layers that

show wildfire threat are found under the Fire History and Active Fires folder, where historical fire starts and historical fire perimeters are located.

Wildfire Potential Impacts

Wildfire potential impacts shows the actual exposure of mapped resources and assets. The data layers do not incorporate the likelihood of burning, they only show the consequence of wildfire if it were to occur. Data layers include: Overall potential impact, Potential impact to people and property, Potential impact to infrastructure, Potential impact to timber resources, Potential impact to wildlife, and Potential impact to forest vegetation. The layers (Potential impact to timber resources, wildlife, and forest vegetation) may be useful when targeting fuels treatment. These layers are influencing the "Benefit" areas in the Overall wildfire risk map - they show areas where there is ecological opportunity to restore historical or desired conditions and/or potentially reduce the risk of catastrophic wildfire with managed fire use or other management. The Potential impact to forest vegetation optional report element is coupled with historical fire regime information to give basic context when comparing historical and current conditions.

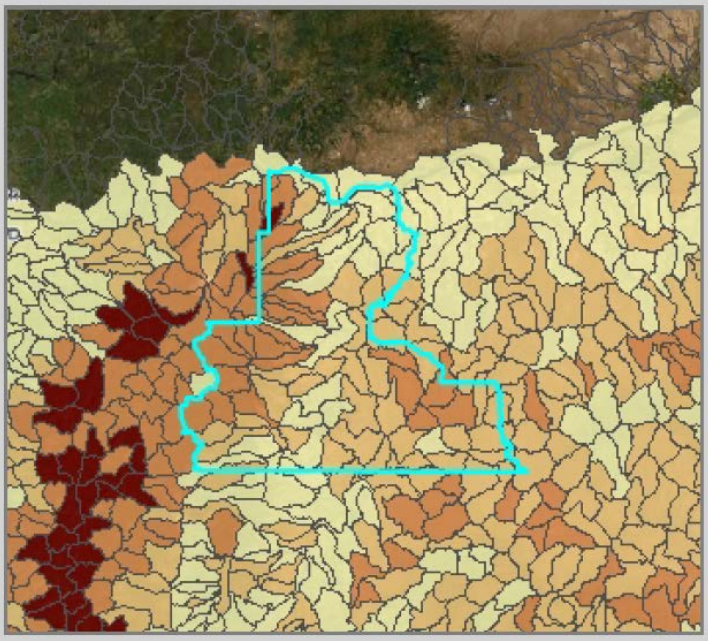
Overall potential impact in Wasco County: sub-watershed summary map. Overall potential impact is summarized at the sub-watershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



Hazard to Potential Structures

Hazard to potential structures depicts the hazard to hypothetical structures in any area if a wildfire were to occur. This differs from Potential Impacts, as those estimates consider only where people and property currently exist. In contrast, this layer maps hazard to hypothetical structures across all directly exposed (burnable), and indirectly exposed (within 150 meters of burnable fuel) areas in Oregon. As with the Potential Impacts layers, the data layer does not take into account wildfire probability, it only shows exposure and susceptibility.

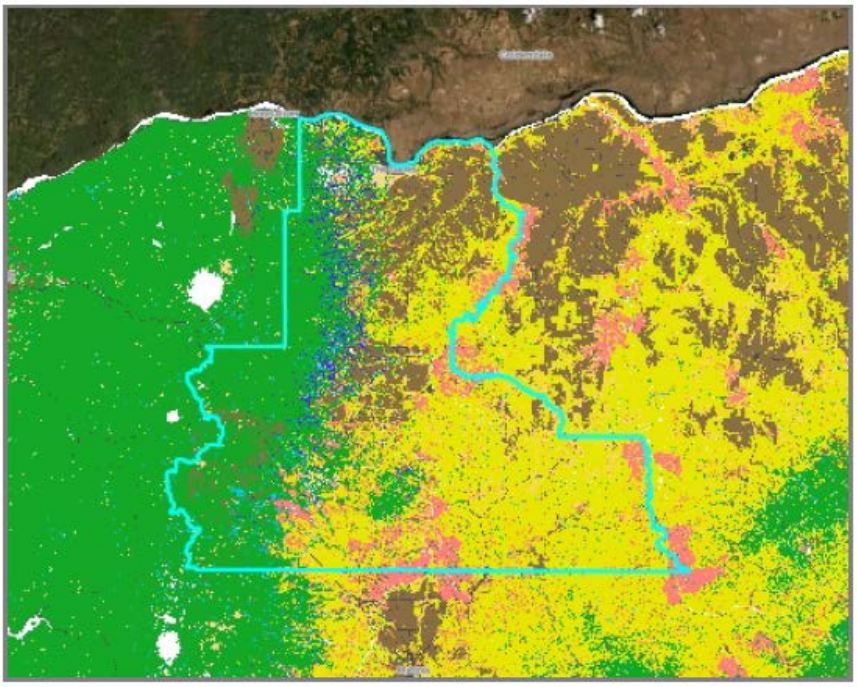
Hazard to potential structures in Wasco County: sub-watershed summary map. Hazard to potential structures is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.

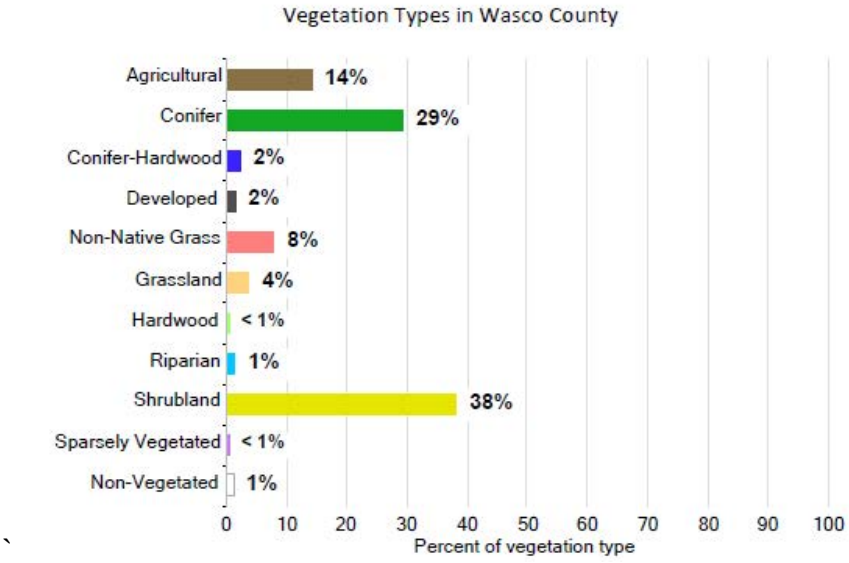


Fire Model Inputs and Fuelscape

These layers are the fuels and topography used to run the fire model in the 2018 Pacific Northwest Quantitative Wildfire Risk Assessment. Data layers include: Fuel models, Fuel model groups, Forest canopy base height, Forest canopy height, Forest canopy cover, and Forest canopy bulk density, Slope, Elevation and Aspect. Fuel models and groups characterize local surface vegetation composition relative to carrying fire more precisely than a basic land cover or vegetation maps. Fuel models indicate the type of potential wildfire based on the fuels that will ignite and spread fire. Canopy data layers characterize vegetation structure for fire modeling: base height, cover, and bulk density estimates can show where there may be propensity for ladder fuels (ground vegetation and trees that reach up to tree branches and upper forest canopy), and where contiguous forest canopies have potential for canopy fire. Note that not all of these layers are available to select for use in the OWRE advanced reports, but all of them are available for download and they are described in the metadata. Also note that weather, the third part of

the three major elements that determine wildfire occurrence and intensity, is not included in this data distribution -please see the full report to understand the weather parameters used in the assessment.





For more detailed information, please see the full 2018 PNW Quantitative Wildfire Risk Assessment report:

oe.oregonexplorer.info/externalcontent/wildfire/reports/20170428_PNW_Quantitative_Wildfire_Risk_Assessment_Report.pdf

Improve Risk Assessment Information

Specific CWPP actions to improve risk assessment information are:

1. **Update the Wasco County risk assessment and include WUI identification map.** Resulting landscape changes from the 2021 and onward wildfire seasons should be incorporated into an updated wildfire risk assessment regularly, and the digital assessment should be accompanied by more thorough on-the-ground analyses.

2. **Explore incentives for risk reduction and enhance existing risk reduction education efforts.** Support Fire District-specific assessments and wildfire mitigations, individual defensible space incentive programs, and work with partners to develop County wide incentives for risk reduction behavior including home hardening, defensible space, and fuels reduction.

Oregon State Fire Marshal's regional Fire Risk Reduction Specialist, as well as OSFM's Analytics and Intelligence Unit, are available to provide CRA data for specific fire districts and jurisdictions using available risk assessment tools. These data can be furnished to requesting partners, either via request through the Fire Risk Reduction Specialist or via email request to OSFMDATA@osp.oregon.gov.

Risk Assessment Summary

The 2020 wildfire season was one of the worst fire seasons in Oregon history, mostly impacting western Oregon, but with several large fires in Wasco County as well. Locally, the 2018 wildfires in Wasco County were more widespread and severe, altering the local landscape significantly. Both seasons resulted in fatalities in Wasco County. The Oregon Explorer 2020 wildfire risk assessments currently available to the county through the digital analysis provided by the Oregon Explorer website will require updating through field data collection, fuels mapping, and an updated analysis of the risk based on any new information uncovered. Once this initiative is undertaken, it will take several months to complete. In order to continue the forward momentum of this CWPP update, the plan will be completed ahead of the new risk assessment and mapping. The 2020 analysis is included in this CWPP (see Appendix A) and the updated risk assessment will be added later.

Part 3: Taking a Cohesive Strategy Approach in Wasco County

Overview

The Federal Land Assistance, Management, and Enhancement Act of 2009 (known as the FLAME Act of 2009) directed the Secretary of the Interior and the Secretary of Agriculture to jointly submit a report to Congress which contained a cohesive wildfire management strategy. This led to the development of a National Cohesive Wildland Fire Management Strategy ("Cohesive Strategy")—a multi-phased effort engaging partners from federal, state, local, and tribal governments, non-governmental organizations, and public stakeholders to examine how the nation can plan for its wildfire future.

The Cohesive Strategy is centered on three goals to achieve its vision:[12]

- **Restore and maintain landscapes**: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
- **Fire adapted communities**: Human populations and infrastructure can withstand a wildfire without loss of life and property.
- **Wildfire response**: All jurisdictions participate in making and implementing safe, effective, efficient, risk-based wildfire management decisions.

In an effort to align with the Cohesive Strategy, Wasco County stakeholders expressed an interest in organizing this CWPP update to address each goal at a local level. This alignment reinforces the importance of collaboration among all local, state, and federal partners, and helps organize the multi-faceted nature of wildfire topics and mitigation strategies under the most appropriate goal.

Each of the following sections provides an overview of the topic, local information, and strategies and resources to address this goal. Specific actions are located in the Action Table (Part 4).

LEARN MORE: Cohesive Strategy

The Cohesive Strategy's Vision for the next century is to safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.

Three Regional Strategy Committees (Northeast, Southeast, and West) were established in 2011 to support and facilitate implementation of the Cohesive Strategy.

Oregon is part of the Western Regional Committee. More information about the Western Region's Cohesive Strategy activities, including success stories, can be found online at wildfireinthewest.blogspot.com

[12] The National Strategy – *The Final Phase in the Development of the National Cohesive Wildland Fire Management Strategy.* Accessed May 3, 2018: https://www.forestsandrangelands.gov/strategy/documents/strategy/CSPhaseIIINationalStrategyApr2014.pdf

Restoring and Maintaining Resilient Landscapes in Wasco County

Through fire suppression, human development, and the changing climate, the terrestrial ecosystem and the role of wildland fire have been significantly altered over time. Restoring landscapes to a resilient state and promoting fire's natural role in ecosystems where appropriate must be an integral part of increasing the county's resilience to wildfire and becoming fire adapted. To achieve this, an ecosystem-based approach to fire management that incorporates prescribed fire in overall land management planning objectives is important in achieving the desired fire effects and mitigating undesirable fire effects on the ecosystem and the public. Finally, post wildfire recovery is an important component in resiliency to ensure that any negative fire effects that impact the ecosystem and the community can be addressed to minimize their impact. With the diverse ownership of land, restorative land management will require a collaborative effort among multiple stakeholders.

Restoration and Maintenance Strategies

Restoration and maintenance strategies should align with the National Cohesive Strategy, as outlined below.

Ecology/Ecosystem-Based Fire Management

- Where allowed and feasible, manage wildfire for resource objectives and ecological purposes to restore and maintain fire-adapted ecosystems and achieve fire-resilient landscapes, including the importance of the high-intensity fire regime component.
- Restore forest processes that are currently under-represented in the landscape, compared to historical conditions, including low- and mixed-severity fire regimes.
- Maintain and promote the growth of specific large tree species component, which are also under-represented, across the landscape.
- Control and eradicate invasive and noxious weeds.

Masticator cutting brush and lower tree limbs (top), help to reduce ladder fuels and crowning (bottom). Credit: Inciweb.nwcg.gov *(top), (bottom)*, **US Forest Service**

Fuel Treatments for Landscapes (Public and Private)

A low intensity prescribed burn along a fire line at White River achieves multiple ecological and risk reduction goals. Credit: US Forest Service.

The 2005 Wasco County CWWP identified priority fuel treatment areas across the county and within specific fire districts, as well as projects that were completed, or ongoing at the time (Appendix D). The plan also provided public communications on the following possible treatment options for these areas and did not receive any significant indication of preference or opposition from the public:

- Slashing and Underburning
- Slashing and Pile Burning
- Commercial Harvest with Ground Based Systems and Under burning
- Commercial Harvest with Ground Based Systems and Chipping
- Commercial Harvest with Ground Based Systems and Pile Burning
- Commercial Harvest with Ground Based Systems and No Fuel Treatment
- Thinning (pre-commercial or commercial)

Moving forward, the following general fuel treatment guidance should be followed:

- Continue to design and prioritize fuel treatments (prescribed fire and mechanical treatments) to reduce fire intensity, structure ignition, and negative wildfire impacts to values.
- Where feasible, implement strategically placed fuel treatments to interrupt fire spread across landscapes.
- Use and expand fuel treatments involving mechanical, biological, or chemical methods where economically feasible and sustainable, and where they align with landowner objectives.
- Reduce the risk of wildfire by removing fuels, especially small-diameter trees, while maintaining forest structure to protect ecosystem components.

Prescribed Fire

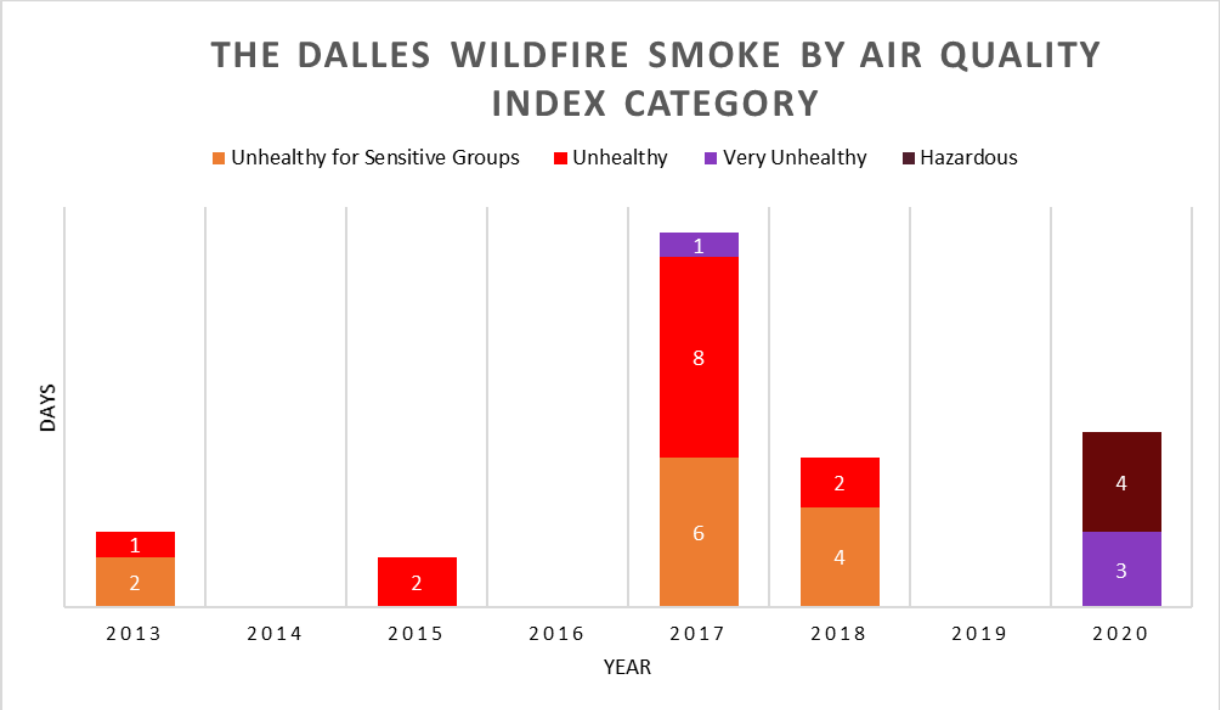
Prescribed fire continues to be recognized as an important fuel treatment and ecological restoration tool, where appropriate; therefore, stakeholders should:

- Continue and expand the use of prescribed fire to meet landscape objectives, improve ecological conditions, and mitigate negative wildfire impacts on human development.
- Ensure that prescribed fire planning includes the management of smoke in accordance with the Clean Air Act and the regulations and policies of the Environmental Protection Agency.
- Ensure that prescribed fire planning follows state and local regulations.
- Be aware of Oregon Certified Burn Manager program and the Oregon Department of Consumer and Business Services study on libaility and prescribed fire insurance.

Figure 12. Wasco County Air Quality Index Category 2013 to 2020

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affective.
Unhealthy for Sensitive Groups	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	301 to 500	Health alert: everyone may experience more serious health effects.

Wildfire smoke trends and the air quality index - Oregon. Oregon Department of Environmental Protection Agency. (n.d.). Retrieved November 30, 2021, from https://www.oregon.gov/deq/wildfires/Documents/WildfireSmokeTrendsReport.pdf.

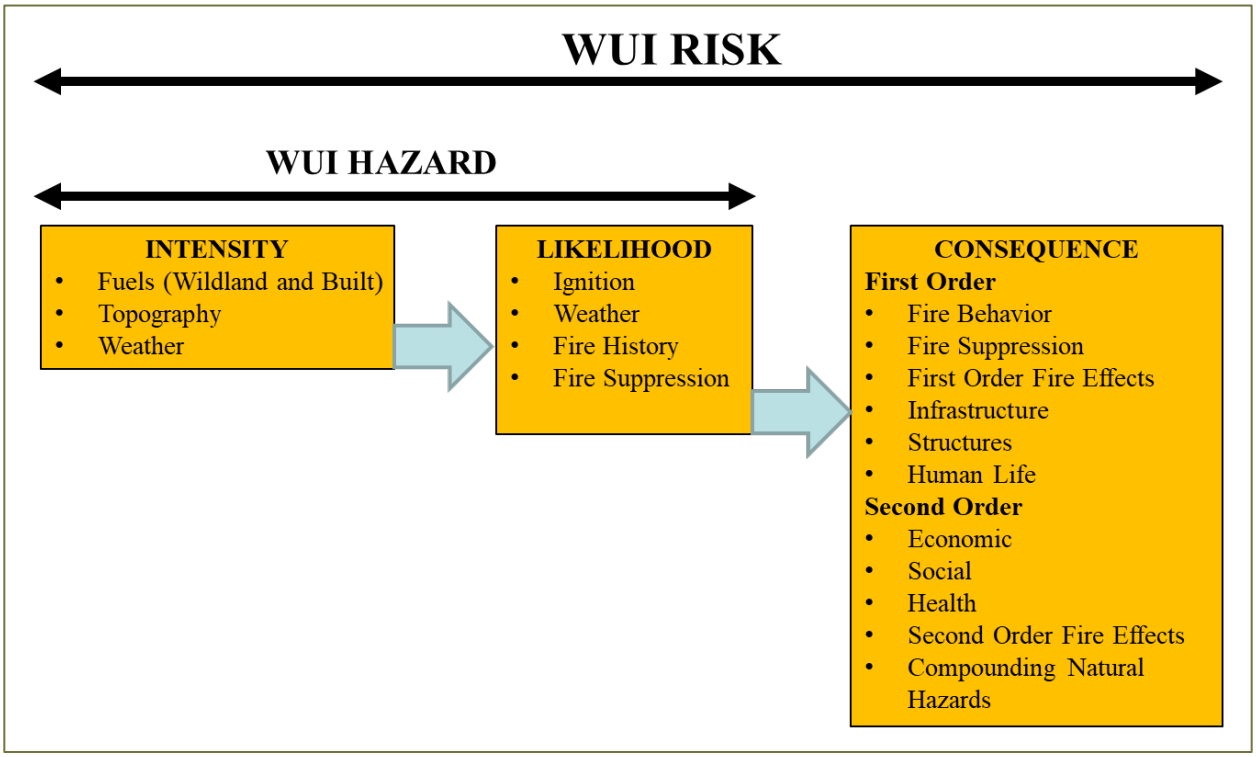


Post-Fire Effects and Recovery

A number of post-fire effects can result from either wildfire or prescribed fire occurrence. Prescribed fire planning goals and objectives are typically driven by desired ecosystem, or hazard reduction outcomes. These goals and objectives should be clearly stated in the prescribed fire plan and a monitoring program should be in place to measure the post-fire effects.

Wildfire events can result in significant post-fire impacts—both positive and negative. Risk assessments can provide guidance in anticipating post-wildfire impacts (Figure 14), mitigating these impacts before a fire occurs and reducing recovery efforts. The development of a post-wildfire recovery plan, based on the anticipated impacts, can help the communities affected become more resilient to wildfire.

Figure 13. Using a Wildfire Risk Assessment to Anticipate Post-Fire Effects



Land Management Planning (State and National Forest)

Collaborative planning efforts between county stakeholders, state, and national forest land managers should be ongoing. Actions resulting from the update of the Wasco County CWPP should be incorporated into both state and national forest land management plans.

Oregon Forestland-Urban Interface Fire Protection Act of 1997

Wasco County Fire Districts and residents work closely with the Oregon Department of Forestry (ODF) under the Oregon Defensible Space Law or commonly called Senate Bill 360.
While not utilized as one of the assessment tools for this CWPP, the Steering Committee promotes the standards of the act for private lands.

The Oregon Defensible Space Law, also known as Senate Bill 360, enlisted the aid of property owners toward the goal of turning fire-vulnerable urban and suburban properties into less volatile zones where firefighters may more safely and effectively defend structures and properties from wildfires. The law required property owners in identified forestland-urban interface areas to reduce excess vegetation around structures and along driveways. In some cases, it is also necessary to create fuel breaks along property lines.

This program was replaced with the passage of Senate Bill 762.

Senate Bill 762

In 2021 comprehensive legislation was passed in Oregon, SB 762, to “help Oregon modernize and improve wildfire preparedness through three key strategies: creating fire-adapted communities, developing safe and effective response, and increasing the resiliency of Oregon's landscapes.”

This statewide approach to wildfire mitigation included directives for various state agencies:

- Oregon Department of Forestry (ODF) to define WUI, analyze and identify wildfire risk statewide, including WUIs
- Building Codes Services (BCS) to adopt fire hardening building codes standards for extreme or high risk areas in the WUI
- Office of State Fire Marshal (OSFM) to develop Fire Adapted Oregon framework, including new defensible space codes
- Department of Land Conservation and Development (DLCD) to identify updates to the statewide land use planning program, including amendments to zoning codes

This work is still in progress, but will be incorporated into future plans including updates to the Wasco County Land Use and Development Ordinance.

Increasing Resiliency of Landscapes

Increasing resiliency of the landscapes within the county involves reducing the wildfire potential and requires an integrated approach.

Specific CWPP actions to increase resiliency of landscapes are:

1. **Update County Fire Safety Standards**
   Fire standards, particularly in the WUI, will be updated consistent with results of SB 762 work including any increased defensible space requirements, setbacks, or road standards.
2. **Complete a road hazard assessment.**
   Identify potential areas for mitigation efforts along public access roads to improve access by fire apparatus for mitigation and response as well as evacuation.
3. **Support collaborative efforts.**
   Support rural fire protection districts, rangeland associations, the Oregon Department of Forestry and the Wasco County Forest Collaborative in wildfire risk reduction projects, upgrading equipment, and other mitigation efforts.
4. **Work with the railroad along rivers**
   Reduce maintenance work on railroads, where possible, on the rivers during fire season. Also support efforts to improve ROW vegetative management.

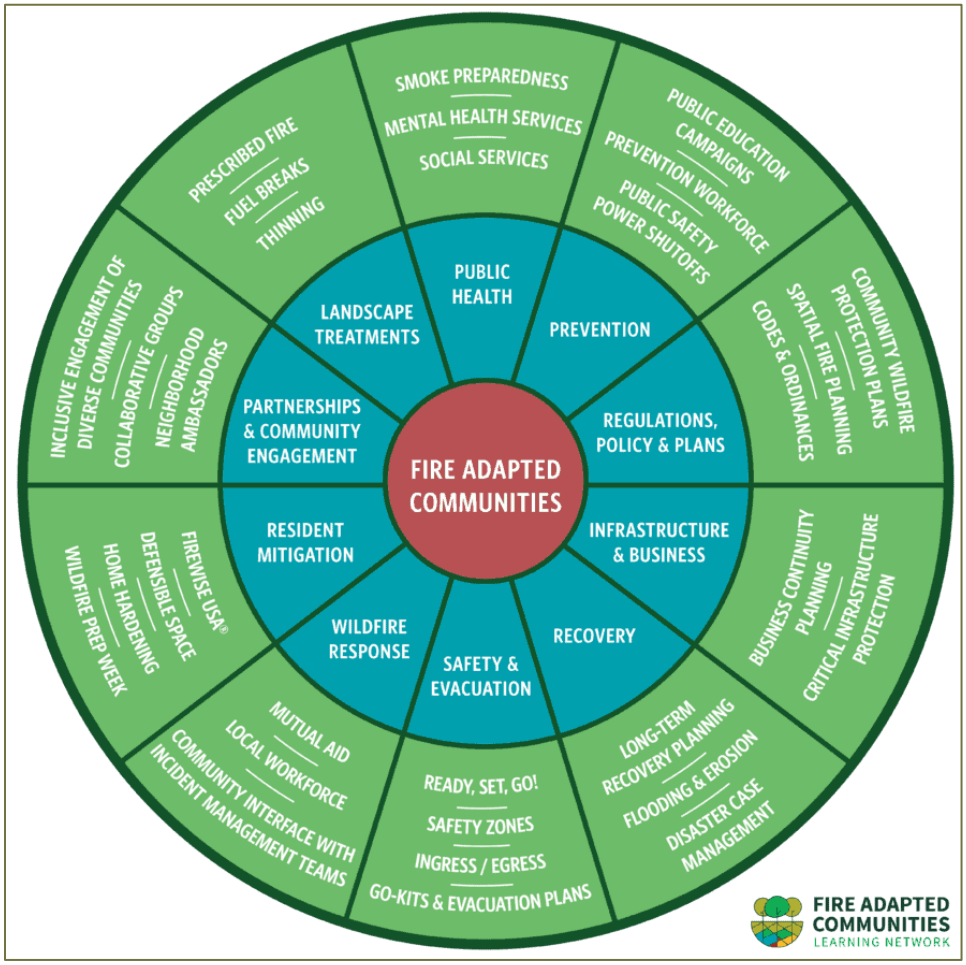
Promoting a Fire Adapted Wasco County

Overview

Promoting fire adapted communities focuses on preventing, preparing for, and protecting lives and properties during wildfire events and ensuring a full recovery. A fire adapted community considers all aspects of its built environment, including homes, businesses, infrastructure, main streets, critical facilities, cultural sites, hospitals, and more.

There are many paths to becoming fire adapted, such as through education, mitigation, policies, and regulations. Fire adapted communities may implement established national programs, such as Firewise Communities/USA and Ready, Set, Go!, develop a CWPP, enhance local capacity, conduct fuel reduction and forest management activities, and utilize codes and ordinances to regulate development in fire-prone areas. The more actions a community takes, the more fire adapted it becomes (Figure 15). Because communities have limited resources, however, strategic identification of actions is necessary to best leverage fire adaptation at the local level. Promoting a fire adapted Wasco County also requires alignment with activities for restoring resilient landscapes and improving wildfire response.

Figure 14. Examples of Community Actions to Become Fire Adapted



Wildfire resources from FAC Net: Fire Adapted Communities. Fire Adapted Communities Learning Network. (2021, April 12). Retrieved November 18, 2021, from https://fireadaptednetwork.org/resources/.

Community Assets

Wasco County has many community assets that could be at risk to wildfire. It's important to consider these values at risk when locally planning for fire adapted communities, which broadly include:

- Homes, businesses, and commercial areas;
- Communication and power transmission lines;
- Airports and transportation corridors;
- Watersheds, creeks, rivers, lakes, forests, and open space;
- Wildlife, fisheries, and biodiversity;
- Air quality, public health, and safety;
- Local, state, federal, and tribal recreational lands;
- Historic sites, historic districts, cultural and sacred areas;
- Critical infrastructure and facilities, such as hazardous-material facilities, hospitals, public shelters, and schools;
- Timber and wood products industries.
- Agricultural lands.

Trends in Community Development and Growth

LEARN MORE:
WASCO COUNTY'S ASSETS AT RISK

Wasco County's values at risk are further detailed in other local plans, including:

- The **Wasco County Natural Hazards Mitigation Plan** (2019), which provides a detailed description of critical facilities and infrastructure, and provides a vulnerability analysis and prioritization of mitigation projects.
- The **Wasco County Comprehensive Plan** (2020), which discuss local values and amenities, including public infrastructure, parks, trails, wildfire, fisheries, and cultural resources.

Wasco County is experiencing growth and change in terms of its population, land use, ownership, and development patterns. The Population Center for Research estimates that unincorporated Wasco County will see an additional 300 people by 2030. To address current and anticipated changes, the county must consider how wildfire can be further integrated into planning and development decisions. For example:

- Conversion of agricultural, forest and riparian lands to developed lands is contributing to the expansion of the wildland-urban interface. The updated wildfire hazard assessment (see Part 2) can be consulted to help evaluate proposed new developments; developments that are proposed in hazardous areas should incorporate strategies that reduce risk to the built environment and increase firefighter and public safety.
- Vulnerable populations living in wildfire-prone areas, such as the elderly and those with fixed and low incomes, may have difficulty in performing or paying for mitigation, or require additional planning for evacuations. Coordinating with emergency managers and fire districts when planning for vulnerable populations can help address unique needs.
- Continued growth in seasonal and second-homeowner markets can affect how stakeholders plan for local response needs and resources. This includes a significant increase in Recreational Vehicle Use for longer stays. Community outreach and engagement with part-time residents and visitors must accommodate unique considerations such as seasonal schedules, changes in population, or varying levels of awareness regarding local wildfire concerns.

Increasing Community Fire Adaptation & Reducing Structural Ignitability

Recent and future population and development changes, combined with an increase in wildfire risk, highlight the need for Wasco County to develop strategies to plan for and adapt to wildfire. Strategies must consider a range of current and future community values, including existing and new homes, vulnerable populations, local amenities, critical facilities and infrastructure, and businesses. Strategies can be in the form of new policies and regulations, education and outreach initiatives, and other programmatic activities that help community members prepare for, and adapt to, future wildfire events.

Strategies below are focused on leveraging existing county activities to increase their impact across the county. Actions listed below are also captured in the Action Table (Part 4).

