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Avian Monitoring in the HFQLG Area – 2007

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PLAS Symposium – March 28, 2008

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Avian Monitoring in the Plumas-Lassen

1. Aspen Restoration
2. Fuels Reduction in Pine-Oak Habitat
3. Pileated Woodpecker MIS Monitoring
4. Landscape Distribution Models

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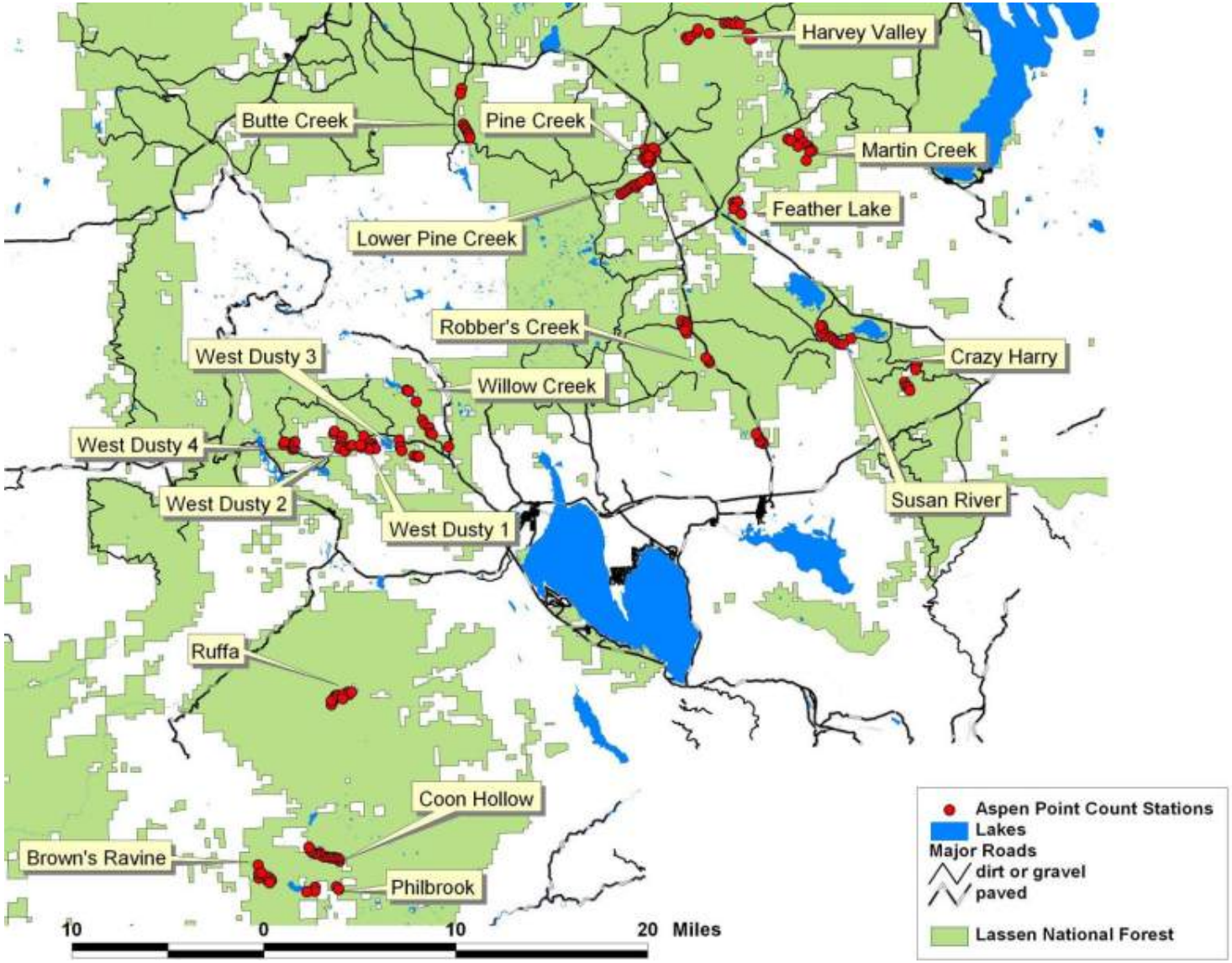
Aspen

PRBO Aspen Study Sites



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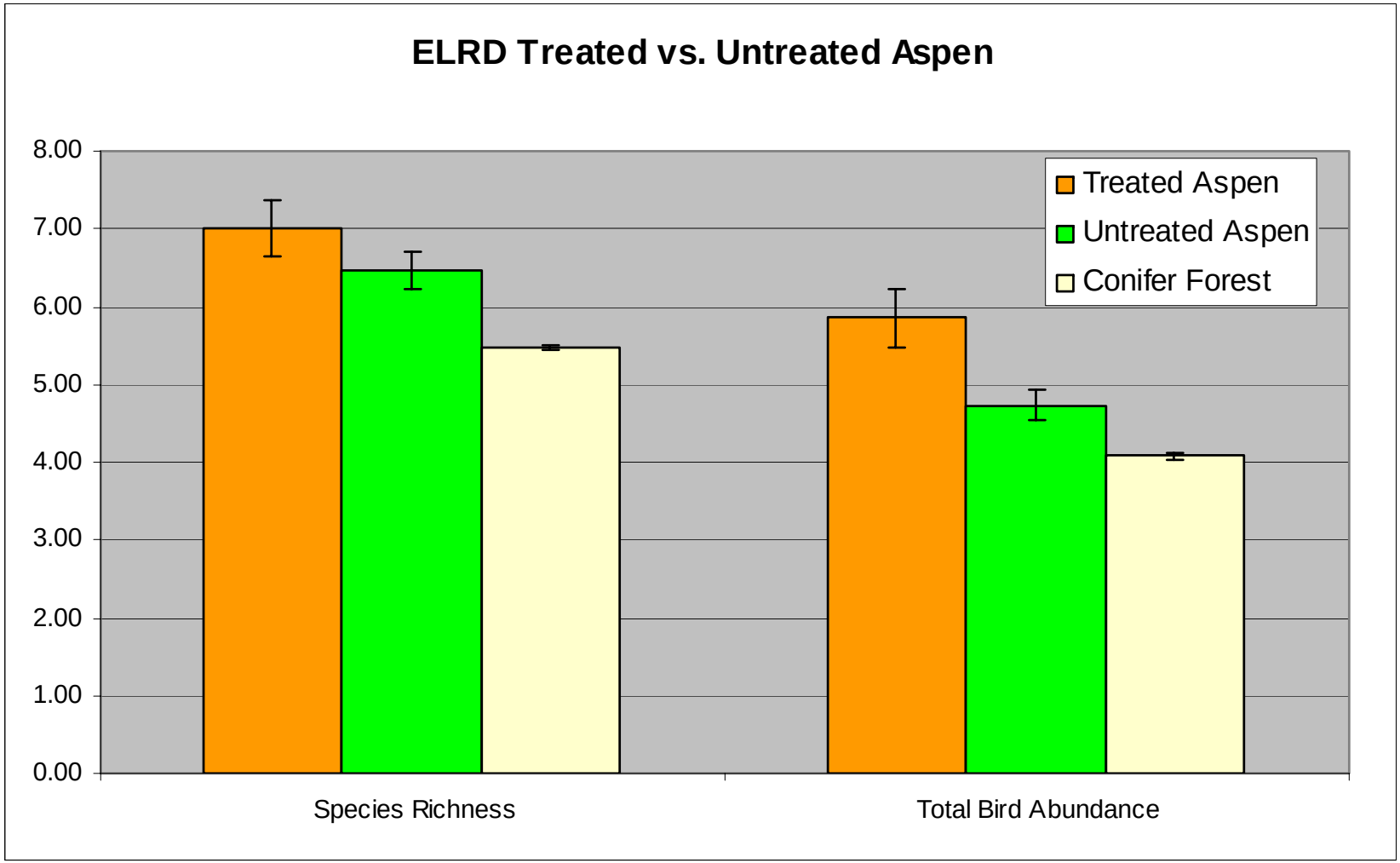
Treated vs. Untreated Aspen ELRD



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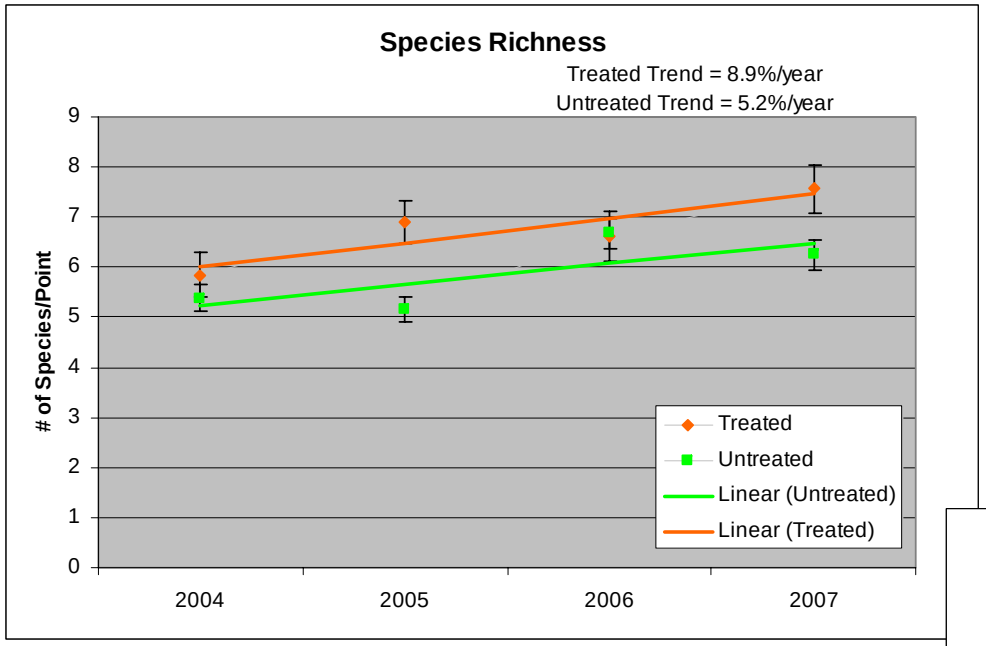
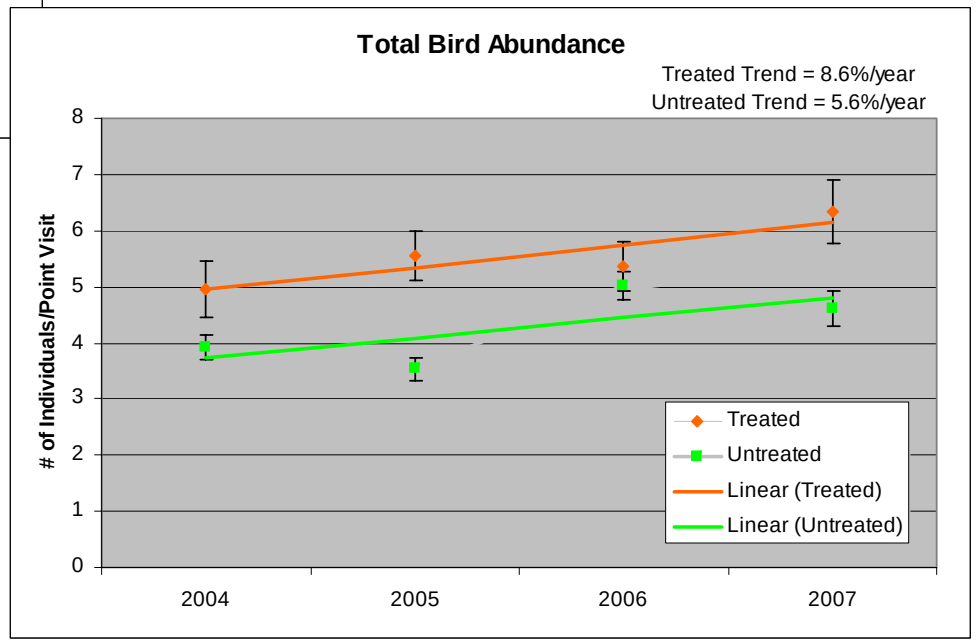
Trends – Treated vs. Untreated Aspen





