

Dry Forest Restoration and Birds

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Objectives/Topics

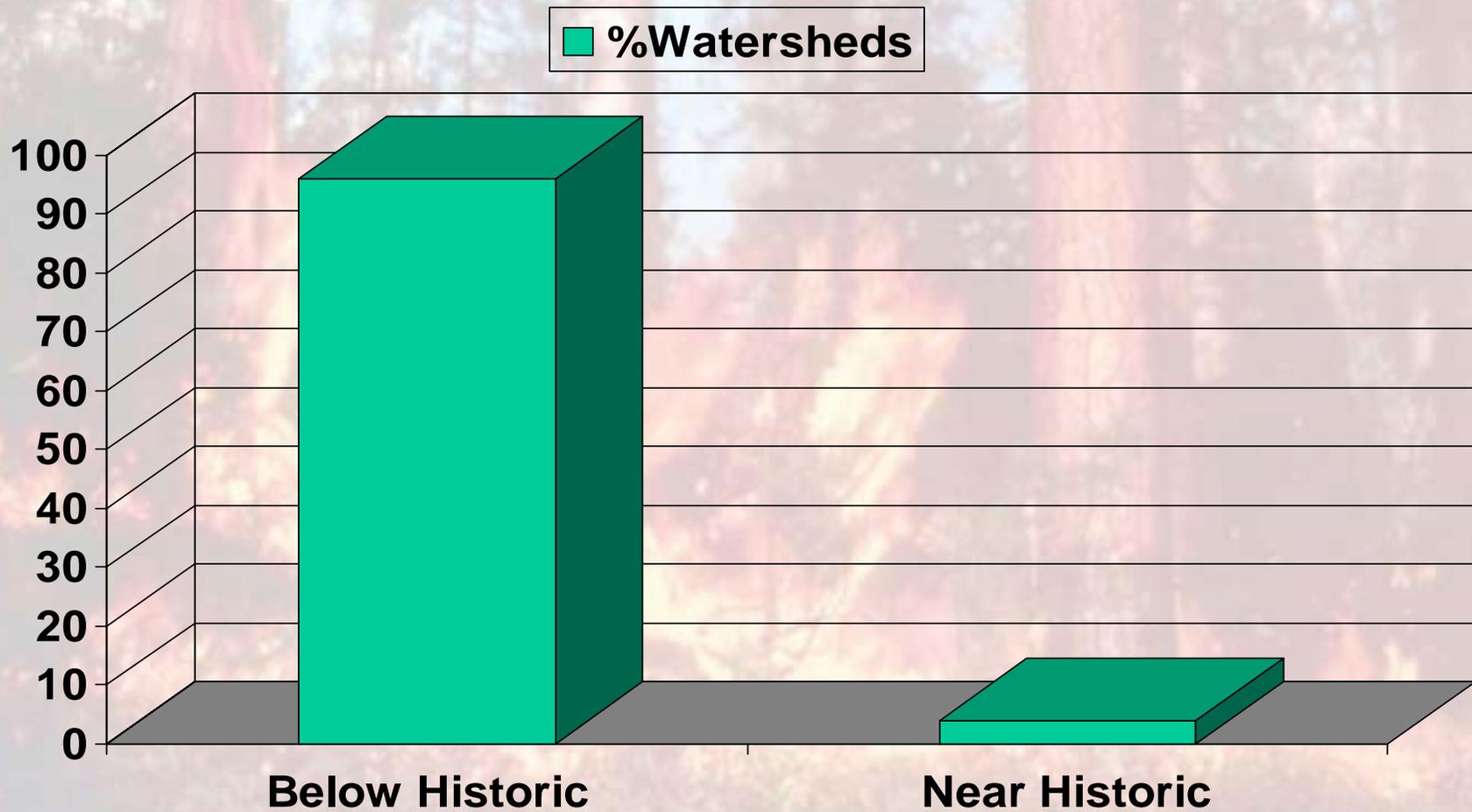
- Background- why restore?
- Dry Forest Treatments:
 - Bird Abundance/Density
 - Bird Foraging Behavior and Habitat
 - Nest Survival and Habitat
- Restoration Priorities
- Management Implications
- Upcoming Publications/
Technology Transfer



Background

- Migratory Bird Treaty Act, Executive Order, FS Memo, Landbird Conservation Strategies:
 - Ensure that NEPA analyses evaluate the effects of actions on migratory birds
 - Develop and use principles, standards, and practices that will lessen the amount of unintentional take
 - Inventory and monitor bird habitat and populations
- Avian Monitoring:
 - Relatively easy and inexpensive to detect and identify
 - Single survey can cover many species
 - Species with differing requirements promotes landscape-scale conservation strategies
- Current Condition of Dry Forest Habitat for Focal Bird Species:
 - ICBEMP
 - NE Washington Forest Plan Assessments

Current Condition of Dry Forest Habitats for Focal Bird Species



The White-headed Woodpecker

How To Restore?

Effects of Dry Forest Treatments on Birds



Thin



Burn



Thin / Burn

- Pendleton Dry Forest
Ecosystem Restoration Project

- Stands Dominated by PIPO
- Thinning Treatments
Implemented in Study Stands
from 1998-1999
- Pile Burning Completed in 2000
- Underburning Completed in
Spring of 2004

- Thin from below (see Harrod
et al. 1999)

