

HAZARD IDENTIFICATION AND VULNERABILITY ANALYSIS (HIVA)

Walla Walla County, Washington

WILDFIRE

Hazard Overview

Forest Fires are the uncontrolled destruction of forested lands caused by natural or human-made wild fire. An average of 905 fires burn 6,488 acres annually with a resource loss of \$2,103,884 in Washington State. The probability of a wildfire in any one locality on a particular day depends on fuel conditions, topography, the time of year, wind direction and speed, the past and present weather conditions, and the activities (debris burning, land clearing, camping, etc.) that are or will be taking place. Controlled burns are also conducted because the fire cycle is an important aspect of management for many ecosystems. These are not considered hazards unless they were to get out of control.

Wildland Fires are the uncontrolled destruction of forests, brush, field crops and grasslands caused by nature or humans.

Wildland/Urban Interface Fires are fires that occur where "combustible vegetation meets combustible structures" and therefore combine the hazards associated with both forest and structure fires. These types of fires have increased dramatically in the last two decades as more and more people move to rural areas. Between 1970 and 1980 the rural population of the United States increased 23.4 percent, more than twice the gain of 11.4 percent for the nation as a whole. The hazard is bi-directional, wild fires can burn homes, and home fires can burn into the wildlands.

As urban areas expand into wildland areas and as an increasing number of homes are built near the wildland and the conflicts associated with wildland fire become more commonplace.

In the 1980s, wildfires burned large tracts of land across the United States. More fires have impacted even larger tracks of land and personal property in the 1990s. A dream home built in an idealistic wildland setting can be razed by fire in a matter of minutes. Likewise, the exemplary scenery that attracted homeowners to the setting can be altered, often because of the inadvertent action of the homeowner.

In a case study of a destructive wildland/urban interface fire, National Fire Protection Association lists four reasons for the increased risk of fire occurrence in wildland/urban interface:

- Wildfires continue to ignite and threaten homes in the wildlands.
- Wildfires continue to present particular problems to fire protection agencies.
- Lack of good vegetative management predisposes areas to wildfires. Unless specific preventive measures are taken by homeowners and local

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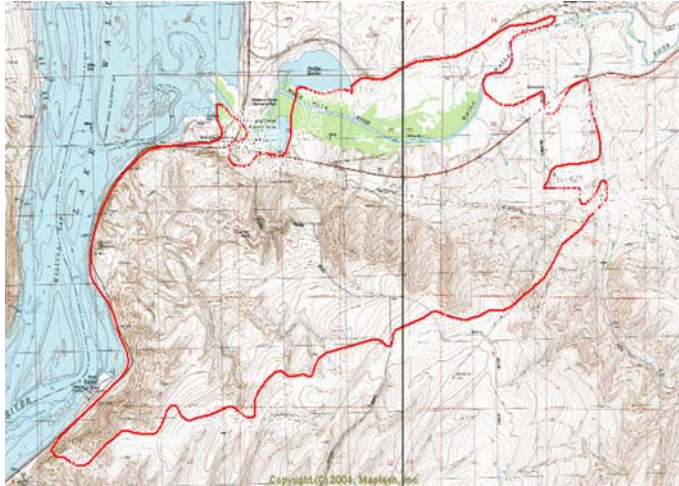
governments homes will continue to be lost and people's lives will continue to be in danger.

History and Probability of Occurrence

Walla Walla County has not experienced a major wildfire, with complete destruction of timber, structures, personal property, wildlife habitat, recreation areas and watershed areas coupled with a substantial negative impact on commerce and infrastructure. In 2001 there were two significant wildfires.

The Port Kelley Fire began in mid-afternoon on July 28, 2001 with multiple ignitions adjacent to the Union

Pacific Railroad track coincident with a passing train. The fire started on lands protected by Walla Walla Protection District #6 and spread to the adjacent Wallula Unit of McNary National Wildlife Refuge. Due to extreme dryness and winds (sustained 25 mph, with gusts to 40 mph), the fire quickly escalated to over 3500 acres.



The fire threatened structures, agricultural lands, and privately and publicly owned utility infrastructures. At the peak there were 311 firefighters, more than 45 engines, 4 tenders, 2 dozers, 2 air tanker and helicopters. The fire was officially declared out on August 6, 2001.

The North Coppei Fire started 5 miles southeast of Waitsburg on September 18, 2001, when a Walla Walla County farmer lost control of a field burn, which farmers commonly use to control insects and disease. Winds of 15 to 20 mph hampered suppression efforts and the fire quickly grew to 4,810 acres. The fire consumed a large tract of trees, grassland and wheat fields. Ten structures were threatened and saved. All five of Washington State's multi-agency fire incident management teams were deployed, with 341 personnel fighting the fire. The fire was officially declared out on September 30, 2001.

