

Residential Landscape Changes in Phoenix, AZ: Results from PASS 2006 to 2011

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Goals and Significance

This report sought to understand how **residential landscapes** have changed over time using the **Phoenix Area Social Survey (PASS)** data collected in both 2006 and 2011. The survey questions involved asked respondents which of landscape types resembles their front and back yards separately. The goal to understand landscape change was driven by urban ecology and water sustainability. The Arizona Department of Water Resources reports that as much as 70% of residential water consumption is for outdoor use.

Methods

The Institute for Social Science Research (ISSR) staff drew an initial sample of 40 residential addresses in each neighborhood for PASS 2006. They obtained a response rate of 51% for a total of 808 survey completions. Their goal was to obtain 20 respondents per neighborhood. In 2011, the ISSR staff included addresses for 757 of the 2006 respondents in the initial sample. The response rate was 43.36%, with a total of 806 responses. Less than half of the 2006 sample of houses and individuals also participated in 2011.

Sample 1

Re-Sampled Houses [n=365]



The 2011 PASS surveyed 806 houses, 365 of which (45%) were also surveyed in 2006.

Sample 2

Re-Sampled Individuals [n=196]

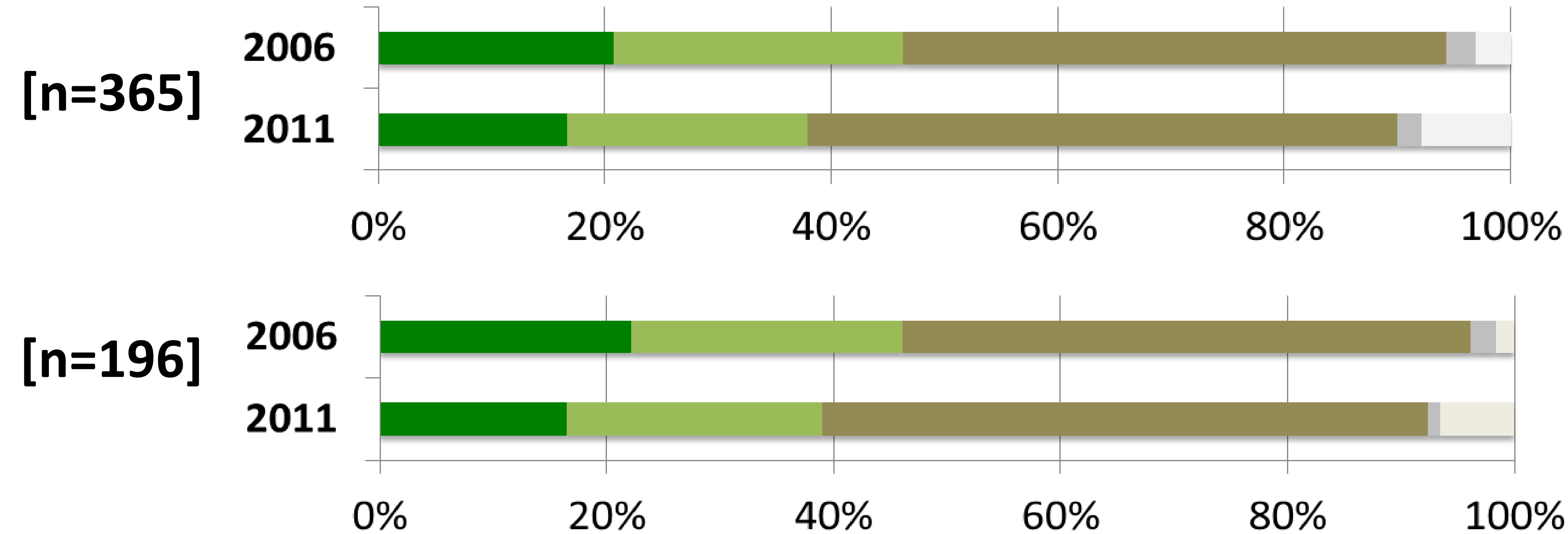


Of the 365 houses that were re-sampled, 196 (54%) were surveyed in both 2006 and 2011.

