

Lure, switch and bait for RIFA management

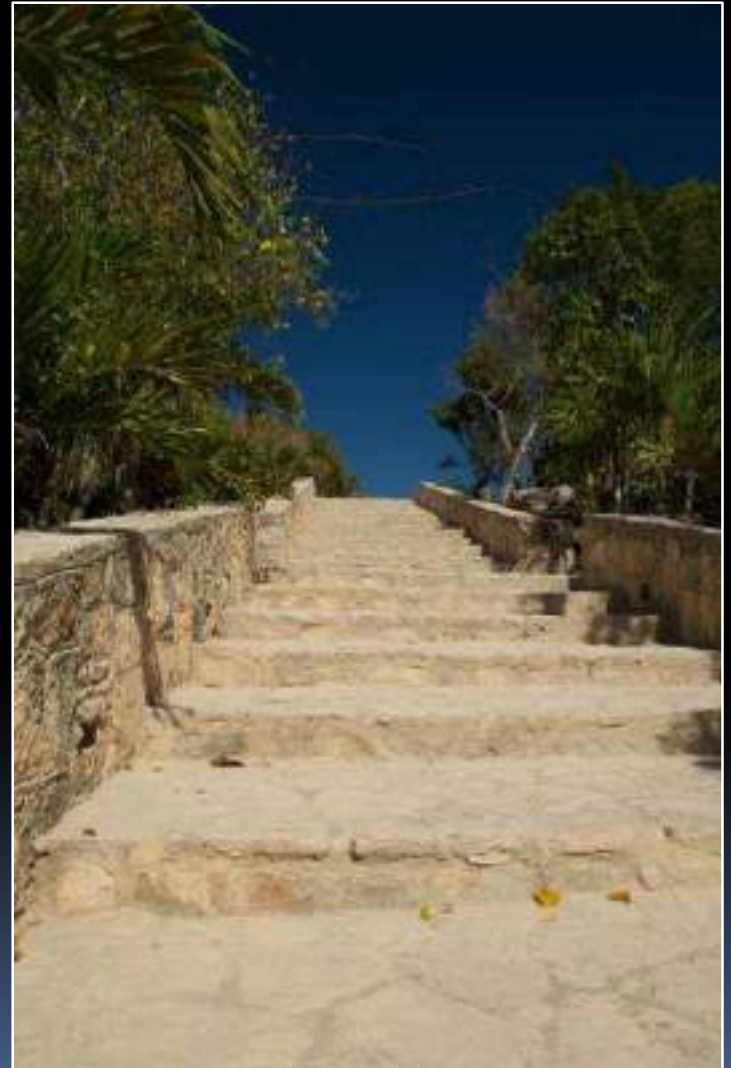


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Bart Drees
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Natalie Cervantes

Darwin, 29 April 2010

Outline

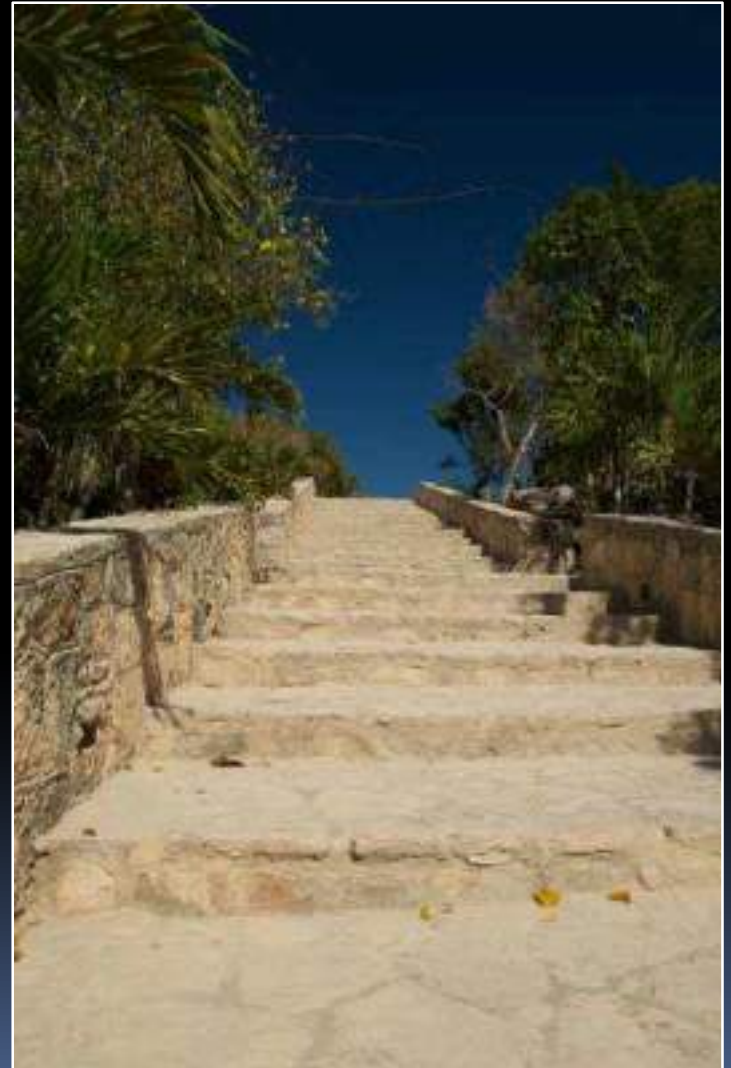
1. Fire Ants and Baits
2. Objectives
3. M&M
4. Results
5. Conclusions





Outline

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Management.

Chemical treatments

1) Individual mound

2) Broadcast

1. Contact granules
2. Foraged baits



Granular Baits.

**Made with defatted
corn and soybean oil**



Granular Baits.