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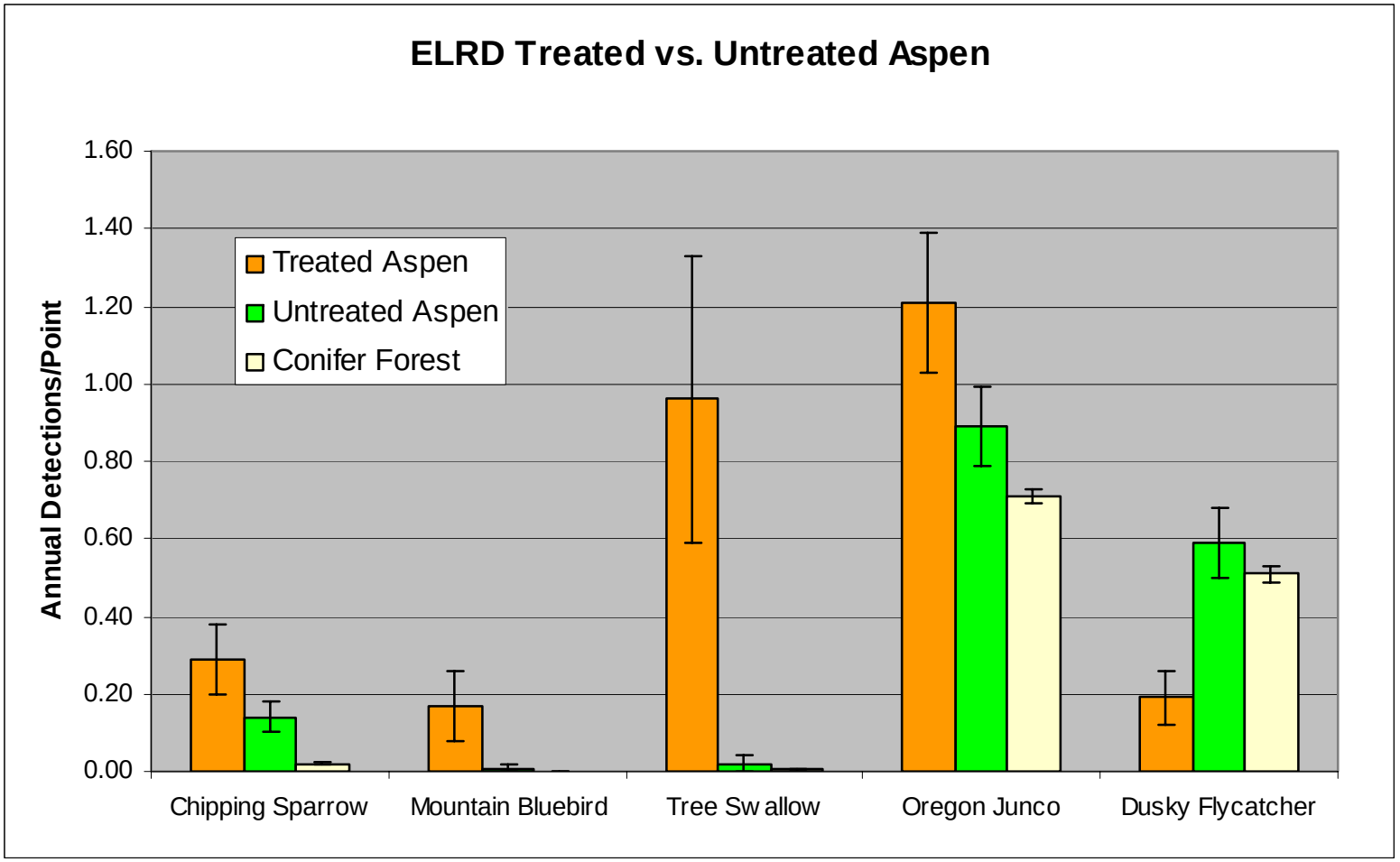
Focal Species Response to treatment



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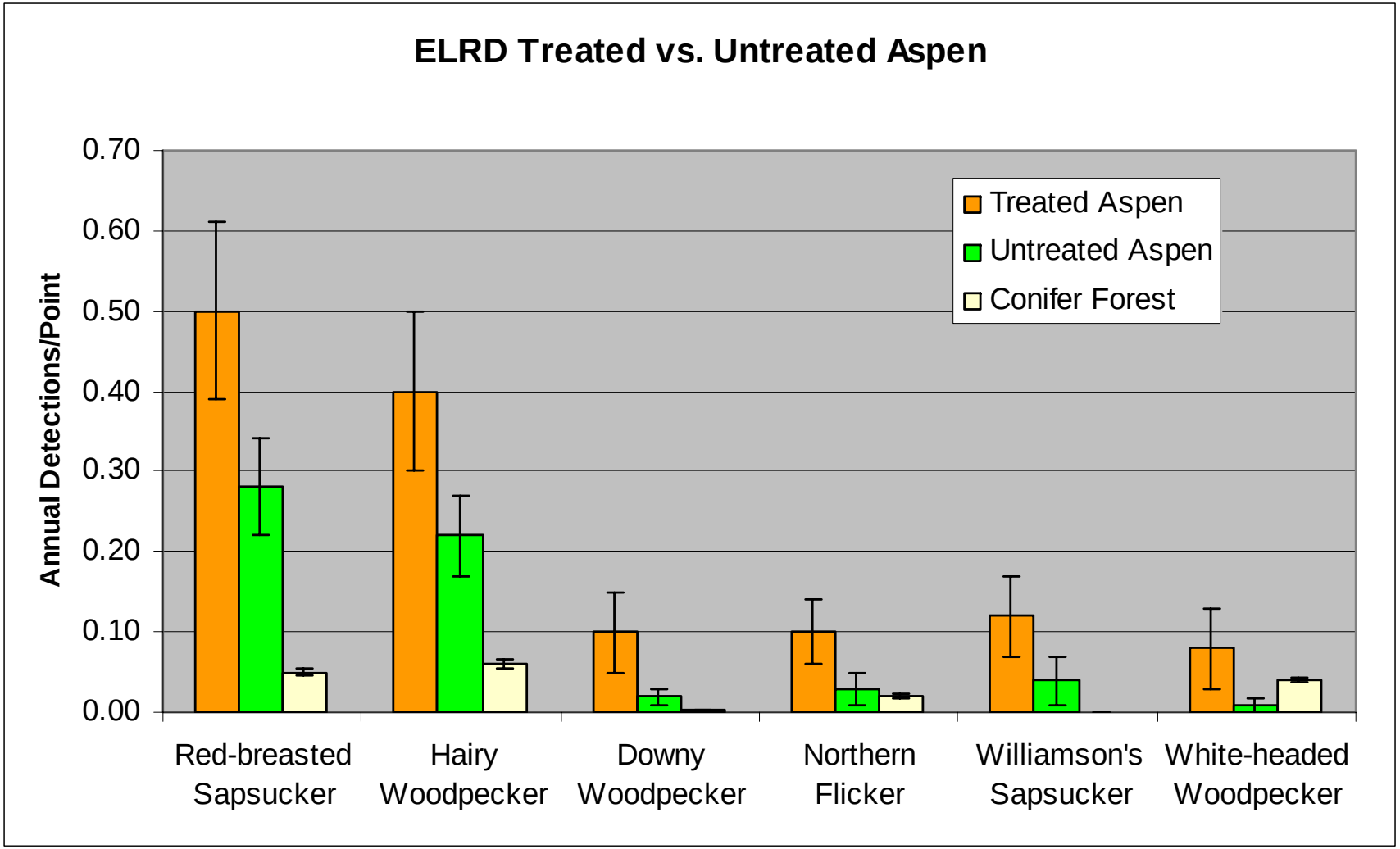
Woodpeckers & Aspen

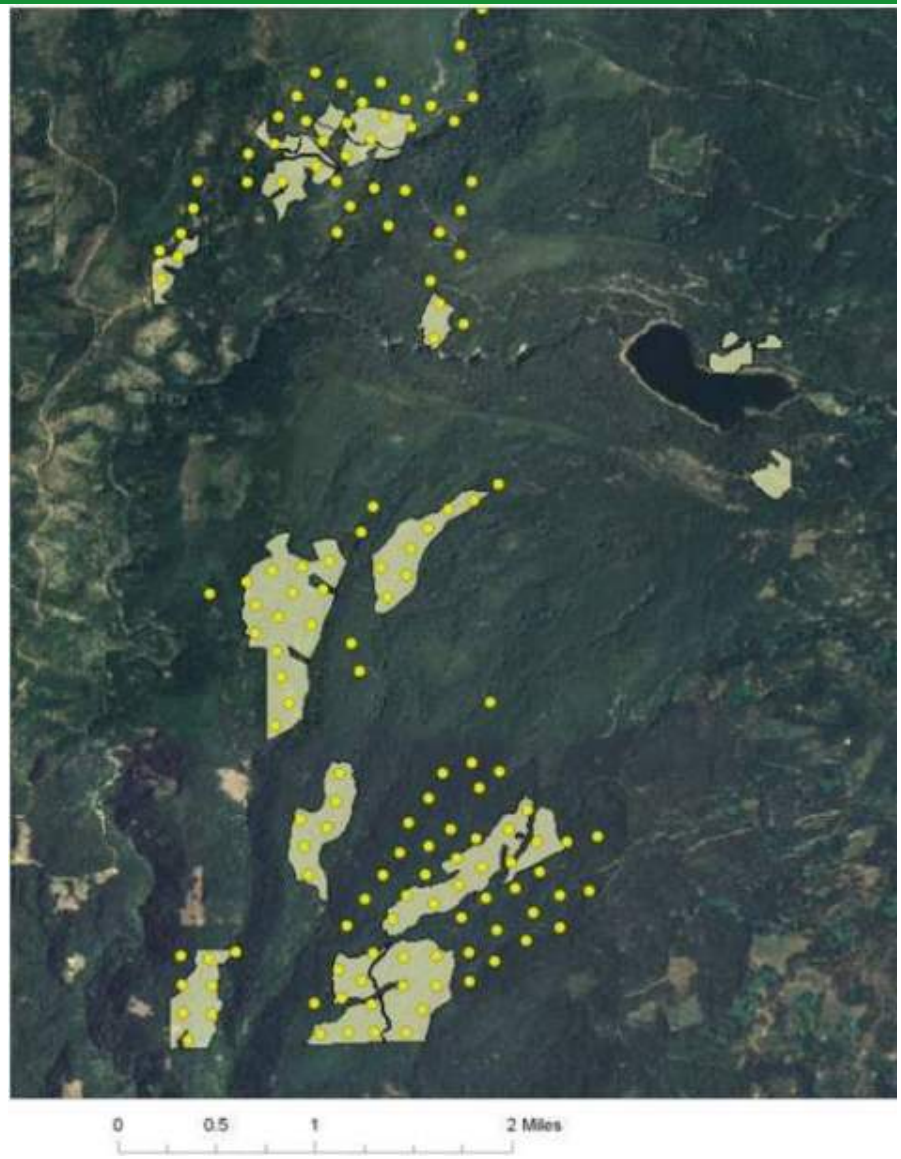


Managing Aspen for Birds

- **Regenerate, expand, and protect**
- **Manage for a range of aspen successional stages.**
- **Manage for dense aspen regeneration – use fire & protect wildfire affected stands from herbivory.**
- **Don’t ignore riparian aspen systems**

