

Woodland Encroachment and Ants of the Central Great Basin

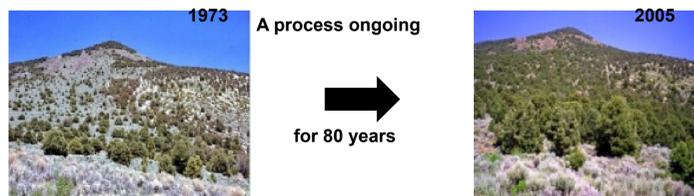
James McIver, Oregon State University

Do ant communities track vegetation in degraded sagebrush steppe ecosystems?



1 The Problem...

Pinyon-Juniper Encroachment into Sagebrush Stands



Why?
Fire Suppression and Cattle Grazing in the Great Basin since the early 1900's

2 The Solution...

BLM and Forest Service managers try to reverse the process by:



OR



BUT

We know little about ecological consequences of these practices, particularly when applied to stands encroached to varying degrees

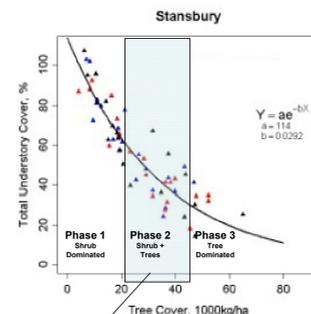


3 Theory Says.....

There will be a threshold in tree dominance above which the ecosystem *will not recover* after tree removal
WHY a THRESHOLD?
Because as trees encroach, they gradually eliminate the understory:



Phase 3 Woodland, now dominated by trees: If they are removed, what will happen?



Recovery threshold is somewhere within this range of Tree Cover
Under Phase 3 conditions, tree removal will likely not result in rapid recovery of understory

CONCLUSIONS:

- ANT community changes as woodland develops
- ANT numbers decline as trees encroach

QUESTION: Will ANTS *follow* or *precede* understory plants when trees are removed?

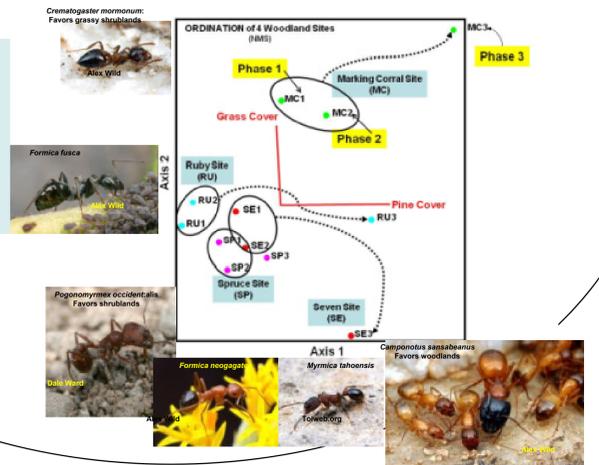
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4 But before we treat....

Do ANTS mirror understory plants in their relation to tree cover?

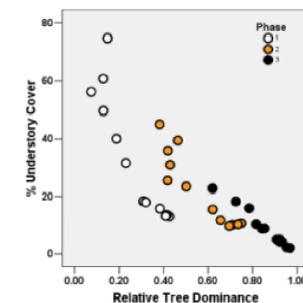
YES --

ANT Community shifts with phase for each site except Spruce:

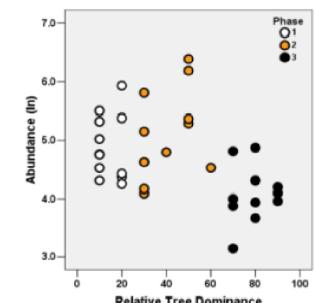


5 AND.....

Total ANT Numbers decline as Woodlands develop, just like the PLANT understory



PLANTS



ANTS

NEXT YEAR:
What will happen when we burn or cut?