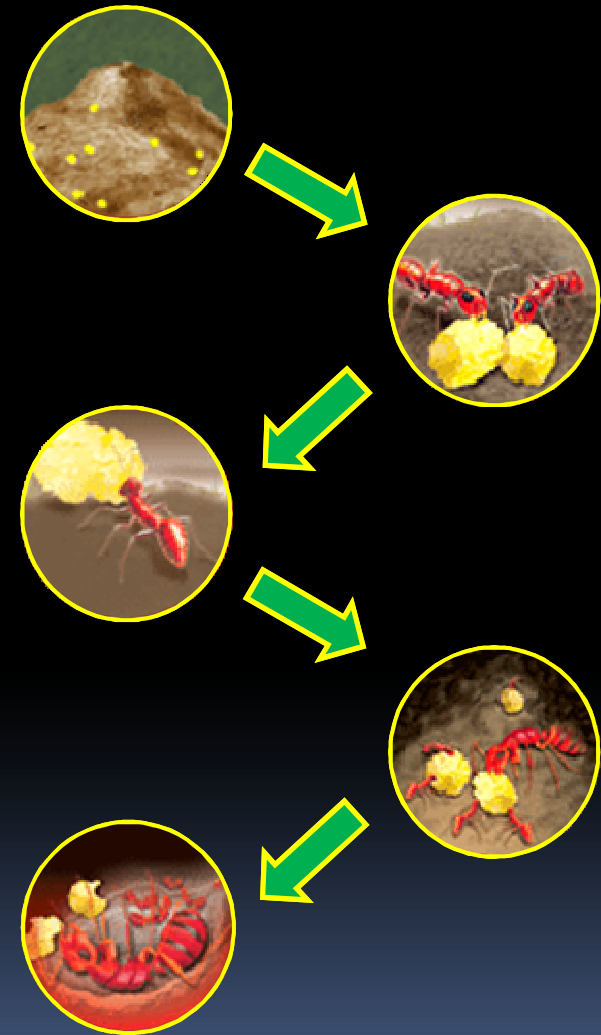
Active ingredients

Insect Growth
Regulators
Metabolic inhibitors
Neurotoxins



Granular Baits.

Ants find the bait, carry it back to the colony, where it is fed to larvae, workers and queen(s)



Granular Baits.

Problem: they are non-selective, they can impact non-target ants and arthropods



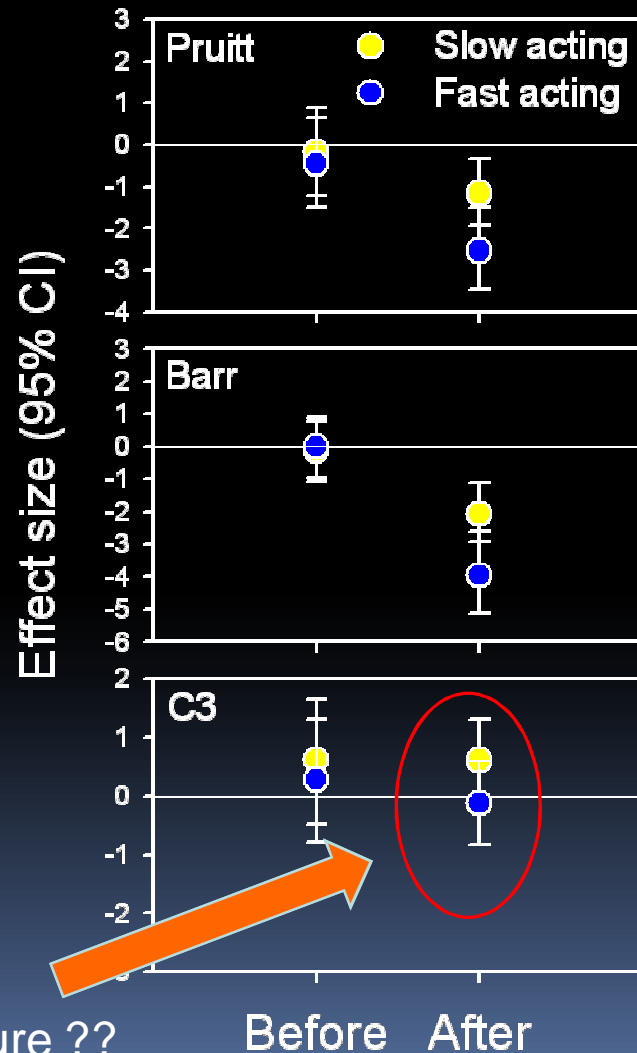
Native Ants – Baits interactions.



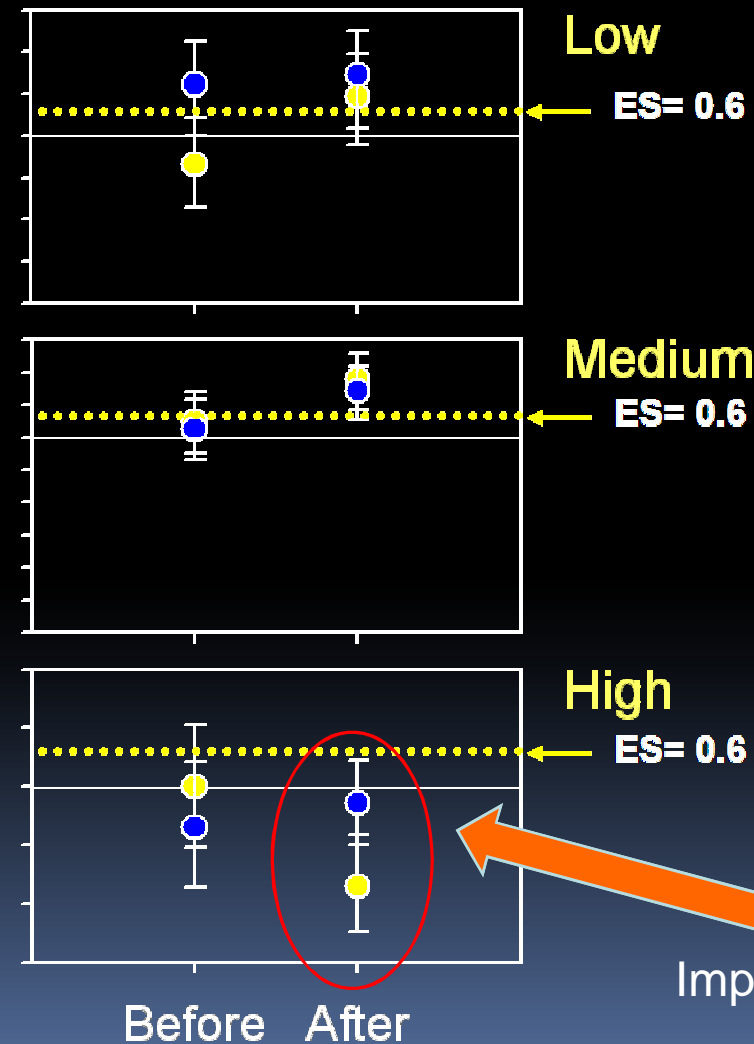
Are native ants compatible or incompatible to baiting programs?