Fuel Treatments in Pine-Oak Habitat

- Almanor Ranger District of the Lassen N.F.
- Treatments implemented in 2005 & 2006
- Before-After/Control-Impact design
- Focal species as response variables



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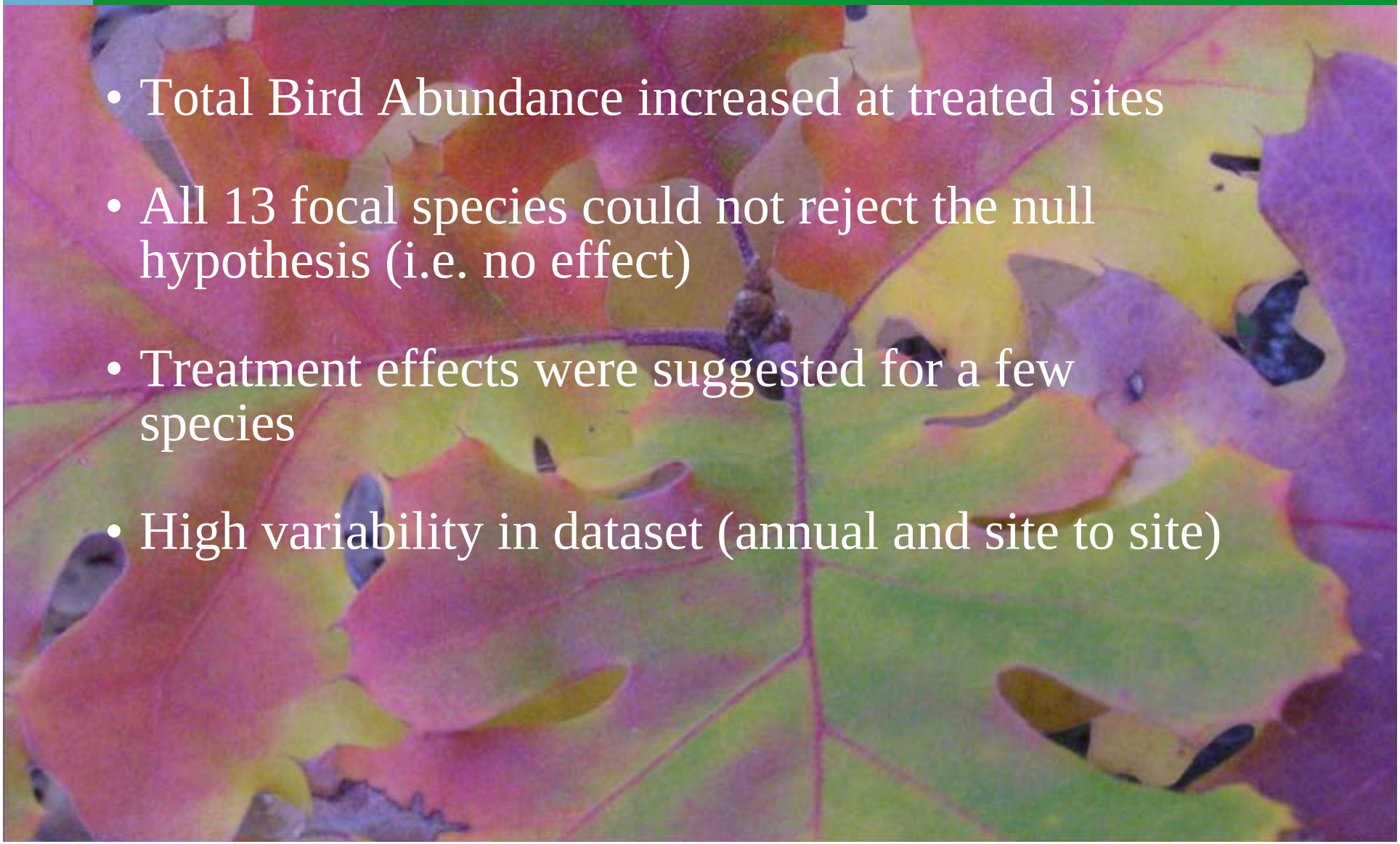
Pine-Black Oak Habitat Avian Focal Species

1. White-headed Woodpecker
2. Band-tailed Pigeon
3. Hairy Woodpecker
4. Red-breasted Nuthatch
5. Dusky Flycatcher
6. Warbling Vireo
7. Cassin's Vireo
8. Nashville Warbler
9. Hermit Warbler
10. Audubon's Warbler
11. MacGillivray's Warbler
12. Western Tanager
13. Oregon Junco

Pine-Oak Results Overview



- Total Bird Abundance increased at treated sites
- All 13 focal species could not reject the null hypothesis (i.e. no effect)
- Treatment effects were suggested for a few species
- High variability in dataset (annual and site to site)

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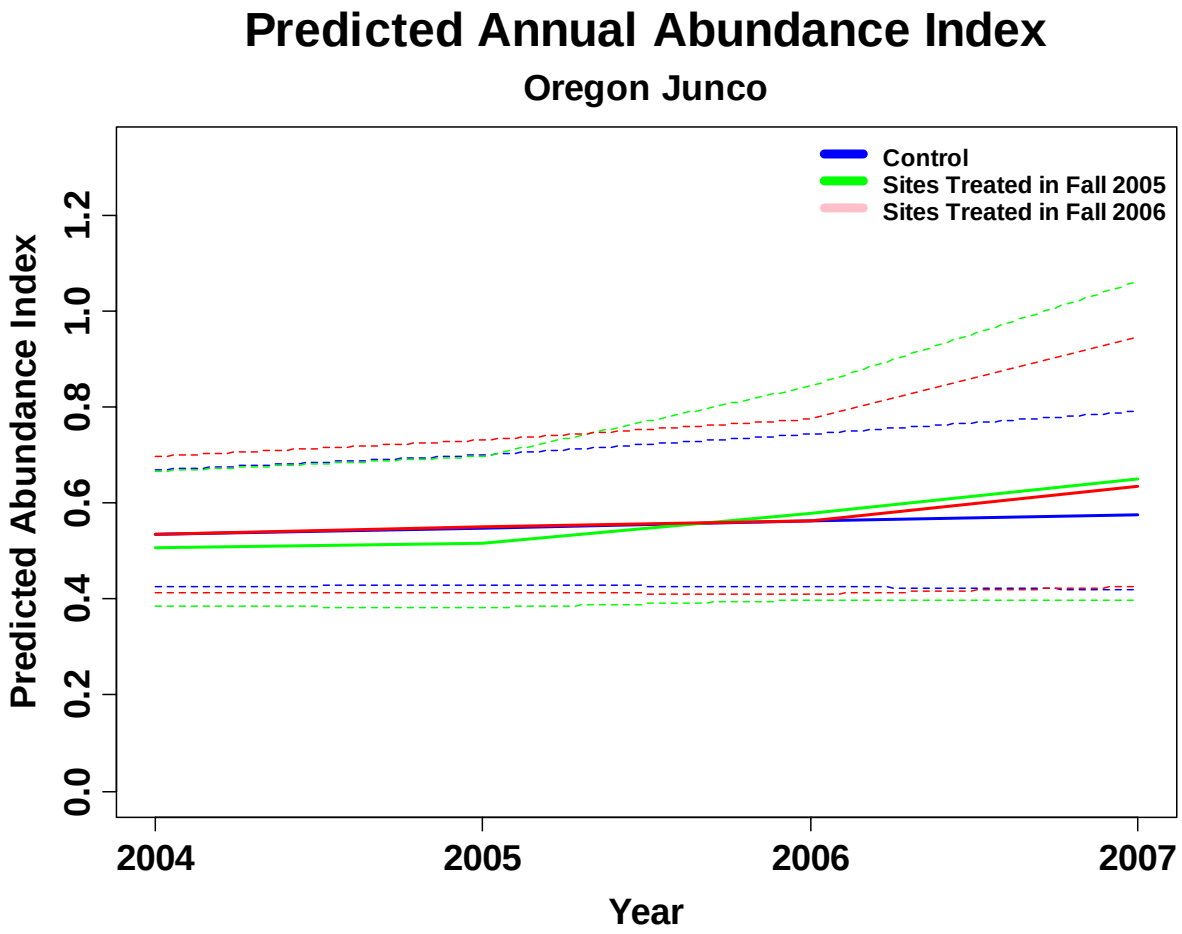
Oregon (Dark-eyed) Junco



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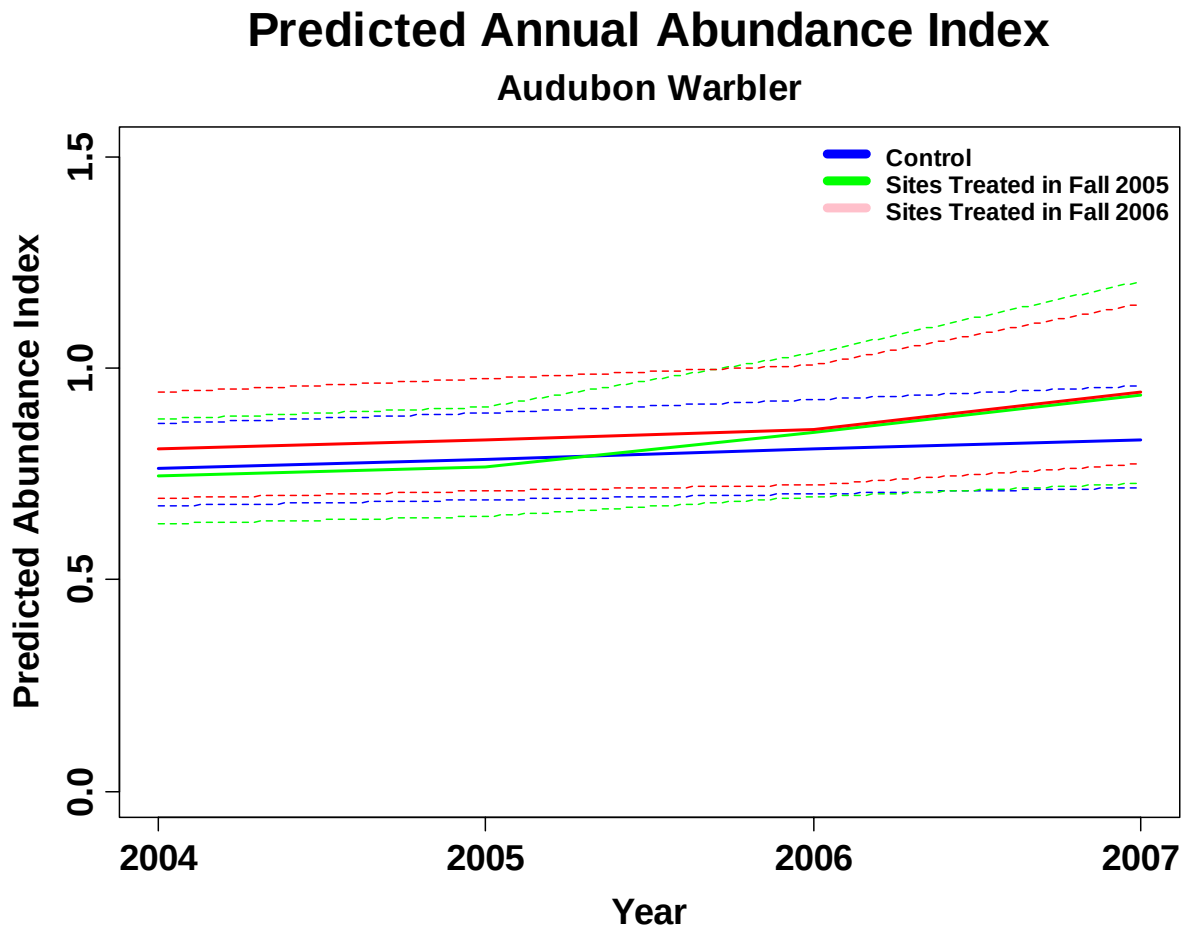
Audubon's Warbler