Promote Implementation of WUI Policies and Regulations

Several key county plans already incorporate wildfire topics into their goals and actions, including the Wasco County Comprehensive Plan, Community Planning Assistance for Wildfire Wasco County Final Report, and the Wasco County Multi-Jurisdictional Natural Hazards Mitigation Plan. For example:

- Wasco County Comprehensive Plan Goal 7 features several policies to ensure consistency between plans, regular collaboration between public safety agencies, and to encourage resilient land use planning techniques for development in areas identified as high risk for wildfire.

This CWPP leverages existing plan goals to advance risk reduction by providing more detailed implementation guidance.

Specific CWPP actions to address development are:

1. **Update County Fire Safety Standards**

   Much of this work will be driven by new defensible space, land use planning, and other statewide initiatives resulting from SB 762.

2. **Adopt WUI Codes and Standards.**

   Home hardening and defensible space standards will be required for all high and extreme risk areas within the wildland urban interface identified by ODF statewide mapping. As of publication of the CWPP, that includes several communities in incorporated and unincorporated Wasco County. This was also identified as a critical action item by all fire partners.

LEARN MORE:

Home hardening standards

Too often, structures and properties are not prepared for wildfire conditions. However, research shows that proper structure ignition measures can increase their survivability during a wildfire by decreasing their susceptibility to flames, radiant heat, and embers.
These strategies aim to reduce home, business, and other property losses during a wildfire.

Oregon Senate Bill 762 (2021) created a statewide approach to a wide range of wildfire mitigation measures. The legislature directed the Building Codes Division to adopt fire hardening building code standards that could be applied to areas of the state mapped as extreme or high risk and that are in the wildland urban interface. Fire hardening refers to building materials and practices that can reduce the risk of ignition of a home by embers from wildfires. New construction standards are forthcoming.

For more information:
https://www.oregon.gov/bcd/codes-stand/Documents/5785-howfirehardeningworks.pdf

Promote WUI Public Education & Outreach

Mitigation strategies are often most accepted when the public and stakeholders understand their effectiveness. For example, scientific tests on building construction identify which types of materials are most effective during ember storms. When the public understands this information, they are more likely to see the value in supporting building codes that include ignition-resistant construction requirements.

Mitigation strategies are also effective in addressing existing development through education and outreach activities to help increase awareness and motivate voluntary actions. Activities can target residents and landowners, youth, industry professionals, and elected officials.

Many education and outreach efforts are already underway by local, state, and federal stakeholders, including annual promotion of Wildfire Awareness Month.

Specific CWPP actions to enhance outreach and education are:

1. **Conduct county-wide wildfire prevention education efforts**

   This includes distribution of fire prevention literature online and in person, circulating public service announcements, supporting fire prevention programs in schools, assisting communities to become Firewise Communities, and supporting one-on-one landowner contacts.

2. **Complete survey and evaluation of home-sites.**

   Partners can use NFPA 11-44, NFPA 1300 (Community Risk Assessments), or NFPA Home Ignition Zone evaluation criteria to review individual homes and provide information on how to reduce risk.

3. **Provide landowners with signs for posting of addresses and include up to date information about wildfire risk rating to homeowners.**

From top to bottom: Prescribed burning. Firefighter directing air traffic in Wasco County and air operations on fire (2020). Credit: Jacob Hastings, OSFM.

Increasing Wildfire Response throughout Wasco County

The multiple agencies responsible for fire suppression have developed an excellent network of interagency support and cooperation. Generally, suppression resources have been able to respond to wildland fire occurrences with adequate resources using this system. However, some concern is expressed over the ability of this system to sustain itself in the face of climate change and the current trend of decreasing volunteer capacity, aging firefighters, and decreasing budgets.

Primary Stakeholders and Response Areas

Most Wasco County communities are within the jurisdictions of one of the twelve legally recognized, community-based rural fire districts, fire service areas, or a municipal fire department (Table 3).

Table 3. Overview of Community-Based Fire Response Agencies in Wasco County, OR

Community-based Fire Response Agency	Communities Served	Response Area (sq. mi)
Antelope Fire District	• City of Antelope	1
Ashwood-Antelope Rangeland Fire Protection Association (within Wasco County)	• Unincorporated Ashwood-Antelope	567
Bakeoven-Shaniko Rangeland Fire Protection Association	• Bakeoven-Shaniko	286
Bureau of Indian Affairs	• Warm Springs Reservation	615
Petersburg Rangeland Fire Protection Association	• Petersburg	119
Dufur Volunteer Fire and Ambulance	• City of Dufur	1
Juniper Flat Rural Fire Protection District	• Juniper Flat • Pine Grove	92
Maupin Volunteer Fire Department	• City of Maupin	2
Mid-Columbia Fire and Rescue	• City of The Dalles • Mayer State Park • Celilo Village (contracted with Bureau of Indian Affairs) • Seven Mile Hill • Tooley Terrace • Rowena Dell	107
Mosier Fire District	• City of Mosier and unincorporated area around the City	23
Shaniko Volunteer Fire Department	• City of Shaniko	.5
Tygh Valley Rural Fire Protection District	• Tygh Valley • Butler Canyon • Shady Brook	32
Wamic Rural Fire District	• Pine Hollow • Wamic • Sportsman's Park/Rock Creek	45

The Rural Fire Protection Districts in Wasco County have a mix of paid and volunteer firefighters, with the majority (except for Mid-Columbia Fire and Rescue) being volunteers. The fire protection associations rely completely on citizen volunteers to respond to wildland fires.

Additional Stakeholders

In addition to fire suppression resources available within the fire protection districts, seasonal wildland firefighters are available through the Forest Service (USFS), Oregon Department of Forestry (ODF) and the Bureau of Land

Management (BLM). These resources are trained and equipped to fight wildland fire only; unlike the fire protection district resources, they are not trained or equipped to fight a structure fire. The USFS also offers access to national incident and area command teams and resources, when required.

Suppression Responsibilities

When an unwanted wildland fire (wildfire) is discovered in Wasco County, a fire response crew from a local fire response jurisdiction, a USFS ranger district, and/or ODF fire unit may respond, depending on its location. The Columbia Cascade Communications Center uses the "closest forces" concept in wildland fire dispatch.

This allows for the closest suppression resource to be sent, regardless of boundaries or jurisdictional responsibilities. This arrangement is particularly helpful at either end of the federally recognized fire season (typically mid-June through mid-September). When wildfires start early, as they often do, full federal fire crews are not yet employed so it is the community-based firefighter who is often first on scene.

Interagency Agreements

Through pre-established mutual aid agreements, all fire suppression resources in Wasco County are authorized to leave their jurisdictional boundaries to aid a requesting agency partner. In addition, Oregon statute allows these resources to assist throughout the state when needed/possible.

Emergency Preparedness/Evacuation

Emergency evacuation procedures are the responsibility of the Wasco County Sheriff s Office. During a wildfire, the Incident Commander (in coordination and with the approval of the agencies having jurisdiction) will recommend evacuation. Routes and locations of shelters/centers depend on fire location and numbers of affected individuals, and so must be made on a case-by-case basis at the time of the incident. Wasco County has an Evacuation Plan. For more information about it, contact the Wasco County Sheriff's Office.

Mid Columbia Fire Prevention Cooperative

Regional wildland fire agencies have created this group to work together to provide fire awareness throughout the Mid-Columbia River Gorge. The organization is committed to keeping communities safe from home and forest fires through education and preparation.

LEARN MORE: Volunteer Fire Service

- Volunteer firefighters are called to a variety of emergencies, including fires, emergency medical incidents, natural disasters, terrorist incidents, water rescue emergencies, and more. Volunteers spend an enormous amount of time training to prepare for responding to these emergencies.
- Volunteers comprise 70 percent of firefighters in the United States. Of the total estimated 1,160,450 firefighters across the country, 814,850 are volunteer.
- The majority of fire departments in the United States are volunteer.
- The number of volunteer firefighters in the U.S. reached a low in 2011, and many local volunteer fire departments are struggling to meet staffing needs. Challenges includes increased time demands and rigorous training requirements.
- Learn more at the National Volunteer Fire Council (nvfc.org)

Source: *National Volunteer Fire Council Fact Shee*t. 2018

Current Suppression Challenges and Limitations

Volunteer Firefighter Capacity

The current national trend of a decreasing and aging pool of volunteer firefighters has been expressed as an increasing local concern for most departments that rely on volunteer responders. Most departments can currently function adequately when faced with in-district emergencies. However, as county and regional wildland fires grow in frequency and size—increasing the need for solid mutual and automatic aid support—and compounded with the demand of other year-round response commitments (medical calls, structure fires, rescues, motor vehicle accidents)—the majority of these departments are unable to provide support to the desired level.

Climate Change

A changing climate, resulting in fires of increased intensity and extended shoulder seasons, will require increased resources. This adds an additional stressor on volunteer firefighter capacity.

Response Area Commitment

Many of the local fire districts are responsible for significant response areas—some extending into neighboring counties and many with multiple communities or values at risk. There is some concern regarding the capacity during a heavy multiple fire load scenario that these resources that are relied upon for mutual aid will be over-committed.

STATE FIRE INSURANCE

Excerpt from "A New Vision for Wildfire Planning: A Report on Land Use and Wildfires" published in 2019 by 1000 Friends of Oregon (https://friends.org/sites/default/files/2019-04/A%20New%20Vision%20for%20Wildfire%20Planning%202018.pdf)

"Oregon is the only state in the nation that purchases catastrophic wildfire insurance. In the 1970s, the state began purchasing wildfire insurance and has done so almost every year since. While undoubtedly a useful investment, premiums and deductibles have risen alongside heightened wildfire risk. Even after spending $38 million on wildfire suppression, the state was shy of hitting its $50 million deductible. In 2013, the insurance policy cost $854,926, but by 2016, the premium rose to $3,529,380 and the deductible doubled from $25 million to $50 million. In recent years, Lloyd's of London has considered canceling the policy altogether, which has created uncertainty and fear among state foresters. As a result, the future of the insurance policy is unclear. Even if the policy continues to be offered in the future, growing deductibles and premiums, along with increasing wildfire costs overall, are a strain on the state's budget."

Improving Response

Specific CWPP actions to improve wildfire response capabilities are:

1. **Maintain rural fire production district or rangeland association protection as appropriate.**
2. **Assist Rural Fire Districts in upgrading their firefighting equipment, facilities, and training as needed.**
3. **Increase interagency training and cooperative planning regarding air resources for fire suppression**. Convene response partners to better determine appropriate utilization of air resources and review standard operating procedures regularly, modify other response and mobilization plans as necessary.

Cohesive Strategy Section Summary

Wasco County has a diverse set of community and ecological values at risk, requiring a comprehensive approach to mitigation. Ecological health challenges, increased development pressures, local fire response capacity challenges,

and climate change all increase the complexity and emphasize the need for this approach. The county anticipates future growth and must plan where and how development should occur to avoid increasing wildfire risk to lives and properties. Accordingly, the natural landscape must also be managed with the combined appropriate combination of vegetation management (mechanical, chemical, and prescribed fire) and response. Wildfire mitigation actions must consider both existing and future development to increase community fire adaptation. Actions listed in this section and summarized in the CWPP Action Plan (Part 4) advance the goals of the county, as well as increase the wildfire response capacity and overall wildfire resiliency. Actions take a wide-ranging approach to address multiple scales and stakeholders and to provide voluntary and regulatory options.

Part 4: Putting the CWPP into Action

Overview

Part 4 focuses on putting the CWPP into action. The first section provides an overview of stakeholders associated with this CWPP to promote understanding of roles and responsibilities. The second section provides an action plan to guide stakeholder implementation activities. This ensures the CWPP process moves forward in tangible ways. Finally, additional guidance on plan maintenance outlines key considerations to ensure this plan stays timely and relevant in the future.

Stakeholder Roles

The success of this CWPP requires the participation of all stakeholders to engage in understanding their role and taking appropriate actions. The following table shares roles that community members at local, state, and federal levels play in Wasco County's wildfire resilience and risk reduction.

Table 4. Overview of CWPP Stakeholder Roles

Stakeholder Group	Overview of Roles
City, County, and Local Partners	
Elected Officials	• Board of County Commissioners (BOCC) has jurisdiction and power to represent the county and has care of the county property, management, and business concerns. • Wasco County Sheriff is an elected position that has responsibility for the enforcement of state and county laws and statutes. • The incorporated cities of Wasco County are governed by a City Council and a Mayor.
Wasco County Planning Department	• Responsible for developing and administering plans and regulations, including zoning and subdivision, growth policy, regional plans.
Fire Departments and Rural Fire Districts	• Responsible for community fire response and protection services for areas across Wasco County.
Wasco County Fire Protection Association	• Nonprofit association with members from city, county, rural, state, and federal agencies, including fire departments and districts, Wasco County Office of Emergency Management, Oregon Department of Natural Resources and Conservation, USDA Forest Service, and other organizations • Coordinates fire prevention and response activities.
Wasco County Emergency Manager	• The Emergency Manager plays a supportive role in wildfire situations. • Administered by the Sheriff's Office

Wasco County and City Residents, Private Landowners, and Community Councils	• Responsible for personal property and engaging in community projects.
Local Partners	• Parks and Recreation Department, School District, Soil and Water Conservation District, and the Wasco Forest Collaborative.
State Partners	
Oregon Department of Forestry	• The Dalles Unit of the Central Oregon District has dual protection responsibilities with several rural fire districts including: Mosier, Mid-Columbia Fire and Rescue, Dufur, Tygh Valley, Pine Wamic, and Juniper Flat, in addition to mutual assistance agreements with Warm Springs Confederated Tribes, Bureau of Land Management, and the United States Forest Services.
Oregon Department of Fish and Wildlife	• Concerned with the effects a large wildfire could have on the winter range habitat. • The Management Plan for the wildlife area states that prescribed burns may be used to reduce hazard fuels and to enhance wildlife habitat.
Oregon State Fire Marshal	• The Fire Marshal is responsible for code enforcement, fire investigation, regional and statewide mobilization requests, fire prevention and education, as well as community risk reduction. Key programs include Fire Adapted Oregon and Response Ready Oregon, originating from Senate Bill 762.
FireSafe Oregon	• Private, nonprofit organization coordinates and supports a statewide coalition of diverse interests working together to help Oregon's make their homes, neighborhoods, and communities fire safe.
Federal and Tribal Partners	
United States Department of Agriculture Forest Service	• Responsible for management and protection of National Forest lands in Wasco County out of the Barlow Ranger District.
Confederated Tribes of the Warm Springs Indian Reservation	• Manages Warm Springs Indian Reservation. • Administers the Tribes Wildland Fire Prevention Plan (WFPP) covering the Reservation; it tiers into their Fire Prevention program of Risk Assessment Mitigation/Strategies (RAMS) which takes into consideration types of fuels, hazards, property values, suppression capabilities, and past fire occurrences.
Bureau of Land Management	• Manages lands in Wasco County, primarily in the Deschutes River corridor. • Responsible for protection of lands from wildfire and will respond to wildfires on nearby private lands if the fire constitutes a threat to Bureau of Land Management lands.
United States Fish and Wildlife Service	• Administers environmental stewardship programs and services to guide conservation, development and management of national fish and wildlife resources. • Issues permits under various wildlife laws and treaties.
Natural Resource Conservation Service	• Technical assistance and land management support to natural and working private land owners.

Action Plan

The following action plan (Table 5) captures actions listed throughout this CWPP. Each action has a proposed lead(s) responsible for advancing the action, a priority level for implementation, a desired timeframe for completion, and any additional notes relevant to support the action. Many actions may relate to one another.

Priorities were determined through the following method:

For Core Group Identified Priorities:
The Overall Risk (1-3) was identified: How great a risk does this issue present to the community if this project is not completed?

1. No Risk
2. Moderate Risk
3. Extreme Risk

Impact (1-3) created by the action: What is the impact to Wasco County if this project is completed?

1. Little impact
2. Moderate impact
3. Significant impact

Resources Needs (1-3) to complete the priority: How much staff and money are needed to achieve the project?

1. Minimal resources
2. Moderate resources
3. Significant resources

Time required (1-3) to complete the project: How much time will be required to complete

1. 1 year or less
2. 1-2 years
3. 2 or more years

Community-Identified Priorities:
Community Feedback (1-3): How did the community rate this as a priority?

1. Low priority
2. Middle priority
3. High priority

Scores were then combined to identify whether it was a high, medium, or low priority project based on community input, resource needs, risk, and impact.

Table 5. Wasco County CWPP Action Plan

Action	Lead(s)	Priority	Timeframe	Notes
Plan Implementation and Update				
1. Assign a County Wildfire Coordinator to represent Wasco County in matters pertaining to the county and the implementation of the CWPP	Planning	Medium to High	0-3 years	
2. Update the CWPP on a five year cycle or as needed.	Planning	Medium	3+ years	
3. Update County Fire Safety Standards	Planning	Medium	0-1 year	Slated for 2023
4. Adopt the WUI Code and Standards (Home hardening and defensible space)	Building Codes Services, OSFM	High	0-1 year	Will be mandatory for high or extreme risk areas within WUI boundaries
Risk Assessment				
5. Update the Wasco County risk assessment and include WUI identification map.	USFS, County, ODF, OSFM, BLM, NRCS, OSU Extension Office	Medium	0-3 years	
6. Explore incentives for risk reduction and enhance existing risk reduction education efforts.	Fire Districts, County, ODF, OSFM	Low to Medium	0-3 years	
Resilient Landscapes and Fire Adapted Communities				
7. Complete a road hazard assessment	County, Fire Districts	Medium	0-3 years	Also prioritized in NHMP, County has applied for a grant to support this effort.
8. Support collaborative efforts	County Fire Districts, Rangeland Associations, ODF, Forest Collaborative	High	Ongoing	
9. Work with railroad to reduce maintenance work during fire season and improve ROW vegetative management	County, Fire Districts	Medium	3+ years	
Public Education and Outreach				
10. Conduct county-wide wildfire prevention education efforts	County, Fire Districts, ODF, USFS, BLM	High	Ongoing	

Action	Lead(s)	Priority	Timeframe	Notes
11. Complete survey and evaluation of home sites	Fire Districts	Medium	Ongoing	
12. Provide landowners with signs for posting of addresses and include up to date information about wildfire risk rating to home owners	Fire Districts, County	High	Ongoing	
Improved Response				
13. Maintain rural fire protection district or rangeland association protection as appropriate.	County, Fire Districts, OSFM, OEM, ODF	High	Ongoing	
14. Assist Rural Fire Districts in upgrading their firefighting equipment, facilities and training as needed.	OEM, Fire Districts, County, ODF	High	Ongoing	
15. Increase interagency training and cooperative planning regarding air resources for fire suppression.	Fire Districts, ODF, OSFM	High	1-2 years	

Plan Updates and Maintenance

The continuous nature of implementing the Action Plan makes this CWPP a living document. Different stakeholders will be meeting at various times to discuss and implement applicable actions—some of which may take months or years to complete, while others could be ongoing.

An annual review of the action plan with lead stakeholders, as identified in the Action Plan, will help further coordinate and re-evaluate the status of actions. More significant updates should occur on an as-needed basis, such as following significant fire seasons.

A major update to this CWPP should be anticipated on a five-year cycle. This increases the efficiency of stakeholder participation and further links content between both plans. The major CWPP update will include:

- Review of all content to confirm accuracy of information, such as recent wildfire history, changes to demographics and land ownership, fire response areas, and more.
- Re-assessment of risk inputs based on changes to the local environment.
- Confirmation of participating stakeholders, stakeholder roles, and signatories.
- Updated Action Plan based on revised content, updated risk assessment, and stakeholder interests.
- Updated mitigation projects

Importantly, keeping the plan updated also helps share successes with other stakeholders and community members as Wasco County increases its capacity for resilient landscapes, fire adapted communities, and efficient response capabilities.

Action Plan & Stakeholder Summary

The CWPP Action Plan builds on the information provided in Parts 1-3 of this CWPP and was collaboratively developed by stakeholders representing different areas of expertise and perspectives. Upon adoption of this CWPP update, stakeholders—including the public—are ready to move forward with implementing actions that prepare Wasco County for future wildfire seasons. As implementation occurs, lead stakeholders (as outlined in the CWPP Action Plan) will continue to coordinate activities and evaluate outcomes to ensure actions remain timely, relevant, and successfully achieve the desired results.

Appendix A: Oregon Wildfire Risk Explorer-Advanced Report for Wasco County

This report summarizes wildfire risk in Wasco County from the Advanced Oregon Wildfire Risk Explorer map viewer (OWRE). Wildfire risk combines the likelihood of a fire occurring with the exposure and susceptibility of valued resources and assets on the landscape.

Nearly all areas in Oregon experience some level of wildfire risk. Conditions vary widely with local topography, fuels, and local weather, especially local winds. In all areas, under warm, dry, windy, and drought conditions, expect higher likelihood of fire starts, higher fire intensities, more ember activity, a wildfire more difficult to control, and more severe impacts. The OWRE Advanced Report provides wildfire risk information for a customized area of interest to support Community Wildfire Protection Plans (CWPPs), Natural Hazard Mitigation Plans (NHMPs), and fuels reduction and restoration treatments in wildfire-prone areas in Oregon.

Oregon Wildfire Risk Explorer- Advanced Report

Wasco County

1,532,385 Acres: (2,394 Sq. Miles)

Generated: December 28, 2020

Weather and vegetation conditions vary daily and seasonally. For current conditions and local fire restrictions, contact your local fire district or visit: www.keeporegongreen.org/current-conditions

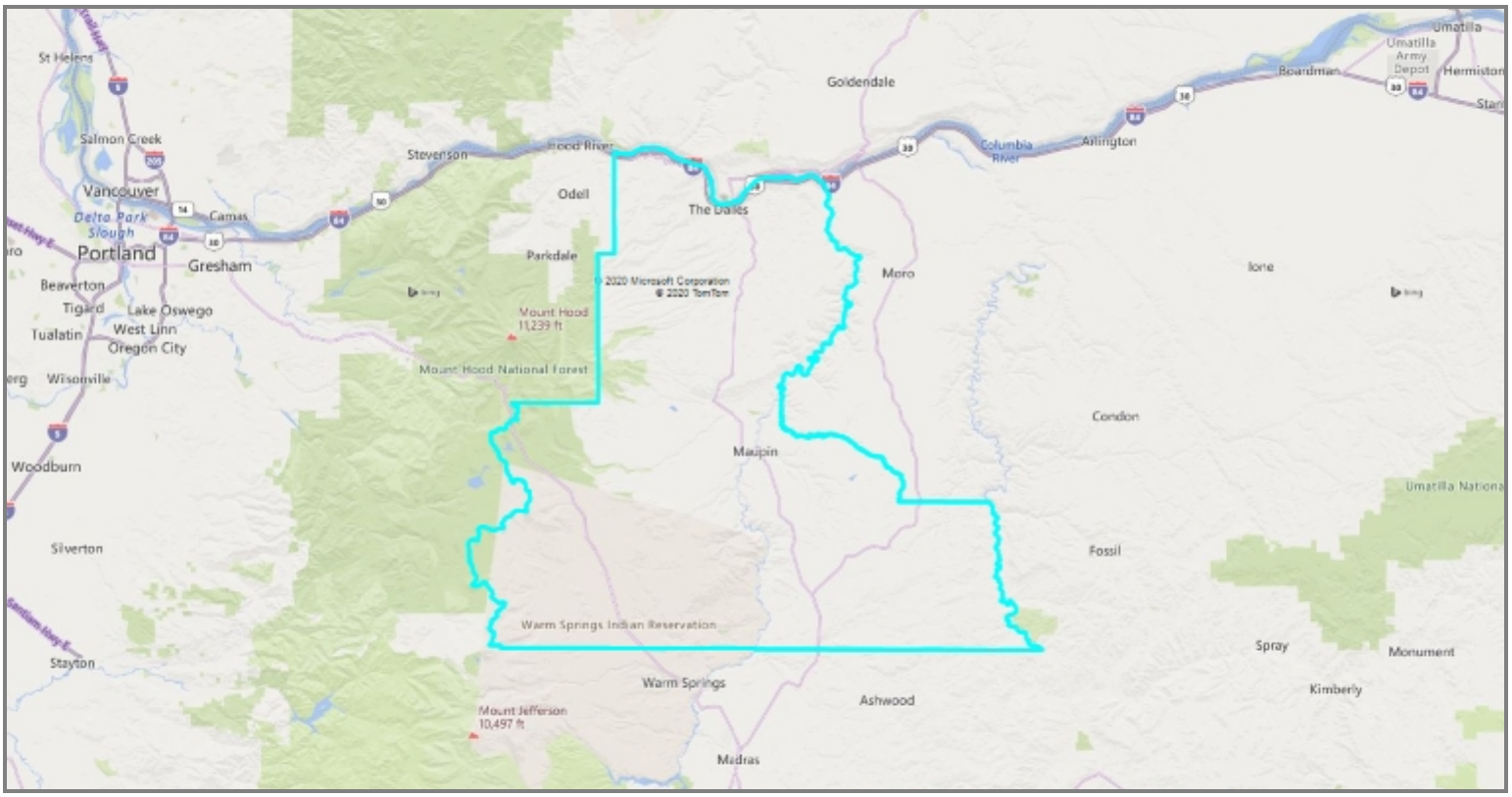
INTRODUCTION

This report summarizes wildfire risk in Wasco County from the Advanced Oregon Wildfire Risk Explorer map viewer (OWRE). Wildfire risk combines the likelihood of a fire occurring with the exposure and susceptibility of valued resources and assets on the landscape.

Nearly all areas in Oregon experience some level of wildfire risk. Conditions vary widely with local topography, fuels, and local weather, especially local winds. In all areas, under warm, dry, windy, and drought conditions, expect higher likelihood of fire starts, higher fire intensities, more ember activity, a wildfire more difficult to control, and more severe impacts.

Wasco County in Oregon

Wasco County Reference Map



REPORT CONTENTS

Oregon Wildfire Risk Explorer- Advanced Report

Wasco County

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GUIDELINES

The OWRE Advanced Report provides wildfire risk information for a customized area of interest to support Community Wildfire Protection Plans (CWPPs), Natural Hazard Mitigation Plans (NHMPs), and fuels reduction and restoration treatments in wildfire-prone areas in Oregon. Here are some things you need to know about this information:

The Advanced OWRE map viewer provides **wildfire risk assessment** data primarily from the 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, produced by the US Forest Service with a coalition of local fire managers, planners, and natural resource specialists in both Washington and Oregon. The assessment uses the most current data (incorporating 2017 fires) and state-of-the art fire modeling techniques, and is the most up-to-date wildfire risk assessment for Oregon. The assessment characterizes risk of large wildfires (>250 acres). Data also comes from the 2013 West Wide Wildfire Risk Assessment, Oregon Department of Forestry (ODF), and other sources.

Wildfire risk is modeled at a landscape scale. The data does not show access for emergency response, home construction materials, characteristics of home ignition zones, or NFPA Firewise USA® principles. For CWPP and NHMP updates you may want to **consider two scales**:

- first, use data from the OWRE to characterize and understand the fire environment and fire history in your area broadly at a landscape scale, focusing on watersheds or counties;
- then, overlay local knowledge, focusing on communities, fire protection capabilities, local planning areas, and defensible space concepts for neighborhoods and homes.

The OWRE Advanced Report will provide the landscape context of the current fire environment and fire history upon which you can build your local plans toward resilience by preparing and mitigating the larger landscape wildfire risk.

The OWRE Advanced Map Viewer and Report will not replace local knowledge of communities you may consider high risk. Continue to use local Fire Department and ODF knowledge to generate CWPP concern areas. OWRE will produce broad scale maps for your CWPP area as a whole, but maps and data will contain some inaccuracies, which are most prevalent at fine scales.

Recommended additional information sources for wildfire planning:

- Oregon Department of Forestry CWPP list - https://www.oregon.gov/ODF/Fire/Pages/CWPP.aspx
- Oregon Explorer Communities Reporter - demographic and other data for counties and communities https://oe.oregonexplorer.info/rural/CommunitiesReporter/
- Wildland Urban Interface Toolkit - https://www.usfa.fema.gov/wui_toolkit/wui_planning.html
- Wildland Urban Interface Wildfire Mitigation Desk Reference Guide - https://www.nwcg.gov/sites/default/files/publications/pms051.pdf
- Oregon Spatial Data Library - https://spatialdata.oregonexplorer.info/geoportal/
- NFPA Firewise USA® - teaching people how to adapt to living with wildfire and encouraging neighbors to work together and take action to prevent losses. - https://www.nfpa.org/Public-Education/By-topic/Wildfire/Firewise-USA
- Headwaters Economics - Full Community Costs of Wildfire - https://headwaterseconomics.org/wildfire/homes-risk/full-community-costs-of-wildfire/

This Advanced Wildfire Risk Report was generated from the Advanced Oregon Wildfire Risk Explorer map viewer at: tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=wildfireplanning. This site is intended for wildfire professionals and planners. For a basic summary of wildfire risk geared toward a public audience, visit the basic OWRE map viewer: tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=wildfire.

Oregon Wildfire Risk Explorer- Advanced Report

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WILDFIRE RISK ASSESSMENT CONCEPTS & DATA

The Advanced Oregon Wildfire Risk Explorer (OWRE) map viewer organizes data into folders based on wildfire risk concepts. All OWRE advanced reports will include information about Overall wildfire risk, Burn probability, Flame length, Overall potential impact, Hazard to potential structures, Fire history, Land management, and Estimated housing density. Users can select additional data layers of interest, which will appear after the layers listed above.

Wildfire Risk

Overall wildfire risk takes into account both the likelihood of a wildfire and the exposure and susceptibility of mapped valued resources and assets combined. The dataset considers (1) the likelihood of wildfire >250 acres (likelihood of burning), (2) the susceptibility of resources and assets to wildfire of different intensities, and (3) the likelihood of those intensities. Blank areas either have no currently mapped assets or resources and/or are considered a non-burnable fuel in terms of wildfire. Note that agricultural lands are considered non-burnable in this map, even though fires can occur in these areas and may spread into more typically considered burnable areas such as forested lands. Data layers include: Overall wildfire risk, Wildfire risk to assets, and Wildfire risk to people and property.

Wildfire Threat

Wildfire threat shows the likelihood of a large wildfire, the average intensity and the likelihood of higher intensities, conveyed by flame length. Data layers include: Burn probability, Average flame length, Probability of exceeding 4'flames, and Probability of exceeding 8' flames. Additional data layers that show wildfire threat are found under the Fire History and Active Fires folder, where historical fire starts and historical fire perimeters are located.

Wildfire Potential Impacts

Wildfire potential impacts shows the actual exposure of mapped resources and assets. The data layers do not incorporate the likelihood of burning, they only show the consequence of wildfire if it were to occur. Data layers include: Overall potential impact,Potential impact to people and property, Potential impact to infrastructure, Potential impact to timber resources, Potential impact to wildlife, and Potential impact to forest vegetation. The layers (Potential impact to timber resources, wildlife, and forest vegetation) may be useful when targeting fuels treatment. These layers are influencing the "Benefit" areas in the Overall wildfire risk map - they show areas where there is ecological opportunity to restore historical or desired conditions and/or potentially reduce the risk of catastrophic wildfire with managed fire use or other management. The Potential impact to forest vegetation optional report element is coupled with historical fire regime information to give basic context when comparing historical and current conditions.

Hazard to Potential Structures

Hazard to potential structures depicts the hazard to hypothetical structures in any area if a wildfire were to occur. This differs fromPotential Impacts, as those estimates consider only where people and property currently exist. In contrast, this layer maps hazard to hypothetical structures across all directly exposed (burnable), and indirectly exposed (within 150 meters of burnable fuel) areas inOregon. As with the Potential Impacts layers, the data layer does not take into account wildfire probability, it only shows exposure and susceptibility.

