

Roads Are Not Significant Pathways for SOD Spread

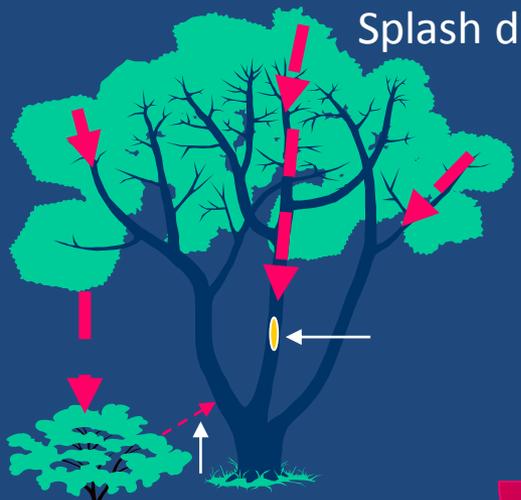
Everett Hansen, Joe Hulbert, Ebba Peterson

Department of Botany and Plant Pathology,
Oregon State University

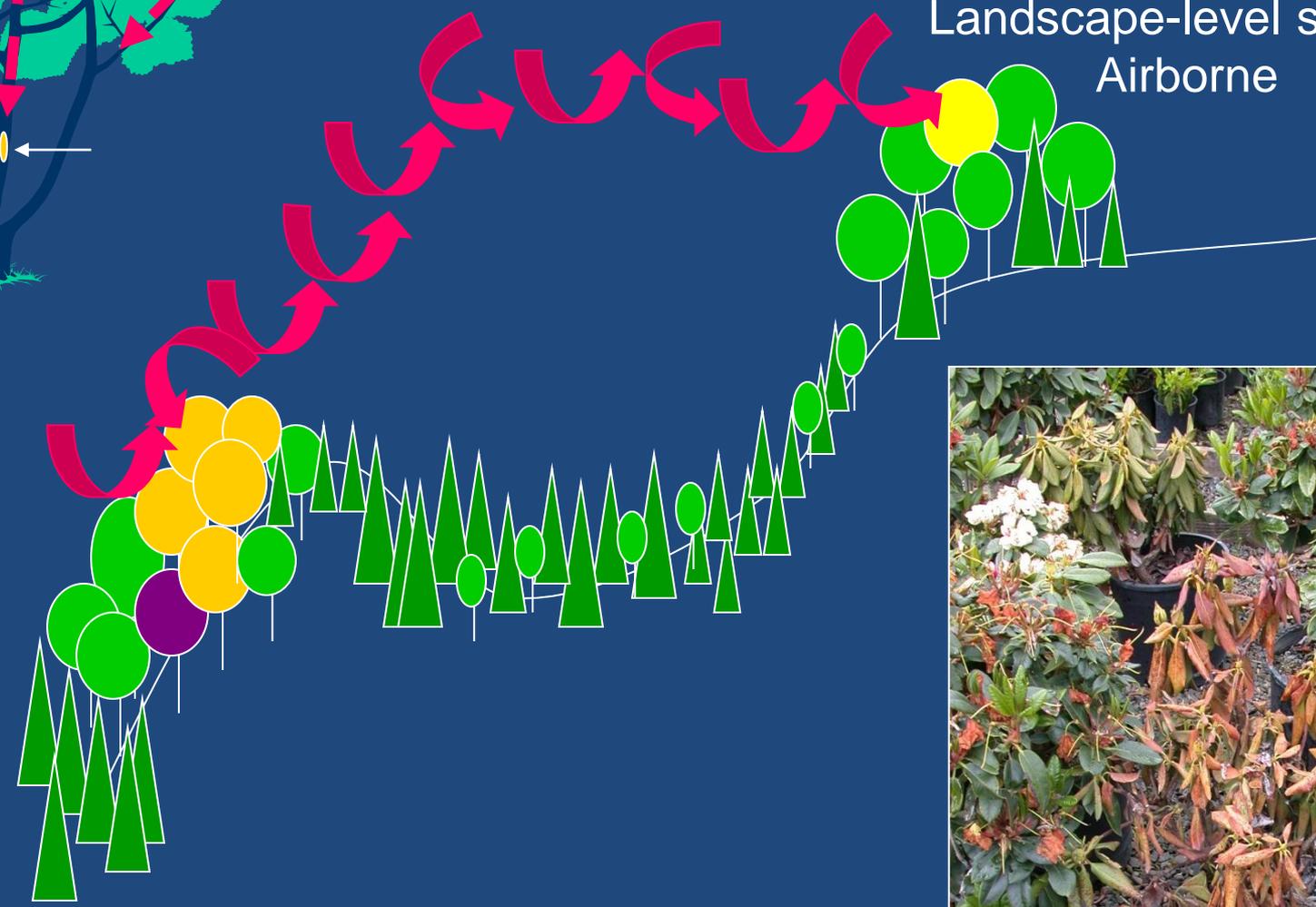
Dispersal mechanisms of forest *Phytophthoras*