- Control vs High-Retention vs
Low-Retention

- 4-6 Point Counts/Stand

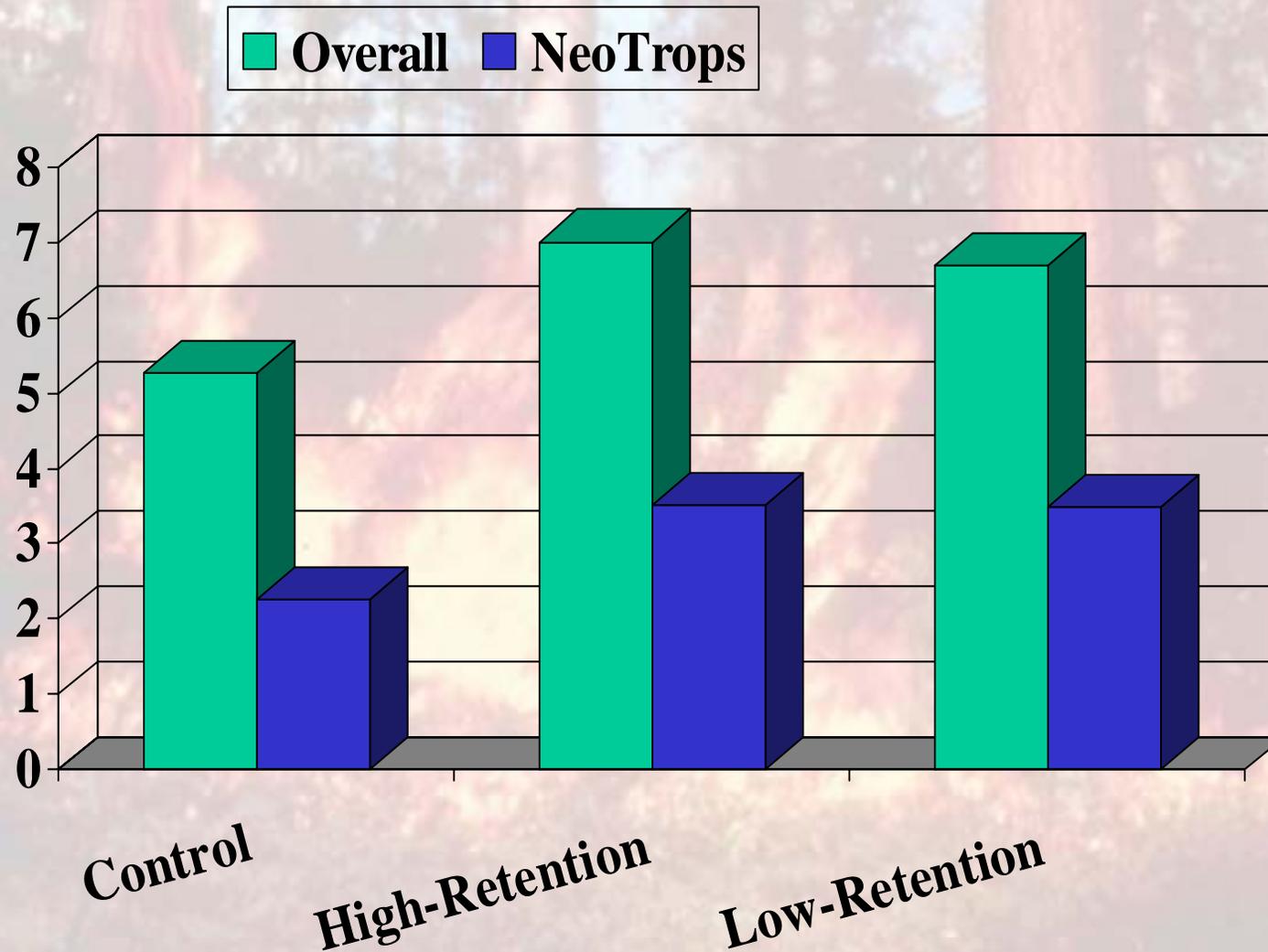
- 4,800 detections from 65 species



