

# Nest Habitat Characteristics for the Coastal Cactus Wren



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# Coastal Cactus Wren

*Campylorhynchus brunneicapillus ssp. sandiegensis*

- Species of special concern due to habitat loss

(Dudek 2000)

- Need cactus for nests year round

(Anderson and Anderson 1957)

- Forage on bare ground and in shrubs for insects and lizards

- Goal: Effective restoration to encourage nesting





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# Site Selection





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# Nest Surveys



- Cactus characteristics
- Five 10m transects centered over the nest or control pad
- Distance to refuge

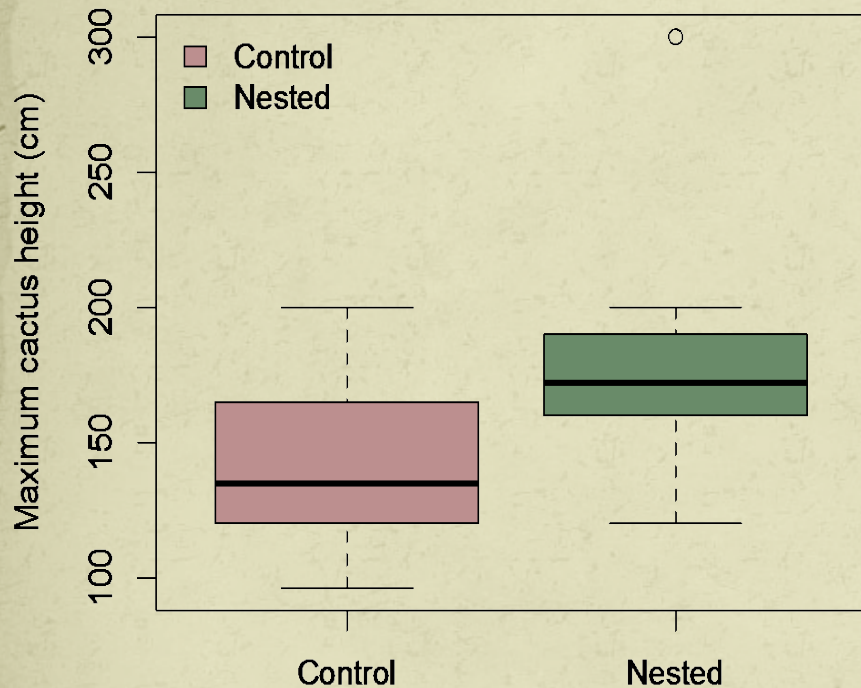
Nests: 20

Controls: 20

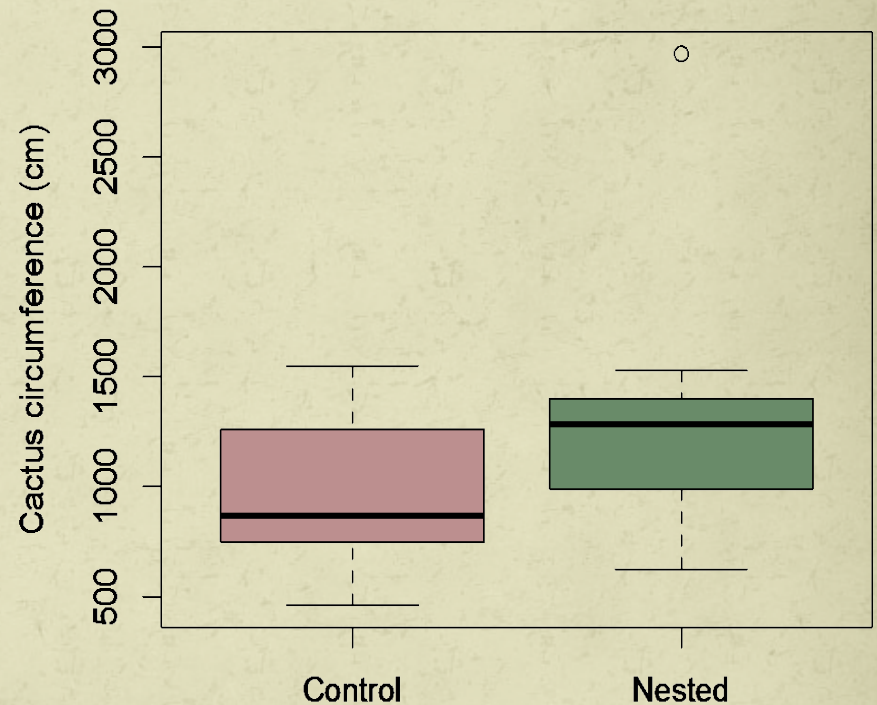


# Nests were found in larger cacti

Height



Circumference



Manova:  $F_{(1,37)}=6.60$ ,  $p=0.003$



# An open foraging area was typical at nested sites



Anova:  $F_{(4,2154)}=10.40$ ,  $p=0.001$



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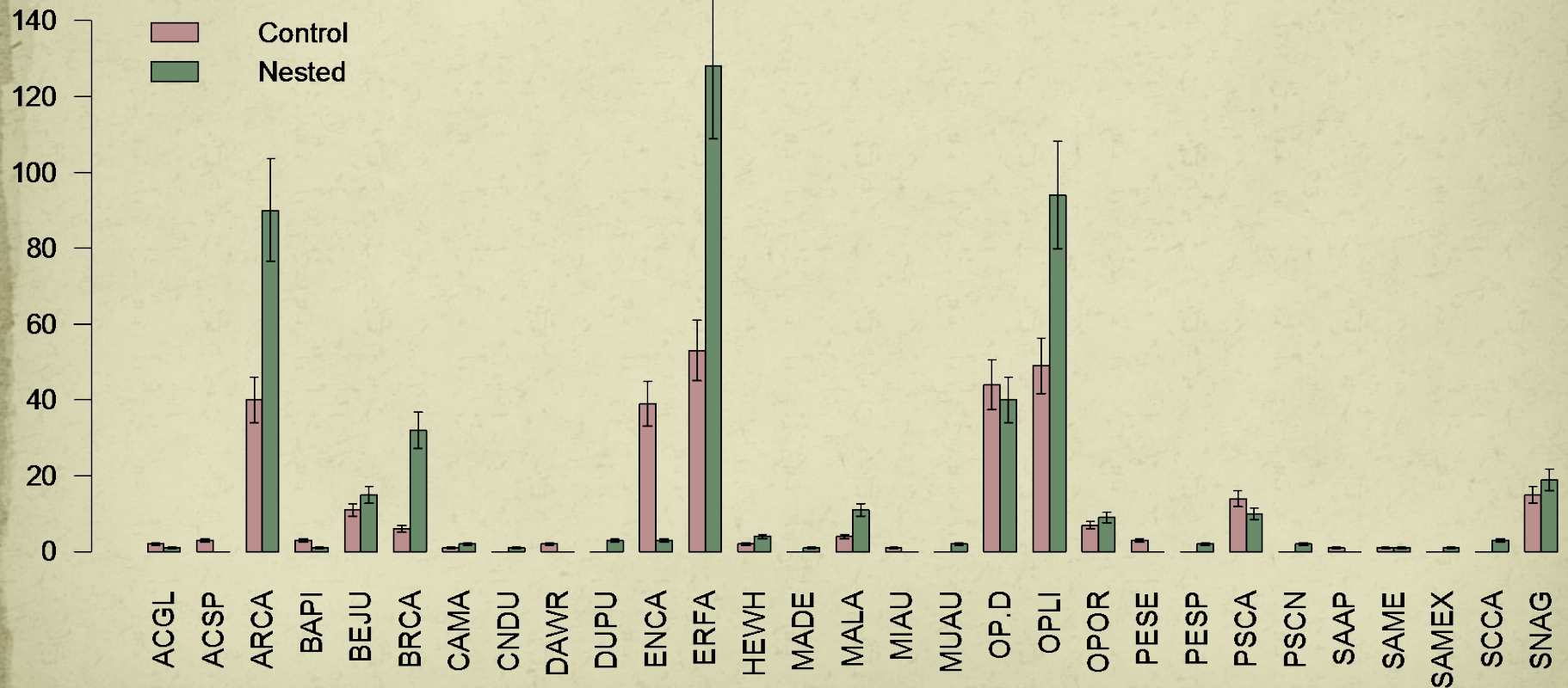