Splash dispersal and stem flow



Landscape-level spread
Airborne



Long-distance spread
Nursery Stock





2011

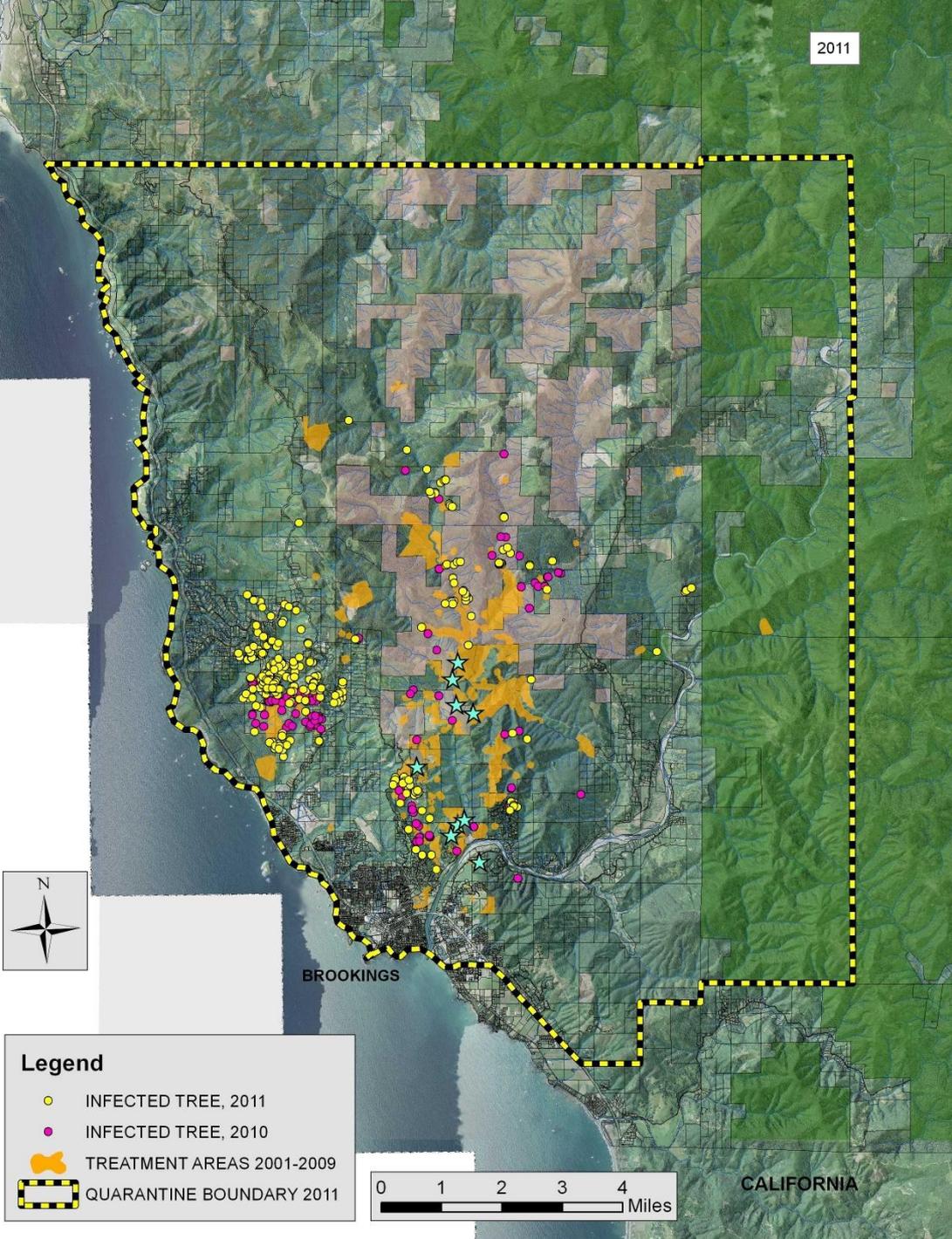
SOD IN OREGON

INTENSIVELY MANAGED,
HEAVILY ROADED LANDSCAPE

ARE ROADS PATHWAYS?

