West Wide Wildfire Risk Assessment Project Summary Statistics of Published Results by State Oregon

December 5, 2012

Prepared for: Oregon Department of Forestry Council of Western State Foresters Western Forestry Leadership Coalition

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Introduction

This document provides summary statistics on the West Wide Wildfire Risk Assessment (WWA) published results completed in 2012 for the State of Oregon. Summary statistics are provided using West Wide classes for the data. This document is intended to supplement the primary summary statistics document that summarizes the Published Results on a West Wide basis.

Background of the West Wide Risk Assessment

Wildfire risk in the western U.S. is increasing and becoming a more complex challenge that warrants coordinated assessment, planning and response. The WWA was designed to quantify the magnitude of the current wildland fire problem in the west, and establish a baseline for planning mitigation activities and monitoring change over time. The methodology implemented provides results that are comparable across the entire West, forming a consistent basis for interpretation and use. WWA results are at a scale compatible with state and community use – much finer than current national efforts. The WWA results will inform and facilitate national, regional and state level coordination,





Output	Description	
INDICES		
Fire Risk Index	Measure of the overall wildfire risk. Calculated as the Fire Threat Index (FTI) times the Fire Effects Index (FEI).	
Fire Threat Index	Measure of wildfire threat, related to the likelihood of an acre burning. The FTI integrates the probability of an acre igniting and the expected final fire size, based on the rate of spread in four weather percentile categories, into a single measure of wildfire threat.	
Fire Effects Index	Identifies areas with important values effected by wildfire and/or that are costly to suppress. FEI is a weighted combination of the Values Impacted Rating (VIR) and Suppression Difficulty Rating (SDR) layers described below.	
RATINGS		
Values Impacted Rating	Reflects areas that have important values effected by wildfire. This combines all values being assessed based on a composite of the weights provided by the states. FTI is not a component of VIR, so values are conditional, assuming that the probability of being impacted by fire is equal.	
Suppression Difficulty Rating	Reflects areas with increased difficulty for fire suppression. It is based on fire line production rates and slope and a composite of the scores and weights provided by the states.	



Output	Description	
SCORES	Response Function Scores	
 Drinking Water Importance Areas RFS Forest Assets RFS Infrastructure Assets RFS Riparian Assets RFS Wildland Development Areas RFS 	A relative measure of the impact of fire on each Values dataset (Drinking Water, Forest Assets, Infrastructure, Riparian Assets, Wildland Development Areas) based on the response function values provided by the states. Response functions are a method of assigning a net change in the value to a resource or asset based on susceptibility to fire of different intensity levels. The assets in the WWA are the values datasets and each one has a corresponding response function output, or score (i.e. Riparian Assets Response Function Score). The Response Function Score for each values dataset will be a number from 0 to -9, with a more negative number indicating a more negative impact from fire. Positive effects from fire were not considered in the West Wide Risk Assessment.	
INPUTS		
Drinking Water Importance Areas	An index that identifies areas that are most crucial to sustaining the quality of drinking water by incorporating data on water supply, surface drinking water consumers at the point of intake, and the flow patterns to the surface water intakes. The U.S. Forest Service's Forests to Faucets (F2F) project is the primary source of this dataset, however, F2F does not exist for Alaska and Hawaii so alternative datasets were used for these two states.	
Forest Assets	Forest lands categorized by height, cover and susceptibility (response to wildfire). The LANDFIRE vegetation datasets (existing vegetation Type, Cover, and Height) were the primary inputs to this dataset along with a crosswalk of the Existing Vegetation Type dataset to a susceptibility class.	



Output	Description	
INPUTS		
Infrastructure	Key infrastructure assets that are susceptible to adverse effects from wildfires. Includes roads (levels 1-3), railroads, airports, schools and hospitals. Roads and railroads are buffered by 300 meters while airports, schools and hospitals are buffered by 500 meters.	
Riparian Assets	Riparian Areas that are important as a suite of ecosystem services, including both terrestrial and aquatic habitat, water quality and quantity, and other ecological functions. The National Hydrography Dataset (NHD), the National Wetlands Inventory (NWI) and LANDFIRE's Existing Vegetation (EVT) dataset were the primary inputs to this dataset.	
Where People Live (WPL) and Wildland Development Areas (WDA)	WPL describes "where people live" and includes both urban and rural areas. WDA represents where people live in wildland areas (i.e. urban areas masked out). These two data sets are derived from the LandScan population count data and represent the number of housing units per acre.	
Surface Fuels	The '2005 Fire Behavior Prediction System Fuel Model Set' was used.	
Fire Ignitions	Federal ignition point data for 1999-2008 were used. State ignition point data for the same period were used if available, otherwise the best available data was used. Additional fires on private land were obtained from the National Fire Incident Reporting System (NFIRS) for 2004-2009 and were grouped by ZIP code polygons. Only the point data had fire sizes available.	



Use of Data and Results

The assessment results represent findings as of 2008. Key data used in the assessment varies with respect to accuracy and date of compilation. For example, federal and most state fire ignition data was utilized for the period 1999-2008, however this range varied depending upon the availability of useable data. For most of the states, fire occurrence data ranging from 2004-2009 was used from the National Fire Incident Reporting System (NFIRS) to supplement the fire ignition data are more recent. All raster data was compiled at a scale consistent with 30 meters. The WWA Risk Model used data about fuels, weather, and fire occurrence that are most appropriate for identifying level of risk or effect at a landscape or larger scale.

With the exceptions noted in the Gap Report, the assessment was conducted using consistent data across all 17 Western states. Accordingly, the output data that was derived and the assessment Published Results that were created are largely comparable across the entire West. The models utilized ensure that the assessment results are largely consistent, comparable and repeatable.

Please note that the WWA Published Results may not match other assessments conducted that use different data, technical methods, or scale of analysis. Having two assessments that do not match does not mean that either one of them is incorrect. The use of different data sources, often from different collection dates and with spatial accuracy and resolutions, combined with different modeling assumptions or definitions will result in different results and can have different interpretations and uses. The WWA results are not intended to replace local and state products as a decision-making tool. The WWA is meant to serve as a regional policy analysis tool that provides results comparable across geographic areas in the West.

Index, rating, and score classes (color ramps)

Output values are grouped in to nine (9) classes based on their distribution across burnable acres. The breakpoints between classes use a consistent target cumulative percentile value. By design, the categories were developed to display the highest rated 14.5% of the cells in categories 6-9 so the user will truly locate the differences within these highly rated cells.

Please note that the class values represent a West Wide distribution of acres.

Class	Cumulative %
Class	Acres
1 (Lowest)	0.0 - 32.9%
2	33.0 - 63.5%
3	63.5 -70.0%
4	70.0 - 77.5%
5	77.5 - 85.5%
6	85.5 - 92.5%
7	92.5 - 96.5%
8	96.5 - 98.5%
9 (Highest)	98.5 - 100%



- 22% of burnable acres in state is Moderate-to-High wildfire risk (classes 4 to 9)
- 56 million burnable acres across the state (90% of all lands)
- 751.672 people are living at risk to wildfire within Wildland Development Areas
- 27.6 million acres of forest assets at risk to wildfire









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Fire Threat

Fire Effects





Values Impacted Scores: Percent Acres



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Moderate-High RFS Acres (4 to 9) Total Acres

Values are in Thousands Acres. Moderate to High RFS includes classes 4 to 9 December 5, 2012

Fire Report Data Used for WWA: Number of Fires by Data Source

Fire Report Data Used for WWA: Acres Burned by Data Source

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