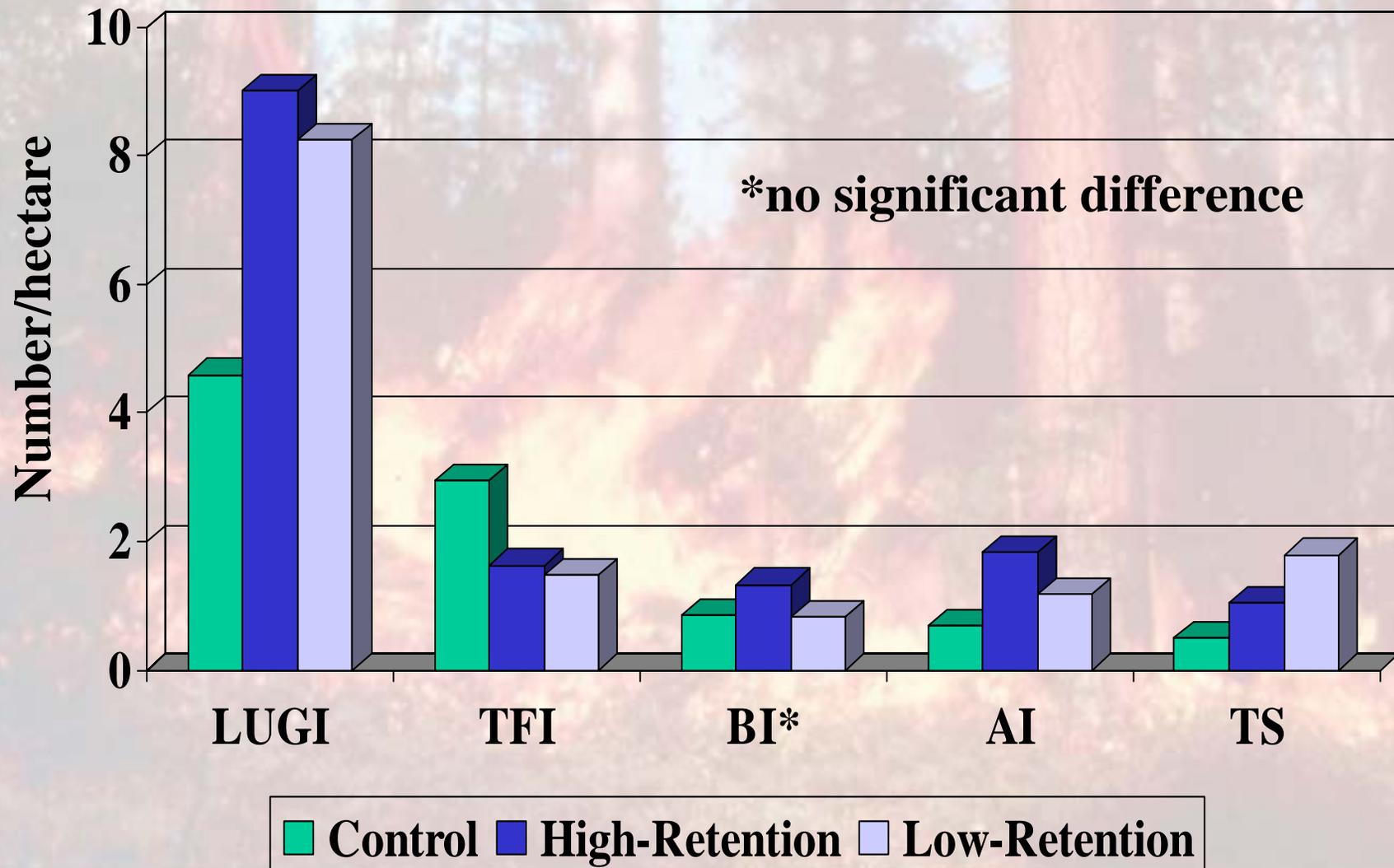
Dry Forest Treatments and Bird Density



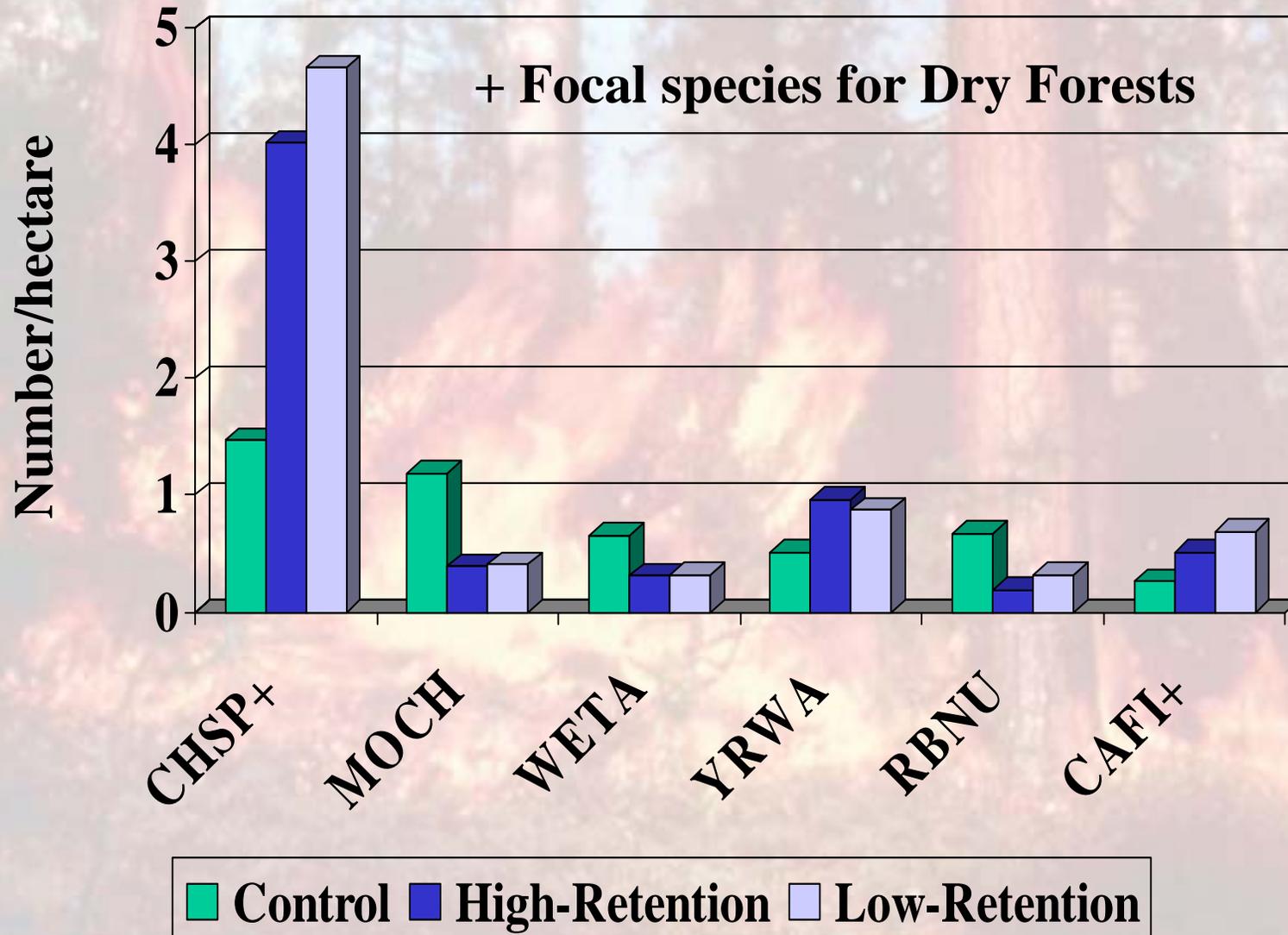
Overall Bird Density and Neotropical Migrants