THREE APPROACHES:

- SPATIAL ANALYSIS
- BAITING FROM ROADWAYS
- ROADSIDE SURVEY



Legend

- INFECTED TREE, 2011
- INFECTED TREE, 2010
- TREATMENT AREAS 2001-2009
- ▬ QUARANTINE BOUNDARY 2011

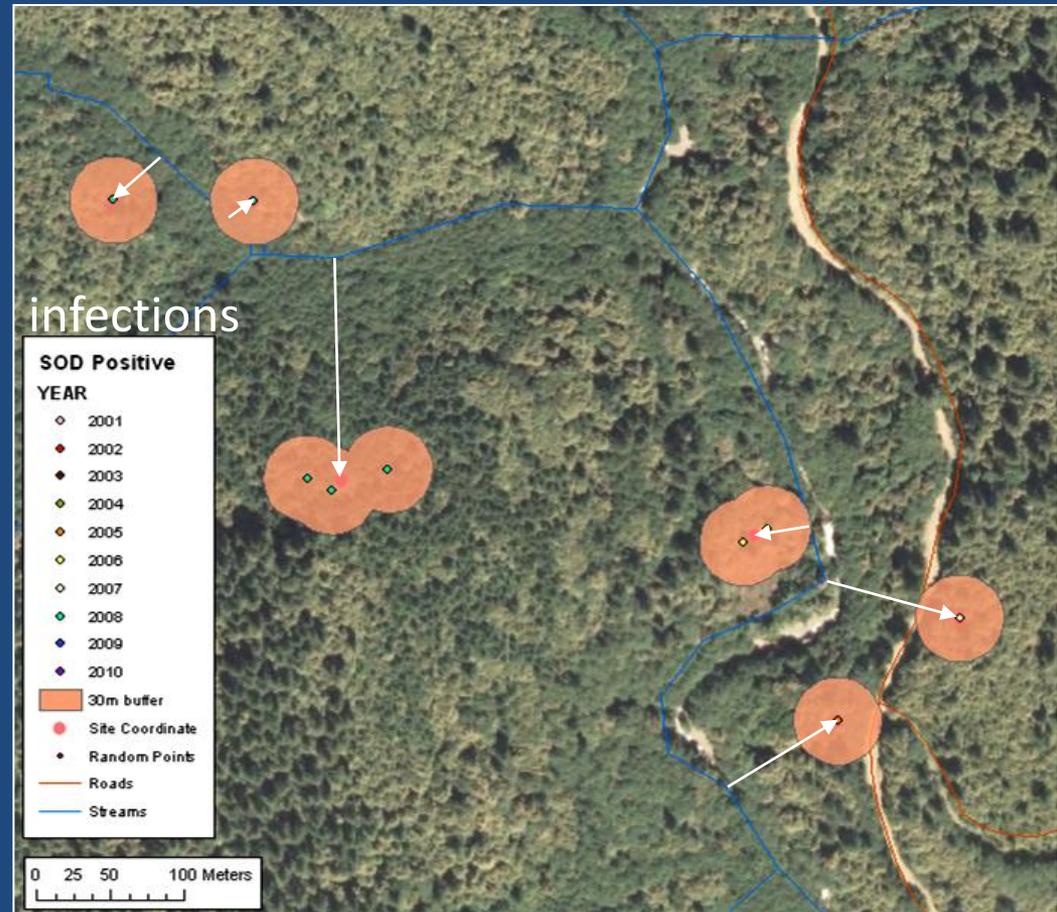
0 1 2 3 4 Miles

CALIFORNIA

1. Landscape Distribution– spatial analysis

Methods

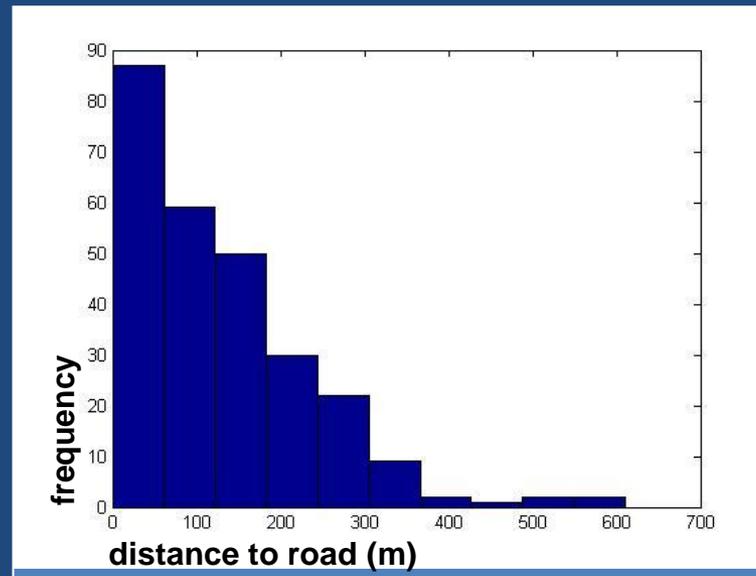
- 2001 - 2010 confirmed trees
- Analysis in ArcGIS (ver. 9.3)
- ‘Site’ = centroid for all within 60 m
- 294 sites total
- Spatial join between
 - site (point)
 - roads / streams (lines)



1. Landscape Distribution – spatial analysis

Results

- We observe *P. ramorum* close to roads, and more distant



Median distance to road
= 100.14 m

H_0 = *P. ramorum* is randomly distributed.

