

Initial Findings of the North Desert Village Landscaping Experiment: The Green, Green Grass of Home

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Project Overview

This research represents the human dimension of a multidisciplinary experiment of human and non-human environment interactions. The aim of this project is to study the reciprocal relationships between humans and different types of residential landscaping regimes.

Researchers at ASU's **International Institute for Sustainability (IIS) Central Arizona-Phoenix Long Term Ecological Research (CAP-LTER) Project** have secured an agreement with the ASU-East campus to landscape selected clusters of faculty, staff, and student family housing in the North Desert Village housing area. CAP-LTER researchers are selectively varying the landscaping of 24 units with 6 units clustered in each landscape type. The remaining 122 units will be zero-scaped (a minimal floral environment with mostly rock covering). Six of those will serve as a control.

In contiguous groups of six, units will receive one of four treatments that vary landscape design and water delivery:

1. **Mesic / irrigated** (high water use plants and turf grass, with irrigation)
2. **Oasis / mixed** (a mixture of high and low water use plants and turf grass, with both drip irrigation and sprinkler systems)
3. **Xeric / drip** (low water use plants without turf grass, with a drip irrigation system)
4. **Native / minimal** (plants native to the Sonoran Desert, with minimal watering)
5. **Control** (zero-scaped)

The pre-treatment measurement of human factors is nearing completion and plantings of landscape treatments have begun. After treatment has been completed, measurement of both human and biophysical variation will be repeated at intervals. This will allow us to examine the effects of different landscaping styles on human behavior, human attitudes, and environmental response.

Preferences for Different Types of Landscapes

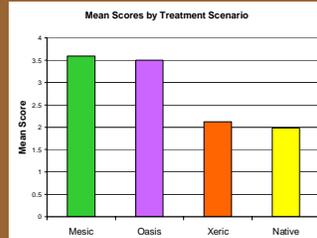


A digital picture of an actual residence at North Desert Village was altered to represent each of the four treatment landscapes. Residents were shown these pictures and were asked, "On a scale from 1 to 4, how much do you like this kind of yard?"

1. Dislike very much
2. Dislike somewhat
3. Like somewhat
4. Like very much

ANOVA results indicate significant variation in rating scores across treatment landscapes ($p < .0001$). Comparisons using Tukey's method ($\alpha = .05$) show that **respondents rated Mesic and Oasis significantly higher than Xeric and Native.**

Implication: Despite living in the Sonoran desert, respondents overwhelmingly prefer landscapes with higher water requirements. If these findings generalize to the greater Phoenix area, this may suggest difficulty in convincing residents to avoid landscapes with high water use.

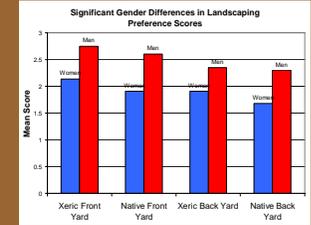


Variation in Preferences

Gender

Gender was significantly correlated with landscaping preference scores for Xeric and Native landscapes ($p < .05$). For both front and back yards, **women rated Xeric and Native landscapes lower than men.**

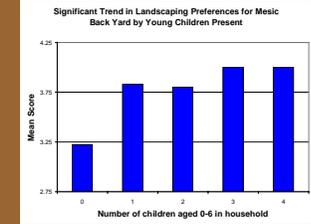
Implication: Gendered divisions of labor may influence perceptions of landscapes, due to labor responsibilities for yard work, housework, and child care.



Children

The number of young children in the household, defined as children between the ages of 0 and 6, was significantly correlated with ratings for mesic back yards ($p < .05$). **Young children in the household and preference for mesic back yards were positively associated.**

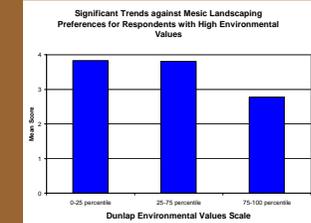
Implication: Respondents' comments indicate a strong perceived connection between mesic landscaping and families. Respondents also expressed the opinion that cacti and other spiny plants presented a danger to children.



Environmental Values

We measured environmental values using Dunlap's (1992) measurement items. **Higher environmental values were significantly and negatively associated with ratings for mesic yards for both back ($p < .05$) and front ($p < .10$) yards.** (mesic back yard scores shown at right). These values were not, however, significantly associated with xeric, native, or oasis scores.

Implication: A critical component of post-treatment research will be to determine if, or how, environmentally-motivated preferences affect behavior.



Conclusions

We anticipate that our findings will further scholarly understandings of human interaction with very small-scale geographic environments, such as backyards and neighborhoods. Our research at this micro-level investigates both individuals' attitudes and behaviors with different landscape treatments and explores the likely outcomes of a shift to water-saving landscape treatments.

Data from our survey will be of interest to researchers from different disciplines and also provide important information to managers. For example, although we have presented information only regarding landscaping preferences, we have additional information from respondents on a variety of topics, including environmental behaviors (recycling and related behaviors), environmental knowledge (ability to identify birds and plants), and attitudes to water issues. We look forward to linking human variables of analysis to measures of biophysical variation that are being collected by other researchers at the North Desert Village site.

A codebook of our survey instrument and data are available on the CAP-LTER server.

Because landscaping treatments will include both manipulated and control neighborhoods, the project will be one of the few studies to examine the relationship between the biophysical environment and human behavior in an experimental, yet at the same time realistic, setting.