Findings: Changes in Front and Back Yards

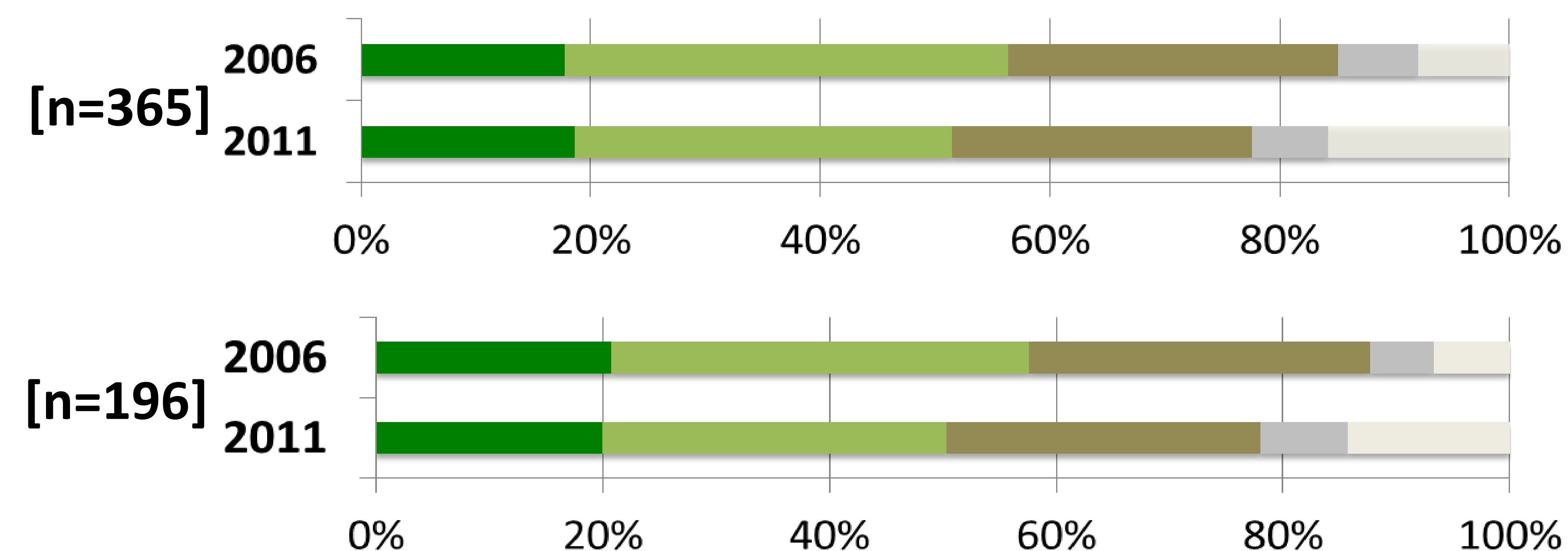
- Overall, most yards in our samples did not change landscape types between 2006 and 2011 (see pie charts at right).
- The aggregate shift in *front yards* (below) was away from mesic/oasis toward oasis/xeric; the extent of lawns decreased in front yards, but not in back yards.
- More landscape changes occurred at the parcel scale or in *back yards* (bottom); mesic grass was not removed, but yards shifted toward oasis and diversification.