H_a = *P. ramorum* is closer to roads than would be expected by chance.

Landscape Distribution

Ebba Peterson

Roads

Observed

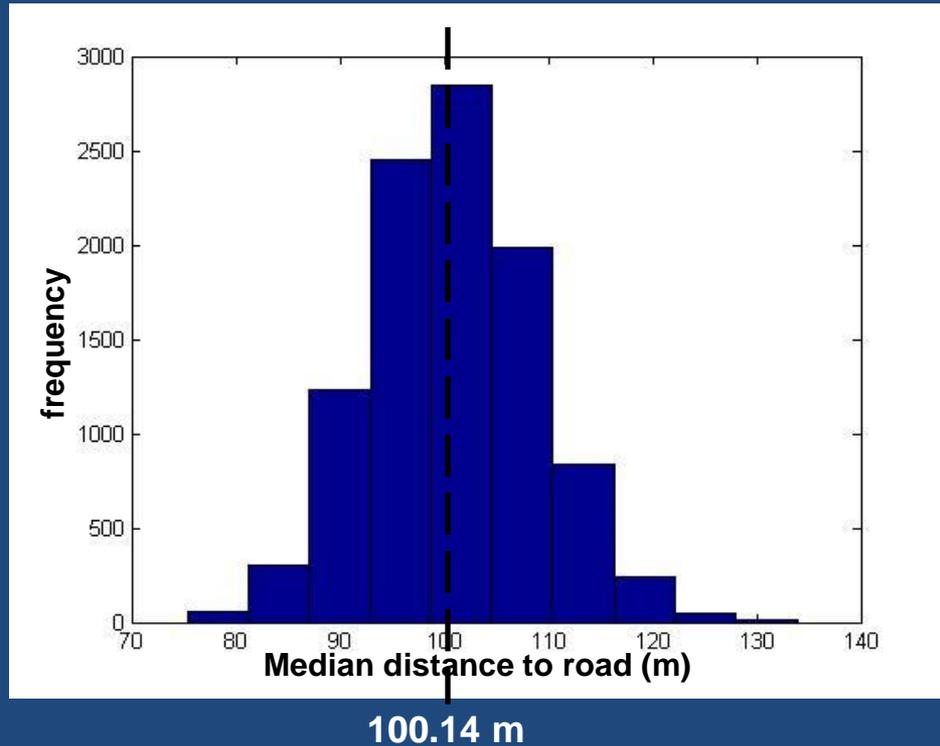
Median distance: 100.14 m

Randomizations

k (# \leq 100.14 m) 4,733

pseudo-p = $4,733 / 10,000$ 0.4733

Conclusion: sites are no closer to roads than would be expected by chance.