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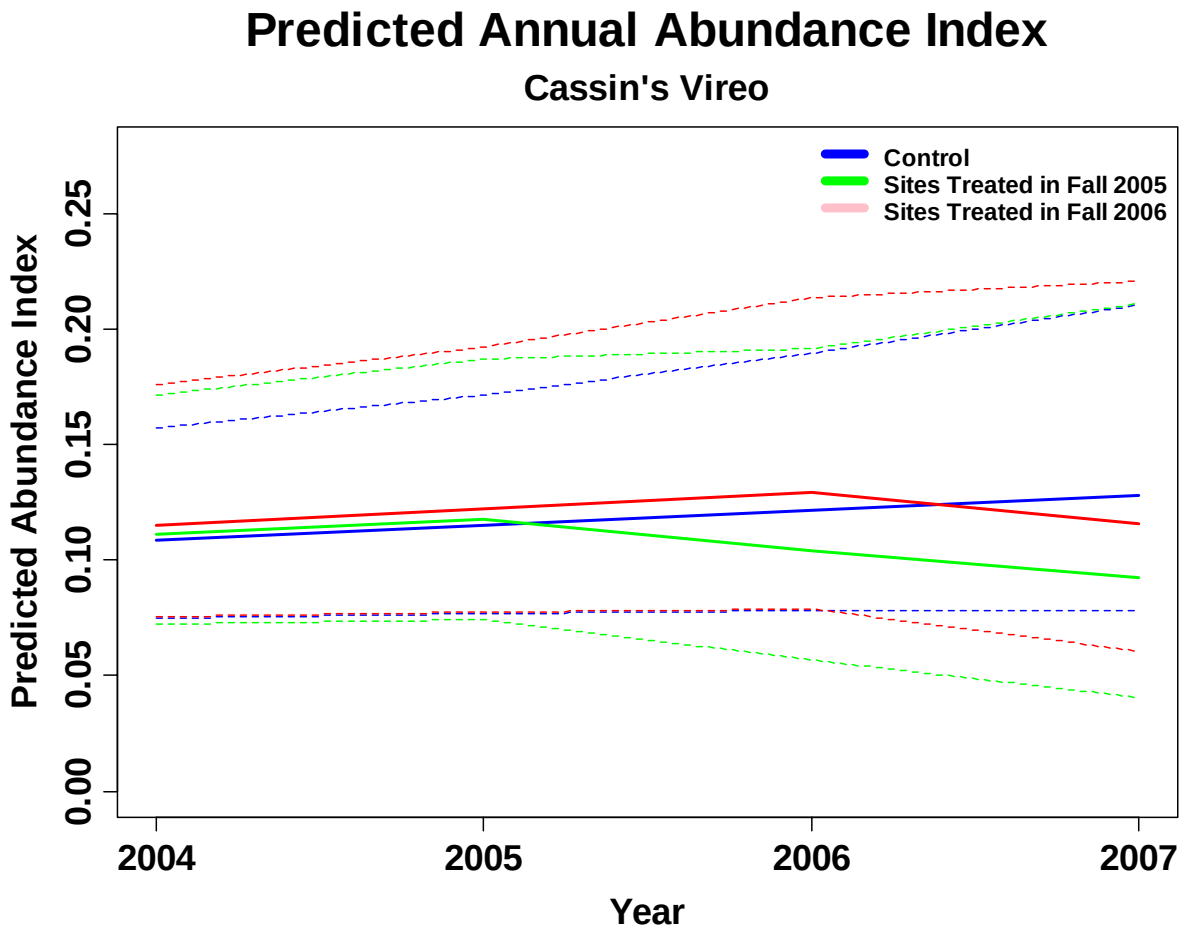
Cassin’s Vireo



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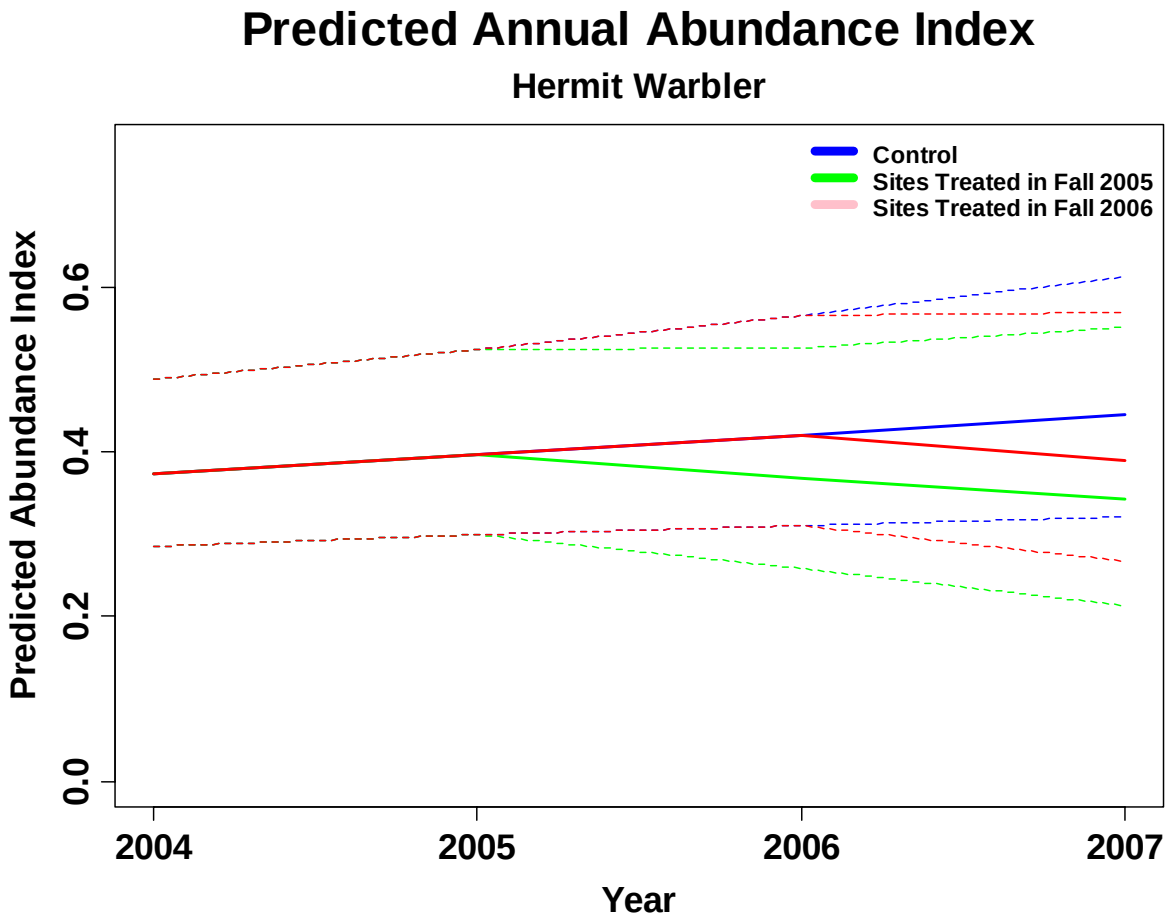
Hermit Warbler



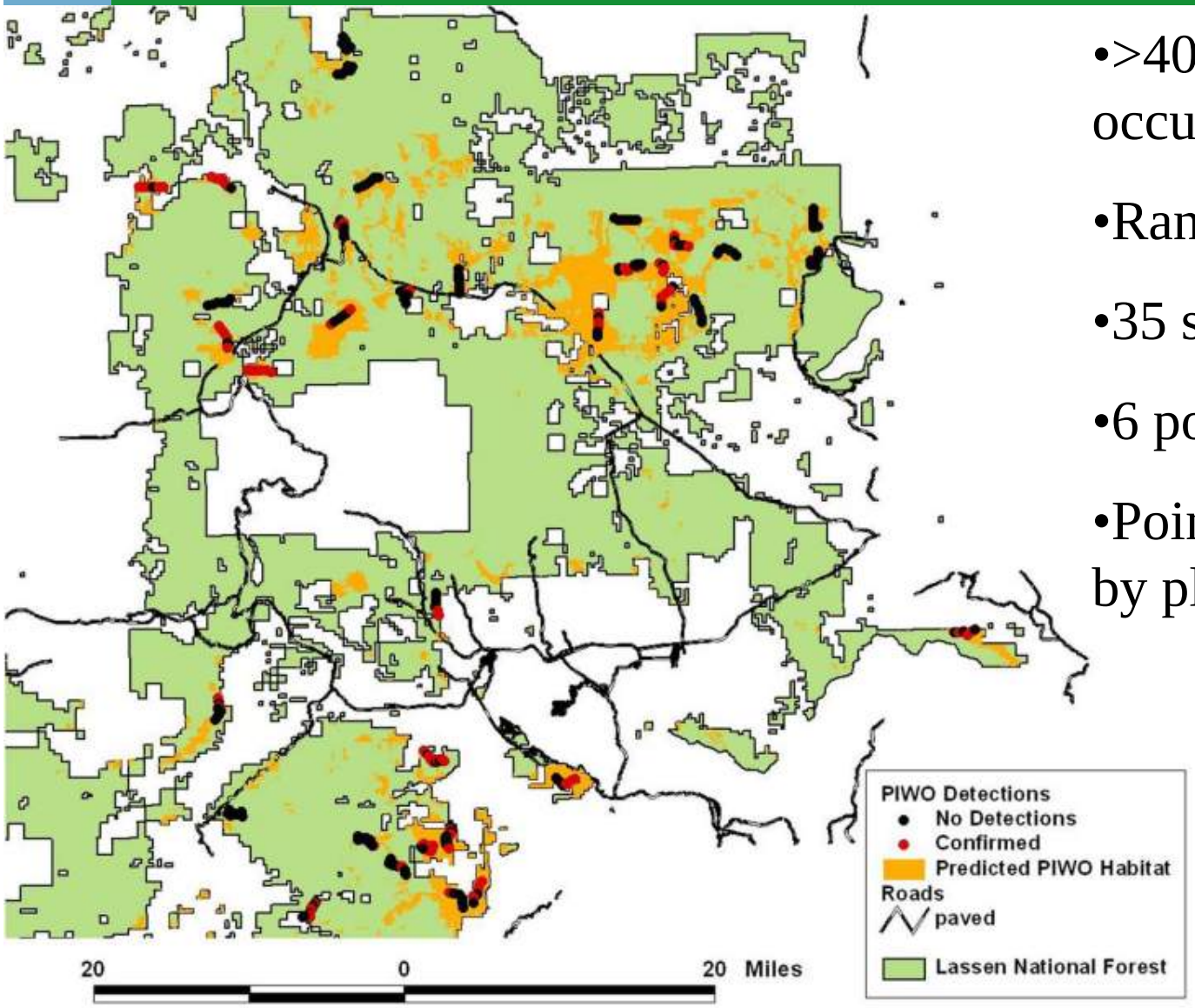
Pine-Oak Conclusions

- Treatments have not resulted in large changes in abundance of any species
- Negative effects likely to manifest in short-term; benefits long-term
- Are DFPZ's that reduce canopy to 40% w/even tree spacing resulting in significant changes to wildlife habitat?