Native Ants – Baits- Effects.

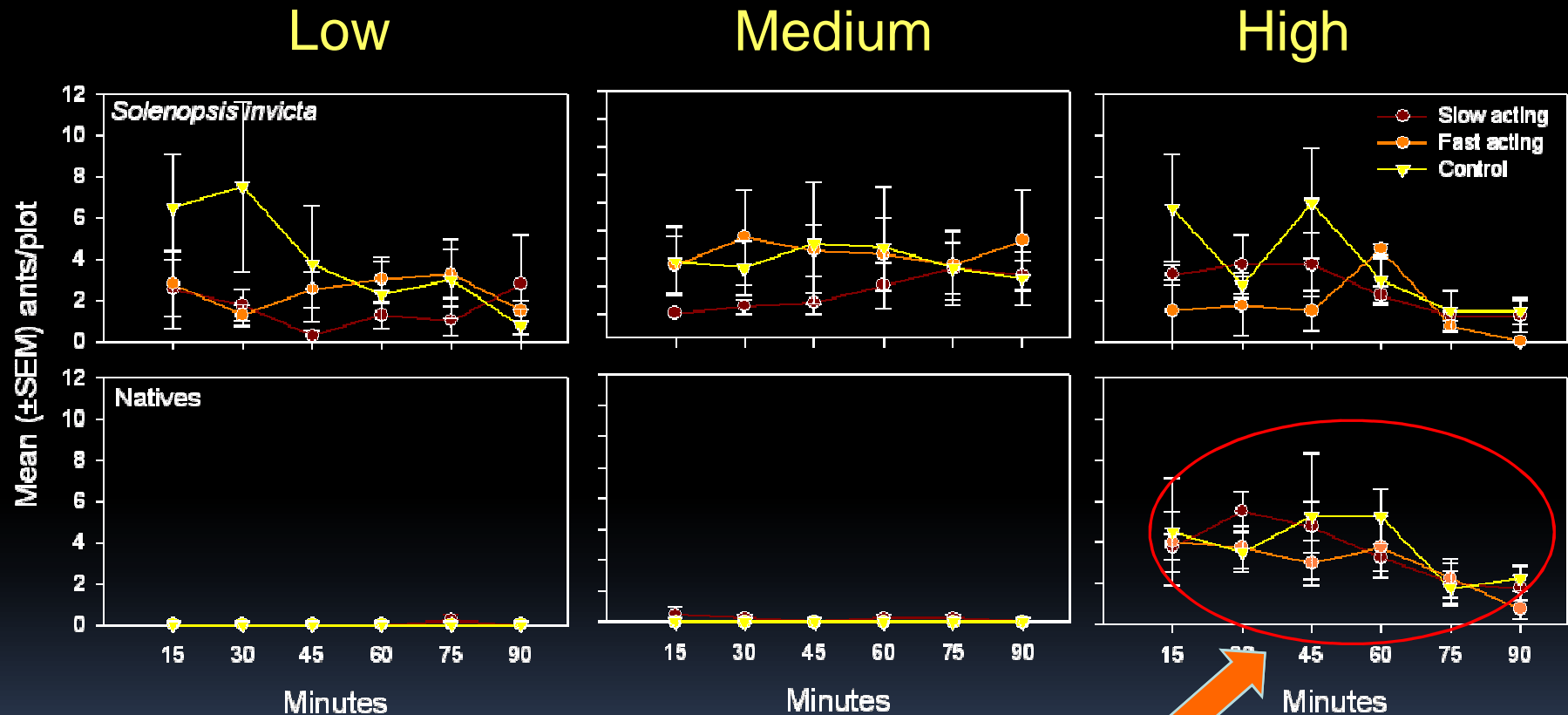
Solenopsis invicta



Native ants



Native Ants – Baits- Mechanisms.

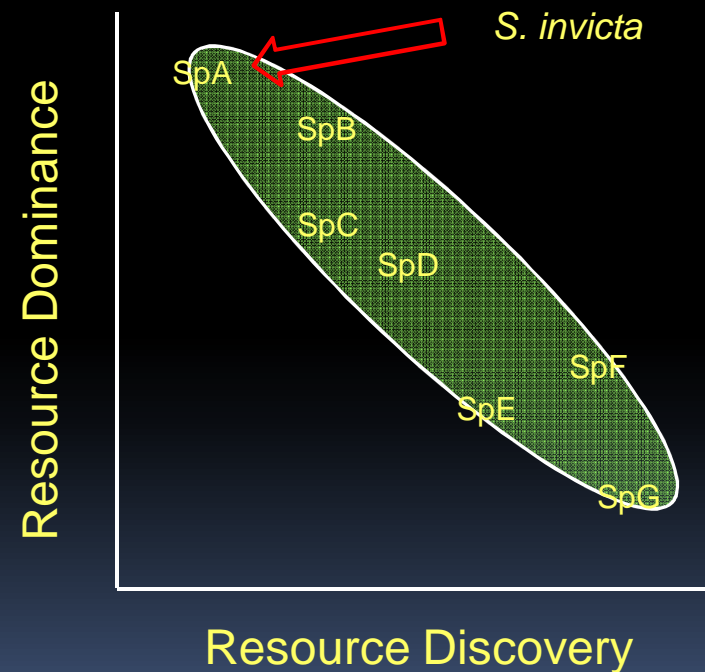


Impact ??

