GRANT COUNTY, OREGON
Community Wildfire Protection Plan

Photo by Todd McKinley – Canyon Creek Complex Fire 2015

Presented to Grant County Court
April 28, 2021

Prepared for:
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Signatures:

As required by the HFRA, the undersigned representatives of the Grant County Court, Grant County Fire Defense Board and Oregon Department of Forestry acknowledge that they have reviewed and agree with the contents of this plan.

Grant County Court

Scott W. Myers — 4/28/2021
Scott Myers, Grant County Judge — Date

Jim Hamsher — 4/28/2021
Jim Hamsher, Grant County Commissioner — Date

4/28/2021
Sam Palmer, Grant County Commissioner — Date

Grant County Fire Defense Board Chief

Ron Smith — 4-28-2021
Ron Smith, Grant County Fire Defense Board Chief — Date

Oregon Department of Forestry

Rob Pentzer for Mike Shaw — 10/19/21
Mike Shaw, District Forester, Central Oregon District — Date

EXECUTIVE SUMMARY

The Healthy Forests Restoration Act (HFRA) of 2003 provides the impetus for wildfire risk assessment and planning at the county and community level specifically identifying "Wildland Urban Interface Communities Within the Vicinity of Federal Lands That are at High Risk From Wildfire" (H.R. 1904-3 Sec. 101, (1) (A) (i)). HFRA refers to this level of planning as Community Wildfire Protection Plans (CWPP). ***The CWPP allows a community to evaluate its current situation with regards to wildfire risk and to devise ways to reduce risk for protection of human welfare and other important economic, social or ecological values. The CWPP may address issues such as community wildfire risk, structure flammability, hazardous fuels and non-fuels mitigation, community values, community preparedness, and emergency procedures***. The Cooperating Group provides oversight to the development and implementation of the CWPP in Grant County.

The Grant County Community Wildfire Protection Plan Grant County CWPP was initially prepared in 2005 followed by an update in 2013. This document is the 2021 revision of the earlier plans which continue to provide a solid foundation. The content of the previous Grant County CWPPs was to meet the intent of the National Fire Plan (NFP) and HFRA. These documents were prepared to support the planning efforts of all agencies and districts that participate in wildland fire management throughout Grant County. A recent report by Headwaters Economics on relative wildfire risk predicted the likelihood of wildfire and risk to homes in Grant County relative to the rest of the state is 86 percent and the nationwide percentile for wildfire likelihood and risk to homes at 96 percent. The primary focus of the Grant County CWPP is the numerous improvements and homes that occur throughout the Wildland-Urban Interface (WUI). A significant portion of the County consists of "Intermix Communities" where structures are scattered throughout the wildland area with no clear line of demarcation and wildland fuels are continuous within and outside of developed areas. Human life and welfare are values at risk to wildfire because of the buildup of hazardous fuels around communities and structures, poor emergency vehicle ingress and egress, lack of communications, inadequately trained and/or equipped fire suppression authorities, or complete absence of structural fire suppression authorities. Throughout the county there are scattered small communities and ranches with no structural fire protection because they are outside an organized fire district. Other economic values at risk include businesses, timberland, farmland, ranchland, hunting and other recreational land, historic and cultural sites, and critical infrastructure.

Wildland fire is a common occurrence in Grant County and lightning causes the large majority of those fires. Several wildland firefighting agencies are present in the county and are very effective at putting out fires rapidly. However, the demographics of Grant County continue to shift and as the number of structures in the WUI has increased so has the cost of firefighting. Protecting improvements during wildland firefighting is more costly.

Natural resource management policy and changing ecological conditions have interacted in ways that have resulted in hazardous fuel situations throughout Grant County. These hazardous fuel conditions are the result of historic fire suppression policy, juniper invasion into sagebrush, grasslands and timberlands, changing climatic patterns, and lack forest management activity on federal lands. The large accumulation of fuels has made most areas in the county very vulnerable to potentially catastrophic wildfire with the resulting loss of important economic, social, cultural and ecological values.

Excess fuels around communities, ranches, and structures create problems for fire protection and suppression. Fuels may consist of conifer and juniper forests, sagebrush, grasslands, and weed fields. Finer fuels such as grasses, sagebrush and weeds are highly flammable, burn rapidly, and resist control. Forested areas with heavy standing and/or down fuels can burn with extreme intensity. A coordinated effort is needed in the County that includes all the fire and emergency response authorities, private landowners and County and city officials to effectively manage hazardous fuels and reduce the risk of wildfire.

Currently, wildfire suppression authorities in the Grant County include the Oregon Department of Forestry (ODF), the United States Forest Service (USFS), the Bureau of Land Management (BLM), the Prairie City Rural Fire Department, the John Day Rural Fire Department, and the Mt. Vernon Rural Fire Department. Agreements exist among all the fire authorities, including the various city departments, for mutual aid and support in the event of a wildfire incident. However, each fire authority operates under regulations that dictate their specific area of responsibility.

Numerous changes and improvements as a result of 2013 Grant County CWPP revision have been implemented. These changes include the formation of fiver official Firewise Communities and the establishment of a GIS mapping system. When the 2015 Canyon Creek Complex fire struck the County was able to provide maps through the GIS system. Although over 40 homes and numerous outbuildings were destroyed the Pine Creek Firewise Community survived that fire with only the loss of some outbuildings – a testimonial to the value of Firewise Communities. The GIS mapping which continues to progress has proved to be invaluable to emergency services personnel. Grant County, the home of the first formally recognized Firewise Communities in eastern Oregon (Pine Creek, Ritter, Middle Fork, Upper Laycock Creek Road) has been a leader in this region. Several other areas in the County are interested in becoming "Firewise" and are currently in various stages of the process. The Grant-Harney Fire Prevention Co-op has been revitalized and has been instrumental in promoting fire prevention throughout the County at every opportunity. The USFS has been proactive in creating fuel breaks along evacuation routes, heavily used Forest Service roads, and next to private lands as well as aggressively thinning thousands of acres of federal land at risk from wildfire. ODF has been proactive in providing grant funds to private landowners for fuel reduction on their lands.

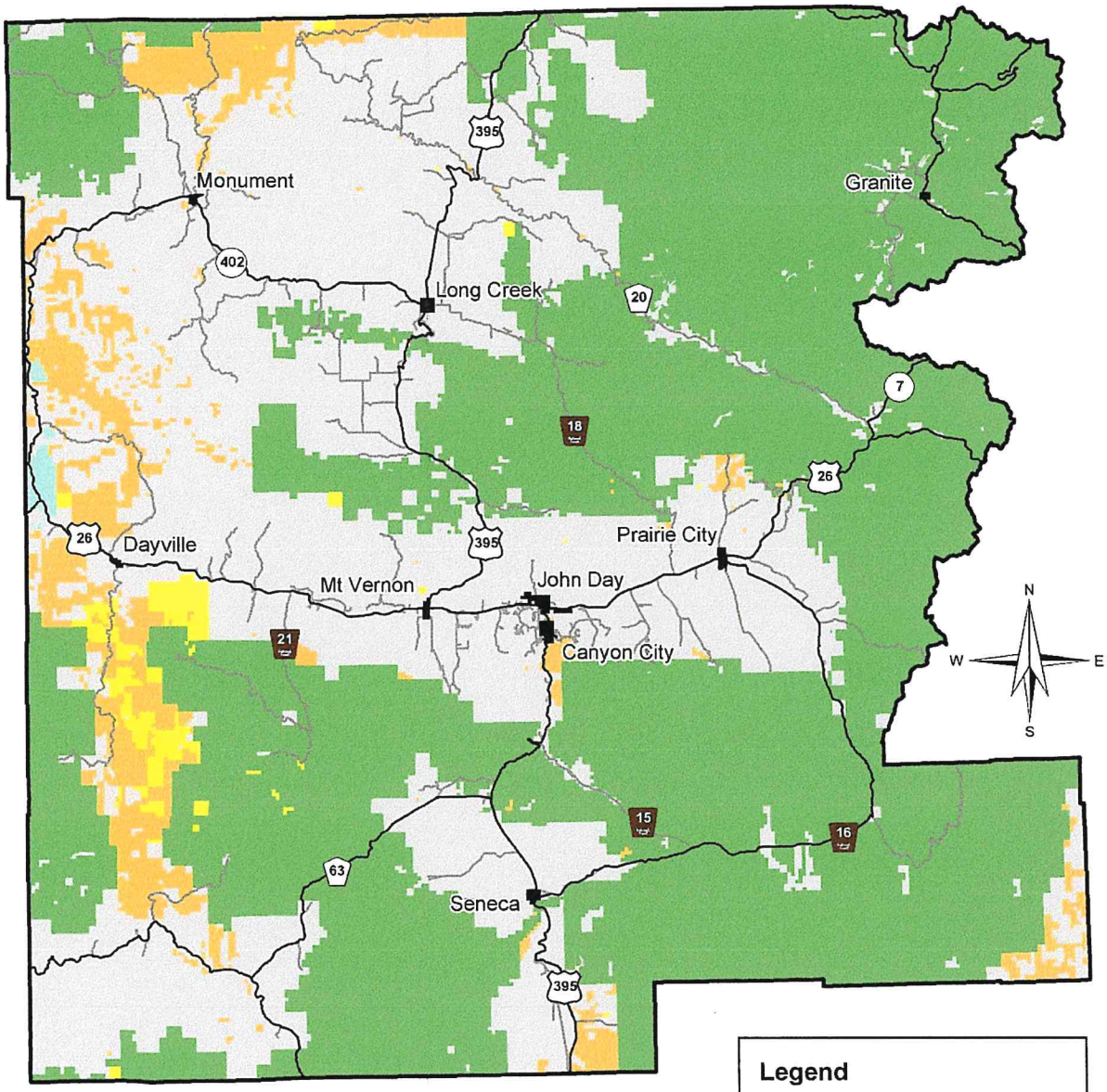
Public outreach for the 2021 CWPP revision has been ongoing in the County through various interactions with Firewise Communities, emergency services personnel, County and city officials, various public meetings and interactions with natural resource agencies personnel.

The 2021 CWPP revision utilizes the Community Risk Reduction model a promoted by the National Fire Academy (NFA) and focuses on 1) Fuels Reduction, 2) Prevention and Education, and 3) Emergency Services as the foundation for the Grant County wildfire protection and mitigation strategy.

COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Project Area



1 inch = 10 miles

0 5 10 20 30 40 Miles

Legend

Landownership

- United States Forest Service
- Private
- National Park Service
- Bureau of Land Management
- State of Oregon

Grant Soil and Water Conservation District
721 South Canyon Boulevard John Day, Oregon 97845
Phone: (541) 575-0135 Website: www.grantswcd.net
Serving the Citizens of Grant County for over 60 Years!

December 1, 2020

LIST OF ACRONYMS AND ABBREVIATIONS

BLM Bureau of Land Management
CWPP Community Wildfire Protection Plans
FEMA Federal Emergency Management Agency
FEPP Federal Excess Personal Property
FERC Federal Emergency Regulatory Commission
FRCC Fire Regime Condition Class
GIS Geographic Information System
HFRA Healthy Forests Restoration Act
NFPA National Fire Protection Association
NPS National Park Service
ODF Oregon Department of Forestry
USFS US Forest Service
WFU Wildland Fire Use
WUI Wildland Urban Interface/Intermix

GRANT COUNTY
Community Wildfire Protection Plan

Table of Contents

1.0 INTRODUCTION

1.1 CWPP Purpose and Process

The Healthy Forests Restoration Act (HFRA) of 2003 provides the impetus for wildfire risk assessment and planning at the county and community level and specifically refers to communities that are at risk of fire coming off of Federal Lands. HFRA refers to this level of planning as Community Wildfire Protection Plans (CWPP). The purpose of the CWPP is for communities to take full responsibility and advantage of wildland fire and hazardous fuel management opportunities offered under HFRA legislation. The CWPP provides for the United States Forest Service (USFS), the Bureau of Land Management (BLM), and other federal agencies to give consideration to the priorities of local communities for forest and rangeland management as well as hazardous fuel reduction projects.

As stated throughout this plan, the process of revising and updating the CWPP will help Grant County clarify and refine its priorities for the protection of life, property, critical infrastructure, significant recreation and scenic areas, and landscapes of historical, economic, or cultural value in the Wildland Urban Interface/Intermix (WUI).

The CWPP allows a community to evaluate its current situation with regards to wildfire risk and plan ways to reduce risk for protection of human welfare and other important economic, social, historic, cultural or ecological values. The CWPP may address issues such as ***community wildfire risk, structure flammability, hazardous fuels and non-fuels mitigation, community preparedness, and emergency procedures.*** The CWPP should be tailored to meet the needs of the community. The CWPP process consists of the following steps:

- Organize the CWPP Committee – The committee should consist of local government, local fire authority, and state agencies responsible for forest management.

- Federal Agency Involvement – Representatives from the USFS and the BLM should be engaged in the CWPP process as consultants.

- Community Interested Parties – The CWPP committee must involve interested community members, private landowners, business, stakeholders, and interest groups in the planning process.

- Community Base Map – A community base map should be developed that may illustrate important features such as landownership, structures, roads, surface water, fire districts, or major utility corridors. The map's importance is that it illustrates community values from which recommendations concerning wildfire planning can occur.

- Develop a Community Wildfire Risk Assessment – The risk assessment will provide critical information to the CWPP committee to make informed decisions. Members should be actively involved in this step. Items that may be addressed include such things as risk of

wildfire occurrence, structure hazard and risk, economic, social and ecological values at risk, local fire authority, preparedness and capability, and hazardous fuels.

- Hazard Reduction Priorities and Recommendations to Reduce Structure Flammability – Mitigation projects are identified and designed to reduce the risk of wildfire loss to the community and other values. Mitigation projects should be prioritized and may include such things as hazardous fuels management, improving the wildfire suppression capability of the local fire authority, developing a permanent water supply, reducing structure flammability, improving emergency procedures, and increasing public education.

- Develop an Action Plan and Assessment Strategy – The action plan should identify who will do what by when. Identify areas of concern and integrate common values. Community funds for hazard reduction projects through grants need to be obtained. The finished CWPP is essential for seeking grant money. Also, an assessment strategy needs to be in place to insure that the CWPP remains current and relevant for future years.

- Finalize the CWPP – The committee needs to agree and approve the CWPP and make sure that the recommend actions are implemented in timely manner.

1.2 Community Wildfire Plan History and Accomplishments

The original Grant County CWPP was prepared in 2004 and 2005. The Grant County Court adopted this hallmark plan, one of the first completed in the state of Oregon, on July 6, 2005. In 2013 a comprehensive endeavor by the coordinating group resulted in the updating of the original 2005 plan. The 2013 Grant County CWPP was the result of a county wide effort initiated to reduce forest fire risk to citizens, to the environment, and to the quality of life within Grant County. Citizens, fire districts, elected officials, and state and federal agency representatives worked together to create a plan that would be successful in implementing fuels reduction projects, in promoting fire prevention education campaigns, in establishing Firewise Communities, in establishing vital systems to improve communications and mapping, in revitalizing the Grant-Harney Fire Prevention Co-op (GHFPC) and in other fire and emergency services related programs. Both the 2005 and 2013 Grant County CWPPs continue to provide a solid foundation for the 2021 revision.

Accomplishments. From 2005 to 2010 the Grant County CWPP was administered and managed by the Oregon Department of Forestry. Annual meetings to review the previous year's accomplishments and to discuss plans for the upcoming year were held. Records were not kept with the CWPP on the actual acres treated on the ground by the various agencies. However, agency cooperation and participation in the annual meetings was good and endeavors to reduce fuel in the WUI were ongoing.

In 2013 with implementation of the revised CWPP the Grant County CWPP/Firewise Coordinator took over the management and implementation of the program in coordination with

county, federal, state and local emergency services representatives. In addition to the annual review of fuel reduction accomplishments and fuel reduction planning for the upcoming years substantial progress has been made in implementing other recommendations in the 2013 CWPP. These include but are not limited to:

- Development of county wide GIS mapping system through a partnership with the Grant County Soil and Watershed District (SWCD)
- Updating and improving the 911 emergency system in partnership with Grant County Dispatch and SWCD
- Provided mapping services, as a direct result of the GIS mapping work implemented from the 2013 CWPP, to the Great Basin Type 1 Incident Management Team, the Sheriff's office, and other agencies during the Canyon Creek Complex Fire in 2015.
- Annually updating information on ownerships throughout the county in partnership with the Grant County Assessor's Office and SWCD
- Creation of a "Map Book" series which identifies locations, of homes by rural address throughout the County. Mapbook locations can be downloaded onto tablets or smart phones for use in the field.
- Designated evacuation zones throughout the county in conjunction with the Sheriff's office, Emergency Management, ODF, USFS and Grant County Fire Defense representatives.
- Establishment of five Firewise communities officially recognized by the National Fire Protection Association (NFPA)
- Ongoing fuel reduction projects implemented by state and federal agencies
- Recognition of these efforts in a very rural community at the national and state levels through a presentation at the national Firewise Workshop in Myrtle Beach, South Carolina; through presentations at the State Fire Prevention workshops in 2018 and 2020; through a presentation at the Northeast Oregon Fire Prevention workshop in La Grande in 2019; and through two presentations at the Eastern Oregon Tree School in Baker City hosted by the Oregon State Unversity Extension Service.
- Utilization of the Grant County CWPP Coordinator to assist in testing and providing feedback to Oregon State University on the Oregon Wildfire Risk Explorer program.

Pine Creek Firewise dedication on the left and Ritter Firewise dedication on the right.

Clockwise from above: Middle Fork, Upper Laycock Creek Road and Canyon Creek Lane Firewise Communities.

1.3 Grant County Need for Updated CWPP

The Grant County CWPP has been in effect for the past 8 years. A look back at those years provides insight on the approach that will best utilize the strengths in the original plans as well as addressing areas that would benefit from improvement in the updated 2021 plan.

The strengths and successes of the 2005 plan include a significant number of acres that received fuels reduction treatments on both federal and private lands. In conjunction with the Grant County CWPP and the implementation of the HFRA, collaboration of various stakeholders has become extremely successful in the county. The Blue Mountains Forest Partners is a collaborative group that has been widely recognized for its effectiveness and success. This partnership resulted from an earlier collaborative effort for a fuels reduction project on Canyon Creek. A biomass plant in the form of a compressed pellet facility was installed at a local facility in John Day.

Areas that were less successful pivot around the lack of a coordinator or specific individual responsible for coordinating and monitoring the implementation of the plan. Annual meetings were not conducted, data was not documented and kept up to date, changes to the WUI that were made at the county level were approved but documentation was not archived with the CWPP. Areas for improvement based on the "lessons learned" from implementation of the 2005 CWPP occur throughout this document.

The updated Grant County CWPP will be an umbrella plan that will provide information and support Firewise Communities and other local-level fire prevention efforts while utilizing

the foundational 2005 and 2013 community wildfire plans. The revised Grant County CWPP will include a county-wide wildfire hazard assessment, county-wide community base map, and a discussion of the county's wildfire suppression situation. The 2013 Grant County CWPP suggested that the various communities throughout the County prepare CWPP's for their local areas. While the suggestion is sound it was never implemented anywhere in the County. Instead several Firewise Communities were established and the "Firewise Community Assessment" took the place and served the same purpose as a CWPP.

CWPPs and Firewise Communities help protect and prepare communities in the event of a wildfire. If your community resides in the WUI and you believe there is a risk of wildfire, a CWPP or a Firewise Community can be an excellent tool to gain community support to raise awareness about wildfire threat and to gain support to mitigate hazards. The most successful programs are those with grass roots efforts where homeowners and landowners have personal investments in the program.

- Communities benefit from a CWPP by being more prepared for a wildfire.
- A CWPP can influence where and how federal monies are spent on hazardous fuels reduction.
- Communities with CWPPs can compete competitively for public funding to implement hazardous fuels reduction projects.
- Communities can work cooperatively with technical and public safety experts to reduce vulnerability to wildfire hazards in their communities.
- Communities can take ownership of efforts to reduce wildfire hazards in their communities.

Stakeholder input is the best method to achieve the best products, local knowledge, and community input. Stakeholder input will identify and address specific needs presented by the communities.

The focus of the 2021 Grant County CWPP is based on predetermined "evacuation zones" defined by the communities of Bear Valley, Canyon City, Dayville, Fox Valley, Granite, Izee, Logan Valley, Long Creek, Lower Middle Fork, John Day, John Day Fossil Beds, Monument, Mt. Vernon, Prairie City, Ritter, Silvies, and the Upper Middle Fork John Day.

Wildland fire is a common occurrence in Grant County. Historic fire occurrence was a major ecological influence in shaping the natural vegetation. The threat of wildfire continues today. However, wildfire risk to human welfare and economic, social and ecological values is more serious today than in the past because of the buildup of hazardous fuels, construction of houses in proximity to forests and rangelands, increased outdoor recreation, and a lack of public appreciation of wildfire. Lightning-caused fires have been the dominant ignition source for hundreds of years and continue to be the main cause of fire. However, human-caused fires have

occurred and their frequency will likely become more numerous as the County's population grows and outdoor recreation increases.

Thunderheads build over Rudio signaling a potential lightening storm.

Natural resource management policy and changing ecological conditions have interacted in ways that resulted in hazardous fuel situations throughout the County. These forces include historic fire suppression policy, juniper and pine invasion into meadows, sagebrush and grasslands, invasive weeds, and changing climate patterns. The accumulation of hazardous fuels may set the stage for catastrophic wildfire occurrence in the County, resulting in the loss of important economic and ecological values. There are varieties of fuels around communities, ranches, and structures that create problems for fire protection. Fuels include ponderosa pine and juniper forests, sagebrush habitat, grasslands, and weed fields. Many of these fuels such as dried grass and weeds are highly flammable, burn rapidly, and resist control. A coordinated effort among all fire authorities and private landowners in the County is needed to manage hazardous fuels and reduce the risk of wildfire.

Currently, fire suppression authorities include the city fire protection departments for Canyon City, Dayville, Long Creek, Granite, Monument, Seneca and city/rural departments of John Day, Mt. Vernon, Prairie City; the Oregon Department of Forestry (ODF) Central Oregon Forest Protection District; the USDA Forest Service (USFS) Malheur, Ochoco, Umatilla and Wallowa Whitman National Forest; and the Burns, Prineville and Vale Bureau of Land Management. Mutual Aid Agreements exist among the municipal fire authorities for mutual aid and support in the event of a wildfire incident while State and Federal agencies have other interagency agreements. However, each fire authority operates under regulations that dictate their area of responsibility and specify limitations. The CWPP provides the means to identify wildfire risk, prioritize mitigation projects, improve public awareness, and improve fire authority coordination to better manage wildfire.

1.4 Community Risk Reduction

The 2021 Grant County CWPP revision will utilize a "Community Risk Reduction" (CRR) approach. The National Fire Academy (NFA) 1452, Guide for Training Fire Service Personnel to Conduct Community Risk Reduction, 2015 ed., defines community risk reduction this way: "Community risk reduction integrates emergency response with prevention. Community risk reduction involves identifying and prioritizing risks, selecting and implementing strategies, monitoring and evaluating activities, and involving community partners, all in an effort to better protect residents and firefighters."

1.5 Introduction to Wildfire

Wildland fire, defined as any non-structure fire occurring in the wildland, includes prescribed fire, wildland fire use, and wildfire. Prescribed fires are planned fires ignited by land managers to accomplish resource objectives. Fires that occur from natural causes, such as lightning, that are then used to achieve management purposes under carefully controlled conditions with minimal suppression costs is known as wildland fire use (WFU). Wildfires are unwanted and unplanned fires that result from natural ignition, unauthorized human-caused fire, escaped WFU, or escaped prescribed fire.

Prescribed fire in Grant County could be used to accomplish a number of resource management purposes, such as reducing the amount of hazardous fuels, improving plant species diversity, increasing livestock forage production, abating noxious and invasive weeds, and improving wildlife habitat. Multiple resource management objectives are often achieved concurrently.

Prescribed fire could occur either in a defined area or in localized burn piles. Prescribed fires are used to burn vegetation in place over the landscape and can vary in the number of acres burned. Burn piles are heaps of woody fuel that are accumulated after a mechanical treatment. Consistency with Oregon State fire and air quality laws and BLM would occur. ODF and County policy would be maintained during prescribed fires. Acceptable burn days would be determined in consultation with ODF and local agencies.

Fire risk is the probability that wildfire will start from natural or human-caused ignitions. Fire hazard is the presence of ignitable fuel coupled with the influences of terrain and weather. The nature of fuels, terrain, and weather conditions combine to dictate fire behavior, rate of spread, and intensity. Wildland fuel attributes refer to both dead and live vegetation and include such factors as density, fuel depth, continuity, loading, vertical arrangement, and moisture content. Structures are also a fuel source. Fire tends to burn more rapidly and intensely upslope than on level terrain. However, evening sundowner winds may rapidly drive wildfire downslope.

Weather conditions such as high ambient temperatures, low relative humidity, and windy conditions favor fire ignition and erratic fire behavior. Natural and human-caused fire has long been an integral part of vegetation communities in the County. Lightning-ignited fire is a natural component of Grant County ecosystems, and its occurrence is important to maintaining the health of forest and rangeland ecosystems. Native Americans used fire for such things as hunting, improving wildlife habitat, and land clearing. As such, many of the plant species and communities are adapted to recurring fire through phenological, physiological, or anatomical attributes. Some plants such as lodge pole pine and western wheatgrass require reoccurring fire to persist.

Fuels affect fire behavior and are the one element that can be manipulated. Wildland fire authorities refer to fuels in terms of Fire Regime Condition Class (FRCC).

Fire Regime Description	Code
Less than 35 year fire return interval, low severity, usually non-lethal	I
Less than 35 year fire return interval, stand replacement severity	II
35 – 100 year fire return interval, mixed severity	III

Condition Class 1: Fire frequencies are within or near the historical range, and have departed from historical frequencies by *no more than one return interval.*
Condition Class 2: Fire frequencies and vegetation attributes have been moderately altered from the historical range, and fire frequencies have departed from historical frequencies by *more than one return interval.*
Condition Class 3: Fire frequencies and vegetation attributes have been significantly altered from the historical range, and fire frequencies have departed from historical frequencies by *multiple return intervals.* The risk of losing key ecosystem components is high.

European settlers, land use policy, and changing ecosystems have altered fire behavior and fuels accumulation from their historic setting. European settlers into Grant County changed the natural fire regime in several interrelated ways. The nature of vegetation (fuel) changed due to land use practices such as homesteading, livestock grazing, agriculture, water development, and road construction. Livestock grazing reduced the amount of fine fuels such as grasses and forbs, which carried low-intensity fire across the landscape. In addition, continuous stretches of forest and rangeland fuels were broken-up by land-clearing activities. In many instances the removal of the natural vegetation allowed introduced weedy plants to colonize and occupy large expanses of land. The establishment of cheatgrass and other annual weeds are examples. Many of these weedy plants become flashy fuels as they age, causing fires to burn faster and hotter than with normal wildland fuels. The invasion of western juniper into big sagebrush stands and grasslands has also increased fuel loads and changed the nature of fire in these ecosystems. In

addition, more than a century of fire-suppression policy has resulted in an unusually large accumulation of hazardous fuels such as big sagebrush and western juniper in many forest and rangeland ecosystems. The presence of flashy fuels coupled with the large accumulation of naturally occurring fuels has created hazardous situations for public safety and fire management.

Modern-day land managers continue the use of fire by using prescribed fire as a tool to improve livestock grazing, wildlife habitat, control noxious weeds, or to reduce hazardous fuels. Their primary efforts in managing fuels and fire are to protect human life, economic values, and ecological values. Proactive and vigilant fire and fuels management is necessary to protect human welfare, as well as economic and ecological values from fire loss.

Wildfire behavior and severity are dictated by fuel type, weather conditions, and terrain. Fuel is the only variable that can easily be managed by reducing such attributes as load, continuity, or size class distribution. Such things as fuelbreaks, tree and shrub thinnings, defensible space, grass mowing or grazing, and green strips are ways to manipulate fuels to reduce the chances of fire occurrence or limit its severity. The CWPP focuses on fuel management on both private and public lands as a means to reduce its risk throughout Grant County.

1.6 Mission, Goals, and Objectives

The mission, goals and objectives for the revised Grant County CWPP were developed in response to input from county, state and federal officials; input from the Grant County Communications Task Force; and input gathered from community meetings and absentee landowner outreach. The mission statement in the 2005 Grant County CWPP was updated and expanded to better reflect the current needs of the county: ***"Reduce the risk from wildfire to life, property and natural resources and assist with resource management of lands within Grant County in a manner that benefits the local economy and maintains and enhances natural resources."*** Achieving the mission will be accomplished by utilizing the three pronged strategy focusing on ***fuels reduction, prevention and education, and emergency services.***

Protect against potential losses to life, property and natural resources from forest/range fires by

- Establishing and maintaining escape routes and adjacent corridors.
- Identifying areas at risk and hazards.
- Prioritizing and reducing fuel loads and wildfire risk to identified areas.
- Developing and utilizing widespread partnerships between citizens, agencies and stakeholders.
- Identifying tools and procedures for improving fire suppression.
- Educating landowners on the value of developing family evacuation plans

Continue to build and maintain active participation from various Fire Protection Districts and Emergency Services functions and by

- Identifying actions throughout the County for enhancing wildland and structural fire protection efforts.
- Improving pre-suppression planning for potential wildfire events.
- Identifying equipment and training needs.
- Continuing to improve various communication systems throughout the County.
- Continuing to strengthen the emergency management system in the County by improving coordination between County government, fire protection districts, state and federal agencies and other relevant community groups.

Identify incentives for fire protection and community participation by

- Accessing and utilizing federal and other grant dollars

Monitor the changing conditions of forest fire risk and citizen action over time by

- Establishing and maintaining a monitoring and evaluation process.

Institutionalize fire-related programs and sustain community efforts for fire protection by

- Promoting and actively participating in the Grant-Harney Fire Prevention Co-op.
- Holding an annual meeting to review progress and plan new projects.

Improve community safety through continued wildland fire education and awareness by

- Setting realistic expectations for reducing forest fire risk.
- Promoting visible projects and program successes.
- Developing strategies for increasing citizen awareness and action for fire and outreach prevention.
- Establishing Firewise communities

Preserve and promote the custom, culture, history and economic health of Grant County by

- Identifying economic developments and networking opportunities regarding fuel reduction and biomass utilization enterprises.
- Evaluation and implementing as appropriate recommendations from the Grant County Private Timberlands Project developed in 2013.

