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:
     - 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

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

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?

James McIver
Research Professor
Eastern Agric. Res. Center
Oregon State University
P.O. Box E, Union, OR 97883
(541) 910-0924
james.mciver@oregonstate.edu

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