



# GROUND ARTHROPOD COMMUNITY COMPOSITION IN A HETEROGENEOUS URBAN ENVIRONMENT.

J. Rango, E. Shochat, M. Tseng, W. Fagan, and S. Faeth.  
Arizona State University.



## RESEARCH OBJECTIVES

- \* describe composition and turnover of arthropod communities in 4 types of urban land use in the Phoenix, Arizona, metropolitan area
- \* determine which taxa are indicative of the area's dominant forms of urban land use
- \* determine differences in diversity of arthropod communities between habitats

## METHODS: LONG-TERM ARTHROPOD MONITORING

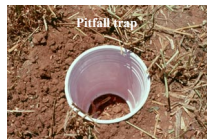
### \* SITES:

Year 1 (June 1998 - May 1999)	Year 2 (June 1999 - May 2000)
4 residential (3 xeriscape, 1 mesoscape)	4 xeriscape residential
4 desert (2 urban desert, 2 fringe desert)	4 mesoscape residential
4 agricultural (3 alfalfa, 1 cotton)	4 urban desert
4 industrial	4 fringe desert
	4 agricultural (4 alfalfa)
	4 industrial

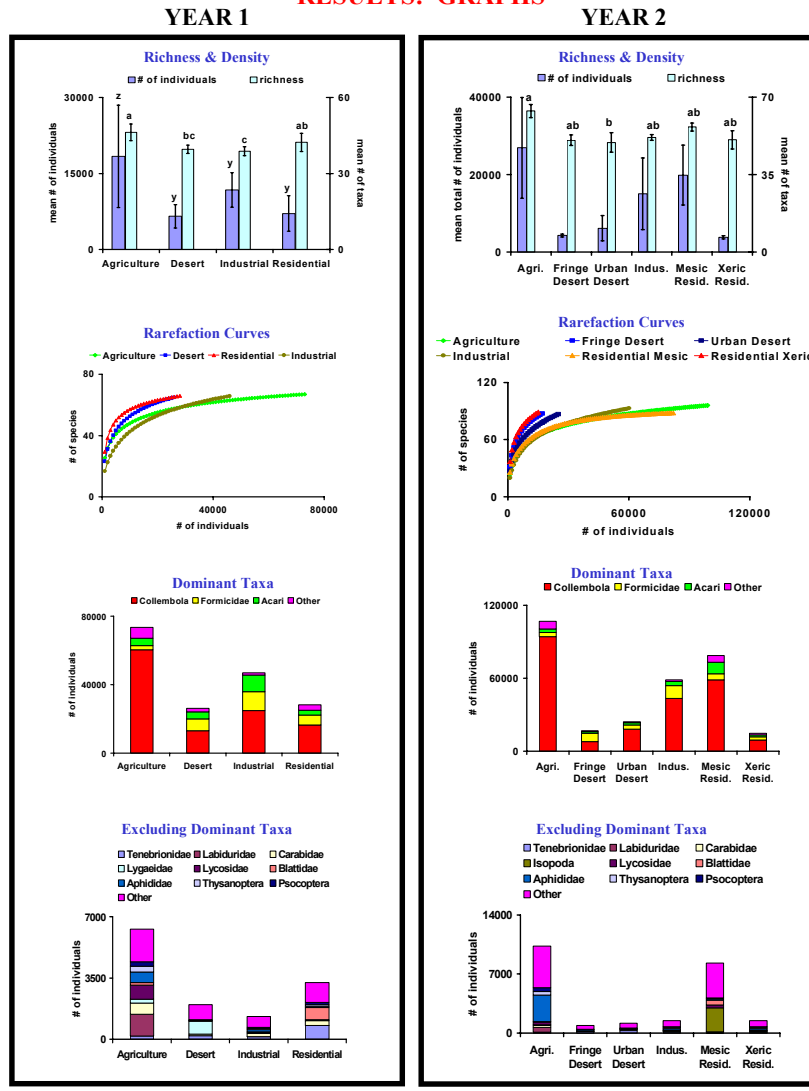


\* TRAPPING METHOD:  
10 pitfall traps per site

\* TRAPPING DURATION:  
3 days per month



## RESULTS: GRAPHS



## RESULTS

- \* overall 165 different taxa of ground arthropods were collected during the two year period.
- \* twice as many ground arthropods were collected during the second year than the first year.
- \* in both years the highest arthropod community richness was found in agricultural fields.
- \* rarefaction demonstrated that high richness in agricultural fields was an artifact of high arthropod densities, and in fact, desert and xeric yards have the most diverse arthropod communities.
- \* xeric yards are good mimics of the desert environment because they support similar arthropod communities.
- \* ground arthropod communities are consistently dominated by springtails (Collembola), ants (Formicidae), and mites (Acari), in the Phoenix metropolitan area.
- \* despite differences in the proportions of arthropods representing each taxa, ground arthropod community composition was similar between years.
- \* community composition varied with landuse.

## IMPLICATIONS

- \* the presence of spatial heterogeneity within the Phoenix metropolitan area boosts the overall arthropod diversity of the region.
- \* home owners should be encouraged to create xeriscaped yards because they reasonably mimic desert habitats.
- \* there are ground arthropod communities that are characteristic of different forms of urban land use, which may be very useful in detecting latent effects of future urbanization.

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