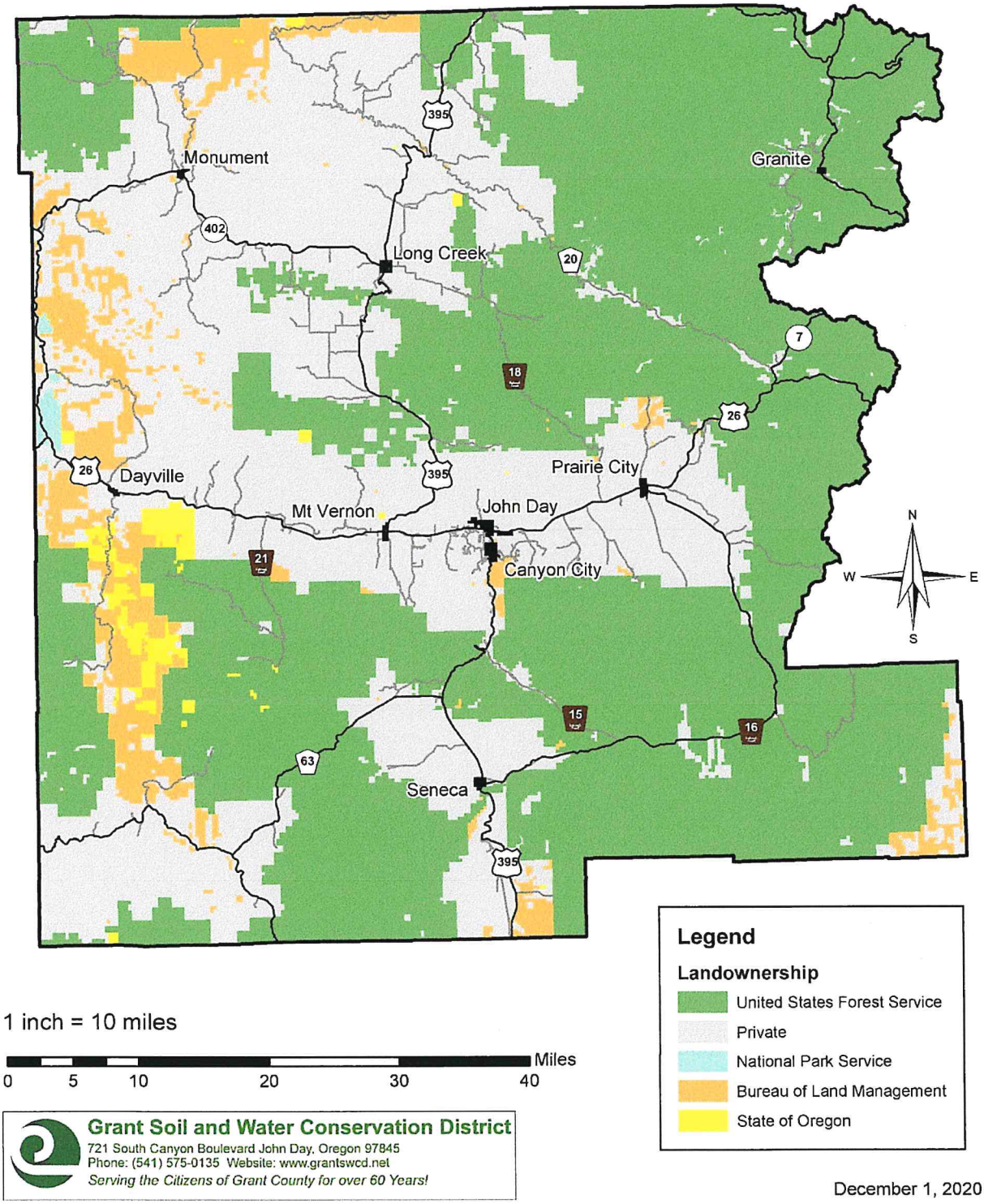
Engage the local workforce in work related to wildfire prevention and protection, and restoration of lands in Grant County by

- Hiring the local workforce for projects.
- Implementing relevant recommendations in the Private Timberlands Project.

COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Project Area



Grant Soil and Water Conservation District
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Phone: (541) 575-0135 Website: www.grantswcd.net
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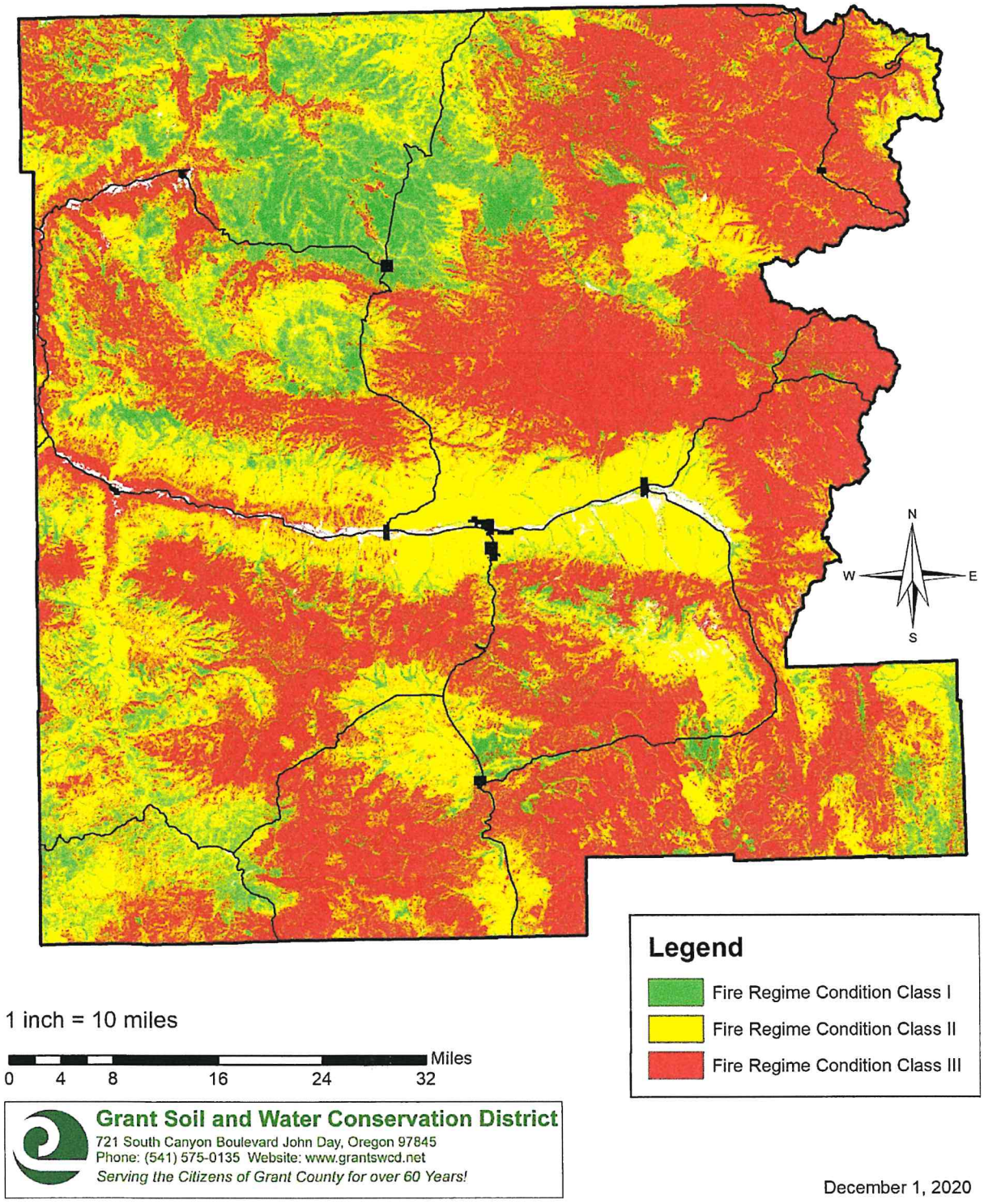
COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Fire Regime Condition Class (Stratum Scale)



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2.0 GRANT COUNTY PROFILE

2.1 History and General Information

Grant County, named for Ulysses S. Grant, is located in the northeastern part of Oregon and was created from portions of Wasco and Umatilla counties. Grant County is the seventh largest county in Oregon and shares boundaries with eight other counties, more than any other county in Oregon. The total area of Grant County is approximately 2,897,238 acres, of which about 1,111,279 acres is privately owned and about 1,756,883 acres is managed by federal, state, and county agencies for the public good.

The economy of Grant County historically has been mainly forest products, agriculture and livestock, mining, hunting, and recreation. Since the original Grant County CWPP was written in 2005, there has been a significant decline in the forest products infrastructure in the county primarily due to the lack of consistent and stable supply of suitable raw materials from Forest Service lands. Two sawmill facilities have closed and utilization of noncommercial material for clean chips and/or hog fuel has been inconsistent. Reductions in federal forest grazing permits acres, due to changes in management direction and litigation, have also influenced the local livestock industry as well.

The 2000 Census listed 7935 people residing in Grant County. The 2010 census revealed that the population in the county had declined to 7445 people. The 2019 census estimated the population at 7199 in the County. In 2020, the Covid-19 global pandemic dramatically impacted areas all over the world. Grant County, Oregon was no exception. Like other rural areas,, the County experienced a huge influx of new residents who left urban areas seeking less crowded conditions. Countless transients passed through while some made permanent camps on the national forests and some trespassed on private land. Both temporary and permanent housing in the County became extremely difficult to find. As of the writing of this document it is not clear how much the population in Grant County has increased and what changes have taken place in the demographics. What is clear, is the need for emergency services, search and rescue, fire prevention and fuels reduction is greater than ever before as urban populations move to rural areas with limited services.

Acres by Ownership

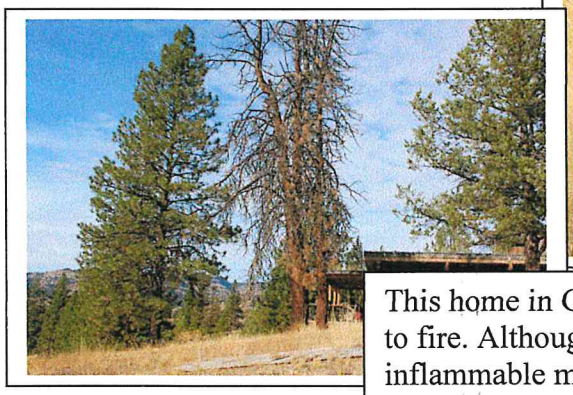
Private Lands (Residential, Ranches, Timber Companies, etc.) 1,111,279
US Department of Interior, Bureau of Land Management 171,481
US Department of Interior, National Park Service 6,688
US Department of Agriculture, Forest Service 1,578,714
- Malheur NF 1,128,931
- Ochoco NF 57,805
- Umatilla NF 309,144

Wallowa-Whitman NF 82,834
Grant County 800
Baker County 5
Ecotrust 14,064 (former Hood River County lands)
State of Oregon, Division of State Lands & Department of Fish & Wildlife 29,076
Total Acres = 2,897,238

2.2 Demographics

As with the federally owned lands, the population of Grant County is spread throughout the landscape. Private lands are interspersed with federal lands all occurring on a rugged landscape. Although the majority of the population is located in the John Day Valley along the main stem of the John Day River, there is an obligation to provide effective and timely emergency services to all areas of the County. Long distances, two lane road systems, and limited communications complicate these efforts.

The population in the outlying areas increasingly comes from more urban areas with limited understanding and knowledge of how wildfire moves across the landscape and how to mitigate the risks and protect their homes and other values at risk.

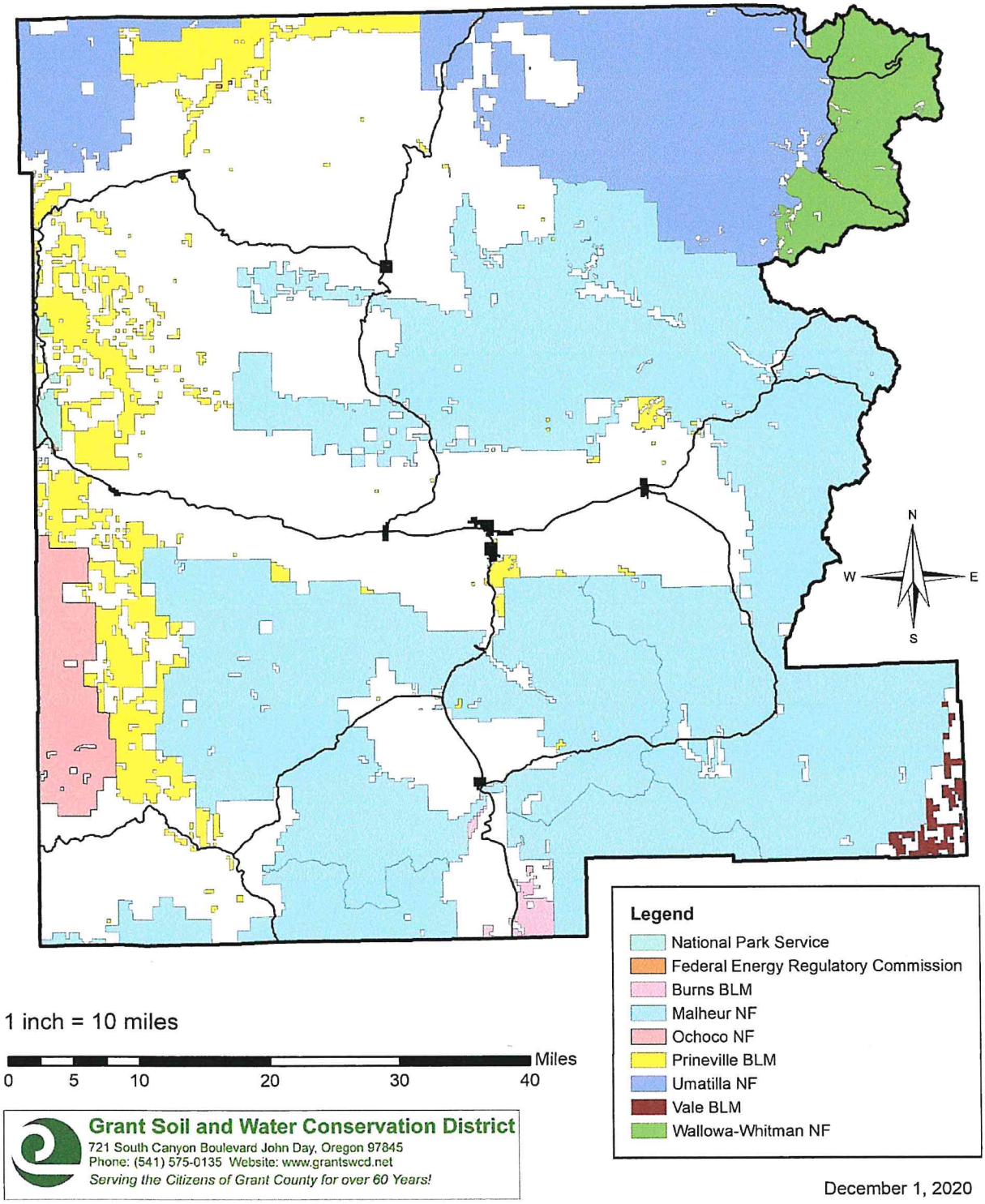


This home in Grant County is extremely vulnerable to fire. Although the house is constructed of inflammable materials, extreme heat from the grass on fire would break the windows. Numerous flammable attachments are present and the sod roof has dry grass on it.

COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Location of Federal Land Ownerships



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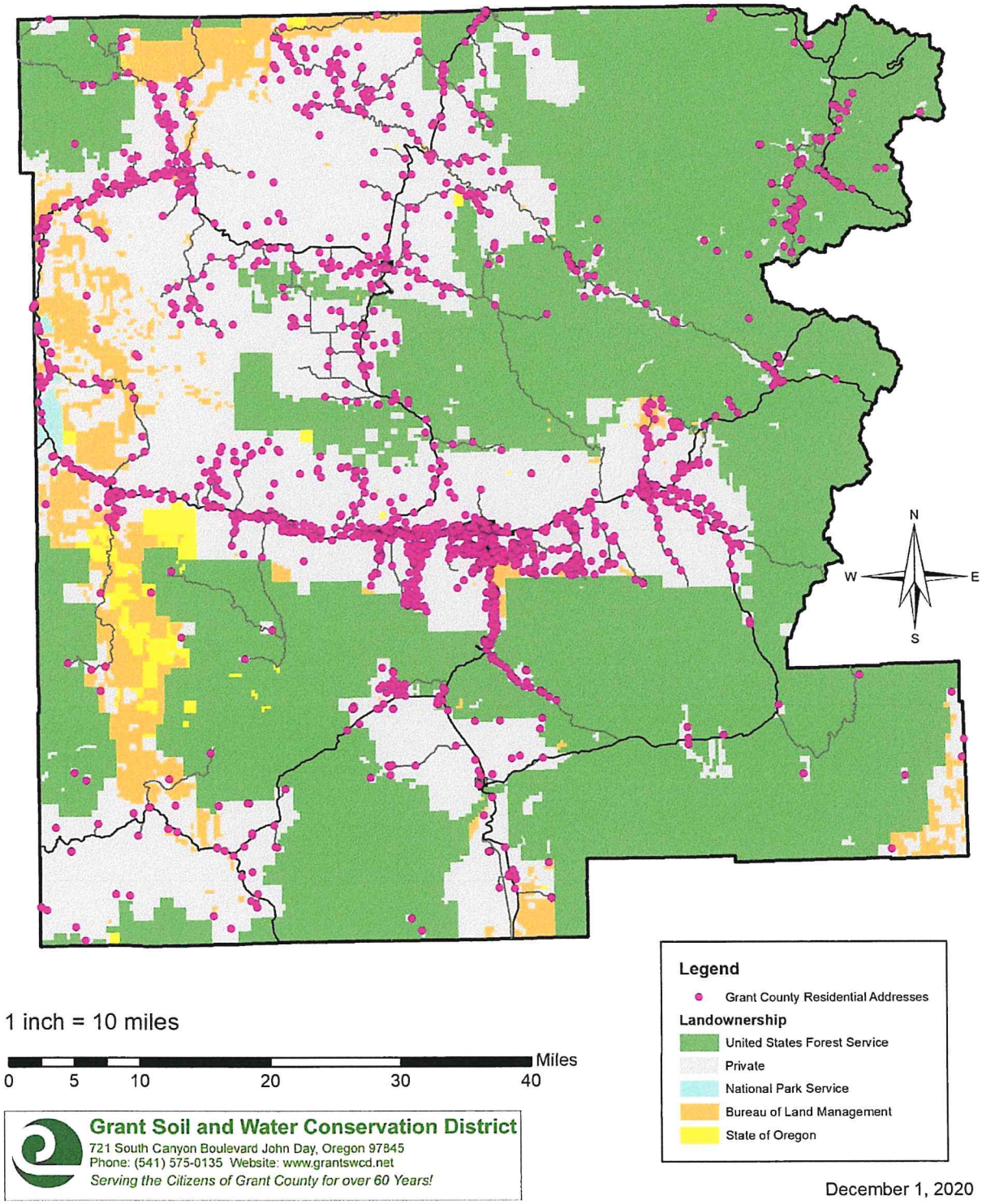
COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Residential Locations



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2.2 Existing Conditions

The topography in Grant County is diverse ranging from flat grassy plateaus to steep rocky canyons to mountain peaks. The elevation of the county varies from 1,820 feet on the John Day River near Kimberly, to 9,038 feet at the summit of Strawberry Mountain.

The John Day River system represents the major watershed in the county with most of the county drained by the four forks of the John Day River, all of which have their headwaters in the county. The John Day River system drains some 7,900 square miles, is the third longest free-flowing river in the "lower 48," and has more miles of federal "Wild and Scenic River" designation than any other river in the United States. From Grant County, the lower John Day River flows 184 miles to its confluence with the Columbia River. The southeastern corner of the county includes the headwaters of the Malheur and Little Malheur rivers, which eventually flow into the Snake River. The southern part of Grant County includes the northern-most reaches of the Great Basin including the Silvies River watershed which flows south into Harney Lake in the High Desert of Eastern Oregon. A small area in the southwestern corner of Grant County is in the Crooked River and Deschutes River watersheds. (Wikipedia 2009)

Grant County is an arid to temperate region, with average annual precipitation ranging from 9 inches near Picture Gorge, to over 40 inches in the Strawberry Mountains. Annual precipitation in the valleys averages between 12 and 14 inches, while the uplands or highlands of the county average between 16 and 24 inches. A great deal of the county's precipitation comes in the form of winter snow in the mountains. This snow pack is vital to recharge aquifers, resulting in spring run-off, and in-stream flows of water throughout the year.

Average temperatures in the county range from Monument, the warmest community, with average daily highs/lows of 90°/50 °F in July and 42°/22 °F in January; to the coolest community, Seneca, with average daily highs/lows of 80°/38 °F in July and 33°/8 °F in January. Extreme temperatures in the county show 30-year highs/lows of: 103°/-37 °F at Austin; 112°/-23 °F at John Day; 108°/-25 °F at Long Creek; 112°/-26 °F at Monument; and 100°/-48 °F at Seneca. (Wikipedia 2009)

Vegetation in Grant County varies from rangelands characterized by sagebrush and grasses to heavily forested areas. Forests in the southern part of the county generally consist of vast stands of ponderosa pine while areas in the northern portion of the county are represented by more mesic species that densely cover mountain slopes. The topography is quite varied characterized by valley bottoms and high elevation steppes and meadows; gentle rolling hills to deeply dissected canyons with significant rimrock to the Strawberry Mountains, a subchain of the Blue Mountains. Of special note is the evolution of the rangeland from sagebrush steppe toward juniper woodland. Western juniper is establishing vast stands throughout the County,

increasing fire hazards and altering watershed processes and functions. Finding effective solutions for reversing this trend is one of the major goals of this CWPP.

Photos taken from Canyon City Cemetery. Left photo looking northwest toward John Day. Right photo looking west toward Adams Drive. Heavy juniper stands occur both in town and throughout the area.

Photos at left taken from 7th St complex looking south and southwest. Photo above taken from 7th St complex looking south (Canyon Mountain in the background). Heavy juniper stands surround the city creating a significant hazard.

2.3 Wood Products, Biomass Utilization and Economic Development

Grant County continues to undergo change in the wood products industry. Malheur Lumber Company remains the only sawmill in the Grant -Harney county area. The 2013 Grant County CWPP discusses the pellet mill and other opportunities for wood by-product utilization that were taking place at Malheur Lumber during that time. Since then pellet mill operations have been suspended and a torrefaction pilot project is being implemented. If the torrefaction process/plant is successful it is possible that significant amounts of small wood fiber material may be utilized in that plant in the future. However, at this time it is unknown what the outcomes will be. In 2013 a 10 year stewardship contract was awarded by the Malheur National Forest to a local contractor. This contract has greatly accelerated the fuels treatments on the Malheur National Forest and has provided the mill with a reliable supply of raw materials.

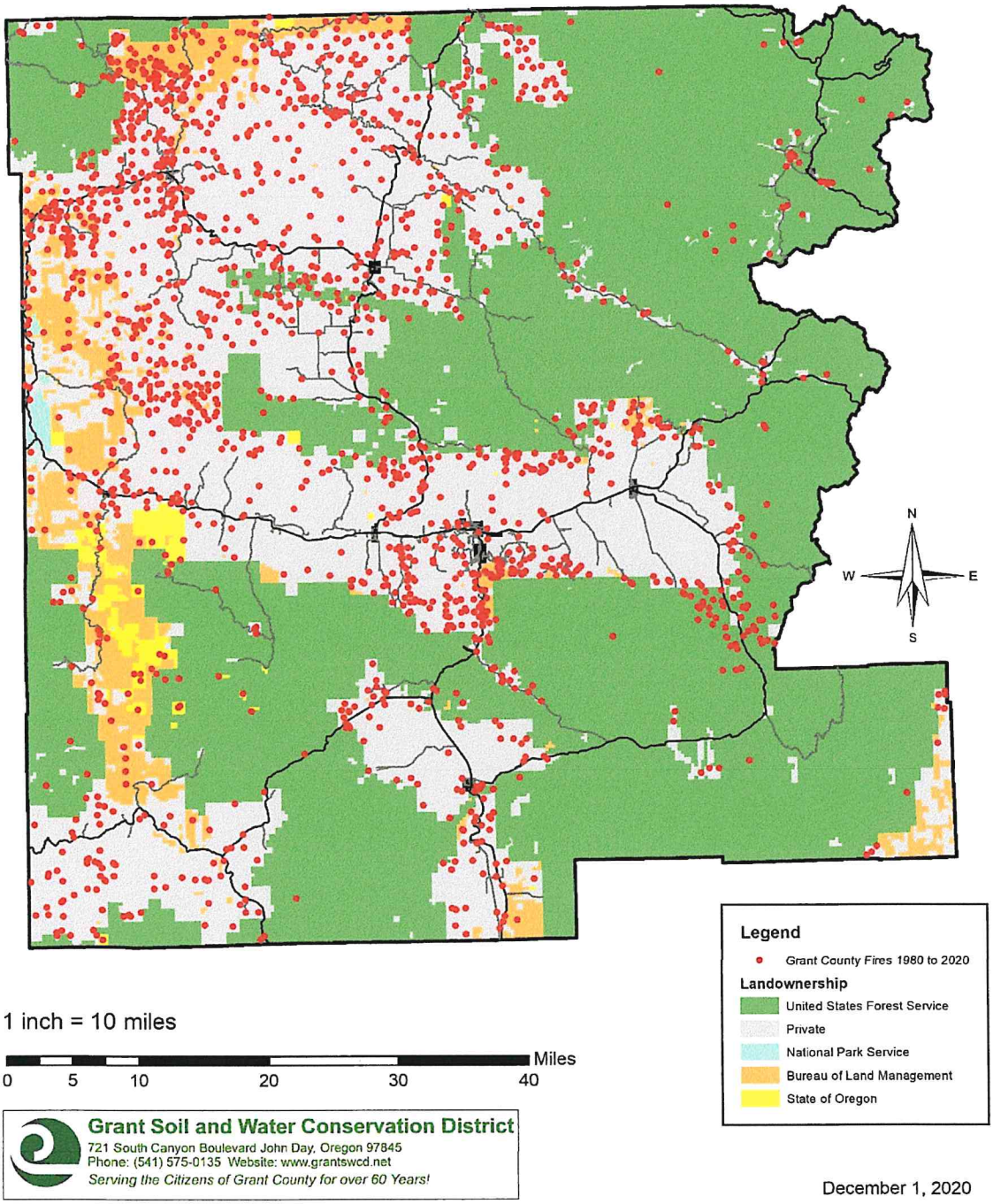
Prairie Wood Products has not reopened to date. The reopening of this facility would be extremely beneficial to the County in terms of the raw materials it can process and the family wage jobs that would be provided. The post and pole mill in Seneca has been operating for a few years using materials sourced from the Malheur National Forest.

County and community groups continue to search for ways to utilize biomass and western juniper off all lands in a cost-effective manner. In 2013, Title III contracted for a study of private timberlands in the County. The Private Timberlands Study provided several action items for potential implementation. These action items remain extremely relevant and should be revisited in conjunction with this CWPP as corollary processes to reduce fuels and provide markets for timber from private lands throughout the County, and to provide economic support. The Grant County Private Timberlands Study can be found here: https://www.gcwpp-firewise.com/

COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Fires 1980-2020



1 inch = 10 miles

0 5 10 20 30 40 Miles

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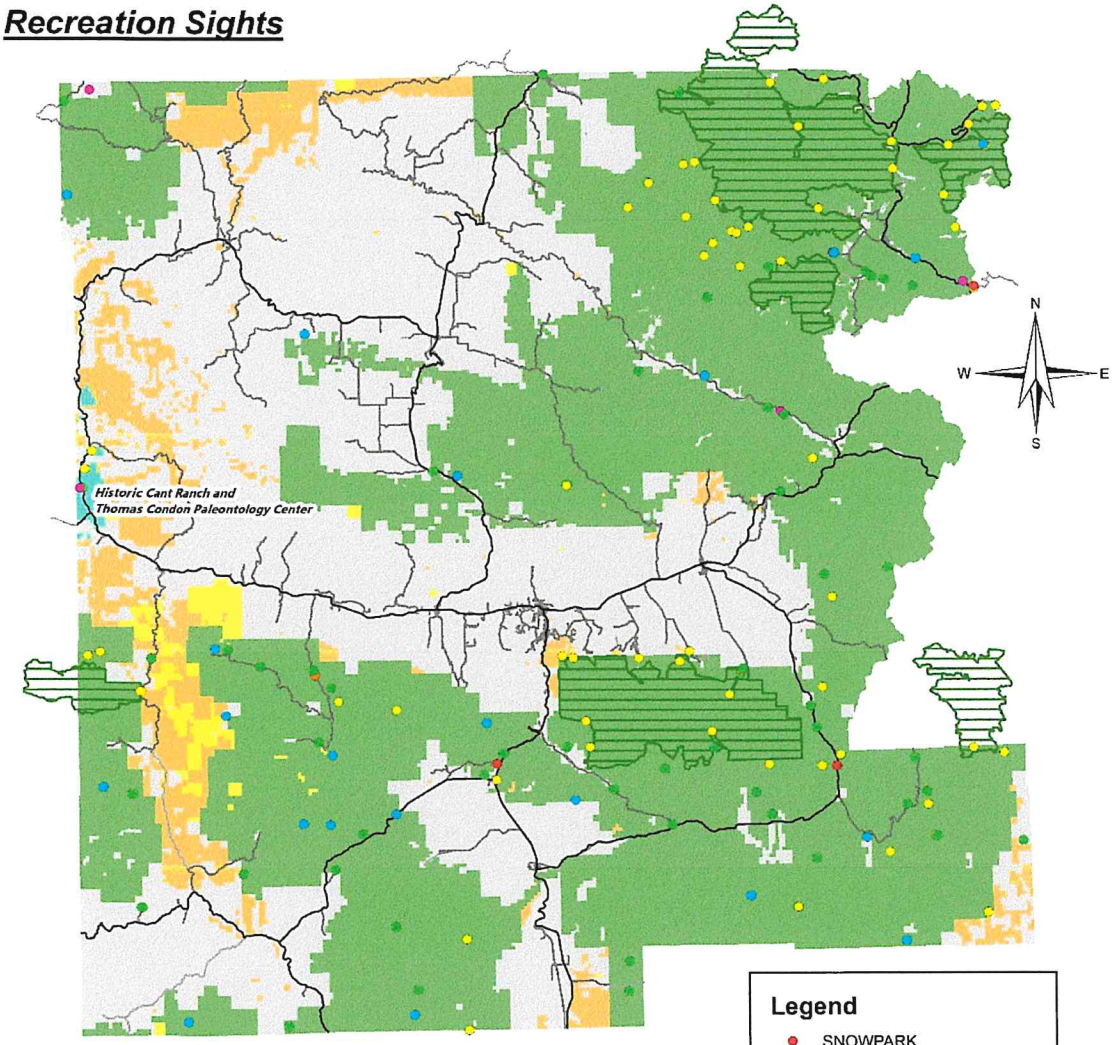
COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Recreation Sights



Legend

- SNOWPARK
- CAMPGROUND
- TRAILHEAD
- LOOKOUT/CABIN
- DAY USE AREA
- HORSE CAMP
- Wilderness
- United States Forest Service
- Private
- National Park Service
- Bureau of Land Management
- State of Oregon

1 inch = 11 miles

0 2.5 5 10 15 20 Miles

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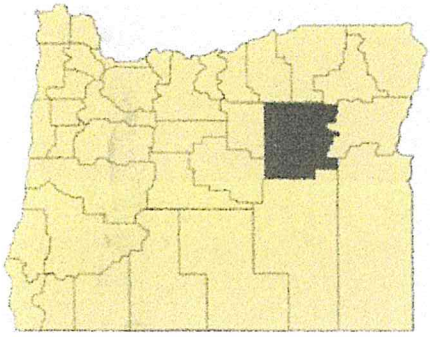
March 29, 2021

Grant County, Oregon *(Est. 1864)*

State of Oregon Employment Department

Updated January, 2021



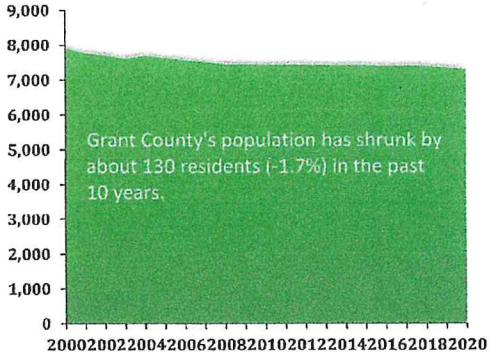
Quick Facts

Geographical Area:	**4,528 sq. mi.**
Population *(2020)*:	**7,315**
Civilian Labor Force *(2019)*:	**3,185**
Average Employment *(2019)*:	**2,964**
Average Wage *(2019)*:	**$39,751**
Per Capita Personal Income *(2019)*:	**$42,888**
Gross Domestic Product *(2019)*:	***$277,653,000***

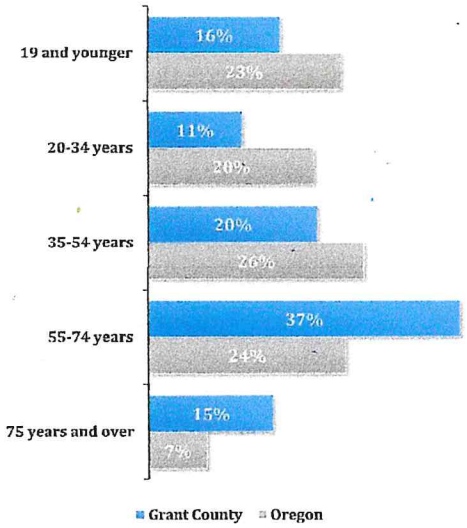
City Populations *(2020)*

Canyon City	705
Dayville	155
John Day	1,750
Long Creek	195
Monument	130
Mt. Vernon	525
Prairie City	915
Seneca	200
Unincorporated	2,700

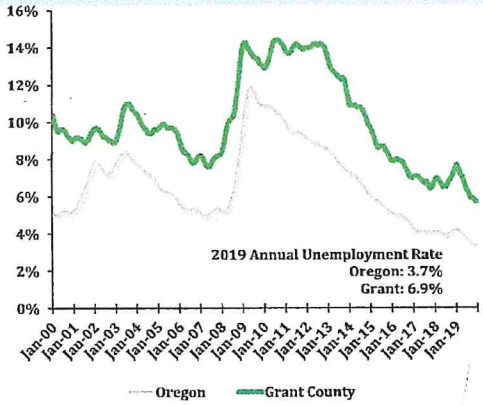
Change in Population *(2000-2020)*



Population by Age *(2019)*



Unemployment Rate (Seasonally Adjusted)

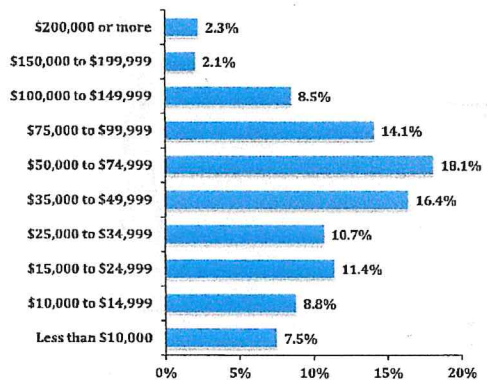


Tony Wendel | Workforce Analyst | Phone: (541) 667-7027 | Email: Tony.A.Wendel@oregon.gov

Grant County, Oregon

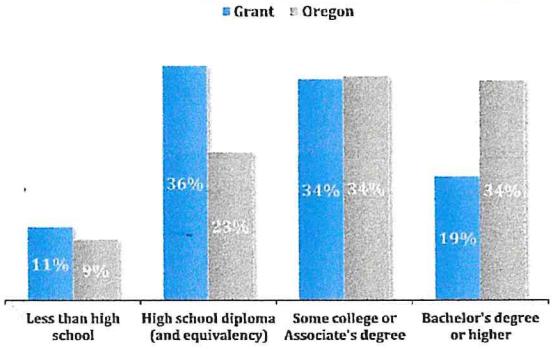
Household Income

Median Household Income: $44,712



Source: U.S. Census Bureau American Community Survey, 2019 5-year estimates.

