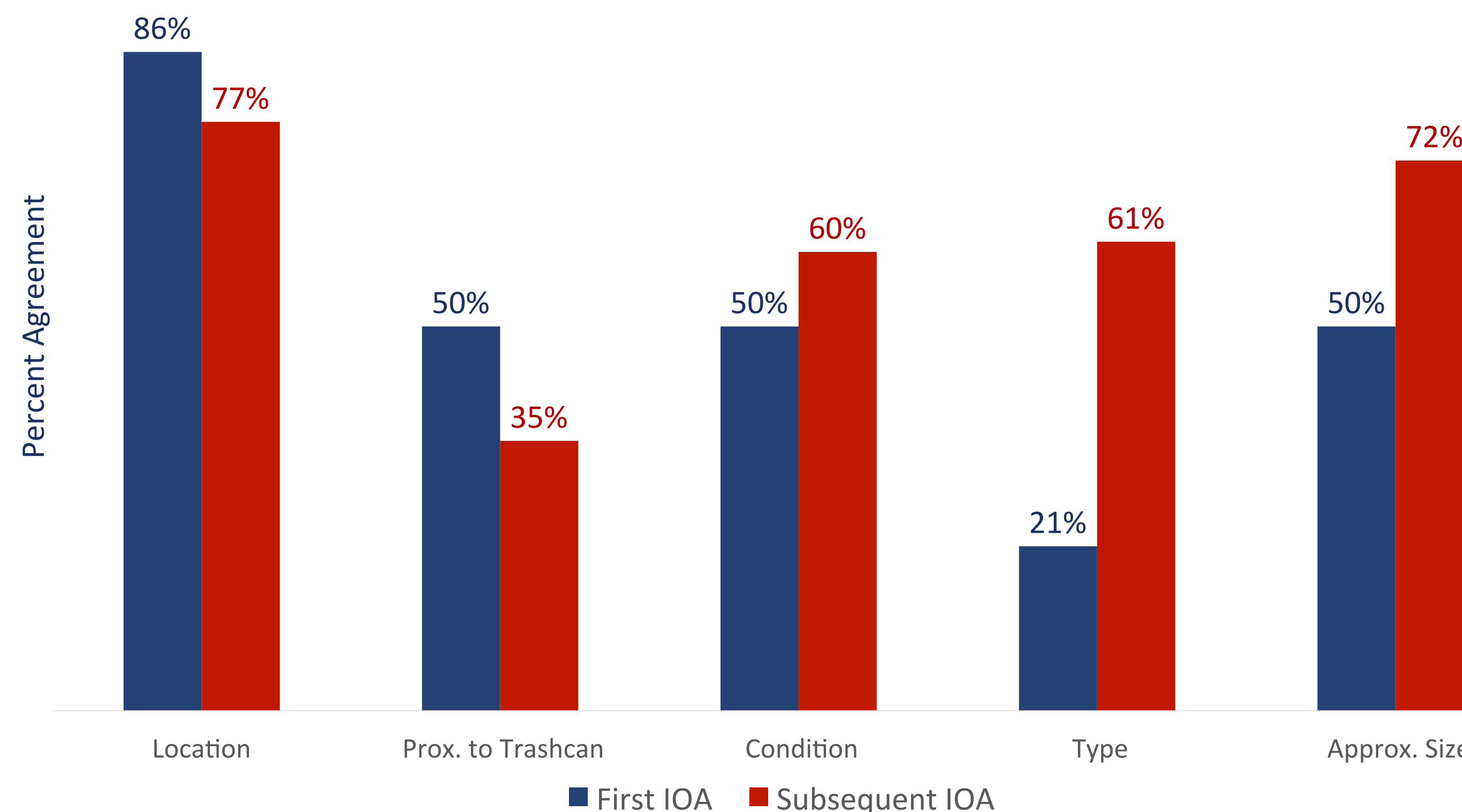


Introduction

Littering is a continual, cyclical issue in American society at large and on our campus. Along with being unsightly, litter can be a hazard to the environment and impact animal, plant, and human health. It costs the U.S. an extensive amount of money to pay for litter cleanup— almost \$11.5 billion annually (Keep America Beautiful (KAB)).

Although animals can contribute to litter, the vast majority of litter in America is the result of human behavior (KAB). Behavioral interventions have been used effectively to reduce litter when the intervention was targeted to the types and causes of litter.

Interobserver Agreement (IOA) Data



Results

The most common type of litter was fairly old, consisted of cigarettes, was found in the grass, and within sight of a trashcan. The next most common types of litter were food packaging, paper (usually flyers or notebook paper) and gum/candy wrappers.

