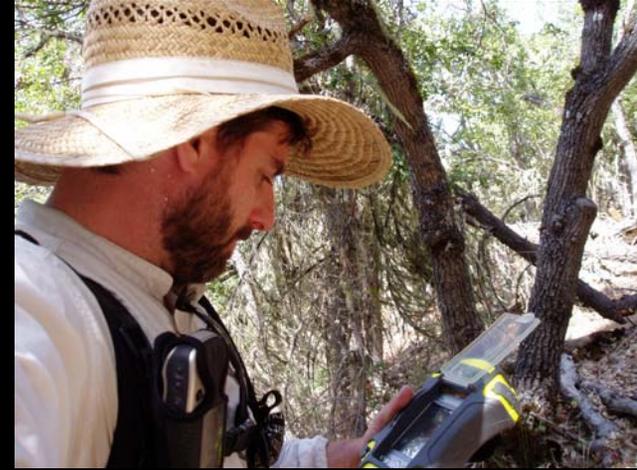


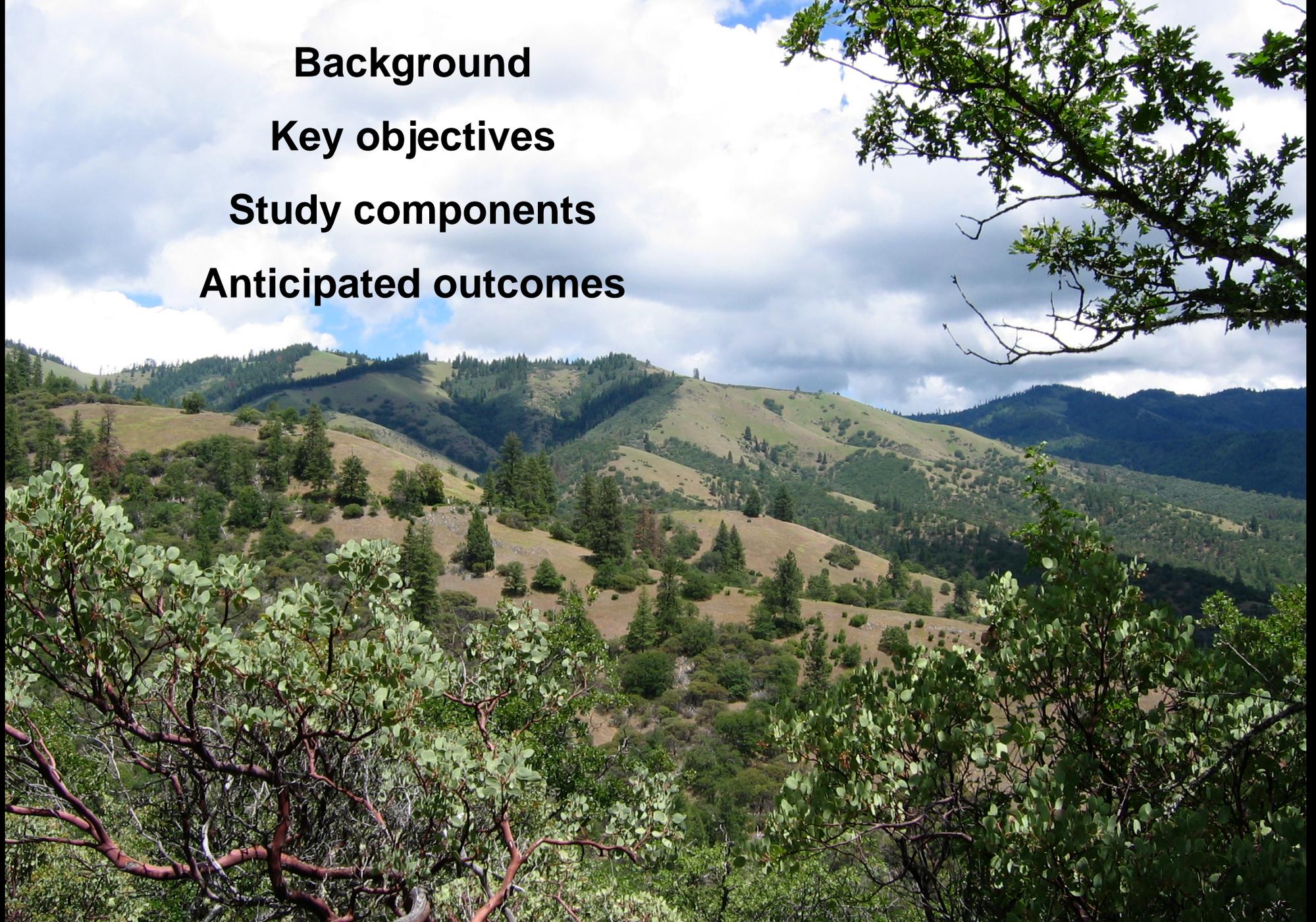
# Fuels Reduction in Oak Woodlands and Shrub Lands of SW Oregon: Consequences for Native Plants and Invasion by Non-native Species