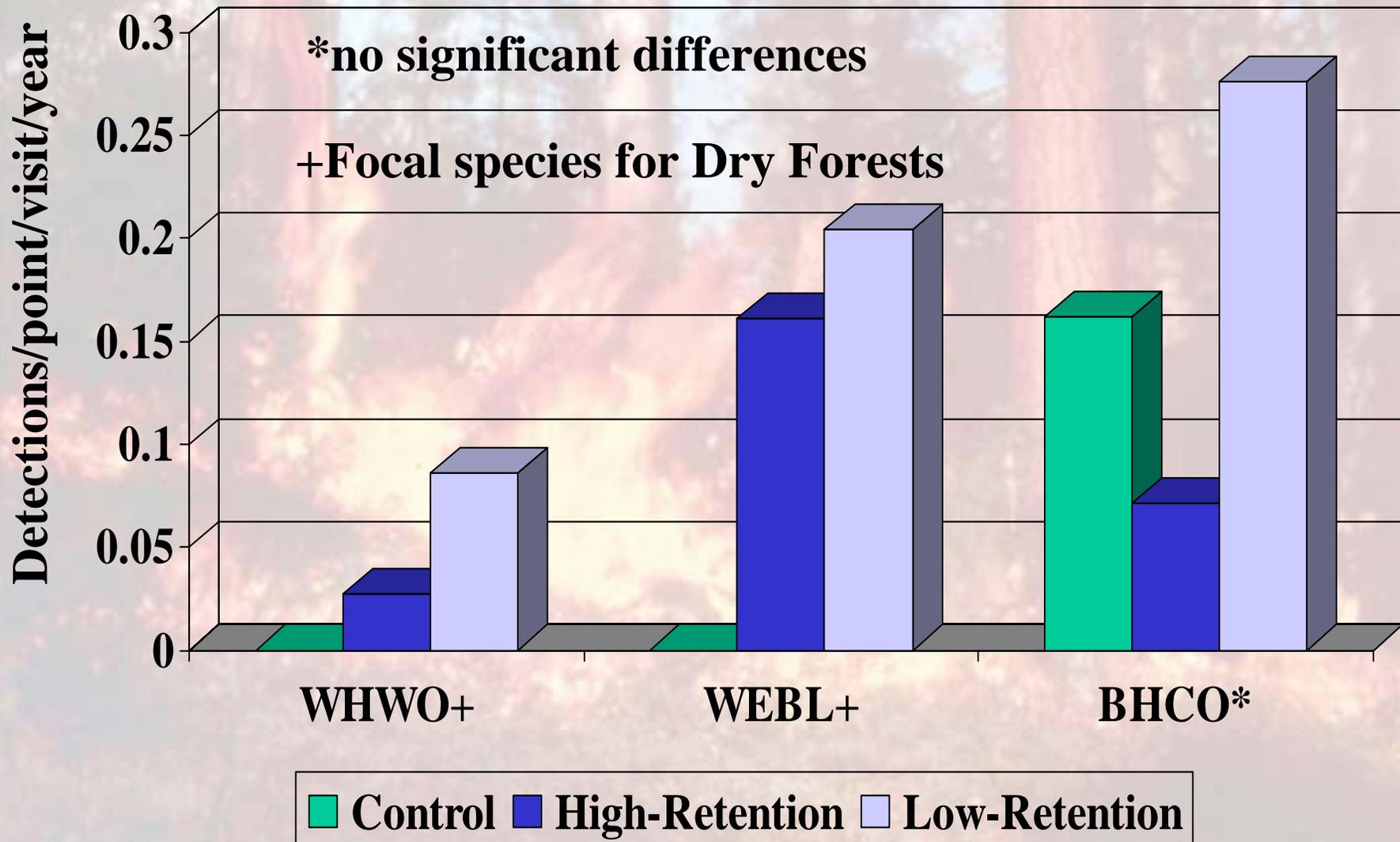
Bird Densities by Foraging Guilds



Individual Species Responses



Individual Species Responses



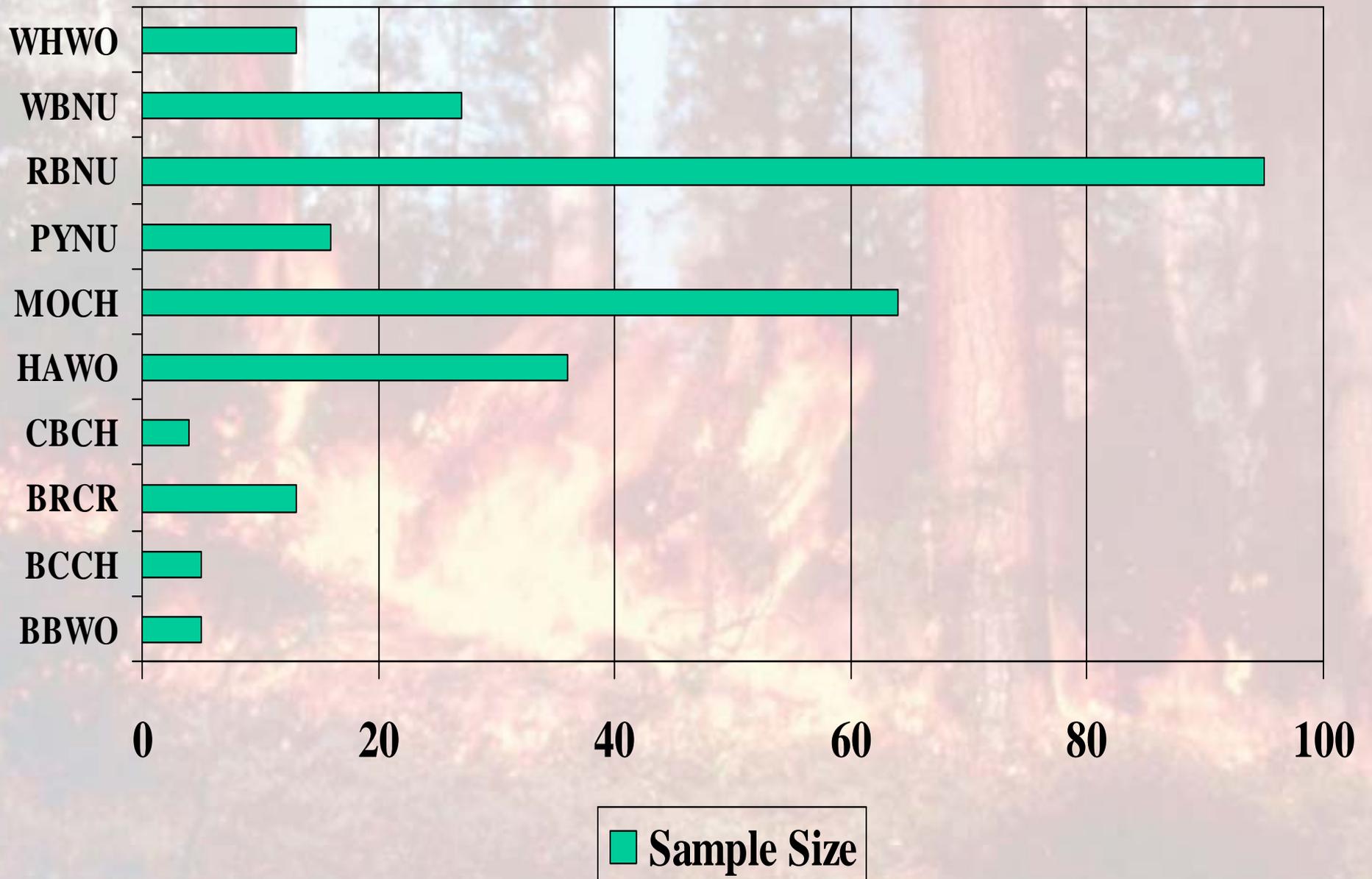
Fire and Fire Surrogate Study

- Fire and Fire Surrogate Study
 - Dry Forest but more diverse than Pendleton
- Observations of Cavity-Nester foraging behavior and habitat use
 - Post-treatment data collected during 2004 and 2005
 - 278 Observations of 10 species
- Nest Searching to estimate survival and measure nesting habitat
 - Post-treatment data collected during 2004 and 2005
 - 175 nests from 24 species
- Control vs Burn Only vs Thin Only vs Burn and Thin