Fire Model Inputs and Fuelscape

These layers are the fuels and topography used to run the fire model in the 2018 Pacific Northwest QuantitativeWildfire Risk Assessment. Data layers include: Fuel models, Fuel model groups, Forest canopy base height, Forest canopy height,Forest canopy cover, Forest canopy bulk density, Slope, Elevation and Aspect. Fuel models and groups characterize local surface vegetation composition relative to carrying fire more precisely than a basic land cover or vegetation maps. Fuel models indicate the type of potential wildfire based on the fuels that will ignite and spread fire. Canopy data layers characterize vegetation structure for fire modeling: base height, cover, and bulk density estimates can show where there may be propensity for ladder fuels (ground vegetation and trees that reach up to tree branches and upper forest canopy), and where contiguous forest canopies have potential for canopy fire.Note that not all of these layers are available to select for use in the OWRE advanced reports, but all of them are available for download and they are described in the metadata. Also note that weather, the third part of the three maor elements that determine wildfire occurrence and intensity, is not included in this data distribution - please see the full report to understand the weather parameters used in the assessment.

For more detailed information, please see the full 2018 PNW Quantitative Wildfire Risk Assessment report:
oe.oregonexplorer.info/externalcontent/wildfire/reports/20170428_PNW_Quantitative_Wildfire_Risk_Assessment_Report.pdf

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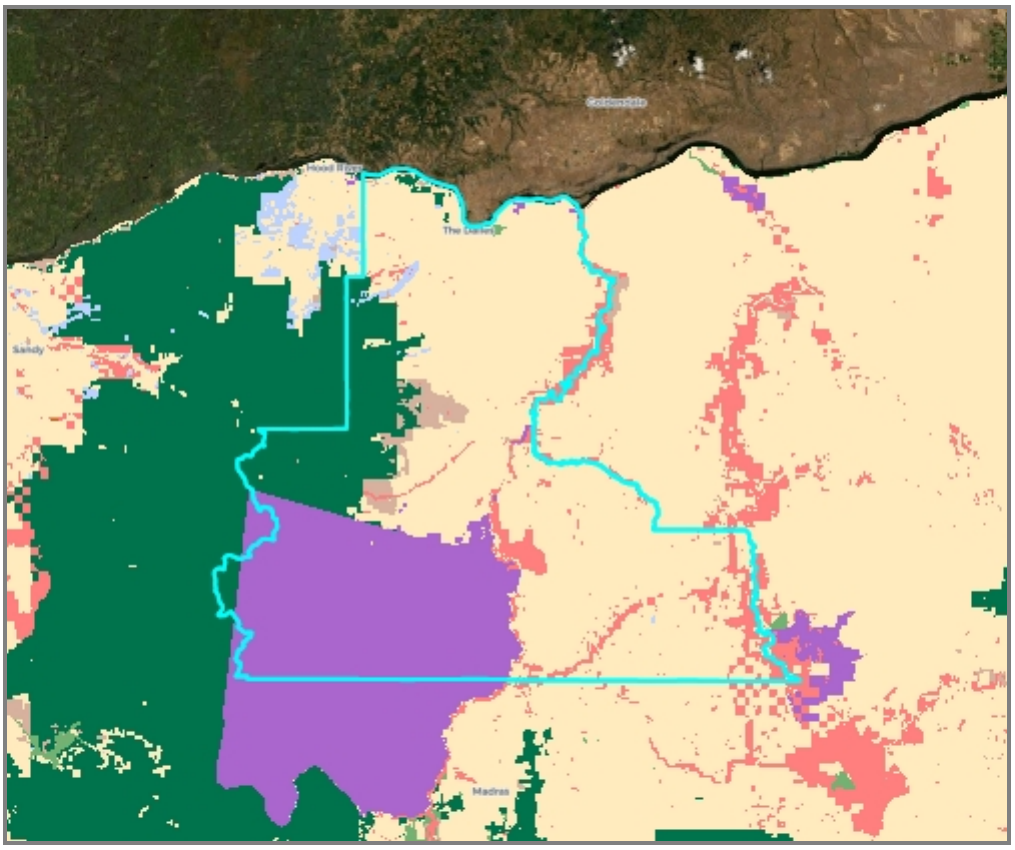
LAND OWNERSHIP AND MANAGEMENT

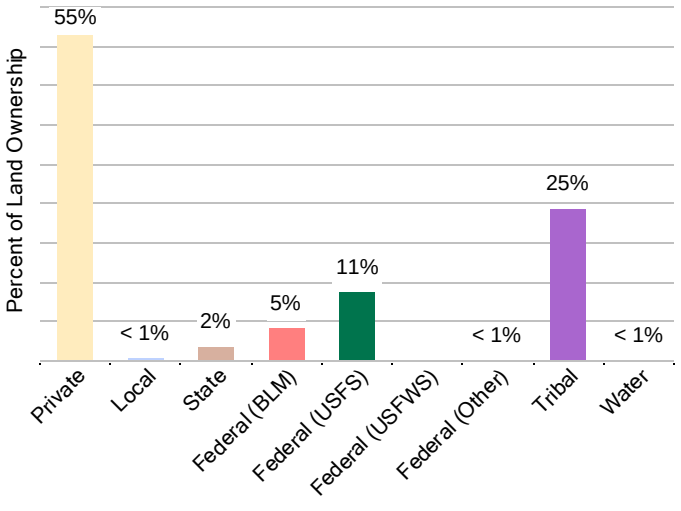


Knowing the land ownership and management in an area is important for hazard planning and awareness when wildfires occur. Oregon has a complete and coordinated wildfire management system between local, private, tribal, state, and federal agencies. These entities participate to fight fire in local areas and throughout the state according to their jurisdictions and protection responsibilities. Different land owners and managers have a variety of highly valued resources and assets to protect. Agencies differ in land use and overall management, including fire management.

The map, table and charts below show the breakdown of ownership types in your area.

Wasco County

Major Landowner/Manager	Acres
Private	843,863
Local	6,144
State	33,989
Bureau of Land Management (BLM)	82,457
US Forest Service (USFS)	174,532
US Fish & Wildlife (USFWS)	0
Other Federal	1,019
Tribal	385,204
Water	125



Source: Bureau of Land Management, 2015

** Values may add up to over 100% due to rounding precision*

Oregon Wildfire Risk Explorer- Advanced Report

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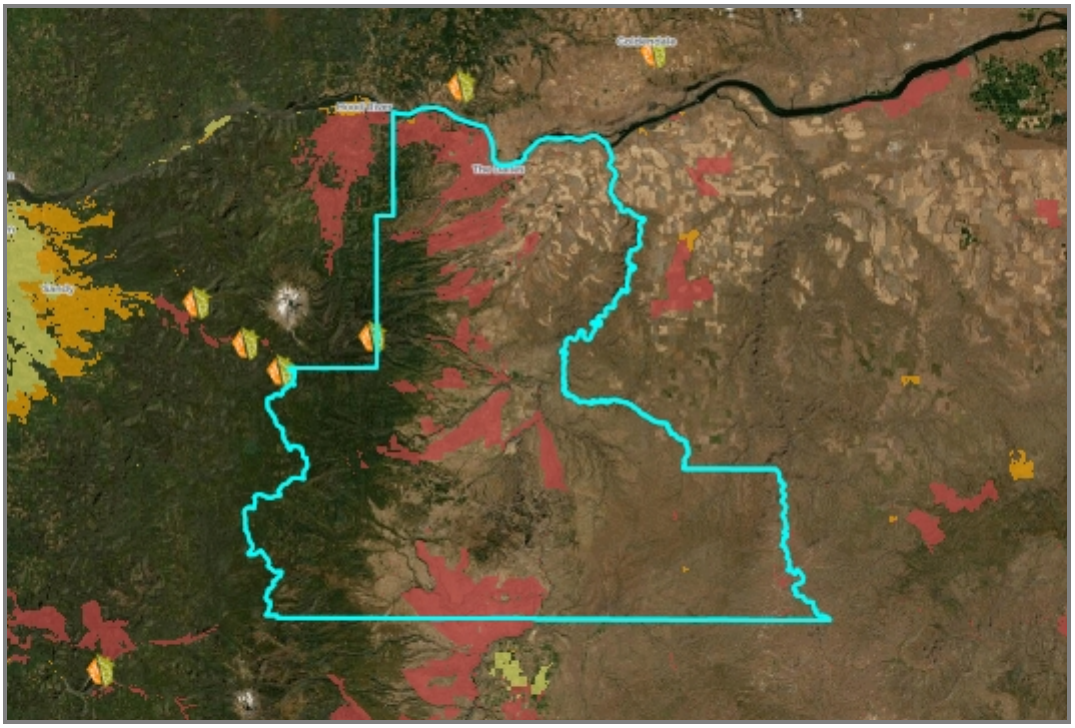
OREGON WUI COMMUNITY HAZARD RATINGS

Counting locally identified communities and neighborhoods, there are up to 6.9 million acres of Wildland Urban Interface (WUI) areas in Oregon. These areas were identified using a base WUI dataset from Radeloff, V.C., et. al, 2017 (published by USFS RDA), which incorporated 2010 census and 2011 land cover data. Locally mapped communities from Community Wildfire Protection Plans (CWPPs) from 2008 through 2013 were associated with the WUI geography. Department of Land Conservation & Development 2017 Oregon Land Use Zoning was also included for recent residential and developed or developing rural growth since the 2010 census. A cross-check was also made with the "100 Communities at Risk" report from the QWRA. Note that this WUI acreage contrasts with the 2.4 million acres from the West Wide Risk Assessment (Where People Live/Wildland Development Areas). The source Radeloff et. al WUI data used census block housing counts and land cover as opposed to WWRA Landscan night lights and housing densities. Acreage is larger in this Oregon WUI due to some rural areas having built environments along roads that spline two or more large census blocks, and we erred on the side of inclusion to add those entire areas to the dataset and not disrupt the original WUI geography. Also very small rural town centers that can potentially be encompassed by catastrophic wildfire, are kept whole in the Oregon WUI dataset.

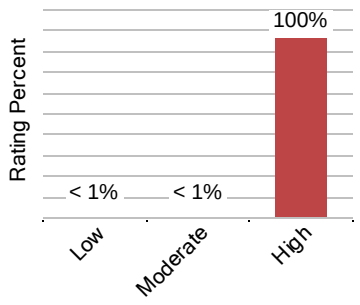
Burn Probability from the QWRA was used to assign a wildfire hazard rating to the built environment and homes in these areas. Hazard levels are based on modeled vegetation, not on building construction materials or ingress/egress issues. For a comprehensive analysis of wildfire risk and understanding of the potential threat of wildfire to your community, view the WUI combined with local fire starts and information in your Community Wildfire Protection Plan. A Community Wildfire Protection Plan (CWPP) is the product of collaboration between local communities and agencies interested in reducing wildfire risk and addressing response in a comprehensive plan. It also allows counties to prioritize and mitigate high risk areas, enhance safety and better protect themselves and their forested landscapes from wildfire.

Even in areas where risk is high, defensible space and Firewise USA® principles can be incredibly useful in minimizing the risk to homes in the Wildland Urban Interface.

Wasco County



WUI Hazard Area Acres in Wasco County



	Rating	Acres
	Low	9
	Moderate	411
	High	186,129
	Firewise Site	

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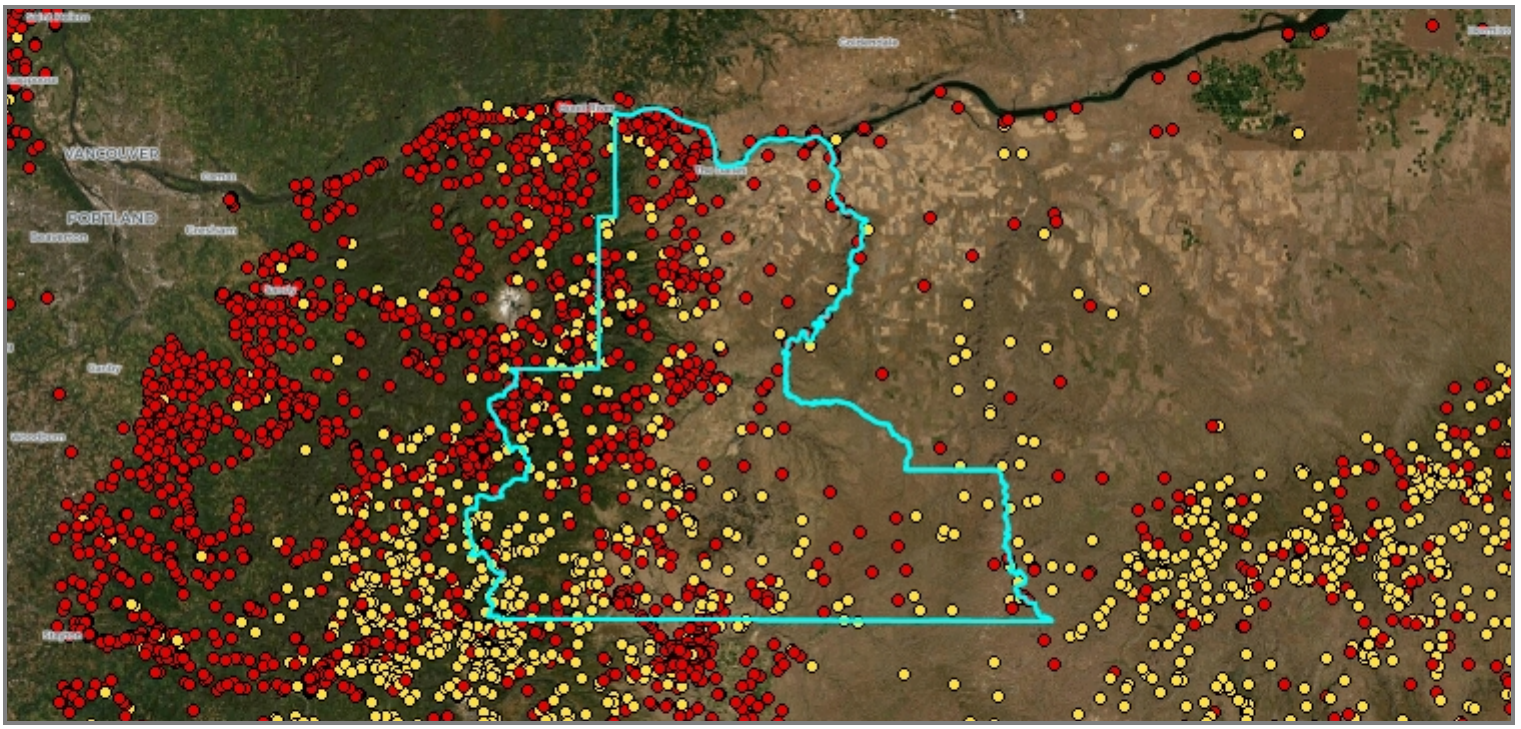
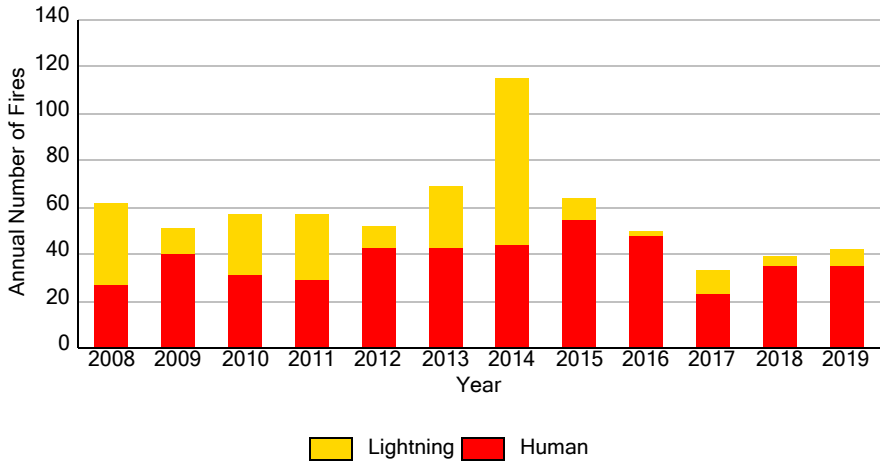
FIRE HISTORY - FIRE IGNITIONS



Wasco County fire starts between 2008-2019

Total Acres Burned	761,799
Total Number of Fires	691
Average Acres Burned Per Year	76,180
Average Fires Per Year	69
Percent Lightning Caused	34.4%
Percent Human Caused	65.6%



Knowing where and why fires start is the first step in awareness, prevention, and mitigation. Viewing local fire starts in conjunction with burn probability (provided later in this report) provides a comprehensive view of local fire history and potential.

Statewide, 71% of fires recorded by ODF are human-caused, and many of these fires are near populated areas. Lightning caused fires make up only 29% of fire starts, but tend to burn more acres as they are often located in remote areas.

The map, table and charts on this page show the cumulative number fire starts in your area.

Source: Short, K. and Oregon Department of Forestry, 2019

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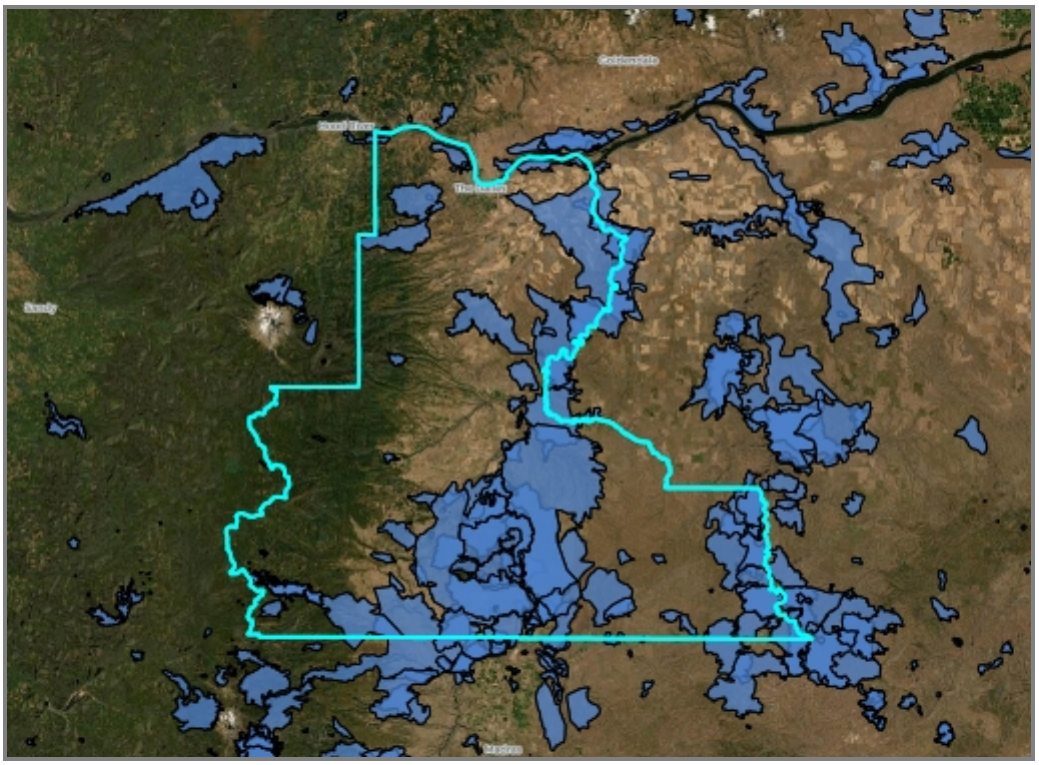
FIRE HISTORY - FIRE PERIMETERS

Although most wildfires in Oregon are human-caused and suppressed quickly while small, Oregon has experienced many large wildfires. The map and table below show the footprints of fires that have occurred in your area since 2000.

Perimeter



Wildfires in Wasco County

Wildfire Name	Year	Acres Burned
BOXCAR 0410 RN	2018	100,227
SUBSTATION 0730 RN	2018	78,424
LONG HOLLOW 0806 RN	2018	33,458
SOUTH VALLEY ROAD	2018	20,045
WHISKEY	2018	918
NENA SPRINGS	2017	68,028
RHOADES CANYON 0301 RN	2017	14,607
NORTH POLE 0900 RN	2017	6,253
OAK SPRINGS 0326 RN	2017	375
Rim	2017	243
RATTLESNAKE	2016	9,235
Fifteen Mile	2016	3,709
0121 RN SOUTH JCT	2016	638
HOT SPRINGS FIRE	2016	387
County Line 2	2015	67,234
Ten Mile Canyon 0368 RN	2015	7,030
0312 Rn	2015	1,338
0590 Rn Oven	2015	1,069
0128 Rn	2015	62
Shaniko Butte	2014	41,966
Black Rock Inc 358	2014	35,724
0347 RN	2014	16,779

Logging Unit Complex	2014	11,452
Logging Unit	2014	6,529
Camas Prairie	2014	5,864
Rowena	2014	3,680
Camp Creek	2014	3,078
White River	2014	651
Haley	2014	108
Nene Creek	2014	46
North Pinhead	2014	3
Sunnyside Turnoff	2013	51,480
Blackburn	2013	11,579
Gordon Butte	2013	4,084
Government Flats	2013	229
Wells Road	2013	66
Baker Canyon	2012	8,057
I-0222	2012	1,051
Rooper	2012	663
Red Lake	2012	178
Kah Nee Ta	2012	116
0487	2012	107
Razorback	2011	64,663
Powerline	2011	20,907
641	2011	11,107
513	2011	9,731
Clarno	2011	8,612
682	2011	6,430
Brown Road	2011	5,618
514	2011	5,612
497	2011	4,586
Deadman Canyon	2011	3,514
Badger Butte	2011	2,519
0431 RN	2011	1,512
Lemiti Meadow	2011	34
Freebridge	2011	17
YOUTHER	2010	28,388
Tygh Ridge	2010	4,717
Fall Canyon	2010	2,702
LAUGHLIN HILL 2	2010	1,943
JOHNSON LAKE	2010	1,583
Devil's Half Acre	2010	1,245
ISLAND RIM	2010	1,063
Oak Canyon	2010	640
0465	2010	212
High Cascades Complex	2010	40
S-410	2010	34
Muddy Creek	2009	16,266
Ward Canyon	2009	1,962

Microwave	2009	1,300
Rapids	2009	430
North Pole Ridge	2008	6,701
SAYRS 2	2008	5,175
Big Cove	2008	4,858
Oak Brook	2008	653
SKOOKUM CREEK	2008	518
Jersey 2	2008	487
Jersey	2008	474
CHENOWETH 2	2008	286
Wettle Ridge	2008	260
JERSEY	2008	138
Highway Nine	2007	1,246
Ball Point	2007	1,238
Rock Springs	2006	1,092
Clarno	2006	35
Chenowith Ridge	2006	17
Wolfe Point	2005	4,235
McKinley	2005	3,813
Schoolie Rim	2005	1,272
Rattlesnake Ridge	2005	1,171
Willow	2005	181
MORNING	2005	123
Log Springs	2004	5,060
Sorefoot Blackrock	2004	87
Bakeoven	2003	96
Hastings	2003	62
Trout Creek	2003	41
White River	2002	24,279
Sheldon Ridge	2002	12,467
KASKELA	2002	3,184
TROUT CREEK	2002	18
FERRY CANYON	2001	18,546
WAGNER MT	2001	7,679
TUNNEL	2001	1,442
SOUTH JUNCTION	2001	243
Murray'S Addition	2001	200
GORDAN	2001	48
OAK SPRINGS	2001	11
Fire # 100	2001	< 1
2 Horse Mtn.	2000	10,740
Harpham Flat	2000	1,724
Dant	2000	526
Blue Pool	2000	114

Source: National Interagency Fire Center: https://www.nifc.gov/

For more information about previous large wildfires, see: National Interagency Fire Center

https://www.nifc.gov/fireInfo/fireInfo_main.html

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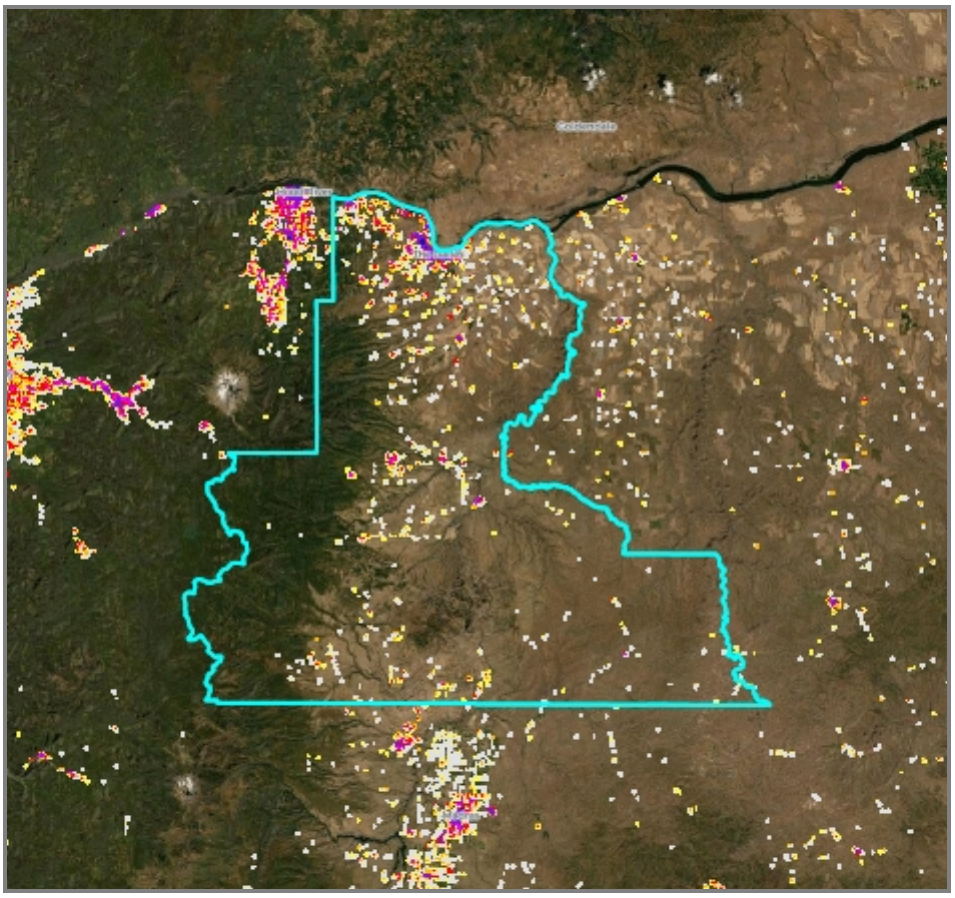
HOUSING DENSITY - WHERE PEOPLE LIVE

Areas where people live are a primary concern when assessing wildfire risk. Especially critical is the Wildland Urban Interface (WUI) - areas where houses and other development meet or mix with undeveloped natural areas, with a close proximity of houses and infrastructure to flammable wildland vegetation.

In the U.S., the number of homes in the WUI increased by 13.4 million since 1990. This expansion of the WUI poses particular challenges for wildfire management, creating more structures and populations at risk in environments where firefighting is often difficult. In Oregon, nearly 2.4 million acres are considered WUI areas, about 3.8% of the state. Of the nearly 1.7 million homes in Oregon, over 603,000, or 36%, are in the WUI.

The map and table on this page shows the location and density of where people live in your area.



Wasco County housing density

Category	Acres	%*
<1 house per 40 acres	20,913	1
1 per 40 acres to 1 per 20 acres	13,134	< 1
1 per 20 acres to 1 per 10 acres	8,113	< 1
1 per 10 acres to 1 per 5 acres	5,535	< 1
1 per 5 acres to 1 per 2 acres	3,313	< 1
1 per 2 acres to 3 per acres	3,493	< 1
> 3 per acres	832	< 1

Source: 2013 West Wide Wildfire Risk Assessment, ODF

** Values may add up to over 100% due to rounding precision*

Oregon Wildfire Risk Explorer- Advanced Report

Wasco County

1,532,385 Acres: (2,394 Sq. Miles)

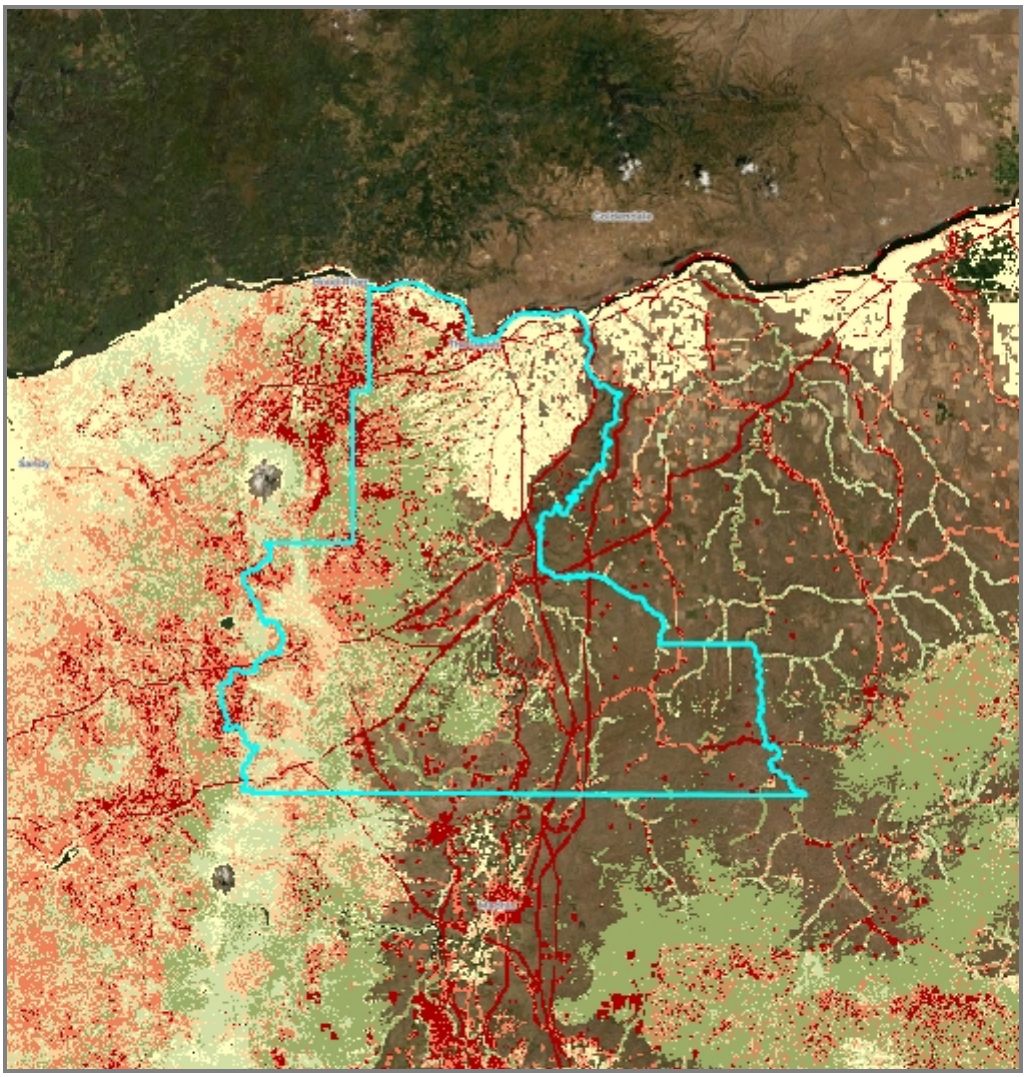
Generated: December 28, 2020

OVERALL WILDFIRE RISK

Overall wildfire risk combines both the likelihood of a wildfire and the expected impacts of a wildfire on highly valued resources and assets. (See other sections for more information on Burn probability and Overall potential impact.) Overall wildfire risk also reflects the susceptibility of resources and assets to wildfire of different intensities, and the likelihood of those intensities.