Resource Discovery and Dominance.



Dominance-Discovery in Ant Communities



Modified from Holway 1999, Feener 2000

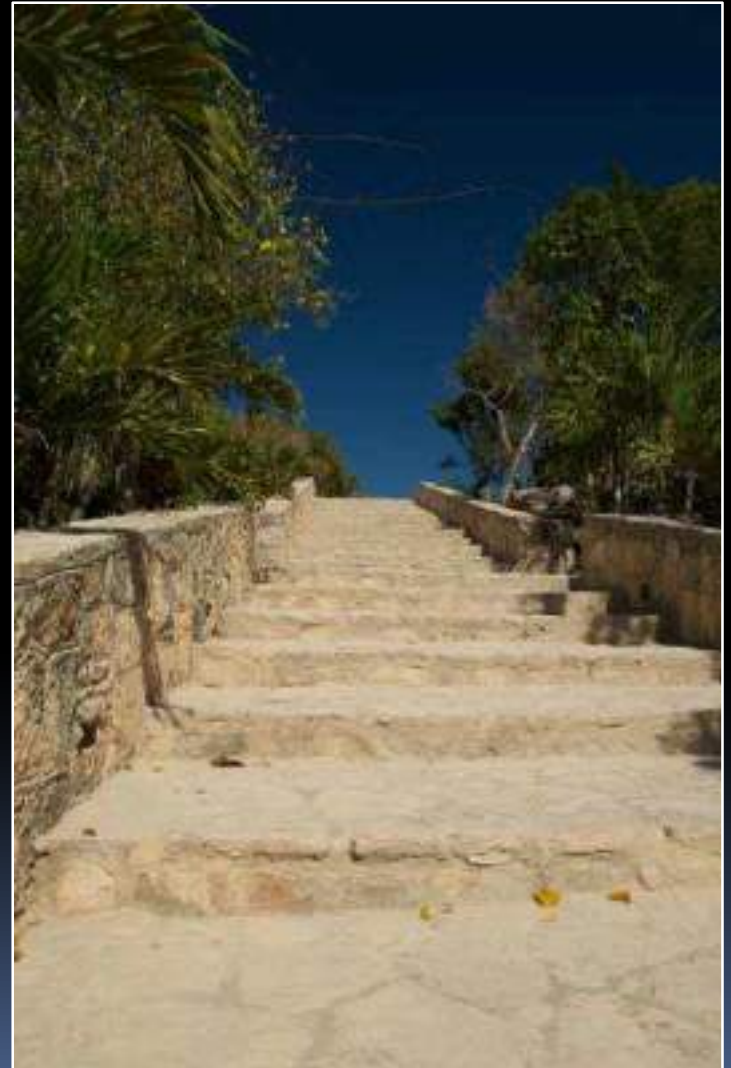


Can we use “discovery and dominance”
as a tool for fire ant management?

How does it perform compared to
other methods?

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Objectives

Objective 1-

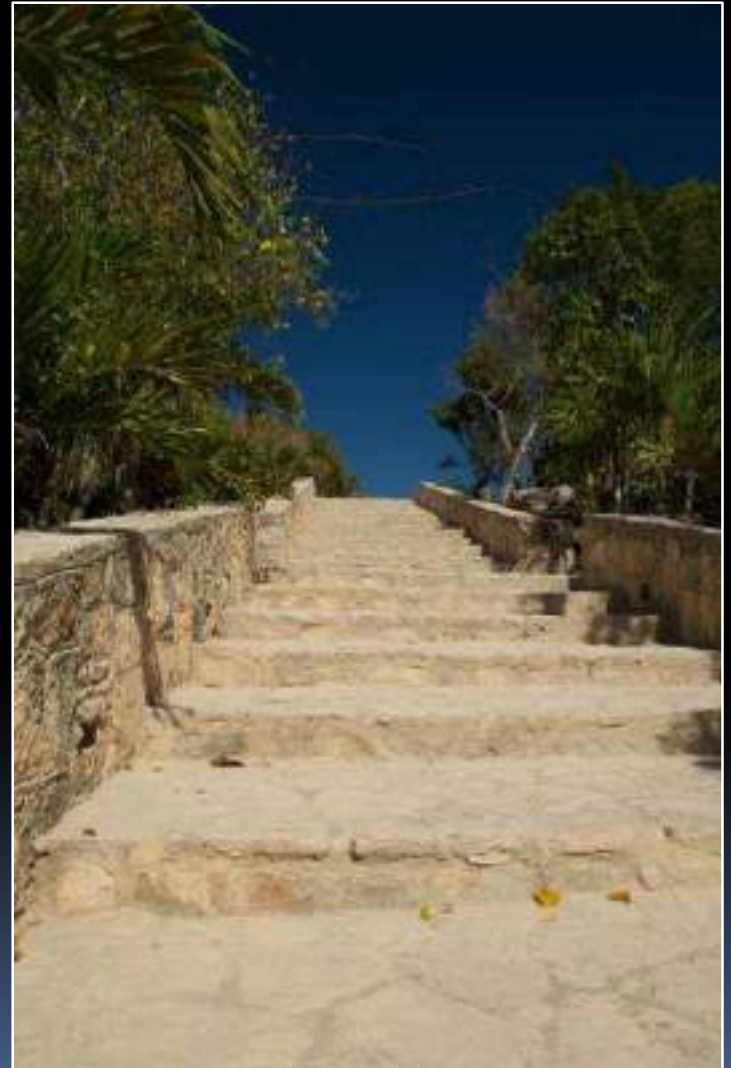
- Evaluate the performance of discovery and dominance (lure-switch-bait (LSB)) as a tool for fire ant management and protection of native ant species

