Humans in the urban food web:

Emerging insights from Phoenix and Baltimore

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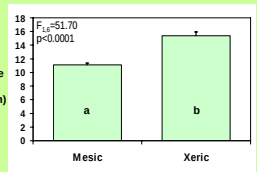
Effects of Landscaping Decisions

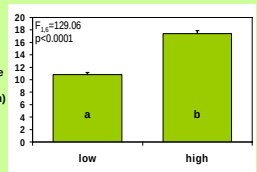
Mesic park

Xeric park

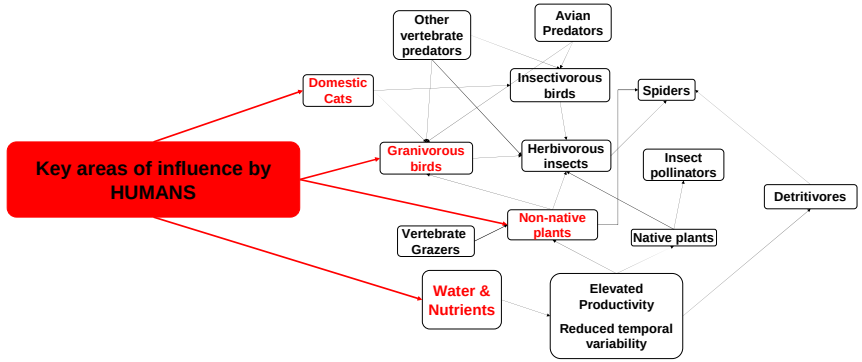
Birds act as though they have greater risk of predation in mesic parks, and…



…greater risk of predation with lower shrub density.



From E. Adley & P. Warren, in prep.



Urban Food Web adapted from Faeth, Warren, Shochat, and Marussich 2005

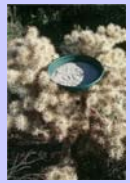
SUMMARY. Little is known about how the most intense human activity, urbanization, alters food webs and trophic structure in biological communities. Experimental studies at the Central Arizona-Phoenix (CAP) LTER reveal surprising alterations in control of trophic dynamics in urban vs. desert settings (see Urban Food Web diagram, below). However, the nature of human provisioning and alteration of resources and predation varies within cities, according to our research at both CAP and BES LTER. For example, bird feeders appear more common in neighborhoods with moderate income and with more retired people. Perversely, birds show evidence of greater competition for food resources in these same neighborhoods. The panels illustrate several key areas in which humans influence trophic dynamics. We hope this will initiate further discussion on ways to integrate humans into our models of food webs.

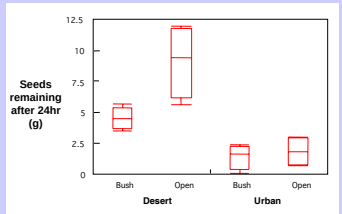
Effects of Predators

Urban birds forage as though they are:

• under lower risk of predation

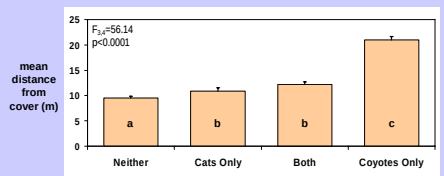
• in greater competition for food resources





From Shochat, et al. 2004

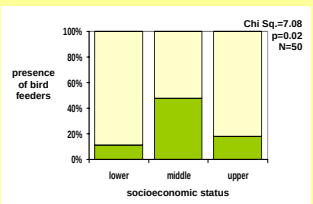
Domestic cats depress bird foraging. Coyotes facilitate it.



From E. Adley & P. Warren, in prep.

Effects of Bird Feeders

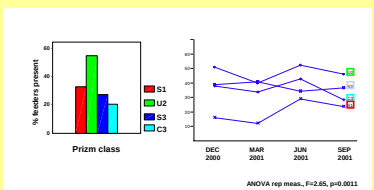
Baltimore



Socioeconomic variables predict presence of bird feeders but not bird abundance.

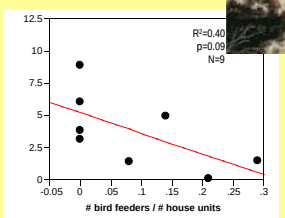
Phoenix

Lifestyle variables (PRIZM market clusters) predict both presence of bird feeders and bird abundance.



From P. Warren, A. Vermuri, J. M. Grove, D. Stuart, and M. Roop, in prep.

Competition for food resources tends to increase with greater densities of bird feeders.



Pilot study by P. Tarrant & P. Warren

CAP LTER
Central Arizona – Phoenix Long-Term Ecological Research