Mapped resources and assets include critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, historic structures, timber, municipal watersheds, vegetation condition, and terrestrial and aquatic wildlife habitat.

The data values in the overall wildfire risk map and chart reflect a range of impacts from a very high negative value, where wildfire is detrimental to one or more resources or assets, to positive, where wildfire has an overall benefit (e.g., forest health or wildlife habitat).



Overall wildfire risk: Legend	
Very High	Wildfire risk is very highly negative (top 5% of values).
High	Wildfire risk is highly negative (80th to 95th percentile).
Moderate	Wildfire risk is moderately negative (50th to 80th percentile).
Low	Wildfire risk is slightly negative(29th to 50th percentile).
Low Benefit	Wildfire is slightly beneficial (14.5 to 29th percentile).
Benefit	Wildfire is beneficial overall (0-14.5th percentile).
Non-burnable	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable (urban, agriculture, etc).

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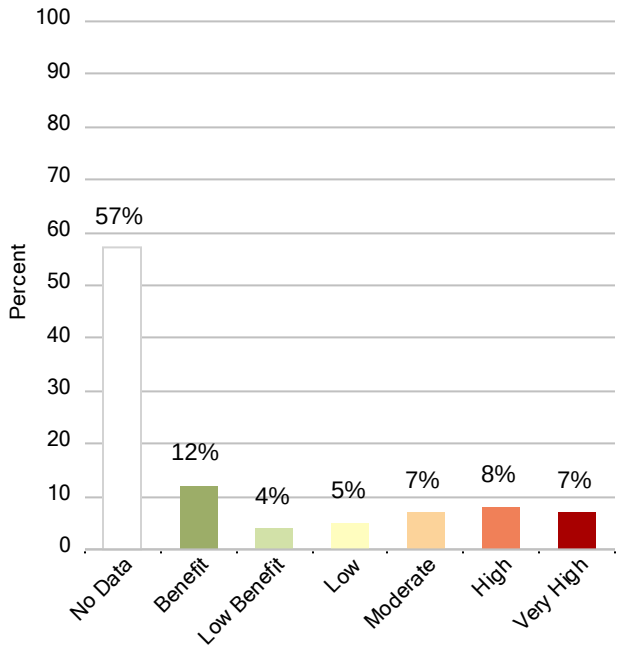
This page contains additional information about overall wildfire risk, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale prioritization.

Overall wildfire risk in Wasco County: estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	103,956	49,677	608	1,518	4,777	31,123	0	367	15,886
High	128,267	27,817	865	725	1,793	55,669	0	138	41,260
Moderate	109,801	30,671	606	313	1,045	21,045	0	88	56,033
Low	75,153	54,070	218	631	591	5,829	0	76	13,738
Low Benefit	65,817	7,560	525	245	602	13,406	0	17	43,462
Benefit	176,422	54,353	2,422	16,102	2,442	42,055	0	6	59,042
No Data	867,791	619,642	914	14,453	71,246	5,404	0	318	155,814
Total Area	1,527,207	843,790	6,158	33,987	82,496	174,531	0	1,010	385,235

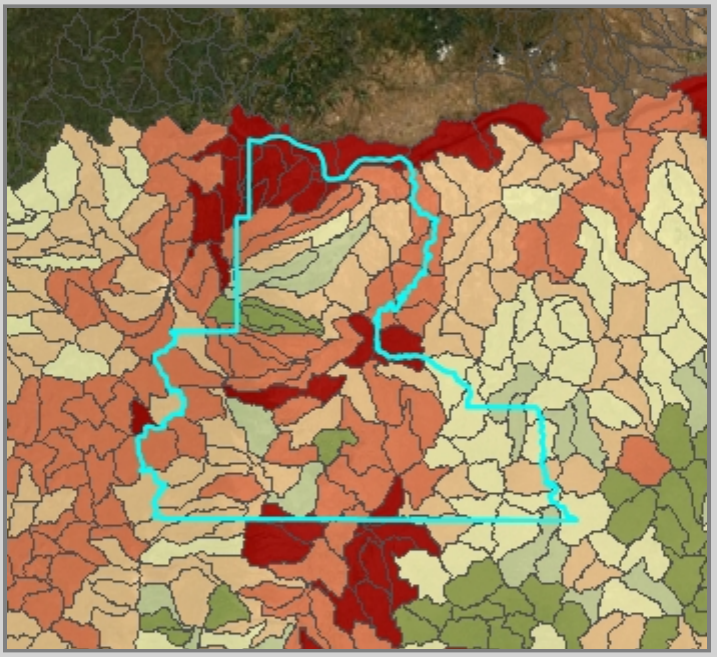
Overall wildfire risk in Wasco County *



Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

** Values may add up to over 100% due to rounding precision*

Overall wildfire risk in Wasco County: sub-watershed summary map. Overall wildfire risk is summarized at the sub-watershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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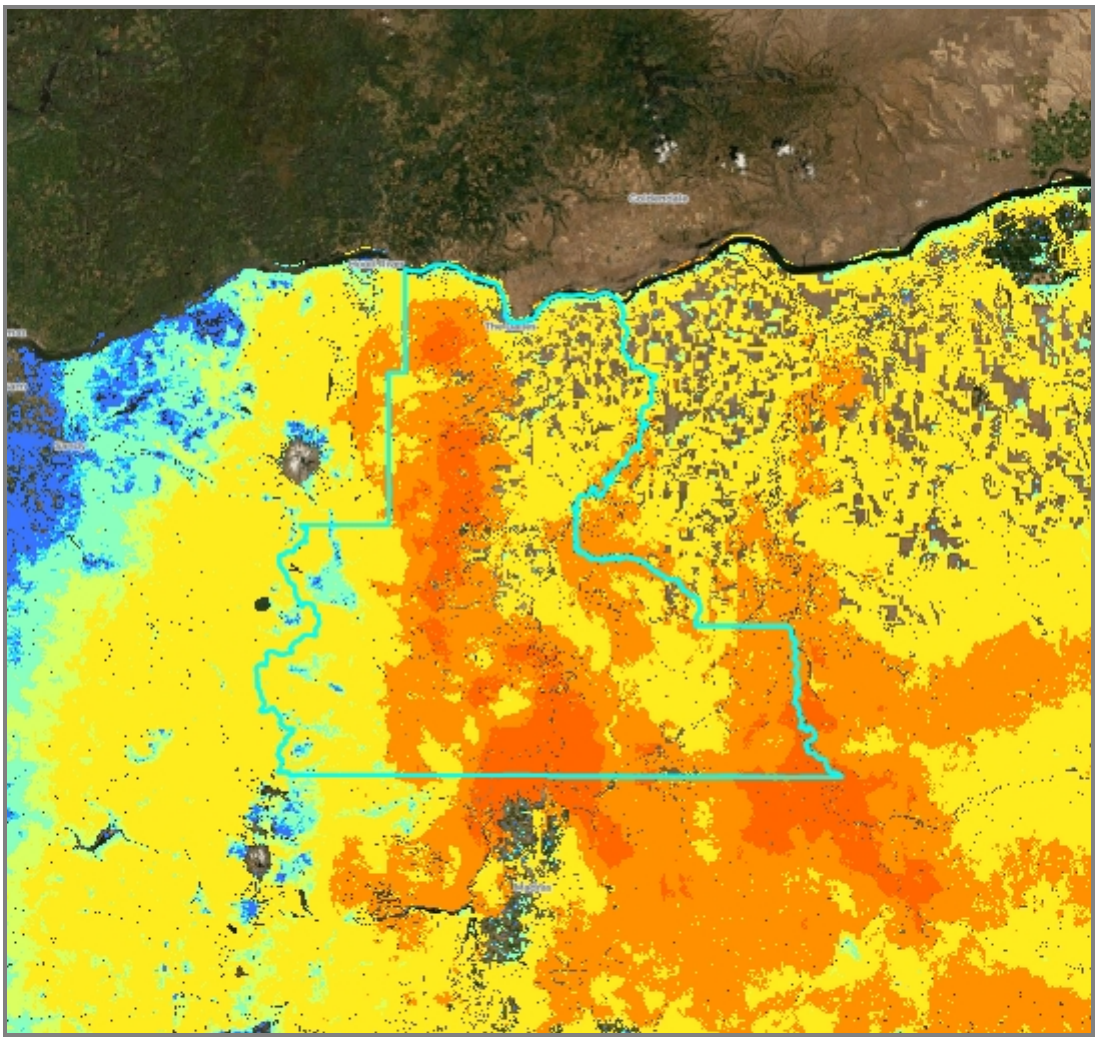
BURN PROBABILITY

Burn probability shows the annual likelihood of a wildfire greater than 250 acres in size occuring, considering weather, topography, fire history, and fuels (vegetation). This estimate includes fire history from 1992 through recently disturbed fuels from large Oregon wildfires in notable years 2013, 2014, 2015, and 2017.

Only large wildfires over 250 acres in size are included because they are the most influential on the landscape and they can be simulated using computer software. Most fire occurrences are less than 250 acres (see fire history section). Although these smaller fires have a low impact on the broader landscape, they can have significant local impacts, especially in areas with human activity and infrastructure.



Burn probability	
Very High	Greater than 1 in 50 chance of a wildfire >250 acres in a single year (>96th percentile).
High-Very High High	Between 1 in 500 and 1 in 50 chance of a wildfire >250 acres in a single year (29th to 96th percentile).
Moderate-High Moderate	Between 1 in 5,000 and 1 in 500 chance of a wildfire >250 acres in a single year (11th to 29th percentile).
Low-Moderate Low	Less than approximately 1 in 5,000 chance of a wildfire >250 acres in a single year (up to the 11th percentile).
Non-burnable	This area contains non-burnable fuel types such as water, urban, agriculture, barren rock, etc.

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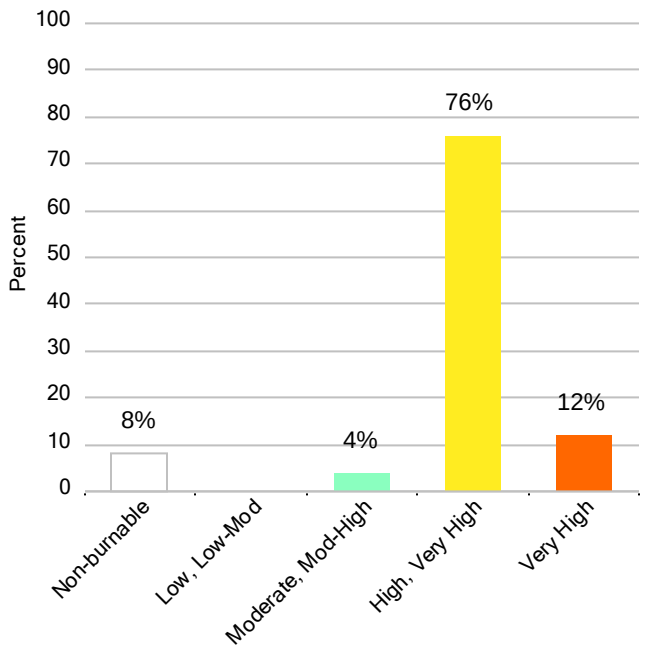
This page contains additional information about burn probability, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale prioritization.

Burn probability in Wasco County: estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	185,320	76,098	1,265	17,960	16,786	15,158	0	0	58,053
High, Very High	1,157,005	649,226	4,550	13,508	59,225	140,940	0	533	289,023
Moderate, Mod-High	56,646	12,231	29	494	224	14,647	0	235	28,786
Low, Low-Mod	5,873	1,227	6	103	15	2,109	0	14	2,399
Non-Burnable	122,362	105,008	309	1,923	6,246	1,676	0	227	6,973
Total Area.	1,527,206	843,790	6,159	33,988	82,496	174,530	0	1,009	385,234

Burn probability in Wasco County *



Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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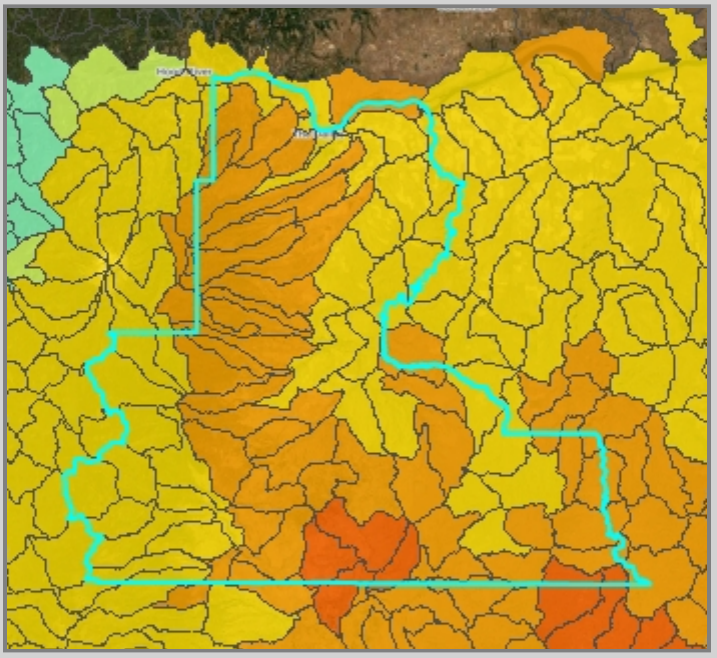
Burn probability in Wasco County: sub-watershed summary map. Burn probability is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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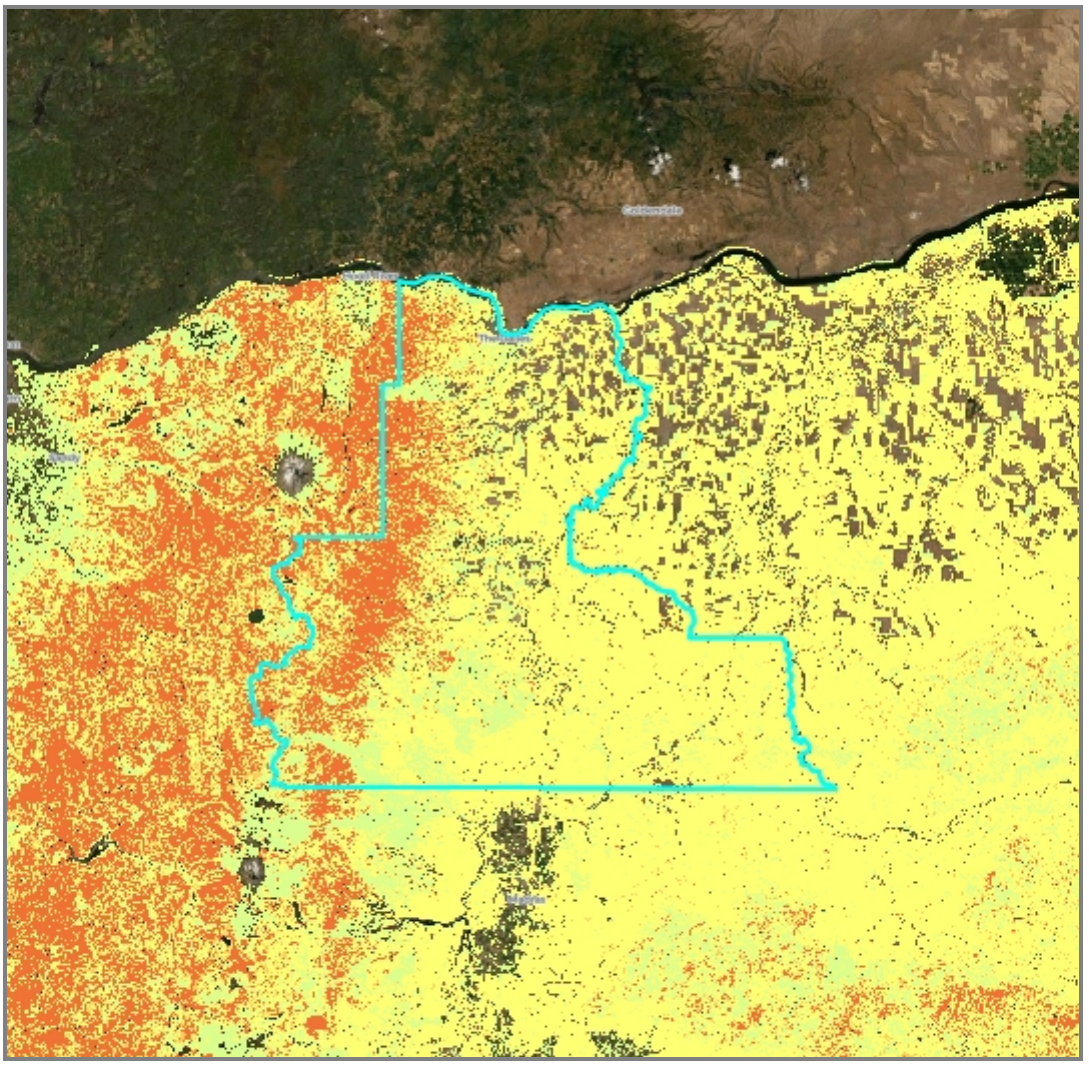
FIRE INTENSITY - FLAME LENGTHS

Flame length is an indication of fire intensity, which is a primary factor to consider for gauging potential impacts to values at risk and for firefighter safety. It can also guide mitigation work to reduce the potential for catastrophic fires by reducing fire intensity and flame length.

Under normal weather conditions average flame lengths within your area are shown, and the associated table describes the expected fire behavior in each average flame length category.

Conditions vary widely with local topography, fuels, and local weather, especially local winds. In all areas, under warm, dry, windy, and drought conditions, expect higher likelihood of fire starts, higher fire intensities, more ember activity, a wildfire more difficult to control, and more severe impacts.



Average fire intensity - flame lengths under normal weather conditions

> 11 foot	Fires may exhibit greater than 11-foot average flames with major fire movement, tree crowning, longer-range spotting and ember travel.
8-11 foot	Fires may exhibit 8-11 foot average flames with tree torching and increased ember travel.
4-8 foot	Fires may exhibit 4-8 foot average flames, and embers may travel moderate distances.
4 foot	Fires may exhibit 4 foot average flames.
Non-burnable	This area contains non-burnable fuel types such as water, urban, agriculture, barren rock, etc.

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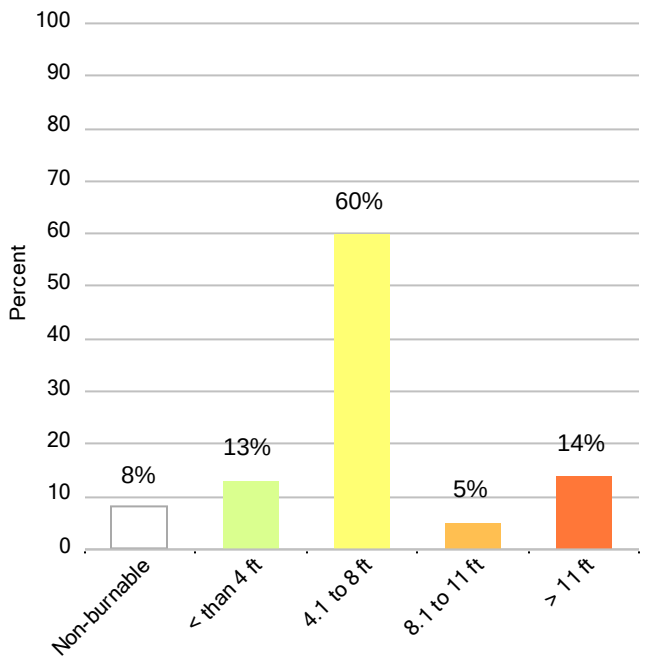
This page contains additional information about fire intensity, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale prioritization.

Wasco County average fire intensity - flame lengths estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
> 11 ft	210,119	33,695	1,562	4,670	1,690	99,058	0	12	69,432
8 - 11 ft	78,076	26,437	478	3,027	2,130	22,388	0	10	23,606
4 - 8 ft	913,781	593,944	2,161	19,168	66,524	37,249	0	467	194,268
> 0 - 4 ft	202,870	84,706	1,649	5,200	5,906	14,159	0	294	90,956
Non-burnable	122,362	105,008	309	1,923	6,246	1,676	0	227	6,973
Total Area	1,527,208	843,790	6,159	33,988	82,496	174,530	0	1,010	385,235

Fire intensity - flame length in Wasco County *



Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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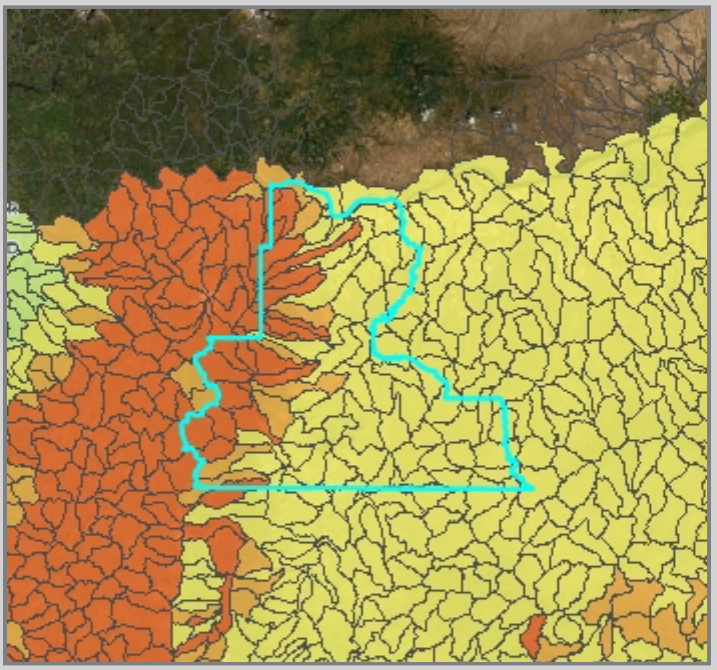
Fire intensity in Wasco County: sub-watershed summary map. Fire intensity is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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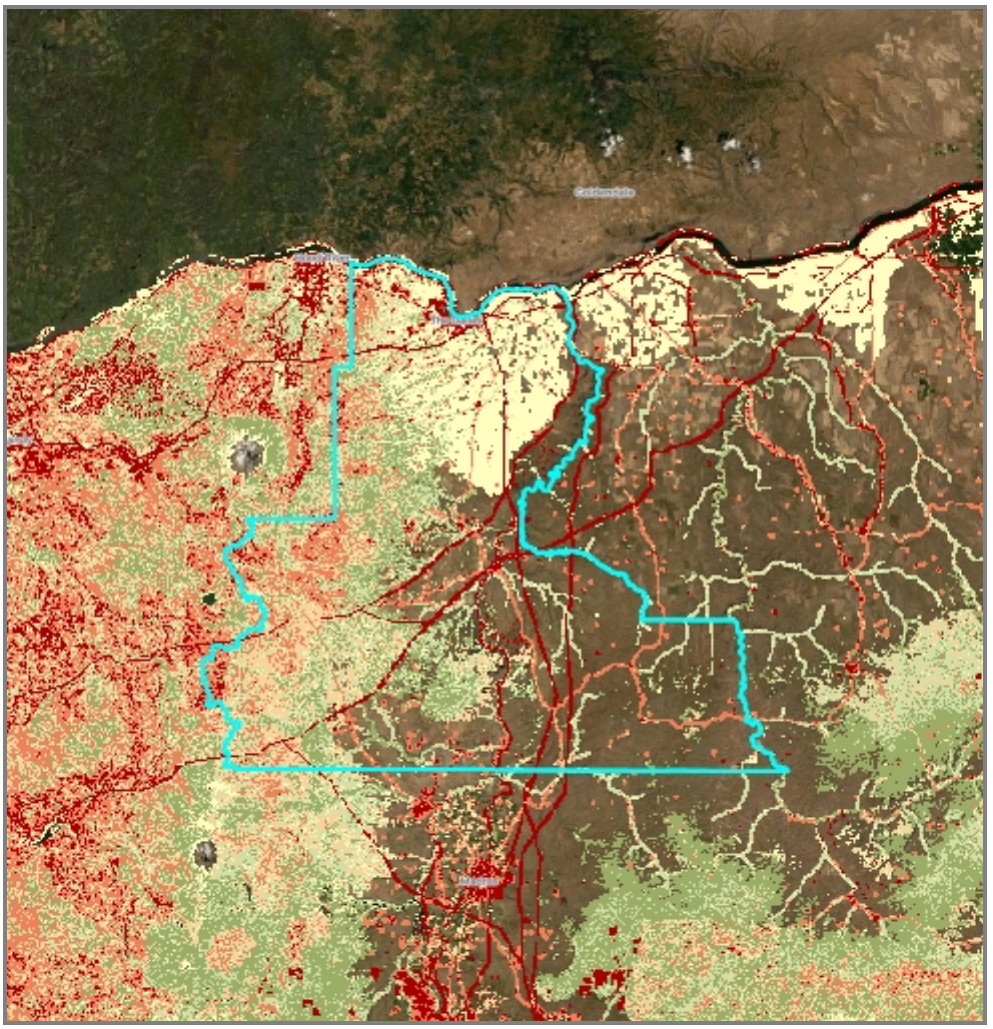
OVERALL POTENTIAL IMPACT

Overall potential impact represents the exposure or consequence of wildfire on all mapped highly valued assets and resources combined, including critical infrastructure, developed recreation, housing density, seed orchards, sawmills, historic structures, timber, municipal watersheds, vegetation condition, and selected terrestrial and aquatic wildlife habitat.

The Potential Impact data layers characterize exposure and susceptibility only, and do not include the likelihood of an area burning. This differentiates the Potential Impact layers from Wildfire Risk layers, which account for the burn probability in the risk rating.

The data values reflect a range of impacts from a very high negative consequence, where wildfire is detrimental (e.g., high exposure to structures, infrastructure, or sensitive habitat), to a positive impact of wildfire, where wildfire will produce an overall benefit (e.g., improving forest health or wildlife habitat).



Overall potential impact (if a wildfire were to occur)

Very High	Overall potential impact is very highly negative (top 5% of values).
High	Overall potential impact is highly negative (80-95th percentile).
Moderate	Overall potential impact is moderately negative (50-80th percentile).
Low	Overall potential impact is slightly negative (30-50th percentile).
Low Benefit	Overall potential impact is slightly beneficial at low flame lengths (15-30th percentile).
Benefit	Overall potential impact is slightly beneficial, with a cumulative positive impact of fire (0-15th percentile).
No Data (blank)	There are no highly valued resources or assets mapped in the area or it is non-burnable (urban, agriculture, barren,etc).

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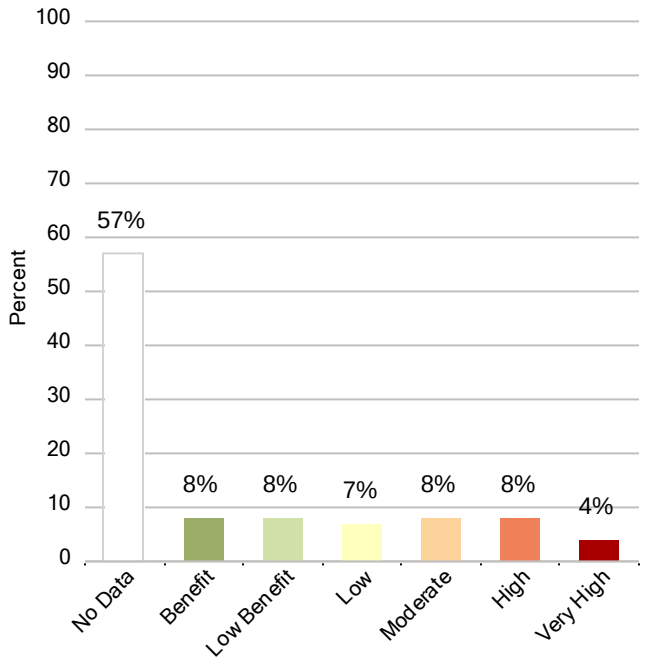
This page contains additional information about overall potential impact, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale prioritization.

Wasco County overall potential impact estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	55,697	32,064	255	1,253	3,527	9,119	0	458	9,021
High	128,127	33,428	507	623	1,509	59,641	0	73	32,346
Moderate	125,146	18,242	969	601	1,816	37,461	0	60	65,997
Low	106,406	78,406	562	701	1,346	7,024	0	78	18,289
Low Benefit	123,402	34,661	1,771	6,075	1,988	25,475	0	14	53,418
Benefit	120,639	27,348	1,181	10,281	1,063	30,407	0	9	50,350
No Data	867,791	619,642	914	14,453	71,246	5,404	0	318	155,814
Total Area	1,527,208	843,791	6,159	33,987	82,495	174,531	0	1,010	385,235

Overall potential impact in Wasco County *



Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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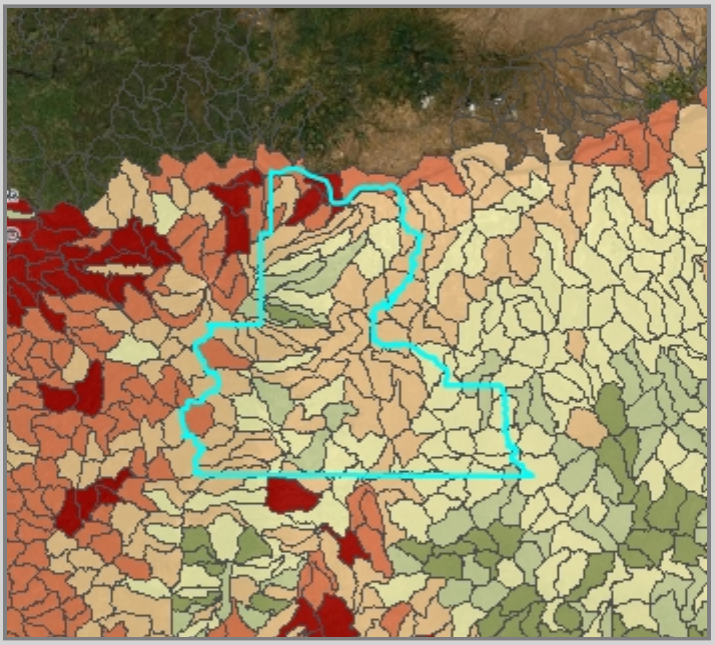
Overall potential impact in Wasco County: sub-watershed summary map. Overall potential impact is summarized at the sub-watershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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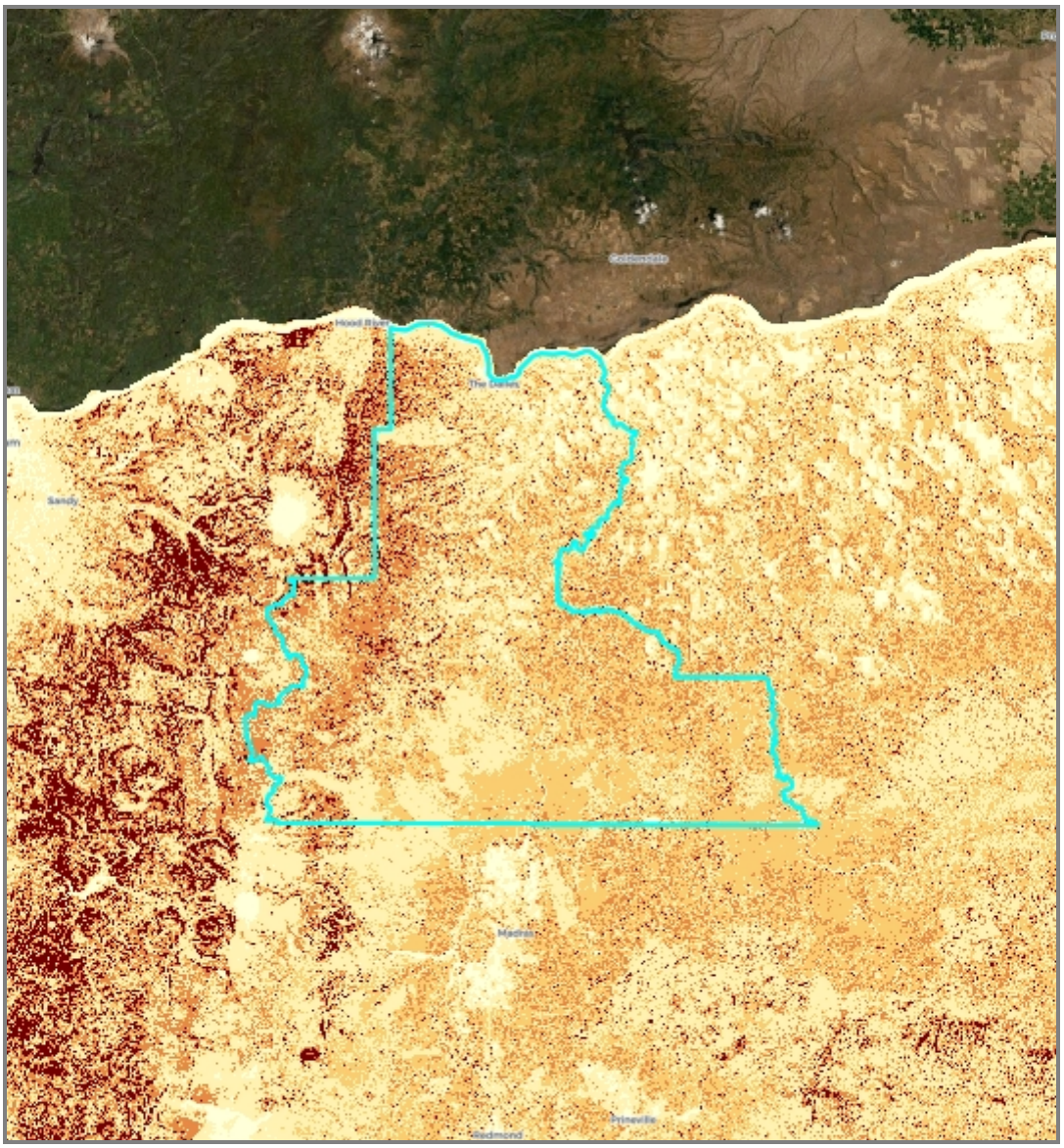
HAZARD TO POTENTIAL STRUCTURES

Hazard to potential structures depicts the hazard to a hypothetical structure (not necessarily an existing structure) if a wildfire were to occur. Hazard to potential structures differs from overall estimates of wildfire impact or risk, as those estimates only consider where existing structures are currently located.

