# Characterizing Firewise and fuel reduction activities among private landowners

Jeff Kline Christine Olsen Eric White Alan Ager







#### Coupled human-natural system study area



#### **Coupled human-natural system study area**









#### **Coupled human-natural fire-prone system**



# This Job By... Wildfire & **Fuels Reduction** 541-598-7393

#### Fischer et al. conceptual framework



#### Fischer et al. empirical modeling

#### Perceived wildfire risk = f ( wildfire hazard, values at risk, past wildfire experience social context );

Treat for fuel = f ( perceived wildfire risk, capacity, perceived responsibility ).

#### Fischer et al. conclusions

- Landowners' wildfire risk perceptions are shown to be correlated with hazardous fuel conditions predicted by fuel models
  - Risk perceptions also are correlated with past wildfire experiences, residency, timber- growing interests, and membership in forestry and fire protection organizations

## Fischer et al. conclusions continued

- Landowners' propensity to reduce fuel is correlated with level of concern about wildfire
- Fuel treatment activity also is correlated with landowners' capacity to undertake activities
- Analysis enables us to identify places where landowners may need inducement toward greater risk reduction effort

### Methods

- WUI homeowners
  - Intermix
  - Interface
- Dillman method
- Summer 2012
- 531 responses
- 31% rate



Public Attitudes Toward Wildfire, Land Management, and Reducing Risk

A Survey of Homeowners in Central and South-Central Oregon

This questionnaire was developed by researchers at Oregon State University at the School of Public Policy and the College of Forestry. The findings will be summarized to help federal land managers and scientists better understand public attitudes toward wildfire and actions for reducing risk of fire. We are asking for your help because you own land in Oregon where fire is a common occurrence. We greatly appreciate your time on this survey.



Please return surveys to:

Public Attitudes Toward Wildfire School of Public Policy 311 Gilkey Hall Oregon State University Corvallis, Oregon 97331-6206 541-737-2811



#### **Conceptual framework**



# Components of homeowner's perceived wildfire risk



#### **Perceptions and actions**

	Vari	able	Response
$\left\{ \left( \right) \right\}$	Chance of wildfire in 5 years on nearby forests		68%
	Chance of property/home damage if fire occurred		31%
	Previous fire just outside neighborhood		26%
	Has conducted a Firewise activity		77%
		Plant fire-resistant veg	34%
		Reduce tree density within 100 ft	52%
		Clean roof/gutters of needles, etc	84%
		Use nonflammable materials	54%

Risk

### **Empirical modeling**

Chance of wildfire = f ( wildfire hazard, values at risk, past wildfire experience, social context );

Chance of damage = f ( wildfire hazard, values at risk, past wildfire experience, social context );

Firewise = f ( perceived wildfire risk, capacity, legal requirement ).

## **Predicting perceived risk**

Chance of wildfire (%)			
Burn probability	+		
Wildfire within miles	+++		
Prescribed burn in miles	++		
Advice: family/neighbor			
Advice: local government			
Advice: fire awareness			
Property owner			
College-educated	+++		
Adjusted R <sup>2</sup>	0.11		

## **X** Chance of damage (%)

Conditional Flame length	++
Trees per hectare	+++
Wildfire within miles	+++
Prescribed burn neighbor	+
Advice: family/neighbor	
Advice: local government	
Advice: fire awareness	+++
Adjusted R <sup>2</sup>	0.20

#### **Predicting Firewise activity**

Firewise activity (yes=1, 0=no)				
Perceived wildfire risk	+			
Wildfire in neighborhood	++			
Advice: family/neighbor				
Advice: local government	+++			
Advice: fire awareness	+++			
Property owner	++			
Tenure	+			
Age				
HOA rule	+++			

### Conclusions

 Homeowners wildfire risk perceptions are shown to be correlated with hazardous fuel conditions predicted by fuel models

Perceived chance of wildfire positively correlated with actual probability of wildfire

Perceived chance of damage positively correlated with potential wildfire intensity

 Risk perceptions also are correlated with past wildfire experiences

### Conclusions

- Advice from friends, family, and local government agencies appears to have little if any influence on wildfire risk perceptions among homeowners
- Advice from local government and fire awareness groups appears to have a positive influence on whether homeowners undertake Firewise activities

# jkline@fs.fed.us