MIS Pileated Woodpecker Monitoring

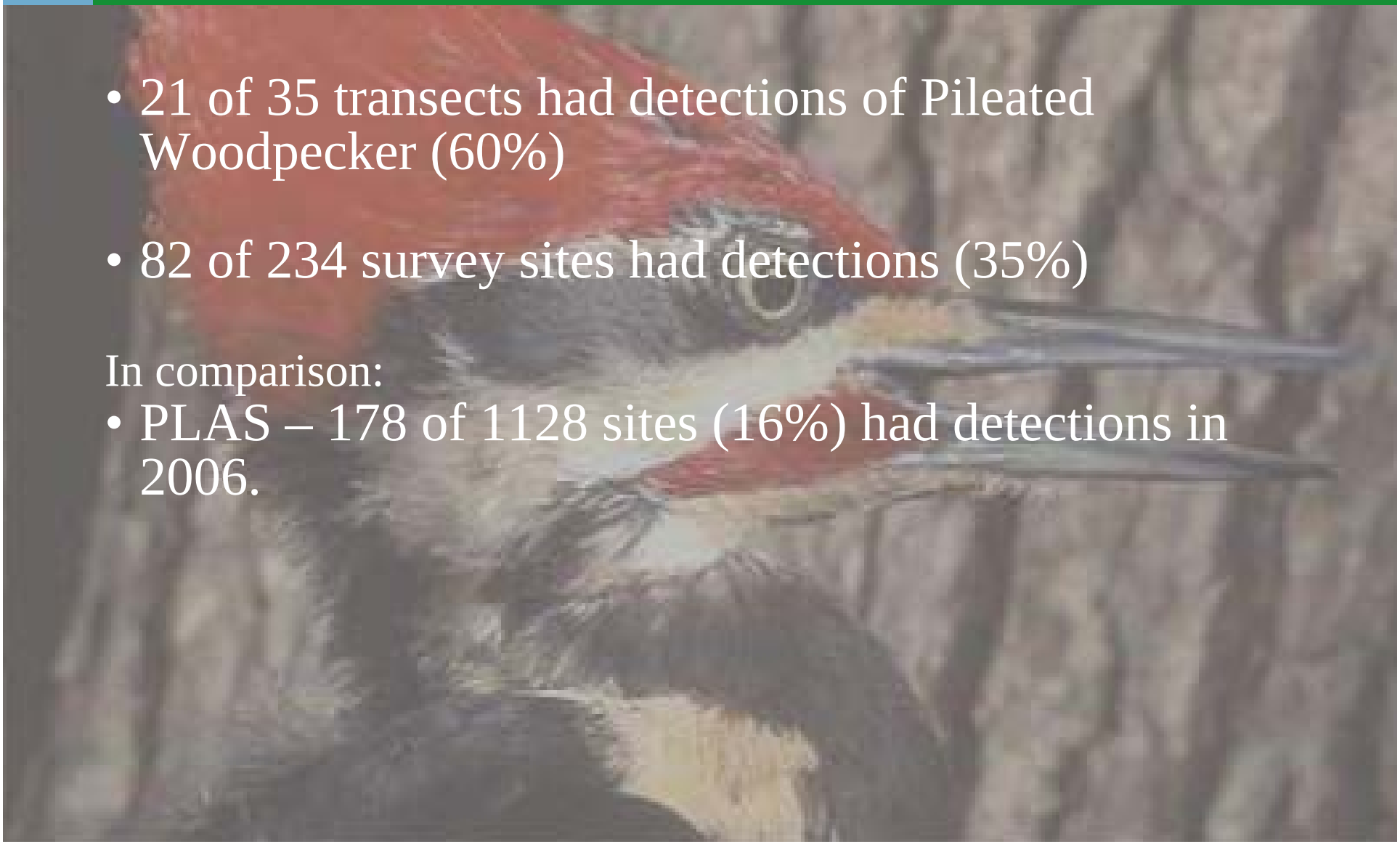
- Lassen National Forest wide
- Management Indicator Species
- Pilot Project to test efficacy of monitoring strategy for PIWO
- Baseline for trends
- Test & refine landscape habitat model
- Identify key areas and habitat conditions
- Collect data on other bird species

Pileated Woodpecker Survey Sites



- >40% probability of occurrence
- Randomly selected sites
- 35 survey routes
- 6 point transects
- Point counts followed by playback surveys

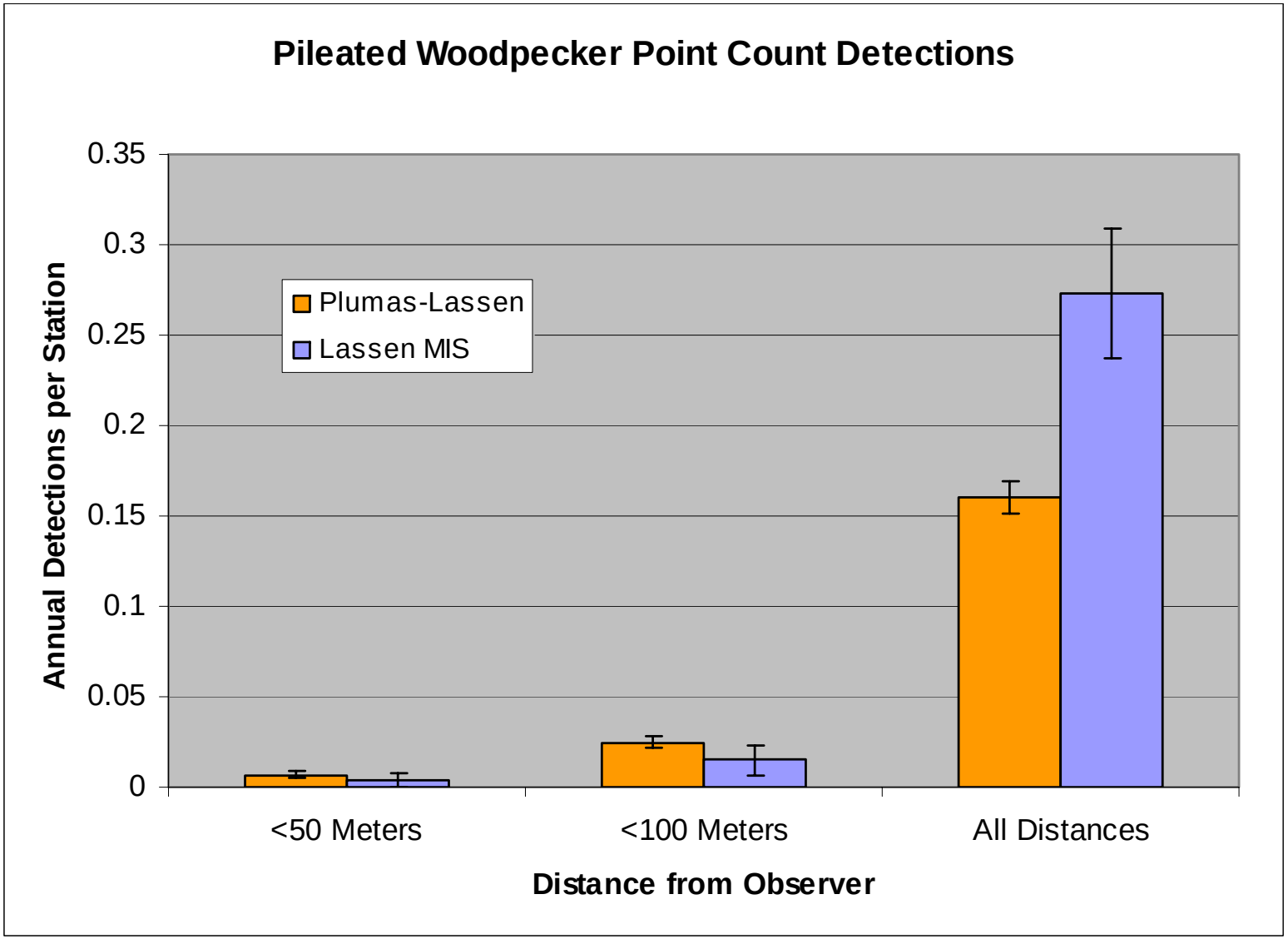
Survey Results – Detection Rates



- 21 of 35 transects had detections of Pileated Woodpecker (60%)
- 82 of 234 survey sites had detections (35%)

In comparison:

- PLAS – 178 of 1128 sites (16%) had detections in 2006.


Pileated Woodpecker Point Count Detections
Annual Detections per Station
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Plumas-Lassen
Lassen MIS
<50 Meters
<100 Meters
All Distances
Distance from Observer