Objective 2-

- Compare the LSB to other methods currently used in sensitive areas where baits are discouraged

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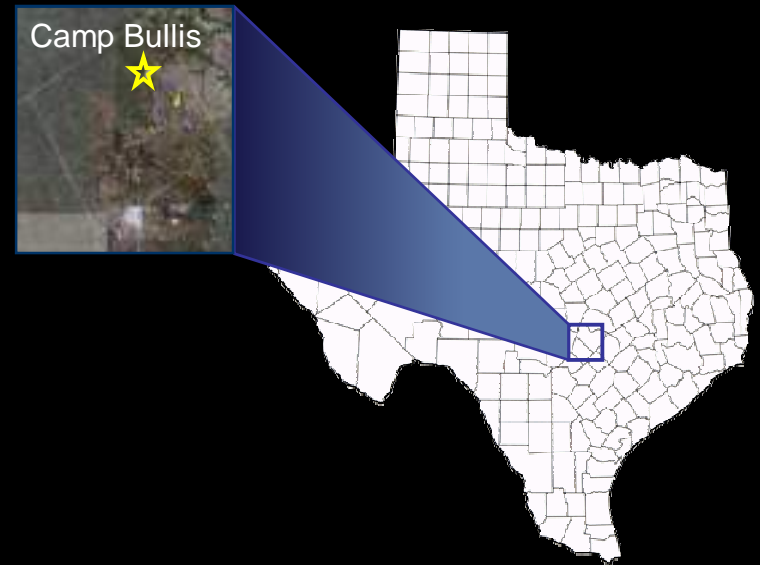


Methods

Study site.

Camp Bullis (Army Base),
San Antonio, Texas

Central Texas Caves –
Federal and State listed
species and species of
concern - 1987-
endangered



Methods

Study site.



Methods

Experimental design

3 treatments

6 replications

1. Boiling water
2. Lure-switch-bait (LSB)
3. Untreated



Methods

Experimental design

Boiling water

- Applied in May 2009
- Mounds disturbed
- Water injected

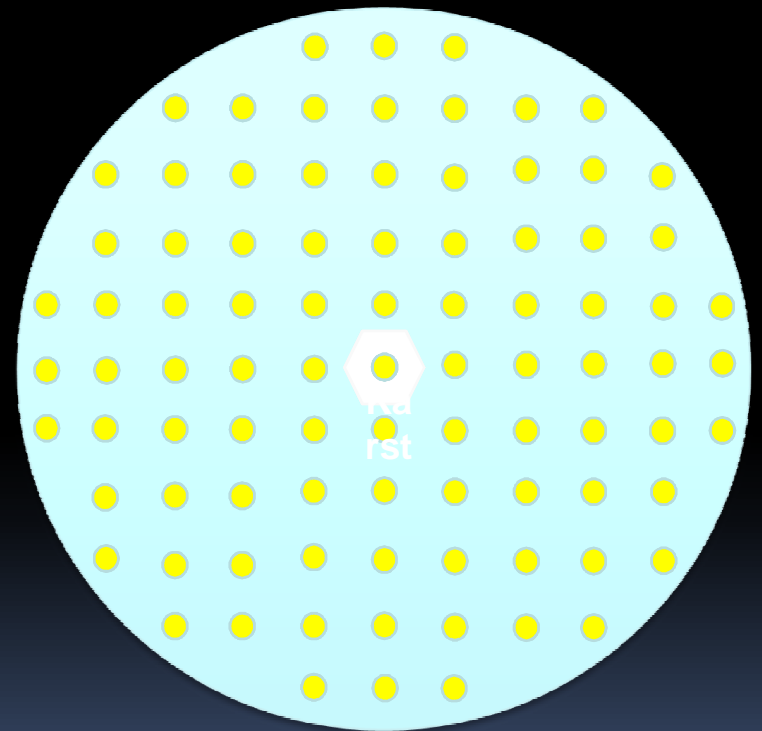


Methods

Experimental design

Lure-switch-bait (LSB)

- Applied in May 2009
- 34 mt circle diameter
- 87 lure stations per cave
- 3 mt between



Methods

Experimental design

Lure-switch-bait (LSB)

- Lures with RIFA switch to a bait station – left for 24 hrs
- 8 gr of pyriproxyfen (Esteem®) - IGR



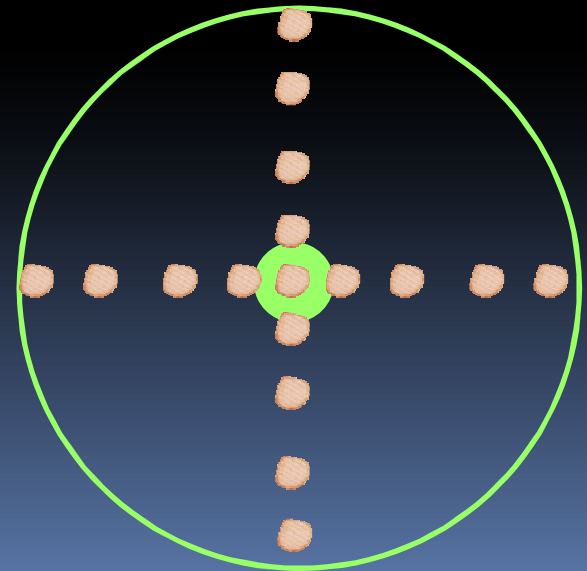
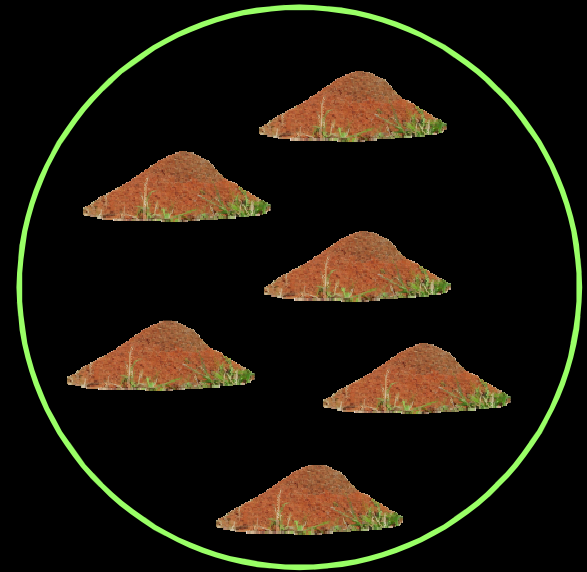
Methods