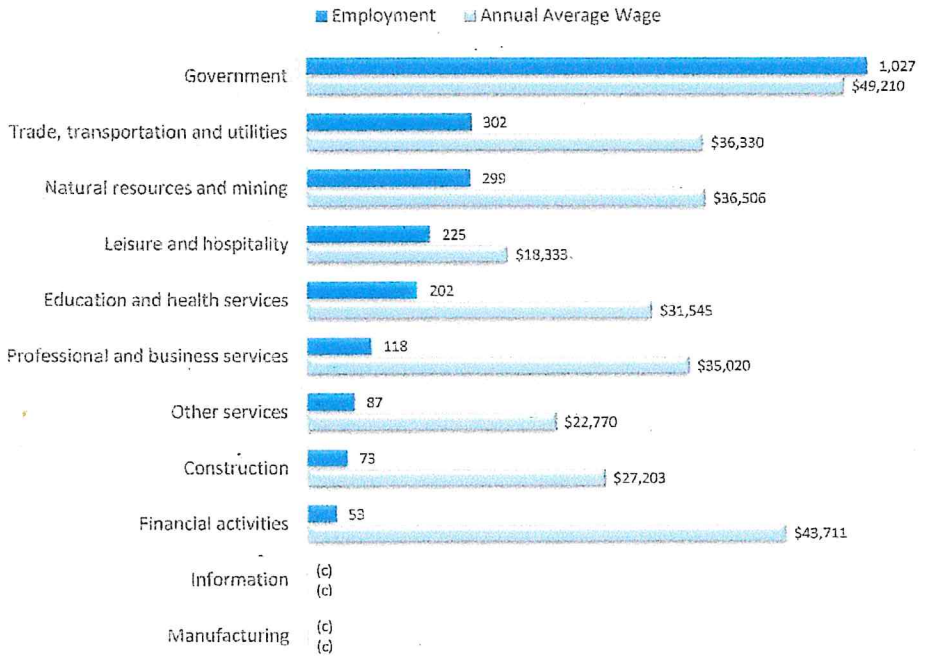
Educational Attainment



Source: U.S. Census Bureau American Community Survey, 2019 5-year estimates.

Industry Employment and Average Wages *(2019)*

Annual Average Employment: 2,546



Source: Quarterly Census of Employment and Wages, 2019 annual

State of Oregon Employment Department

Tony Wendel | Workforce Analyst | Phone: (541) 667-7027 | Email: Tony.A.Wendel@oregon.gov

3.0 Emergency Services

3.1 Agency Wildfire Protection Roles

3.11 Oregon Department of Forestry

ODF's "Protection From Fire" Division's main purpose is to protect private forestland from fire. This includes the acres in the 'wildland-urban interface', which are forest lands with residences and other structures within the reach of wildfire in that area. This is done through a complete and coordinated system of fire prevention, suppression and fuels management.

The goal of the program is to create and use environmentally sound and economically efficient strategies which minimize the total cost to protect Oregon's timber and other forest values from wildfire while also minimizing wildfire damage to protected resources. Grant County is the only county in the state that has complete protection from wildland fire. Further, the county has more timbered acres and grazing acres than any other county in COD as well as being the only county that has Zone 1 acres. COD protects almost a 1,000,000 acres from wildland fire in Grant County.

The Central Oregon District (COD) often has the highest fire load in the state, primarily due to dry lightning events that result in multiple fire starts over short periods of time. While most fires are effectively suppressed, occasionally one escapes initial attack due to lack of resources. Landowners in COD generally pay the highest forest patrol assessment rates in the state. Information the fire patrol assessment and current rates can be accessed at http://www.oregon.gov/ODF/centraloregon/Pages/index.aspx

Oregon forest landowners with "improved lots" pay a surcharge in addition to the forestland assessment, which helps to offset the higher cost of protecting structures within the forest. This does not mean that homes and other buildings receive structural fire protection from ODF. The improved lot surcharge reflects the higher costs involved associated with protecting improvements when wildfire is a threat. In the absence of structures and other improvements, ODF can utilize tactics that minimize acres burned and hold down costs. When structures are present, traditional wildland fire suppression techniques are compromised, driving up the costs of firefighting.

3.12 United States Forest Service

One of the missions of the USFS is to provide wildland firefighting services on federal lands. The USFS does not fight structural fires. The USFS also implements prescribed fires. A prescribed fire is any fire intentionally ignited to meet specific land management objectives such as reduction of flammable fuels on the forest floor, or to help restore ecosystem health. Prescribed fires are preplanned ignitions, with predetermined boundaries. They are conducted

only under certain weather conditions during periods of low wind when flames length and heat can be controlled.

3.13 Bureau of Land Management

One of the missions of the BLM is to provide wildland fire fighting services on federal lands. The BLM does not fight structural fires. The BLM also implements prescribed fires. A prescribed fire is any fire intentionally ignited to meet specific land management objectives such as reduction of flammable fuels on the forest floor, or to help restore ecosystem health. Prescribed fires are preplanned ignitions, with predetermined boundaries. They are conducted only under certain weather conditions during periods of low wind when flames length and heat can be controlled.

3.14 Rural Fire Departments

Rural fire departments provide a combination of structural and wildland firefighting services in rural areas. As such, they have the appropriate equipment and training to safely fight structure fires and wildland fires. Grant County supports three rural fire departments: John Day Rural, Mt. Vernon Rural and Prairie City Rural.

3.15 Municipal Fire Departments

All the incorporated cities in Grant County have city fire departments. While these departments are not responsible for wildland firefighting outside of their jurisdictions, they have mutual aid agreements with other agencies and departments and provide backup and support as needed. All the fire departments in Grant County have been actively engaged in the CWPP process. These departments are all volunteer and recruitment of volunteers remains a significant barrier.

3.151 Canyon City Fire Department Summary – 2021

Canyon City Fire Department is a municipal fire organization located in Canyon City, Oregon and covers approximately 4 square miles. The department is all volunteer and provides structural protection for Canyon City. The department is always in need of new volunteers.

3.152 Dayville Fire Department Summary – 2021

Dayville Fire Department is a municipal fire organization located Dayville, Oregon. The department is staffed entirely with volunteers. The department provides structural fire response for the city of Dayville. The general population is aging, making the recruitment and retention of volunteers increasingly difficult. Apparatus are currently housed in a private facility during the

winter months to prevent freezing. This department is actively seeking avenues to build a new fire station.

3.153 Granite Fire Department Summary – 2021

Granite Fire Department is a municipal fire organization located in Granite, Oregon. The department is staffed entirely with volunteers. The department provides structural fire response for the city of Granite. Because of the location and road access to Granite, city emergency services work closely with Sumpter and Baker County, as well as Grant County. The general population that remains is aging, making the recruitment and retention of volunteers increasingly difficult. This department is always on the lookout for updated equipment.

3.154 John Day Fire Department Summary – 2021:

John Day Fire Department and Rural provides structural protection for the city of John Day and wildland fire protection for the area outside of the city limits of John Day and up Canyon Creek to junction of Forest Road 15. The department has a mutual aid agreement with the Oregon Department of Forestry (ODF). John Day Rural covers areas directly around the city of John Day. This is a vigorous fire department but volunteers are always needed.

3.155 Long Creek City Fire Department Summary – 2021:

Long Creek Fire Department is a municipal fire organization located in Long Creek, Oregon. The department is staffed entirely with volunteers. The department provides structural fire response for the city of Long Creek. As with all of Grant County, Long Creek is losing population. The general population that remains is aging, making the recruitment and retention of volunteers increasingly difficult.

3.156 Monument City Fire Department Summary – 2021:

Monument City Fire Department is a municipal fire organization located in Monument, Oregon. The department is composed entirely of volunteers. The department provides structural for the city of Monument and in the surrounding area when possible. Recruiting enough volunteers continues to be a problem as the population of Monument ages consistent with the rest of Grant County.

3.157 Mt. Vernon Fire Department 2021:

Mt. Vernon Rural Fire Department is located in Mt. Vernon, Oregon and provides structural fire response for the city of Mt. Vernon and structural and wildland response for 640,000 acres in the surrounding area. The department is composed entirely of volunteers. Mt. Vernon Rural is the largest rural fire department in Grant County and has been very successful.

However as the population of the wildland urban intermix continues to grow, issues such as adequate road access, adequately brushed roads, appropriately sized/constructed bridges to safely hold fire apparatus, and adequately prepared homeowners and landowners continue to arise.

3.158 Prairie Rural Fire District Summary – 2021:

Prairie Rural Fire Department provides structural fire protection for the city of Prairie City and structural and wildland fire protection for a significant surrounding area. Prairie Rural Fire has a vital department but is desperately in need of rate increases for protection. When the department was originally formed, a provision was made to freeze rates. While well intended at the time this provision has created an unrealistic fiscal model. The significant increase in homes in the wildland urban intermix and the steady increases in costs for equipment, maintenance, fuels and insurance necessitates a more flexible fiscal model. As with the other departments, there is always a need for more volunteers.

3.159 Seneca Volunteer Fire Department Summary – 2021

The fire department for the city of Seneca has revitalized since 2013. The department is up and running and has constructed a new fire barn to store engines during the cold winter months.

3.16 Office of the State Fire Marshal

The mission of the Oregon State Fire Marshal's office is "Protecting citizens, their property, and the environment from fire and hazardous materials". This mission is accomplished through a variety of programs and services including Fire and Life Safety Education, Emergency Response, Local Emergency Training, Codes and Technical Services, and Youth Fire Prevention and Intervention. The Fire Marshal is responsible for code enforcement and fire investigation. The role in wildfire protection of the representative from the State Fire Marshal serving Grant County is to coordinate with the County Court and the various fire departments when the Conflagration Act is invoked and to assist with fire district development and training needs. Information on the State Fire Marshal's Office is available at:

http://www.oregon.gov/OSP/SFM/Pages/index.aspx

3.2 Grant County Emergency Operations Management

The Grant county Emergency Operations Plan is an all-hazard plan that describes how Grant County will organize and respond to emergencies and disasters in the community. It is based on, and is consistent with Federal, State of Oregon, and other applicable laws, regulations,

plans and policies, including the National Response Framework and the State of Oregon Emergency Operations Plan.

The Emergency Operations Plan is designed to be all inclusive in combining the four phases of emergency management, which are:

- **Mitigation:** activities that eliminate or reduce the probability of disaster.
- **Preparedness:** activities that governments, organizations, and individuals develop to save lives and minimize damage.
- **Response:** activities that prevent loss of lives and property and provide emergency assistance.
- **Recovery:** short-and long-term activities that return all systems to normal or improved standards.

The County views emergency management planning as a continuous process that is linked closely with training and exercises to establish a comprehensive preparedness agenda and organizational culture that prioritizes increased disaster resiliency.

The Northeast Oregon Multi-Jurisdictional Natural Hazard Mitigation Plan identifies activities that assist the County in reducing risk and preventing loss from future natural hazard events.

CWPP Recommendations:

- Emergency management entities should work closely with Grant County Planning Department to promote safety in the WUI
- Community strategy under this CWPP should utilize 3 pronged approach WUI areas by blending 1) fuels treatment, 2) emergency management, and 3) fire prevention.

3.3 Grant County 911 Dispatch

On January 1st 2019 the Intergovernmental Agreement came into effect, creating the Grant County Emergency Communications Agency, governed by the Intergovernmental Council. The Grant County Intergovernmental Council (IGC) consists of 13 members, one elected official is appointed by the following; the cities, rural fire boards within Grant County and the county, to serve on the IGC. The authority of the IGC is to govern and oversee the agency.

The 9-1-1 User Board consists of 18 members and six Ex-Officio members, representing every agency that the 9-1-1 Center serves in Grant County. Its primary purpose is to make recommendations to the IGC regarding policy and procedures related to the operations of the 9-1-1 Center.

3.4 Grant County Fire Defense Board/Communications Task Force

The Grant County Fire Defense Board consists of representatives from all municipal and rural fire protection districts in Grant County. This group meets formally twice a year, in the spring and in the fall as required by Oregon State Fire Marshal's Office. The Grant County Communications Task Force is represented by a wide variety of agencies and groups in the County who provide various services directly or indirectly involved with Emergency Services operations in the County.

3.5 Grant County Sheriff's Office and Search and Rescue

The sheriff's office plays an integral role in emergency operations at the County level and play a key role in the CCR process, including issuing evacuation notices in a wildfire event. By Oregon statute, counties are responsible for search and rescue (SAR) operations on all lands within the County. The last few years have seen an increase in SAR operations as summarized in the 20202 SAR Annual Report: "2020 has been a busy year. Grant County Sheriff's Office (GCSO) Search and Rescue (SAR) has had 91 SAR missions since I took over as the SAR Coordinator in September 2018, with 46 of those taking place in 2020. Regardless of directives, guidelines or mandates from the Oregon Health Authority or the Governor's Office (relating to COVID) the SAR missions have kept coming during 2020. The entire State of Oregon has seen increases in SAR missions during 2020. Smaller, more remote counties in Oregon saw an influx of visitors from Western Oregon, Washington, and Idaho as the COVID Pandemic blossomed and spread throughout the Northwest. As different jurisdictions started reporting more and more COVID cases, Grant and other smaller counties were seen as a refuge and a safe place to come and visit."

3.6 Grant County Multi-Jurisdictional Natural Hazards Mitigation Plan

On September 3, 2020, the United States Department of Homeland Security's Federal Emergency Management Agency (FEMA) Region 10, approved the Grant County Multi-Jurisdictional Hazard Mitigation Plan (NHMP) as a multi-jurisdictional local plan as outlined in Code of Federal Regulations Title 44 Part 201. This approval provides the jurisdictions in Grant County eligibility to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's, Hazard Mitigation Assistance (HMA) grants through September 2, 2025, through the state of Oregon. The revised Grant County CWPP is a supporting document to the NHMP and recommendations will be aligned with that plan.

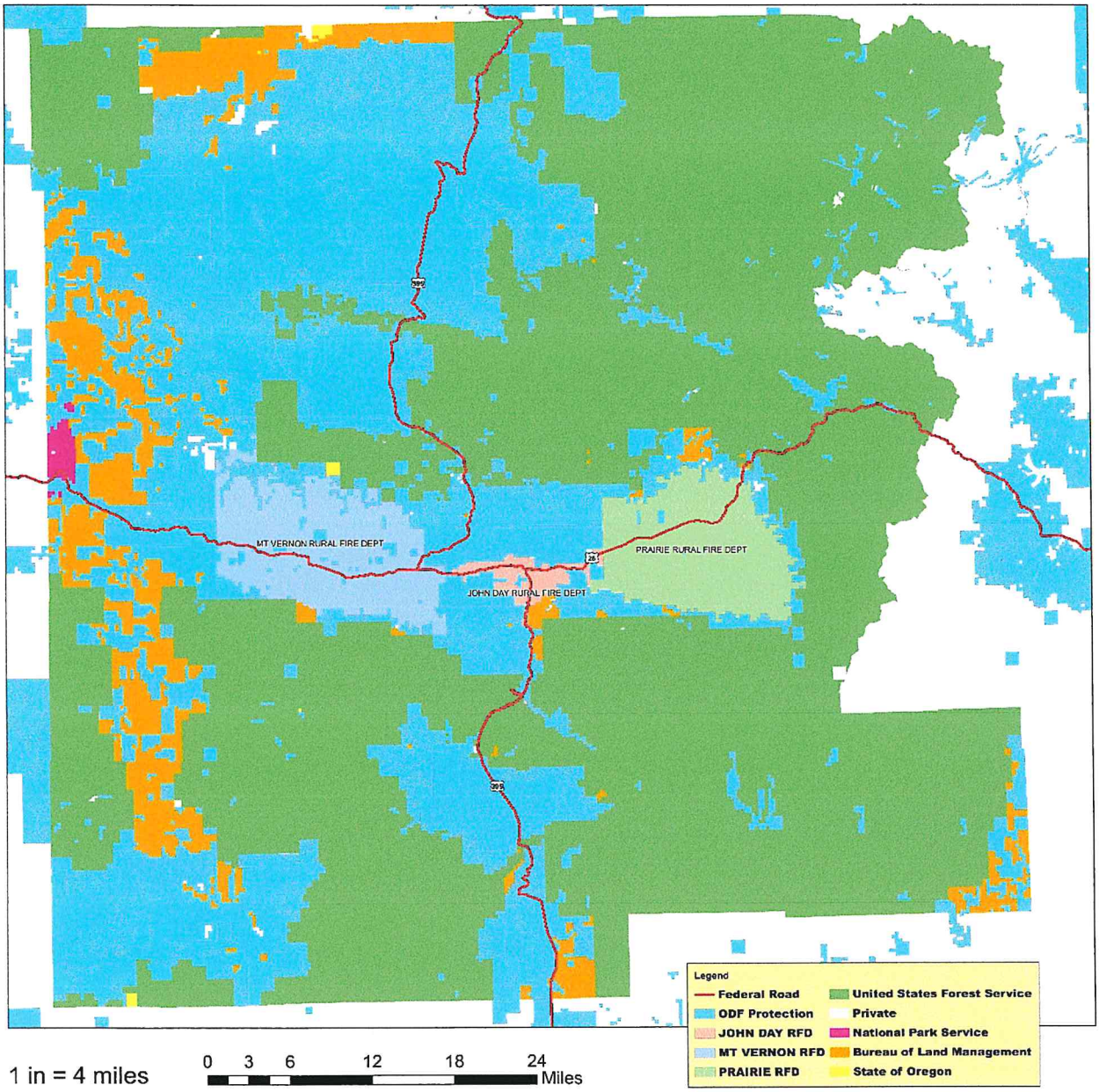
3.7 Grant-Harney County Fire Prevention Cooperative

The Grant-Harney Fire Prevention Co-Op, was formed in the early 1980's to help coordinate fire prevention efforts in the two counties. The cooperative facilitates interagency coordination in mass-media, information and education programs and participation in county fairs. All general fire prevention is coordinated through this group.

3.8 Grant County ARES

Amateur Radio Emergency Service (ARES) has become an important player in the CCR program in Grant County. Wikipedia provides the following definition: "In the United States and Canada, the Amateur Radio Emergency Service is a corps of trained amateur radio operator volunteers organized to assist in public service and emergency communications. It is organized and sponsored by the American Radio Relay League and the Radio Amateurs of Canada." There is currently an effort underway at the County level to gain formal recognition for a group called ERIC. ERIC stands for emergency radio infrastructure coalition. In many geographic areas, and especially rural areas such as Grant County, commercial communications systems such as cell phones, internet and wireline telephone and public safety radio systems do not have adequate coverage or redundancy. ERIC provides alternative communication systems that can be used when needed. For more information refer to the various documents on the Grant County CWPP/Firewise webpage: https://www,gcwpp-firewise.com/

Grant County Fire Protection



1 in = 4 miles

0 3 6 12 18 24 Miles

3/19/2021

4.0 WILDFIRE RISK ASSESSMENT

4.1 Grant County Communities at Risk – Statewide Assessment

A statewide task force was formed in February 2004 as part of the Oregon Department of Forestry's Fire Program Review to develop a statewide assessment of *Communities At Risk.* This supports fulfillment of the Memorandum of Understanding (MOU) between the NASF and federal agencies as well as Task E in Goal 4 of the *Implementation Plan for the 10-Year Comprehensive Strategy.* The task force brought together a number of stakeholder organizations outside of those involved in the MOU. The statewide *Communities At Risk* assessment also provides guidance for communities in the process of developing or updating local risk assessments to align with the state methodology. The statewide *Communities At Risk* assessment also provides guidance for communities in the process of developing or updating local risk assessments to align with the state methodology.

The original *Communities At Risk* assessment was used to develop a statewide fuels strategy and to help set large-scale priorities across geographic areas (watersheds, multi-county coordination areas, etc). The task group developed the methodology using national guidance. At this scale, available data must be applied consistently statewide for relative comparisons. Community and local priorities, including prioritization of projects, will be determined through community wildfire protection plans and local assessments using more refined local data. Important factors that need to be considered in assessment of individual lots and neighborhoods, such as roof type, defensible space, and access, are not considered at the statewide scale and will not be part of the statewide assessment at this time. The following risk assessment, which replaces the original list in the Federal Register in 2001, was developed utilizing predetermined evacuation zones in Grant County.

Community at Risk By Evacuation Zone	Risk	Hazard	Protection	Value	Overall	Federal/ Tribal Lands
Bear Valley	M	H	L	L	M	Y
Canyon City	H	H	M	L	H	Y
Dayville	M	H	M	L	M	Y
Fox Valley	M	H	L	L	M	Y
Granite	H	H	M	M	H	Y
Izee	M	H	L	L	M	Y
Logan Valley	M	H	L	M	M	Y
Long Creek	H	H	M	L	H	Y
Lower Middle Fork	M	H	L	M	M	Y
John Day	H	H	M	L	H	Y
John Day Fossil Beds	M	M	L	H	M	Y

Monument	H	H	M	L	M	Y
Mt. Vernon	H	H	F	L	H	Y
Prairie City	L	H	M	L	H	Y
Ritter	M	H	L	M	M	Y
Silvies Valley	H	H	M	L	H	Y
Upper Middle Fork	M	H	L	M	M	Y

4.2 Grant County Risk Assessment Methodology

The assessment of wildfire risk in Grant County was completed by Evacuation Zone. Evacuation Zones were developed utilizing mapping tools, local knowledge, and experience and expertise by local County EMS personnel. Based on local experience and advancement of fire prevention programs within the County, Communities at Risk were evaluated by "Evacuation Zone". Essentially the entire County is at risk from wildfire and the following assessment provides an evaluation of levels of risk and other values. The risk level for individual communities is provided in a discussion of the evacuation zone.

A Wildfire Risk Assessment was completed for the seventeen evacuation zones in the county with the assessment resulting in each zone receiving a rating of Low, Moderate, High, or Extreme Overall Risk. Fiver factors were considered: 1) Ignition risk, 2) Hazard, 3) Values at Risk, 4) Protection Capability, and 5) Structural Vulnerability. Ratings were based on scores assigned to four risk factors (Structural Vulnerability was not included in the rating as the home-site surveys continue to be completed around the County). Each of the four scoring factors has from two to five criteria designed to better describe the factor. These criteria were given weighted scores established by ODF. Criteria scores were added giving a total score for the factor. The scores for the factors were added up and used to establish the overall rating factor.

The scoring system for the four factors used to rate the zones and communities is as follows:

Ignition Risk is the likelihood of a wildfire occurring. There are three criteria used for assessment of Ignition Risk: 1) historic fire occurrence (number of fires per 1000 acres per 10 years), 2) home density per 10 acres, 3) other risk factors (such as powerlines, highways, off road vehicle use, etc.)

- Historic Fire Occurrence: Historic fire locations from were used to generate Risk Rating. The density of fire starts per 1000 acres per 10 years was then determined. This layer is used to indicate a *low, moderate*, or *high* likelihood of a fire occurring, based upon historic fire occurrence.

Historic Fire Occurrence **Fire occurrence – per 1000 acres per 10 years**	**Rating Points**
Low 0- .11	**5 points**
Moderate 0.1 – 1.12	**10 points**
High 1.1 + 3	**20 points**

- **Home Density:** The density of homes per 10 acres.

Home Density **Per 10 Acres**	**Rating Points**
0 - .9 – Rural	**0 points**
1 – 5 – Suburban	**5 points**
5.1 + -Urban	**10 points**

- **Other Ignition Risk Factors Present in the Vicinity** include transmission power lines, power substations, active logging, construction, debris burning, slash burning, mining, dispersed or developed camping, hunting, off road vehicle use, highways, woodcutting, ranches, or lightning prone areas.

Other Ignition Risk Factors Present in Vicinity	**Rating Points**
< 8 factors present	**0 points**
8 – 15 present	**5 points**
> 15 present	**10 points**

Ignition Risk Factor Rating is the cumulative store of the three criteria:
0-13 Low
14-27 Moderate
28-40 High

Hazard is defined as resistance to control once a wildfire starts. Hazard is influenced by weather, topography and fuels that adversely affect suppression efforts. Hazard is used to indicate a *low, moderate,* or *high* resistance to control once a wildfire starts. The rating is based upon a composite of weather (25%), slope (4%), aspect (6%), elevation (2%) and fuel (30%), insect/disease mortality (20%), and crown fire potential (13%).

Weather factor value is the number of days per season that forest fuels are capable of producing a significant fire event. All of eastern Oregon is classified as ***high*** with the maximum score of 40 points assigned.

- **Slope**

Percent Slope	Rating Points
0 – 25%	**0 points**
26 – 40%	**2 points**
> 40%	**3 points**

- **Aspect**

Aspect	Rating Points
N, NW, NE	**0 points**
W, E	**3 points**
S, SW, SE	**5 points**

- **Elevation**

Elevation	Rating Points
5001+ feet	**0 points**
3501- 5000 feet	**1 points**
0 – 3500 feet	**2 points**

Surface Fuels are based on Fire Behavior Fuel Models. Hazard Value 1 (HV1) produces flame lengths up to 5 feet with little spotting, torching or crowning. HV2 has flame lengths from 5 to 8 feet with sporadic spotting, torching or crowning. HV3 has flame lengths over 8 feet with frequent spotting, torching and crowning.

Surface Fuels	Rating Points
Non- forest	**0 points**
HV1	**5 points**
HV2	**10 points**
HV3	**30 points**

- **Crown Fire Potential (Aerial Fuels)**

Crown Fire Potential	Rating Points
Passive – Low	**0 points**
Active – Moderate	**5 points**
Independent	**10 points**

The Hazard Factor Rating is the cumulative score of the six criteria:
0-9 Low
10-40 Moderate
41– 80 High/Extreme

Values Protected are the human and economic values associated with communities or landscapes. Protection of life is the number one priority with all agencies and is measured by the density of homes. The presence of community infrastructure such as power substations and corridors, transportation corridors, manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals, schools, churches, community centers and stores are other considerations.

- **Home Density:** The density of homes per 10 acres.

Home Density Per 10 Acres	Rating Points
0 - .9 – Rural	**2 points**
1 – 5 – Suburban	**15 points**
5.1 + -Urban	**30 points**

- **Community Infrastructure**

Community Infrastructure	Rating Points
None present	**0 points**
One present	**10 points**
More than one present	**20 points**

Values Protected Rating is the cumulative score of the two criteria:
0-14 Low
16-30 Moderate
31-50 High

Protection Capability is the capacity and resources to undertake fire suppression and prevention activities. It involves a combination of capacities of fire protection agencies, local government and community organizations. A high score represents a high risk and a low protection capability. Because many Grant County Evacuation Zones have both a small city and a large Wildland Urban Intermix, two values were placed in association with relevant zones to represent the high hazard in that zone.