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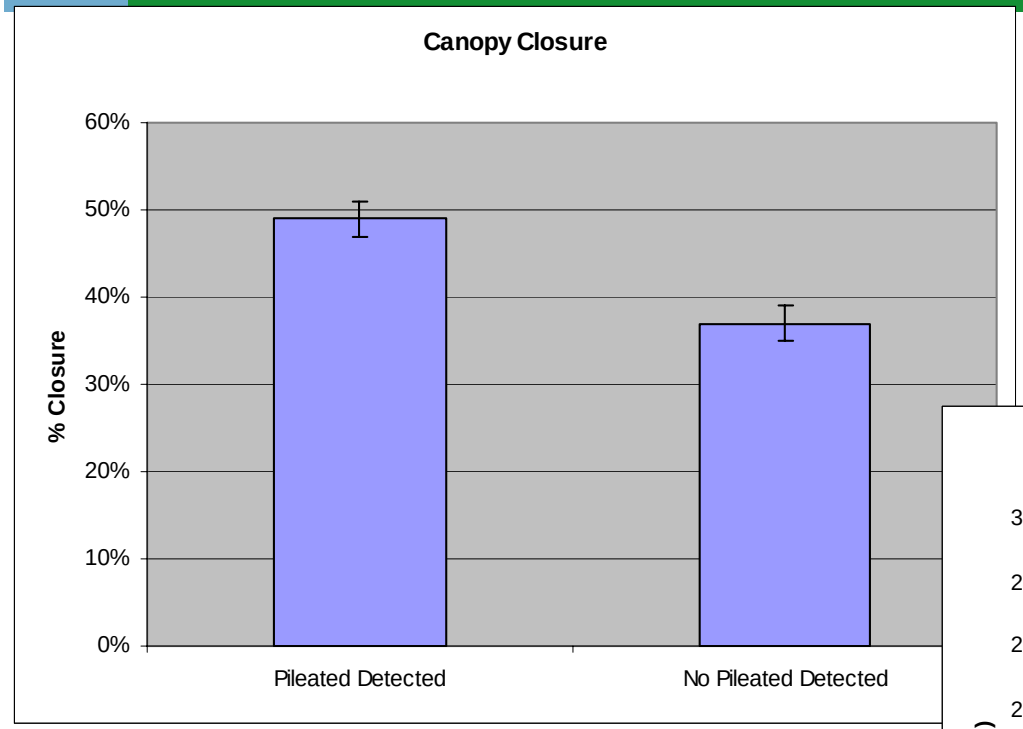
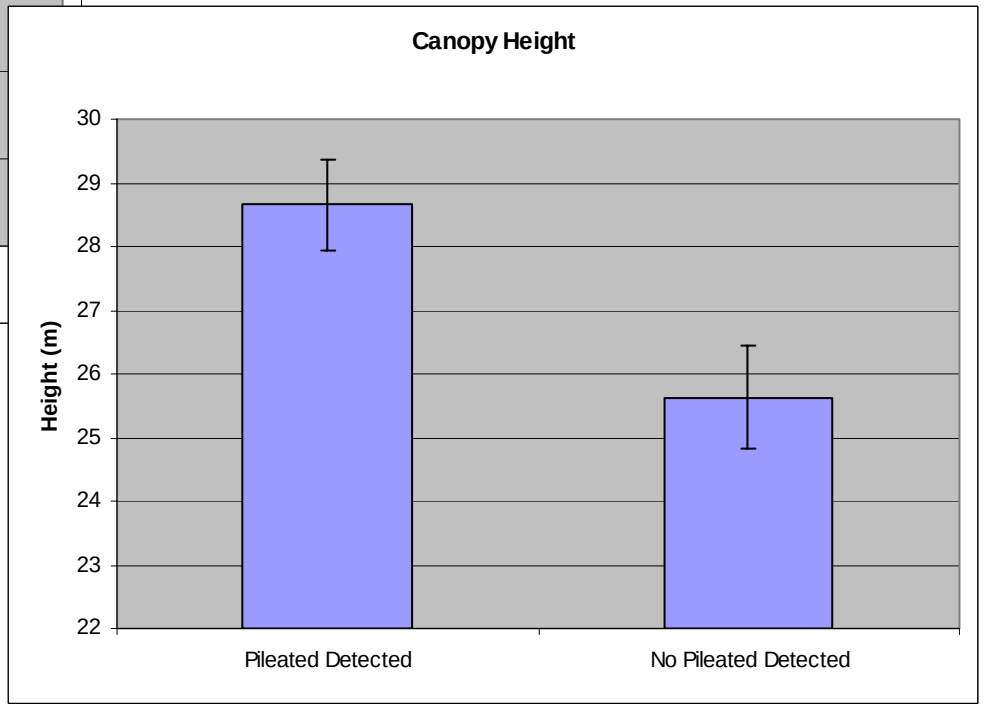
Pileated Woodpecker Habitat - Canopy





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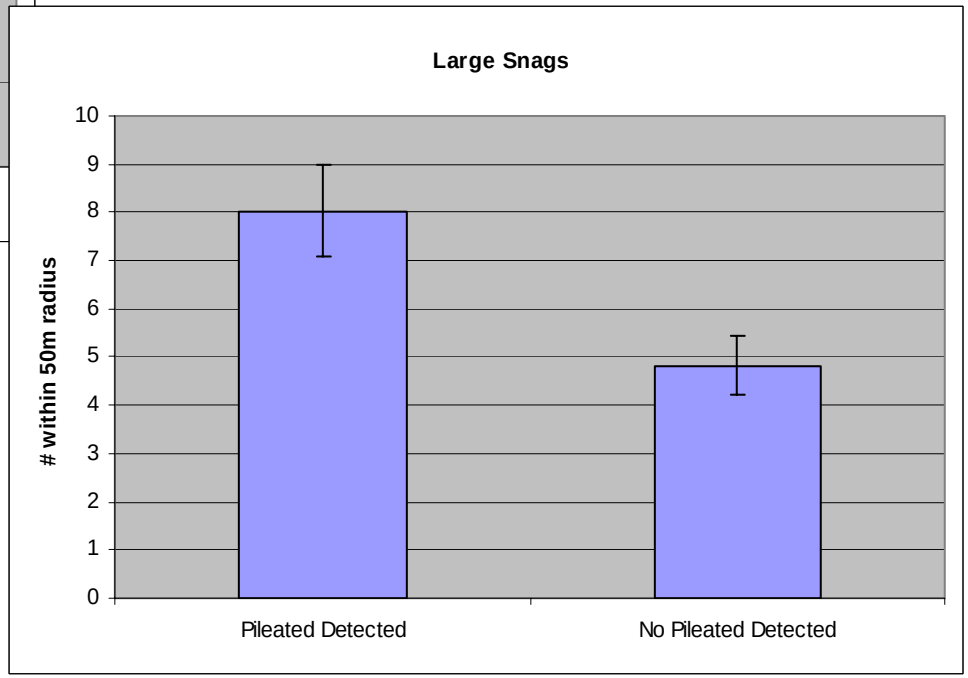
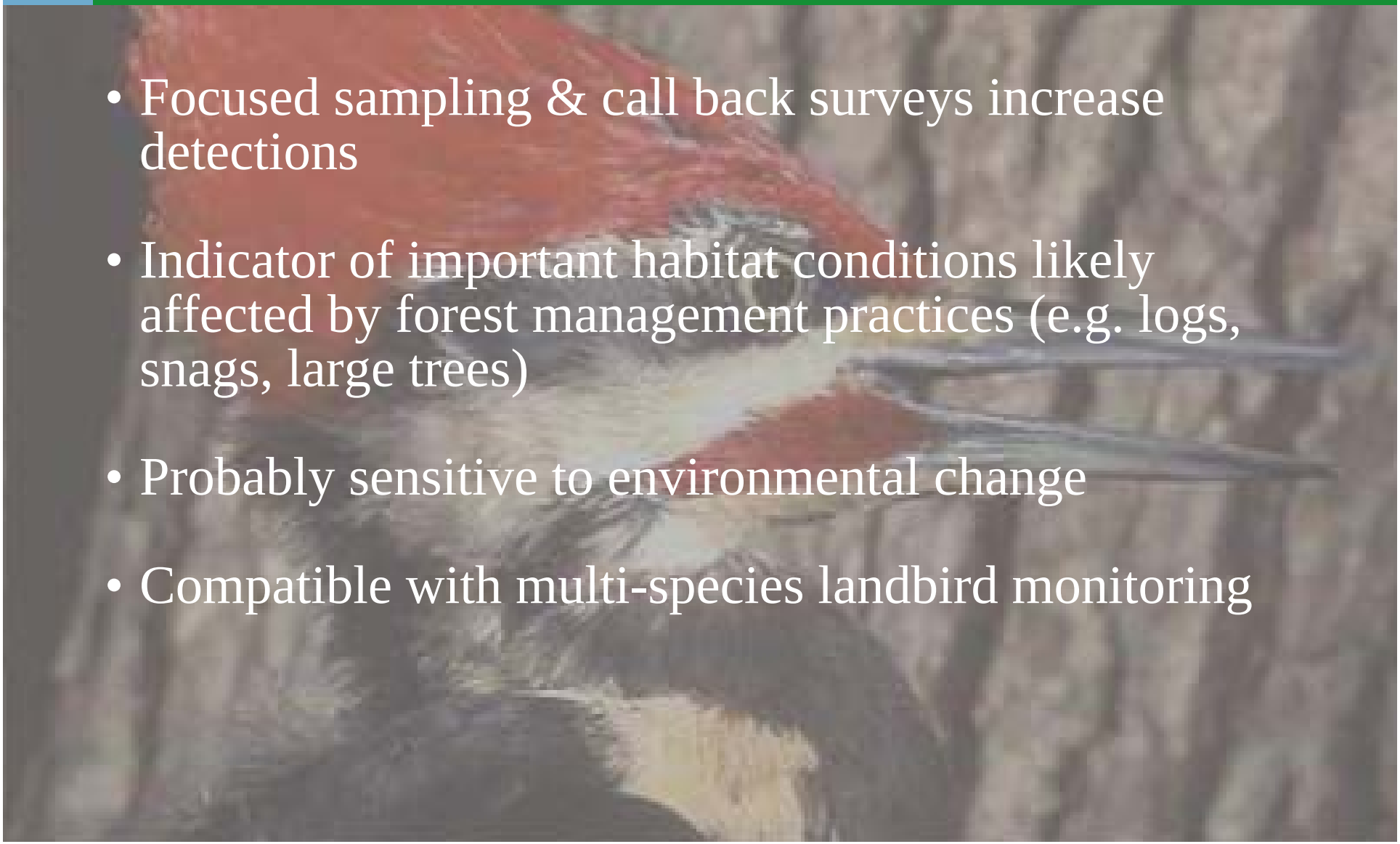
Pileated Woodpecker Habitat – Dead Wood