Experimental design

Monitoring around caves

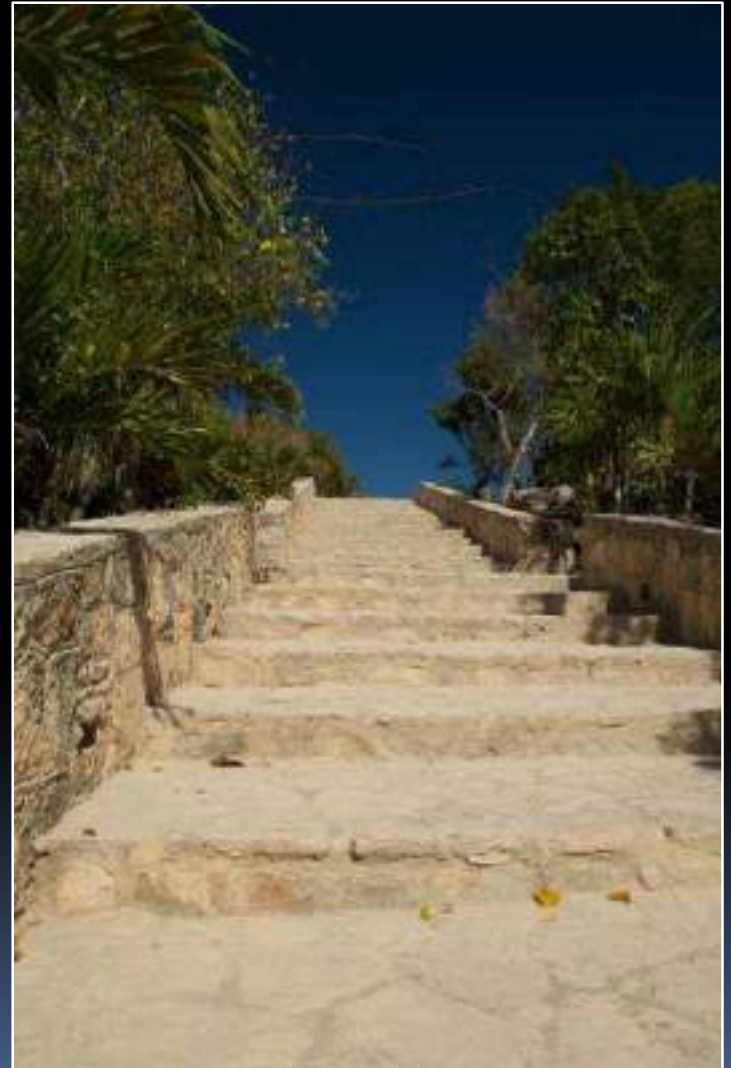
Mound counts (abundance)
0.1 ha circles

Lures – “hot dogs” (activity)