- **Fire Response**

Fire Response Capacity	Rating Points
Organized structural response < 10 minutes	**0 points**
Inside fire district, but structural response > 10 minutes	**8 points**
No structural protection, wildland response < 20 minutes	**15 points**
No structural response & wildland protection > 20 minutes	**36 points**

\
Community Preparedness refers to effective mitigation efforts by the community that will help make fire response successful. Grant County has been promoting wildfire prevention, homeowner preparedness, and defensible space all over the County for a number of years. Many homeowners in the outlying areas, although not part of a formal "Firewise" Community have prepared their homes and sought guidance from professionals in the County.

Community Preparedness	Rating Points
Organized stakeholder groups, Firewise communities, phone trees, etc.	**0 points**
Mixed preparedness in the community and evacuation zone.	**1 point**
Primarily agency efforts	**2 points**
No effort	**4 points**

Protection Capability Rating is the cumulative score of the two criteria:
0-9 Low
10-16 Moderate
17-40 High

Structural Vulnerability is the likelihood that a structure will be destroyed during a wildfire event. The practices controlled by the landowner within the home ignition zone account for 90% of the likelihood of a wildfire threatening a structure. The three primary criteria involved are roofing assembly, defensible space, and presence of suppression action (access).

Grant County will complete an assessment of Structural Vulnerability through on site visits. Assessments will be completed in conjunction with educating and assisting communities in participating in the ***Firewise Communities USA*** program.

4.3 Grant County CAR – Wildfire Risk Assessment

In Grant County, a ***community-at-risk (CAR)*** is defined as a group of homes or other structures with basic infrastructure (such as shared transportation routes) and services within or near federal land. A ***wildland-urban interface (WUI)*** area surrounds a community-at-risk, including that community's infrastructure or water source, and may extend 1 ½ miles or more beyond that community. This boundary depends on topography and geographic features that could influence wildfire, the location of an effective firebreak, or Condition Class 3 lands. Major evacuation routes in the county are part of the WUI as well.

Grant is a relatively large county in area with a significant amount of federal land. Private lands are interspersed throughout the federal lands with numerous structures throughout. Road systems are all two lane, communications are hampered by the topography, and distances are significant. Essentially, all the private lands are wildland urban intermix at risk of fire coming off federal land. The implications of this risk have been heightened over the past year

with the Covid 19 pandemic. People have flocked to rural areas in droves buying homes, renting homes, camping on federal lands both in official campgrounds and in primitive camps throughout the forest. Fire prevention specialists representing various agencies were stretched thin and County search and rescue missions were up.

The city of Granite has a fire department and a truck that is kept in a heated building during the winter months. Volunteers are always needed. The area around Granite is at very high risk from wildfire due to extremely heavy fuel loads, both standing and down. The Olive Creek Road, which has numerous cabins and structures along it, is one of the major evacuation routes for this area. This route is in extreme need of fuel reduction to create a safe route. Mountain pine beetle is killing many of the trees along the road. Trees are extremely thick and in need of thinning.

The photos above provide examples of the extreme fuels along the Olive Creek Road, a major evacuation route for the Granite area.

Prairie City, John Day, and Monument received the number of points rating them in the high range. Canyon City/John Day received the highest risk rating due to the most critical infrastructure in the county including the hospital, the county courthouse, several schools, and the major business district in the county. Both Monument and Prairie City are more vulnerable to wildfire due to the surrounding topography and vegetation. The area around Monument has been subject to numerous severe complex fires in the last two decades. Prairie City, north of Highway 26. is characterized by dense vegetation and steep slopes up Dixie Creek. While only part of the area is within the city limits, the area is contiguous.

4.4 Grant County Evacuation Zones – Wildfire Risk Assessment

Due to the variability in topography, aspect, elevation and vegetation that may exist within an individual zone a certain amount of professional judgment was used in applying the individual ratings during the assessment process for each of the zones.

It is important to recognize that private lands are widely intermixed with public lands throughout the County. The topography is quite rugged in general and highway systems are narrow and winding. Although the population of the County is low (Grant is considered a "frontier" county), the residents are scattered all over. In those evacuation zones that have city fire departments, such as Long Creek, the city may respond to structural fires outside the city limits even though it is beyond their jurisdiction. For purposes of the wildfire risk analysis, evacuation zones with structural departments and wildland areas, ratings were made for both structural response and wildland. Canyon City and John Day Evacuation Zones have been combined in this assessment as they form a contiguous area and John Day Rural protects some of the area south of Canyon City while the area east of Canyon City and south of John Day has no rural protection.

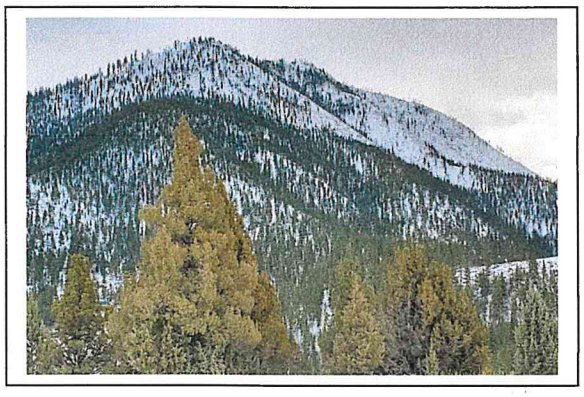
Bear Valley Zone

Bear Valley evacuation zone covers the lands in Bear Valley and a surrounding fringe of the Malheur National Forest. The area is sparsely populated with approximately 150 residents in the town of Seneca, scattered ranches, and a concentration of residences (both permanent and absentee owners) primarily located on the north edge of the zone. Seneca has a fire department. All other areas are protected by the Oregon Department of Forestry, Forest Service, or BLM. Seneca. Resident preparation for wildfire hazard is mixed, both in the town of Seneca and in the intermix areas.

Canyon City/John Day Zone

The Canyon City/John Day evacuation zone includes the town of Canyon City and the narrow corridor along both the main-stem and east forks of Canyon Creek. Canyon City has a structural fire department only. The John Day Rural provides protection south of the Canyon City limits along Canyon Creek. This area was the most heavily impacted from the Canyon Creek Complex Fire in 2015. Many fire killed trees were not removed due to inaccessible terrain and steep slopes and those trees now present a significant hazard especially along the East Fork of Canyon Creek on Canyon Creek Lane. Residents of Canyon Creek Lane recently were approved as a Firewise Community by the NFPA. Canyon City is surrounded by extremely

dense stands of western juniper that is rapidly increasing setting the stage for extreme wildfire behavior. The photos below are taken from the Canyon City Cemetery and main street John Day.



This received the highest hazard risk rating for wildfire loss in Grant County. Although there is a vital fire department both in the city and for the surrounding rural area, this zone has a higher density of homes in the WUI than some other areas in the county as well as a greater number of improvements and "values at risk" such as cell phone towers, schools, hospital, etc. With the advent of Covid-19 and the global pandemic, people are moving to the County in great numbers and many of them are settling in and around the edges of John Day and Canyon City. It is not unusual for these new citizens to be from very urban areas with limited understanding of the profound risks presented by wildfire in areas such as Grant County. Western juniper has proliferated all around the city creating elevated risk for extreme fire behaviors. In some areas juniper has been cut but slash has not been burned creating additional hazard.

Dayville Zone

The Dayville evacuation zone has a relatively high hazard. This zone is large, encompasses some very rugged topography, and extends south up the South Fork John Day River. Landownerships are very mixed with BLM, USFS, state of Oregon lands interspersed with private holdings. Many of the private parcels have structures with both permanent and part time residents. Dayville City Fire Department is active and Prineville BLM has an office just west of town. The Dayville Zone has experienced numerous significant wildfire emergencies with the Corner Creek Fire covering over 26,000 acres in 2013.

Fox Valley Zone

Fox Valley Zone consists of Fox Valley and the area surrounding area which includes Forest Service lands and some larger private forest land ownerships. This Zone is sparsely populated and has one of the lower wildfire hazard ratings for the County. Much of the valley bottom is managed for grass hay and the surrounding fringe areas do not support the extremely dense stands of western juniper that are present in other areas of the County.

Granite Zone

The Granite Zone rated out as a "high" hazard for wildfire risk. This zone is extremely vulnerable to wildfire due to the location, the vegetation type, the topography, the communications structure, and the limited structural fire protection available. Although the city of Granite has a fire department the recruitment and retention of volunteers is very difficult. This area has numerous absentee landowners who visit their respective properties sporadically throughout the year.

Izee Zone

The Izee Zone is located in the very southwest corner of the County. Much of this Zone is in the transition area between the forest and rangelands. The exception to this is the portion of the Zone that extends north down the South Fork of the John Day toward Dayville. The topography in this area is very rugged with the Ochoco National Forest on the west side of the road and the Malheur on the east side. Although the population is low there are dwellings scattered throughout the Zone on private lands.

Logan Valley Zone

Logan Valley Zone is located in the southeast corner of the county and is almost entirely federal land. However, the private parcels that are widely scattered throughout the Zone almost all have structures or improvements. The Lake Creek Camp located in Logan Valley itself is an important asset to the County. Much of this Zone is heavily forested and densely stocked creating the potential for extreme wildfire behavior.

Long Creek

Long Creek Zone is located in the north central area of the County and includes the town of Long Creek. Long Creek has an active city fire department. Much of this zone is rangeland, some of which has been heavily invaded by western juniper in various stages of maturity. The eastern edge of the zone is forested and abuts the Malheur National Forest. Numerous ranches and vacation homes occur in this portion of the zone and many have only a single access road creating concerns for evacuation routes. Both national forest lands and private lands are

becoming densely overgrown in many areas. The lack of wood products markets within reasonable transportation distance has made forest management difficult in this area.

Lower Middle Fork Zone

The Lower Middle Fork Zone is generally located in the middle of the area between the Ritter Zone and the Upper Middle Fork Zone and includes the historic mining towns of Galena and Susanville. No longer active as mining communities these areas support numerous structures on private lands. While most of the residents are part time, there are some year round residents in the area. Private land is located primarily along the John Day River where the topography is more gentle. Away from the river bottom slopes are steep and heavily forested with the west side of the zone abutting the Umatilla National Forest on the north and the east side of the zone abutting the Maheur National Forest. The south side of the zone abuts the Malheur National Forest. Many forested areas are heavily stocked and slopes are steep. Evacuation plans are critical for residents of this area.

John Day Fossil Beds Zone

The Fossil Beds rated low compared most of the County primarily due to the smaller population, the scattered residents, and the absence of heavier fuels. While there is significant western juniper in some areas, the National Park Service has been proactive in rangeland burning which has made a significant difference. The John Day Fossil Beds are world renowned and the major infrastructure is the Thomas Condon Paleontology Center and the Historic Cant Ranch Home and Museum. The topography in this area is rugged and characterized by deep canyons and rugged rims.

Monument Zone

The Monument Zone is rated as "high" for risk from wildfire. This is a large zone and the area around Monument has been subject to numerous significantly sized complex fires within the last two decades including the 55,000 acre Monument Complex in 2007. Much of the fuel in this area is "flashy" and dries out early in the season and temperatures in much of this zone can be quite warm. The orientation of several deep canyons funnels the winds at extreme velocities. Dead and down timber from previous wildfire and unhealthy forest stands is scattered throughout the area. Many areas are covered with dense stands of juniper. The outlying areas continue to see an increase the number of homes and residents in range and forest lands. Monument has a city fire departments however there is no rural at this time.

Rugged topography and development south of Monument. This area is extremely hot during the summer months and water sources are dispersed.

Mt. Vernon Zone

The Mt. Vernon Zone rated as "high" for risk from wildfire. The Mt. Vernon fire department and rural provides structural fire protection for the city of Mt. Vernon and the surrounding area. This fire department is the largest rural in the county and a vital fire department. The area protected by the rural is a checkerboard in some areas, that is not all landowners have opted to join the department. This zone has a higher density of homes in the WUI than some other areas in the county as well as a greater number of improvements and "values at risk". Western juniper is taking over much of this area.

Prairie City Zone

The Prairie City Zone is rated as "high" for risk from wildfire. The Prairie Fire Department provides structural fire protection for Prairie City and the surrounding area. This fire department covers a large rural area in the county. The by-laws for this fire department were crafted in the 1940s and require that rates must never be raised. Predictably, this has become problematic as the department protects more and more homes in the outlying areas without the ability to implement higher rates. The charter for this department must be revisited and modernized. Numerous structures and residences are located throughout the coverage area with some of the newer structures established in very difficult and dangerous locations for firefighters. Specifically, homes have been established mid-slope in timbered areas with timber and dense vegetation above and below the structure. Access roads are mid-slope full bench, one way in and one way out, and very narrow.

Ritter/Dale Zone

The Ritter/Dale Zone rated out as a "high" hazard for wildfire risk. This zone is extremely vulnerable to wildfire due to the location, the vegetation type, the topography, the

communications structure, and the complete absence of structural fire protection in the area. Further the area is remote, especially west of Highway 395 around Ritter. The county road east to Highway 395 provides the only evacuation route since the road to the west has been locked by a private landowner.

Silvies Zone

The Silvies Zone rated out as a "low" hazard relative to the rest of the county. The characteristics of the topography in combination with the type of vegetation mitigated the risks compared to other areas. Development in this Zone is almost exclusively the Silvies Valley Ranch. The Silvies Valley Ranch Retreat and Links is a 140,000 acre ranch that offers world class golfing, dining, and lodging. The ranch has worked to harden many of the buildings to be resistant to wildfire. There are some brush engines and basic firefighting equipment on site although there is no structural firefighting equipment. The ranch is vulnerable in the event of catastrophic wildfire given there may be guests on site.

Upper Middle Fork Zone

The Upper Middle Fork Zone rated out as a "high" hazard for wildfire risk. This zone is extremely vulnerable to wildfire due to the location, the vegetation type, the topography, the communications structure, and the complete absence of structural fire protection in the area. Further the area is remote and generally accessed from Highway 7 where the old community of Bates was located.

Federal Lands

Federal lands comprise almost 70 percent of the County land base. Unfortunately much of this area is characterized by poorly maintained roads; road closures; and lack of informational signage. Campgrounds and roads are often surrounded by extremely dense stands of trees putting campers, hikers, horseback, emergency service and other personnel at risk. Communications are often non-existent for the public. In the last several years, SAR missions have been up significantly. During Covid pandemic many people have migrated to the forest both to improved and dispersed sites. The public is increasingly unprepared for hiking, skiing, snowmobiling, hunting in these areas. It is common for the public to follow GPS apps on smart phones rather than following signs and utilizing appropriate precautionary measures. Increased signage for Forest Service roads is necessary. Roads are being closed in areas that are critical to SAR missions, and documentation of the road system is limited. SAR volunteer rely and vantage points that allow a strategic view of remote areas.

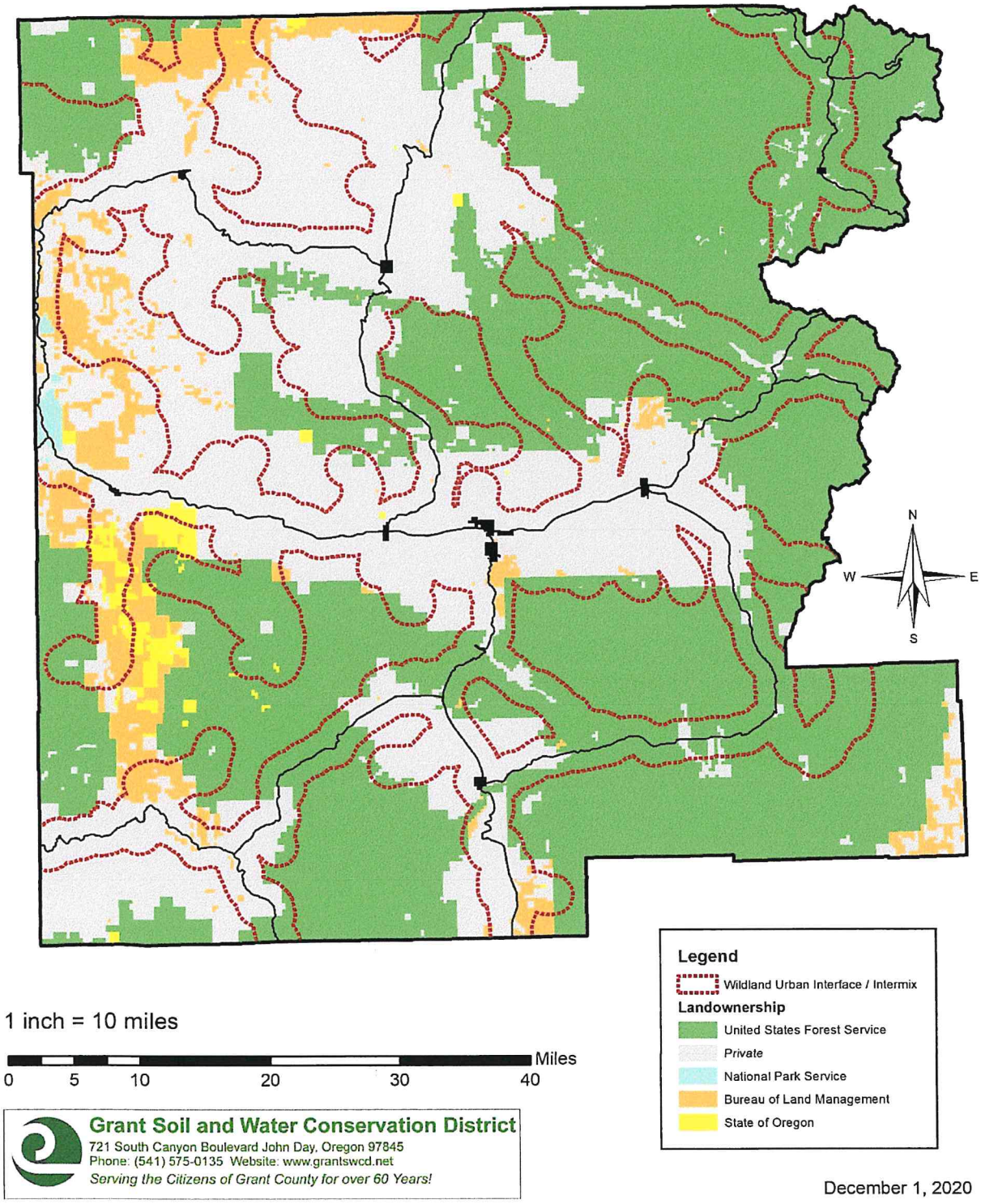
- Identify and develop more/existing water sources
- Prioritize and keep open roads on the Malheur NF for safety reasons – these should be identified in travel management plan.

- Identify roads that lead to large inaccessible areas and make these available to Search and Rescue volunteers. Areas that have good vantage points for ocular inspection of large areas are critical.
- Emphasize more cooperation between public and private lands.
- Identify cross-boundary projects for fuel reduction, prescribed burning, and other relevant work.
- Reduce fuels in the area of campgrounds and trailheads to provide safer conditions for emergency services especially County Search and Rescue volunteers.

COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Wildlands Urban Interface / Intermix Zone



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Phone: (541) 575-0135 Website: www.grantswcd.net
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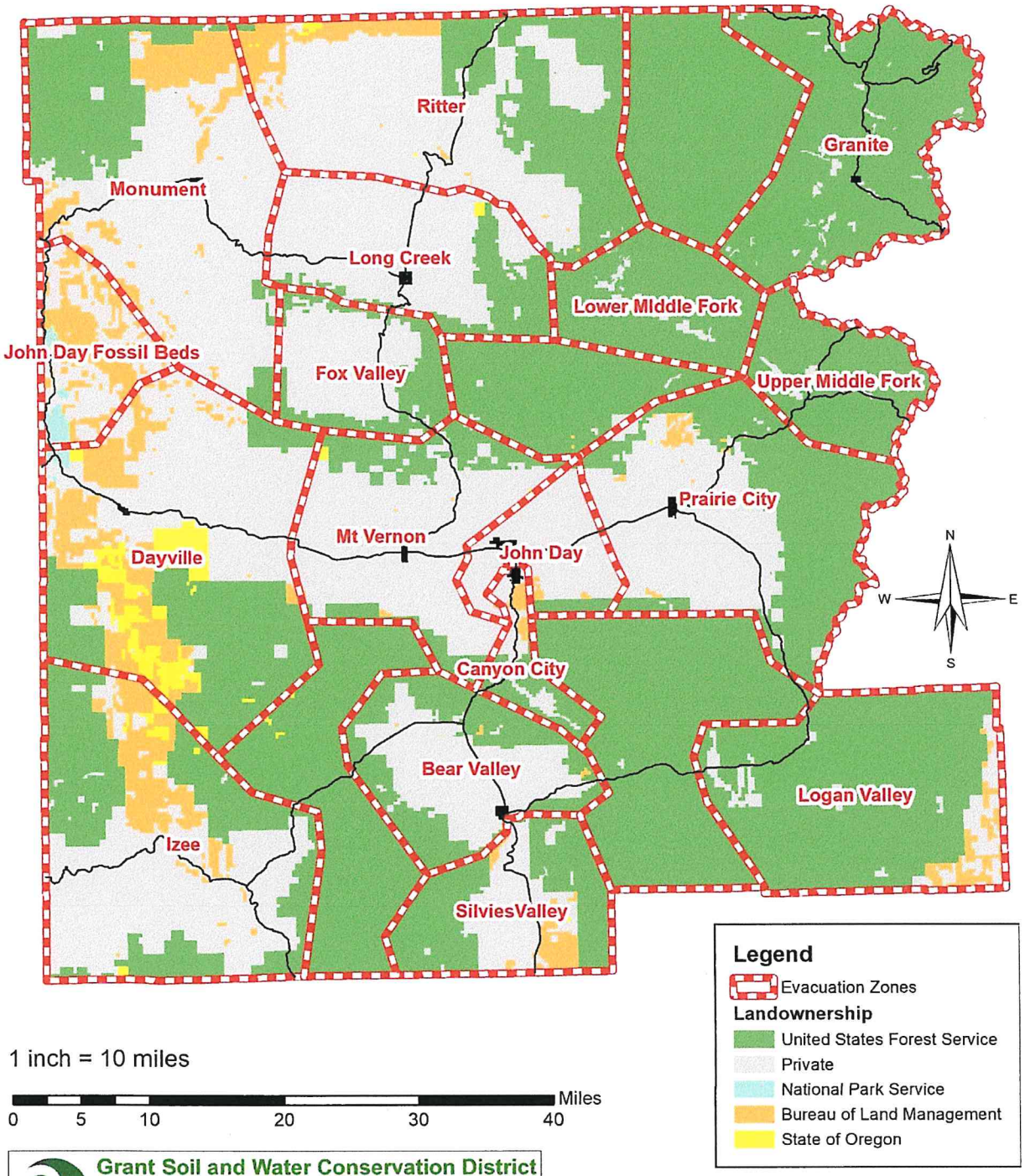
December 1, 2020

COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Project Zones



1 inch = 10 miles

0 5 10 20 30 40 Miles

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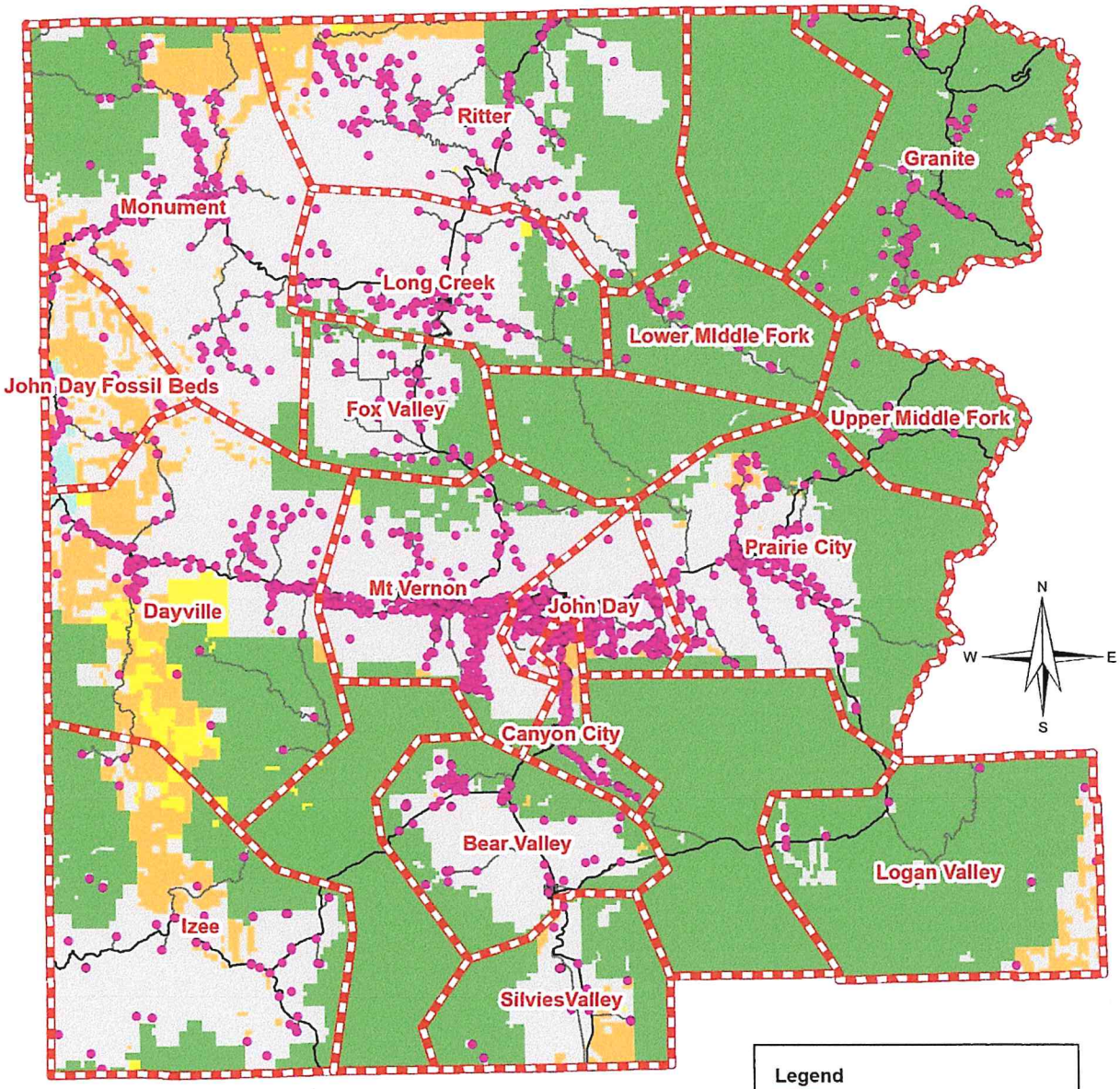
COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Residential Locations With Evacuation Zones



Legend

- Evacuation Zones
- Grant County Residential Addresses

Landownership

- United States Forest Service
- Private
- National Park Service
- Bureau of Land Management
- State of Oregon

1 inch = 10 miles

0 5 10 20 30 40 Miles

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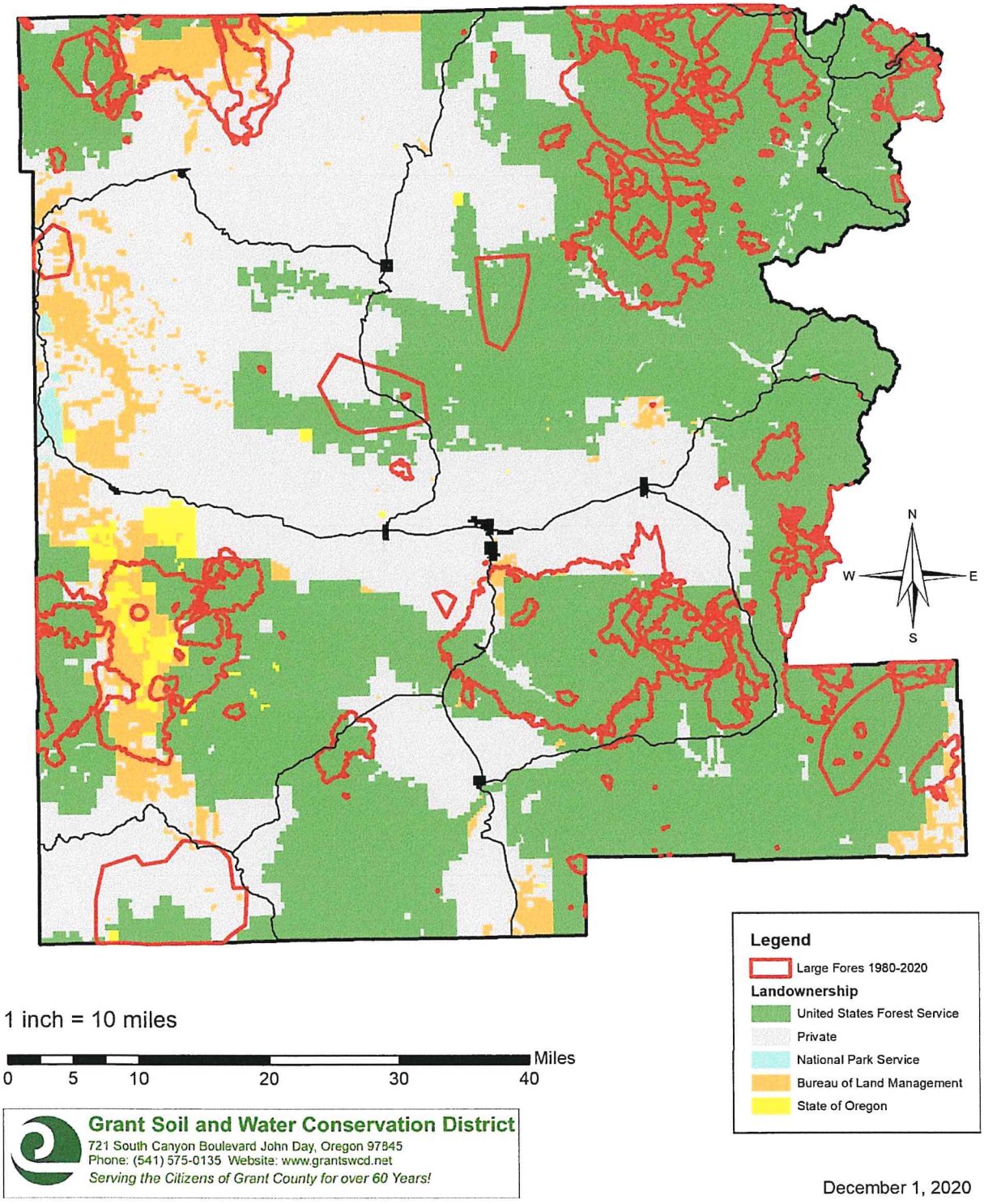
COMMUNITY WILDFIRE PROTECTION PLAN

Grant County

Large Fire Occurrence 1980 to 2020



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5.0 IMPLEMENTATION OF WILDFIRE MITIGATION STRATEGY

The mission statement for the CWPP in Grant County is: ***"Reduce the risk from wildfire to life, property and natural resources and assist with resource management of lands within Grant County in a manner that benefits the local economy and maintains and enhances natural resources."*** Based on the mission statement, the goals and objectives, and the overarching premise utilized in CRR, the revised Grant County CWPP will utilize a three pronged strategy: Fuel Reduction, Prevention, and Emergency Services. The WUI boundaries were drawn to capture the overall limitations of each fire protection district, fuel hazard, CAR's, and values-at-risk. Logical anchor points on the landscape were used to designate WUI boundaries, including natural fuelbreaks, ridgelines, roads, and local of the area. A map is provided with approximately WUI boundaries delineated, however actual boundaries will be determined on the ground as dictated by site specific conditions. In reality all the private lands in Grant County are wildland intermix and at risk from wildfire coming off federal lands.