Community planners can use this information when planning development outside of existing developed, urban or WUI areas. This data provides model-based consideration of wildfire hazard when developing Fire Adapted Communities in Oregon.

As with the other data layers, this layer characterizes the fire environment only and does not consider other important factors in determining structural fire risk such as building construction materials and vegetation within close proximity of a structure.



Hazard to potential structures	
Very High	Potential hazard is very high (top 5 percent).
High	Potential hazard is high (80th to 95th percentile).
Moderate	Potential hazard is moderate (50th to 80th percentile).
Low	Potential hazard is low (up to the 50th percentile).
Non-Burnable	Fuel in the area is largely non-burnable or very sparse.

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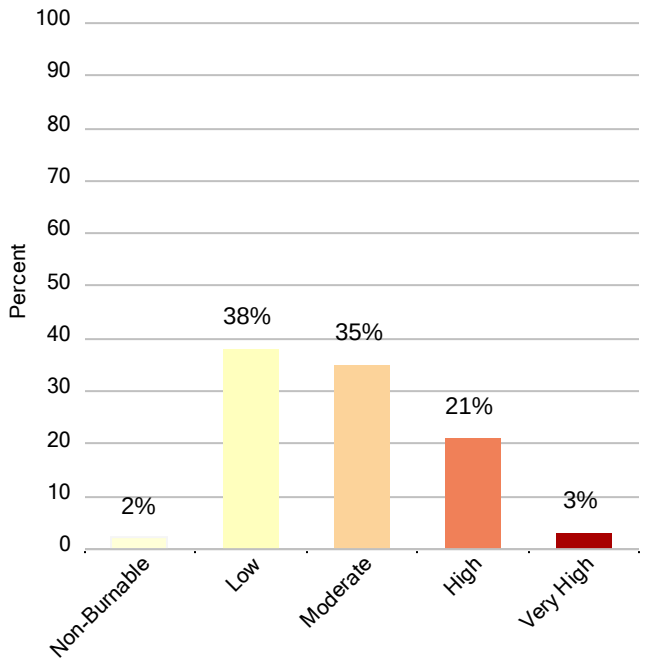
This page contains additional information about hazard to potential structures, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale prioritization.

Hazard to potential structures in Wasco County: estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	52,538	19,380	335	1,664	1,867	18,981	0	4	10,307
High	316,177	143,960	1,373	7,525	10,861	81,217	0	42	71,199
Moderate	535,775	332,605	1,212	9,696	41,510	31,423	0	200	119,129
Low	587,397	315,030	3,206	14,606	27,204	42,399	0	725	184,227
Non-Burnable	35,319	32,815	32	496	1,053	512	0	38	373
Total Area	1,527,206	843,790	6,158	33,987	82,495	174,532	0	1,009	385,235

Hazard to potential structures in Wasco County *



Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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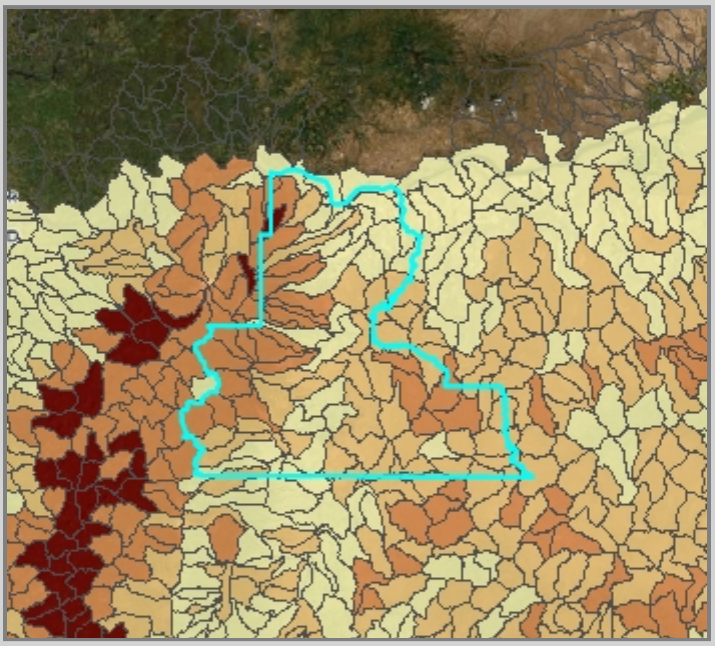
Hazard to potential structures in Wasco County: sub-watershed summary map. Hazard to potential structures is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.

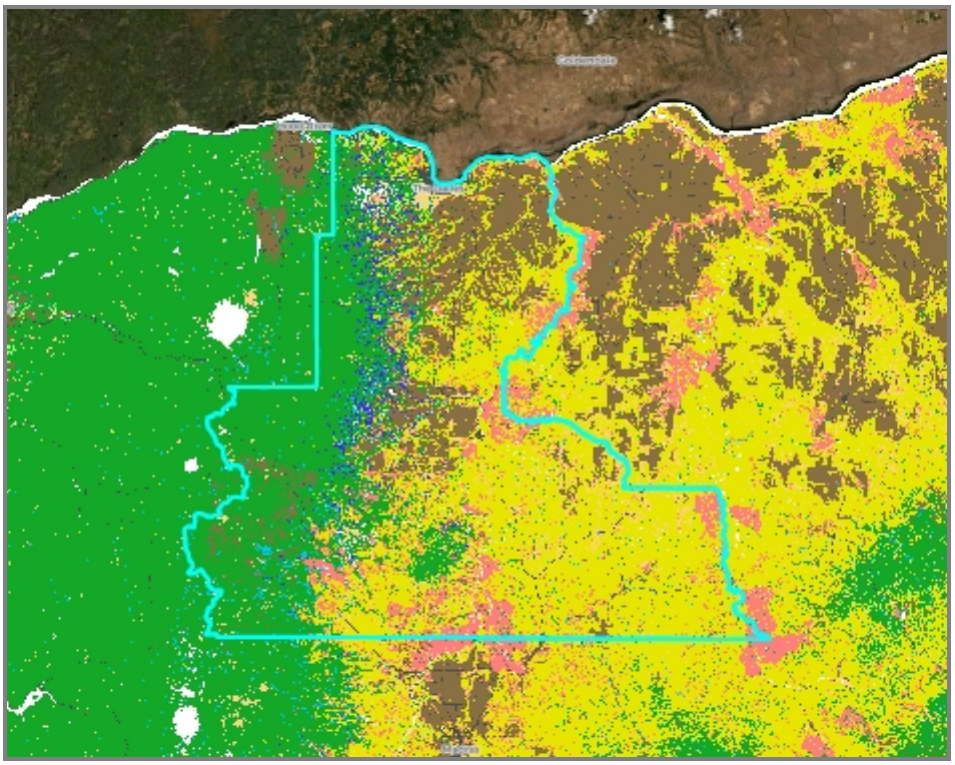


EXISTING VEGETATION TYPE

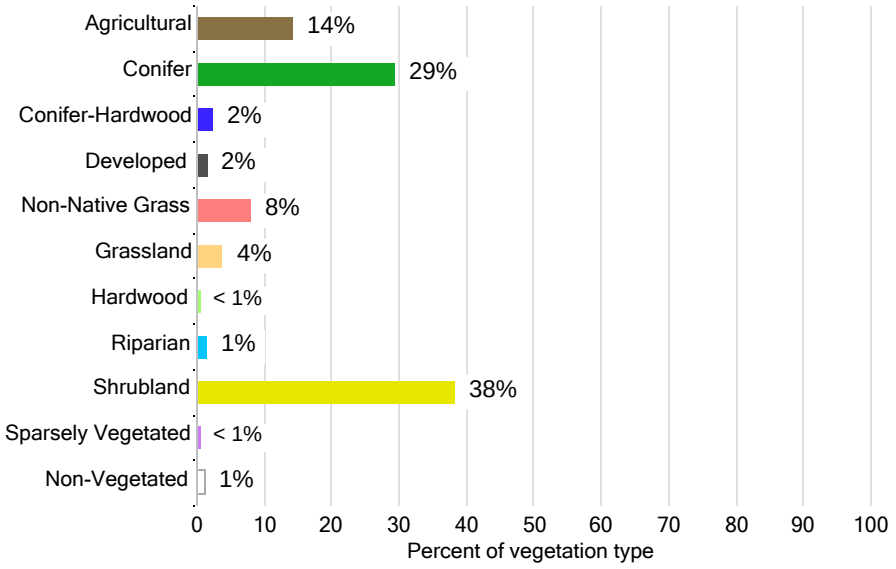
Vegetation is an important influence on potential wildfire behavior. The dominant vegetation type helps us understand the corresponding historical fire regime, a designation of fire frequency and severity. Fire frequency, or burn probability, suggests how often wildfire occurs (see Burn probability data layer). Fire severity tells us how much impact wildfires are likely to have on the vegetation and other elements of an ecosystem (see Potential impact to forest vegetation data layer). The living and dead vegetation below forest canopies (shrubs, grasses, leaf litter, dead tree snags, etc.) also strongly influence fire behavior and impacts in a location (see Fuel models).

Higher frequency fire areas generally have lower severities. Vegetation is continually or often thinned by fire and the remaining vegetation and other ecosystem elements can be considered adaptive or resilient to fire. Examples include Ponderosa pine forests and oak woodlands.

Lower frequency fire regimes experience less fire, but generally have higher severities, with vegetation and other ecosystem elements which can be considered sensitive. Examples include coastal forests, subalpine forests and many stream headwaters and riparian areas.



Vegetation Types in Wasco County



Wasco County vegetation type

Category	Description	Acres	%*
Non-vegetated or recently disturbed	Non-vegetated	18,554	1
Agricultural	Agricultural	216,958	14
Conifer	Conifer	449,767	29
Conifer-Hardwood	Conifer-Hardwood	35,480	2
Developed	Developed	23,138	2
Exotic Herbaceous	Non-Native Grass	120,769	8
Grassland	Grassland	56,066	4
Hardwood	Hardwood	6,796	< 1
Riparian	Riparian	20,694	1
Shrubland	Shrubland	584,093	38
Sparsely Vegetated	Sparsely Vegetated	11	< 1

Existing Vegetation Type Data Dictionary https://www.landfire.gov/evt.php
Source: LANDFIRE https://www.landfire.gov

Resource:
US Forest Service Fire Regime Table
https://www.fs.fed.us/database/feis/fire_regime_table/fire_regime_table.html#PacificNorthwest

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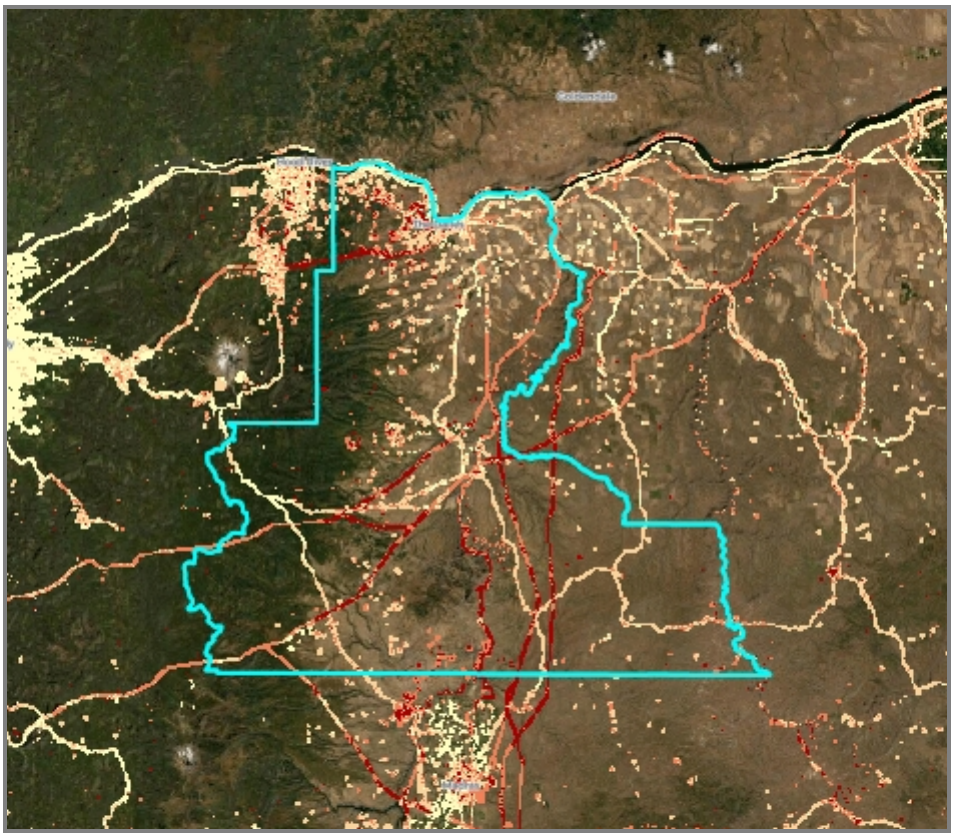
WILDFIRE RISK TO ASSETS

Wildfire risk combines both the likelihood of a wildfire (or Burn probability) and the expected effects of a wildfire on highly valued resources and assets. See the description of Overall wildfire risk for more details.

Wildfire risk to assets maps wildfire risk only in places with the following assets: critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures. Note that these resources and assets were mapped at a broad scale across all of Oregon and Washington, and maps contain errors and omissions, especially at fine scales.

The values in the maps and charts reflect a range of negative impacts from low to very high. Positive benefits of wildfire are not mapped in this layer, assuming that any impact of wildfire to human development is negative.



Wildfire Risk to Assets in Wasco County

Category	Description	Acres	%*
Very High	Wildfire risk is very highly negative to all combined mapped assets (top 5%).	18,199	1
High	Wildfire risk is highly negative (80-95th percentile).	29,532	2
Moderate	Wildfire risk is moderately negative (50-80th percentile).	35,085	2
Low	Wildfire risk is slightly negative (0-50th percentile).	6,393	< 1
No Data	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable.	1,443,172	94

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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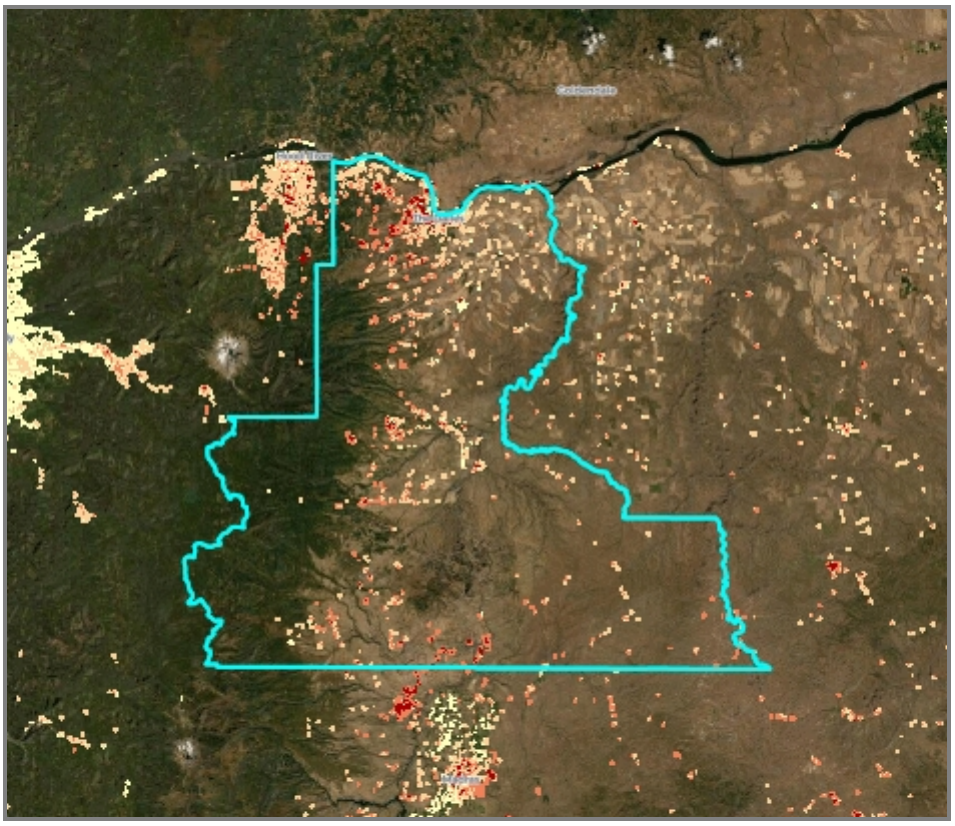
WILDFIRE RISK TO PEOPLE AND PROPERTY

Wildfire risk combines both the likelihood of a wildfire (or burn probability) and the expected effects of a wildfire on highly valued resources and assets. See the description of overall wildfire risk for more details.

Wildfire risk to people and property includes only housing unit density as mapped in the Where people live layer and US Forest Service private inholdings.

Note that these resources and assets were mapped at a broad scale across all of Oregon and Washington, and maps contain errors and omissions, especially at fine scales.

The values in the maps and charts reflect a range of negative impacts from low to very high. Positive benefits of wildfire are not mapped in this layer, assuming that any impacts of wildfire to human development is a negative impact.



Wildfire Risk to People and Property in Wasco County

Category	Description	Acres	%*
Very High	Wildfire risk is very highly negative to people and property (top 5%).	4,910	< 1
High	Wildfire risk is highly negative (80-95th percentile).	17,730	1
Moderate	Wildfire risk is moderately negative (50-80 percentile).	19,618	1
Low	Wildfire risk is slightly negative (0-50 percentile).	1,129	< 1
No Data	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable.	1,488,993	97

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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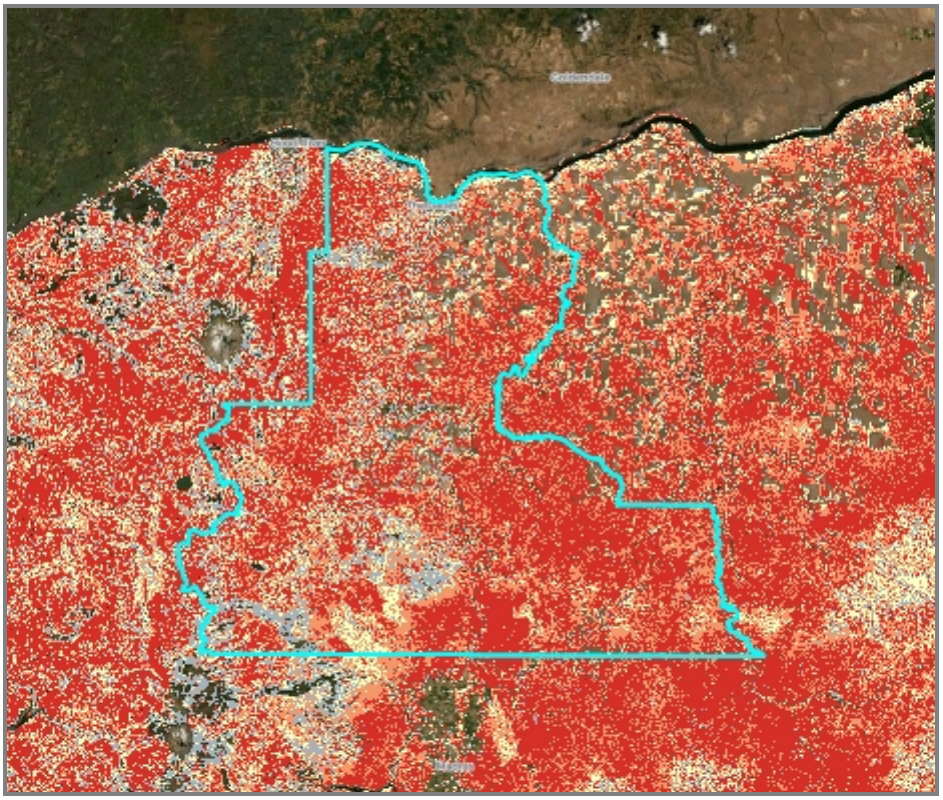
PROBABILITY OF EXCEEDING 4 FOOT FLAME LENGTHS

Flame length is an indication of fire intensity, which is a primary factor to consider for firefighter safety and for gauging potential impacts to values at risk. Fires with greater flame lengths are more intense and difficult to control. At higher flame lengths, firefighters cannot directly approach. As flame lengths increase, tree torching and spotting is expected and ember travel is increased.

Fires with greater than 4' flames are too intense for firefighters to work at the front of the flame using hand tools, and heavier equipment such as bulldozers may be necessary.

Using this layer to help target locations of higher flame length potential, a local assessment might reveal opportunity to reduce fire intensity as a goal of fuels treatment projects by using managed fire and/or other active management activities. Values are expressed as a percent likelihood. These probabilities do not take into account the likelihood of burning (see Burn probability).



Wasco County probability of exceeding 4' flames

Category	Description	Acres	%*
75-100%	If a fire occurs, there is a very high (>75%) chance that flame lengths will be greater than 4'.	701,338	46
50-75%	If a fire occurs, there is a high (50-75%) chance that flame lengths will be greater than 4'.	377,823	25
25-50%	If a fire occurs, there is a moderate (25-50%) chance that flame lengths will be greater than 4'.	177,177	12
0-25%	If a fire occurs, there is a low (<25%) chance that flame lengths will be greater than 4'.	138,214	9
0%	This area contains non-burnable fuel types such as water, urban, agriculture, barren rock, etc.	137,828	9

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

** Values may add up to over 100% due to rounding precision*

Oregon Wildfire Risk Explorer- Advanced Report

Wasco County

1,532,385 Acres: (2,394 Sq. Miles)

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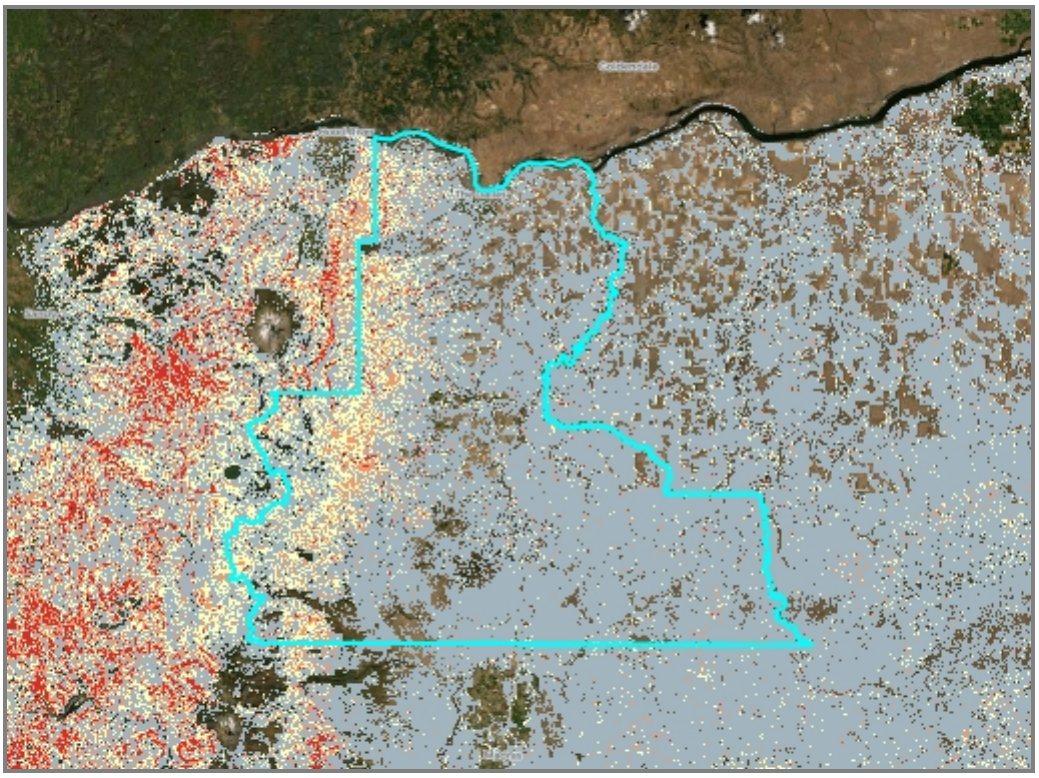
PROBABILITY OF EXCEEDING 8 FOOT FLAME LENGTHS

Flame length is an indication of fire intensity, which is a primary factor to consider for firefighter safety and for gauging potential impacts to values at risk. Fires with greater flame lengths are very intense and are expected to be highly difficult to control -- too intense for firefighters to work at the front of the flame, and they can severely impact values at risk. Tree torching and spotting is expected and ember travel is increased.

Fires with >8' flame lengths may be very difficult to control with little ability to work at the front of the flame, and greater risk of torching, crowning and spotting.

Using this layer to help target locations of higher flame length potential, a local assessment might reveal opportunity to reduce fire intensity as a goal of fuels treatment projects by using managed fire and/or other active management activities.

Values are expressed as a percent likelihood. These probabilities do not take into account the likelihood of an area burning.



Wasco County probability of exceeding 8' flames

Category	Description	Acres	%*
75-100%	If a fire occurs, there is a very high (>75%) chance that flame lengths will be greater than 8'.	10,913	< 1
50-75%	If a fire occurs, there is a high (50-75%) chance that flame lengths will be greater than 8'.	73,297	5
25-50%	If a fire occurs, there is a moderate (25-50%) chance that flame lengths will be greater than 8'.	158,293	10
0-25%	If a fire occurs, there is a low (<25%) chance that flame lengths will be greater than 8'.	1,046,920	68
0%	This area contains non-burnable fuel types such as water, urban, agriculture, barren rock, glacial areas, etc.	242,958	16

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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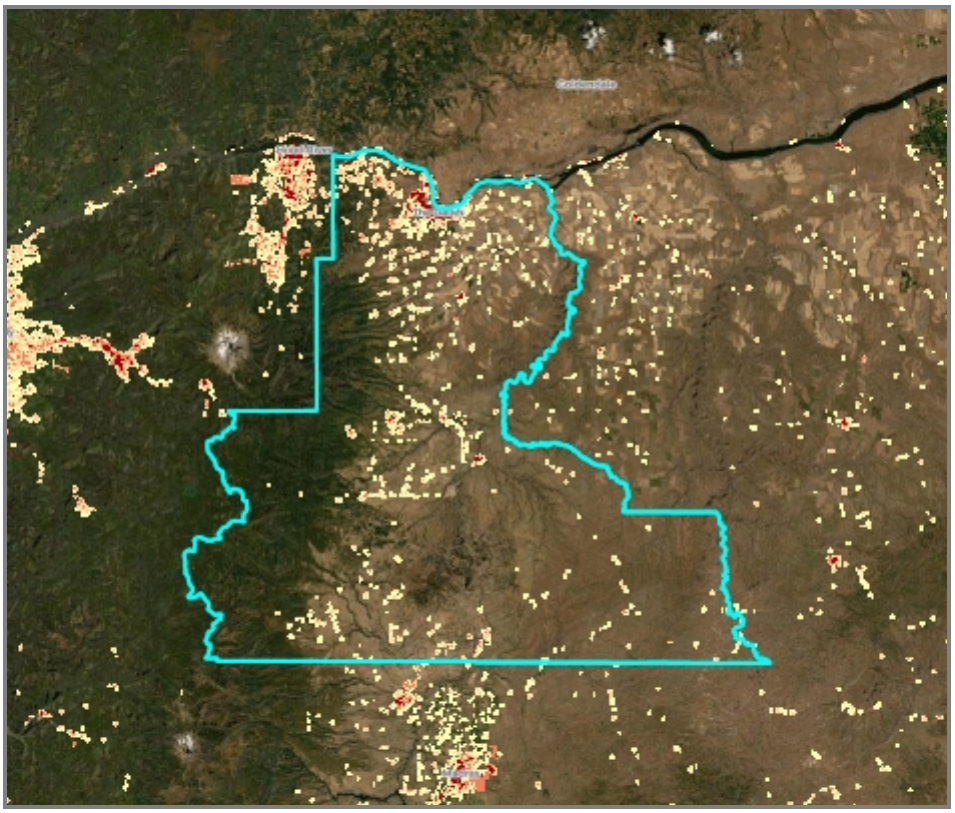
POTENTIAL IMPACT TO PEOPLE AND PROPERTY

Potential impact to people and property represents the exposure or consequence of wildfire on mapped highly valued assets including housing unit density and USFS private inholdings.

The Potential Impact data layers characterize exposure and susceptibility only, and do not include the likelihood of an area burning. This differentiates the Potential Impact layers from Wildfire Risk layers, which account for the burn probability in the risk rating.

The data values reflect a range of impacts from very high to low negative consequences. Positive benefits of wildfire are not mapped in this layer, assuming that any impact of wildfire to human development is negative.



Wasco County potential impact to people and property, if a wildfire were to occur.

