



# 200 POINT SURVEY: VEGETATIVE ARTHROPOD COMMUNITY STRUCTURE

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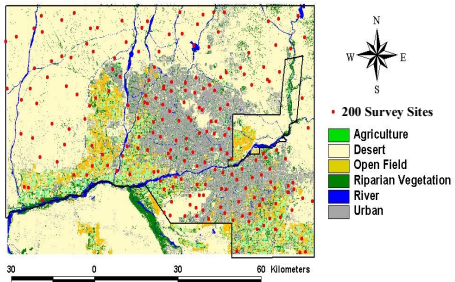
## Research Question & Objectives

What are the main factors that affect arthropod community abundance, richness and composition on vegetation in Phoenix, Arizona?

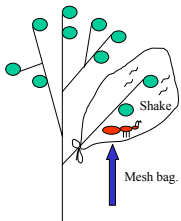
- \* compare richness and density of arthropod communities across landuse type
- \* compare community composition across landuse type
- \* compare community composition on different plant genera
- \* compare community composition on *Larrea* across landuse types

## Methods

- \* Arthropod samples were collected at 200 randomly chosen survey sites across the Phoenix metropolitan area.



- \* Arthropod samples were collected off of 0 or 3 woody plants per site
- \* Collections were made between March - May 2000

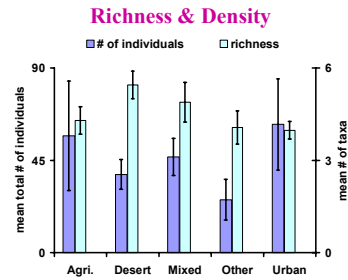


200 POINT SURVEY SUMMARY DATA

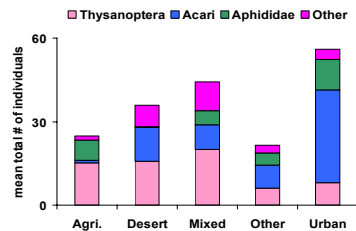
LANDUSE TYPE	# OF SITES SAMPLED	# OF PLANTS SAMPLED	# OF <i>LARREA</i> SAMPLED
Agriculture	23	27	--
Desert	66	183	75
Mixed*	39	105	11
Other**	18	44	--
Urban	57	138	11

\*Mixed category includes survey sites that consist of more than one landuse type.  
\*\*Other category includes the following landuses: transportation, riparian, water, and open field.

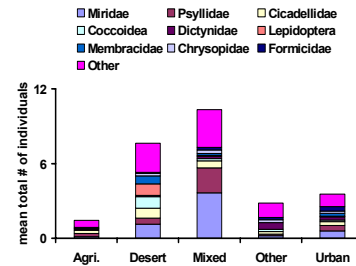
## Results: Arthropod communities versus Landuse



## Dominant Taxa

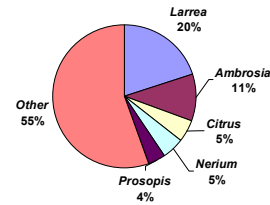


## Excluding Dominant Taxa

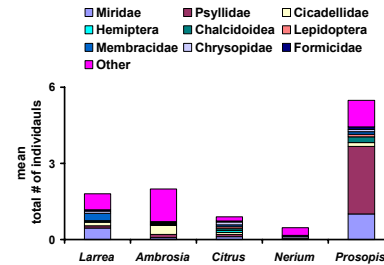


## Results: Arthropod Communities versus Plant Taxa

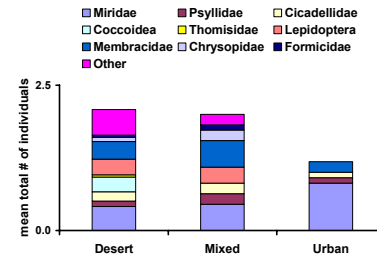
### Plant Taxa Sampled



## Excluding Dominant Taxa



## Communities on *Larrea* Excluding Dominant Taxa



## Results

- \* Arthropod communities were the most rich at desert sites and the least rich at urban sites.
- \* Across all landuse types, the most commonly collected taxa included aphids, thrips, and mites.
- \* Among the dominant taxa, aphids are rarely collected off of plants at desert sites.
- \* The most abundant arthropod communities were collected off of two plants native to the Sonoran Desert including *Larrea* and *Prosopis*.
- \* The least abundant arthropod communities were collected off of *Nerium*, a taxon exotic to the Sonoran Desert.
- \* Arthropod communities collected off of *Larrea* were least rich in urban sites when compared to both desert and mixed sites.

## Implications

- \* Aphids might be useful indicator species signifying changes in landuse due to urban development since they rarely occur in undeveloped desert areas (see **Dominant Taxa** figure).
- \* Urban development leads to less rich and abundant arthropod communities.
- \* The same trend of urban development leading to depauperate biotic communities can be observed in the following studies exhibited in poster session 2: Katti and Shochat, Marussich et al., and Rango et al.

## Acknowledgements

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