5.1 Fuel Reduction

1. Encourage and support collaborative efforts between the Forest Service, BLM, National Park Service (NPS), Grant County Firewise Communities and all communities at risk from wildfires. Help identify needed hazard fuel reduction work on federal lands within the WUI.

- Establish fuel breaks on federal lands that border Firewise Communities in Grant County
- Work with Grant County representatives to create fuel breaks along evacuation corridors

Responsibility – Forest Service, BLM, Grant County Wildfire Coordinator
Time Frame – Initiate in 2021 and continue as necessary as ongoing projects.

2. Encourage and support efforts between private landowners and ODF for implementation of fuel reduction projects in high priority areas. High priority areas for fuel reduction in order of need:

- Private lands in the John Day Valley east along the Malheur National Forest Boundary from Canyon City/John Day. Extreme need for fuel reduction in the WUI area from Highway 26 east to Little Tamarck Draw Ln.
- Private lands in the John Day Valley west along the Malheur National Forest Boundary from Canyon City/John Day to the Harper Creek Road area south of Mt. Vernon
- Private lands in the John Day Valley west of Harper Creek Road along the Malheur National Forest Boundary to the ODFW lands west of Widows Creek.
- Private lands east of the city of Long Creek to the Malheur National Forest boundary.
  Responsibility – ODF

Time Frame – Initiate in 2021 and continue as necessary as ongoing projects.

3. Encourage and support efforts between private landowners and ODF to get slash from fuel reduction projects burned. This is a **High** priority.

   Responsibility – ODF, Grant County Wildfire Coordinator

5.2 Prevention

1. Create a succession plan for the Grant County Wildfire Coordinator to continue active fire prevention work in the County in the event that Title 3 funds are no longer available. This is a **High** priority.

   Responsibility – Grant County Wildfire Coordinator, Grant County Court
   Time Frame – Initiate immediately and complete by December 31, 2023.

2. Continue county-wide wildfire education and prevention efforts as described in the 2005 and 2013 Grant County CWPPs. This is a High priority.

   Responsibility – County Wildfire Coordinator, Grant-Harney Fire Prevention Co-op, Federal agencies, County Emergency Service Personnel, ODF
   Time Frame – Immediate and ongoing

3. Continue to promote and assist with the establishment of Firewise Communities within the County. This is a High priority for individual communities. Communicating the importance and the value to community members and motivating them to action is the challenge.

   Responsibility – County Wildfire Coordinator
   Time Frame – Immediate and ongoing

5.3 Emergency Services

1. Continue to implement a geographical information system (GIS) system in the county. Grant County currently does not support any type of county wide GIS. GIS is needed to capture, store, manipulate, analyze, manage, and present all types of geographical data associated with the CWPP and to merge cartography, statistical analysis, and database technology. GIS capability is needed for emergency services personnel, for combining data provided by various federal and state agencies, for tracking landowners in the WUI, and for easily locating structures in the WUI. Consequently, a GIS database is currently being developed as a result of and in conjunction with the development of the revised Grant County CWPP.

   Responsibility – County Wildfire Coordinator
   Time Frame- Immediate and Ongoing

2. Relocate and memorialize locations of dry hydrants established throughout the County.

   Responsibility – ODF
   Time Frame – Ongoing

3. Continue to evaluate and update the county emergency management systems, including fire suppression resources county-wide.

   Responsibility – Grant County Wildfire Coordinator and all Emergency Services
   Time Frame – Ongoing

4. Complete a road hazard assessment to address existing road conditions which could result in problems for evacuation of residents and limit fire apparatus response during a wildfire situation. Priority areas include:

   - Areas covered by Mt. Vernon rural fire department
   - Areas covered by John Day rural fire department
   - Areas covered by Prairie City rural fire department

   Responsibility – County Wildfire Coordinator, Rural Fire Districts, Grant County Sheriff's Office, ODF
   Time Frame – Immediate and ongoing

5. Update and maintain County-wide evacuation plans. This is a High priority.

   Responsibility –Wildfire Coordinator, Rural Fire Districts, Grant County Sheriff's Office, Grant County Emergency Management, ODF
   Time Frame - Ongoing

6. Assist all Fire Departments within the County in upgrading their firefighting equipment, facilities and training as needed. This is a High priority.

   Responsibility – ODF, Fire Chiefs, Forest Service, BLM, Grant County
   Time Frame – Immediate and ongoing

The dry hydrant at left was one of many that were established throughout the County. The locations of the others have been lost and need to be relocated.

5.4 County-Wide General Strategy:

Continue to:

Hold an annual meeting to discuss the CWPP including the previous year's accomplishments and the plans for the upcoming year.

Protect against potential losses to life, property and natural resources from forest/range fires by

- Establishing and maintaining escape routes and adjacent corridors.
- Identifying areas at risk and hazards.
- Reducing wildfire risk to identified areas.
- Developing and utilizing widespread partnerships between citizens, agencies and stakeholders.
- Identifying tools and procedures for improving fire suppression.

Build and maintain active participation from each Fire Protection District by

- Identifying actions for fire protection.
- Improving pre-suppression planning in the event of a wildfire.
- Identifying equipment and training needs.

Identify incentives for fire protection and community participation by

- Accessing and utilizing federal and other grant dollars
- Developing incentives for landowners to both conduct fuel reduction and maintain those conditions

Monitor the changing conditions of forest fire risk and citizen action over time by

- Establishing and maintaining a monitoring and evaluation process.

Institutionalize fire-related programs and sustain community efforts for fire protection by

- Establishing and maintaining a County fire prevention program
- Holding an annual meeting to review progress and plan new projects.

Improve community safety through continued wildland fire education and awareness by

- Setting realistic expectations for reducing forest fire risk.
- Promoting visible projects and program successes.
- Developing strategies for increasing citizen awareness and action for fire and outreach prevention.

Preserve and promote the history, custom, culture and economic health of Grant County by

- Identifying economic developments and networking opportunities regarding fuel reduction and biomass utilization enterprises.
- Evaluation and implementing as appropriate recommendations from the Grant County Private Timberlands Project developed in 2013.

Engage the local workforce in work related to wildfire prevention and protection, and restoration of lands in Grant County by

- Hiring the local workforce for projects.
- Implementing relevant recommendations in the Private Timberlands Project.

Strengthen emergency management in Grant County by

- Improving coordination and communication between county government, fire protection districts, state and federal agencies and other relevant community groups.

GRANT COUNTY COMMUNITIES AT RISK – WILDFIRE RISK ASSESSMENT

County Evacuation Zone	John Day	John Day Fossil Beds	Monument	Mt. Vernon	Prairie City	Ritter	Silvies Valley	Upper Middle Fork	
RISK									
Fire Occurrence									
0 -.1 5 pts									
.1-1.1 10 pts									
1.1+ 20 pts	20	20	20	20	20	20	20	20	
Home Density									
0-0.9 Rural 0 pts		0				0	0	0	
1-5 Suburban 5 pt	5		5	5	5				
5+ Urban 10 pts									
Other Factors									
< 1/3 0 pts									
1/3 -2/3 5 pts	5	0	5	5	5	0	5	0	
>2/3 10 pts									
Risk Category Rating	***30***	***20***	***30***	***30***	***30***	***20***	***25***	***20***	
HAZARD									
Weather									
Zone 3 40 pts	40	40	40	40	40	40	40	40	

Table 2 – CAR Risk Assessment

GRANT COUNTY COMMUNITIES AT RISK – WILDFIRE RISK ASSESSMENT

County Evacuation Zone	John Day	John Day Fossil Beds	Monument	Mt. Vernon	Prairie City	Ritter	Silvies Valley	Upper Middle Fork	
HAZARD									
Slope									
0 – 25% 0 pts	0						0		
26-40% 2 pts		2		2	2				
41%+ 3 pts			3			3		3	
Aspect									
N,NW,NE 0 pts	0			0		0		0	
W,E 3 pts		3					3		
S,SW,SE 5 pts	5		5	5	5	5		5	
Elevation									
5,001+ 0 pts							0		
3,500-5000 1 pts			1		1	1		1	
0-3,500 2 pts	2	2		2					
Vegetation									
Non-forest 0 pts									
HV-1 5 pts		5							
HV-2 15 pts									
HV-3 20 pts	20		20						

Table 2 – CAR Risk Assessment

GRANT COUNTY COMMUNITIES AT RISK – WILDFIRE RISK ASSESSMENT

County Evacuation Zone	John Day	John Day Fossil Beds	Monument	Mt. Vernon	Prairie City	Ritter	Silvies Valley	Upper Middle Fork	
HAZARD									
Crown Fire Potential									
Low 0 pts		0					0		
Moderate 5 pts	5		5	5					
High 10 pts					10	10		10	
Hazard Rating	*72*	*52*	*74*	*72*	*78*	*74*	*70*	*79*	
VALUES PROTECTED									
Home Density Per 10 acres									
.1-.9 2 pts		2	2			2	2	2	
1-5.0 15 pts	15			15	15				
5.1+ 30 pts									
Infrastructure									
None 0 pts						0		0	
One 10 pts		10	10	10	10		10		
>One 20 pts	20								
Values Protected Rating	*35*	*12*	*12*	*25*	*25*	*2*	*12*	*2*	

Table 2 – CAR Risk Assessment

GRANT COUNTY COMMUNITIES AT RISK – WILDFIRE RISK ASSESSMENT

County Evacuation Zone	John Day/ Intermix	John Day Fossil Beds	Monument/ Intermix	Mt. Vernon/ Intermix	Prairie City/ Intermix	Ritter	Silvies Valley	Upper Middle Fork	
PROTECTION CAPABILITIES									
Fire Response									
Structure<10 min 0 pt									
Protection>10 min 8 pt	8		8	8	8				
Wildland Only 15 pt	15	15	15	15	15	15	15	15	
No Protection 30 pt									
Community Preparedness									
Prepared 0 pts									
Mixed 1 pts	1		1	1	1	1		1	
Mainly agency 2 pts		2					2		
No effort 4 pts									
Protection Capability Rating	*24*	*17*	*24*	*24*	*24*	*16*	*17*	*16*	
TOTAL RISK RATING	**161**	**101**	**140**	**151**	**157**	**112**	**97**	**117**	

Table 2 – CAR Risk Assessment

GLOSSARY

Biomass: quantity of biological matter of one or more species present on a unit area.

Condition Class: qualitative measure of degree of departure from historical ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings.

Conflagration Act: state legal authority established as a civil defense measure to mobilize structural fire suppression resources for massive urban fires. It was first used in 1951 to coordinate aid to an explosion and fire in downtown Roseburg. The Act was not invoked again until 1972, when a wildland fire in Yamhill County threatened homes in what is now known as the wildland-urban interface. The Conflagration Act must be authorized by the Governor. The Act includes authorization for OSFM to assign firefighting forces and equipment beyond mutual aid agreements. It also designates reimbursement for aid to those departments participating.

Consequence: values at-risk from a fire occurring in a specific geographic location.

Community at-risk: (in Grant County) a group of homes or other structures with basic infrastructure (such as shared transportation routes) and services within or near federal land.

Defensible Space: the zone, typically a width of 30 feet or more, between an improved property and a potential wildfire where the combustibles have been removed or modified. It is recommended, depending on slope and fuels surrounding the home, that radius of defensible space could be closer to 100 feet.

Fire Adapted Communities: The Fire Adapted Community uses tools, supported by federal and state agencies, to prepare its homes, neighborhoods, businesses, infrastructure, natural areas, and surrounding landscape for wildfire. It's up to homeowners and the local jurisdiction to take the necessary actions.

Fire regime: Qualitative measure describing the degree of departure from historical fire regimes, where fire frequency has deviated from normal intervals.
Flame length: the distance measured from the tip of the flame to the middle of the flaming zone at base of the fire. It is measured on a slant when the flames are tilted due to effects of wind and slope.

Firewise Community/Neighborhood/Site: The national Firewise USA® recognition program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. Any community that meets a set of voluntary criteria on

an annual basis and retains an "In Good Standing Status" may identify itself as being a Firewise® Site.

Fuel: Non-decomposed material, living or dead, derived from herbaceous plants.

Fuel Break: an area, strategically located for fighting anticipated fires, where the native vegetation has been permanently modified or replaced so that fires burning into it can be more easily controlled. Fuel breaks divide fire-prone areas into smaller areas for easier fire control and to provide access for fire fighting.

Fuel Hazard: a fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition or of suppression difficulty.

Fuel Loading: the volume of fuel in a given area generally expressed in tons per acre.

Fuel Model: a simulated fuel complex for which all fuel descriptors required by the mathematical fire spread model have been supplied.

Fuel Reduction: the planned manipulation of living or dead forest fuels for forest management and other land-use objectives.

Green Space: see Defensible Space.

Hazard (as it relates to wildfire): hazardous conditions like fuel, topography, weather, etc. that contributes to fire spread.

Home Ignition Zone:

Initial Attack: the actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

Ladder fuel: fuels that provide vertical continuity allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease.

Mutual Aid Agreement: agreement in place between wildland and structural fire protection agencies that allows for either fire protection agency to help the other in a wildfire event.

Prescribed Fire: the controlled application of fire to wildland fuels in either their natural or modified state, under such conditions of weather, fuel moisture, soil moisture, etc. as allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives of silviculture, wildlife management, grazing, hazard reduction, etc. The intention is to employ fire scientifically so as to realize maximum net benefits with minimum damage and at acceptable cost.

Rate of Spread: the relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire; or as rate of forward-spread of the fire front; or as rate of increase in area, depending on the intended use of the information. Usually its (forward) rate of spread is expressed in chains or acres per hour.

Risk (as it relates to wildfire): the likelihood of a fire occurring.
Roof Class: can be either A, B, C, or non-rated. Roof class is a determination of flame resistance. Class A is rated for more flame resistant building materials than Class C.

Seral: of, like, or pertaining to the development of like ecological communities.

Silviculture: manipulation of forest vegetation to accomplish a specified set of objectives; controlling forest establishment, composition, and growth.

Structural Fire Protection: The protection of a structure from interior and exterior fire ignition sources. This fire protection service is normally provided by municipal fire departments, with trained and equipped personnel. In northeastern Oregon, rural and volunteer fire departments are relied upon heavily to also provide this type of protection. After life safety, the agency's priority is to keep the fire from leaving the structure of origin and to protect the structure from an advancing wildland fire. (The equipment and training required to conduct structural fire protection is not normally provided to the wildland firefighter.) Various taxing authorities fund this service.

Structural Ignitability: a term that relates cause of a home igniting during a wildfire to building materials. Cause could be attributed to the building materials used for the home or the amount of combustible materials around the home.

Structural Vulnerability: a term that relates factors contributing to how and why a home is vulnerable to wildfire. Examples of factors that contribute to vulnerability are type of access to the home, ladder fuels and vegetation with the landscape of a home, and whether or not fire protection is available.

Survivable Space: see Defensible Space.

Triage (as it relates to structures in a wildfire event): the sorting and prioritizing of structures requiring protection from wildfire based upon an educated assessment designed to maximize the number of structures saved.

Wildland Fire Protection: the protection of natural resources and watersheds from damage by wildland fires. State and Federal forestry or land management agencies normally provide wildland fire protection with trained and equipped personnel. The structural firefighter may also be trained and equipped to aid the

wildland agency in a wildland fire event. Various taxing authorities and fees fund this service.

Wildland Fire Use: is the management of naturally ignited wildland fires to achieve forest health and resource management objectives.

Wildland-Urban Interface: (in Grant County) an area that surrounds a community or values of a community, including that community's infrastructure or water source, and may extend 1 1/2 miles or more beyond that community. The boundary of a wildland-urban interface area depends on topographic and geographic features that could influence wildfire, the location of an effective fuelbreak, or Condition Class 3 lands. All private lands in Grant County are at risk of fire coming off federal lands.

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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

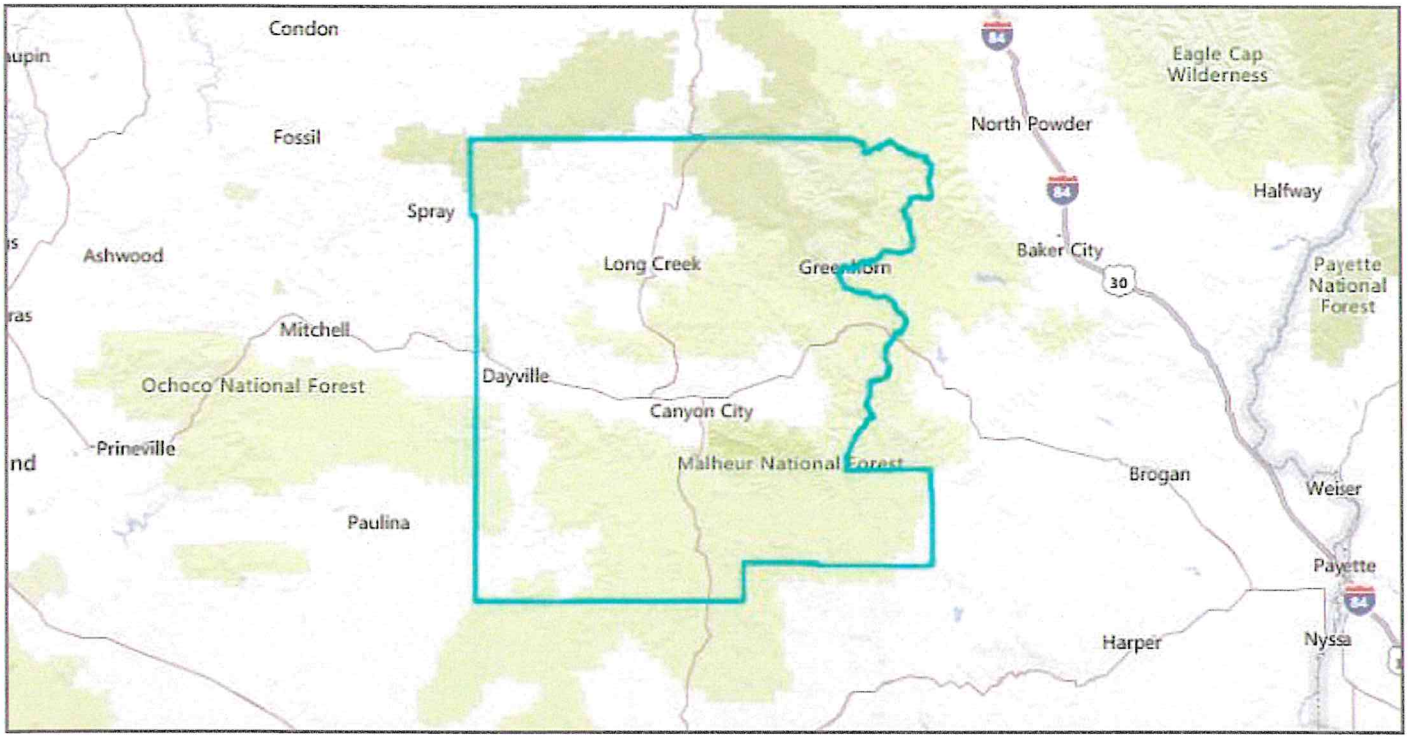
INTRODUCTION

This report summarizes wildfire risk in Grant 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.

Grant County in Oregon

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.

Grant County Reference Map



REPORT CONTENTS

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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.

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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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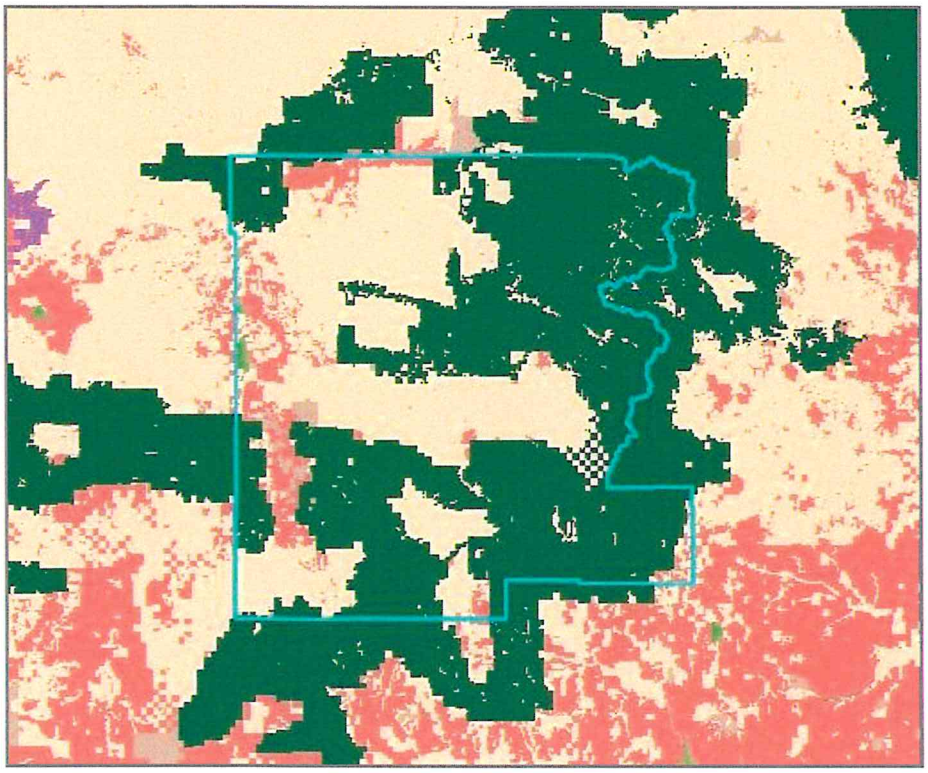
LAND OWNERSHIP AND MANAGEMENT

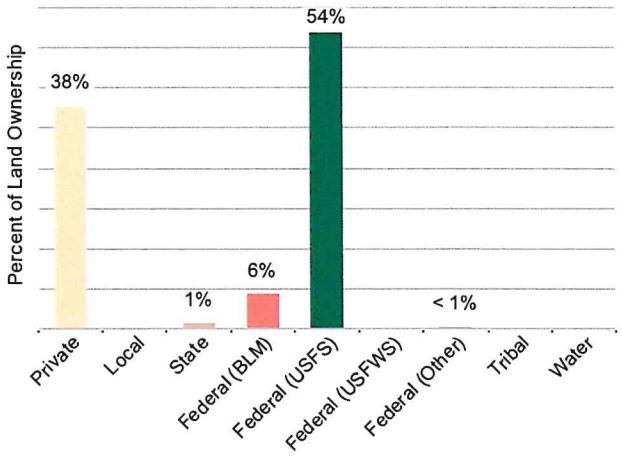


Knowing the land ownership and management in an area is important for hazard planning and awareness when wildfires occur. Oregon has a complete and coordinated wildfire management system between local, private, tribal, state, and federal agencies. These entities participate to fight fire in local areas 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.

Grant County

	Major Landowner/Manager	Acres
	Private	1,108,956
	Local	0
	State	28,764
	Bureau of Land Management (BLM)	173,770
	US Forest Service (USFS)	1,578,431
	US Fish & Wildlife (USFWS)	0
	Other Federal	7,088
	Tribal	0
	Water	0



Source: Bureau of Land Management, 2015

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

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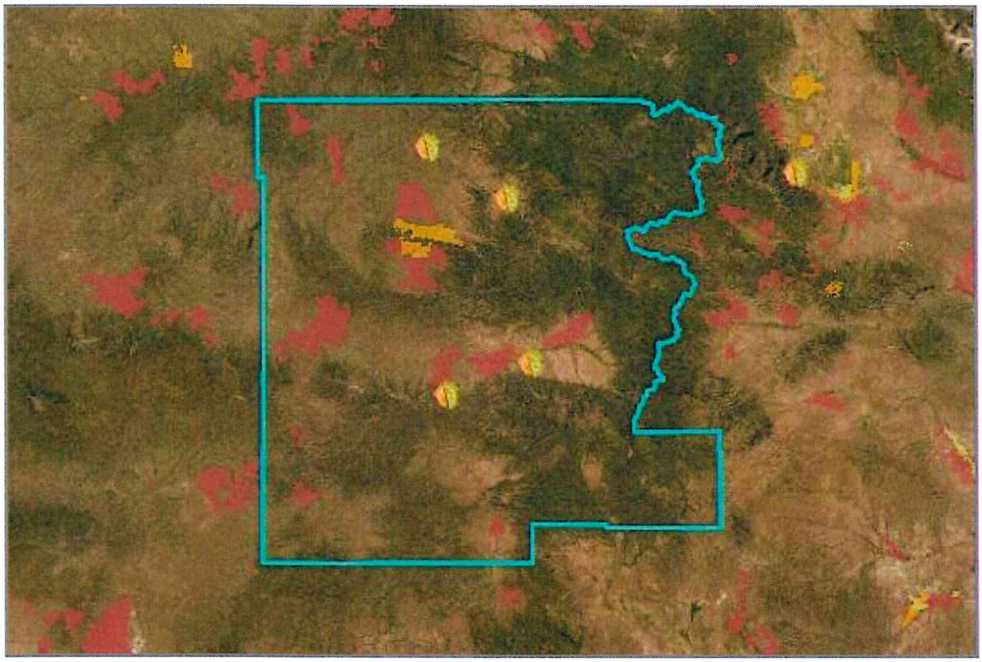
OREGON WUI COMMUNITY HAZARD RATINGS

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.

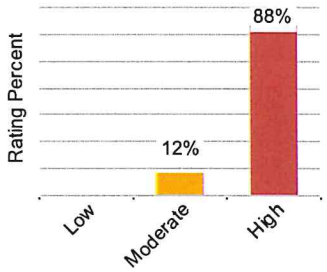
Burn Probability from the QWRA was used to assign a wildfire hazard rating to the built environment and homes in these areas. Hazard levels are based on modeled vegetation, not on building construction materials or ingress/egress issues. For a comprehensive analysis of wildfire risk and understanding 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.

Grant County



WUI Hazard Area Acres in Grant County



	Rating	Acres
	Low	0
	Moderate	17,039
	High	126,616
	Firewise Site	

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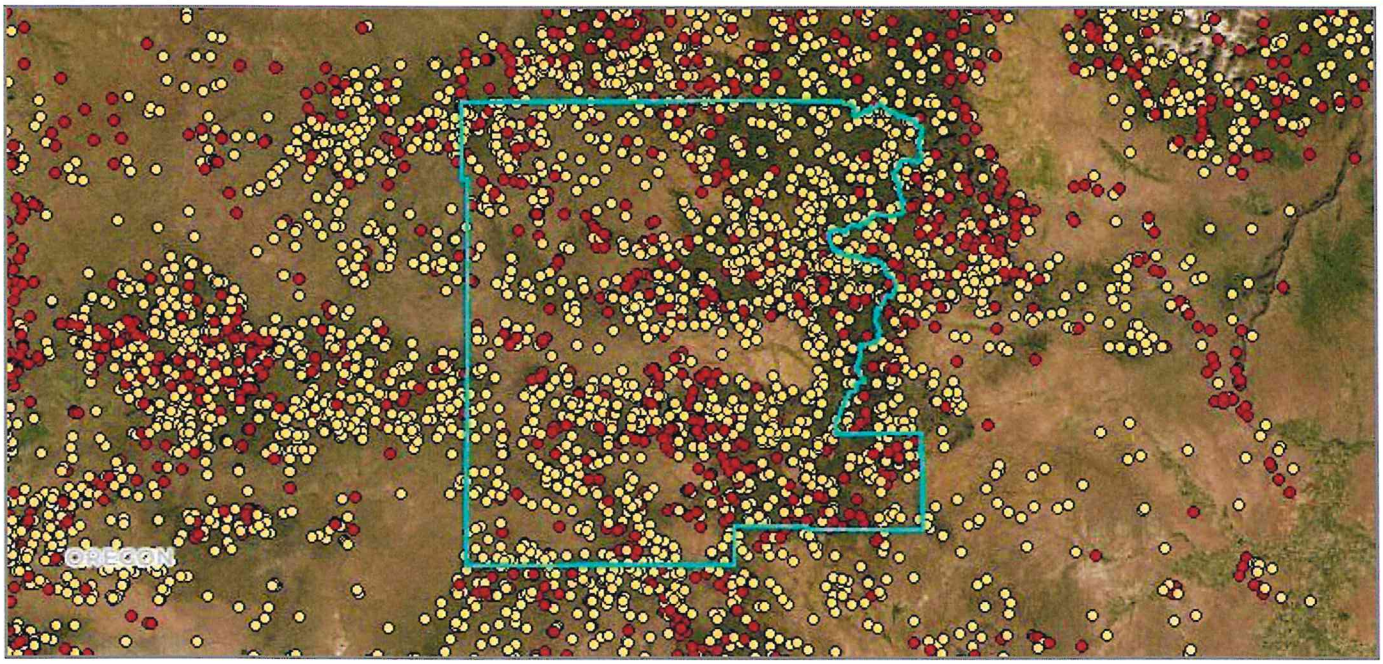
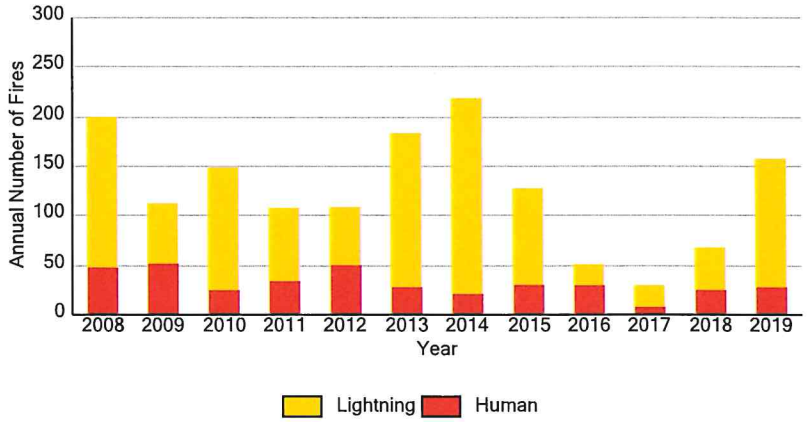
FIRE HISTORY - FIRE IGNITIONS



Grant County fire starts between 2008-2019

Total Acres Burned	269,637
Total Number of Fires	1,517
Average Acres Burned Per Year	26,964
Average Fires Per Year	152
Percent Lightning Caused	75%
Percent Human Caused	25%