Anova:  $F_{(4,2154)}=10.0$ ,  $p=0.001$





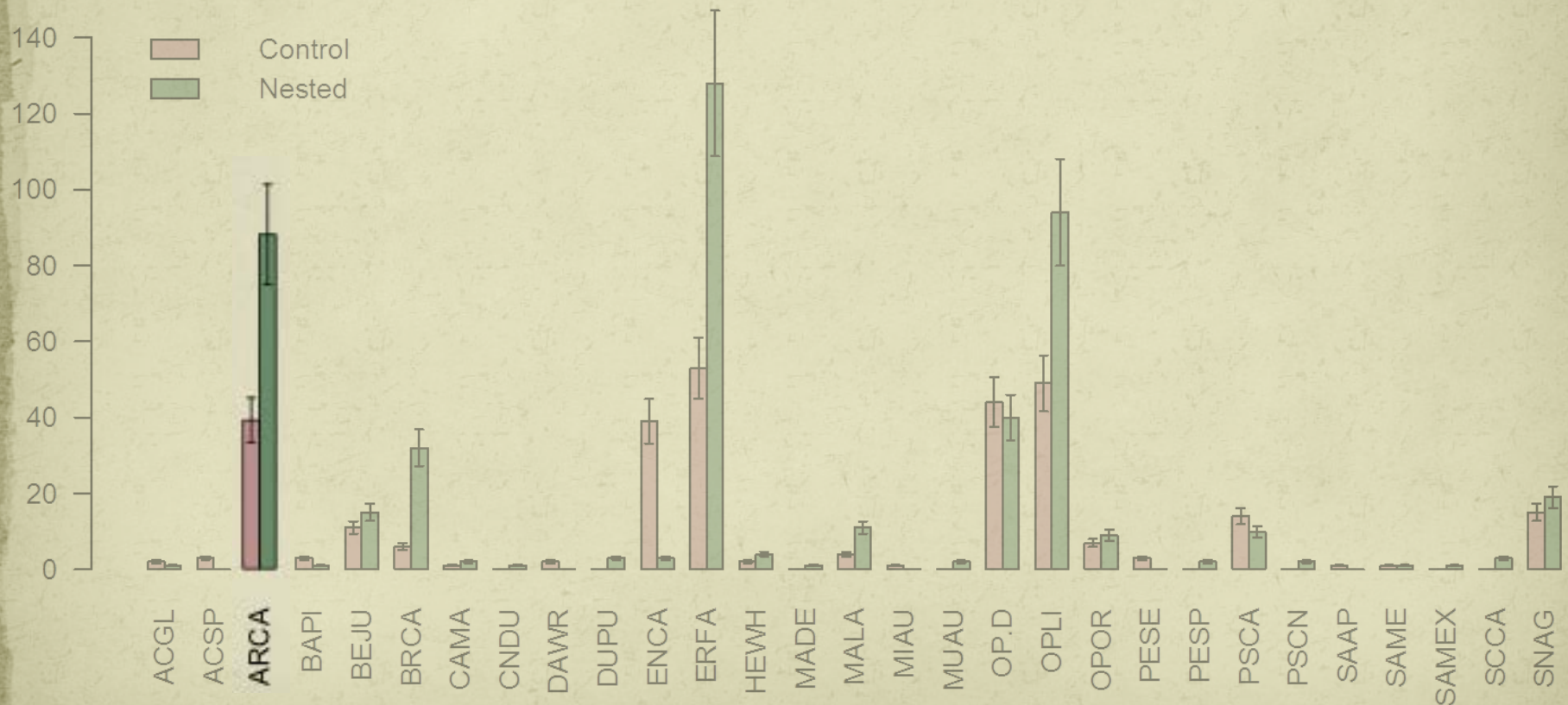
# Species frequencies differ at nested and un-nested sites