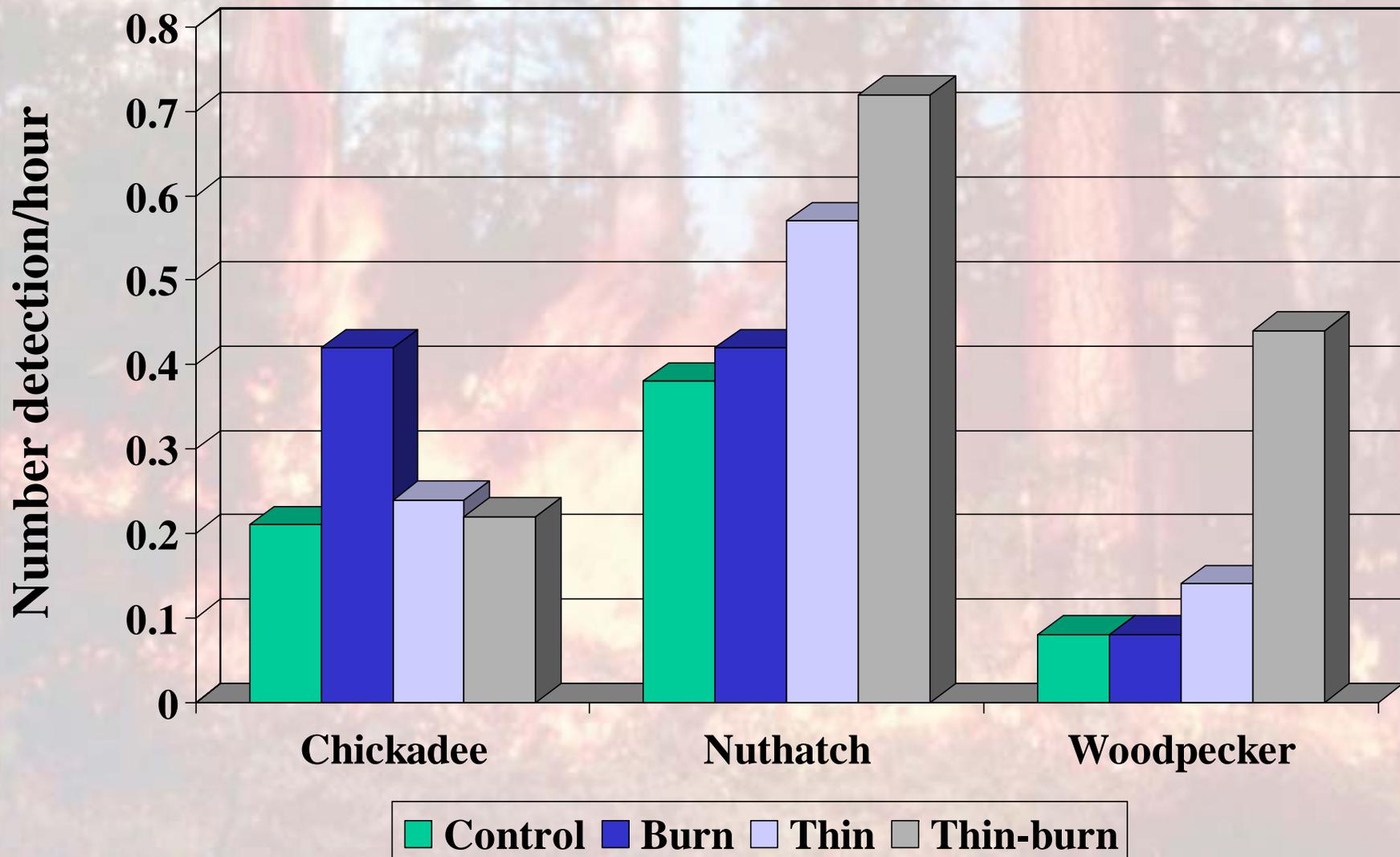
Foraging Behavior and Habitat



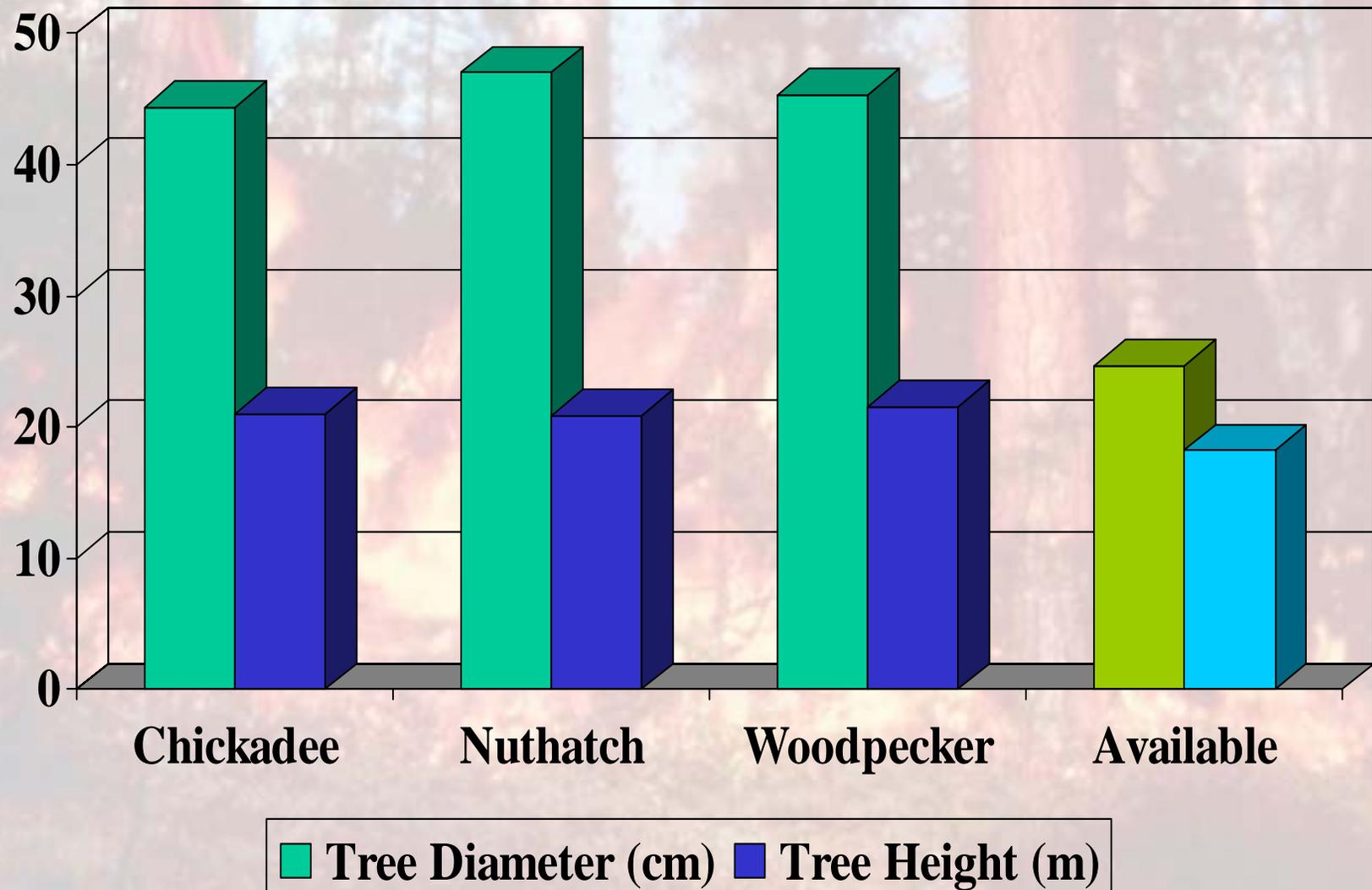
Cavity Nesters Observed



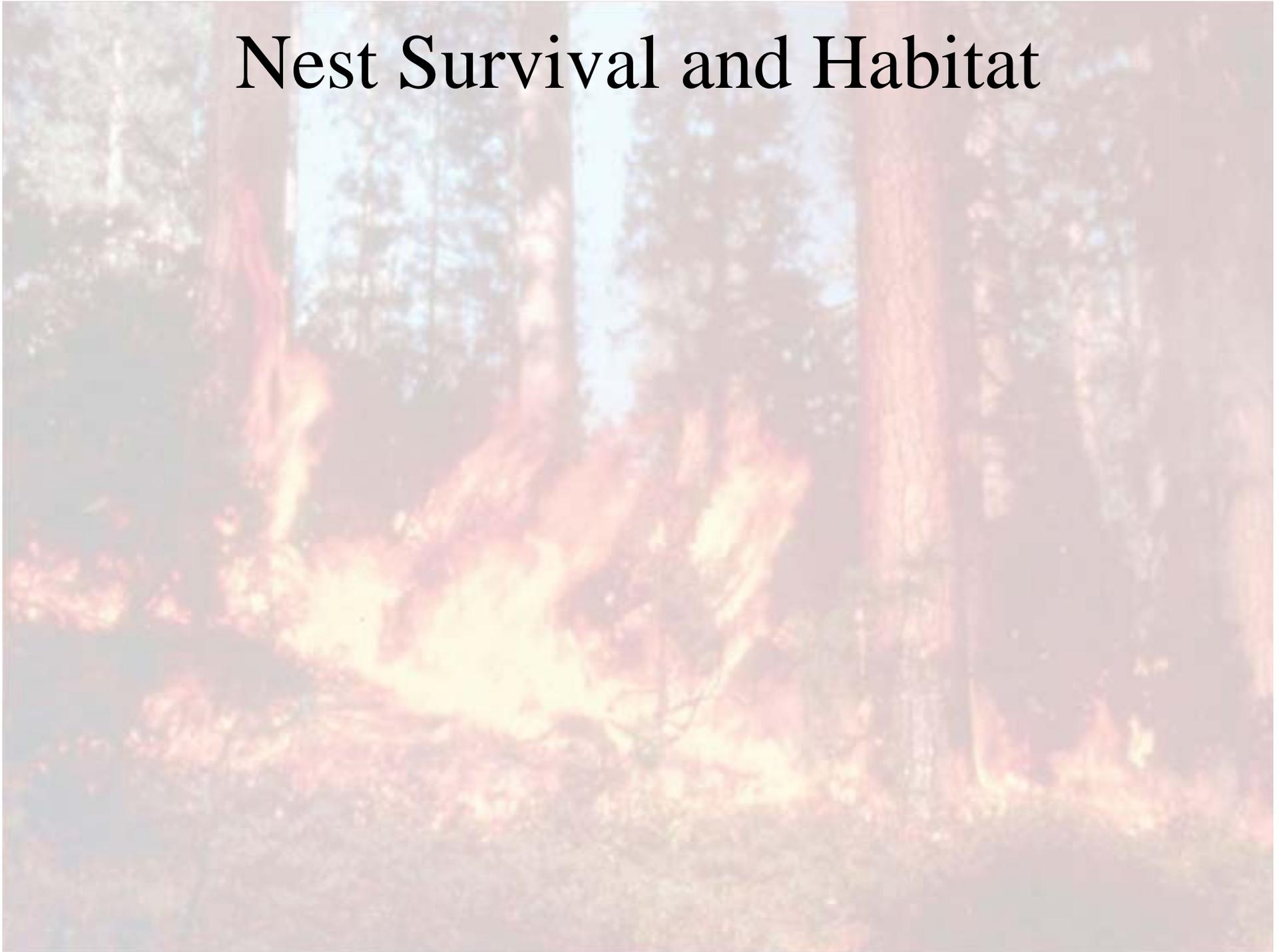
Observation Rates/Treatment



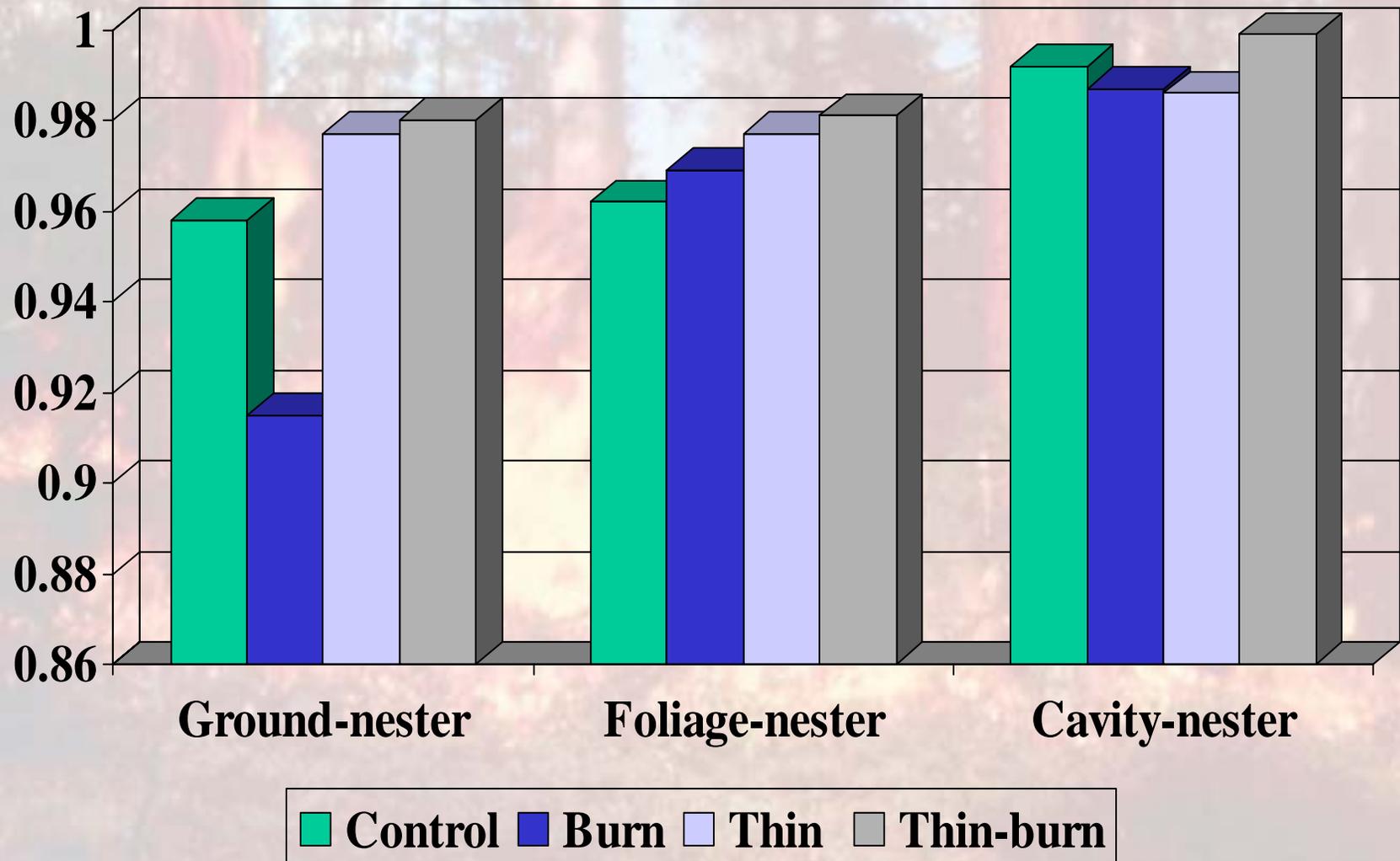
Foraging Habitat Selection



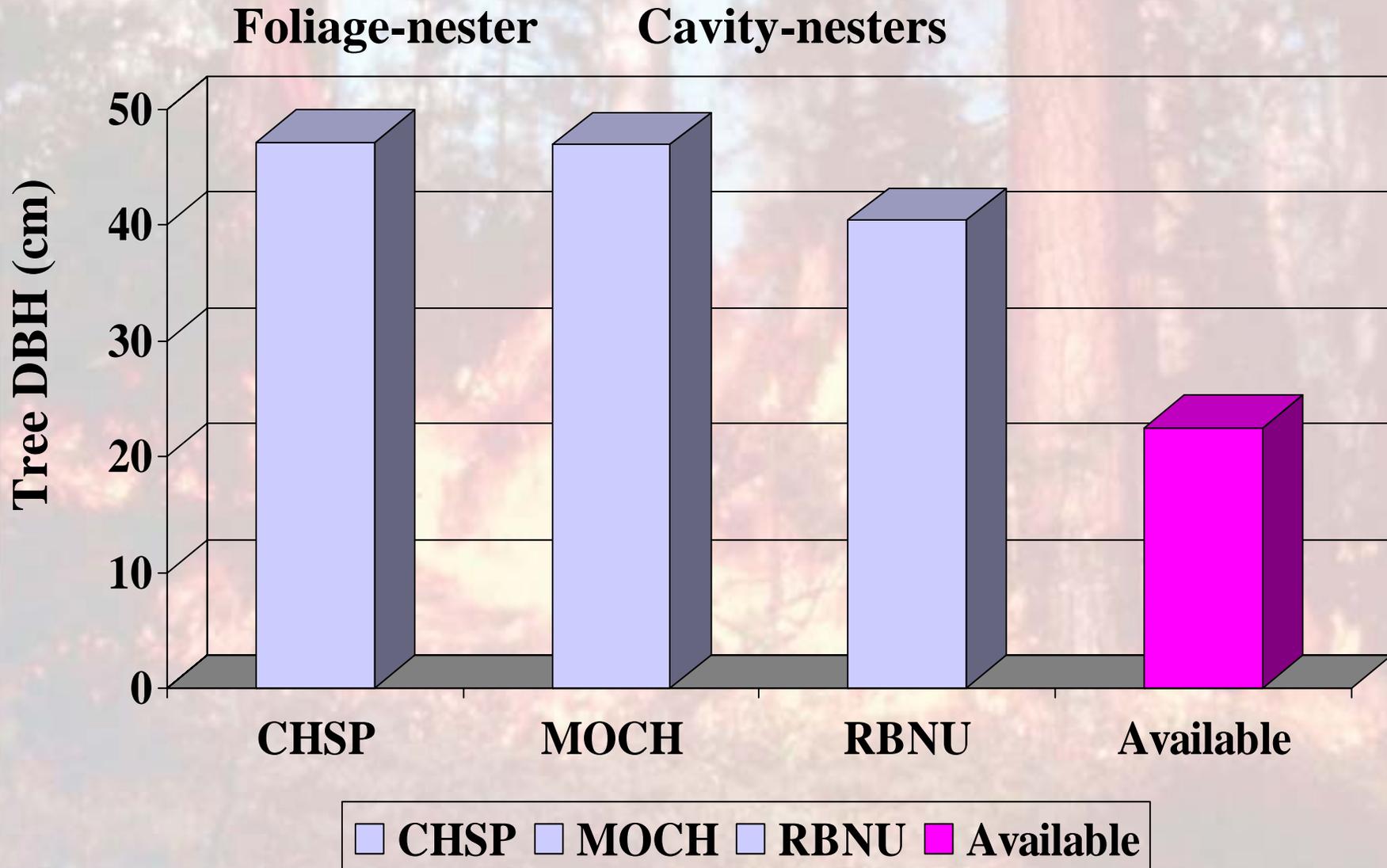
Nest Survival and Habitat



Dry Forest Treatments and Nest Survival



Nesting Habitat Selection-Tree Diameter

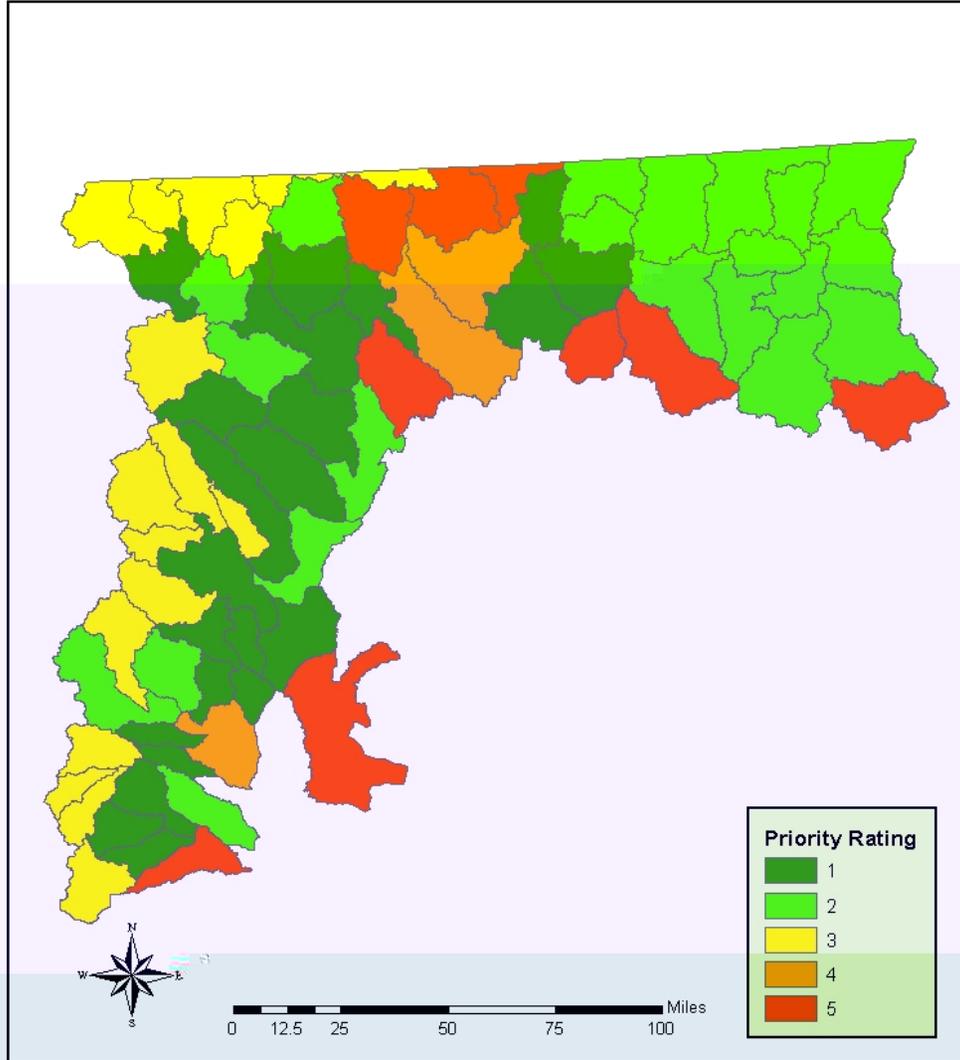


Where to Restore?



Dry Forest Restoration

