The Effects of Formal and Informal Institutions on Residential Land Management in the Phoenix Metropolitan Area

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Effects of Landscaping Decisions on Urban Sustainability

According to Paul Robbins (2007), residential landscape chemical application rival toxins applied at industrial agricultural proportions. Coupled with substantial water inputs, yard management impacts urban sustainability in America and elsewhere.

In order to take steps toward a more sustainable future, we must first understand the underlying mechanisms that drive landscaping practices—such as water and chemical usage—in residential settings where people live and interact with their local environments.

This study explores the effects of 2 types of institutions—formal rules and informal norms—on residents' land management practices in Phoenix neighborhoods through 2 basic questions:

Q1: Do landscaping practices and norms in HOA neighborhoods reinforce conformity in groundcover types or other landscaping practices more than in non-HOA areas?

Q2: How do institutional drivers of landscape management vary across different socio-spatial (neighborhood) contexts?

Interview-based Research Methods

We conducted 12 semi-structured interviews across 3 neighborhoods (n=4 per neighborhood) to understand how institutions affect land management decisions in diverse contexts. We coordinated with other LTER sites in Boston (PIE), Miami (FCE) and Baltimore (BES).

Our study compares **3 case study neighborhoods**, which were defined by census tracts and chosen because of their varied landscaping characteristics and social institutions across the City of Phoenix, including 1 older, downtown neighborhood and 2 newer areas located to the north and south.

Interviewees from each neighborhood were selected to represent diverse landscaping patterns and demographic characteristics based on a survey conducted in 2008. In order to capture the variety of landscaping choices within and across neighborhoods, participants were selected first based on varying groundcover types—***mesic* grass**, ***xeric* rock**, or ***mixed* oasis—and** then by **intensity of chemical usage** (no to heavy use of fertilizers and pesticides).

The Role of Social Institutions: Formal Rules and Informal Norms

Formal institutions entail legally enforceable, codified rules (Adger et al., 2003). Here, they are embodied in homeowner's association (HOA) restrictions in neighborhoods, while other formal rules (e.g., municipal ordinances) are considered secondarily. HOAs are generally created to maintain property values and other shared values, and as such, they are potentially a standardizing force for residential landscapes in particular neighborhoods.

Informal institutions encompass social norms, customs or traditions that are not codified in law, but rather are followed through implicit, social obligations or expectations to conform (Adger et al., 2003). Social norms are often harder to identify, but may be learned through social interactions with neighbors as well as visual cues manifested through actual management practices.

Diversity in Ecologically and Socially Sustainable Landscapes

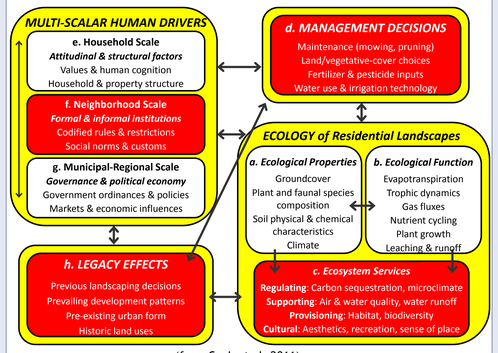
Joan Nassauer's notion of **cultural sustainability** emphasizes the design of landscapes that are environmentally valuable as well as aesthetically and socially valued in ways that elicit and maintain peoples' interests and preferences over time (Nassauer, 2009).

"**Cues of care**" are one such mechanism to enhance the cultural sustainability of ecologically functioning landscapes, especially those that are commonly seen as undesirable to people (such as wetlands) (Nassauer, 2009). Since naturalistic landscapes (e.g., bushier and thicker) tend to be messier, they are often viewed as poorly managed and undesirable even though they may be critical for wildlife and the health of water resources, among other factors.

Ecologically managed landscape with naturalistic features

Socially managed landscape with neat, orderly features

Conceptual Framework: Yard Management Drivers, Outcomes & Feedbacks



(from Cook et al, 2011)

We focus on the interplay of formal institutions, social norms and legacy effects (indicated in red boxes) as important drivers of landscaping decisions and consequently ecosystem services.

Historic Mesic Palms Neighborhood

The majority of the groundcover in this neighborhood is lush and green, dominated primarily by lawns and palm trees.

No HOAs govern this neighborhood. Residents are bound by very few municipal (formal) regulations through city maintenance of common areas and citations for hazards (e.g. abundance of weeds as fire hazard, etc). The neighborhood has historic society, but it is more focused on maintaining historic architectural integrity.

Social norms and the legacy effect of historically verdant landscapes were strong drivers of land management for residents.

"We are in a city park environment and so I think that if you stay and respect the fact that it's a city park that's the natural environment here. If you respect that, that's what you're going to have in your yard." (186b)

"Everyone in the neighborhood pretty much believes in grass because they have irrigation…and I'm kind of an outcast [without grass]." (178b)

Wealthy Mountain Oasis Neighborhood

Landscaping in this neighborhood is mainly a mix of xeric rock with some grassy patches. Many residents also have pools in backyards. Formal rules are present in the area, but social pressures for neatness appear to drive land management more than formal rules.

3 distinct HOAs govern the neighborhood and none of them allow for completely bare desert in the front yards. All have stipulations about well-trimmed landscaping regardless of groundcover type.

However, **interviewees were largely unaware of these regulations and only 1 participant mentioned an HOA citation.** While interviewees did not express any pressure to follow certain groundcover types, **all participants stressed a general expectation for neat, "well-trimmed" yards (as in comments below).**

"I don't think there's an expectation for desert landscaping or grass or for you to have palm trees or not… beyond just neat, trim, and well maintained." (391d)

"[Landscaping] needs to be appealing and kept up. If it isn't [neighbors are] going to report it to the association." (462d)

New Xeric Tracts Neighborhood

The landscaping in this neighborhood is generally xeric, rock cover.

The neighborhood spans 2 independent HOAs, both of which have "well-trimmed landscapes" codified in their rules.

Participants in this neighborhood were unique because they did not have a distinct or consistent sense of HOA responsibilities. One resident falsely believed that his HOA had been disbanded. Overall, **social pressures dictated a well-trimmed, neat yard.**

"People don't have to be totally into [their landscaping] and spend a lot of money. Just groom it. Make it look halfway appropriate." (331c)

"We had [an HOA] in the very beginning, but after about four years, we shut it down, after the developer left…" (253c)

Overall Findings

Our findings suggest that there is **social acceptance for a variety of landscapes types** despite the traditional "lawn norm," with a common emphasis on well-manicured landscapes.

Q1: Regardless of HOA or non-HOA context of neighborhoods, social norms reinforce the desire for neatness rather than dictating particular groundcover choices (e.g., mesic lawns or xeric rock-based yards).

Q2: Participants in the study neighborhoods appear to have a 'live and let live' mentality—including in HOA areas—whereby interviewees were willing to tolerate varied landscape types, as long as neighbors keep plants trimmed and the yard free of excess plant litter—or, in other words, neat.

Conclusions and Recommendations

Formal institutional rules appear relatively insignificant overall for yard management due in part to a lack of awareness of actual rules.

Instilling and reinforcing norms appears to be a more powerful way to encourage desirable (i.e., sustainable) landscaping practices regardless of HOA context as framed in Nassauer's "cues of care" theory. This is because normative beliefs and pressures were more strongly invoked as influences on residents' management decisions.

Varied landscapes are the key to urban sustainability

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