ZAP, log-link:  $Z=2.124$ ,  $p=0.034$



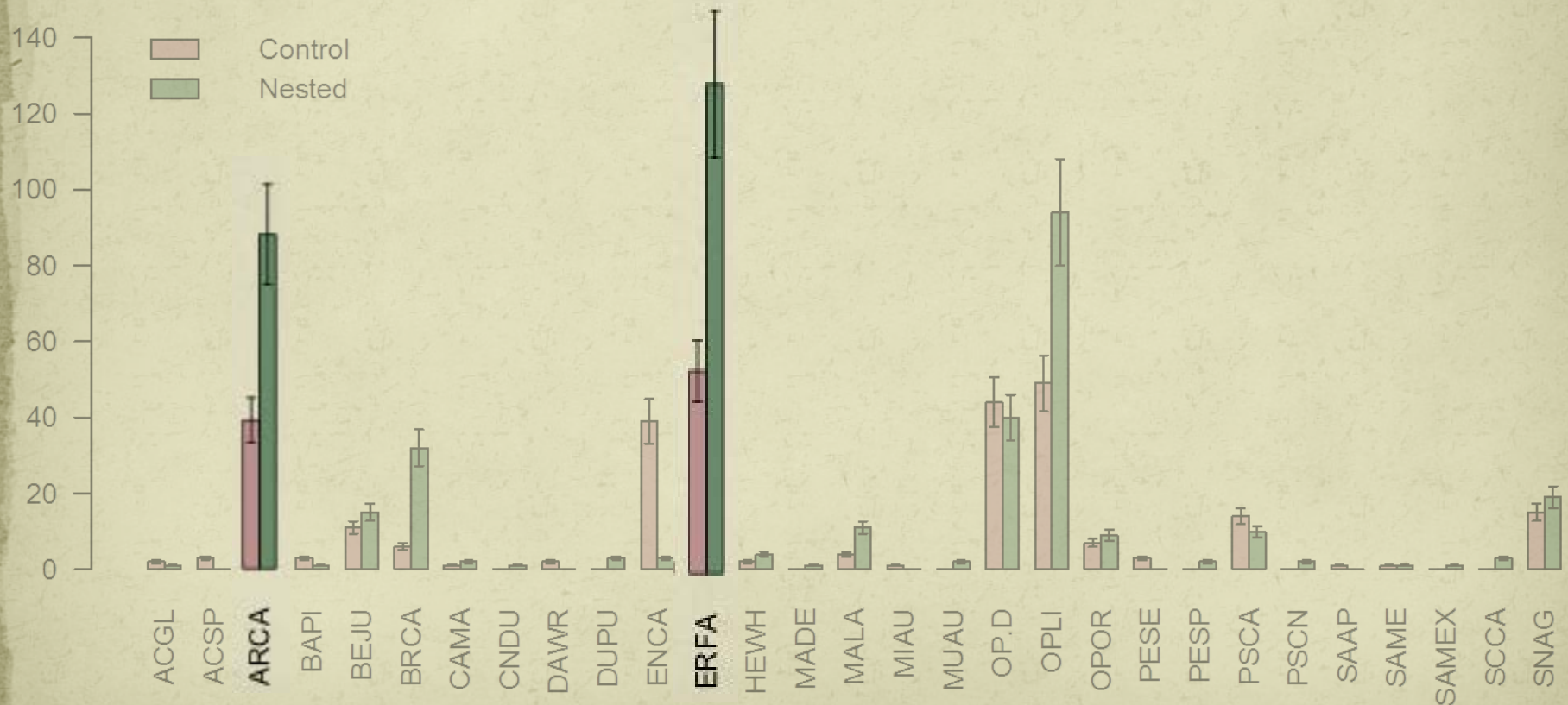
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