P. Hosten, P.S. Muir, K. Perchemlides, E. Pfaff, and K. Sikes

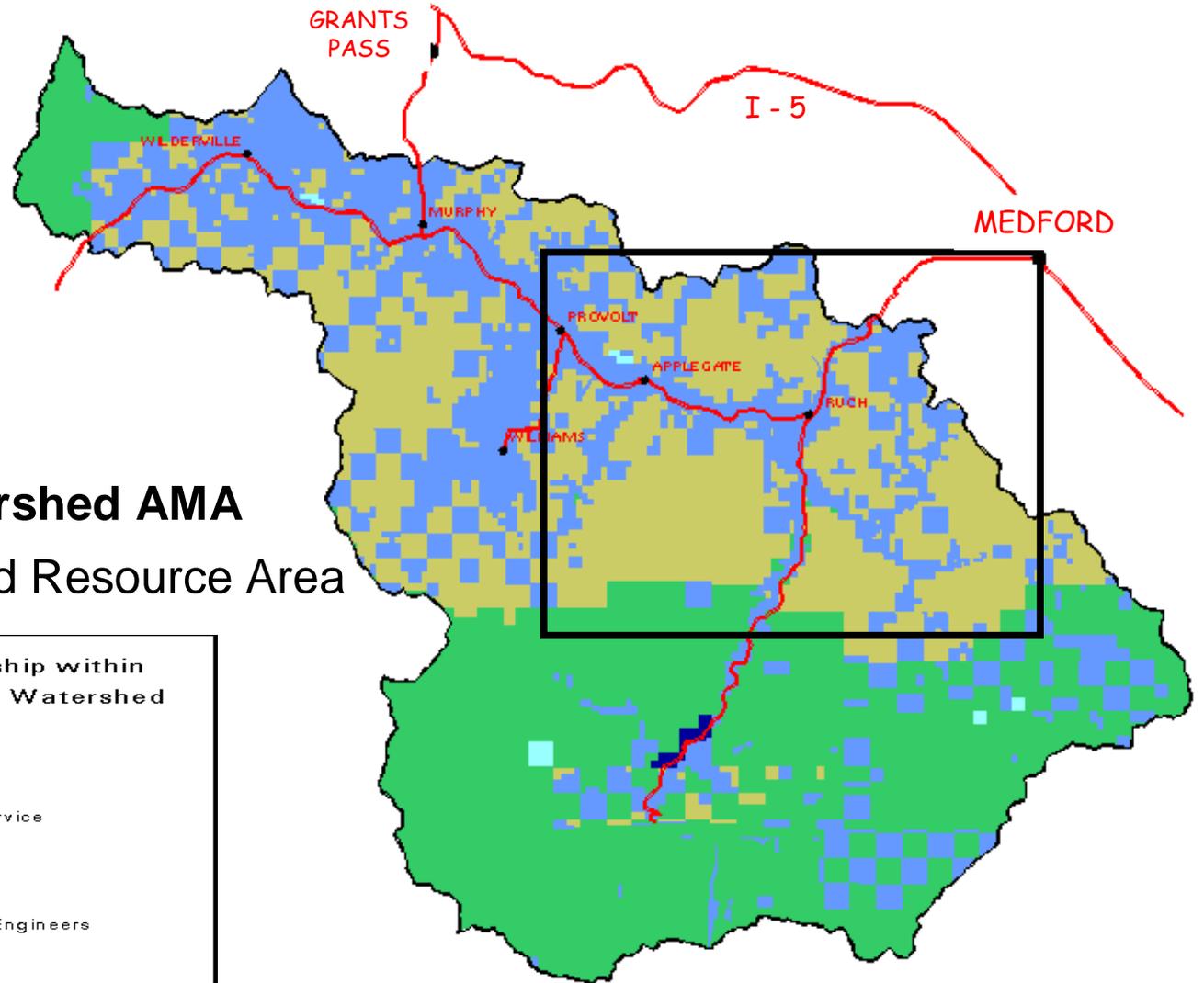
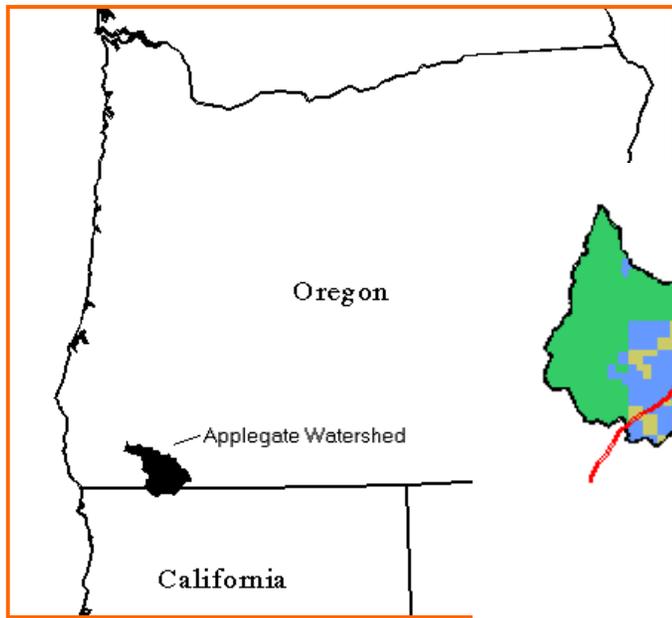