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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Haystack Complex	2014	1,815
Buck Fork	2014	1,747
Throop	2014	491
Badger Butte 2	2014	17
Junction Springs	2014	15
GC Complex	2013	11,917
Vinegar	2013	1,351
Boulder Butte	2013	209
Sagehen Gulch	2013	175
High Lake	2013	155
Pine Creek Mountain	2013	28
Granite	2013	1
Parish Cabin	2012	6,437
Briley Mountain	2012	798
Steward Ditch	2012	230
180	2012	1
0848	2011	1,115
Theimer 2	2011	321
0847	2011	173
Cottonwood Creek	2011	84
0849	2011	65
Cougar Mountain	2010	2,064
Drinkwater	2010	26
North Fork Complex	2009	12,406
McGinnis Creek	2009	3,416
Cougar Creek	2009	1,049
Twelve Mile	2009	535
North Fork Complex	2009	20
North Fork Complex	2009	4
North Fork Complex	2009	< 1
North Fork Complex	2009	< 1
Murders Creek	2008	1,414
I-230	2008	23
SHEEP GULCH	2008	< 1
Monument Complex	2007	53,499
Trout Meadows	2007	3,887
Fossil Creek	2007	3,269
Otter Creek	2007	2,923
Poison Creek	2007	1,265
Grapple	2007	992
Longview	2007	841
Big Basin Complex	2007	666
Squaw Creek	2007	194
Power Fire	2007	181
China Diggins	2007	156
Little Wolf	2007	1
Shake Table Complex	2006	14,527

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Sharps Ridge	2006	5,510
Todd	2006	963
North Fire	2006	288
South Fire	2006	194
East Fire	2006	193
Groundhog	2006	71
Shake Table Complex	2006	71
CLEVENGER	2006	39
Briley Fire	2006	19
Shake Table Complex	2006	17
Cottonwood Fire	2006	15
Shake Table Complex	2006	13
Shake Table Complex	2006	13
Shake Table Complex	2006	8
Shake Table Complex	2006	7
Shake Table Complex	2006	7
Shake Table Complex	2006	< 1
Shake Table Complex	2006	< 1
Shake Table Complex	2006	< 1
CHICKENHOUSE	2005	618
Dry Cabin	2005	260
PLANE CRASH	2005	59
HIDAWAY	2005	19
Bull Spring	2003	1,268
Jenkins Cabin	2003	773
Big Ridge	2003	71
Monument	2002	24,539
747 Complex	2002	16,882
Roberts	2002	13,540
Flagtail	2002	7,920
Easy	2002	5,481
Murray 0976	2002	321
Trout Farm	2002	167
Steamboat	2002	19
Cougar	2002	17
Jacks Horse	2002	13
Mallory/birch Creek Ii	2001	12,429
Birch Creek Ii	2001	9,574
Fern Boneyard	2001	3,472
Mallory	2001	2,893
Timber Basin	2001	1,858
Big Creek	2001	689
Wolf Creek	2001	661
MONUMENT COMPLEX	2001	474
Cottonwood Creek	2001	293
Four Corners	2001	49
Franklin Mountain	2001	40

Oregon Wildfire Risk Explorer- Advanced Report

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

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Meadow	2000	591
Undefined	2000	411
Alsup Mountain	2000	45
Slide Mountain	2000	1

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

Oregon Wildfire Risk Explorer- Advanced Report

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2,897,008 Acres: (4,527 Sq. Miles)

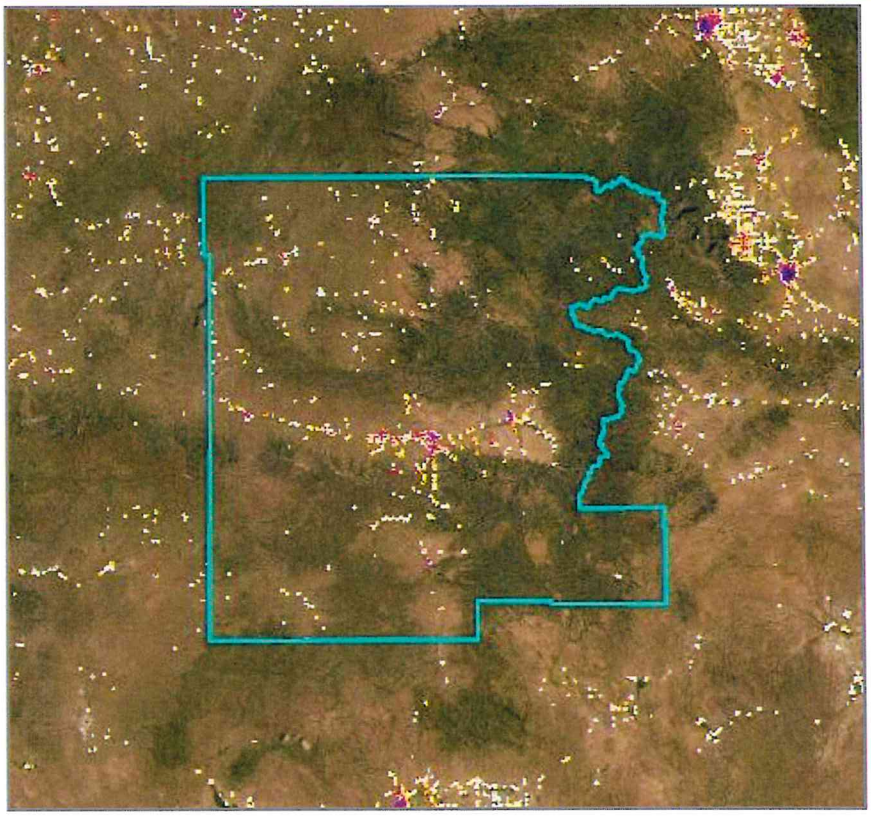
Generated: February 18, 2021

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.



Grant County housing density

Category	Acres	%*
<1 house per 40 acres	15,112	< 1
1 per 40 acres to 1 per 20 acres	6,703	< 1
1 per 20 acres to 1 per 10 acres	6,179	< 1
1 per 10 acres to 1 per 5 acres	3,332	< 1
1 per 5 acres to 1 per 2 acres	2,151	< 1
1 per 2 acres to 3 per acres	1,709	< 1
> 3 per acres	14	< 1

Source: 2013 West Wide Wildfire Risk Assessment, ODF

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

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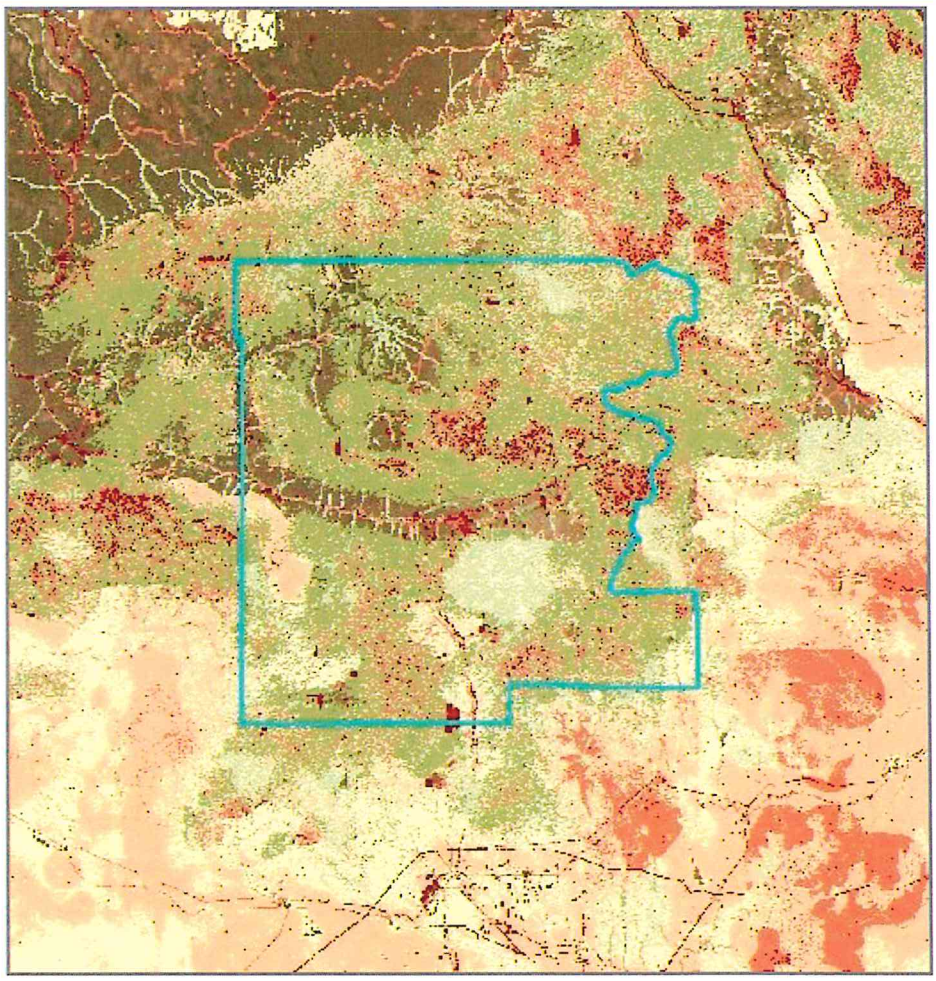
OVERALL WILDFIRE RISK

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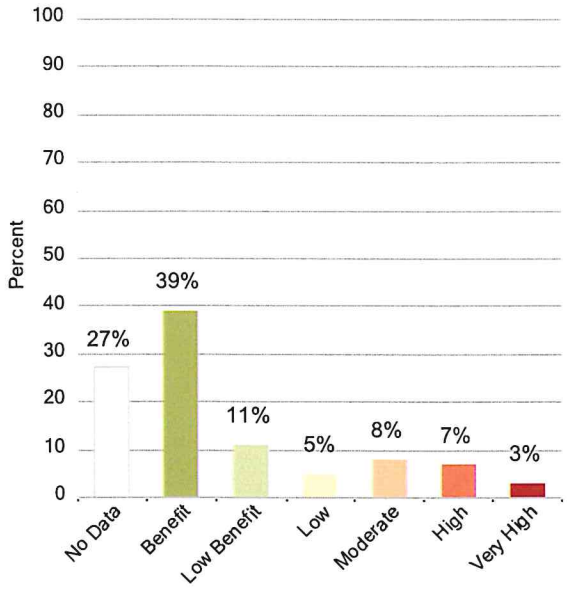
This page contains additional information about overall wildfire risk, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale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

Overall wildfire risk in Grant County: estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	87,199	27,714	0	176	2,066	56,986	0	257	0
High	206,558	29,761	0	502	5,000	171,047	0	248	0
Moderate	218,201	48,198	0	10,747	32,341	126,846	0	69	0
Low	148,527	71,930	0	785	20,716	55,061	0	35	0
Low Benefit	322,811	69,990	0	2,185	18,950	231,638	0	48	0
Benefit	1,129,331	291,324	0	6,834	35,841	795,110	0	222	0
No Data	784,373	570,052	0	7,561	58,857	141,697	0	6,206	0
Total Area	2,897,000	1,108,969	0	28,790	173,771	1,578,385	0	7,085	0

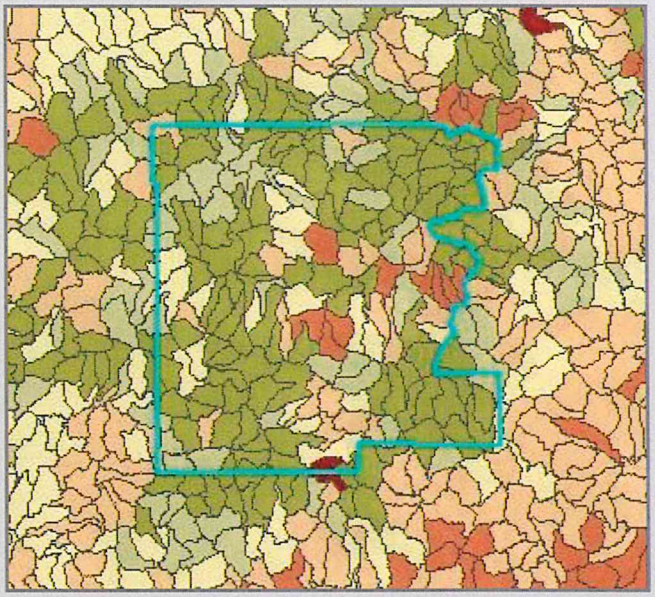
Overall wildfire risk in Grant County *



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 Grant 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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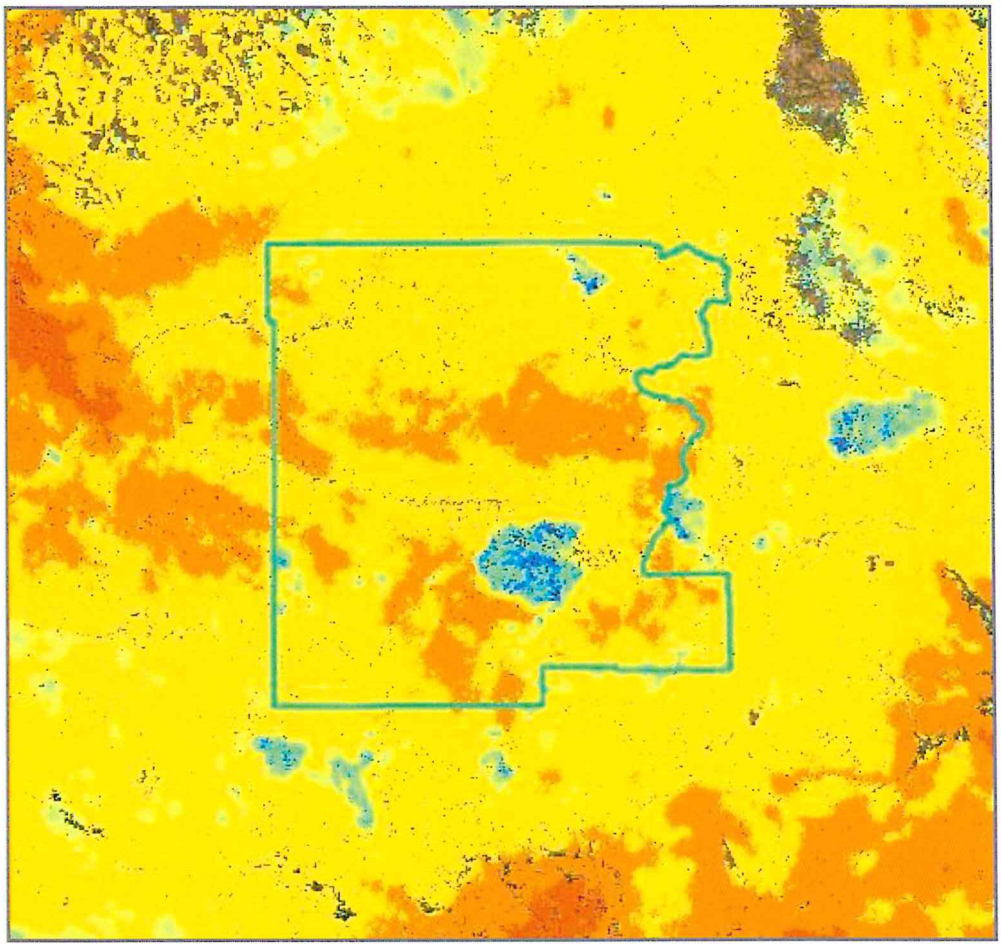
BURN PROBABILITY

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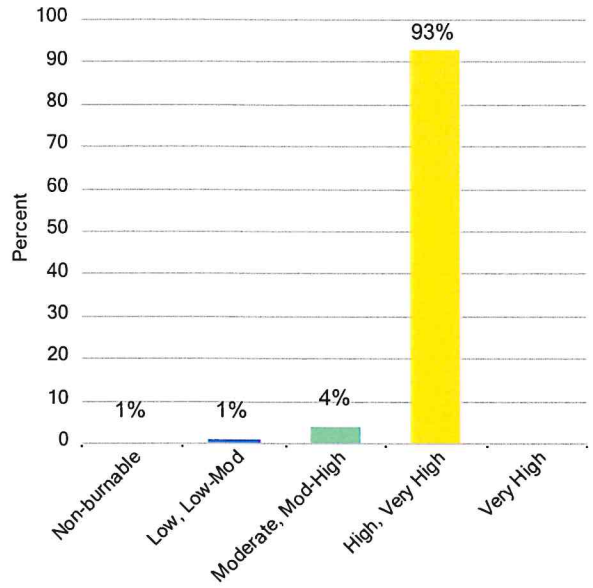
This page contains additional information about burn probability, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale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

Burn probability in Grant County: estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	0	0	0	0	0	0	0	0	0
High, Very High	2,699,577	1,071,100	0	28,586	168,607	1,424,706	0	6,578	0
Moderate, Mod-High	115,872	12,697	0	51	3,045	100,074	0	5	0
Low, Low-Mod	42,325	2,269	0	0	141	39,911	0	4	0
Non-Burnable	39,224	22,903	0	153	1,977	13,693	0	498	0
Total Area.	2,896,998	1,108,969	0	28,790	173,770	1,578,384	0	7,085	0

Burn probability in Grant County *



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

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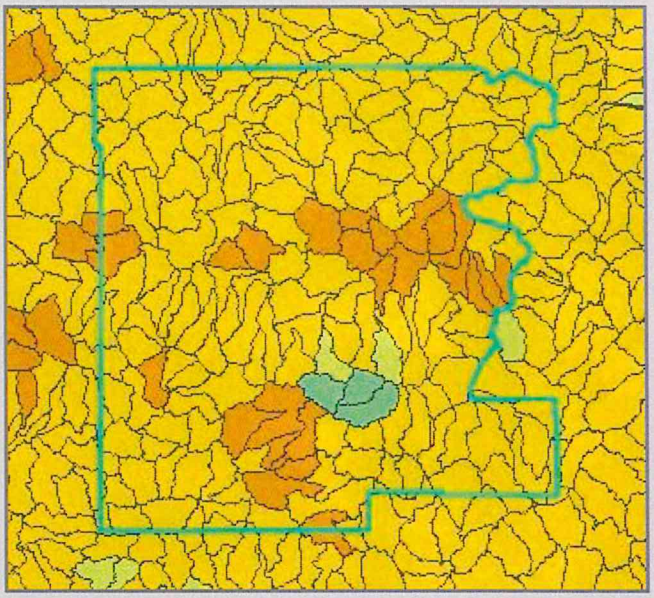
Burn probability in Grant County: sub-watershed summary map. Burn probability is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



Oregon Wildfire Risk Explorer- Advanced Report

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

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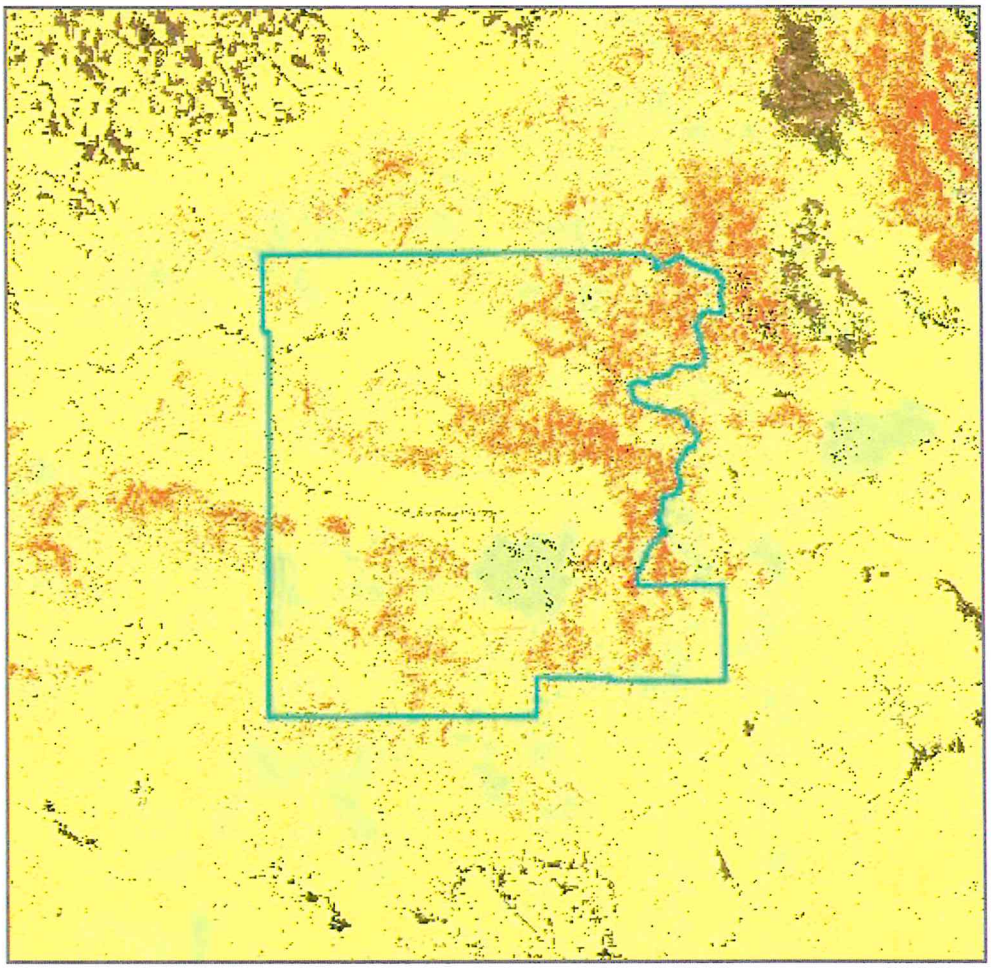
FIRE INTENSITY - FLAME LENGTHS

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.

Oregon Wildfire Risk Explorer- Advanced Report

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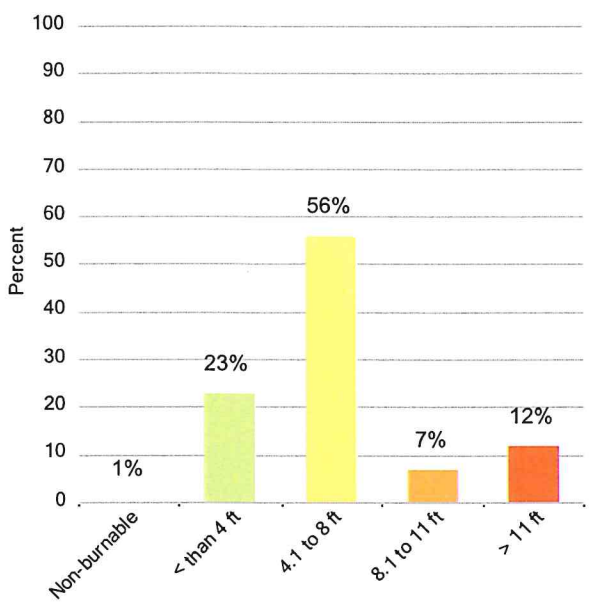
This page contains additional information about fire intensity, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale prioritization.

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

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
> 11 ft	347,026	25,148	0	1,432	7,117	313,322	0	7	0
8 - 11 ft	201,545	33,736	0	825	5,308	161,573	0	103	0
4 - 8 ft	1,628,520	836,183	0	23,286	132,544	630,382	0	6,125	0
> 0 - 4 ft	680,683	190,999	0	3,095	26,825	459,414	0	350	0
Non-burnable	39,224	22,903	0	153	1,977	13,693	0	498	0
Total Area	2,896,998	1,108,969	0	28,791	173,771	1,578,384	0	7,083	0

Fire intensity - flame length in Grant County *



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

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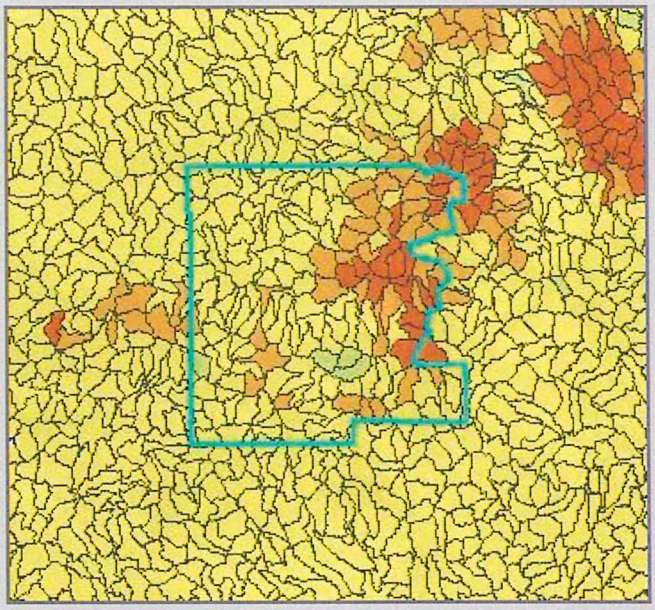
Fire intensity in Grant County: sub-watershed summary map. Fire intensity is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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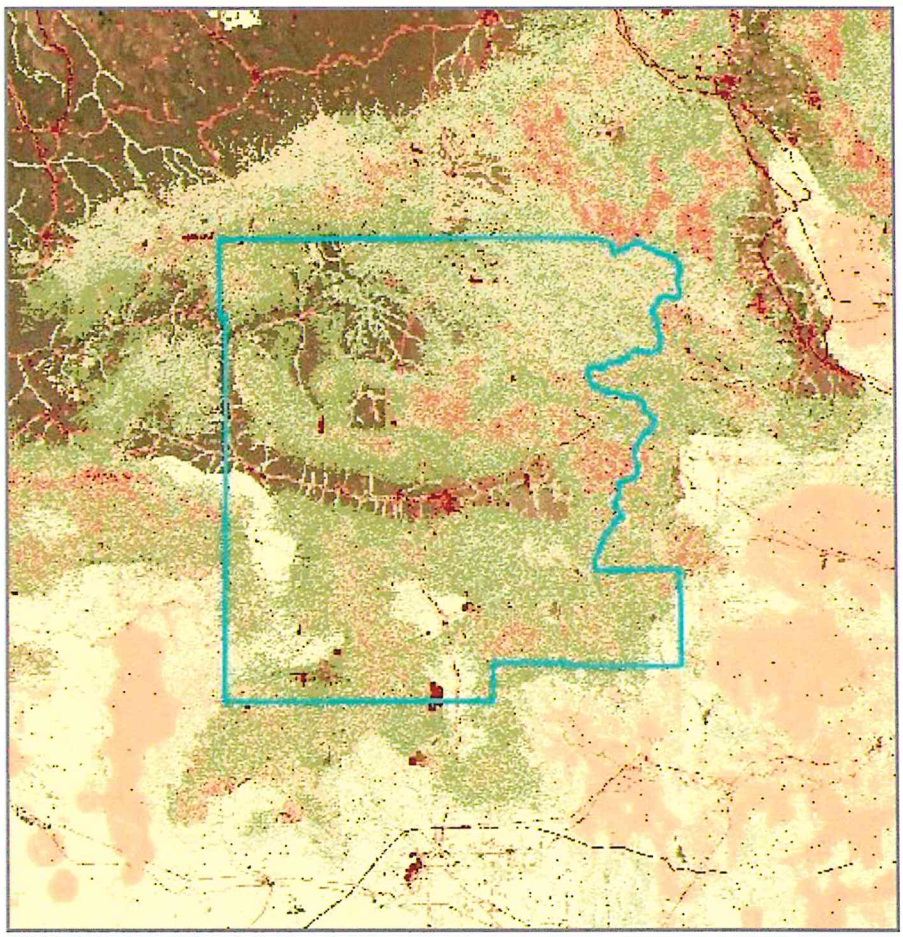
OVERALL POTENTIAL IMPACT

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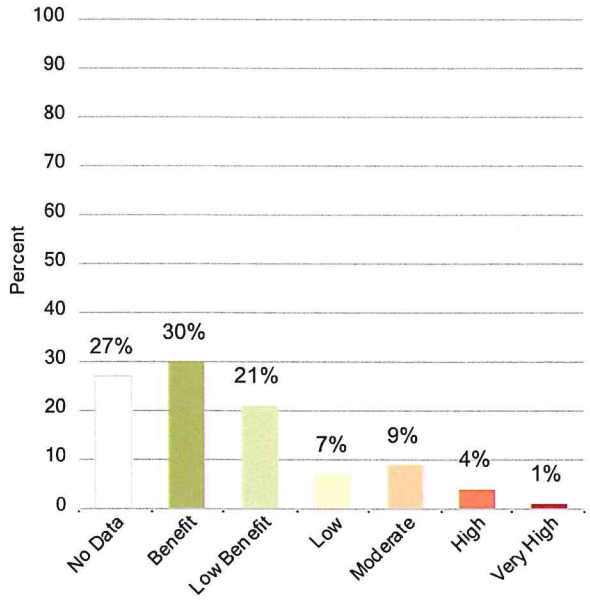
This page contains additional information about overall potential impact, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale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

Grant County overall potential impact estimated acres by ownership

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	28,686	20,929	0	149	1,378	6,216	0	14	0
High	125,661	22,426	0	115	2,151	100,647	0	322	0
Moderate	264,637	31,274	0	1,054	9,603	222,488	0	218	0
Low	207,926	93,538	0	10,825	44,006	59,510	0	47	0
Low Benefit	604,862	151,512	0	4,534	29,032	419,613	0	171	0
Benefit	880,854	219,238	0	4,553	28,744	628,213	0	106	0
No Data	784,373	570,052	0	7,561	58,857	141,697	0	6,206	0
Total Area	2,896,999	1,108,969	0	28,791	173,771	1,578,384	0	7,084	0