Forest and wildfires are most likely to occur during the local dry season, mid-May through October, and anytime during prolonged dry periods causing drought or near-drought conditions. The probability of a destructive fire depends on weather, fuel conditions, topography and human activities such as debris burning, land clearing, camping, and construction. Conditions exist in Walla Walla County for a major fire and the probability of occurrence should not be determined based on history, but the conditions present. An analysis of the conditions in the county suggests that the likelihood of it occurring is high. The likelihood of a major wildfire in the county in the next 25 years is rated as HIGH.

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Vulnerability

The effects of wildland fires vary with intensity, area, and time of year. Factors affecting the degree of risk include rainfall, humidity, type of vegetation, water availability, topography and proximity to firefighting agencies. In addition to these factors, the risk to structures in the wildland-urban interface includes building construction, means of access, location of vegetation in relation to the structure, roofing assembly, and utilities placement. Short-term loss is the complete destruction of valuable resources, such as timber, wildlife habitat, scenic vistas, and watersheds along with destruction of structures, personal property and utilities. Loss of life, injuries and casualties may occur as well. Vulnerability to flooding increases due to the destruction of watersheds. Severe fires producing high soil temperatures create a water-repellent layer below the soil surface. The soil above this layer becomes highly prone to erosion, often resulting in mud slides. Long-term effects are reduced amounts of timber for building and recreational areas.

In Walla Walla County, the highest hazard area is the wildland-urban interface in the eastern part of the county. Other areas of the county are at risk of wildfire such as dryland farms, but generally, farmers take protective action to protect structures, equipment and livestock/animals. Too often, these defensible actions are not taken to protect structures in the wildland-urban interface.

In the spring of 2002, Walla Walla County Emergency Management Division assisted by Whitman College Student Interns, conducted a wildfire risk assessment survey. The purpose of the assessment was to determine where, if any, high-risk and/or extreme-risk wildfire areas are located by conducting a roadside survey examining certain risk factors.

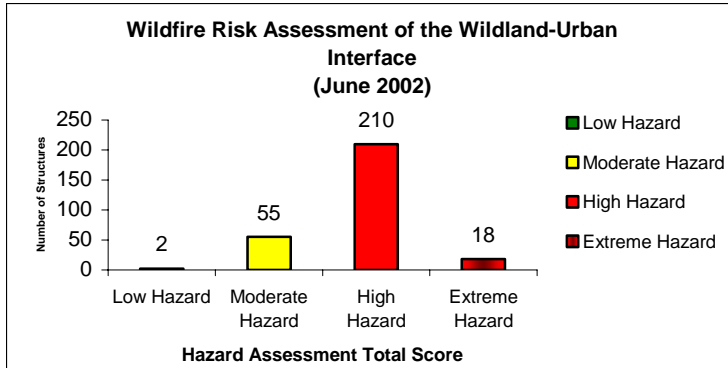
A total of 285 structures were surveyed:

<u>ROAD</u>	<u>STRUCTURES</u>	<u>ROAD</u>	<u>STRUCTURES</u>
Mill Creek	65	North Fork Coppei	5
Lewis Peak	45	Coppei	4
Biscuit Ridge	31	Klicker Mountain	4
Kooskooskie	25	Seaman	4
Scott	18	Tracy	4
S. Fork Coppei	18	Hooper	2
Blue Creek	17	Little Bear Ridge	2
Hummingbird Place	13	Clancy	1
E. Highway 12	8	Leid	1
Spring Creek	6	Scenic Loop	1
Blue Jay	5	Wickersham	1
Mud Creek	5		

The purposes of the surveys were to determine the risk of structures in the event of a wildfire occurrence; to identify high risk areas for additional mitigation; to capture information useful to responders in the event of a fire; and to inform the

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public of the risks and various ways to reduce the risks of their homes being destroyed by wildfire.