Category	Description	Acres	%*
Very High	Potential impact is very highly negative to people and property (top 5%).	1,586	< 1
High	Potential impact is highly negative (80-95th percentile).	4,511	< 1
Moderate	Potential impact is moderately negative (50-80th percentile).	15,146	< 1
Low	Potential impact is slightly negative (0-50th percentile).	22,145	1
No Data	There is no people and property mapped in the area or it is considered non-burnable (urban, agriculture, barren,etc).	1,488,993	97

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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Oregon Wildfire Risk Explorer- Advanced Report

Wasco County

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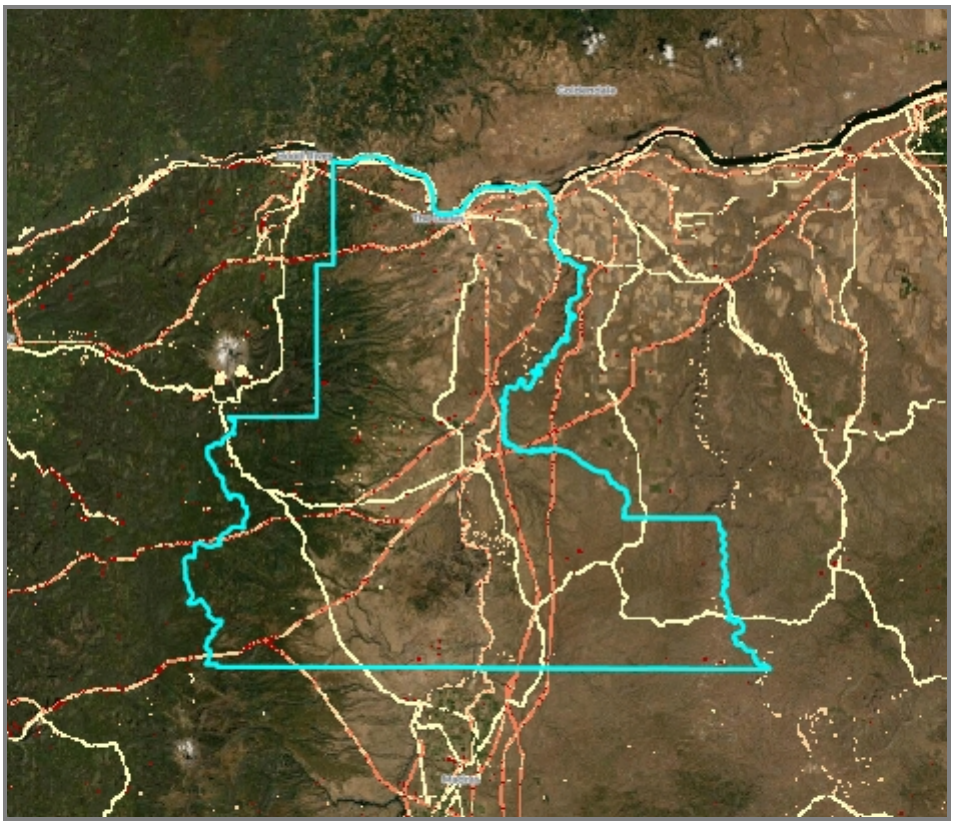
POTENTIAL IMPACT TO INFRASTRUCTURE

Potential impact to infrastructure represents the exposure or consequence of wildfire on mapped highly valued assets including critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures.

The Potential Impact data layers characterize exposure and susceptibility only, and do not include the likelihood of an area burning. This differentiates the Potential Impact layers from Wildfire Risk layers, which account for the burn probability in the risk rating.

The resulting values reflect a range of impacts from a very high to low negative consequences. Positive benefits of wildfire are not mapped in this layer, assuming that any impact of wildfire to infrastructure is negative.



Wasco County potential impact to infrastructure, if a wildfire were to occur.

Category	Description	Acres	%*
Very High	Potential impact is very highly negative (top 5%).	4,302	< 1
High	Potential impact is highly negative (80-95th percentile).	18,241	1
Moderate	Potential impact is moderately negative (50-80th percentile).	12,178	< 1
Low	Potential impact is slightly negative (0-50th percentile).	15,882	1
No Data	There is no infrastructure mapped in the area or it is considered non-burnable (urban, agriculture, barren,etc).	1,481,777	97

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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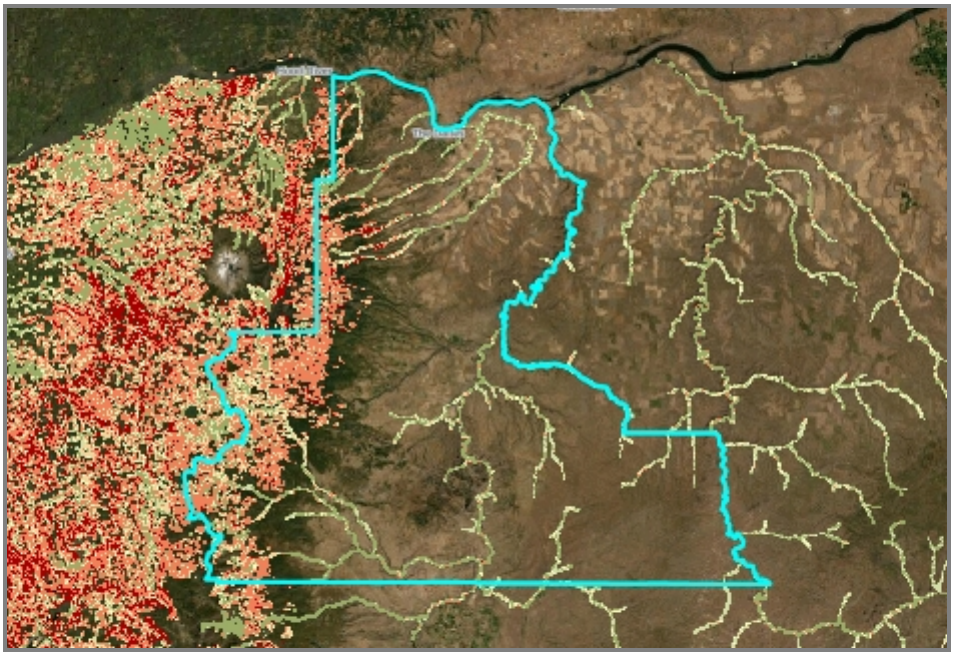
POTENTIAL IMPACT TO WILDLIFE

Potential impact to wildlife represents the exposure or consequence of wildfire on mapped wildlife habitat for the following species: northern spotted owl, marbled murrelet, sage grouse, chinook salmon, coho salmon, steelhead trout, bull trout, redband trout, coastal cutthroat, and Lahontan cutthroat trout.

The Potential Impact data layers characterize exposure and susceptibility only, and do not include the likelihood of an area burning. This differentiates the Potential Impact layers from Wildfire Risk layers, which account for the burn probability in the risk rating.

The data values reflect a range of impacts from a very high negative consequences, where wildfire is detrimental (for example, sensitive habitat with fire-intolerant species), to a positive impacts of wildfire, where wildfire will produce an overall benefit (for example, improving wildlife habitat for fire-dependent species).



Wasco County potential impact to wildlife habitat, if a wildfire were to occur.

Category	Description	Acres	%*
Very High	Potential impact is very highly negative (top 5%).	4,429	< 1
High	Potential impact is highly negative (80-95th percentile).	56,858	4
Moderate	Potential impact is moderately negative (50-80th percentile).	16,666	1
Low	Potential impact is slightly negative (17-50th percentile).	6,894	< 1
Low Benefit	Potential impact is slightly beneficial to wildlife at low flame lengths (8-17th percentile).	14,359	< 1
Benefit	Potential impact is beneficial, with a cumulative positive impact on wildlife habitat (0-8th percentile).	32,564	2
No Data	There is no wildlife habitat mapped in the area, or it is considered non-burnable (urban, agriculture, barren,etc).	1,400,610	91

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

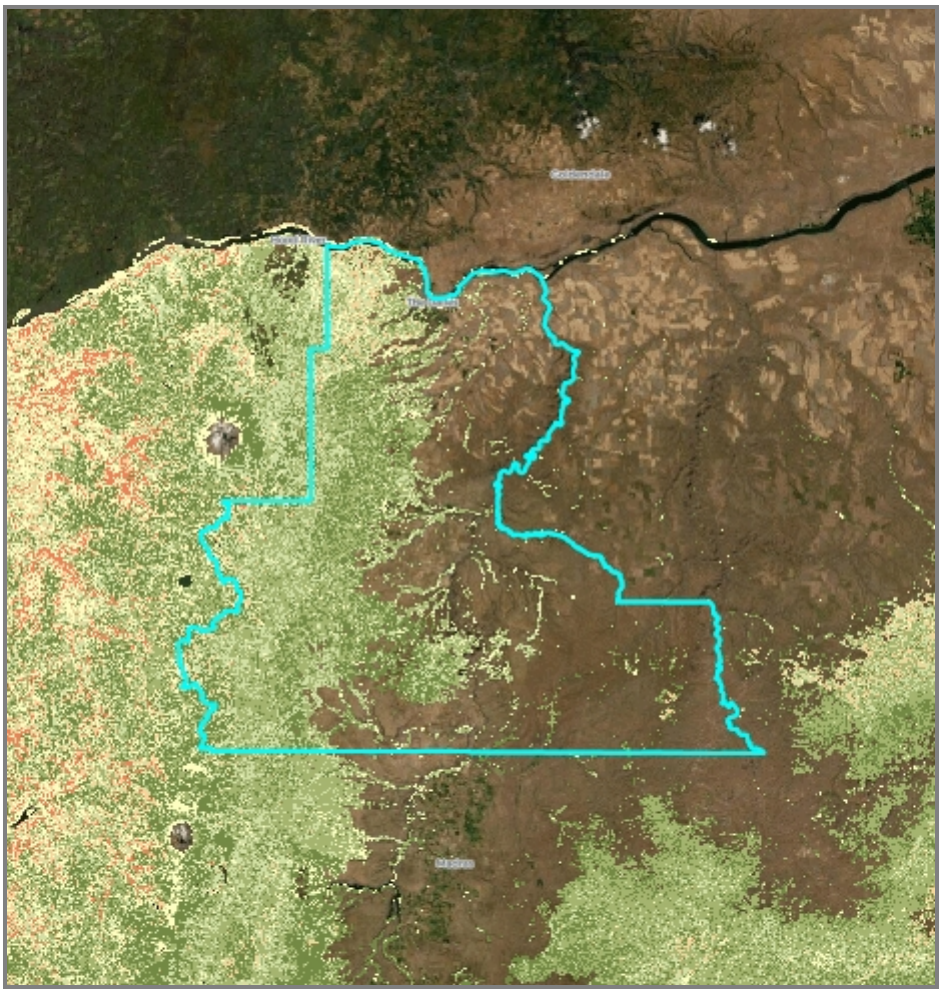
** Values may add up to over 100% due to rounding precision*

POTENTIAL IMPACT TO FOREST VEGETATION

Potential impact to forest vegetation represents the exposure or consequence of wildfire on mapped forest vegetation. This layer provides information about departure of current vegetation condition relative to historical vegetation and reference conditions, and considers the natural role of fire to specific fire regime groups.

The Potential Impact data layers characterize exposure and susceptibility only, and do not include the likelihood of an area burning. This differentiates the Potential Impact layers from Wildfire Risk layers, which account for the burn probability in the risk rating.

The data values reflect a range of impacts from a very high negative rating, where wildfire will move the landscape further from historical or desired conditions, to positive, where wildfire will bring the landscape closer to historical or desired conditions. Note that wildfire impacts on rangeland and grassland vegetation were not simulated due to a lack of spatial data and adequate characterization of wildfire impacts on vegetation outside of forested communities.



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Wasco County potential impact to forest vegetation, if a wildfire were to occur.

Category	Description	Acres	%*
Very High	Potential impact is very highly negative (top 3%). Fire has a highly detrimental effect on the landscape, moving the landscape further from historical/desired conditions.	118,825	8
High	Potential impact is highly negative (87-97th percentile). Fire has a detrimental effect on the landscape, moving the landscape further from historical/desired conditions.	214,959	14
Moderate	Potential impact is moderately negative (52-87th percentile). Fire will move the landscape further from historical/desired conditions.	118,197	8
Low	Potential impact is slightly negative (19-52th percentile). Fire will move the landscape further from historical/desired conditions.	23,543	2
Low Benefit	Potential impact is slightly beneficial to forest vegetation at low flame lengths, potentially producing a "fuel treatment" effect (0.6-19th percentile).	15,007	< 1
Benefit	Potential impact is beneficial, with a cumulative positive impact on forest vegetation (0-0.6th percentile). There is potential for fire to bring the landscape closer to	1,048	< 1
No Data	There is no vegetation mapped in the area, or it is considered non-burnable (urban, agriculture, barren,etc).	1,040,801	68

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

** Values may add up to over 100% due to rounding precision*

FIRE REGIME GROUPS

A fire regime is a description of the general characteristics of a fire area, including frequency, intensity, size, pattern, season, and severity of effects of wildfire in an ecosystem over an extended period of time, dependent on topography, weather, vegetation, and fire history. How intensely a fire burns determines the effects and severity. Overall impacts of fires will depend on the historical fire regime and the influence of changes to that regime through changes in forest structure, composition, and processes.

Existing vegetation has departed from historical conditions in some areas, which affects the current fire environment. This departure depicts relative degrees of alterations of key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. The potential impact to forest vegetation layer (and other potential impact layers) shows the areas where wildfire will move the landscape further from historical conditions, and where there are opportunities to use managed fire, active management, or other fuel treatments to bring the landscape closer to historical conditions.

Historically, higher fire frequency areas have lower fire severities. Vegetation in these areas is considered adaptive or resilient to fire due to this frequency. Examples include Ponderosa pine forests and dry mixed conifer forests. Lower frequency fire regime areas generally have higher severities, with vegetation and ecosystem elements usually considered sensitive due to their lack of exposure to fire. Examples include coastal forests, subalpine forests, alpine meadows, and many stream headwaters and riparian areas (see Existing vegetation).

Fire frequency suggests how often wildfire occurs (see Burn probability and Fire history data layers). Fire severity tells us how much impact wildfires are likely to have on the vegetation and other elements of an ecosystem (see Potential Impact data layers. The living and dead vegetation below forest canopies (shrubs, grasses, leaf litter, dead tree snags, etc.) also influences fire behavior (intensity and spread) and severity (impacts or effects). See Fuel models and Flame length data layers).

The national classification of fire regime groups commonly used includes five groups of fire frequency and severity pairs: I - frequent fire (0-35 years), low severity; II - frequent fire (0-35 years), stand replacement severity; III - 35-100+ years, mixed severity; IV - 35-100+ years, stand replacement severity; and V - 200+ years, stand replacement severity. Oregon has all of these historical fire regimes.

Maps of fire regime groups from LANDFIRE can be found here:
https://www.landfire.gov/geoareasmaps/2012/CONUS_FRG_c12.pdf.

Find more information about fire regime groups here: https://www.landfire.gov/frg.php.

Fire Regime table for major vegetation areas (in the Pacific Northwest):
https://www.fs.fed.us/database/feis/fire_regime_table/fire_regime_table.html#PacificNorthwest

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Wasco County

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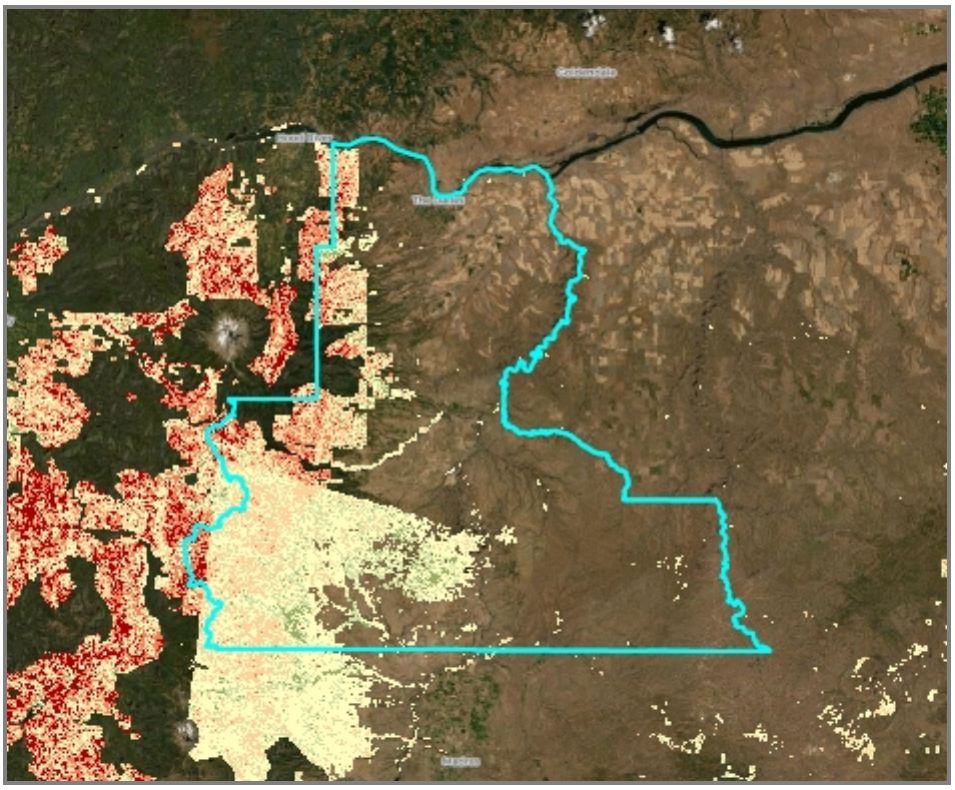
POTENTIAL IMPACT TO TIMBER RESOURCES

Potential impact to timber resources represents the exposure or consequence of wildfire on mapped highly valued timber on US Forest Service, Tribal, private lands, BLM, and state-managed lands.

The Potential Impact data layers characterize exposure and susceptibility only, and do not include the likelihood of an area burning. This differentiates the potential impact layers from Wildfire Risk layers, which account for the burn probability in the risk rating.

The data values reflect a range of impacts from a very high negative rating, where wildfire is detrimental (for example early seral stage and/or sensitive forests), to positive, where wildfire may produce an overall benefit (for example, understory thinning treatment for fire-adapted species).



Wasco County potential impact to timber resources, if a wildfire were to occur.

Category	Description	Acres	%*
Very High	Potential impact is very highly negative (top 5%).	12,055	< 1
High	Potential impact is highly negative (80-95th percentile).	43,754	3
Moderate	Potential impact is moderately negative (50-80th percentile).	103,858	7
Low	Potential impact is slightly negative (19-50th percentile).	133,756	9
Low Benefit	Potential impact is slightly beneficial to timber resources at low flame lengths (9-19th percentile).	36,493	2
Benefit	Potential impact is beneficial, with a cumulative positive impact on timber resources (0-9th percentile).	15,292	< 1
No Data	There are no timber resources mapped in the area, or it is considered non-burnable (urban, agriculture, barren,etc).	1,187,172	77

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

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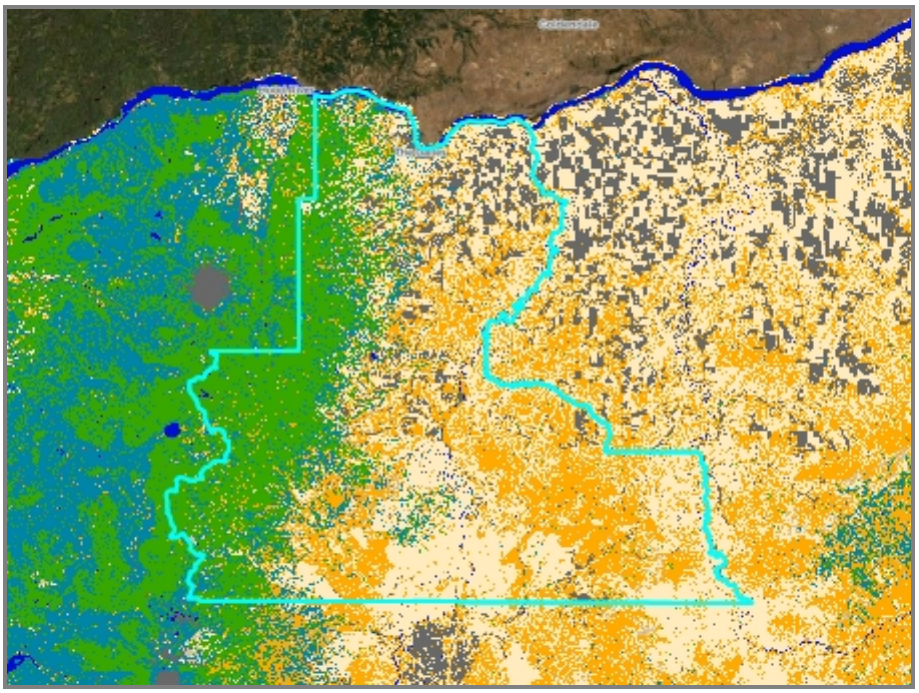
FUEL MODEL GROUPS

Fuel models describe the fire-carrying materials that make up surface fuels, such as such as grasses, shrubs and litter (see next page). Fuel models are developed from climate characteristics, existing vegetation type, cover, height, and other vegetation characteristics, and help us understand the fuels igniting and carrying fire. These fuel models can be grouped into broad categories of burnable fuels based on descriptions of live and dead vegetation that represent distinct fuel types, size classes, and load distributions (amounts), shown in the map and chart below.

Fuels and other elements of the fuelscape in the risk assessment were extensively reviewed and refined by local expert consultation, and the fuelscape was updated to account for wildfires that occurred through 2017.



Wasco County fuel model groups (see next page for descriptions of codes)

Category	Description	Acres	%*
Grass	Fuel models 101-104, (GR1; GR2; GR3; GR4)	531,439	35
Grass/Shrub	Fuel models 121-123, (GS1; GS2; GS3)	420,940	27
Non-burnable-other	Fuel Models 91-93,99, (NB1; NB2; NB3; NB9)	115,269	8
Non-burnable-water	Fuel Models 98, (NB8)	10,226	< 1
Slash-blowdown	Fuel Models 202, (SB2)	0	0
Shrub	Fuel Models 141-147, (SH1; SH2; SH3; SH4; SH5; SH6; SH7)	26,079	2
Timber Litter	Fuel Models 181-189, (TL1; TL2; TL3; TL4; TL5; TL6; TL7; TL8; TL9)	107,334	7
Timber-Understory	Fuel Models 161-163, 165, (TU1; TU2; TU3; TU5)	321,093	21

Source: 2018 Pacific Northwest Quantitative Wildfire Risk Assessment, US Forest Service

** Values may add up to over 100% due to rounding precision*

Table of Fuel Model Groups

40 Scott and Burgan Fire Behavior Fuel Models Description and Data Dictionary https://www.landfire.gov/fbfm40.php
https://www.landfire.gov/DataDictionary/f40.pdf

Group	Description
Grass Fuel models 101-104, (GR1; GR2; GR3; GR4)	GR1: Short, sparse dry climate grass is short, naturally or heavy grazing, predicted rate of fire spread and flame length low GR2: Low load, dry climate grass primarily grass with some small amounts of fine, dead fuel, any shrubs do not affect fire behavior GR3: Low load, very coarse, humid climate grass continuous, coarse humid climate grass, any shrubs do not affect fire behavior GR4: Moderate load, dry climate grass, continuous, dry climate grass, fuelbed depth about 2 feet
Grass/Shrub Fuel models 121-123, (GS1; GS2; GS3)	GS1: Low load, dry climate grass-shrub shrub about 1 foot high, grass load low, spread rate moderate and flame length low GS2: Moderate load, dry climate grass-shrub, shrubs are 1-3 feet high, grass load moderate, spread rate high, and flame length is moderate GS3: Moderate load, humid climate grass-shrub, moderate grass/shrub load, grass/shrub depth is less than 2 feet, spread rate is high and flame length is moderate
Non-Burnable-Other	Fuel Models 91-93, 99, (NB1; NB2; NB3; NB9) NB1: Urban NB2: Snow/Ice NB3: Agriculture NB9: Barren
Non-burnable-Water	Fuel Model 98, (NB8): Water
Slash-blowdown	Fuel Model 202, (SB2): Moderate load activity fuel or low load blowdown, 7-12 t/ac, 0-3 inch diameter class, depth about 1 foot, blowdown scattered with many still standing, spread rate and flame low
Shrub Group Fuel Models 141-147, (SH1; SH2; SH3; SH4; SH5; SH6; SH7)	SH1: Low load dry climate shrub, woody shrubs and shrub litter, fuelbed depth about 1 foot, may be some grass, spread rate and flame low SH2: Moderate load dry climate shrub, woody shrubs and shrub litter, fuelbed depth about 1 foot, no grass, spread rate and flame low SH3: Moderate load, humid climate shrub, woody shrubs and shrub litter, possible pine overstory, fuelbed depth 2-3 feet, spread rate and flame low SH4: Low load, humid climate timber shrub, woody shrubs and shrub litter, low to moderate load, possible pine overstory, fuelbed depth about 3 feet, spread rate high and flame moderate SH5: High load, humid climate grass-shrub combined, heavy load with depth greater than 2 feet, spread rate and flame very high SH6: Low load, humid climate shrub, woody shrubs and shrub litter, dense shrubs, little or no herbaceous fuel, depth about 2 feet, spread rate and flame high SH7: Very high load, dry climate shrub, woody shrubs and shrub litter, very heavy shrub load, depth 4-6 feet, spread rate somewhat lower than SH6 and flame very high

Timber Litter Group Fuel Models 181-189, (TL1; TL2; TL3; TL4; TL5; TL6; TL7; TL8; TL9)	TL1: Low load compact conifer litter, compact forest litter, light to moderate load, 1-2 inches deep, may represent a recent burn, spread rate and flame low TL2: Low load broadleaf litter, broadleaf, hardwood litter, spread rate and flame low TL3: Moderate load conifer litter, moderate load conifer litter, light load of coarse fuels, spread rate and flame low TL4: Small downed logs moderate load of fine litter and coarse fuels, small diameter downed logs, spread rate and flame low TL5: High load conifer litter, light slash or dead fuel, spread rate and flame low TL6: Moderate load broadleaf litter, spread rate and flame moderate TL8: Large downed logs, heavy load forest litter, larger diameter downed logs, spread rate and flame low TL8: Long needle litter, moderate load long needle pine litter, may have small amounts of herbaceous fuel, spread rate moderate and flame low TL9: Very high load broadleaf litter, may be heavy needle drape, spread rate and flame moderate
Timber-Understory Group Fuel Models 161-163, 165, (TU1; TU2; TU3; TU5)	TU1: Low load dry climate timber grass shrub, low load of grass and/or shrub with litter, spread rate and flame low TU2: Moderate load, humid climate timber-shrub, moderate litter load with some shrub, spread rate moderate and flame low TU3: Moderate load, humid climate timber grass shrub, moderate forest litter with some grass and shrub, spread rate high and flame moderate TU5: Very high load, dry climate shrub, heavy forest litter with shrub or small tree understory, spread rate and flame moderate

This report was generated from the Advanced Oregon Wildfire Risk Explorer map viewer: tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=wildfireplanning. For more information on wildfire risk in a specific location, you can generate a Homeowner's report from the Oregon Wildfire Risk Explorer map viewer.

How to Cite:

Accessed from the Oregon Wildfire Risk Explorer on December 28, 2020
URL:https://tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=wildfireplanning
Primary data Source: USDA Forest Service Pacific Northwest Quantitative Wildfire Risk Assessment (2018)

The Oregon Wildfire Risk Explorer site, tools and reports are the result of a collaboration among the following organizations and others:

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Appendix B: Primary Plans Related to CWPP Action Table

To support the development of the CWPP Action Plan, several county and city plans were referenced to understand existing goals, objectives, and/or actions to address wildfire risk reduction and the wildland-urban interface, primarily including:

- Wasco County Comprehensive Plan (2020)
- Natural Hazards Mitigation Plan (2019)

The following list of wildfire and/or WUI-related actions serves as a quick reference to help readers see the linkages between this CWPP and other county and city plans. These references are not exhaustive in naming all actions that could support wildfire risk reduction. Primary documents should be consulted for additional details and any future updates.

Wasco County Comprehensive Plan

Policy 7.1.3: All physical development should be located such that it minimizes the risk of wildfire and allows for assistance in the control of wildfire

Implementation	Timeframe	Lead Partners
a. All physical developments shall implement the applicable Fire Safety Standards of the zone in a timely manner. Physical developments that do not implement the Fire Safety Standards in a timely manner shall be considered a code compliance violation	Ongoing	Planning, Code Compliance
b. A functioning on-site water supply shall be implemented prior to issuance of any zoning approval/building permit within the F-1 and F-2 Forest zones. The aforementioned water supply shall be connected to all applicable Fire Safety Standards of the zone.	Ongoing	Planning, Building Codes Services
c. In the "F-1" & "F-2" Forest Zones, coordination with the local fire protection agency shall occur prior to any land use application. Where development does not fall within a structural fire protection district, coordination with the applicable wildland interface agencies shall occur. Close consideration of the Wildland Urban Interface (WUI) setting, Wildfire Hazard designation, and Mitigation Difficulty for that area shall occur with agency coordination	Ongoing	Planning, RFPD, ODF, RPA
d. Requests for dwellings not in conjunction with forest use, on property which is located outside of a rural fire protection district, shall not be accepted by the Approving Authority unless a contract for services has been reached with a rural fire protection district.	Ongoing	Planning, RFPD

Policy 7.1.3: Mitigate wildfire hazards through enhanced fire safety development standards

Implementation	Timeframe	Lead Partners
a. All implementing ordinances applicable to the County shall be consistent with the Comprehensive Plan, the Natural Hazard Mitigation Plan, and the Community Wildfire Protection Plan.	Ongoing	Planning
b. Fire Protection agencies and other applicable organizations shall be provided an opportunity to comment on development applications prior to approval	Ongoing	Planning, RFPD, ODF, RPA
c. All physical development shall be required to implement applicable Fire Safety Standards in a timely manner	Ongoing	Planning
d. All applications for physical development in areas identified as high risk for wildfire shall require a County approved wildfire mitigation plan prior to approval	Ongoing	Planning
e. Encourage sustainable and resilient land use planning techniques for development in areas identified as high risk for wildfire	Ongoing	Planning

Wasco County Natural Hazards Mitigation Plan (2019)

WH1 – Assessment of Non-County Roads for Response to Wildfire Hazards

Project	Lead Partners	Time Frame	County Priority
Conduct mapping/ analysis of non-county roads to assess access by fire fighting vehicles, evacuation, and to identify mitigation projects	Planning, Public Works, Surveyor, RFPD	0-3 years	High

WH2 – Accomplish Defensible Space around Structures

Project	Lead Partners	Time Frame	County Priority
Various projects including education, code compliance, planning, grant funded mitigation	Planning, Emergency Management	0-3 years	High

WH3 – Treat Hazard Fuels in the Wildland Urban Interface Including in The Dalles Municipal Watershed

Project	Lead Partners	Time Frame	County Priority
Reduce hazard fuels, educate land owners about hazard fuel reduction	RFPD, The Dalles, Emergency Management, County Public Works and Planning	0-3 years	High

WH4 – Explore ways to increase Fire District coverage throughout the County

Project	Lead Partners	Time Frame	County Priority
Support rangeland protection associations, improve mutual aid agreements	RFPD, ODF, USFS, State Fire Marshal's Office	3+ years	High

WH5 – Establish a Wildfire Coordinator or local Natural Hazard Planner position

Project	Lead Partners	Time Frame	County Priority
Support rangeland protection associations, improve mutual aid agreements	BOC, Planning, Emergency Management	0-3 years	High

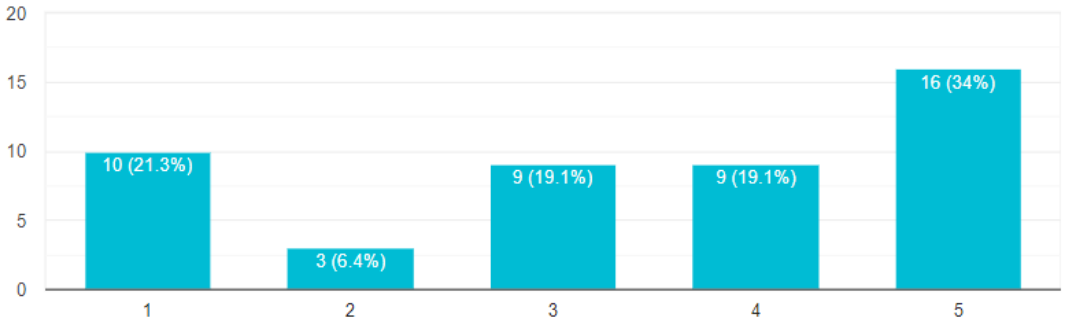
Appendix C: Stakeholder and Public Engagement during CWPP Update Process

Public Outreach and Survey (May 2021)

To coincide with a social media daily campaign to promote Wildfire Awareness Month, the Planning Department launched its first public survey about possible CWPP strategies. We received 47 responses to the survey:

The 2005 CWPP recommended a road hazard assessment to identify challenges for access by fire equipment and as resident evacuation routes. Please rate how much this is a current priority for you.