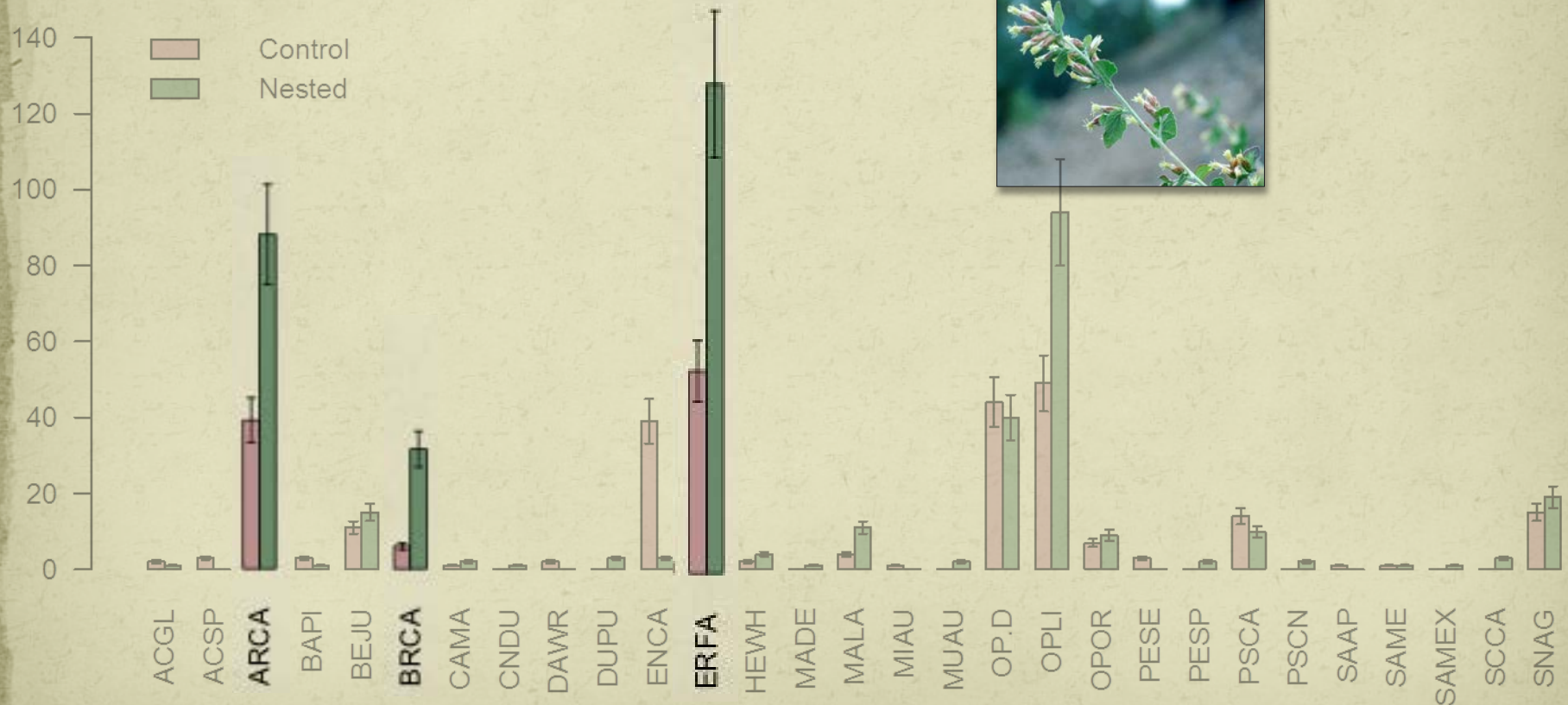
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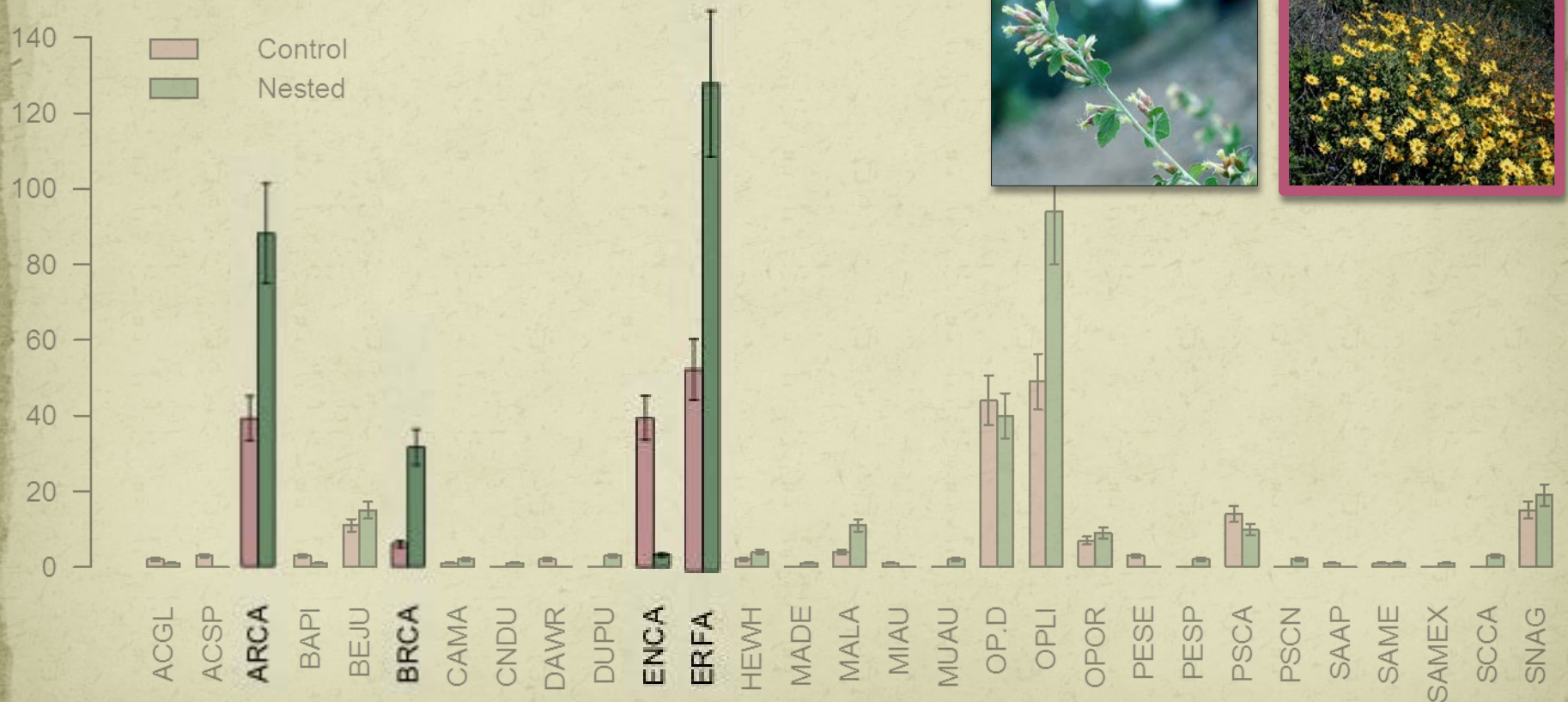
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# Wrens build a safe height above surrounding vegetation