17 per circle



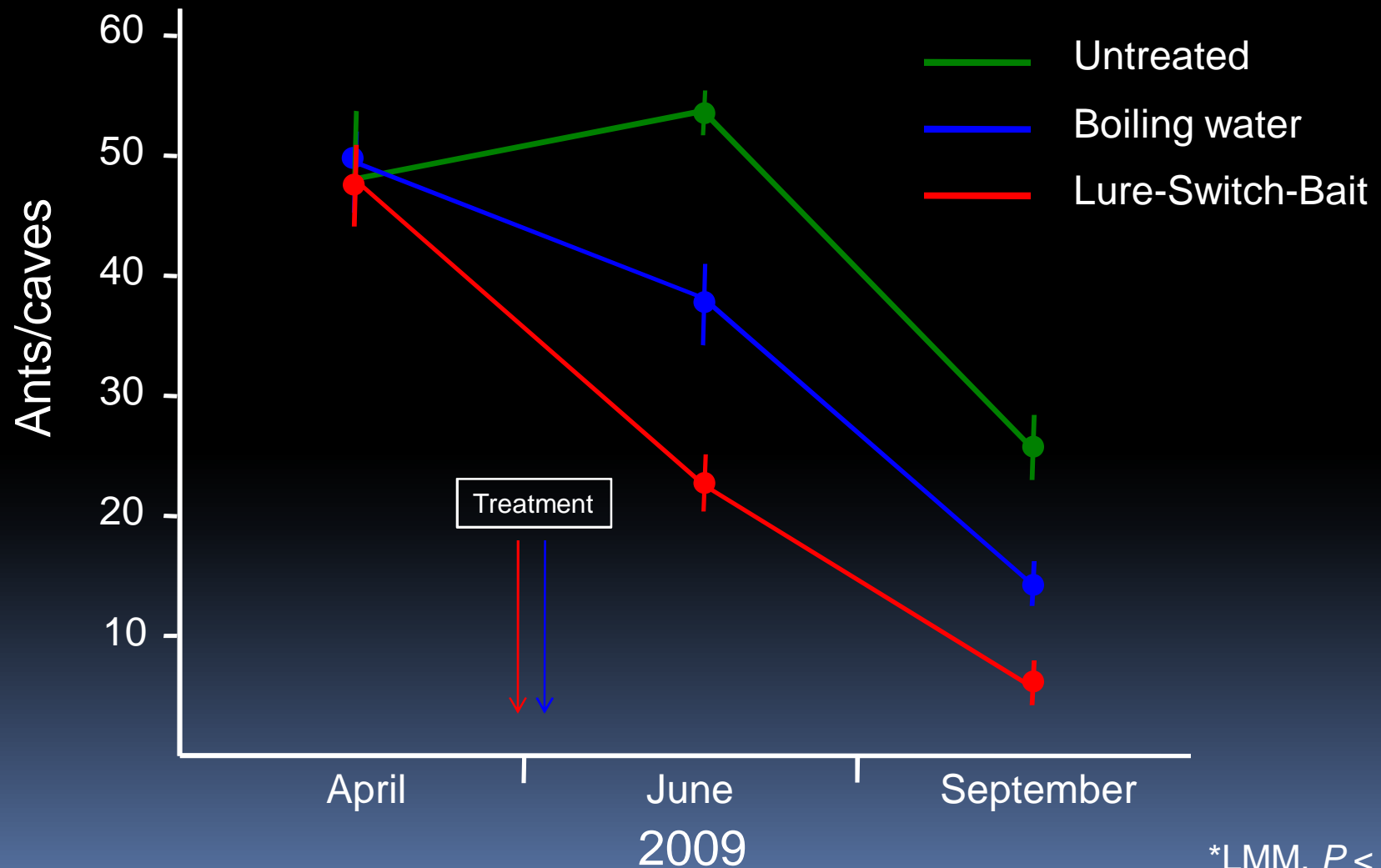
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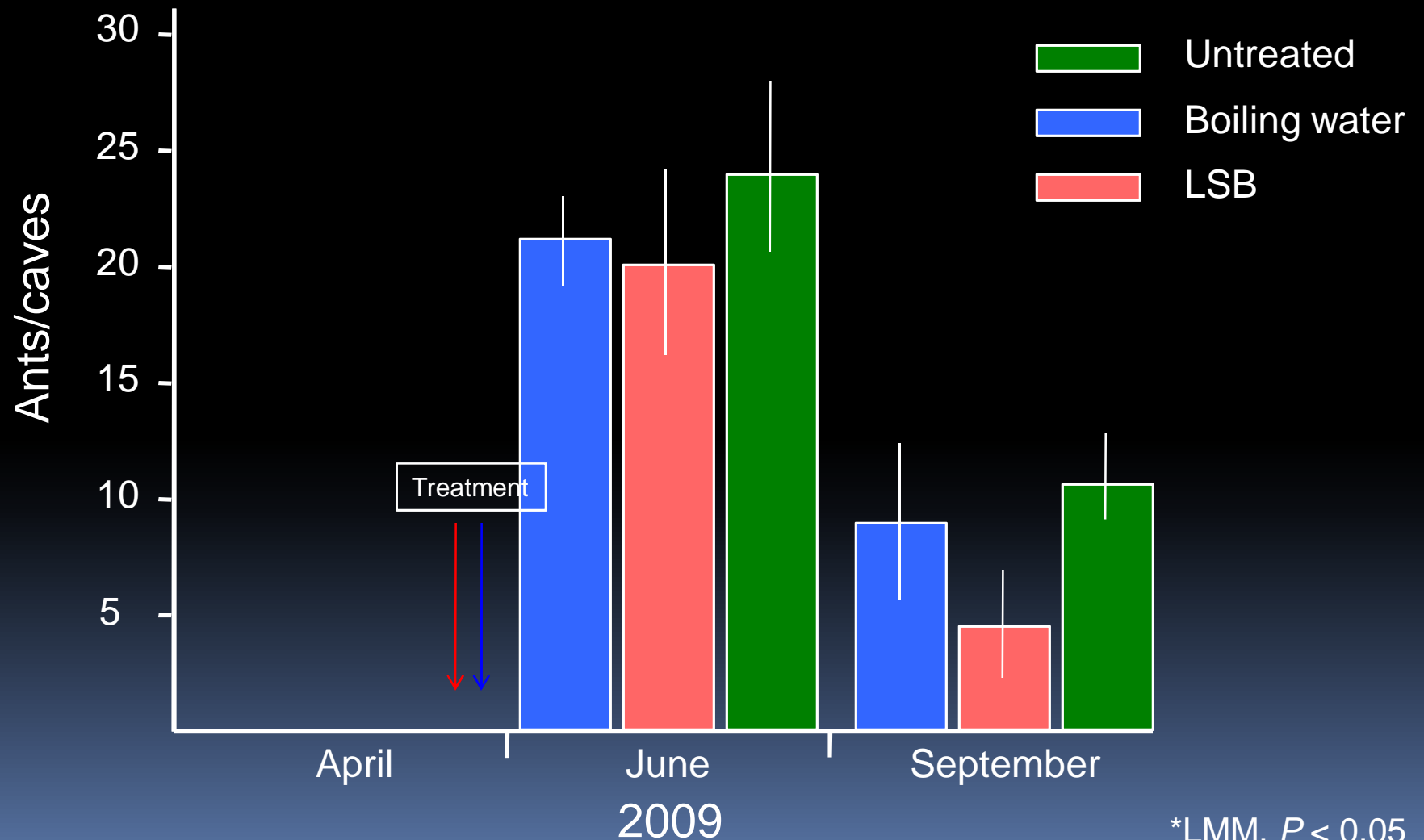
Results