Front Yard Landscape Change



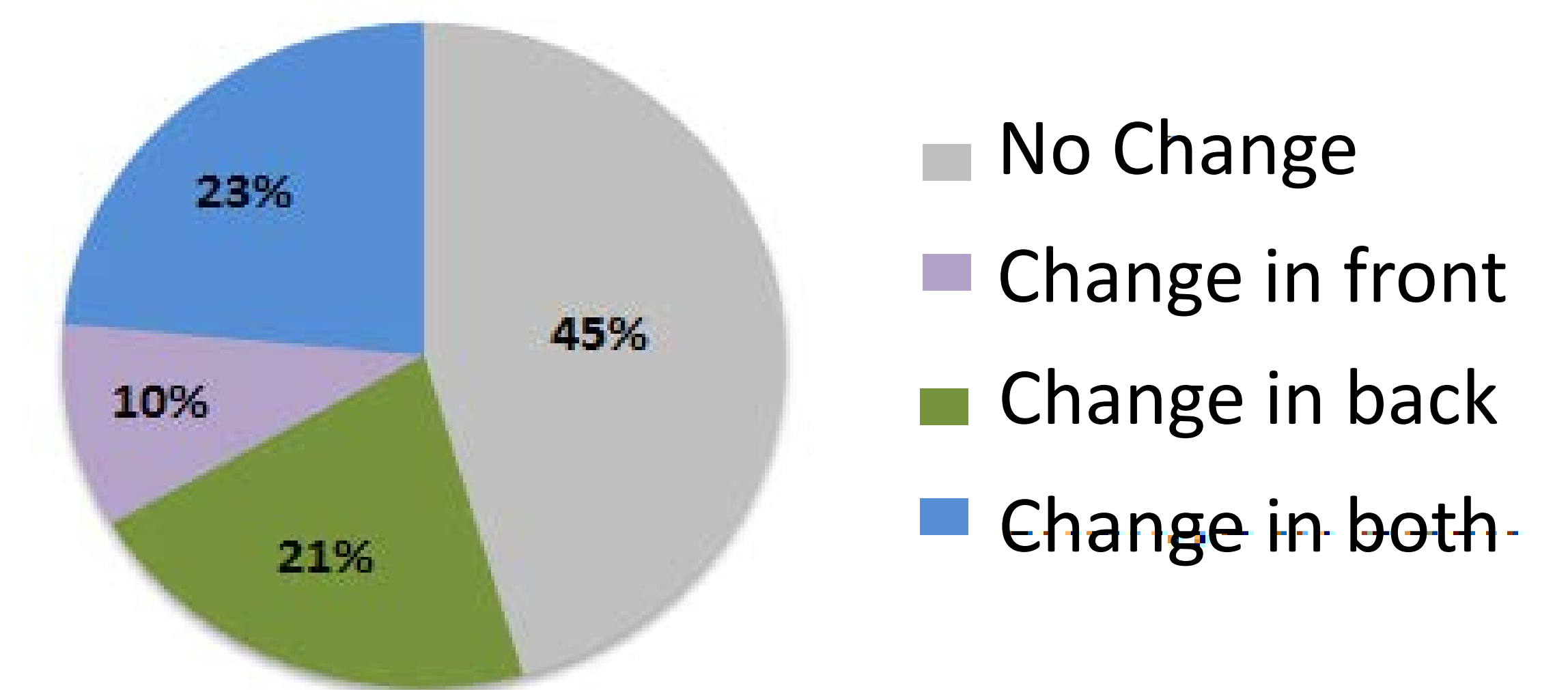
- Mesic** – A yard with grass, some shrubs & leafy trees
- Oasis** – A yard with some grass & some crushed stone with plants, shrubs & trees
- Xeric** – A yard with crushed stone & native desert plants & trees
- Patio** – A yard with large areas of hard surface, such as flagstone or finished concrete, & plants & shrubs in containers
- Other** – All other types of landscape