With the exception of location of litter, we had less than 75% agreement for the classifications. After modifications to the data collection procedure, IOA increased for 3 of the 5 classifications and decreased for 2 classifications. However, IOA remained below 75% for 4 of the 5 classifications. IOA was lowest for proximity to the trashcan.

Purpose

The purpose of this study was to create, implement, and evaluate data collection procedures that would allow us and others to determine efficient targeted behavioral interventions to reducing litter.

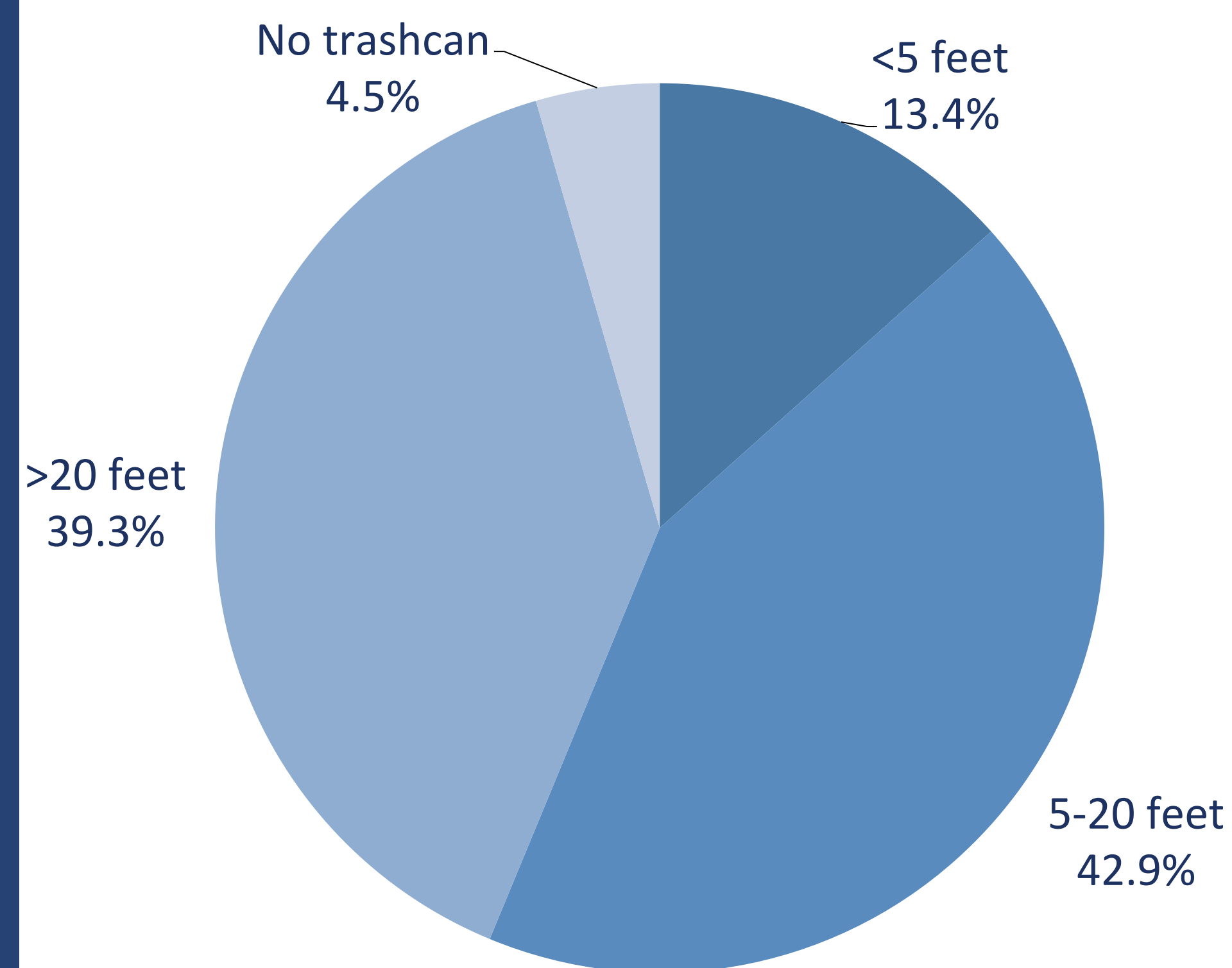
Methods

This study took place outside at the University of Mississippi near several central on-campus locations with a great deal of foot traffic. The locations and categories of litter were chosen with landscape services staff. The data sheet was revised several times during pilot testing.