47 responses

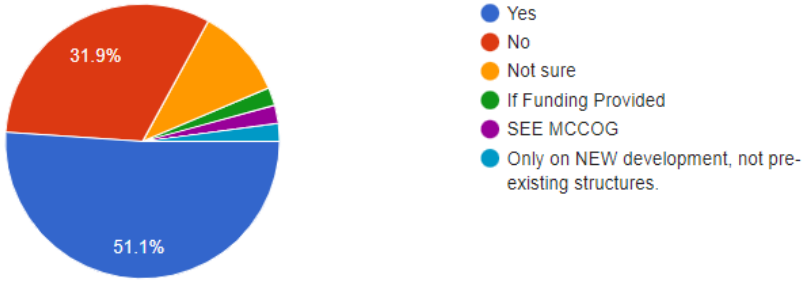


Well marked addresses with a consistent numbering system are critical for emergency services when identifying homes at the time of emergency. If Wasco County were to overhaul the addressing system, that could mean a change to your address. How willing would you be to participate in re-addressing for improved safety?

47 responses

The Community Wildfire Assistance Program research recommended potential building codes requirements, like fire resistant roofing and siding materials, stand pipes, and chimney screens. Do you think Wasco County should implement construction standards for new development?

47 responses



Wasco County Planning requires a fire safety self certification and the creation of defensible space for new development. Defensible space should be maintained over the lifetime of the development, and includes keeping vegetation and trees well maintained for a well defined perimeter around structures. Do you think Wasco County should pursue code compliance cases, with fines, for overgrown vegetation?

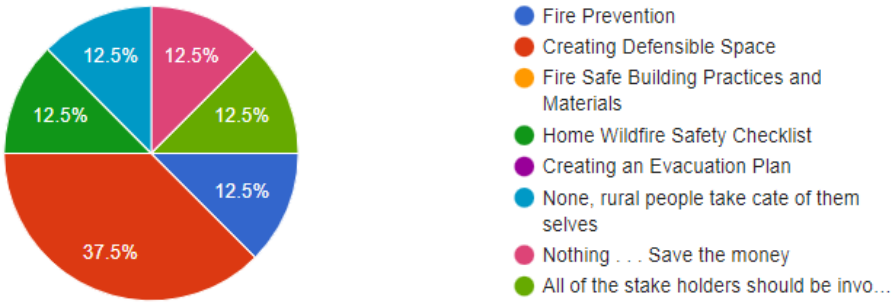
47 responses

Survey (November 2021)

In November 2021, the Planning Department launched its second public input survey that focused on education, volunteerism with RFPDs, and home site reviews. This survey received 8 responses:

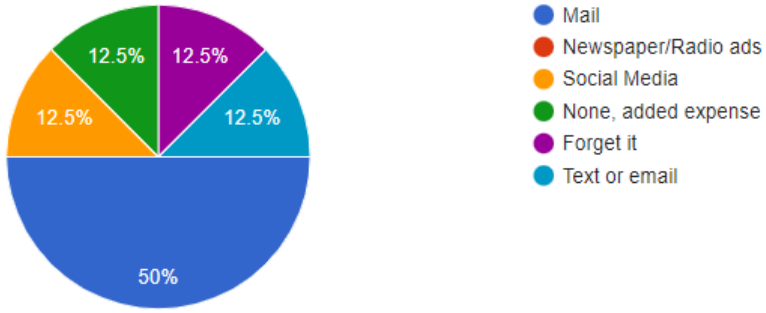
What kind of information would you like, regularly, from your Rural Fire Protection District or Wasco County? (Select all that apply)

8 responses



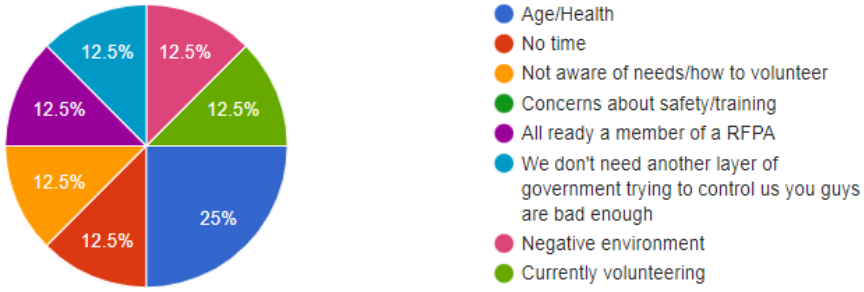
What is the best way to share fire safety information with you?

8 responses



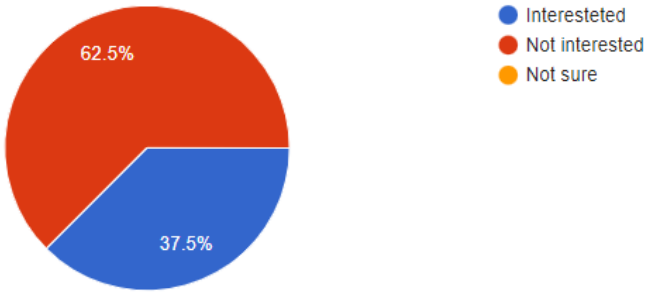
What barriers prevent you or others from volunteering for your Rural Fire Protection District?

8 responses



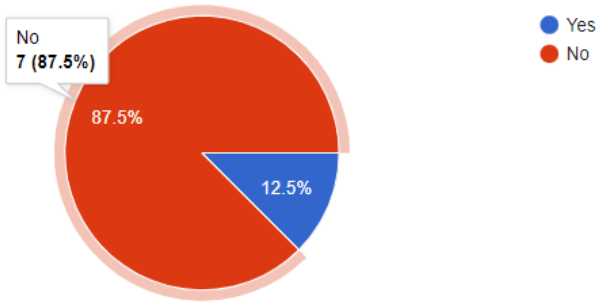
Would you be interested in a home site review with firefighting professional that identifies issues and how to lower your risk?

8 responses



Would you be willing to pay a small fee for a home site review?

8 responses



What are other ways Wasco County or your Fire Department/Protection District can help you reduce your risk and prepare for wildfire events?

8 responses

Plow fire breaks

Easy access to information and resource lists on county website.

You'd be of no value to us

Make White River Crossing more accessible. We are supposed to be protected BY ODF, but due to the horrific road condition it has taken them forever to get here due to the poor road condition. We have had two fires within 150' of our house in the past two years. (Both caused by lightening) The condition of White River crossing is unacceptable and I encourage EVERY Wasco County elected official to travel on it. It is the ONLY connection between Jun iper Flat and the Wamic area without having to drive around 35 miles.

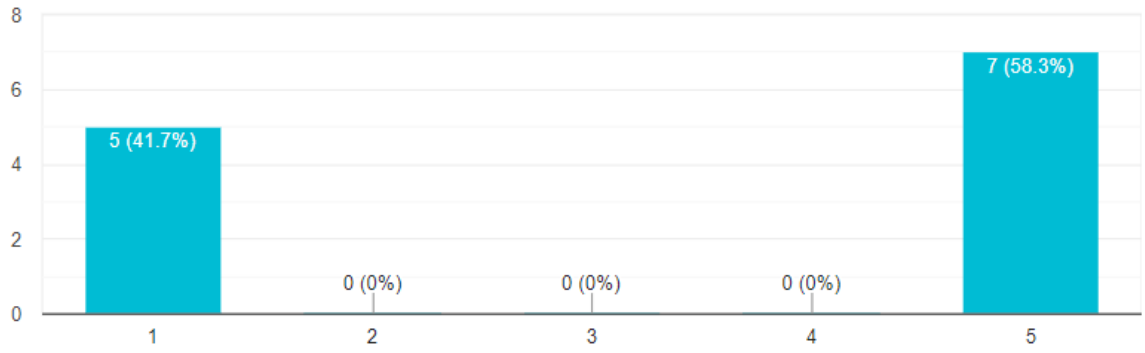
Accurate and timely information is critical, all too often in recent years inaccurate evacuation orders have been given and the expertise and experience of CRFPD was belittled and ignored. Information can and should be shared and avoid critical mistakes and unfortunate loss of life and property. If the fire prevention plan is to be taken seriously the major stakeholders must be involved.

Continue communication

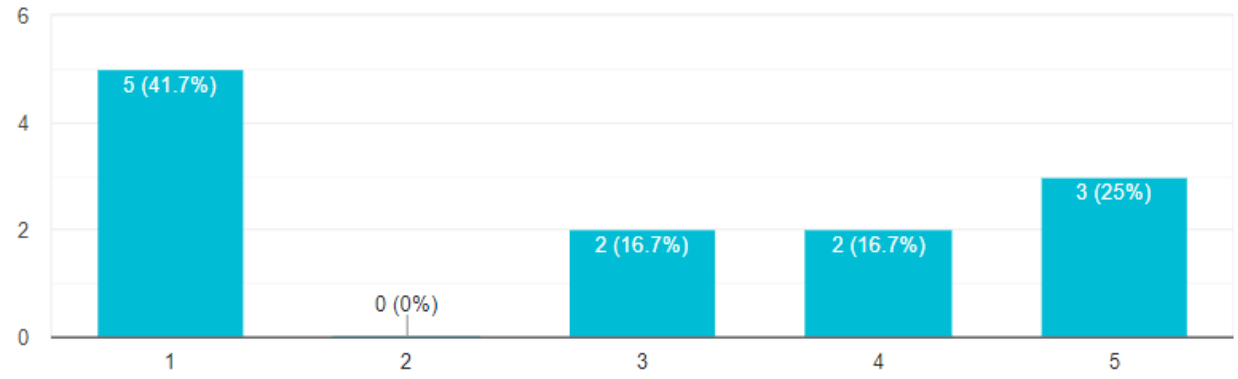
Survey (January 2022)

In January 2022, the Planning Department launched its third and final public input survey that focused on proposed action items and asked for public to rank them in order of priority from 1 (low) to 5 (high).

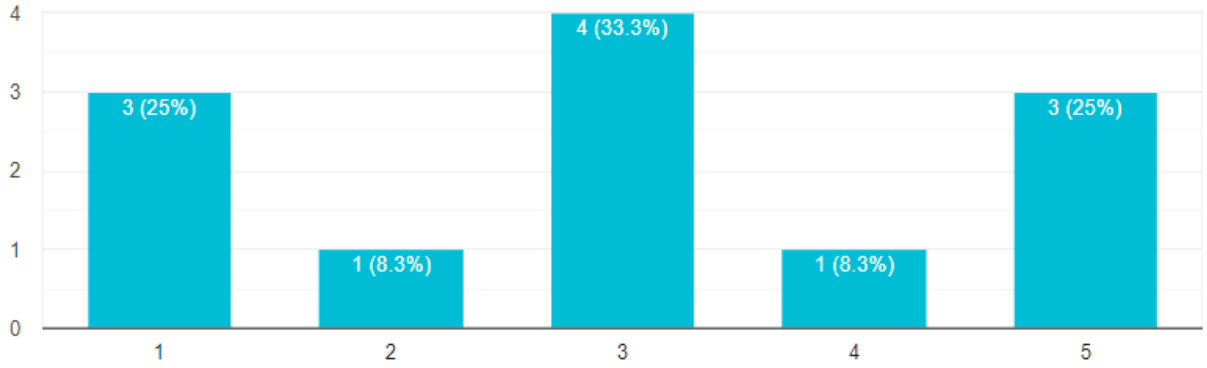
What priority should a County Wildfire Coordinator be for implementing the Community Wildfire Protection Plan, coordinating wildfire mitigation efforts, and providing wildfire education?



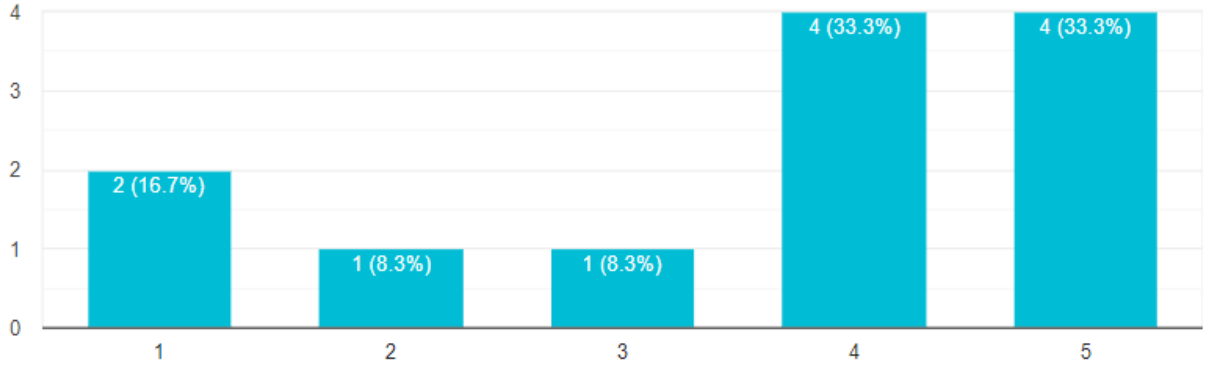
How important do you think it is to update rules related to wildfire, including the Community Wildfire Protection Plan?



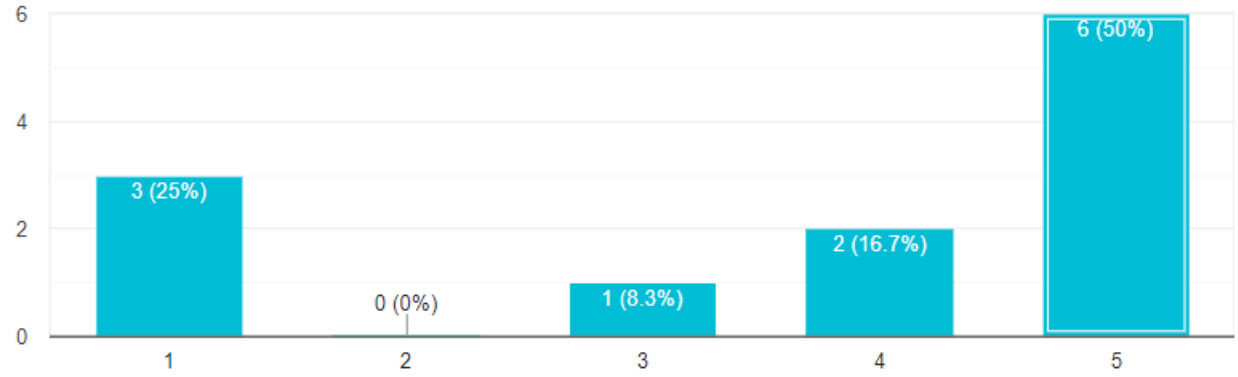
How would you prioritize conducting an assessment of road hazards on County or public access roads?



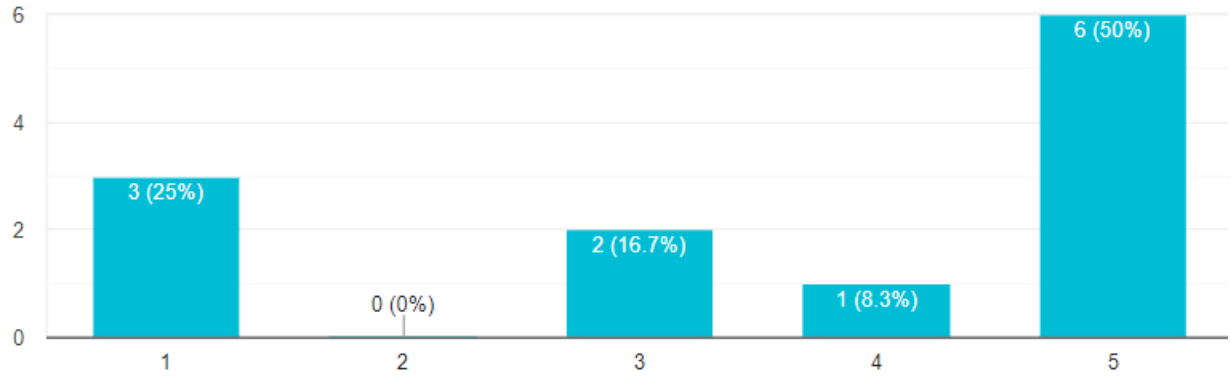
How do you prioritize Rural Fire District equipment upgrades, training, or facilities maintenance?



The Wasco County Forest Collaborative is a partnership for various agencies and organizations to improve forest management and reduce wildfire risk. How would you rank supporting this effort as a priority for Wasco County?



What priority should wildfire risk reduction and prevention education and outreach be?



Do you have any other strategies for wildfire mitigation Wasco County should consider adopting?

No

I don't mind education but with the new fire tax I am paying you will not waste it on another gov job. Forest management like thinning and logging is important as groomed land doesn't burn uncontrollably. Using fire as a reason to lock down private property use is unfair.

Yes I do. Give gov't. people and other planners who advocate running roughshod over landowners NO place at the planning table . Do NOT commit our tax money. Encourage and allow private landowners, only, to make ALL decisions that concern their private property. Make NO rules, ever, unless you can be reasonable for a change--and your track record under the crazy runaway spell of Dr. Glover has proved anything BUT reasonable. Fire her and I might discuss a plan with you. But as long as she lives in, works for, or has anything else to do with Wasco County, I want NOTHING to do

with your "plans". By the way isn't it about time for some in-person hearings so you can get an unskewed real feel of the taxpayers' opinions--or is it your MO to continue on dazzling us with your BS and Marxist agenda?

Find ways to support Prescribed Burn Associations as a way to empower rural residents to be fire ready.

Information: Help the public learn more about how much the county has changed as the result of fire suppression. Oak woodlands and savanna are replaced with conifer. The conifer are now dying because of drought. What goes around comes around. Time to wake up and smell the smoke. We need to learn to live in the mess our decisions have left us with.

free community events at the schools, granges, and local rural fire departments, supported and advertised by these same organizations to their community. i would provide education and grant funding to home owners so they can implement water catchment, fuel reduction and native plantings.

Core Group Meetings

The Core Group, made of representative from Mid-Columbia Fire and Rescue, Juniper Flat RFPD, the Office of State Fire Marshal, Oregon Department of Forestry and Wasco County began meeting in September 2020 to review the 2005 CWPP and discuss revisions. The group also once a month as needed in 2021 and 2022 to discuss action items, public outreach, and mitigation projects.

District Surveys

Detailed surveys were sent to various stakeholders, including RFPDs, in 2020 and 2021 to get feedback about the CWPP, identify equipment and facility needs, mitigation projects, and ask for input on various action items.

Stakeholder Calls and Emails

Stakeholder calls were coordinated throughout the process to provide stakeholders the ability to discuss CWPP drafts and provide feedback. In addition, stakeholders were invited to provide written comments on CWPP drafts.

Community Surveys

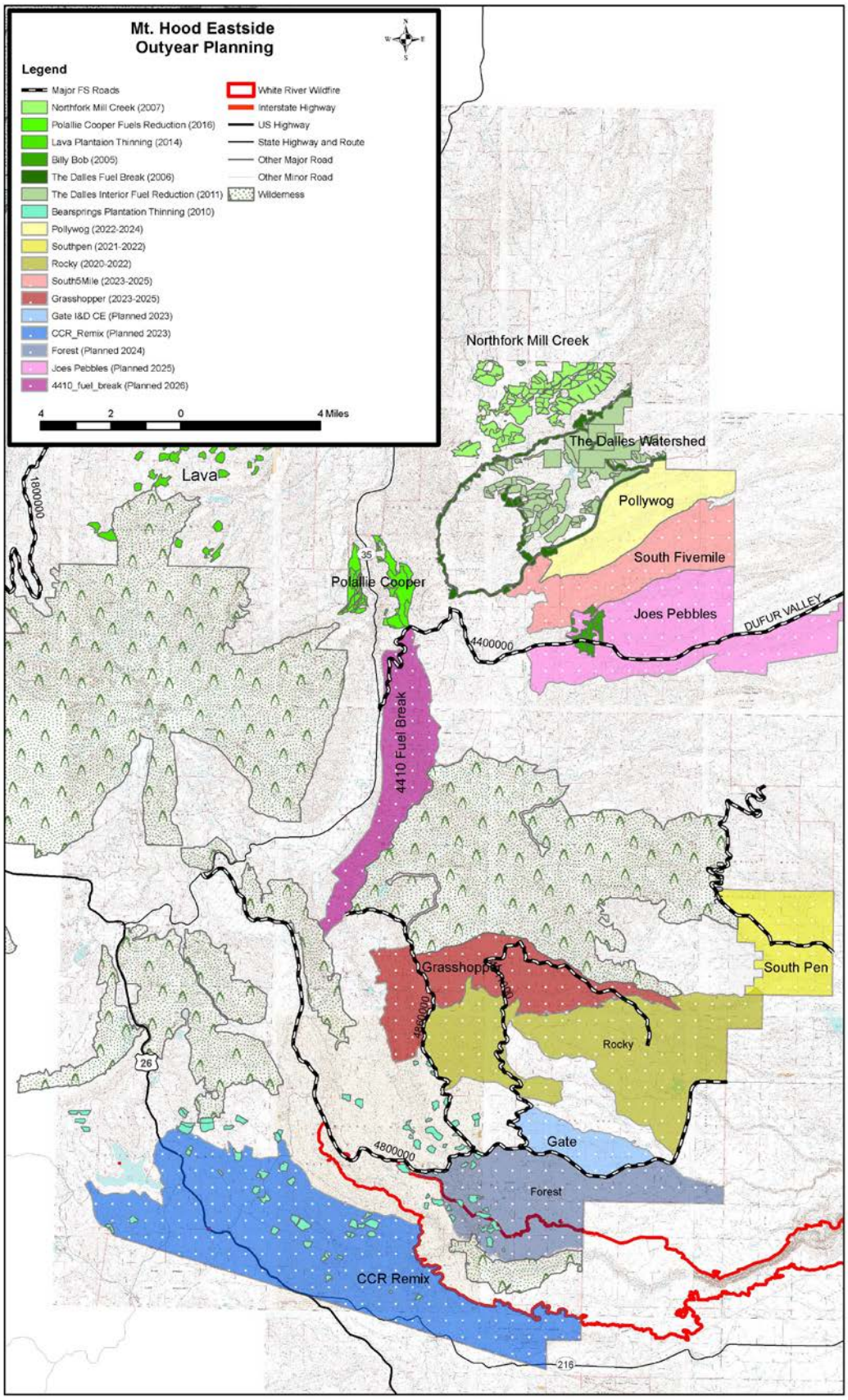
Surveys about action items were circulated on the CWPP landing page and through social media in 2021 and 2022 to solicit public input. Responses are shown above.

Public Review and Comment Period

Members of the public are also invited to review and comment on the CWPP during the public review period which is scheduled for October 2022. Details about the public comment and review period are available on the Wasco County website.

Appendix D: Wasco County Forest Collaborative Priority Areas for Fuels Reduction/Forest Health

In addition to the mapped areas below, an additional $4.2 million dollars in grants have been secured by various partners for fuels reduction and forest health treatments in Central Wasco County. This includes private forest lands, ODFW and USFS lands.


Mt. Hood Eastside
Outyear Planning
Legend
Major FS Roads
Northfork Mill Creek (2007)
Polallie Cooper Fuels Reduction (2016)
Lava Plantation Thinning (2014)
Billy Bob (2005)
The Dalles Fuel Break (2006)
The Dalles Interior Fuel Reduction (2011)
Bearsprings Plantation Thinning (2010)
Pollywog (2022-2024)
Southpen (2021-2022)
Rocky (2020-2022)
South5Mile (2023-2025)
Grasshopper (2023-2025)
Gate I&D CE (Planned 2023)
CCR_Remix (Planned 2023)
Forest (Planned 2024)
Joes Pebbles (Planned 2025)
4410_fuel_break (Planned 2026)
White River Wildfire
Interstate Highway
US Highway
State Highway and Route
Other Major Road
Other Minor Road
Wilderness
4 2 0 4 Miles
Northfork Mill Creek
The Dalles Watershed
Pollywog
South Fivemile
Joes Pebbles
DUFUR VALLEY
Lava
Polallie Cooper
4410 Fuel Break
Grasshopper
South Pen
Rocky
Gate
Forest
CCR Remix
1800000
4400000
4800000
35
26
216

Appendix E: Oregon Department of Forestry Priorities for Fuel Reduction

The fuels reduction projects below are those identified as underway or could be pursued in the future.

Fuels Reduction/Forest Health Projects currently underway:

1. Landscape Scale Restoration Project (LRP) – Wasco County Oak Restoration and Fuels Mitigation

a. Managed by ODF
b. Located in Central Wasco County (Friend, Rail Hollow, Kingsley areas)
c. Target is for Oak habitat thinning & fuels reduction on 280 acres on private lands
d. Project timeline: 2019 – April 2024

2. Western States Fire Managers Grant – North Wasco County Fuels

a. Managed by ODF
b. Located in North Wasco County (Mosier, Seven mile, Rowena, Mill Creek areas)
c. Target is for fuels reduction work to treat 265 acres on private lands
d. Project timeline: 2019 – December 2023

3. Western States Fire Managers Grant – Central Wasco County Fuels Reduction

a. Managed by ODF
b. Located in Central Wasco County (Rail Hollow, Pine Hollow, Wamic areas)
c. Target for removal of dead/dying hazard trees near homes/infrastructure (295 acres)
d. Project timeline: Fall 2022 – Fall 2025

4. Joint Chief's Project – Central Wasco County

a. USFS & NRCS are lead agencies
b. Interagency cross boundary fuels treatment work (located on the Mt. Hood NF, ODFW White River Wildlife Area, and private lands in the Wamic/Pine Hollow areas)
c. Treatment activity and acres managed as follows:
    i. Mt. Hood NF for work on federal lands – mixed activities
        1. Details can be found from MHF staff
    ii. ODF for work on ODFW lands – Fuel reduction mastication on 515 acres
    iii. NRCS for work on private lands (EQIP) – fuels reduction
        1. Details can be found from NRCS staff
d. Project timeline: Fall 2019 – Fall 2025

5. ODF SB 762 Landscape Resilience Program – Wasco County Forest Resilience Project

a. ODF is lead agency
b. Interagency cross boundary fuels treatment work (located on the Mt. Hood NF, USFS Scenic Area, ODFW White River Wildlife Area, and private lands in the Friend area)
c. Treatment activity and acres managed as follows:
    i. Mt. Hood NF for work on federal lands – Mastication, invasive species treatment, and Rx burning on 728 acres
    ii. USFS Scenic Area for work on federal lands – Lop and scatter/Invasive species treatment on 1025 acres, and 4.3 miles of road improvement for fire access

iii. ODF for work on ODFW lands – Mastication on 725 acres
iv. Private landowner work – fuels reduction on 100 acres
v. East Cascades Oak Partnership – 50 Oak monitoring plots established

6. Good Neighbor Authority Agreement

a. Managed by USFS Mt. Hood NF in partnership with ODF
b. Ongoing agreement for ODF assistance with accomplishing fuels reduction work on the Mt. Hood NF Barlow Ranger District
i. Thinning/brushing w/ ODF Crew – 582 acres
ii. Mastication contract admin – 217 acres
iii. Rx line burn prep – 7 miles
c. Timeline – 2017 – December 2026

7. Joint Chief's Project – North Wasco All Lands Project (submitted 7/2023, award status unknown)

a. USFS & NRCS are lead agencies
b. Interagency cross boundary fuels treatment work (located on the Mt. Hood NF, ODFW White River Wildlife Area, Dept. of State Lands, City of The Dalles Watershed, and private lands in the Friend, Rail Hollow, and Fivemile areas)
c. Treatment activity and acres managed as follows:
i. Mt. Hood NF for work on federal lands – mixed activities
1. Details can be found from MHF staff
ii. ODF for work on ODFW lands – Fuel reduction mastication on 424 acres
iii. ODF for work on City of The Dalles Watershed – Roadside brushing, mastication, pruning/piling/burning on 373 acres
iv. ODF for work on Dept. of State Land in TD Watershed – Roadside brushing, mastication on 13 acres
v. NRCS for work on private lands (EQIP) – fuels reduction
1. Details can be found from NRCS staff
d. Timeline: Will depend on award and funding received

Federal Infrastructure Funding through the Community Wildfire Defense Grant (CWDG) for fuels treatment. Funding opportunities start in 2022 and will occur for 5 years total with 5 years to implement each round of funding.

Future Project Concepts where Funding Support is Needed:

1. Treatment Focus Area Priority #1: Mosier, Rowena, Sevenmile, Mill Creek (North Wasco County WUI)

a. Activities: Fuels reduction risk mitigation beyond defensible space, Defensible space treatment, Invasive Species/Oak resprout treatment
i. May include thinning, mastication, pruning, piling, chipping, burning, and chemical application.
ii. Oregon Explorer - Much of this area has: High or Very High Overall Wildfire Risk; Rates at a High or Very High Burn Probability; Has a Moderate, High, or Very High Hazard Potential to Structures; Within the identified Communities at Risk Boundary, Moderate or High Ignition Risk Rating.

2. **Treatment Focus Area Priority #2: Sportsman's Paradise, Rail Hollow, Friend (Central Wasco County WUI)**
    a. Activities: Fuels reduction risk mitigation beyond defensible space, Defensible space treatment, Invasive Species/Oak resprout treatment
        i. May include thinning, mastication, pruning, piling, chipping, burning, and chemical application.
        ii. Oregon Explorer - Much of this area has: High or Very High Overall Wildfire Risk; Rates at a High or Very High Burn Probability; Has a Moderate, High, or Very High Hazard Potential to Structures; Within the identified Communities at Risk Boundary, Moderate or High Ignition Risk Rating.

3. **Treatment Focus Area Priority #3: Sportsman's Park, Pine Hollow, Wamic (South Wasco County WUI)**
    a. Activities: Fuels reduction risk mitigation beyond defensible space, Defensible space treatment, Invasive Species/Oak resprout treatment
        i. May include thinning, mastication, pruning, piling, chipping, burning, and chemical application.
        ii. Oregon Explorer - Much of this area has: High or Very High Overall Wildfire Risk; Rates at a High or Very High Burn Probability; Has a Moderate, High, or Very High Hazard Potential to Structures; Within the identified Communities at Risk Boundary, Moderate or High Ignition Risk Rating.

4. **Funding for maintenance of fuels reduction projects that were treated through prior funding.**
    a. Identify qualifying projects that will become eligible for a follow up treatment.

5. **Roadside vegetation management**
    a. Activities: Mowing, pruning, chemical treatment to improve ingress/egress in WUI's

6. **Debris removal/Pick up Events** – Landowners stage material roadside for grant funded trailer to pick up through scheduled/coordinated outreach events managed by the County.