Solenopsis invicta activity - lures



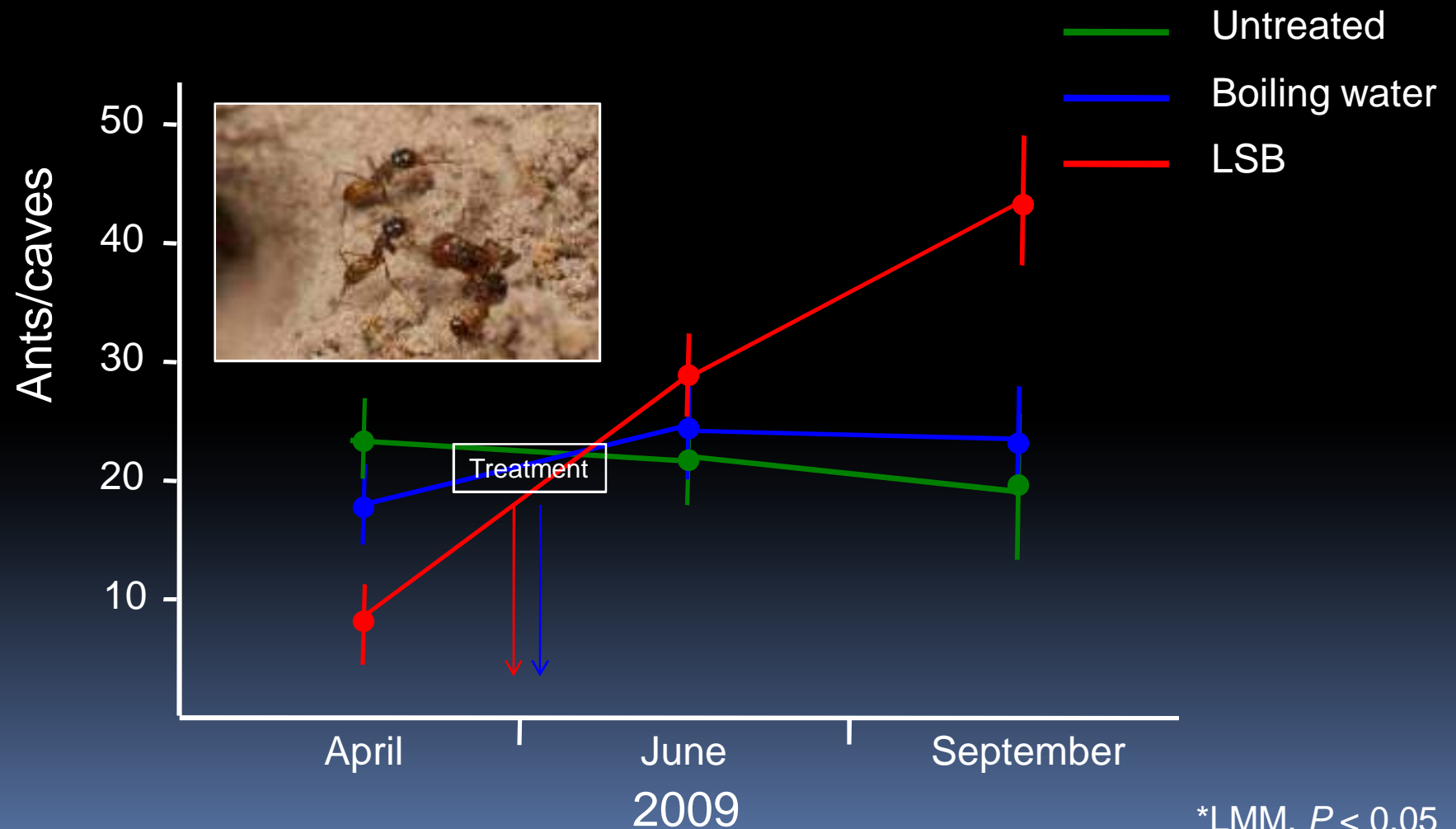
Results

Solenopsis invicta relative abundance - mounds



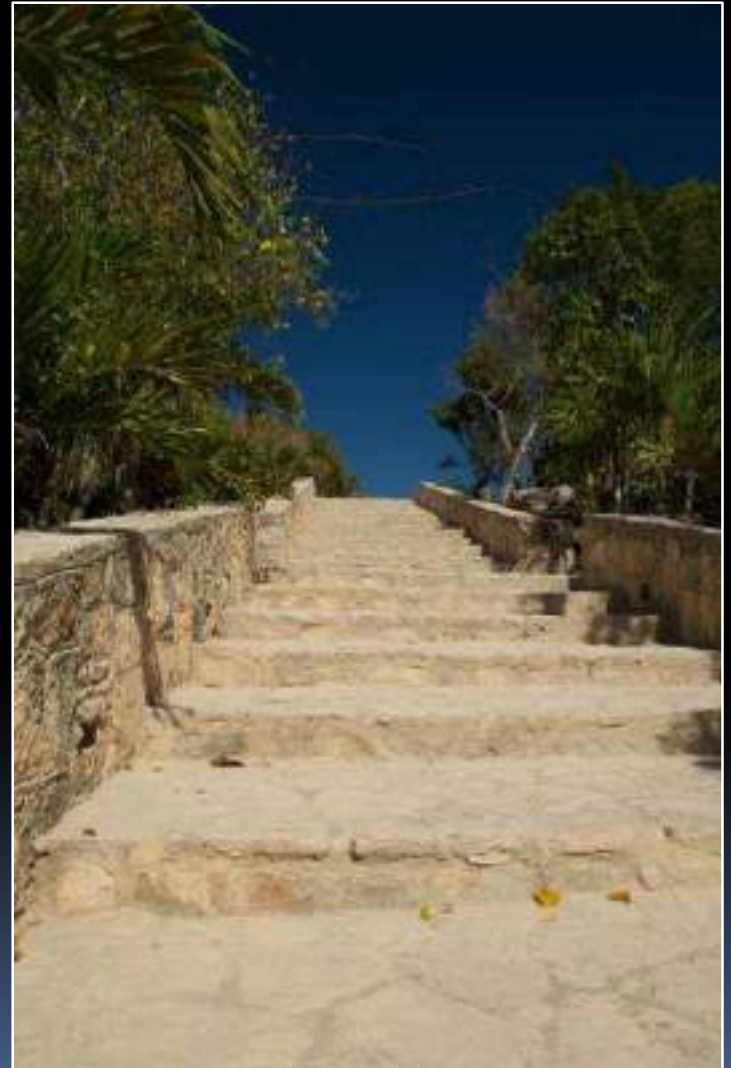
Results

Native ants activity - lures



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Conclusions

Preliminary data

LSB performs **better** on reducing RIFA than boiling water (workers and mounds)

- Cheaper, less labor intensive, more effective

Native ants appeared **unaffected**

Impact on non-ant-arthropods is currently investigated

Aknowledgements

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Texas Master Naturalists



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