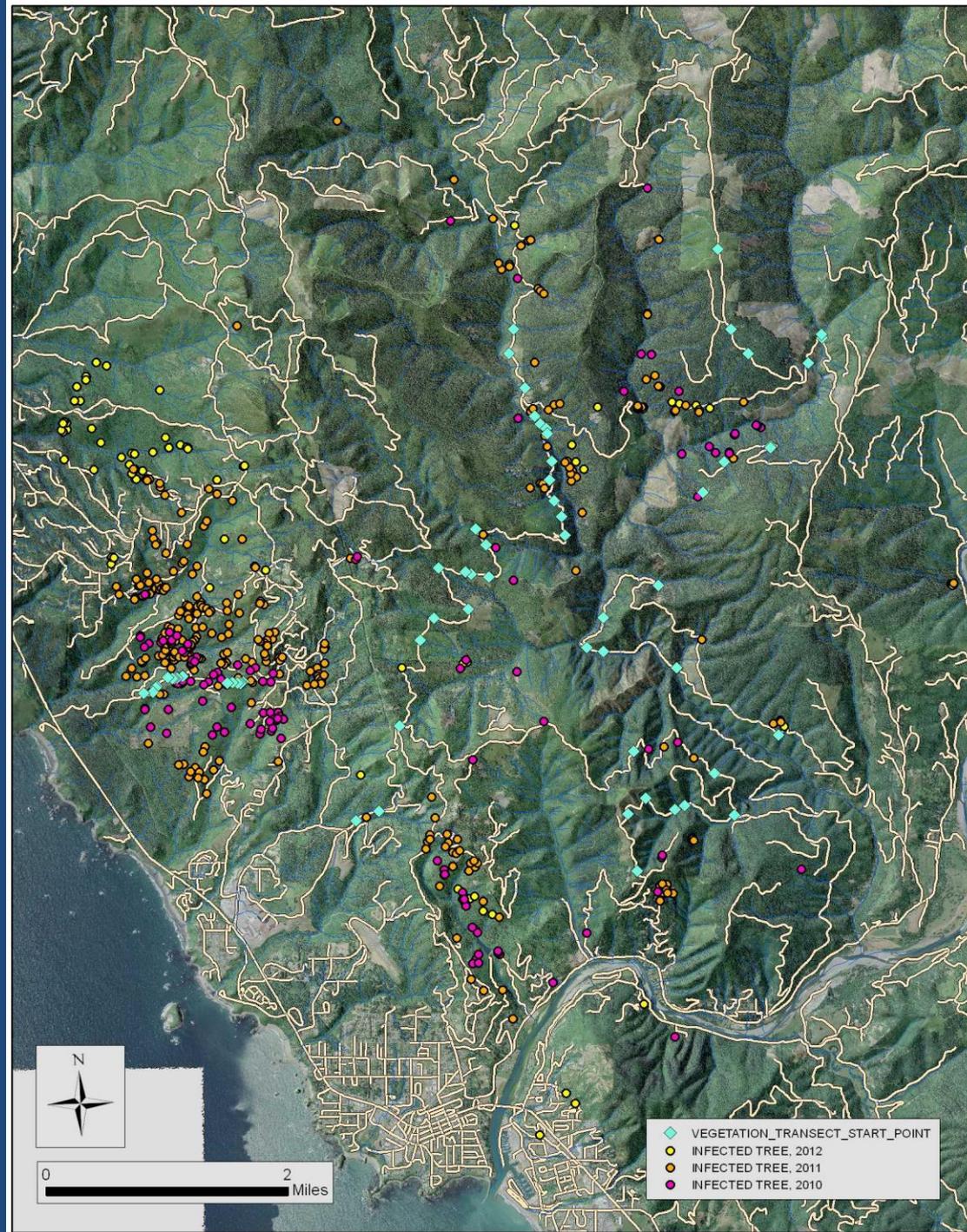


- BAITING FROM ROADWAYS
- VEG TRANSECTS NEXT TO ROADS

2 years

108 puddles

92 transects







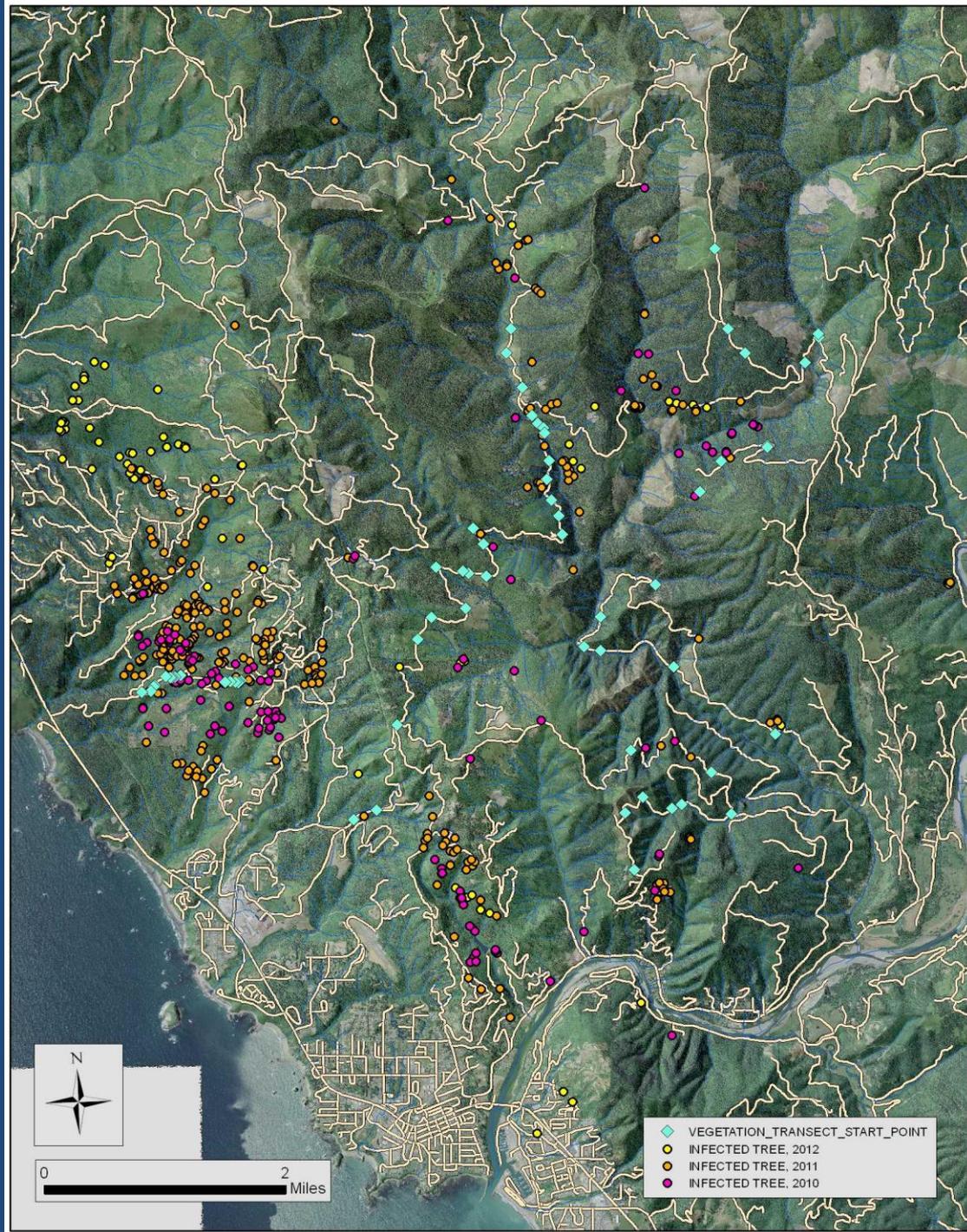






SITE	PUDDLES	PUDDLES +	TRANSECTS	TRANSECTS +
Lewis Creek	10	0	10	0
Thousand Line	42	1	34	0
Duley Creek	10	1	12	5
Mountain View Drive	8	0	4	0
Bean Creek	14	0	8	0
Ostenburg Road	14	0	6	2
Bravo Creek	4	0	8	0
Ransom Ridge	6	0	10	0
TOTAL	108	2	92	7





Roads Are Not Significant Pathways for SOD Spread

WHY?