Mean Height from Resident Cactus

Mean Height from Resident Cactus

Mean Height from Resident Cactus

Mean Height from Resident Cactus

Mean Height from Resident Cactus



Shrub

Shrub

Shrub

Anova:  $F_{(1,28)}=4.66$ ,  $p=0.03$



# Elderberry and Laurel Sumac: interchangeable refuge?



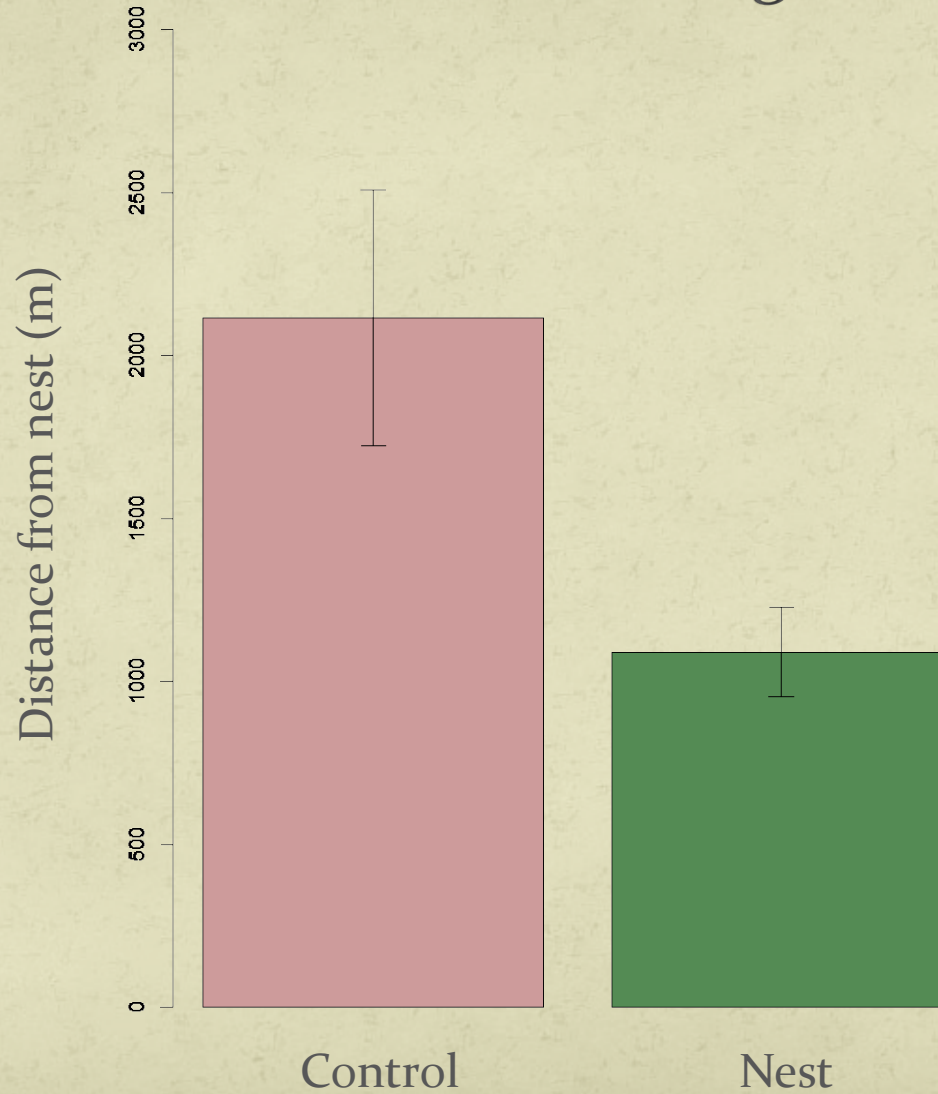
Photo Credit: Rosa Chung



Photo Credit: Ryan Brown

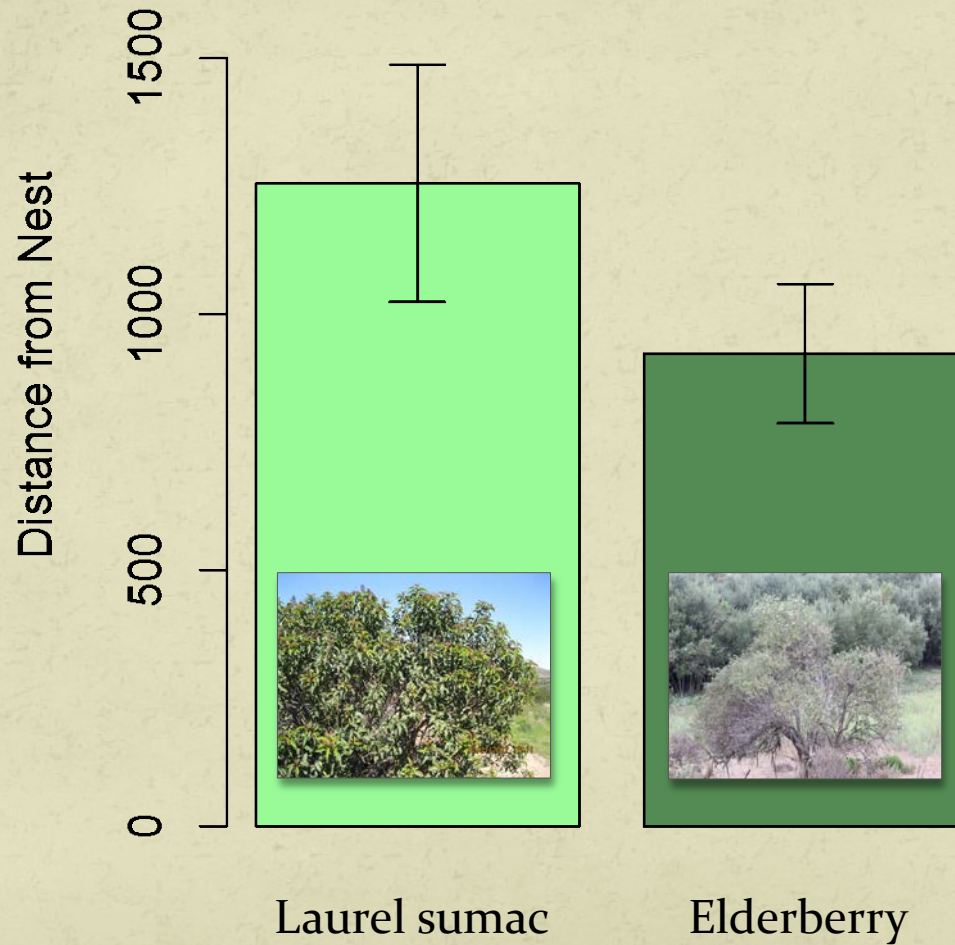


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# Main conclusions

- Tall cacti within a large cactus patch afford maximum protection from predators
- Some shrub species are more common near nests, other species are avoided
- Refuge species often in close proximity



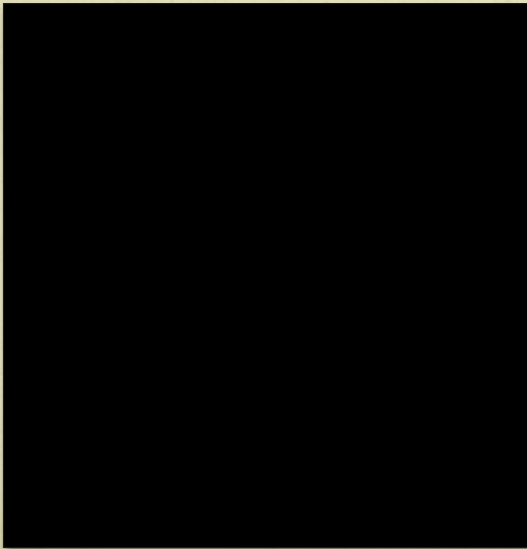
# Restoration considerations

- Ensure that favored shrubs are planted and managed to maintain preferred heights
- Control grass cover to provide bare ground for foraging
- Not limited to sites containing Elderberry as a refuge, utilize Laurel Sumac as a potential alternative
- Regional habitat preferences need consideration



# Future Directions

- Determine use of the surrounding open bare ground area
- Test success of habitat amendment strategy on a small scale
- Expand Study to other Coastal cactus wren populations across southern California for regional comparisons





# Acknowledgements

Sara Motheral  
Rosa Chung  
Applied Plant Ecology

## Volunteers

Andrew Heath  
Jennifer Monteforte  
Kelly Lion

Foundation for Sustainability and Innovation

San Diego Zoo Institute for Conservation Research

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