

Landscape Dynamics in Post-Recession Phoenix

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Background

- 1/3 homes in foreclosure in Phoenix at peak of recession
- Converting to less water intensive landscapes cuts water spending
- Single family water use is 1/2 of Phoenix water use, and 1/2 of this is used outdoors
- Phoenix green initiatives promote renovating homes with green appliances and landscapes to reduce water consumption and improve value
- Water reduction interventions include removing turf, switching to xeriscape, or allowing turf to transition to arid landscape

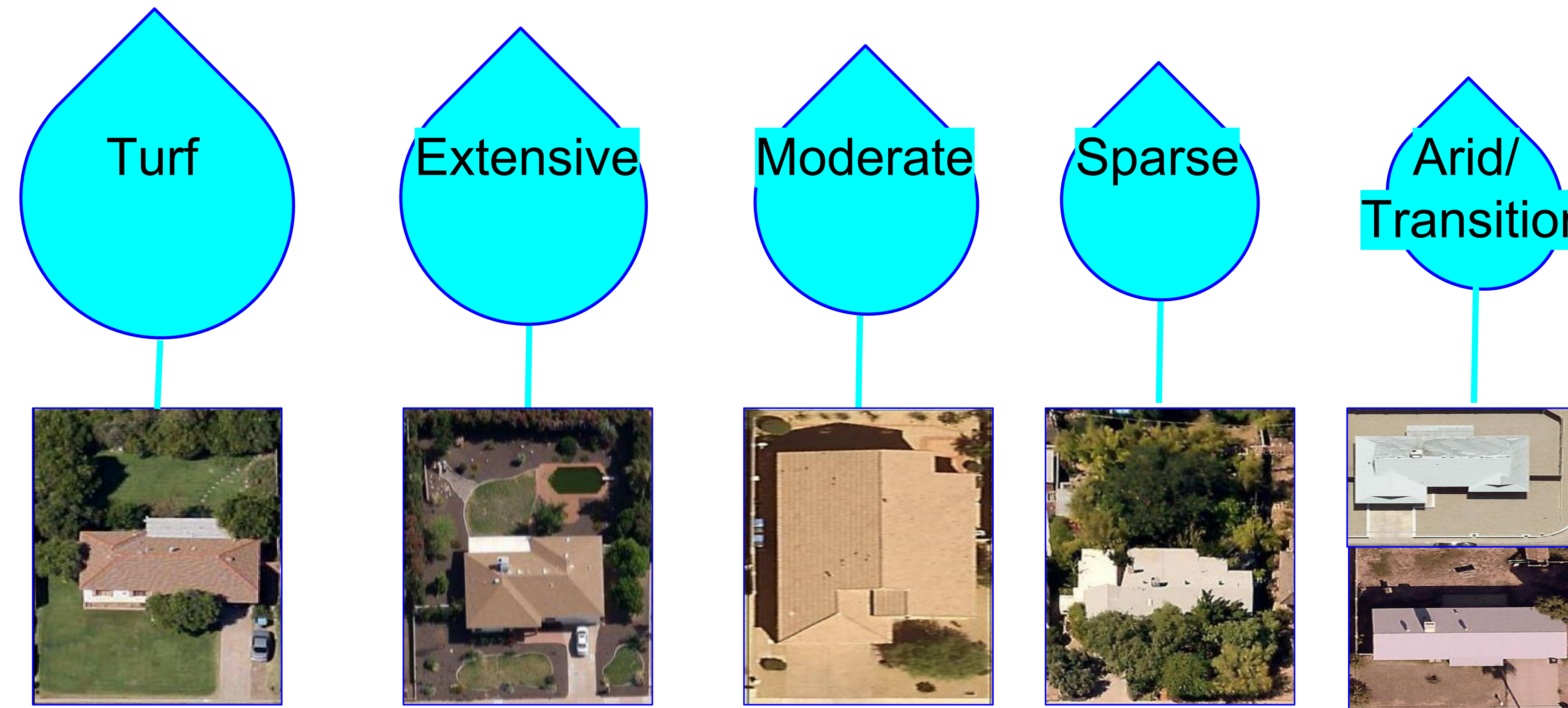


Figure 1. Single family residence overall landscape types, from most water intensive (turf) to least (arid/transition).