Oregon quarantine, eradication, and sanitation practices keep *P. ramorum* off of the roads

OR

P. ramorum does not survive in the harsh road surface environment

OR

Soil infestation is a dead end for *P. ramorum*

OR

All of the above

WHY?

Oregon quarantine, eradication, and sanitation practices keep *P. ramorum* off of the roads



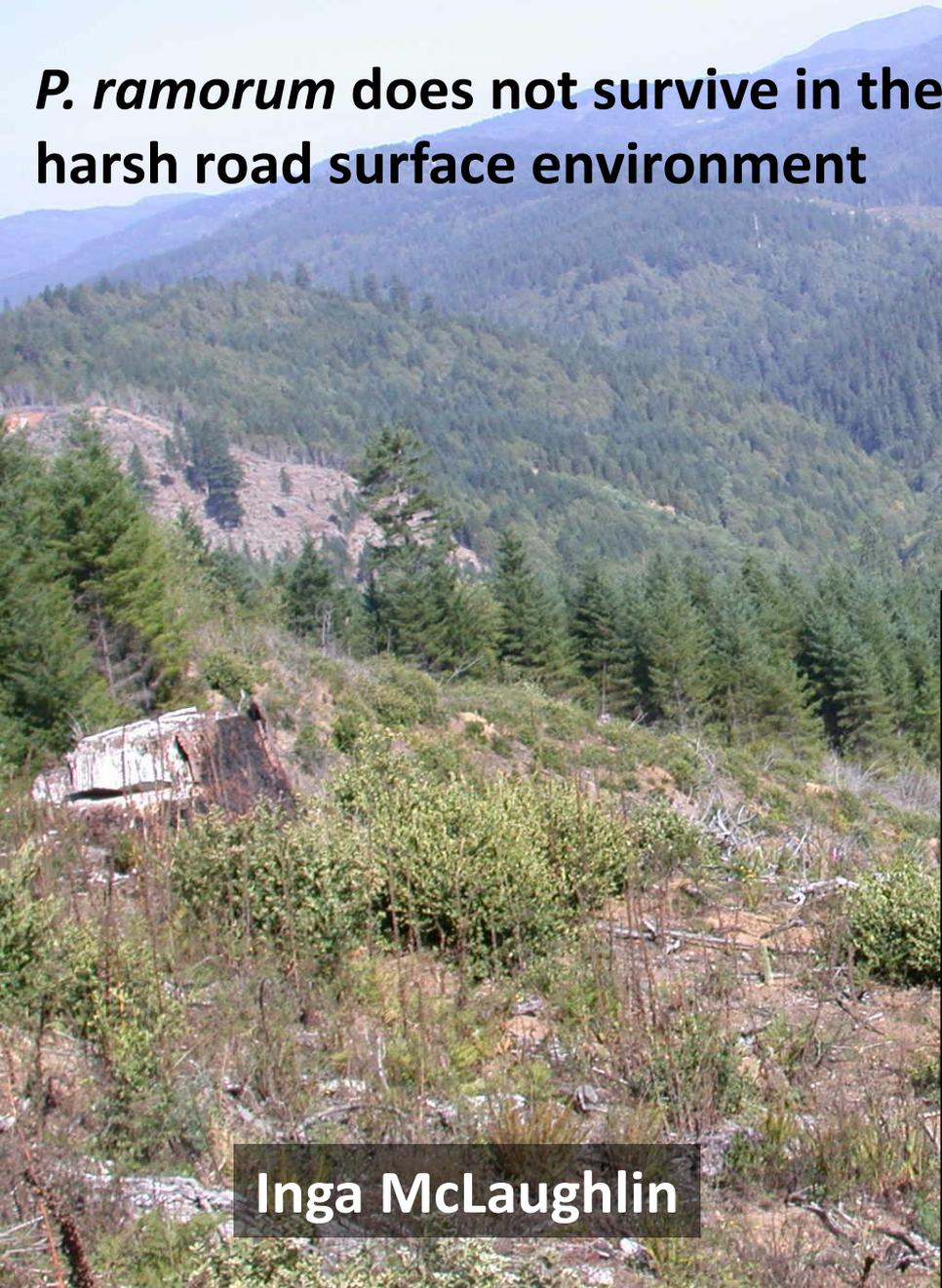
WARNING
SUDDEN OAK DEATH
RESTRICTED AREA
REMOVAL OF PLANT MATERIAL PROHIBITED
GREEN BRUSH AND LOGS BEFORE LEAVING AREA
903-986-4836, OAR 803-052-1230