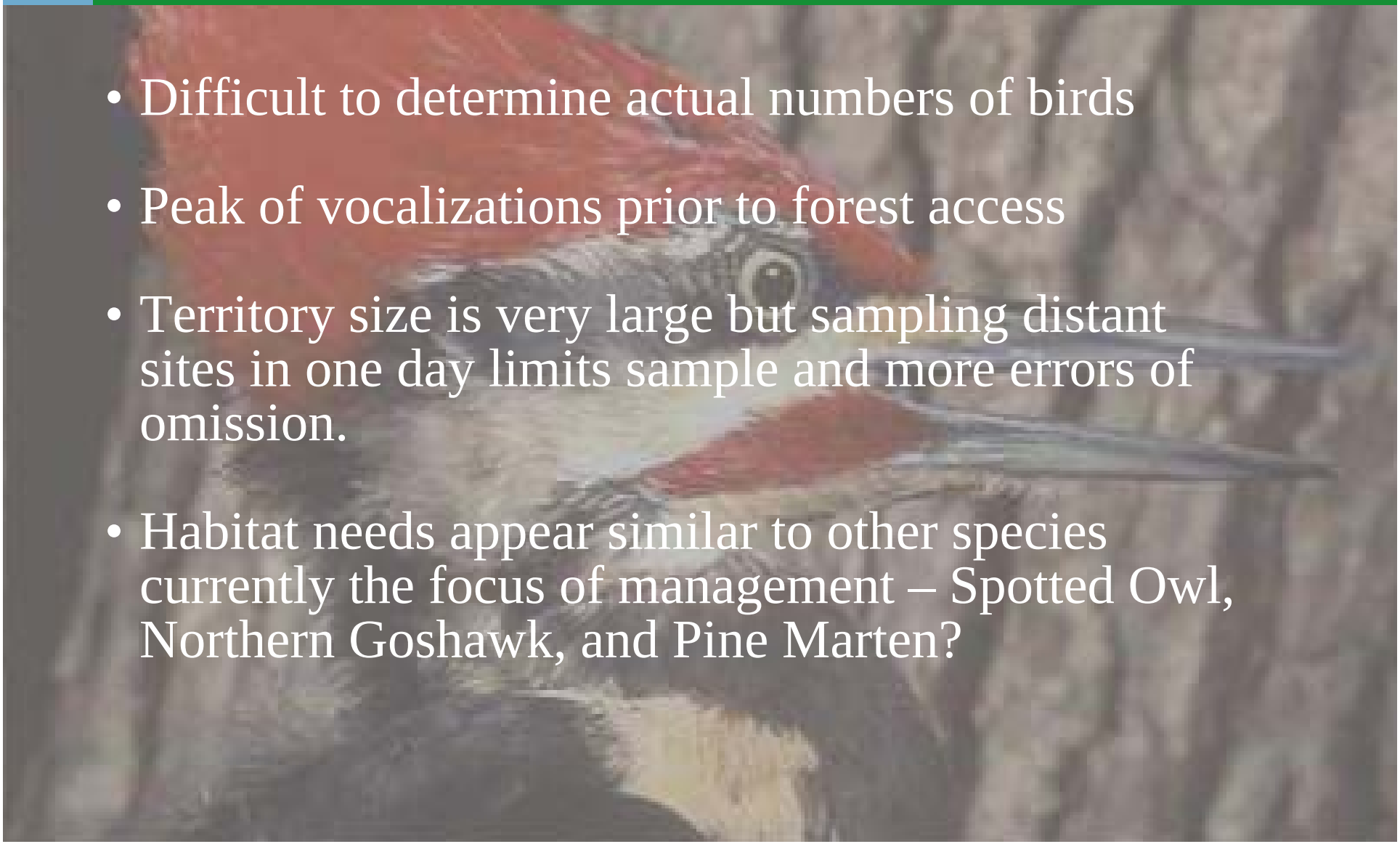


Pros for Pileated Woodpecker as MIS



- Focused sampling & call back surveys increase detections
- Indicator of important habitat conditions likely affected by forest management practices (e.g. logs, snags, large trees)
- Probably sensitive to environmental change
- Compatible with multi-species landbird monitoring

Cons of Pileated Woodpecker as MIS



- Difficult to determine actual numbers of birds
- Peak of vocalizations prior to forest access
- Territory size is very large but sampling distant sites in one day limits sample and more errors of omission.
- Habitat needs appear similar to other species currently the focus of management – Spotted Owl, Northern Goshawk, and Pine Marten?

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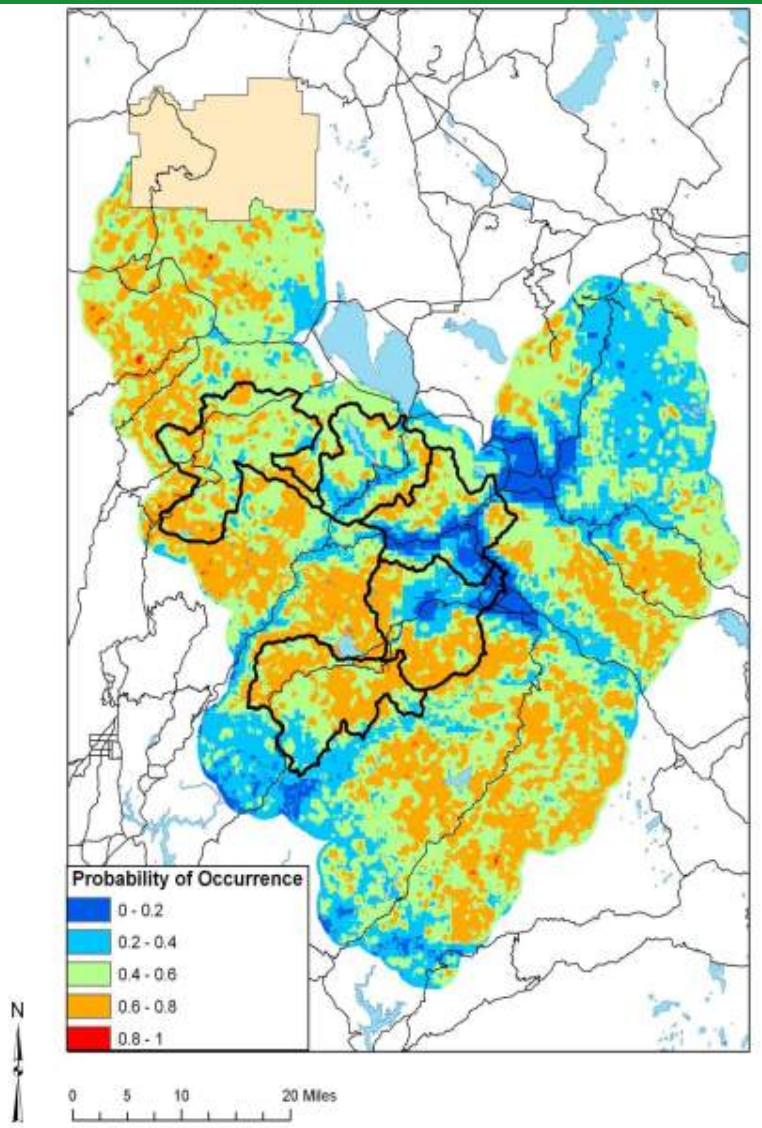
Landscape Models - A Decision Support Tool

Spatially explicit
Scalable
Data rich
Planning **TOOL**



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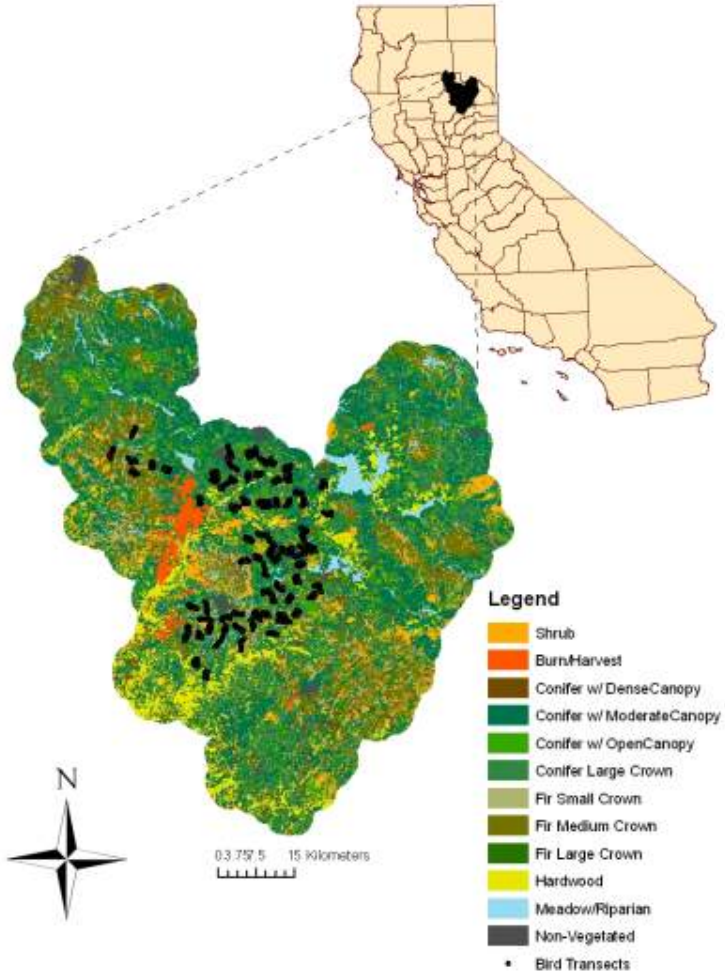
PLAS Study Area



Model Building Methods

- **General vegetation types (reclassified)**
- **Habitat structure – size and density classes**
- **Habitat composition and patch structure**
- **Climate variables**
- **Identified list of appropriate landscape habitat variables for each species**
- **Developed models using Maximum Entropy – included model validation**
- **Generated spatial predictions using GIS habitat layers**

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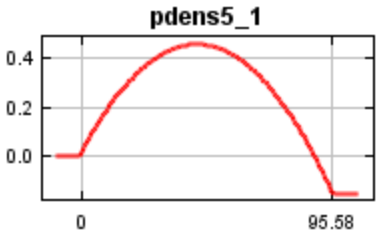
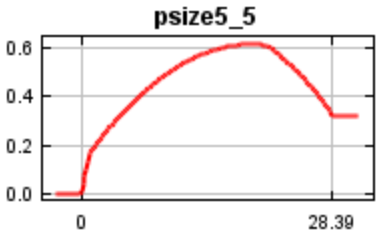
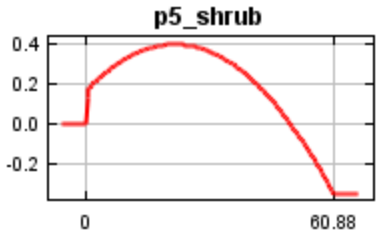
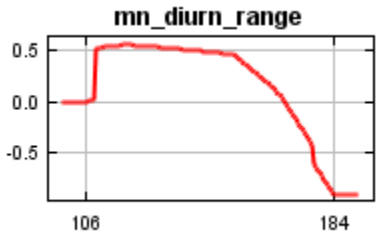
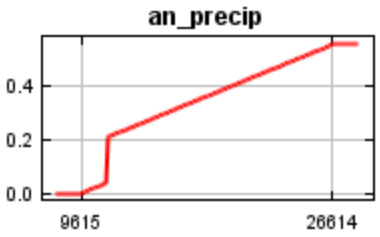
Fox Sparrow – response curves & model contribution