**Background**  
**Key objectives**  
**Study components**  
**Anticipated outcomes**

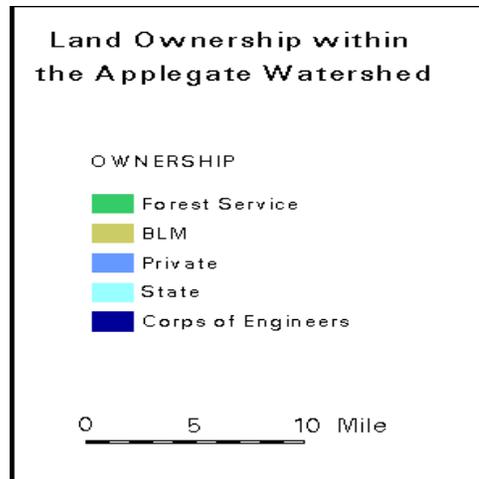


# Study Area:

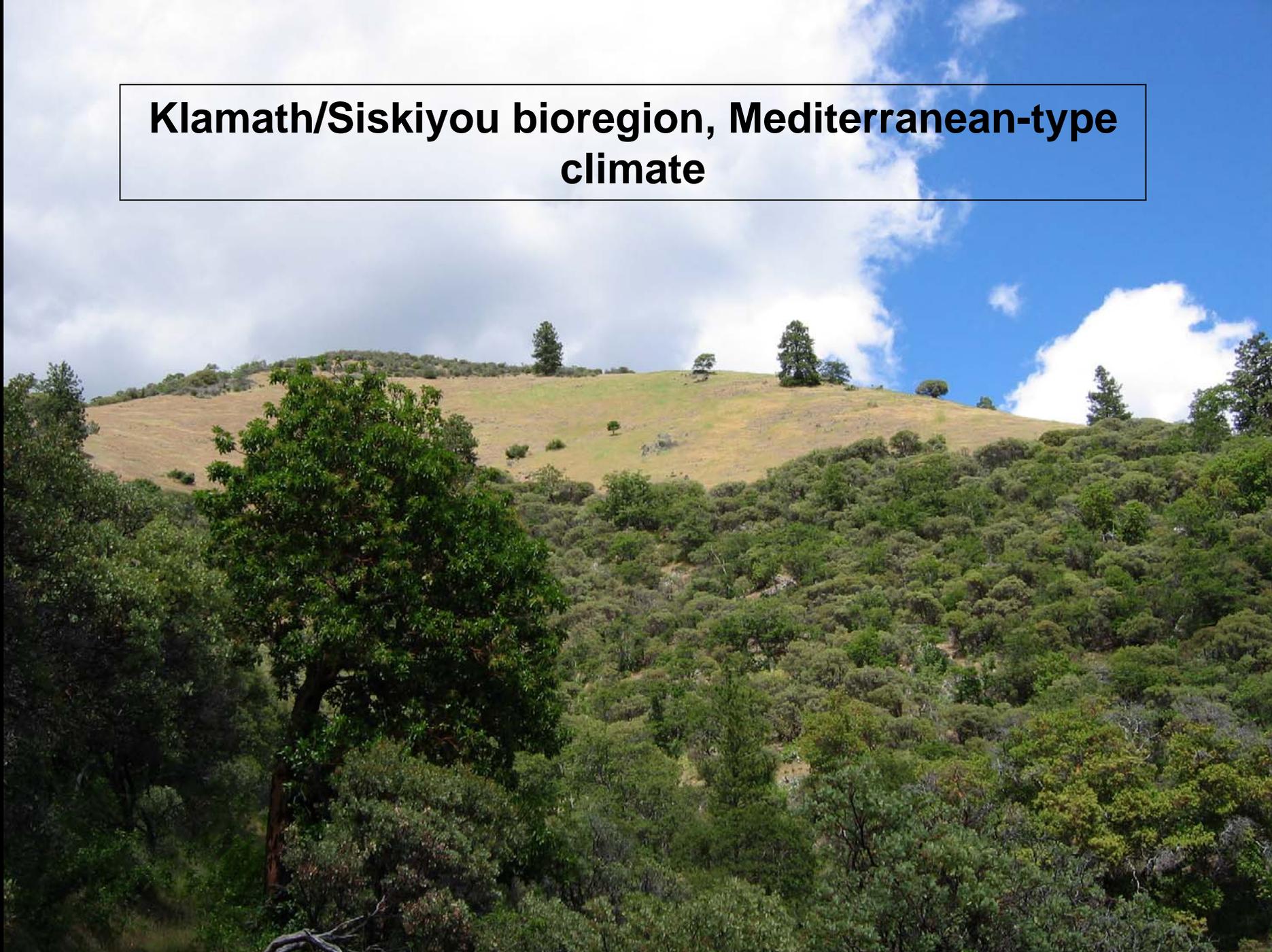