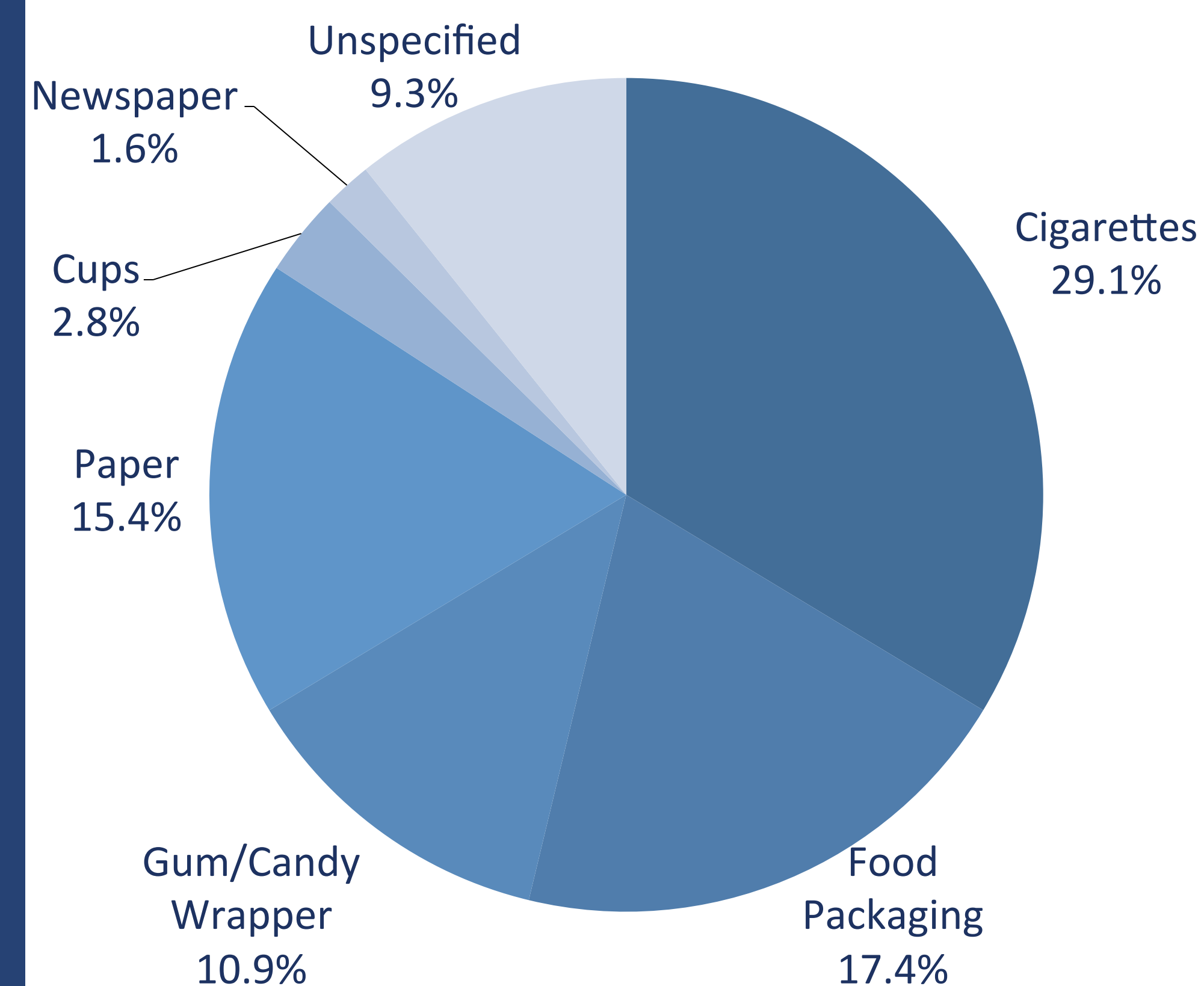
An undergraduate researcher collected the primary data over a 2 week period (Author JM). Additional psychology majors collected data on approximately 43% of the observations. During the first session, it became clear that observers were looking at different pieces of litter. In subsequent sessions one observer would point to a piece of litter and provide a tact (e.g., "piece A").

