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BACKGROUND

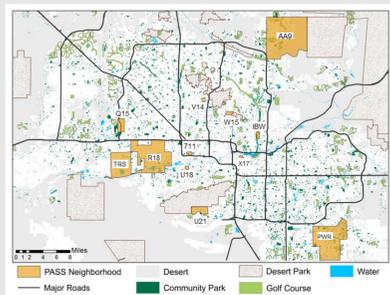
- Urban residents often feed & water wild birds¹, creating both ecological benefits & risks.²
- While these actions support wildlife & human wellbeing³, they can also attract predators – such as pet cats that owners allow outdoors – or provide low nutrition foods.^{4,5}
- When stewardship intentions lead to harm, these paradoxical outcomes represent **social-ecological traps**.⁶

RESEARCH QUESTIONS:

1. What bird provisioning behaviors & pet ownership practices do Phoenix residents engage in?
2. How do bird feeding guilds – groups of species that share similar diets – respond to different types of provisioning?
3. Do outdoor cats interact with provisioning behaviors to create potential social-ecological traps?

METHODS

Fig. 1 Study Neighborhoods:
12 neighborhoods in the 2021 Phoenix Area Social Survey (PASS), 35.6% response rate, N = 509.
Map by Jeff Clark, 2021.



PASS Survey Variables

- Bird provisioning: food, water
- Food types: seed, suet, sugar water, bread/scraps
- Cat ownership & unsupervised outdoor access

Bird Data & Guilds

- Data from CAP LTER (2020-22): Abundance as mean per station per year, Richness as number of unique species per nbhd, Guild grouped by diet

RESULTS

Bird species richness is higher in neighborhoods where residents provide water, pointing to the importance of this resource in the arid Sonoran Desert.

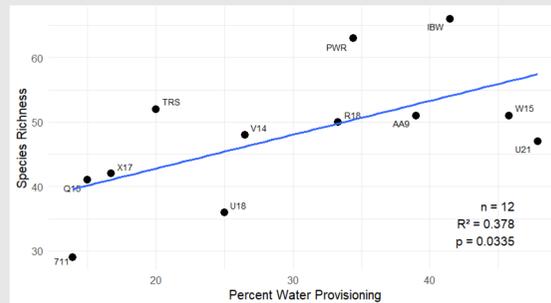


Fig 2. Species Richness vs. Water Provisioning

GUILD-SPECIFIC RESPONSES TO PROVISIONING

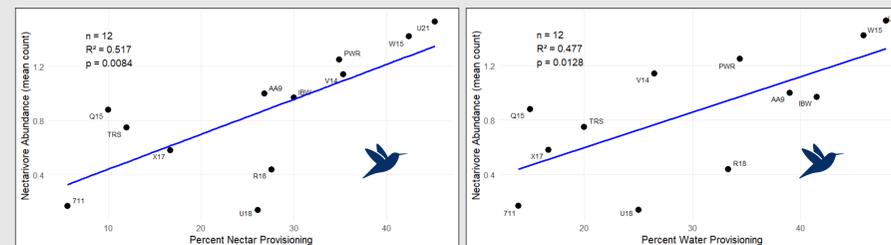


Fig. 3 Nectarivore Abundance with Provisioning Nectar & Fig. 4 Water

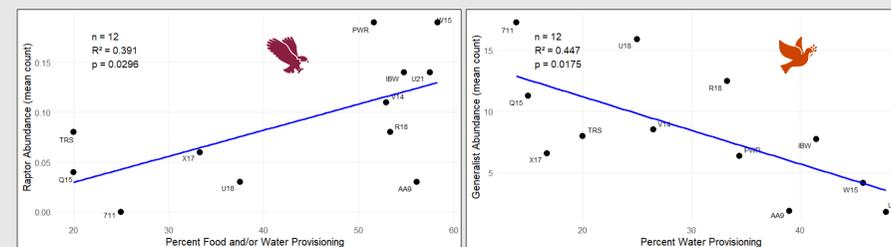


Fig. 5. Raptor Abundance vs. Any Provisioning

Fig. 6. Generalist Abundance vs. Water Provisioning

- Nectarivores (nectar-eaters) greater in neighborhoods with more nectar & water resource provisioning.
- Generalists (omnivores) fewer in areas with water provisioning, possibly reflecting habitat differences across neighborhoods.
- Bird-eating raptors greater in neighborhoods with more bird provisioning (any), suggesting a potential attraction to prey-rich areas.

Granivores (seed-eaters) showed no clear relationships with provisioning behaviors.

RESULTS (CONT.)

Cat owners who provision for birds are more likely to let their cats outdoors

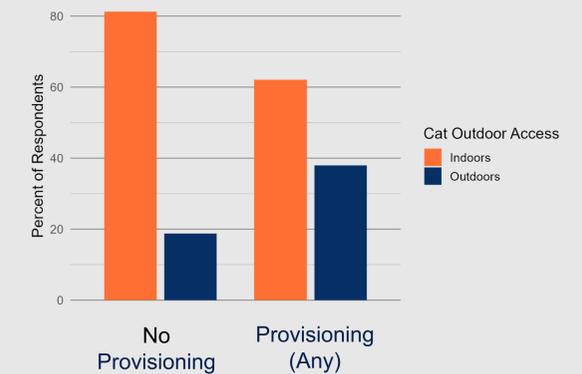


Fig 7. Bird Provisioning & Cat Outdoor Access

Free-ranging domestic cats kill **1-4 billion** wild birds in the U.S. each year.⁷ Supporting birds while increasing predation risk illustrates **paradoxical stewardship**.

Neighborhoods with more outdoor cats tend to have fewer bird species.

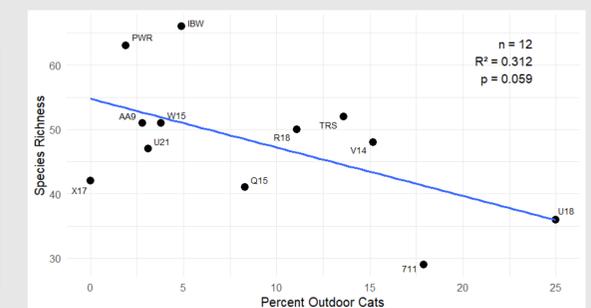


Fig 8. Species Richness & Cat Outdoor Access

CONCLUSIONS & NEXT STEPS

- Residents' provisioning behaviors can influence local bird communities, with some guilds showing stronger responses than others.
- However, social factors like outdoor cat ownership may offset potential benefits.
- Ongoing work explores the influence of environmental (e.g., impervious surface, vegetation) & socioeconomic factors (e.g., income) in shaping these patterns.

LITERATURE CITED

- 1 Jones & Reynolds (2008) *J Avian Biol*
- 2 Wilcoxon et al. (2015) *Conserv Physiol*
- 3 Hammoud et al. (2022) *Sci Rep*
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- 6 Cinner (2011) *Glob Environ Change*
- 7 Loss et al. (2013) *Nat Commun*