## Applegate Watershed AMA

Medford BLM, Ashland Resource Area



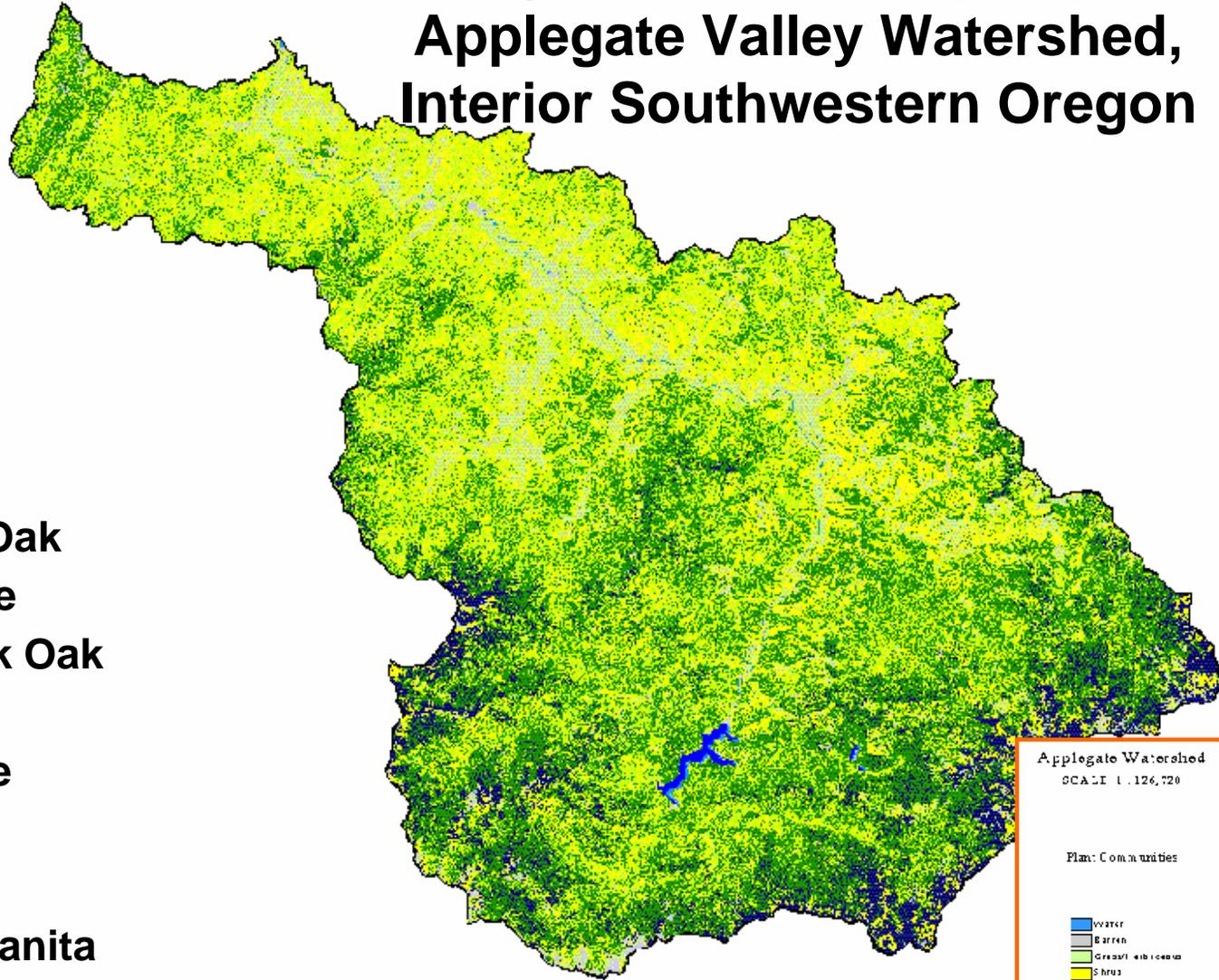
**Klamath/Siskiyou bioregion, Mediterranean-type climate**