Overall potential impact in Grant County *



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

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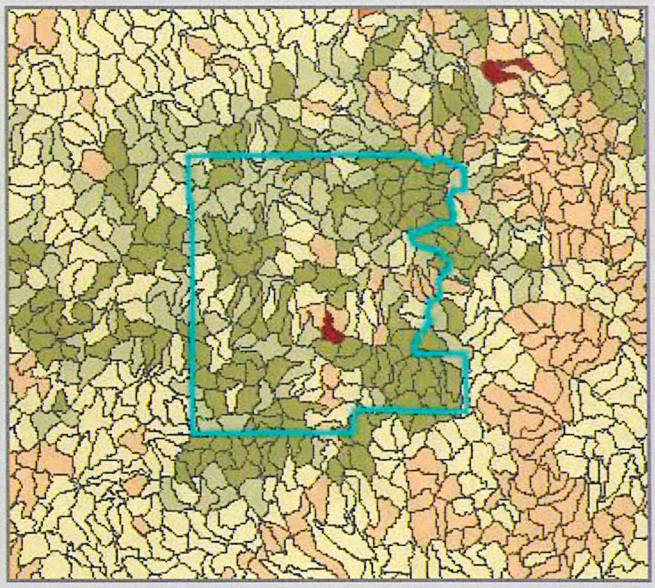
Overall potential impact in Grant County: sub-watershed summary map. Overall potential impact is summarized at the sub-watershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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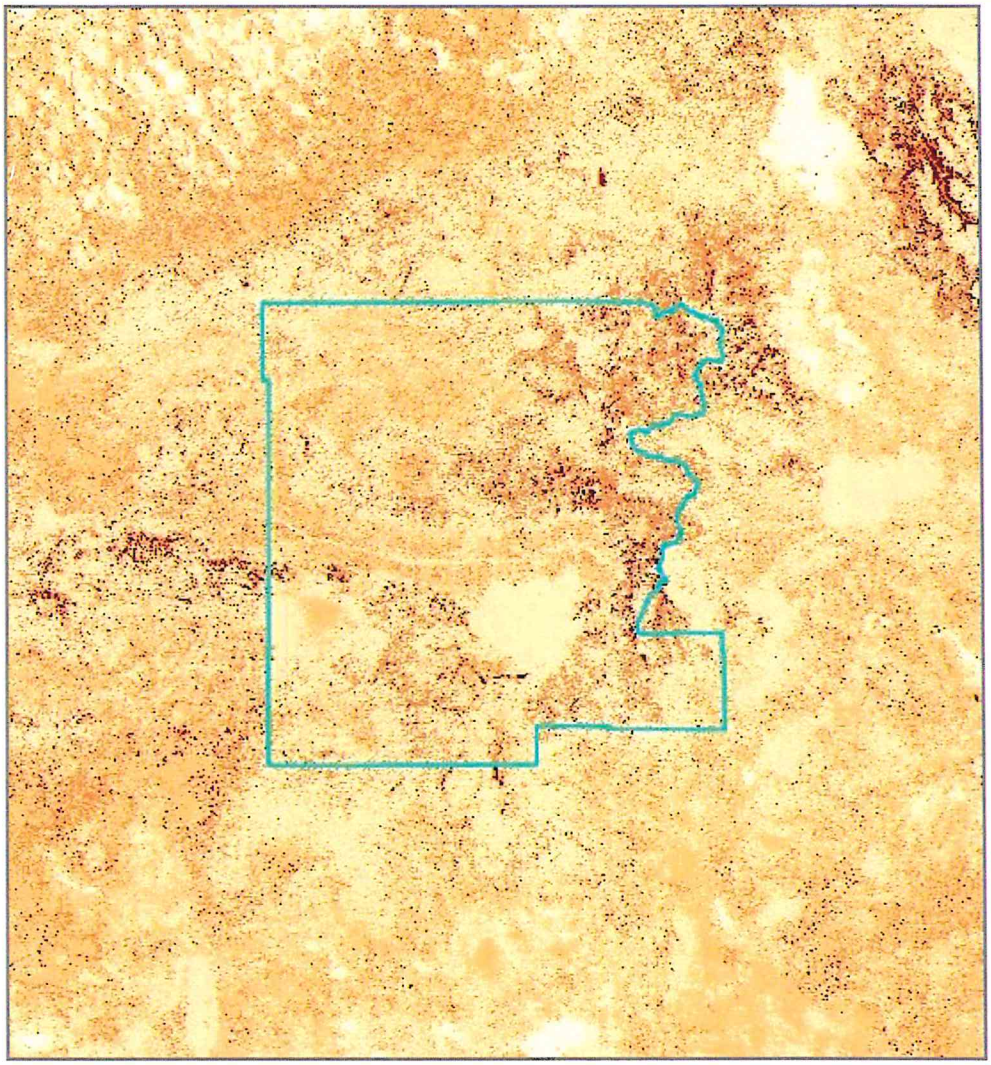
HAZARD TO POTENTIAL STRUCTURES

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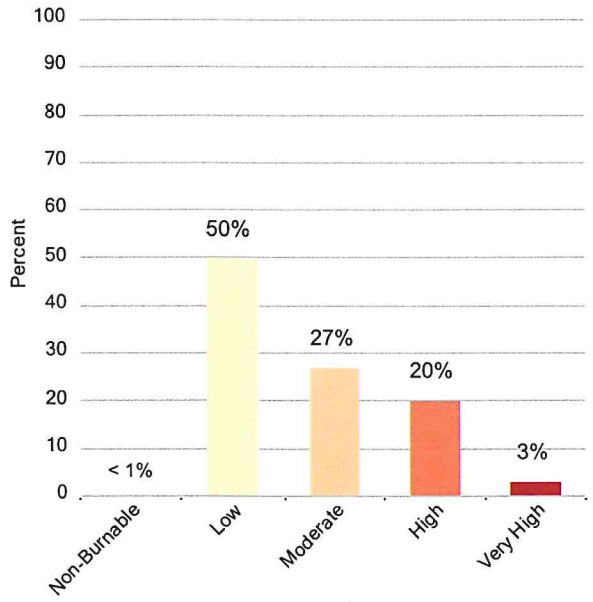
This page contains additional information about hazard to potential structures, including a table of classes by ownership to determine the distribution of categories across ownerships, and a chart of overall percentages of classes across the area. The inset box displays sub-watershed summaries for landscape-scale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

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

Category	Total	Private	Local	State	BLM	USFS	USFWS	Other Fed	Tribal
Very High	73,322	13,241	0	354	2,713	56,931	0	83	0
High	588,080	151,275	0	3,271	20,950	411,638	0	946	0
Moderate	789,499	448,550	0	15,675	71,810	249,371	0	4,093	0
Low	1,442,228	494,393	0	9,473	78,013	858,413	0	1,936	0
Non-Burnable	3,869	1,510	0	16	286	2,031	0	26	0
Total Area	2,896,998	1,108,969	0	28,789	173,772	1,578,384	0	7,084	0

Hazard to potential structures in Grant County *



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

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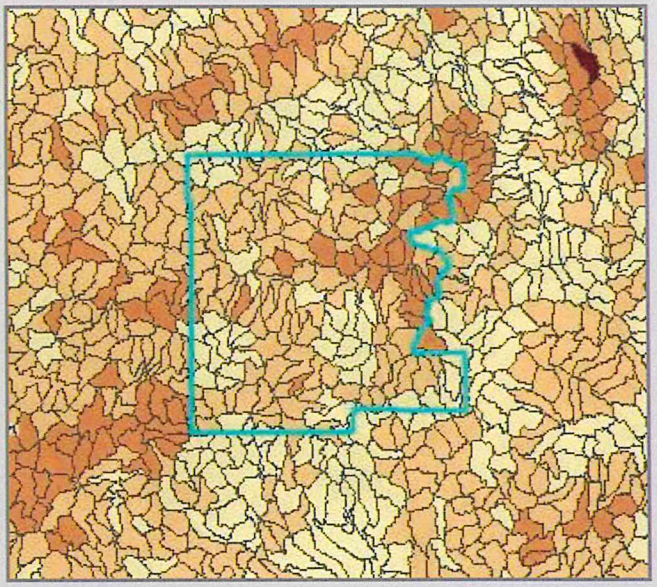
Hazard to potential structures in Grant County: sub-watershed summary map. Hazard to potential structures is summarized at the subwatershed (6th field Hydrologic Unit Code, HUC12) level. Watershed summaries enable you to view the landscape context and identify and compare sub-watersheds for prioritization.



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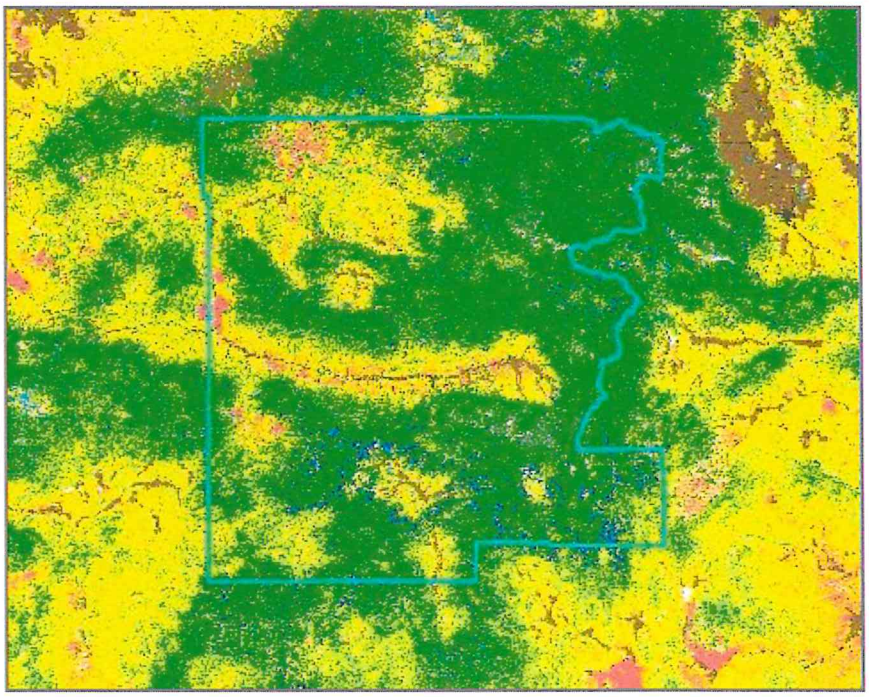
EXISTING VEGETATION TYPE

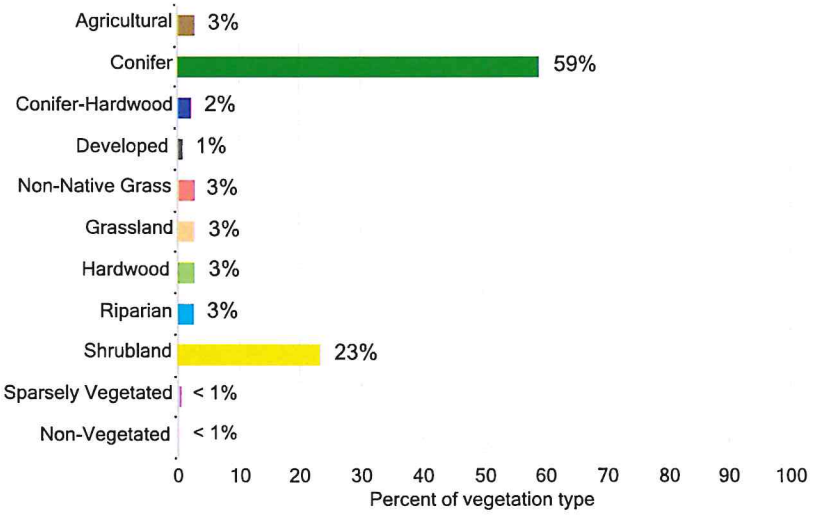
Vegetation is an important influence on potential wildfire behavior. The dominant vegetation type helps us understand the corresponding historical fire regime, a designation of fire frequency and severity. Fire frequency, or burn probability, suggests how often wildfire occurs (see Burn probability data 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 Grant County



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Grant County vegetation type

Category	Description	Acres	%*
Non-vegetated or recently disturbed	Non-vegetated	3,286	< 1
Agricultural	Agricultural	82,445	3
Conifer	Conifer	1,712,270	59
Conifer-Hardwood	Conifer-Hardwood	64,288	2
Developed	Developed	23,126	< 1
Exotic Herbaceous	Non-Native Grass	78,867	3
Grassland	Grassland	80,946	3
Hardwood	Hardwood	83,825	3
Riparian	Riparian	77,029	3
Shrubland	Shrubland	677,378	23
Sparsely Vegetated	Sparsely Vegetated	13,539	< 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

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

Oregon Wildfire Risk Explorer- Advanced Report

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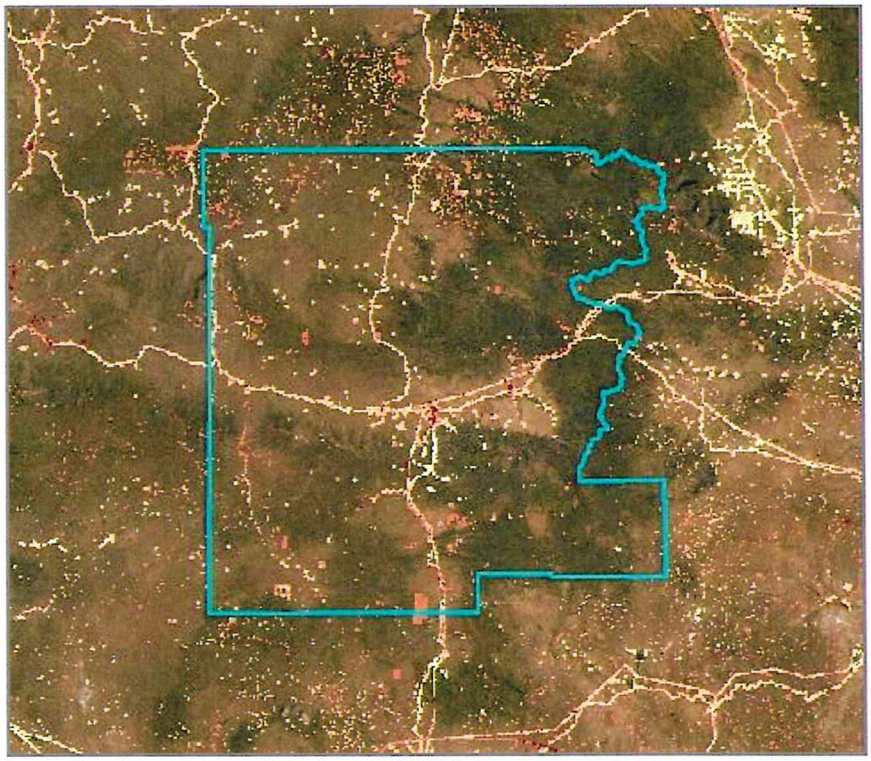
WILDFIRE RISK TO ASSETS

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 Grant County

Category	Description	Acres	%*
Very High	Wildfire risk is very highly negative to all combined mapped assets (top 5%).	2,485	< 1
High	Wildfire risk is highly negative (80-95th percentile).	20,884	< 1
Moderate	Wildfire risk is moderately negative (50-80th percentile).	38,067	1
Low	Wildfire risk is slightly negative (0-50th percentile).	6,149	< 1
No Data	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable.	2,829,415	98

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

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

Generated: February 18, 2021

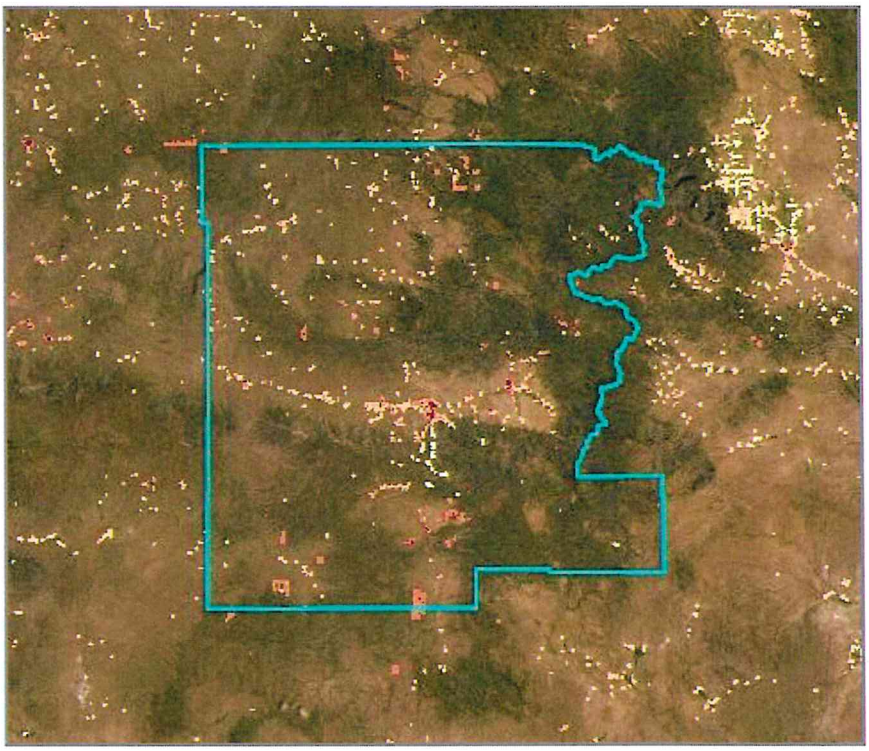
WILDFIRE RISK TO PEOPLE AND PROPERTY

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 Grant County

Category	Description	Acres	%*
Very High	Wildfire risk is very highly negative to people and property (top 5%).	2,179	< 1
High	Wildfire risk is highly negative (80-95th percentile).	19,003	< 1
Moderate	Wildfire risk is moderately negative (50-80 percentile).	19,946	< 1
Low	Wildfire risk is slightly negative (0-50 percentile).	1,583	< 1
No Data	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable.	2,854,289	99

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

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

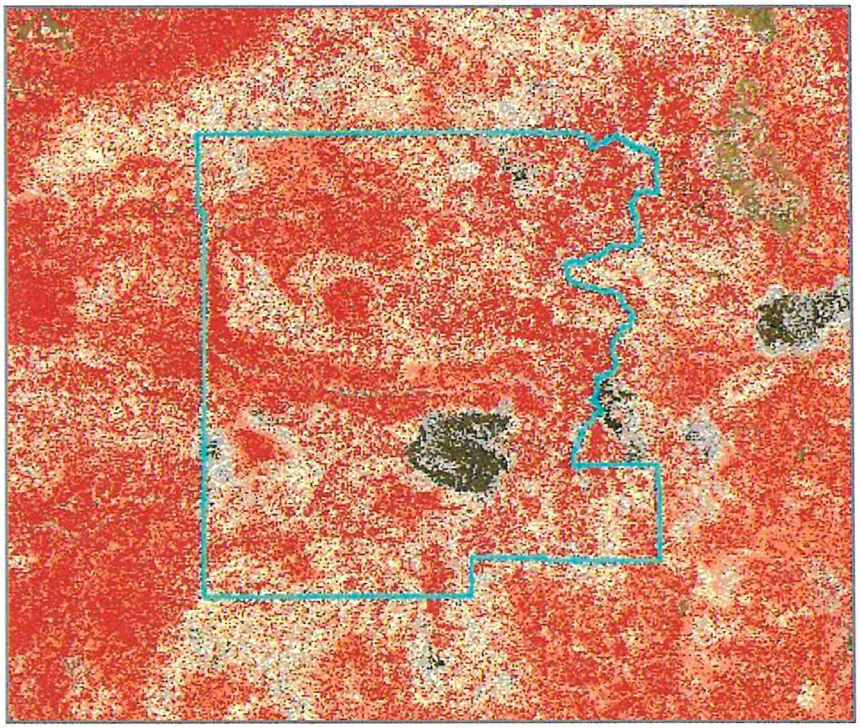
Generated: February 18, 2021

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).



Grant 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'.	1,129,244	39
50-75%	If a fire occurs, there is a high (50-75%) chance that flame lengths will be greater than 4'.	687,674	24
25-50%	If a fire occurs, there is a moderate (25-50%) chance that flame lengths will be greater than 4'.	588,607	20
0-25%	If a fire occurs, there is a low (<25%) chance that flame lengths will be greater than 4'.	374,572	13
0%	This area contains non-burnable fuel types such as water, urban, agriculture, barren rock, etc.	116,902	4

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

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

Generated: February 18, 2021

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.

Grant 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'.	8,663	< 1
50-75%	If a fire occurs, there is a high (50-75%) chance that flame lengths will be greater than 8'.	102,588	4
25-50%	If a fire occurs, there is a moderate (25-50%) chance that flame lengths will be greater than 8'.	355,048	12
0-25%	If a fire occurs, there is a low (<25%) chance that flame lengths will be greater than 8'.	2,002,381	69
0%	This area contains non-burnable fuel types such as water, urban, agriculture, barren rock, glacial areas, etc.	428,319	15

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

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

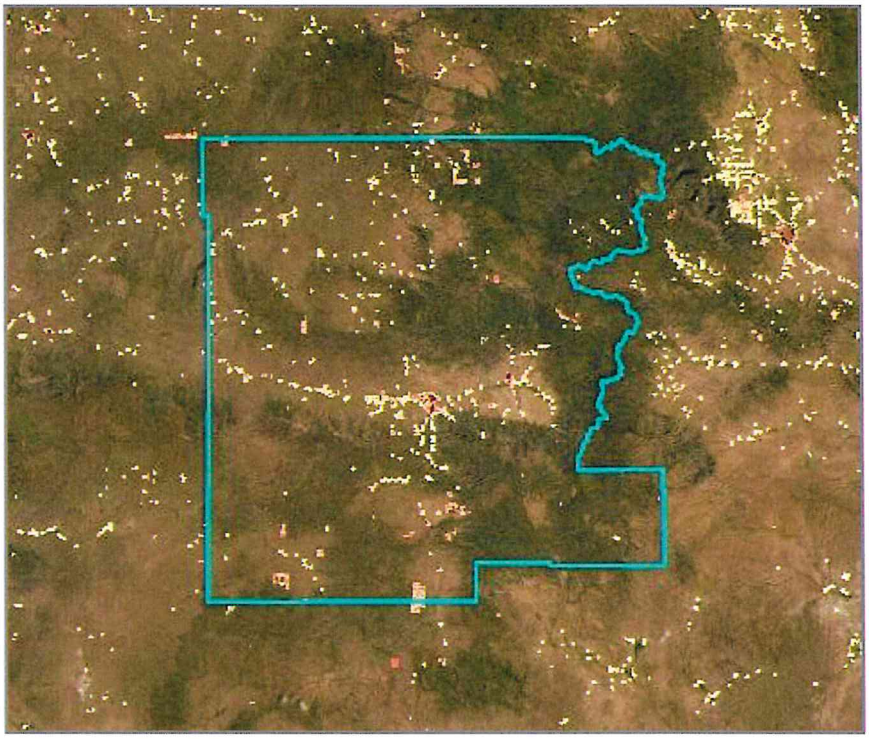
Generated: February 18, 2021

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.



Grant 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%).	872	< 1
High	Potential impact is highly negative (80-95th percentile).	7,948	< 1
Moderate	Potential impact is moderately negative (50-80th percentile).	16,839	< 1
Low	Potential impact is slightly negative (0-50th percentile).	17,051	< 1
No Data	There is no people and property mapped in the area or it is considered non-burnable (urban, agriculture, barren,etc).	2,854,289	99

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

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

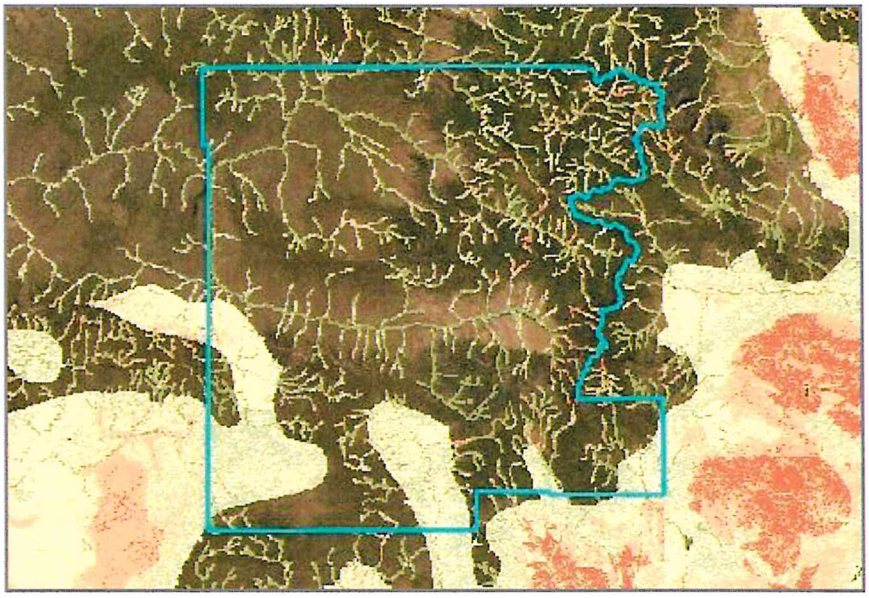
Generated: February 18, 2021

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).



Grant 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%).	248	< 1
High	Potential impact is highly negative (80-95th percentile).	9,851	< 1
Moderate	Potential impact is moderately negative (50-80th percentile).	33,758	1
Low	Potential impact is slightly negative (17-50th percentile).	229,063	8
Low Benefit	Potential impact is slightly beneficial to wildlife at low flame lengths (8-17th percentile).	157,270	5
Benefit	Potential impact is beneficial, with a cumulative positive impact on wildlife habitat (0-8th percentile).	119,778	4
No Data	There is no wildlife habitat mapped in the area, or it is considered non-burnable (urban, agriculture, barren,etc).	2,347,030	81

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

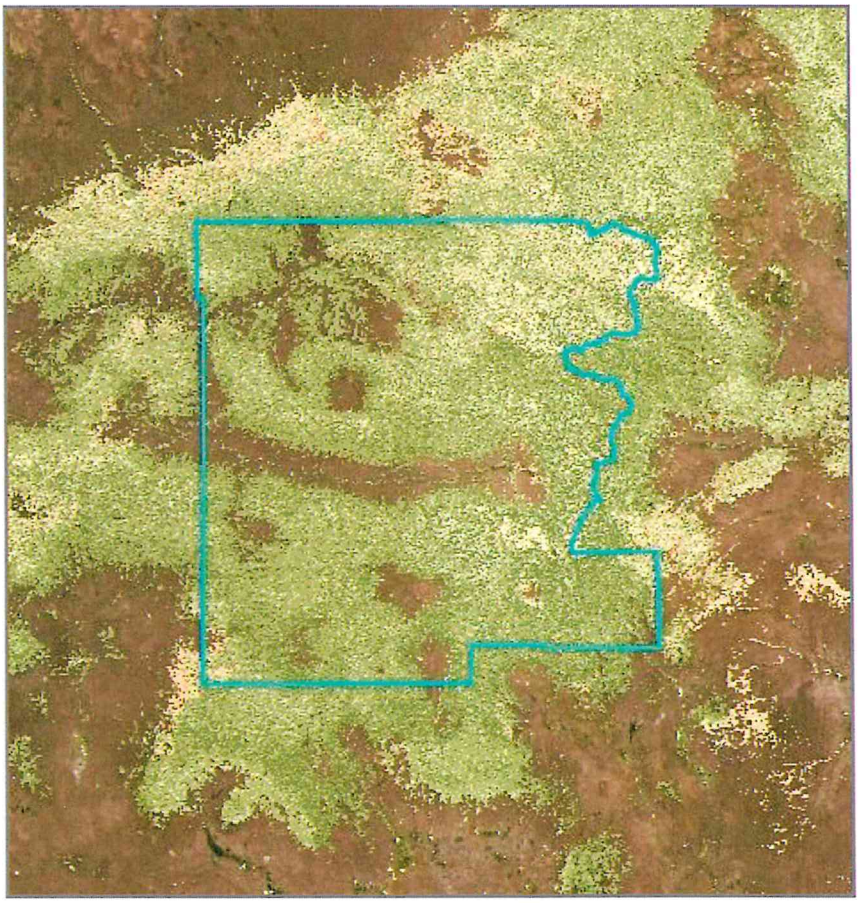
** Values may add up to over 100% due to rounding precision*

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.



Oregon Wildfire Risk Explorer- Advanced Report

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

Generated: February 18, 2021

Grant 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.	426,854	15
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.	886,505	31
Moderate	Potential impact is moderately negative (52-87th percentile). Fire will move the landscape further from historical/desired conditions.	363,071	13
Low	Potential impact is slightly negative (19-52th percentile). Fire will move the landscape further from historical/desired conditions.	78,005	3
Low Benefit	Potential impact is slightly beneficial to forest vegetation at low flame lengths, potentially producing a "fuel treatment" effect (0.6-19th percentile).	53,801	2
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	1,728	< 1
No Data	There is no vegetation mapped in the area, or it is considered non-burnable (urban, agriculture, barren,etc).	1,087,034	38

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

Oregon Wildfire Risk Explorer- Advanced Report

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

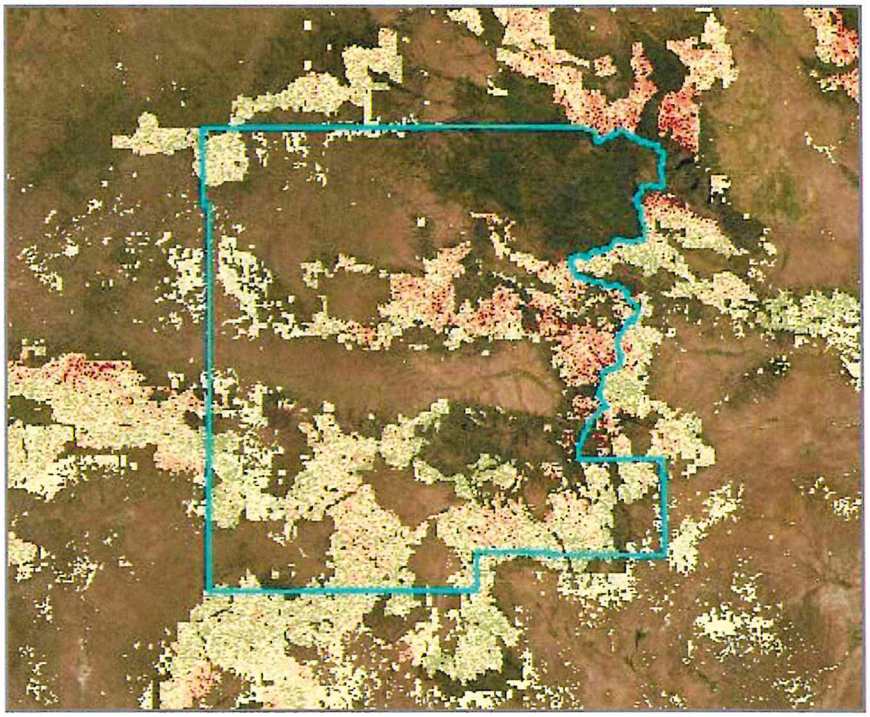
Generated: February 18, 2021

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).



Grant 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%).	13,433	< 1
High	Potential impact is highly negative (80-95th percentile).	62,270	2
Moderate	Potential impact is moderately negative (50-80th percentile).	122,333	4
Low	Potential impact is slightly negative (19-50th percentile).	165,439	6
Low Benefit	Potential impact is slightly beneficial to timber resources at low flame lengths (9-19th percentile).	98,123	3
Benefit	Potential impact is beneficial, with a cumulative positive impact on timber resources (0-9th percentile).	116,598	4
No Data	There are no timber resources mapped in the area, or it is considered non-burnable (urban, agriculture, barren,etc).	2,318,803	80

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

Grant County

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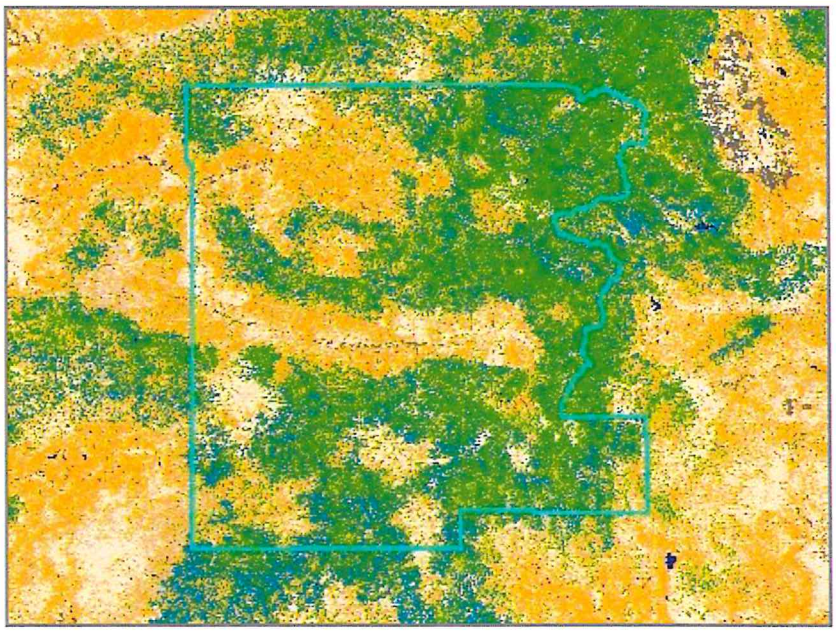
FUEL MODEL GROUPS

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.