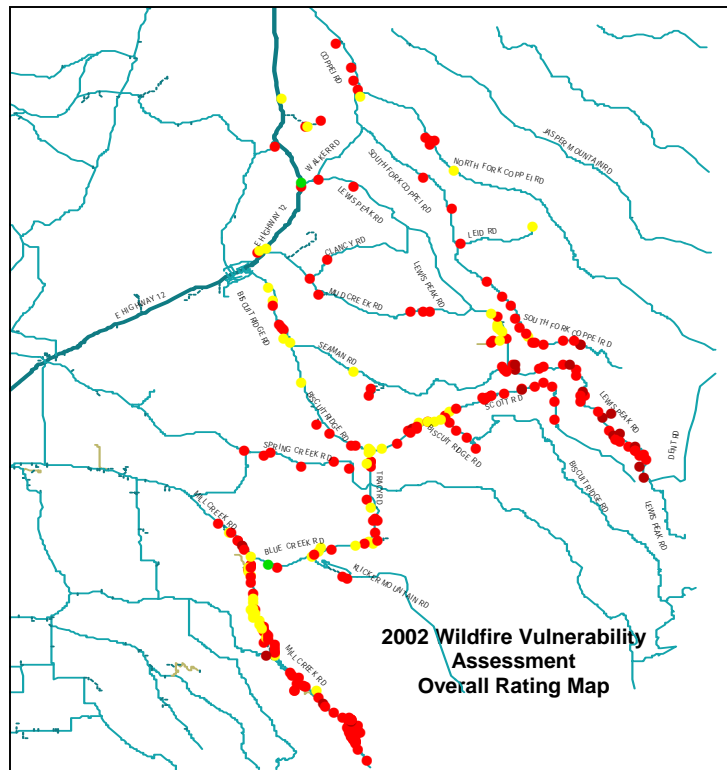
The standards for the survey were adopted from the *NFPA Standard for Protection of Life and Property from Wildland Fire*, using the standards in Wildland/Urban Interface Fire Hazard Assessment Methodology (Attachment A). Each of the areas was assessed

and points were assigned to each element.

Structures rated as *extreme hazard* are located primarily on the Upper Lewis Peak Road.

There are several concentrations of *high hazard* assessment structures. They are:

- Upper Mill Creek Road from Blue Creek to State Line
- Upper Lewis Peak Road
- Scott Road
- Upper South Fork Coppei Road



Using the score assigned by *NFPA Standard for Protection of Life and Property from Wildland Fire*, vegetation surrounding structures were the single highest risk factor, contributing to homes rated with high or extreme assessment.

Homes with wood roofing were the second highest factor. The availability of emergency water was the third highest factor.

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Four high-vulnerability hazard areas have been established based on the survey. Property valuations for structures in these areas were calculated to estimate the potential loss of structures during a wildfire in each of these areas. Other improvements or timber value was not calculated.

Coppei	\$691,900
Lewis Peak	\$3,660,000
Scott Road	\$8,284,100
Mill Creek	\$4,642,400

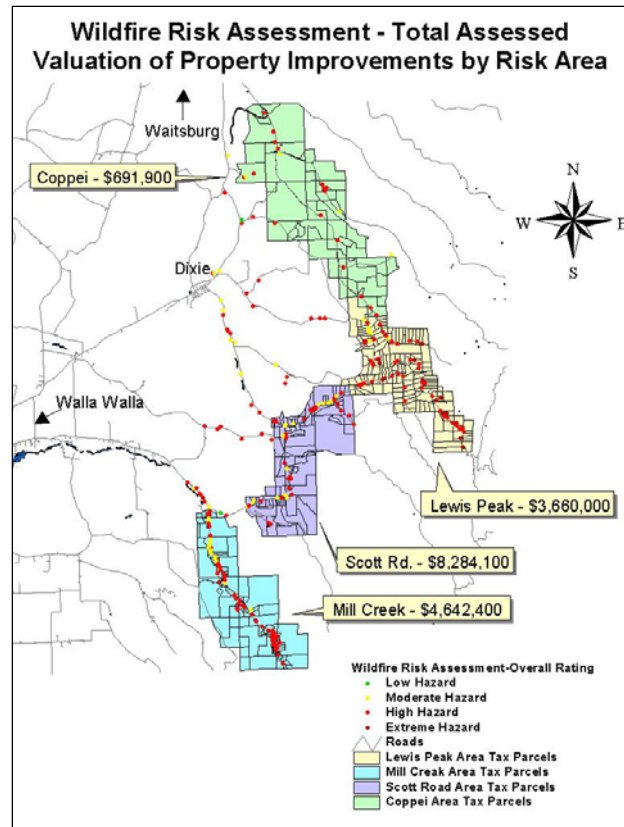
Building near wildlands increases loss from fires. Often, structures are built with minimal awareness of the need for fire protection. Wildland fires occur with regularity in Washington State. There are a number of ways to reduce wildland fires and minimize injury and property loss. Recommendations determined by the results of the 2002 survey are:

1. Focus mitigation efforts on homeowners in these areas to encourage them to develop defensible space.
2. Seek ways to encourage owner mitigation.
3. Encourage creating emergency water supply for those areas where emergency water is not readily available.
4. Consider adopting land use and/or building code ordinances to reduce risk to wildfire.

A limited area or segment of Walla Walla County's population, property, commerce, infrastructure or service would be affected by a major wildfire. The vulnerability is LOW.

Risk Rating

The probability is HIGH and our vulnerability is LOW, so a risk rating of MEDIUM is assigned. There is moderate potential for a wildfire disaster of less than major proportions during the next 25 years. The threat is great enough to warrant modest effort to prepare for, respond to, recover from, and mitigate against this hazard. This hazard should be included in the county's emergency management training and exercise program.



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