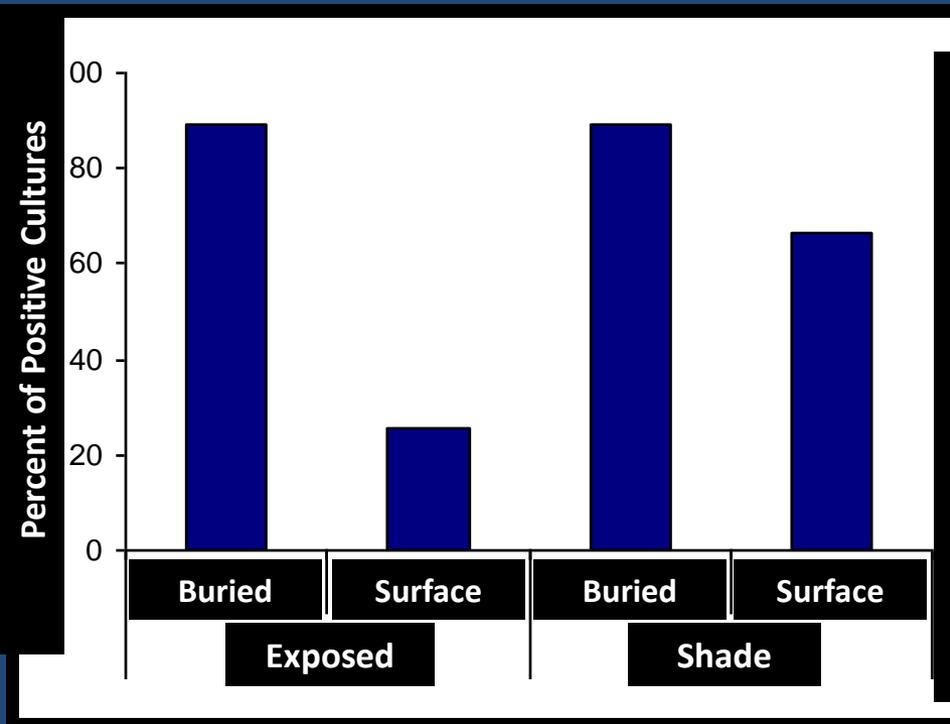
OR.....