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

Category	Description	Acres	%*
Grass	Fuel models 101-104, (GR1; GR2; GR3; GR4)	426,540	15
Grass/Shrub	Fuel models 121-123, (GS1; GS2; GS3)	863,767	30
Non-burnable-other	Fuel Models 91-93,99, (NB1; NB2; NB3; NB9)	34,417	1
Non-burnable-water	Fuel Models 98, (NB8)	1,800	< 1
Slash-blowdown	Fuel Models 202, (SB2)	0	0
Shrub	Fuel Models 141-147, (SH1; SH2; SH3; SH4; SH5; SH6; SH7)	70,222	2
Timber Litter	Fuel Models 181-189, (TL1; TL2; TL3; TL4; TL5; TL6; TL7; TL8; TL9)	610,364	21
Timber-Understory	Fuel Models 161-163, 165, (TU1; TU2; TU3; TU5)	889,889	31

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

Grant County

2,897,008 Acres: (4,527 Sq. Miles)

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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

Oregon Wildfire Risk Explorer- Advanced Report

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Generated: February 18, 2021

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 February 18, 2021
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:

A Profile of Wildfire Risk

Selected Geographies:

Grant County, OR

United States

Comparison Geographies:

U.S.

Produced by
Headwaters Economics'
Economic Profile System (EPS)
https://headwaterseconomics.org/eps
February 16, 2021

Wildfire Risk

Grant County, OR

About this report

This report presents data about wildfire risk, socioeconomic vulnerability, and land use to help communities understand their relative wildfire risk profile. It was created through a partnership between Headwaters Economics and the U.S. Forest Service through the Community Planning Assistance for Wildfire program using data from Wildfire Risk to Communities.

cpaw.headwaterseconomics.org

Community Planning Assistance for Wildfire (CPAW) works with communities to reduce wildfire risks through improved land use planning. CPAW provides communities with technical land use planning recommendations, hazard assessments, custom research, and training.

wildfirerisk.org

Wildfire Risk to Communities is a free, easy-to-use website with interactive maps, charts, and data to help communities in the United States understand, explore, and reduce wildfire risk. Wildfire Risk to Communities is a project of the USDA Forest Service, under the direction of Congress.

Project partners

headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Its mission is to improve community development and land management decisions.

Headwaters Economics provides original and effective research to help people and organizations develop solutions to some of the most urgent and important issues that communities face.

www.fs.fed.us

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres.

The Forest Service's mission is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

See https://headwaterseconomics.org/eps for more information about the capabilities of EPS. For technical questions, contact Patty Hernandez at eps@headwaterseconomics.org or telephone 406-599-7425.

Table of Contents

Note to Users:

This is one of 14 reports that can be created and downloaded from EPS. Topics include land use, demographics, specific industry sectors, the role of non-labor income, the wildland-urban interface, the role of amenities in economic development, and payments to county governments from federal lands. The EPS reports are downloadable as Excel or PDF documents. See https://headwaterseconomics.org/eps.

Wildfire Risk

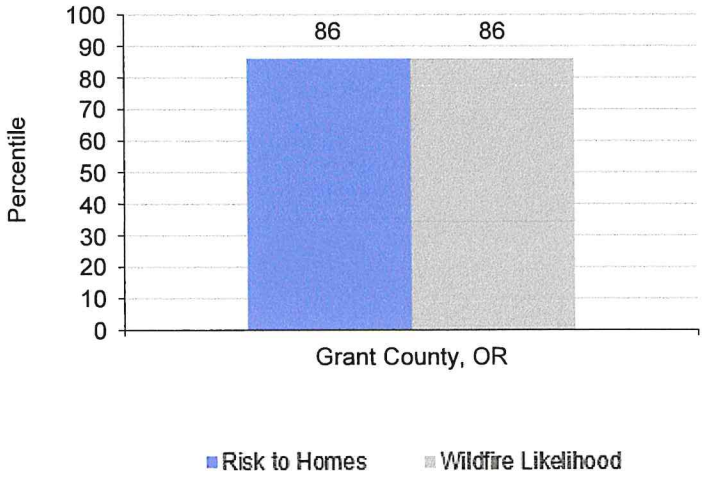
Grant County, OR

Relative Wildfire Risk

	Grant County, OR
Statewide Percentile Rank	
Risk to Homes	86
Wildfire Likelihood	86
Nationwide Percentile Rank	
Risk to Homes	96
Wildfire Likelihood	96

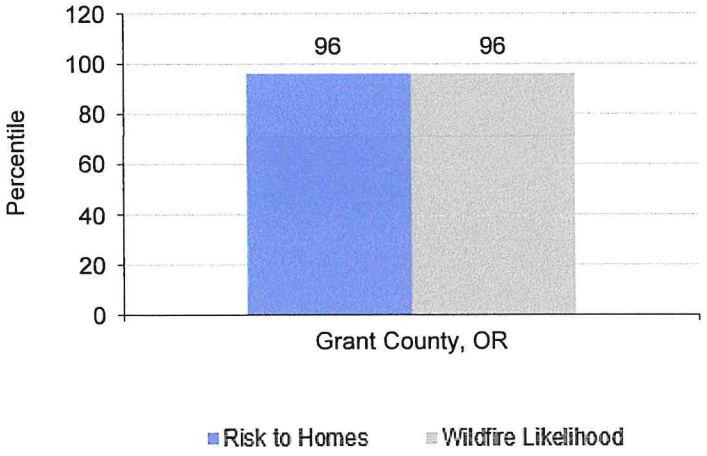
Relative Risk (0-100) Wthin State

- Populated areas in Grant County, OR have, on average, greater risk than 86% of counties in the state.
- Populated areas in Grant County, OR have, on average, greater wildfire likelihood than 86% of counties in the state.



Relative Risk (0-100) Within Nation

- Populated areas in Grant County, OR have, on average, greater risk than 96% of counties in the nation.
- Populated areas in Grant County, OR have, on average, greater wildfire likelihood than 96% of counties in the nation.



Data Sources: USDA Forest Service, Wildfire Risk to Communities. 2020. Washington, D.C., wildfirerisk.org.

Relative Wildfire Risk

What do we measure on this page?

Risk to Homes integrates wildfire likelihood (the probability of wildfire occurring) and wildfire intensity (the energy released by a wildfire) with expected consequences to homes if a fire occurs.

Wildfire Likelihood is the annual probability of a wildfire occurring in a specific location. At the community level, wildfire likelihood is averaged where housing units occur.

Both measures—Risk to Homes and Wildfire Likelihood—are shown as a percentile (or rank). If the place you selected is a community or county, the percentile is relative to all other communities or counties in the state (statewide rank) and the nation (nationwide rank). If the place you selected is a state, the percentile is relative to all other states in the nation.

Why is it important?

The Risk to Homes data pose the hypothetical question: "What would be the relative risk to a house if one existed here?" It asks that question whether a home actually exists at that location or not. This allows us to compare the wildfire risk in places where homes already exist to places where new construction may be proposed.

The Risk to Homes data integrate wildfire likelihood and wildfire intensity from simulation modeling. These two risk components represent wildfire hazard. To translate this into terms specific to the effect of fire on homes, this report uses a generalized concept of susceptibility for all homes as derived from *Wildfire Risk to Communities*.[1] In other words, it is assumed all homes that encounter wildfire will be damaged, and the degree of damage is directly related to wildfire intensity. The report does not account for homes that may have been mitigated.

In reality, an individual home's ability to survive wildfire is driven primarily by local conditions (known as the "home ignition zone"), including the construction materials and the vegetation in the immediate area. The only way to truly assess home susceptibility is through individual home assessments. Communities can reduce their risk to homes by reducing wildfire likelihood, wildfire intensity, exposure, and susceptibility. For example, fuel treatments may reduce wildfire likelihood or intensity, exposure may be reduced through land use planning tools, and susceptibility may be reduced by mitigating the home ignition zone, home hardening, and land use planning tools.

Wildfire Likelihood is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring, including weather, topography, and ignitions are varied based on patterns derived from observations in recent decades. Wildfire likelihood is not predictive and does not reflect any currently forecasted weather or fire danger conditions.

Wildfire likelihood is simply a probability that any specific location may experience wildfire in any given year. It does not say anything about the wildfire intensity if it occurs. Wildfire likelihood is difficult to modify but can be reduced through fuel treatment projects and ignition-prevention efforts.

Wildfire Risk

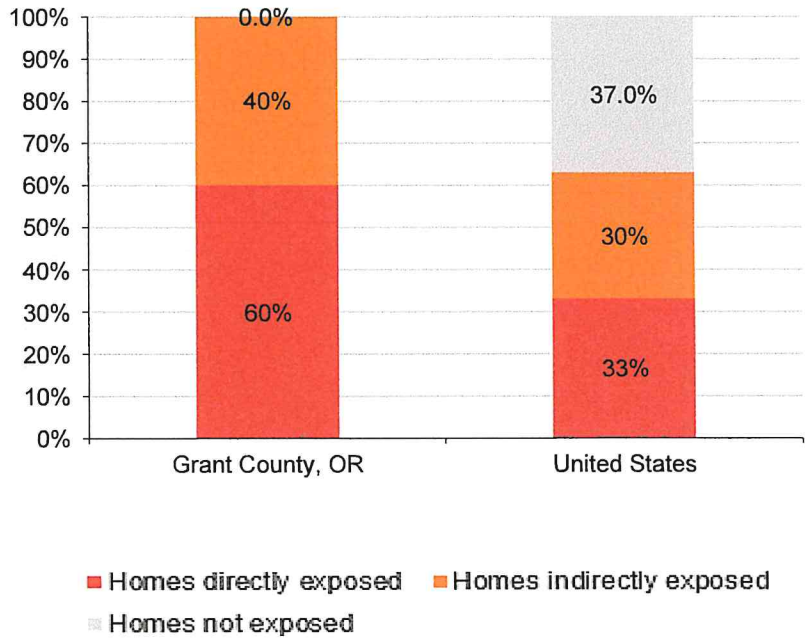
Grant County, OR

Wildfire Exposure

	Grant County, OR	United States
Percent of Total		
Homes directly exposed	60.0%	33.0%
Homes indirectly exposed	40.0%	30.0%
Homes not exposed	0.0%	37.0%

Exposure of Homes to Wildfire

- 60% of homes in Grant County, OR are exposed to wildfire from direct sources, such as adjacent flammable vegetation.
- 40% of homes in Grant County, OR are exposed to wildfire from indirect sources, such as embers or home-to-home ignition.



Data Sources: USDA Forest Service, Wildfire Risk to Communities. 2020. Washington, D.C., wildfirerisk.org.

Wildfire Exposure

What do we measure on this page?

Wildfire Exposure is the spatial coincidence of wildfire likelihood (the probability of wildfire occurring) and wildfire intensity (the energy released by a wildfire) with communities.

Why is it important?

Any part of a community that is located where wildfire likelihood is greater than zero is exposed to wildfire. For example, a home in a flammable forest is exposed to wildfire. Locations within a community can be directly exposed to wildfire from adjacent wildland vegetation, or indirectly exposed to wildfire from embers (firebrands) and home-to-home ignition. Locations within a community that are not exposed are not likely to be subjected to wildfire from either direct or indirect sources.

Communities can reduce their exposure to wildfire with actions such as modifying the home ignition zone and using land use planning tools.

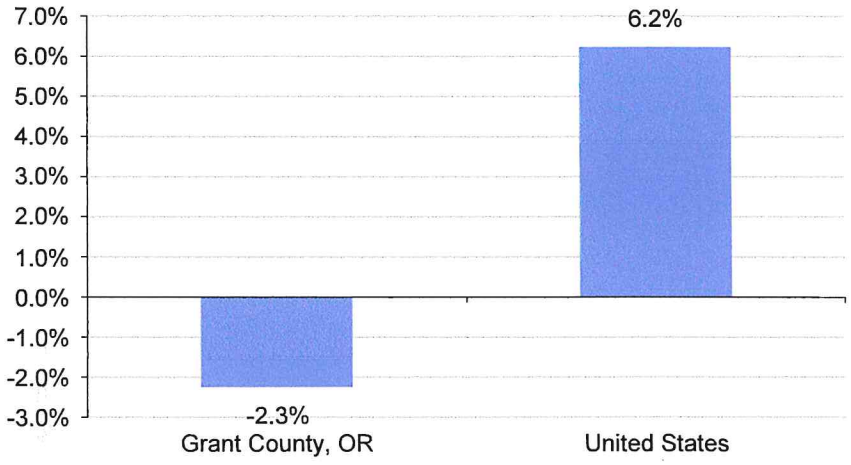
Population Change

	Grant County, OR	United States
Population (2018*)	7,183	322,903,030
Population (2010*)	7,349	303,965,272
Population Change (2010*-2018*)	-166	18,937,758
Population Pct. Change (2010*-2018*)	-2.3%	6.2%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

Percent Change in Population, 2010*-2018*

- From 2010* to 2018*, Grant County, OR had the smallest estimated absolute change in population (-166).
- From 2010* to 2018*, United States had the largest estimated relative change in population (6.2%), and Grant County, OR had the smallest (-2.3%).



* ACS 5-year estimates used. 2018 represents average characteristics from 2014-2018; 2010 represents 2006-2010.

Data Sources: U.S. Department of Commerce. 2019. Census Bureau, American Community Survey Office, Washington, D.C.

Population Change

What do we measure on this page?

This page describes the total population and change in total population.[2, 3]

Data in this report comes from the U.S. Census Bureau's American Community Survey (ACS).[4] The ACS is conducted nationwide every year by the U.S. Census Bureau to collect demographic, social, economic, and housing information. For more information about ACS data and accuracy, see the Data Sources & Methods section at the end of this report.

Why is it important?

Population growth is generally an indication of a healthy economy. No growth or long-term decline generally occur when an area is struggling. However, as population grows, more and more people are building homes on fire-prone lands.

Since 2010, 34% of single-family homes are located in the wildland-urban interface (WUI). The WUI is the fastest-growing type of land use in the conterminous United States, increasing by 145% from 1990 to 2015. Today nearly half of the U.S. population lives in the WUI.[5]

Another consequence of population growth is the possibility of more fire ignitions. Almost all wildfires (97%) in the WUI are caused by people. Human-caused wildfires are responsible for 92% of the wildfires that threaten structures, which is 30 times more than lightning-caused wildfires.[6]

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed.
The Census provides documentation about changes in boundaries at this site: www.census.gov/geo/reference/boundary-changes.html

Potentially Vulnerable Populations

Populations, 2018*	Grant County, OR	United States
Families in poverty	¨147	7,930,699
Households with no car	˙155	10,424,934
People over 65	2,034	49,238,581
People with disabilities	1,657	40,071,666
People with language barriers	¨26	13,322,872
Percent of Total*		
Families in poverty	˙8.0%	10.0%
Households with no car	¨0.0%	9.0%
People over 65	28.0%	15.0%
People with disabilities	23.0%	13.0%
People with language barriers	¨0.0%	˙4.0%

* Each measure on this page comes from a different subset of the overall population. For example, "poverty status" is not determined for all families. "Households with no car" is determined only for occupied households. "People with disabilities" includes only those people in civilian, noninstitutionalized settings. "Language barriers" is determined only for people five years or older.

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
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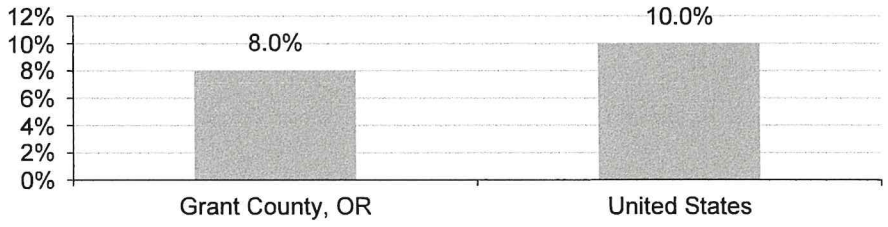
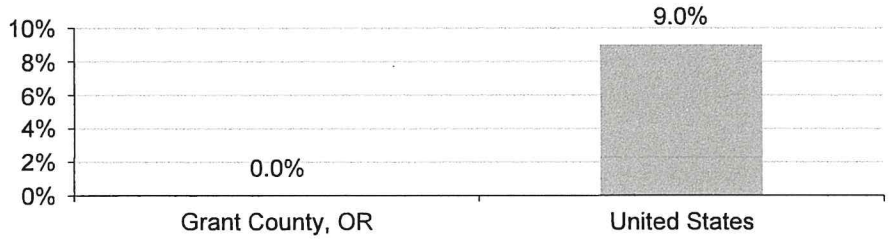
Families in Poverty, 2018*

- From 2010* to 2018*, United States had the largest share of families in poverty (10%).



Households with No Car, 2018*

- From 2010* to 2018*, United States had the largest share of households with no car (9%).



*** ACS 5-year estimates used. 2018 represents average characteristics from 2014-2018; 2010 represents 2006-2010.**

CITATION: U.S. Department of Commerce. 2019. Census Bureau, American Community Survey Office, Washington, D.C., reported by Headwaters Economics' Populations at Risk, headwaterseconomics.org/par.

Potentially Vulnerable Populations

What do we measure on this page?

This page describes household types that are associated with increased hardship.○

Data in this report come from the U.S. Census Bureau's American Community Survey (ACS).[7] For more information about ACS, see the Data Sources & Methods section.

Why is it important?

People's susceptibility to wildfire is based on their ability to prepare for, respond to, and recover from a wildfire.[8] Vulnerable populations are more likely to be disproportionately affected by wildfire disasters because they lack resources, experience cultural and institutional barriers, have limited mobility, and/or have compromised physical health.

Low income is one of the strongest predictors for compromised health and ability to recover from disruptions.[9] Wildfires disproportionately affect the poor because of factors such as inadequate housing, social exclusion, diminished ability to evacuate or relocate, and more acute emotional stress. People with low incomes are also more likely to be overlooked during emergency response following disasters[10] and are less likely to have adequate property insurance, so they bear a greater burden from property damage following wildfires.[11] Due to a lack of financial resources and time, impoverished families may be less likely to take proactive measures to mitigate wildfire hazard in advance of an event.[10]

Older populations are more likely to have pre-existing medical conditions or compromised mobility, which can reduce their ability to respond to wildfire. Older adults are more susceptible to air pollution and particulates associated with wildfire smoke.[12]

During emergencies, people who do not have a car are less likely to evacuate or have access to emergency response centers.[13] Access to a car is also linked with higher wages and more financial stability.[14]

Populations with disabilities are subject to health complications that make wildfire more consequential because disasters often result in limited access to medical care.[12] Compromised mobility and medical conditions can reduce the ability to respond to natural disasters.

Language and cultural barriers can make it more difficult to follow directions or interact with agencies before, during, or after a wildfire disaster.[13]

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Housing Characteristics

	Grant County, OR	United States
Total Housing Units, 2018*	4,397	136,384,292
Occupied	3,294	119,730,128
Vacant	1,103	16,654,164
For rent	¨31	2,822,053
Rented, not occupied	¨21	615,344
For sale only	¨96	1,304,850
Sold, not occupied	¨13	653,988
Seasonal, recreational, occasional	602	5,465,886
For migrant workers	¨0	36,850
Other vacant	˙340	5,755,193
Year Built		
Built 2010 or later	˙113	5,622,664
Built 2000 to 2009	˙587	19,435,745
Built 1990 to 1999	˙411	19,018,824
Built 1980 to 1989	˙511	18,425,173
Built 1970 to 1979	832	20,898,334
Built 1940 to 1969	1,254	35,575,605
Median year structure built^	1973	1977
Percent of Total		
Occupancy		
Occupied	74.9%	87.8%
Vacant	25.1%	12.2%
For rent	¨0.7%	2.1%
Rented, not occupied	¨0.5%	0.5%
For sale only	¨2.2%	1.0%
Sold, not occupied	¨0.3%	0.5%
Seasonal, recreational, occasional	13.7%	4.0%
For migrant workers	¨0.0%	0.0%
Other vacant	˙7.7%	4.2%
Year Built		
Built 2010 or later	˙2.6%	4.1%
Built 2000 to 2009	˙13.4%	14.3%
Built 1990 to 1999	˙9.3%	13.9%
Built 1980 to 1989	˙11.6%	13.5%
Built 1970 to 1979	18.9%	15.3%
Built 1940 to 1969	28.5%	26.1%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
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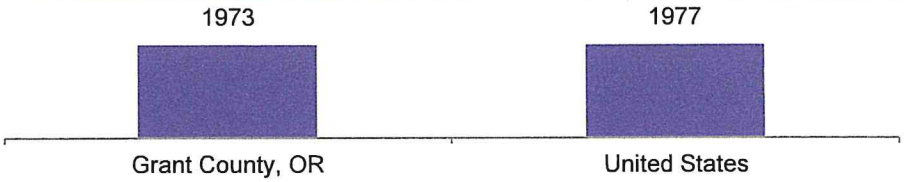
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

Median year structure built, 2018*

- The median year of structures is newer (1977) in Grant County, OR and older (1973) in United States



* ACS 5-year estimates used. 2018 represents average characteristics from 2014-2018.

Data Sources: U.S. Department of Commerce. 2019. Census Bureau, American Community Survey Office, Washington, D.C.

Housing Characteristics

What do we measure on this page?

This page describes whether housing is occupied or vacant, for rent or seasonally occupied, and the year built.

Rent: The number of homes for rent was defined as occupied housing units that were for rent, vacant housing units that were for rent, and vacant units rented but not occupied at the time of interview.

Seasonal, Recreational, or Occasional Use: Refers to vacant units used or intended for use only in certain seasons or for weekends or other occasional use throughout the year.

For Migrant Workers: Refers to housing units intended for occupancy by migratory workers employed in farm work during the crop season.

Why is it important?

Efforts to reduce wildfire risk to homes center around the home ignition zone, an area 100-200 feet from the foundation. It includes vegetation, the home itself, and other structures or attachments like decks, furniture, fences, and outbuildings.

A majority of homes lost to wildfire are first ignited by embers. By reducing the susceptibility of the area immediately around the home and the home itself—the home ignition zone—the chances of a home surviving an ember storm or small spot-fire are greatly increased.

Housing characteristics are relevant to reducing the risk from wildfires in several ways. The year the home was built may convey information about the housing stock that was built before and after the passage of land use planning regulations to reduce exposure to homes (for example, a building code requiring the use of wildfire-resistant building materials). It may also be possible that newer homes incorporate improved building standards and materials that reduce susceptibility to wildfires.

The prevalence of rental properties, seasonal homes and recreational homes, vacant homes, and homes used for migrant workers may complicate landowner education efforts that are aimed at reducing risk in the home ignition zone. The presence of many non-owner-occupied homes may also make it difficult for community leaders to reach homeowners whose support is needed for the passage of land use planning tools, such as landscape ordinances or building codes, that reduce the risk from wildfires.

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Land Ownership

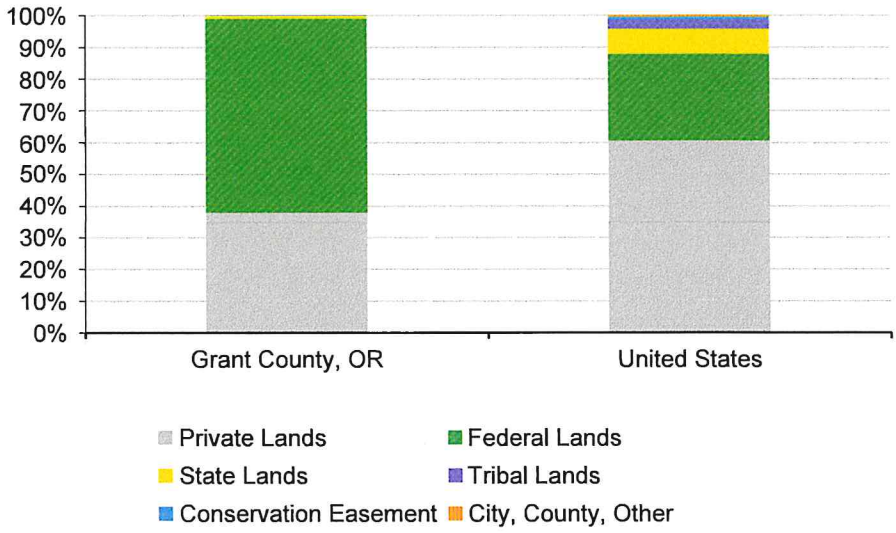
	Grant County, OR	United States
Total Acres	2,898,255	2,303,091,014
Private Lands	1,098,902	1,406,717,148
Conservation Easement	1,831	21,237,199
Federal Lands	1,770,081	632,461,561
Forest Service	1,593,053	192,648,950
BLM	173,844	242,857,628
National Park Service	3,184	78,366,536
Military	0	24,412,029
Other Federal	0	94,176,418
State Lands	29,273	184,973,953
State Trust Lands*	4,058	51,983,763
Other State	25,215	132,990,190
Tribal Lands	0	67,946,824
City, County, Other	0	10,989,958

Percent of Total

Private Lands	37.9%	61.1%
Conservation Easement	0.1%	0.9%
Federal Lands	61.1%	27.5%
Forest Service	55.0%	8.4%
BLM	6.0%	10.5%
National Park Service	0.1%	3.4%
Military	0.0%	1.1%
Other Federal	0.0%	4.1%
State Lands	1.0%	8.0%
State Trust Lands*	0.1%	2.3%
Other State	0.9%	5.8%
Tribal Lands	0.0%	3.0%
City, County, Other	0.0%	0.5%

Land Ownership, Percent of Land Area

- Grant County, OR has the largest share of federal public lands (61.1%), and United States has the smallest (27.5%).
- United States has the largest share of state public lands (8%), and Grant County, OR has the smallest (1%).
- United States has the largest share of private lands (61.1%), and Grant County, OR has the smallest (37.9%).



Data Sources: U.S. Geological Survey, Gap Analysis Program. 2012. Protected Areas Database of the United States (PADUS) version 1.3

Land Ownership

What do we measure on this page?

This page describes the share of the selected location that is private and the share that is managed by various public agencies.

The data presented in this report were calculated using Geographic Information System (GIS) tools. Two primary GIS datasets were used: U.S. Census Bureau's TIGER/Line County Boundaries[15] and U.S. Geological Survey's Protected Areas Database (PADUS).[16, 17]

Although every attempt was made to use the best available GIS land ownership dataset, the data sometimes have errors or become outdated. Please report any inaccuracies to eps@headwaterseconomics.org.

Why is it important?

Wildfires can occur on any lands—including private, state, tribal and federal lands—and fires also can spread across multiple land ownerships. Because of this, wildland firefighting is by necessity most often a multi-agency effort. Efforts to reduce the likelihood (probability) of a fire and the intensity of a fire (related to fuels and topography) can have important consequences on homeowner and firefighter safety and on the vulnerability of the built environment, especially homes.

Wildfires do not respect property boundaries and burn across a mosaic of land ownerships. Efforts to reduce the likelihood and intensity of wildfires can have important implications for neighboring lands and properties. For example, fuel treatments on U.S. Forest Service lands can lower the intensity of a wildfire and therefore reduce the risk to homes on nearby private lands.[18] At the same time, communities can reduce the susceptibility of homes to wildfire through land use planning and by focusing mitigation efforts on the "home ignition zone" to reduce a home's vulnerability to embers.[19] Fire-adapted communities can live with the inevitability of wildfires. By being fire-adapted, communities make it more likely that managers of nearby lands—whether state, federal, or tribal—can use fires for their ecological role, allowing some to burn or setting controlled burns to reduce fuels.

Data Sources & Methods

This report uses statistics from public government sources and from the Wildfire Risk to Communities website. All data used can be verified with the original sources:

Wildfire Risk to Communities. 2020.
Scott JH, Gilbertson-Day JW, Moran C, Dillon GK, Short KC, Vogler KC. 2020. Wildfire Risk to Communities: Spatial datasets of landscape-wide wildfire risk components for the United States. Fort Collins, CO: Forest Service Research Data Archive. Updated 25 November 2020. https://doi.org/10.2737/RDS-2020-0016 and https://wildfirerisk.org

U.S. Geological Survey, Gap Analysis Program. 2012.
Protected Areas Database of the United States (PADUS) version 1.3
https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/protected-areas

U.S. Department of Commerce. 2019.
Census Bureau, American Community Survey Office, Washington, D.C.
https://www.census.gov/programs-surveys/acs

Endnotes

1 - See *Wildfire Risk to Communities* website: https://wildfirerisk.org/understand-risk/. Also see Scott JH, Gilbertson-Day JW, Moran C, Dillon GK, Short KC, and Vogler KC. 2020. Wildfire Risk to Communities: Spatial datasets of landscape-wide wildfire risk components for the United States. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2020-0016.

2 - A useful resource on rural population change is the U.S. Department of Agriculture's Economic Research Service web page: https://www.ers.usda.gov/topics/rural-economy-population/population-migration/.

3 - William H. Frey's website provides links to publications, issues, media stories, data tools and resources on migration, population redistribution, and demography of both rural and urban populations in the U.S.: http://frey-demographer.org/.

4 - For a description of the U.S. Census Bureau's ACS methodology and data accuracy, see https://www.census.gov/programs-surveys/acs/methodology.html.

5 - Martinuzzi S, Stewart SI, Helmers DP, Mockrin MH, Hammer RB, and Radeloff VC. 2015. *The 2010 wildland-urban interface of the conterminous United States*. Research Map NRS-8. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 124p. https://www.nrs.fs.fed.us/pubs/48642. Also Radeloff VC, et al. 2017. Rapid growth of the U.S. wildland-urban interface raises wildfire risk. *PNAS* 115(13): 3314-3319. www.pnas.org/cgi/doi/10.1073/pnas.1718850115. Mietkiewicz N, Balch J, Schoennagel T, Leyk S, Denis L, and Bradley B. 2020. In the line of fire: Consequences of human-ignited wildfires to homes in the U.S. (1992-2015). *Fire*. Available online: https://www.mdpi.com/2571-6255/3/3/50.

6 - Balch J, Bradley B, Abatzoglou J, Nagy C, Fusco E, and Mahood A. 2017. Human-started wildfires expand the fire niche across the US. *PNAS*. Available online: http://www.pnas.org/content/114/11/2946. Also Mietkiewicz N, Balch J, Schoennagel T, Leyk S, Denis L, and Bradley B. 2020. In the line of fire: Consequences of human-ignited wildfires to homes in the U.S. (1992-2015). *Fire*. Available online: https://www.mdpi.com/2571-6255/3/3/50

7 - https://www.census.gov/programs-surveys/acs

8 - Collins TW and Bolin B. 2008. Situating hazard vulnerability: People's negotiations with wildfire environments in the U.S. Southwest. *Environmental Management* 44: 441-455.

9 - County of Los Angeles Public Health. 2013. Health Atlas for the City of Los Angeles. Los Angeles, CA. https://wattscommunitystudio.files.wordpress.com/2013/06/healthatlas.pdf

10 - Fothergill A and Peek LA. 2004. Poverty and disasters in the United States: A review of recent sociological findings. *Natural Hazards* 32(1): 89-110.