Analysis of Results

- Findings show that of 181 residences in study that experienced foreclosure, 60% showed no change in landscape type, 15% changed to a wetter type, and 25% changed to a dryer landscape type
- Based on these findings, researchers believe that there is a slight correlation between foreclosure and landscape composition
- Switching to a less water intensive landscape may be cost preventative, despite potential savings

Conclusion

- Economic shock is an opportunity to become environmentally and economically more efficient
- If the City of Phoenix is to remain viable in the 21st century, it must embrace its status as a desert city and conserve water while maintaining quality of life
- Further study should examine variables of income and newer build dates

How has the Great Recession impacted the landscape composition of single family residences?

Methods

- Collect addresses (APN) of all foreclosures in City of Phoenix (Information Market)
- Select foreclosures from time frame of 1/1/08-12/31/09, and with building date before the 1980s (County Assessor/Excel)
- Compare aerial image layers of foreclosed homes from 2010 (recession) to 2015 (post recession) (ArcGIS)
- Create spreadsheet of landscape type in 2010 and 2015, noting if change occurred, and if landscape changed to a type with more or less water use

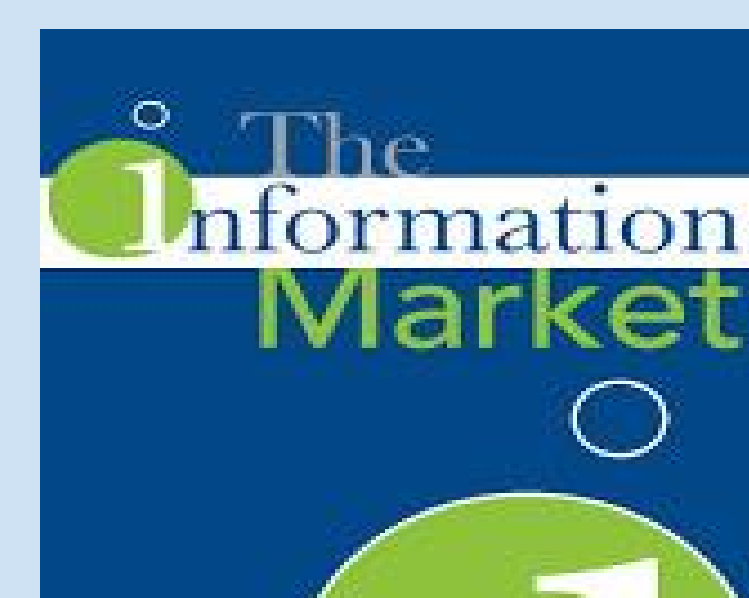


Figure 2. Bar graph compares SF landscape types between 2010 (gray) and 2015 (blue). Landscape type is arranged from wettest to driest. Graph shows a similar trend of mainly moderate and sparse landscapes, but appears to show a small shift towards dryer landscapes in 2015.