7. **County Voucher Program** – Provide vouchers to landowners for vegetation debris drop off at transfer station through scheduled/coordinated outreach events managed by the County.

8. **Design/installation of water source cisterns in areas of limited water availability**

9. **Education/Outreach**
    a. Training costs for staff to learn how to conduct property inspections or assessments.
    b. Funding for staff to conduct property inspections or assessments related to defensible space on properties in the WUI.
    c. Funding for staff to conduct outreach specific to identification and establishments of new Firewise Communities in Wasco County.

10. **Equipment – Acquisition of equipment to support fuels treatment projects.**
    a. Examples include: Chipper w/ trailer, brush mower w/ trailer, power saws, pruning saws

Appendix F: Fire Agency Priorities and Needs

Wasco County Fire Agencies

Dufur

1. **Current Projects**
    a. Diminish heavy fuel loads on City property

2. **Suggestions to reduce fire ignition on public lands within jurisdiction**
    a. City of Dufur maintenance efforts
    b. Wasco County Road Department fuel clearing
    c. ODOT -- US Highway (HWY) 197
        i. Fuel reduction along two miles of west side HWY 197, Mile Post 13-14

3. **Training Needs**
    a. Current
        i. Trainers to accommodate a full volunteer department
        ii. Mutual time to train volunteers
        iii. Currently four days a month, on Wednesdays

4. **Personnel Needs**
    a. More staffing at all levels

5. **Goals at becoming more effective**
    a. Gather more personnel to make a better fire fighting force
    b. Update outdated equipment
    c. Update radio communications county wide

6. **Composition of Department**
    a. 22 volunteers
        i. Ten fire personnel
        ii. 12 ambulance professionals
    b. Two Type 6 wildland engines, frequently used
    c. Three structure engines
    d. One ladder truck
    e. One tactical water tender, frequently used

7. **Current activities to ensure local communities are adapted to wildfire**
    a. Burn permits, during fire season only
    b. Burn bans, during fire season only

8. **Ways the community could adapt to more frequent fires**
    a. Community involvement in informational fire meetings, in both wildland and structural fires

9. **Equipment Needs**
    a. Two updated Type 6 wildland engines
    b. Updated wildland Personal Protective Equipment (PPE)
    c. Additional plumbing on the water tenders
        i. Fire nozzles

ii. Electrically controlled fog nozzle on a front bumper
d. Acquire one Type 3 wildland engine (multiple uses)

10. Facility Needs
a. Commercial Washer and Dryer for contaminated clothing
b. Hose drying capabilities

11. Major Hurdles
a. More Grants
b. Larger Budget
c. More Volunteers
d. More Outside Training for volunteers

Juniper Flat Rural Fire Protection District

1. Suggestions to reduce fire ignition on public lands within jurisdiction
a. Needs defensible space
b. Needs road access, fire breaks

2. Goals at becoming more effective
a. Enhance drone program with more capable & higher-tech networking drones. Utilize networked drones to provide real time situational awareness to firefighters on the ground during a response to enhance responder safety and improve response efforts
b. Provide certified training for all members in;
i. Rescue
ii. Structure Fire
iii. Wildland Fire
c. Working towards and encouraging Wasco co. to develop incentive programs for land owner to create defensible space on their entire property.
d. Our goals are to learn and build from the lessons learnt during our incidents and other agencies incidents. Juniper Flat Fire Dept Responders debriefs and critiques every incident until the firefighters are satisfied with the after-action reviews to correct any problems, to improve on tactics and procedures that will provide the best life and safety service for the people we serve. 2020- White River fire, 2021- 503 fire, 2022- Dodge/Miller Rd fire provided a lot of lessons.

3. Resiliency projects underway
a. We are in the planning and applying for funding stage to created Fire Breaks which include Green Striping along north and south roads, FSA CRP fields and private property, removal of burned trees after 2022 Miller Rd fire, creating defensible space such as limbing and removing trees, reducing grass and fire hazards along roads to create fire breaks.
b. Needs road access, fire breaks

4. Current Fire Adapted Community Projects
a. Education and Outreach, Website and Social media, Collaborating with partners on events like Wildfire in Wasco community meetings and fire prevention flyers.

5. Personnel Needs

Immediate Need:

a. Fund Wildland Firefighting Air Resource in the 1st 30 minutes of the incident
b. Drivers Training for Heavy on & off-road trucks 60,000 lbs plus, especially water Tenders, Basic Wildland Fire Training for new Firefighters, NWCG s215 Fire operation in urban interface, NWCG Single Resource Boss training, NWCG Air operations training
c. Funding Stipend pay for attending training and responding, due to the ERA and cost of just volunteering
d. Funding for volunteer Incentives and awards
e. Basic Wildland Fire Training for new Firefighters
f. NWCG s215 Fire operation in urban interface
g. NWCG Single Resource Boss training
h. NWCG Air operations training

6. Equipment Needs

Immediate Need:

a. 3 Initial Attack (IA) Tenders: Since the 2020- White River fire, 2021- 503 fire, 2022- Dodge/Miller Rd fire new tactics have been established to stop these fast-moving fires. This requires 3 – 3500 gallon Initial Attack Tenders laying wide and long wet-line fire breaks (possibly with fire retardant) in advance of the fire so the IA Wildland fire direct attack apparatus can control and contain the fire.
b. Upgrade old outdated fire Apparatus
c. Live drone data in our apparatus
d. 50,000 Gals. water Storage in middle of Fire district at JF RFPD Station 1 with pumps. During the 2020- White River fire, 2021- 503 fire, 2022- Dodge/Miller Rd fire, The community of Pine Grove Water System was not usable for firefighting efforts requiring water suppling Tenders to drive a time consuming 30 +/- miles for water.
e. PPE both Structure and Wildland fire. In the 46-year History of JF RFPD our firefighters have had to used outdated, not fitted, used hand me down turnout gear due to the budget.

Overall Need:

a. 3x 3500 gal initial attack tenders, preferably 6 wheel drive, pump and roll min. 600+ GPM with Front monitor; fill rate 1000 gpm, min 500 gpm; 200+ gpm combo nozzles on all sizes;controlled and adjustable in cab; rear nozzles pointing straight down, controlled from cab; dual radios; IR camera on front
b. Newer all-wheel-drive apparatus
c. Additional 3,000 gallon tactical tenders to replace aging equipment that are off-road capable
d. Additional Type 3 interface wildland fire engines (1500 gal +/-), must b 4 wheel drive and off-road ready for maximum effectiveness, with additional modifications as needed for structural fire attack
e. One structure fire pumper tender
f. One quick attack rescue (400 gal)
g. Additional quick attack rescue vehicle with rescue equipment (extrication/rope rescue/EMS equipment)
h. 50,000 gallon tank coupled with highly portable water pump equipment (min. 2x 500 gpm portable pumps) located at JFRFPD Station #1 to support initial attack and reduce stress on local community water system as well as increase resilience during PSPS events and power losses during incidents
i. 2x 500 gpm portable pumps on trailers
j. Skidder with fire fighting capabilities
k. UTV's fire support in rough terrain

7. Facility Needs

a. Fully equip three existing stations for service
b. Expand existing facilities at Station #1 to accommodate additional apparatus, provide for training space, living quarters, pump service station, and continued equipment maintenance

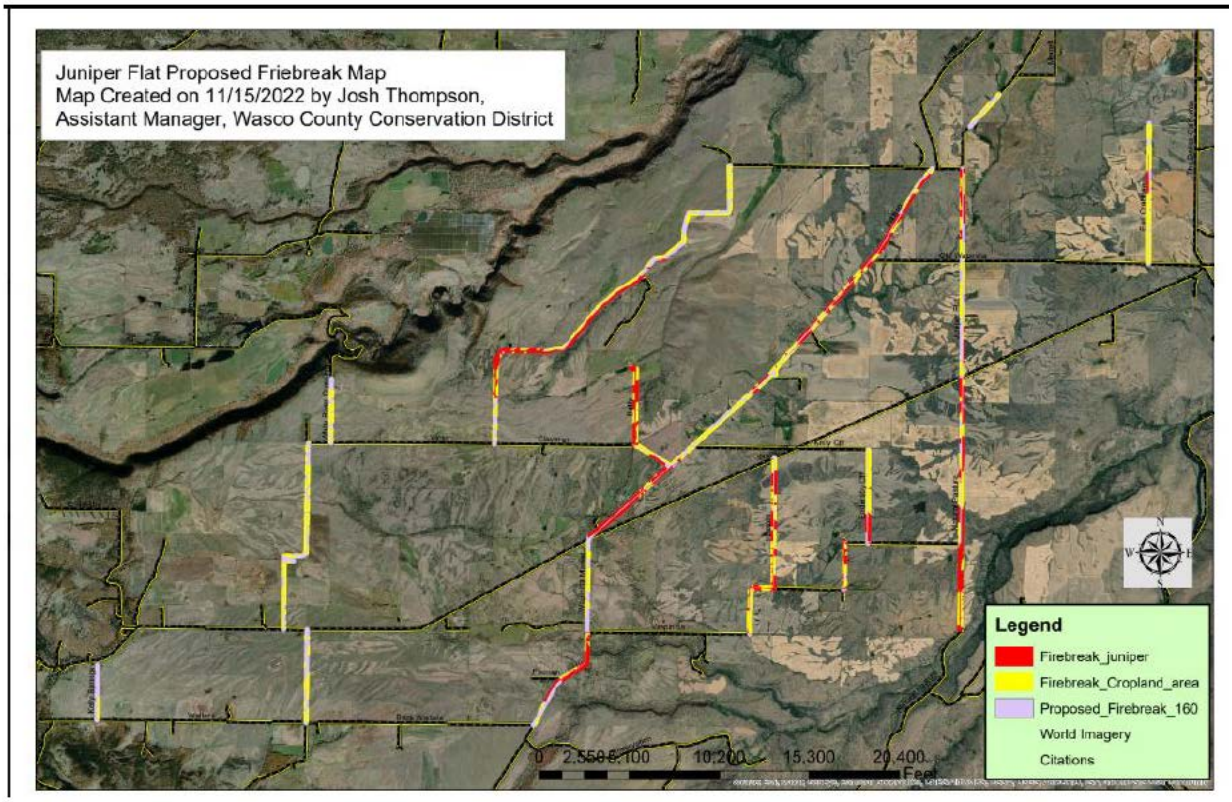
8. Needs from Other Resources

(If incident is on USDA, FSA, NRCS lands, FSA fund the air resources)

a. Immediate large air tanker support - retardant
b. Immediate single engine air tanker support
c. Immediate helicopter support
d. Hand crew and dozers (ODF)
e. Structure task force capable for off road wildland fire fighting (OSFM)
f. Helicopter support for areas not accessible with fire apparatus (BLM)
g. Mop up on large scale or extended incidents (local mutual aid)

9. Major Hurdles

a. One set of fire regulations between federal, state, county, and local agencies (especially regarding county-wide burn bans)
b. Location of some of the more rural fire starts results in delayed mutual aid and decreases effectiveness of initial attack, particularly in warm and windy red flag conditions - increasing speed of initial attack and utilization of air resources as well as enhancing partner response is key.
c. Large amount of dead and dying vegetation from previous fires.
d. There is no road access or fire breaks upwind of the community which most of the land is owned by Oregon Dept of Fish and Wildlife. The entire fire district is in a very high wildland fire risk area as proven by the 11000 acre 2022 Dodge/Miller Rd fire which burn through the fire district in a afternoon. Due to Government farm programs summer follow fire break are gone. In both of these high fire risk areas describe above Fire Breaks and Fire Road Access must be reinstated and will require funding from at state and federal level.
e. a successful and safe mission always attract recruits where unsuccessful events do not, everybody wants to be involved on a winning team but not in a losing battle.
f. To implement a mechanism to fund and receive Wildland Firefighting Air Resource in the 1st 30 minutes of the incident



Maupin

1. **Current Projects**
    a. Training for department to watch for hazards and report issues to the City or residents to resolve
    b. Encouraging better landscape and building materials to lessen fire hazards
    c. Funding community help for elderly or those that may not be able to cut vegetation or mitigate hazards

2. **Suggestions to reduce fire ignition on public lands within jurisdiction**
    a. Work with BLM and State for wildfire fuel mitigation and clean up

3. **Training Needs**
    a. Current
        i. Train all personnel to the Fire Fighter 1 (FF1) status
        ii. Partner with Oregon Department of Public Safety Standards and Training (DPSST) for training
        iii. Maintain records

4. **Personnel Needs**
    a. Need at least ten more volunteers. Aging population has decreased our volunteer staff significantly. We now have around 10 newer volunteers but will need at least 10 more to staff all apparatus if needed. We are starting ongoing recruiting campaigns.

5. **Goals at becoming more effective**

a. Immediately begin new training program with experienced trainer
b. Update and maintain all training and records
c. Regularly perform full inspection of all apparatus and schedule maintenance

6. Makeup of Department

a. 9 active limited-experience volunteers
b. 0 full time staff.
c. Two EMT, sharenod with South Wasco Ambulance
d. One Type 1 structure engine: 1989 Spartan Monarch Pumper. Functional and passed recent pump tests. Should be able to maintain this vehicle for another few years. Shaniko owned the "sister engine" from Portland and that had the transmission go recently causing a full loss of the vehicle.
e. Two Type 2 engines: 1980 Welch Pumper. This vehicle has had a lot of problems operating basic pump functions.
f. One command Ford Pickup: 1994 Ford F250. In good working order but is limited on fire operations. The pump and tank system needs replaced and we have no covered storage so in the winter it is limited to only a vehicle to transport or survey, not fight fires.
g. One Tender: 1954 GMC Military 6x6 This starts occasionally but needs to be out of service or have significant money invested.
h. One Type 6: 1977 Dodge Seagrave: Another vehicle that needs to be upgraded or out of service. We had two major tire blowouts this year that almost resulted in accidents.

7. Ways the community could adapt to more frequent wildfires

a. Firewise certification
b. Businesses inspected for fire detection and suppression systems.

8. Equipment Needs

a. New apparatus to replace aging equipment
b. New PPE including certified boots for all firefighters
c. Better masks for smoke protection

9. Facility Needs

a. Expand Fire District into City Public Works building to expand training area
    i. Waiting for public works to obtain new building

10. Major Hurdles

a. More personnel and volunteers are needed/more funding for people: we need a way to incentivize volunteers or move to paid staff. Pay for certification, stipend per call would be first steps. Volunteers are down across the country and we are suffering. Even though we have 9 active FFs, they leave seasonally, which leaves our town down to 2 or 3 here at times. Not enough to fight a structure fire.
b. Regular DPSST and local training : No easy answer here but incentives would help. We get people leaving in the off season to go make a buck so they can live. If we could pay them something to stick around it would be the difference is response or not.
c. Grant money for new equipment and to recertify existing: Need a single source location online to help support getting used equip to volunteer depts. Depts could sign up both ways to give or receive.

Could be for manpower, grant writing resources, physical equipment like SCBAs, and hoses or any other help.

11. High Wildfire Risk/High Value Life and Property Loss Concerns and Strategies

a. Area surrounding Maupin is 400-800' higher than the City providing an easy path for fire to travel.
b. Railroad has historically caused many of the low fuel fires along the railway.
c. Season camping and rafting along the river increase risks.
d. Prevailing winds come from the WEST. Afternoon winds can shift and come from the NORTH after 3pm.
e. We are implementing annual ride outs for hazard assessments.
f. Working with community to proactively eliminate hazards such as long grass and debris.
g. Developing a way to fund assistance for those that may not be able to mitigate hazards.

12. 5 Year Goals

a. To be able to fully respond to any structure fire within the City of Maupin.
b. Expand our current fire station to fully house all vehicles.
c. Get all firefighters to level I and work on certification for senior.

13. Resources and actions required to enhance fire prevention in the district

a. Enact a community wide clean up to reduce debris and fuels around properties.
b. Newer apparatus that is up to date and functional. We need smaller attack vehicles for fast response and command presence.
c. Type 3 engine and a water Tender

Mid-Columbia Fire and Rescue District

1. Current Projects

a. MCFR has no current projects in process, however, the district supports USFS and ODF fuel mitigation efforts.

2. Suggestions to reduce fire ignition on public lands within jurisdiction

a. Implementation of fuels reduction and modification programs.
b. Implementation of fuels treatment programs
c. Both programs should target public transportation right of ways

3. Training Needs

a. Additional National Wildfire Coordinating Group (NWCG) intermediate and advanced wildland training to include S-230 Crew boss and above.
b. Community Risk Reduction education

4. Personnel Needs

a. Current need: Four EMTs and four Paramedics to staff EMS-only program
b. Establish a seasonal wildland firefighter program of four personnel within the next three years
c. Additional firefighting staffing of 12 personnel per shift within the next five years

5. Goals at becoming more effective

a. Goal 1: To replace two first out Type III Wildland Interface engines on or before May 2022.

b. Goal 2: Add one additional Type I engine crew on or before August 2025.
c. Goal 3: Add one seasonal Type VI engine crew on or before August 2025.
d. Goal 4: Add a third fire station so support additional personnel from goals 2 and 3 on or before July 2025.

6. Personnel Composition of Department

a. Current makeup of Fire District: Four Chief officers, 21 line staff, one Office Manager and 18 volunteer members.
b. Career Staff: Four Chief officers; one Office Manager; three Captains; three Lieutenants; 15 firefighters
c. Volunteers: Five qualified firefighters; 5 recruit firefighters; 8 support personnel

7. Current activities to ensure local communities are adapted to wildfire

a. MCFR, ODF, and OSFM are working to implement additional firewise communities throughout the district and the county more broadly.

8. We currently have the following programs in place to assist communities adapt to wildfire:

a. Public education
b. Fire prevention
c. Code enforcement

9. Ways the community could adapt to more frequent wildfires

The District would recommend that the following safety standards be implemented to promote wildfire adapted communities:

a. Adoption of the WUII standard within Wasco County
b. Adoption of a Firewise Program to address resiliency within wildfire prone areas
c. Establish enhanced cooperation/communication between regulating agencies to more effectively and consistently implement codes and standards.

10. Equipment Needs

a. Two Type 3 wildland interface engines
b. Wood chipping equipment made available to loan for fuels reduction programs (County wide)
c. Upgraded radio equipment

11. Facility Needs

a. Development of water supply systems strategically located within Wasco County
b. Upgrade to a more robust interoperable County wide communications system
c. The addition of a third fire station for MCFR.

12. Major Hurdles

a. Lack of adequate and consistent funding
b. Competition for available funding
c. Volunteer recruitment and retention obstacles
d. Conflicting regulations between partnering agencies
e. Public and government apathy towards Fire Service protection capabilities

Mosier

1. **Current Projects**
    a. Share Firewise information and other local resource information when issuing fire burning permits.

2. **Suggestions to reduce fire ignition on public lands within jurisdiction**
    a. Working with and assisting ODF, BLM, USFS, as needed or requested

3. **Training Needs**
    a. Stay with current training courses.
    b. The District has 12 of 17 responders trained/certified between type 2 NWCC Taskforce LDR/Strike Team Leader
    c. Host or Assist in hosting an S-215 course every odd calendar year

4. **Personnel Needs**
    a. Stay on current PPO Plan
    b. Do upgrades as needed

5. **Goals at becoming more effective**
    a. Working with local partners
    b. Acquire equipment as needed from Federal Excess Personal Property (FEPP)/ BLM

6. **Composition of Department**
    a. One Full Time Equivalent (FTE) Fire Chief
    b. 17 Volunteers
    c. Two Type 1 engines
    d. One Type 3 engine
    e. Two Type 6 engines
    f. Two Type 2 tenders

7. **Current activities to ensure local communities are adapted to wildfire**
    a. Site visits
    b. Partner with ODF to promote the Firewise program to certain areas of the district.

8. **Ways the community could adapt to more frequent wildfires**
    a. Adopt the international WUI Code
    b. Add sections to Fire Self-Certification. This ensures that structures meet safety standards and obtain fire district approval to ensure before the Building Codes Department issues a certificate of occupancy.

9. **Equipment Needs**
    a. Add one Type 5 apparatus
    b. Add one Type 6 apparatus

10. **Facility Needs**
    a. Currently working on a new facility

b. Design better access, staging and storage at the fire station at Carroll and State Road.

11. Major Hurdles

a. Obtain RFP/VFP grant for more PPE or Type 6 and Type 3 engines

Shaniko

1. Current Projects

a. Securing a grader to cut and maintain fire lines
b. Comprehensive plan for homeowners to reduce fuel loads and create access on properties
c. Upgrade municipal water supply
d. Developing recommendations and plans for:
    i. Fire prevention
    ii. Backyard burning rules
    iii. Emergency service network for announcements on local emergency conditions
e. Start a fire safety inspection program

2. Suggestions to reduce fire ignition on public lands within jurisdiction

a. Very little public land is present, though some is leased for ranching. Mutual aid is available from Antelope/Ashwood RFPA and Bakeoven RFPA.

3. Training Needs

a. Current certified trainer is meeting needs of the department.

4. Personnel Needs

a. The age of volunteers is a major concern. The average age is 63 years old.
b. Recruitment will be a continuous challenge

5. Goals at becoming more effective

a. Five-year goals
    i. Update and equipment
    ii. New Fire Department
    iii. Recruit younger volunteers
    iv. Upgrade municipal water supply

6. Composition of Department

a. Six volunteers with two additional seasonal volunteers. The department has no paid employees.
b. Three operational engines, with only one in good operating condition. This engine has a low water storage capacity and insufficient hose length.

7. Ways the community could adapt to more frequent wildfires

a. Large road signs RE wildfire/wind conditions
b. Additional ODOT cameras & signage (surveillance next 60 miles)
c. Educational bulletins for residence

8. Equipment Needs

a. Replace two current older models
    i. One Type 1
    ii. One Type 6
b. Add:
    i. One Type 6 tender with 3,000 gallon capacity
    ii. Command vehicle
    iii. Hand tools
    iv. Hose nozzles
    v. PPE

9. Facility Needs

a. More space is needed to house vehicles inside. Current indoor capacity is two vehicles; indoor space for six vehicles is needed.
b. Upgraded lighting is needed inside and outside.
c. Need air system for maintenance.
d. Need vehicle jacks.
e. Need additional hand tools

10. Major Hurdles

a. Funding is currently unavailable for a new fire hall
b. Most improvement and maintenance costs are funded by the volunteer fire fighters with some funding provided by the City's general fund

Tygh Valley Rural Fire Protection District

1. Current Projects

a. Ditch Clean up and reshape for efficient fuel maintenance
b. Community Fire breaks and cleanup of properties at vulnerable entry points into community - designated in red on map

2. Suggestions to reduce fire ignition on public lands within jurisdiction

a. Oregon Department of Forestry
    i. Implement fuel removal and maintenance to all areas approaching community, especially from the west and south
b. Bureau of Land Management
    i. Improve roadside access to all parts of the Deschutes River

3. Training Needs

a. Current
    i. Legitimate training program

4. Personnel Needs

a. Five to ten fire volunteers
b. Five to ten other related volunteers

5. **Goals at becoming more effective**
    a. Continue training opportunities

6. **Composition of Department**
    a. 16 volunteers for fire and rescue
    b. Four support volunteers plus the board
    c. One structure engine
    d. One Type 4 wildland engine, most used
    e. One Type 3 wildland engine, second most used
    f. Two Type 6 wildland engines, third most used
    g. One 2,000 gallon tender

7. **Current activities to ensure local communities are adapted to wildfire**
    a. Continued education through Facebook and ODF Firewise materials

8. **Ways the community could adapt to more frequent wildfires**
    a. More concerted effort on the part of Wasco County and Oregon Department of Transportation to remove roadside fuels and maintain ditches and right of ways
    b. Continued individual property owners meetings to help improve condition of property
    c. Work with farmers to create natural fire breaks using fields and farming areas

9. **Equipment Needs**
    a. One tender

10. **Facility Needs**
    a. New five-bay fire station

11. **Major Hurdles**
    a. Revenue
    b. Volunteers
    c. Community ignorance

Wamic Rural Fire Protection District

No response received.

Confederated Tribes of Warm Springs Fire & Safety

No response received.

Federal Agency Partners

Bureau of Land Management

1. **Current Projects**
    a. No current fuel treatment projects scheduled.

b. Continue the general campfire closure order annually from June 1 – October 15.
c. BLM will continue to manage special areas in its jurisdiction, including the National Wild and Scenic River corridors along the Deschutes and White Rivers, in addition to the Lower White River Wilderness.

Oregon Department of Forestry

1. Current Projects
    a. ODF is actively involved in a local interagency Fire Prevention Cooperative. This group meets regularly to discuss and plan activities and outreach strategies to help get messages out regarding fire prevention, safety, defensible space, fire restrictions, etc. This entails activities such as:
        i. Team Teaching events through coordination with local school districts
        ii. Involvement with local safety events, County fairs, hunter info booths, etc.
        iii. Messaging to the public through newsprint, radio, movie theater ads, etc.
    b. ODF participates on the Wasco Forest Collaborative as the Wasco County fire representative. This allows collaborative engagement for federally managed projects on the Mt. Hood National Forest as well as all lands within Wasco County.
    c. Participation on local Committees and planning/outreach events such as:
        i. Natural Hazard Mitigation Plan (NHMP)
        ii. CWPP
        iii. CPAW

    d. Regular meetings and coordination efforts with local federal, state, county agencies as well as Rural Fire Districts to:
        i. Build and strengthen relationships to share information between partners
        ii. Coordinate planning around shared resources
        iii. Evaluate improved communications (repeaters, channels, equipment, dispatch, etc.)
        iv. Identify lessons learned for continuous improvement
        v. Host public meetings and outreach events
    e. ODF is responsible for implementing and enforcing fire prevention laws on lands protected by ODF. This includes restrictions and shut down requirements tied to:
        i. Fire Season Declaration & Termination of Regulated Use Closure (public use restrictions)
        ii. Burn bans (coordinated with county and fire districts)
        iii. Industrial Fire restriction & enforcement for fire prevention on logging operations
        iv. Working with railroad companies to maintain fuel hazards along rail lines

2. Suggestions to reduce fire ignition on public lands within jurisdiction
    a. Submit a new Joint Chiefs project application on the footprint just north of the current project boundary (Rail Hollow, Friend area). ODF is currently working on a National Fire Plan grant for fuels reduction through removal of dead & dying trees in Central Wasco County. Looking to incorporate $25K in funding to Wasco County Planning Department as part of this funding request.
    b. ODF is currently working on a National Fire Plan grant for fuels reduction through removal of dead & dying trees in Central Wasco County. Looking to incorporate $25K in funding to Wasco County Planning Department as part of this funding request.

3. **Goals to become more effective**
    a. Support and provide technical assistance for the rollout of development standards in the WUI.
    b. Continue to promote more landowner awareness of defensible space (including long term maintenance).
    c. Promote voluntary fuels treatment on private lands.
    d. Provide public education/understanding of fire risks/threats.
    e. Encourage federal land management practices that reduce fire severity.
    f. Be involved in discussions about how to best administer fire suppression on private contiguous properties planted with dryland wheat.

4. **Current activities to ensure local communities are adapted to wildfire**
    a. ODF actively applies for, manages and supports financial assistance programs that result in hazardous fuel reduction, improved forest health, Oak restoration, defensible space and landowner education. We are currently involved with the following activities in this regard:
        i. Administration of a National Fire Plan fuels reduction grant on private lands in the Sevenmile area.
        ii. Administration of a Landscape Scale Restoration grant for Oak habitat restoration and fuels reduction on private and ODFW lands in Central Wasco County.
        iii. Administration of a National Fire Plan fuels reduction grant, using ODF's Thinning Crew on ODFW lands in Southern Wasco County.
        iv. Administration of fuels reduction and Oak habitat restoration on ODFW land as part of the Central Wasco County All-Lands Joint Chiefs project (Pine Hollow, Wamic area).
        v. Administration of Good Neighbor Authority funds, where ODF assists with layout, brushing, thinning, mastication and Rx fire line prep work on USFS lands.
        vi. Technical support to Natural Resources Conservation Service (NRCS) for fuels reduction work on private lands through their Environmental Quality Incentives Program (EQIP) program.
        vii. Technical support to FSA for post fire restoration through their Emergency Forest Restoration Program (EFRP) on the South Valley Road, Mosier Creek and White River Fires.
        viii. Administration of fuels reduction work on USFS National Scenic Area lands with ODF Fire crews in the Gorge.

5. **Major Hurdles**
    a. More funding is needed to support the efforts needed for fuel treatment and other projects needed to reduce future wildfire potential.

US Forest Service – Barlow and Hood River Ranger Districts

1. **Current Projects**

Current fuel reduction activities are underway in the Wamic, Tygh Valley, and Pine Hollow areas. The Mt Hood National Forest is currently implementing vegetation and fuels management activities associated with the Rocky Mountain Restoration Initiative. Primary objectives for this project were to thin dense stands, reduce surface fuels and put prescribed fire back onto the landscape.

The Forest was awarded a multi-year, multimillion dollar grant in 2020. We were awarded this funding for our Central Wasco County All Lands Project. This is a cross boundary effort to reduce fire risks on public and private lands. Our focus is tied to the Rock Creek area, and the communities mentioned above. We continue

to receive additional fuels dollars to implement fuels reduction activities on the Barlow RD. It is recognized at the Regional and National level (of the US Forest Service) that there is a need on the Mt Hood NF to conduct these activities. If you would like to know more about the Joint Chief's project and its purpose, let me know.

2. Goals to become more effective

Future projects on the East Zone will continue to have an emphasis on thinning stands, reducing fuels and getting prescribed fire back onto the land. One of the primary aspects of these projects is looking at how departed the area is from the natural condition. We are looking at areas that have missed one or more fire intervals, as a result of management actions, in most cases, that is due to wildfire suppression. We look at the fire regime and the fire regime condition class. The more departed an area is from its natural fire regime, the greater chances of a large, more severe wildfire impacting that area.

US Forest Service – Columbia River Gorge National Scenic Area (NSA)

1. Current Projects

Our highest priority in Wasco County is to continue our Seven Mile hazardous fuels treatments. This is the thinning and burning that has been underway for ten years. The goal of these treatments are to accentuate our potential to stop the negative effects of large wildland fires and create opportunities to control them without damaging natural resources. Secondly we are pursuing new NEPA project that will allow us to treat areas not covered under the current Seven Mile CE.

a. Ongoing fuels treatment on USFS NSA lands between Mosier and The Dalles:
    i. Thinned and burned over 10,000 slash piles in this area over six years. These burning efforts was supported by local fire districts and were co-sponsored by the Wild Turkey Federation and Rocky Mountain Elk Foundation.
    ii. Eliminated erosion in fuel treatment areas.
    iii. Conducted three under-burns to eliminate invasive vegetation.
    iv. Implemented experimental study near Rowena Creek to study effectiveness of burning with various herbicide applications.
    v. Used old roadway corridors to enhance fuel breaks in the Sevenmile area.

2. Ongoing Goals to Become More Effective

a. Develop Operational Delineations (PODs) with fire districts and ODF.
b. Develop interagency agreements to conduct active thinning, fuels reduction, and release of existing oak tree stands.
c. Continue to support ODF in competing for federal grants to complete fuel treatment compensation on private lands.
d. Remain active participants in the development of four Fire Danger Rating Operating Plans in the NSA.
e. Support and participate in Fire Councils and CWPPs throughout the Gorge to assist partners in restoration and resiliency work.

3. Current and past activities to ensure local communities are adapted to wildfire

a. Facilitate educational presentations about fire prevention, mitigation, and safety.

b. Continue media outreach to general public, NSA property owners regarding updated fuel treatment accomplishments and plans.
c. Continue to convene the Eastern Gorge Collaborative group.
d. USFS NSA staff, as well as ODF, OSFM, BLM, and structural fire districts collaborate regularly on fire prevention efforts via the Mid-Columbia Fire Prevention Co-op.