Residential Landscapes
Synthesis of the Literature and Preliminary Survey Results
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Objectives:
• Gain comprehensive understanding of residential landscapes in urban ecosystems.
• Highlight the social, ecological and integrated socio-ecological themes and current findings about residential landscapes.
• Identify gaps in current knowledge
• Integrate preliminary survey results from Phoenixians' landscaping preferences and practices into synthesis

Overview:
• Residential landscapes are a human construct adding to the heterogeneity of the urban matrix.
• Few studies focus specifically on residential yards. Rather, residential lawns are compared with other urban and non urban land cover and land uses. Additionally, studies rarely focus on variability within a yard or between yards.
• Among the 48 studies reviewed, 5 themes are identified.

Themes from Residential Landscape Studies

Residential Landscape Survey Variables
Frequency of Variable Use (Percentage of Total Studies)

<table>
<thead>
<tr>
<th>Property Characteristics</th>
<th>Soil Characteristics</th>
<th>Homeowner Characteristics</th>
<th>Biodiversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Cover* 35 (73%)</td>
<td>Total Nitrogen (N) 7 (15%)</td>
<td>Education 8 (17%)</td>
<td>Vegetation 18 (33%)</td>
</tr>
<tr>
<td>Land Use 15 (31%)</td>
<td>Inorganic Nitrogen (Ni) 7 (15%)</td>
<td>Cultural Norms* 4 (8%)</td>
<td>Arthropod 2 (4%)</td>
</tr>
<tr>
<td>Housing Age 13 (27%)</td>
<td>Total Carbon (C) 6 (13%)</td>
<td>Environmental 4 (8%)</td>
<td>Earthworm 1 (2%)</td>
</tr>
<tr>
<td>Irrigation/Water Use 8 (17%)</td>
<td>Phosphorus (P) 6 (13%)</td>
<td>Ethnicity 3 (6%)</td>
<td></td>
</tr>
<tr>
<td>Building Type 6 (13%)</td>
<td>Soil Bulk Density 6 (13%)</td>
<td>Gender 2 (4%)</td>
<td></td>
</tr>
<tr>
<td>Lot Size 4 (8%)</td>
<td>Soil Moisture 5 (10%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microclimate 4 (8%)</td>
<td>Soil Organic Matter 4 (8%)</td>
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<td></td>
</tr>
</tbody>
</table>

* Land Cover includes bare, turfgrass, shrubs, vegetable garden, etc.
* Building Type includes single family homes, apartment complex, mixed use, etc.
* Cultural and neighborhood norms are reported by homeowners to influence landscaping management decisions
* Environmental variable accounts for homeowners reporting some educational background in environmental issues

Case Study of Landscape Preferences & Practices:
Phoenix residents, from 4 distinct neighborhoods ranging from high to low household income with mesic, xeric and oasis yards, were recently surveyed on homeowner landscaping preferences and management practices. Reported below are some preliminary findings on landscaping preferences and practices from 121 survey respondents.

This survey is the initial step in addressing the integrated socio-ecological research question: What are the factors that drive residential landscape management decisions, and how do these practices affect ecological processes, specifically biogeochemistry?

Survey Mode / Totals

- Hispanic Core: 19
- Asian Core: 11
- North Fringe: 21
- South Fringe: 17
- Total N: 69
- Percent: 57.5%
- Total N: 46
- Percent: 36%
- Total N: 37
- Percent: 37%
- Total N: 10
- Percent: 9%

Future Steps:
• Continue to build current literature database and synthesize the literature
• Link current natural and social science data to understand drivers of landscaping practices, decisions and biological functioning of residential yards.
• Field work to gather data on vegetation composition, biogeochemical cycling, and soil properties at the residences from above social survey.
• Follow up interviews from survey presented above to attain further insight into how landscape management is linked to neighborhood pressures and social identity.

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Study Sampling Designs:

- Landscape Preferences: 17%
- Landscape Management Practices: 27%
- Biodiversity: 56%
- Soil Characteristics: 100%
- Microclimate: 100%

Themes of Integrated Socio-Ecological Studies