Back Yard Landscape Types

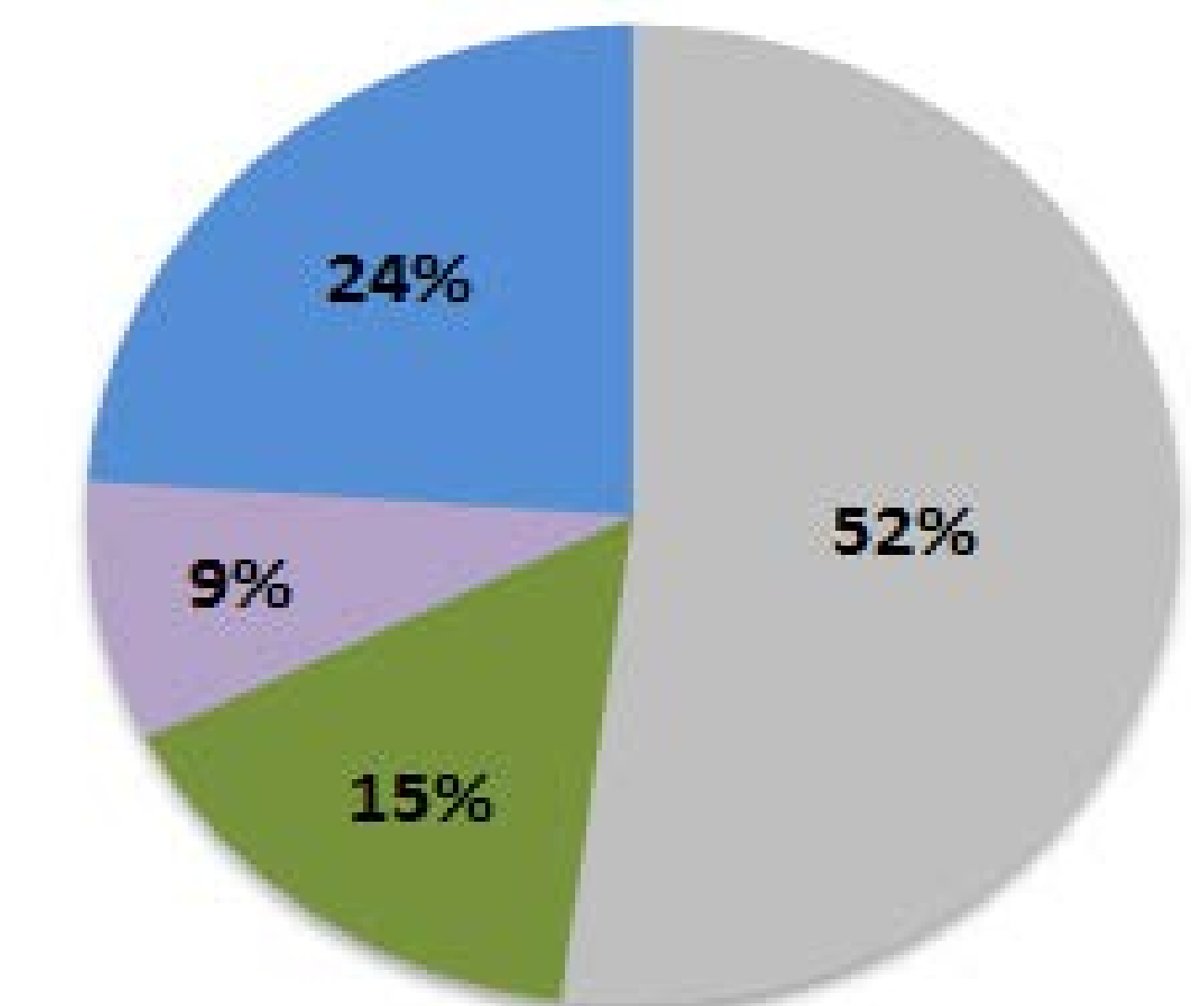


Extent of Landscape Changes

Re-Sampled Houses [n=365]



Re-Sampled Individuals [n=196]



Concluding Points

In sum, residential landscapes have shifted toward xeric, drought-tolerant styles in recent years, especially for front yards. This has positive implications for water conservation and potentially other outcomes, such as biodiversity.

The longitudinal nature of PASS is problematic due to lack of participation. Only 25% of sample individuals completed the survey between the two times, posing a challenge for long-term analyses.

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