Location	Proximity to Trash Can	Condition	Type	Approximate size, Item #	Note
<input type="checkbox"/> Sidewalk	<input type="checkbox"/> Less Than 5 feet	<input type="checkbox"/> Fairly Old	<input type="checkbox"/> Food Pkg	<input type="checkbox"/> Less than 2 in.	
<input type="checkbox"/> Bldg Entrance	<input type="checkbox"/> 5-20 ft	<input type="checkbox"/> Fairly new	<input type="checkbox"/> Cups	<input type="checkbox"/> More than 2 in.	
<input type="checkbox"/> Grass	<input type="checkbox"/> more than 20	<input type="checkbox"/> Unknown	<input type="checkbox"/> Plastic Bags	<input type="checkbox"/> Multiple Items of trash	
<input type="checkbox"/> Other	<input type="checkbox"/> none in sight		<input type="checkbox"/> Cigarette		
			<input type="checkbox"/> Newspaper		
			<input type="checkbox"/> Gum		
			<input type="checkbox"/> Paper		
			<input type="checkbox"/> Other		

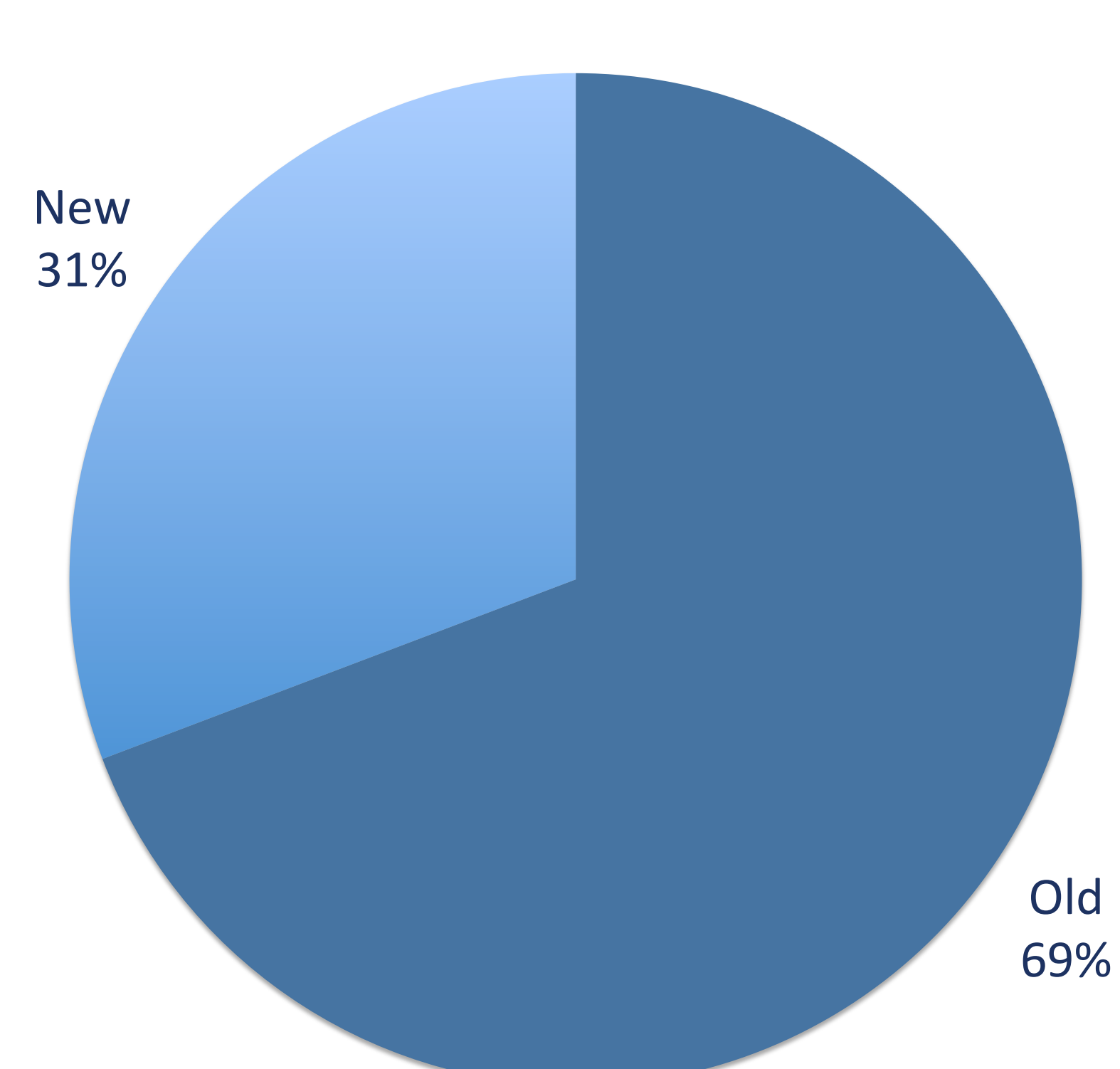
Litter Proximity to Trashcan



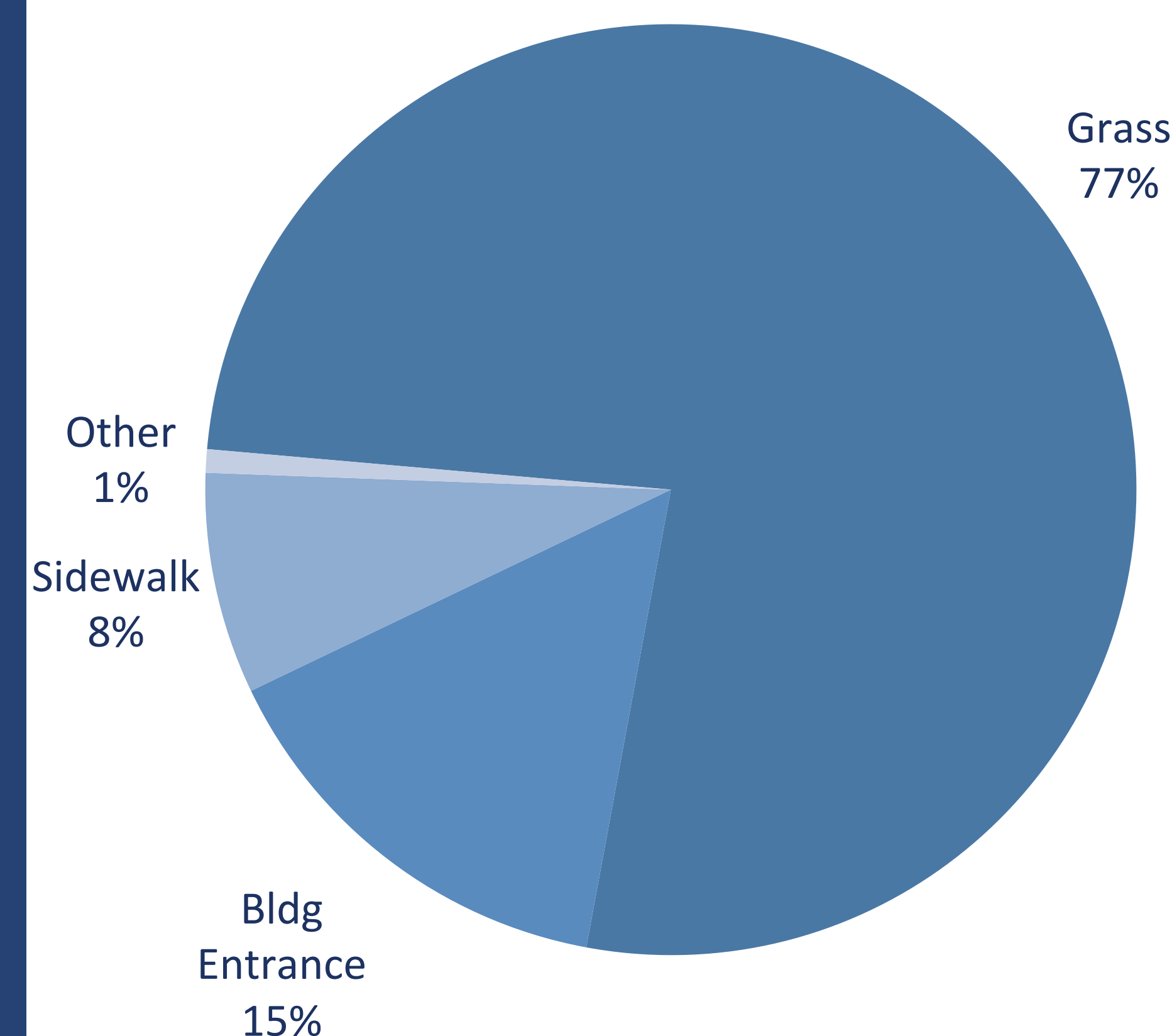
Types of Litter



Condition of Litter



Location Type



Discussion

Our findings about the types of litter were used to advocate for several changes to our campus environment. The high percentage of litter from cigarette butts contributed to the University's decision to make our campus smoke-free. The relatively high rates of food packaging litter contributed to the decision to use only reusable food containers for the cafeteria.

Overall, inter-observer agreement was not at acceptable levels. This is a clear indication that the data sheet, definitions and training procedures need to be revised.

Future research will examine methods of improving IOA. We will give the revised data collection system to University employees to use and work with them to implement and evaluate additional interventions. A smart phone application may be developed to make data collection more efficient and accessible.

References

Keep America Beautiful. (2006). *Litter prevention*. Retrieved June 12, 2012, from <http://www.kab.org>
 Keep America Beautiful. (2009). *Litter in America*. Retrieved June 12, 2012, from <http://www.kab.org>