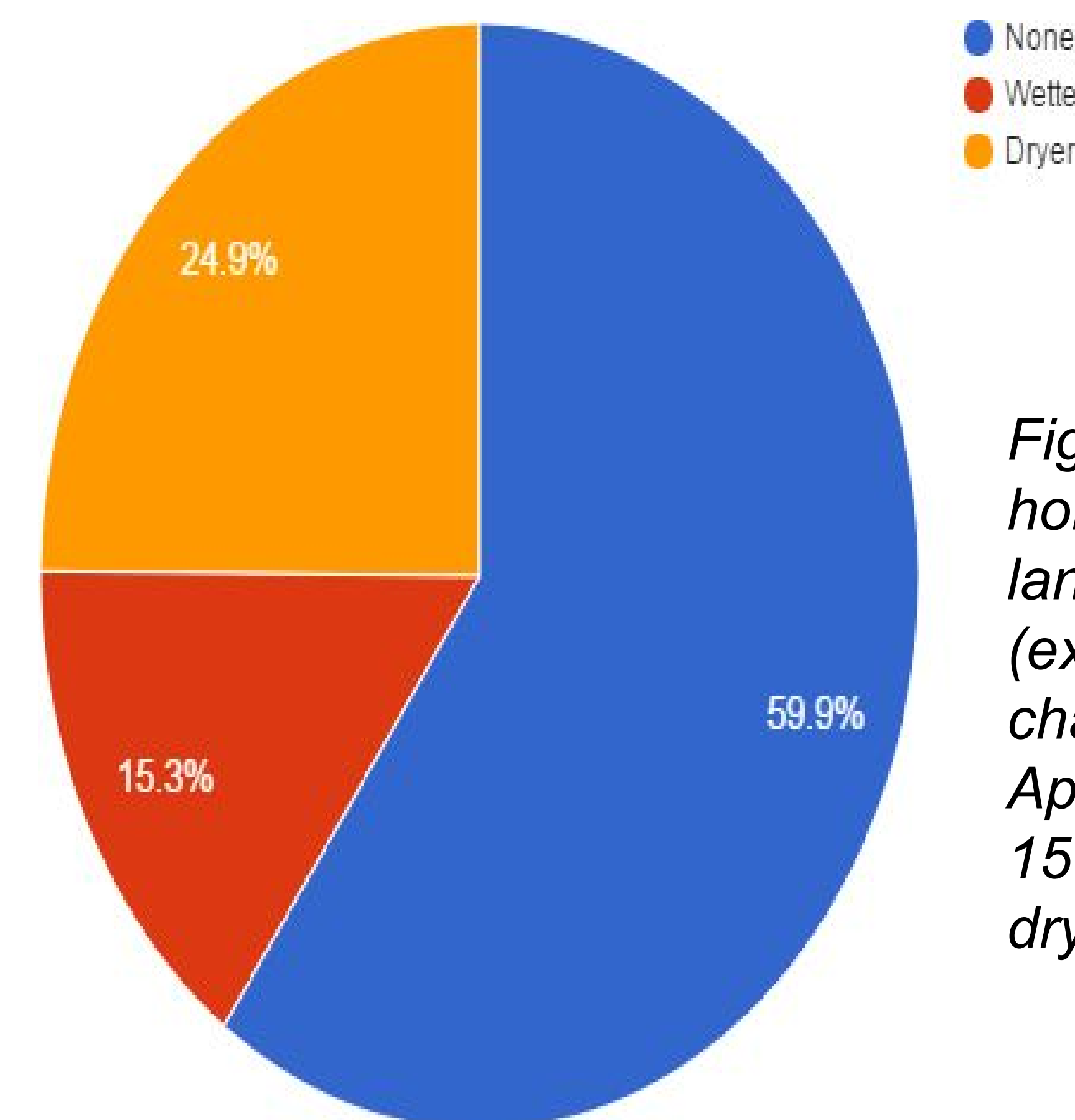
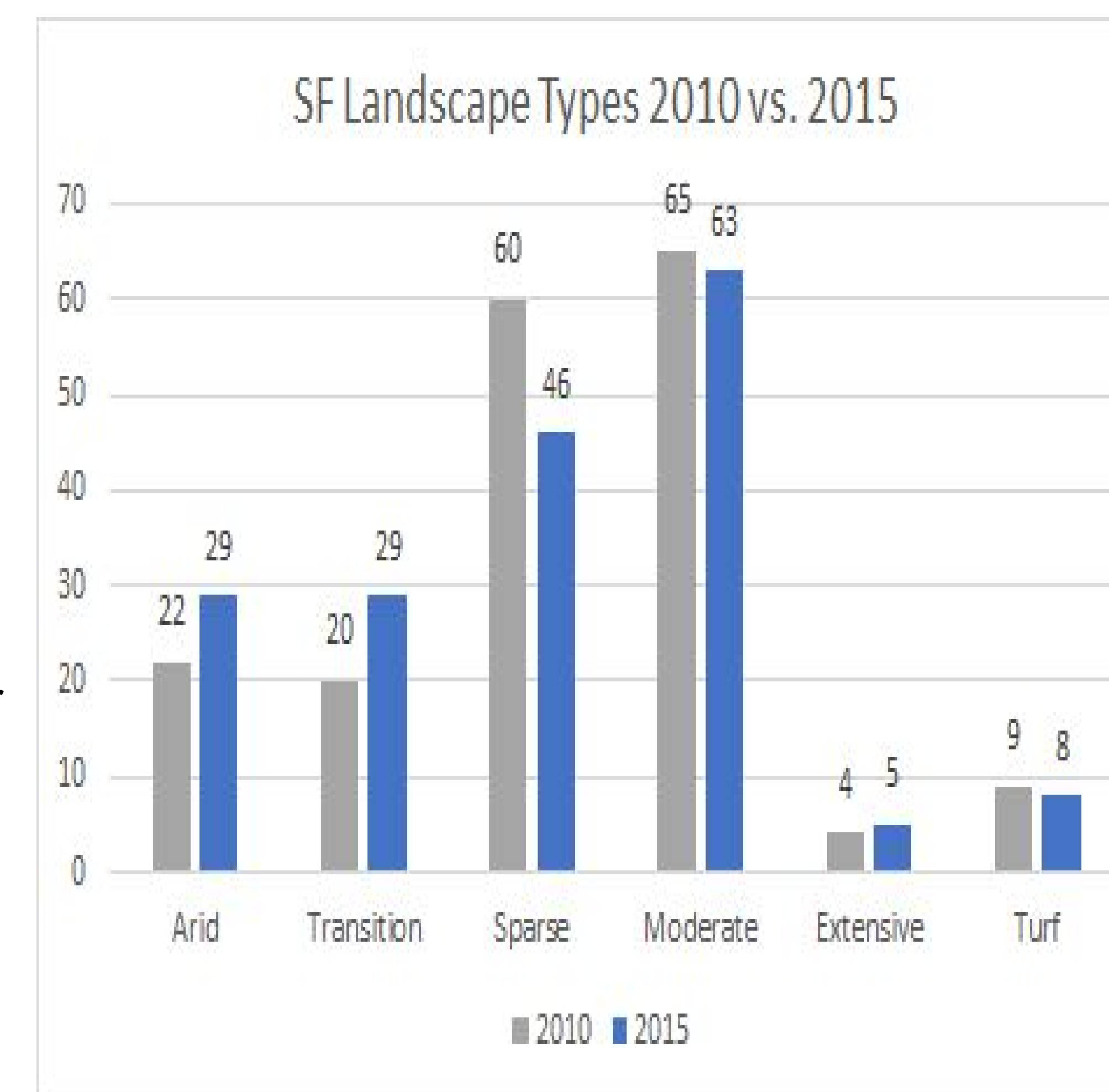


Figure 3. Pie chart shows the percentage of SF homes that showed a change to a wetter landscape (ex. sparse to turf), dryer landscape (ex. turf to sparse), or exhibited no change. This change was analyzed between 2010 and 2015. Approximately 60% showed no change (blue), 15% became wetter (red), and 25% became dryer (yellow).

Further Study

- Research was limited to 2010 and 2015 aerial images due to resources, but future studies could analyze income shocks before, during, and after the period of foreclosure
- Further studies could conduct cross-city analysis, comparing how the recession impacted landscape composition in different areas of Arizona
- If available, household income data could contextualize findings
- As City of Phoenix Water Smart programs encourage water reduction within households, comparison between indoor and outdoor water use changes could provide more dimension to analysis

Acknowledgment

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