**Intersection of several unique floristic regions**



# Vegetation Diversity in the Applegate Valley Watershed, Interior Southwestern Oregon



## Hardwood trees:

- Oregon White Oak
- Pacific Madrone
- California Black Oak

## Conifers:

- Ponderosa Pine
- Douglas Fir

## Shrubs:

- Whiteleaf Manzanita
- Buckbrush Ceanothus
- Birchleaf Mountain Mahogany
- Poison Oak



## **Assumptions Guiding Management:**

- **Historic fire regime was high frequency**
  - **Vegetation structure was more open**
- **Fire suppression has altered vegetation structure**
  - **Current overly-dense “senescent” growth**
  - **Loss of habitat for native grasses and forbs**
    - **Increased risk of intense wildfire**









**Slashbuster: Mechanical Mastication**















Landscape without thinning



Landscape after thinning











## Key Objectives

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- **Assess short-term consequences for plant communities of seeding after fuel reduction treatment with and without follow-up burning.**
- **Evaluate vegetation response to wildfire following fuel reduction treatments.**

**Historical sleuthing –  
compares past with current vegetation.**

P. Hosten

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

MAP SHEET

No. \_\_\_\_\_ Crater National Forest.

Division \_\_\_\_\_ District \_\_\_\_\_ Block \_\_\_\_\_  
T. 30 S., R. 35 E., W. 1 M., Section 34, Quarter N<sup>2</sup>NE<sup>4</sup> and N<sup>2</sup>NW<sup>4</sup>

Mapped by J. Grizzle Scale: 8 inches = 1 mile.



- 2 Open meadowy glade, 5-7% arable, balance too rocky
- 72 Meadowy glade with scattering Sarvis, mahogany & young Pine Fir 3% arable if cleared, bal. too rocky
- 87 Brushy & Rocky - scattering Fir & Pine - non-arable
- 63 D+WF+YF 5'-60' tall, 15-150 per A + brush 1% arable if cleared - balance too rocky
- 69 D+WF+YF 2-10' per A + 30-250 per A 20'-80' tall 3% arable, balance too rocky
- 29 D+YF 5-25' per A + some WF + fully stocked young FPs 5'-80' tall 1% arable, bal. too rocky

DF - Douglas Fir  
WF - White "  
YF - Yellow Pine

Crater - Settlement  
Kurz, Emanuel Paul #303

Area applied for \_\_\_\_\_  
" recommended \_\_\_\_\_

Compass line \_\_\_\_\_  
Contour interval 50'  
Figures on arrows = % slopes

CL - Clay Loam  
GL - Gravelly Loam  
SCL - Sandy Clay "  
GCL - Gravelly Clay Loam  
R - Rocks or Rocky  
X - Camera Station  
--- Secondary road