Priority Watersheds



Summary/Management Implications

- Bird Density/Abundance:
 - Overall avian density, density of neotropical migrants, and density of focal species responded favorably to treatments
- Bird Foraging:
 - Neutral to positive treatment effects on foraging observation rates
 - Large diameter (>45 cm) live trees (in addition to snags), treated stands

Summary/Management Implications

- Nest Survival and Habitat Use:
 - Generally higher in treated stands with the exception of ground-nesters in burn-only treatment
 - FFS meta-analysis with showed positive trend in ground nesters
 - Importance of large trees (>40 cm) as nesting habitat
- Overall substantial support for using these kinds of treatments to restore habitat for dry forest focal bird species.

Publications/Technology Transfer

- Short-term Response of Land Birds to Ponderosa Pine Restoration. In press. *Journal of Restoration Ecology* (fall of 2007).
- Chapter 8. Avian Community Composition, Nesting Ecology, and Bark-Gleaner Foraging Ecology. In prep. USDA Forest Service, PNW-GTR.
- Short term effects of Fire and Fire Surrogate Treatment on Foraging Tree Selection by Cavity-nesting Birds in Dry Forests of central Washington. Submitted. *Forest Ecology and Management*.
- Short-term Effects of Fire and Fire Surrogate Treatments on Avian Community Composition, Density, and Nest Survival in the eastern Cascades, Washington. In prep. *Forest Science*.
- Additional information from the Birds and Burn studies in preparation.

Acknowledgements

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