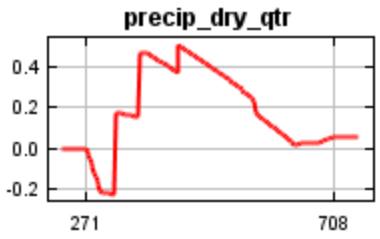


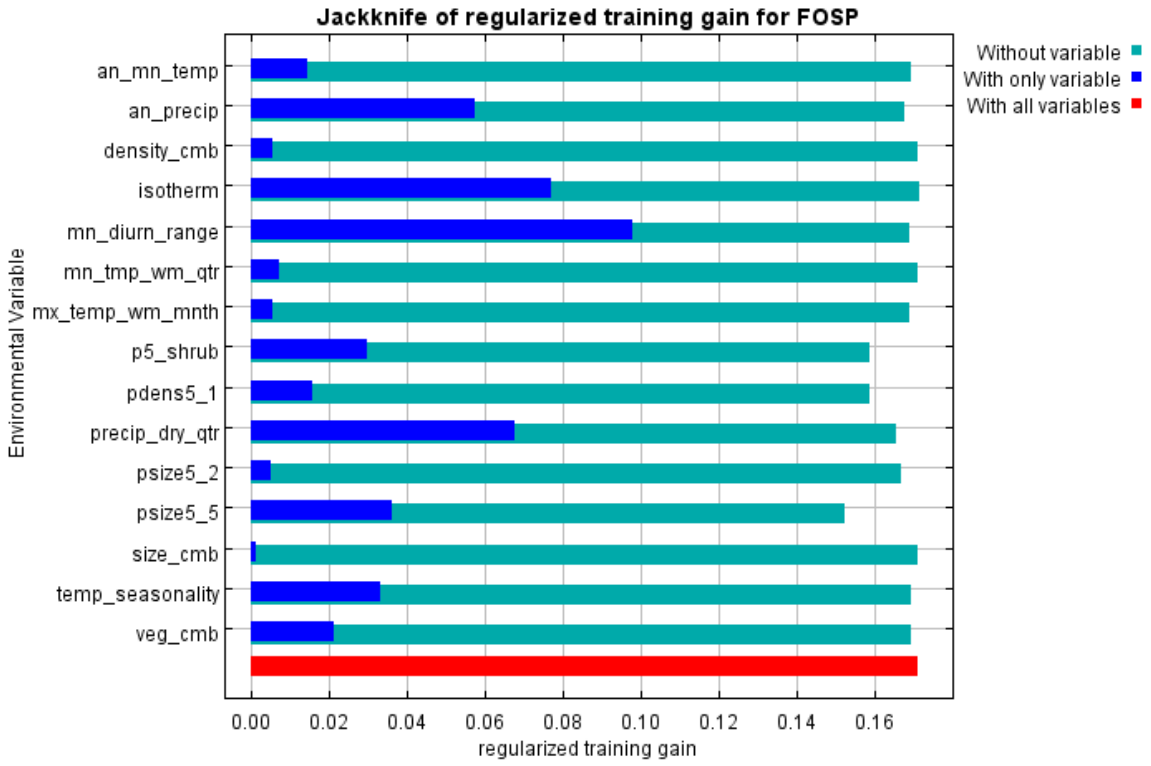












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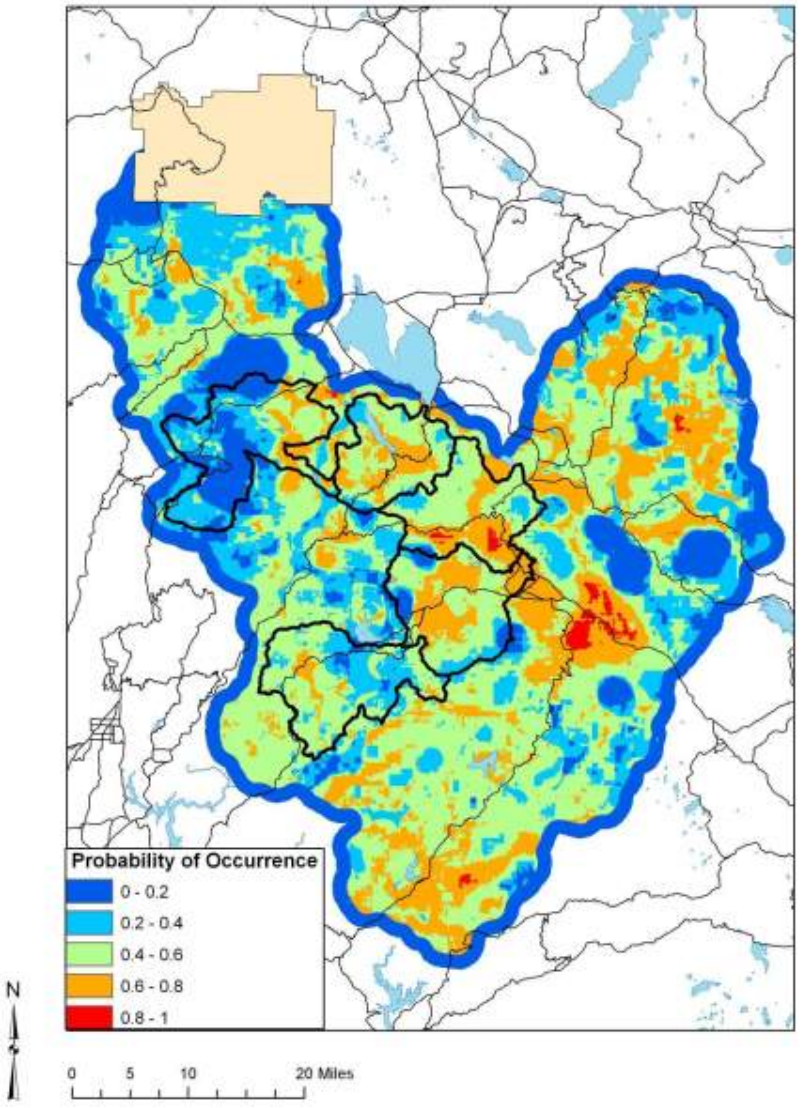
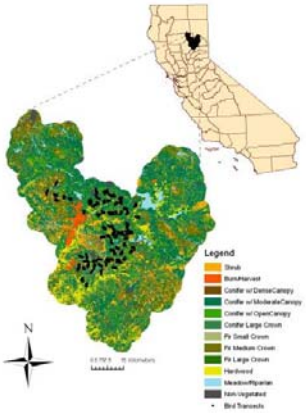
Pileated Woodpecker





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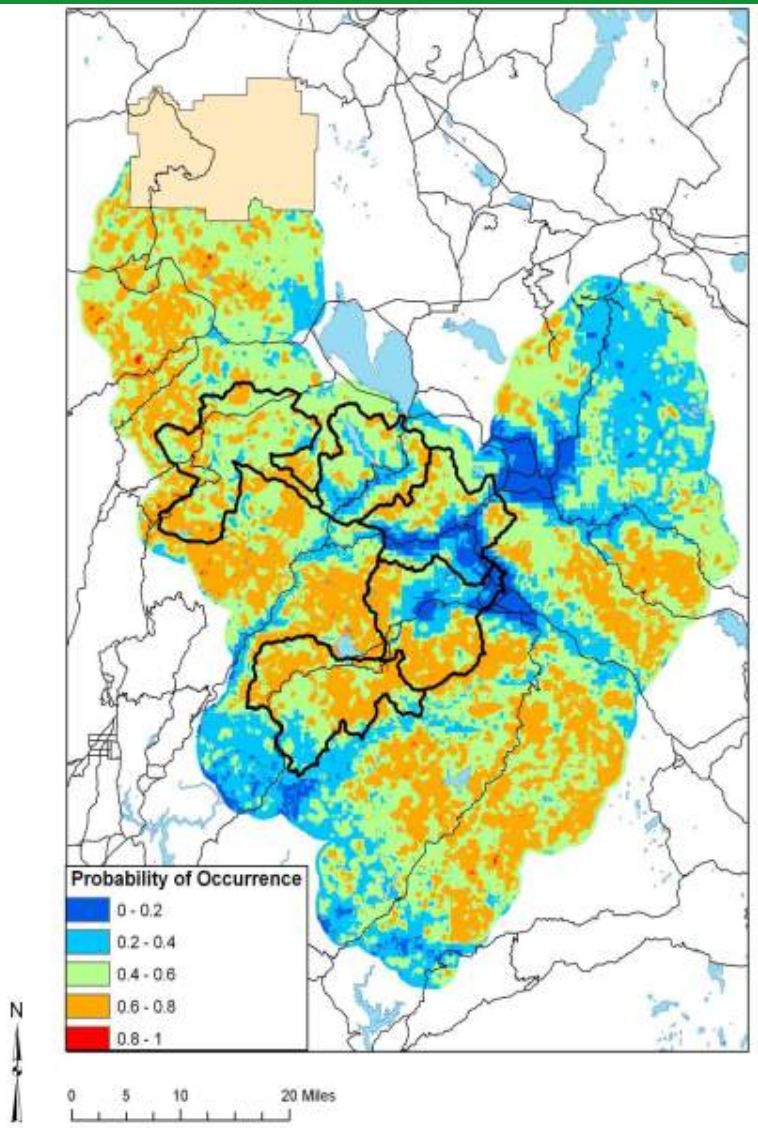
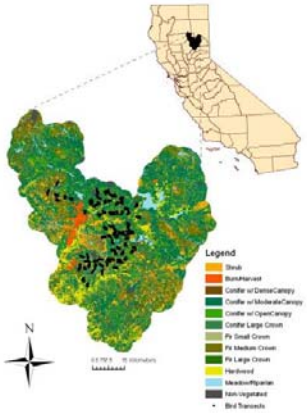
Fox Sparrow





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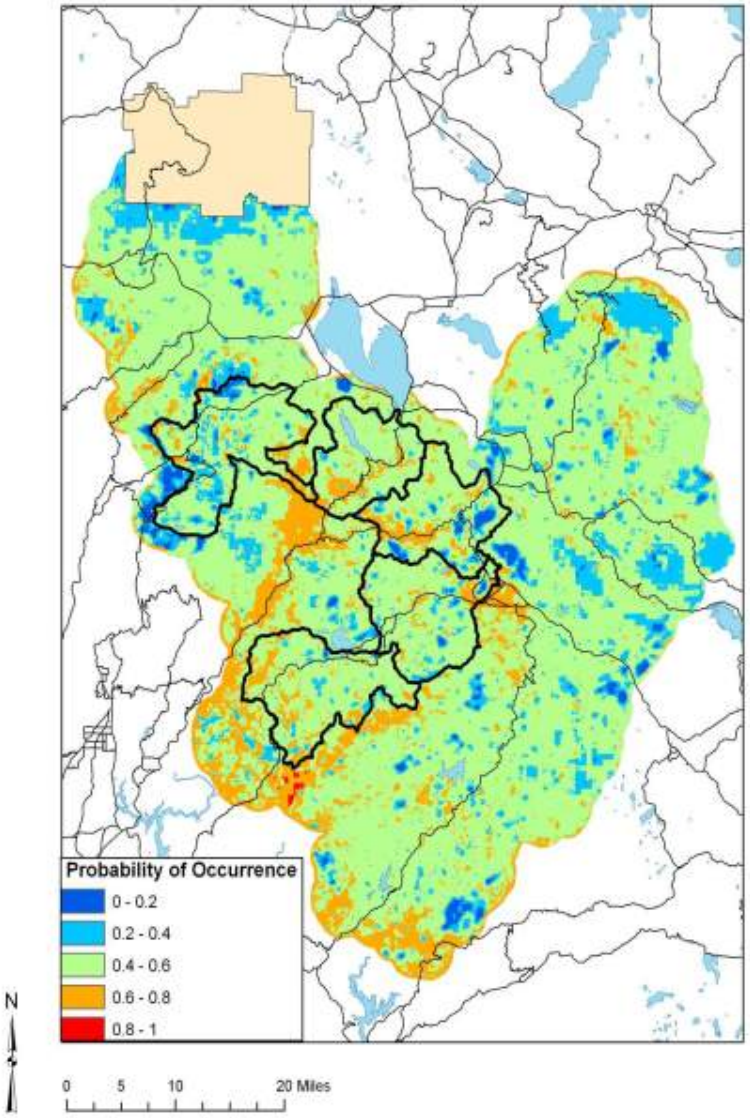
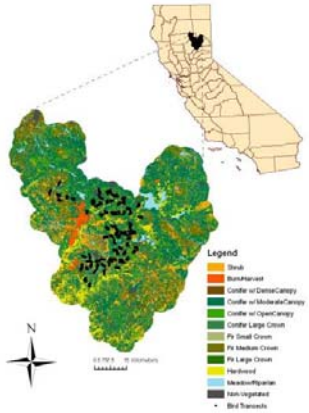
Brown Creeper





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Integration and Outreach

Aspen Workshop

Community Outreach

Region 5 Forest Management Conference

International Partner’s in Flight Conference

Acknowledgements

Region 5 of the USFS, National Fire Plan, PSW - SNRC, HFQLG Monitoring

Lassen and Plumas National Forests – Mark Williams, Tom Rickman, Bobette Jones, Coye Burnett, Al Vasquez, Gary Rotta

40+ field biologists who collected the data

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