Mt. Ashland →

← Mt. Wagner Lookout



23255A



# **Landscape-level mapping of current vegetation communities and conditions**

P. Hosten and E. Pfaff



# Rosaceous chaparral and landscape heterogeneity



# Anticipated outcomes:

**Map of current  
vegetation**

**Creation of spatially  
explicit community  
database to serve as  
context for more  
detailed monitoring of  
treatment outcomes**

**Establishment of  
baseline for assessing  
future changes**



**Comparison of vegetation in areas treated for fuel reduction with vegetation in adjacent untreated areas.**

K. Perchemlides, K. Sikes, P. Muir



LBB 204  
3T, W  
CHASTY





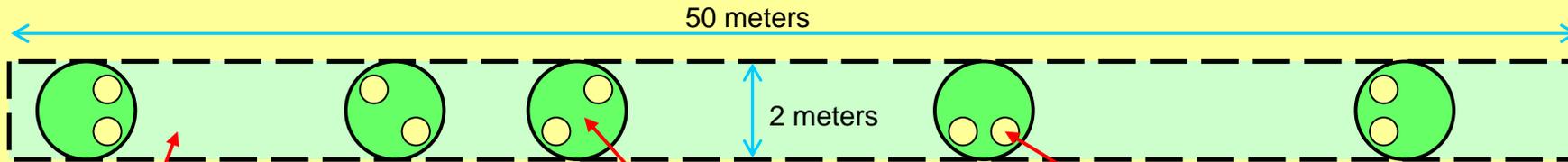
**Units Thinned 1996 through 2001. Red = SB,  
Blue = HPB, Orange = Rx Burn.**

## Transect Pairs

<b>Dominant Shrub Species</b>				
<b>Treatment</b>	<i>Ceanothus</i>	<i>Arctostaph.</i>	<b>Mixed</b>	<b>Total</b>
<b>Hand pile &amp; burn</b>	<b>5</b>	<b>13</b>	<b>6</b>	<b>24</b>
<b>Mastication</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>20</b>
<b>Total</b>	<b>10</b>	<b>20</b>	<b>14</b>	<b>44</b>

**Larger sample of HPB in *Arctostaphylos* and mixed reflects inclusion of older Thompson Creek units.**

## Sampling Method for 2005 paired transects:



### **Overstory Area:**

Recorded species, plus basal diameter and DBH for all trees and arborescent shrubs. Includes stumps > 10 cm in thinned areas.

### **Canopy Context:**

Recorded percent cover, status and stems for all tree and shrub species within five randomly located 2 meter diameter circles.

### **Grass and Forb Areas:**

Recorded species and percent cover for all grasses and forbs within ten 36 cm diameter circles randomly placed within the five canopy context circles.

*Also recorded for each transect:* Thinning treatment and date; slope, aspect and elevation; pile burn scar areas; GPS coordinates; and a full list of species within the 2 x 50 meter overstory area using a time-constrained ocular survey.

# Different Perspectives on Thinning Outcomes:

Release of suppressed native species...



...or both...

...or invasion of disturbed sites by non-native weeds...



...or neither.

# Some Anticipated Findings:

**Increase in native grasses and forbs.**



**Increase in invasive exotic species.**



**Mass germination of fire adapted shrubs at burned sites**



**Suppression of all species by heavy layer of masticated debris.**



## Project Timeline

<b>Component</b>	<b>Status</b>	<b>Anticipated completion</b>
<b>Historical sleuthing</b>	<b>On-going</b>	<b>Fall '06</b>
<b>Seeding study</b>	<b>Pre-treatment data collected; trts. this fall/winter; re-sample summer '06</b>	<b>Fall – Winter '06</b>
<b>Wildfire in treated area</b>	<b>Pre-fire data collected; post-fire data collected; analysis on going</b>	<b>Spring '06</b>
<b>Treatment transect monitoring</b>	<b>Data collection complete; analysis on-going</b>	<b>Spring '06</b>
<b>Landscape veg. surveys</b>	<b>Data collection complete; analysis on-going</b>	<b>Spring '06</b>

**Thanks to:**

**JFSP**

**BLM**

**OSU**

**Photographers:**

**P. Hosten, K. Perchemlides,  
D. , K. Sikes**

**Interns:**

**D. DiPaolo & J. deJulio**







Typical white oak (*Q. garryana*) stand – P. Hosten