P. ramorum does not survive in the harsh road surface environment

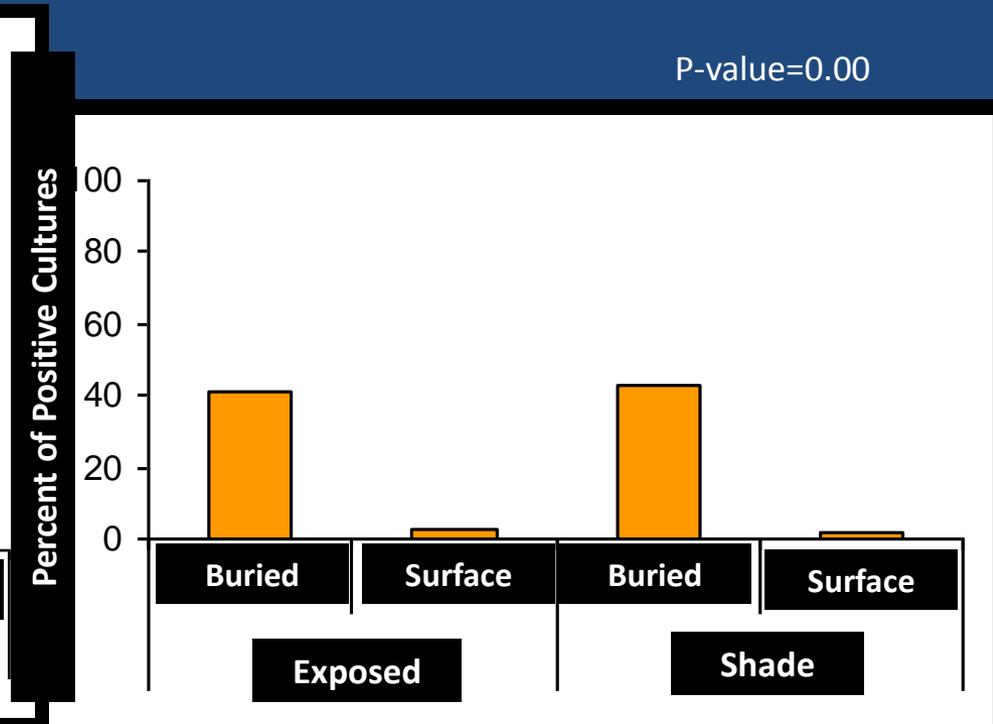


Inga McLaughlin

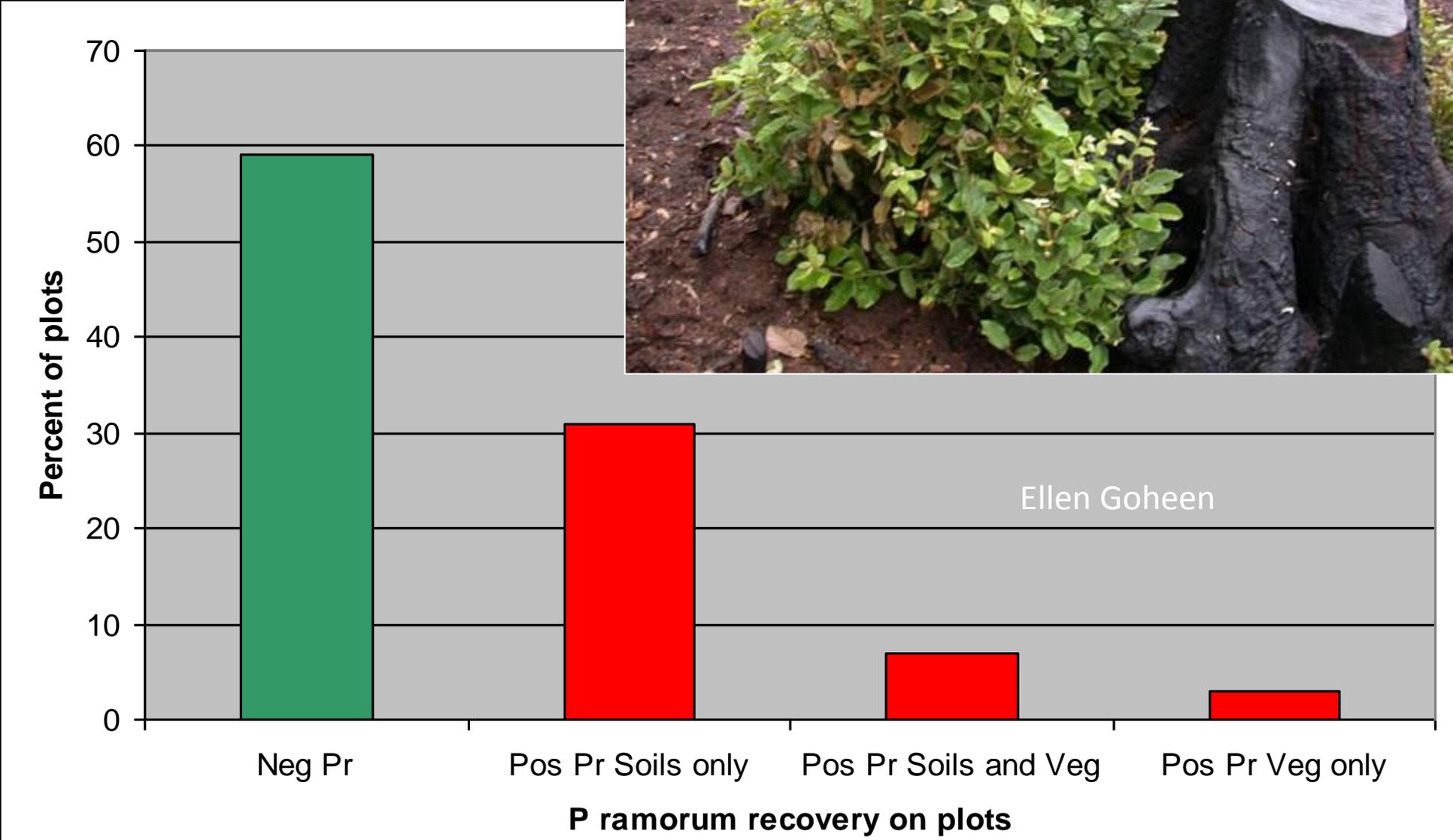
Fall trial September-November



Summer trial May-August



OR.....
Soil infestation is a dead end
for *P. ramorum*





THANK YOU

