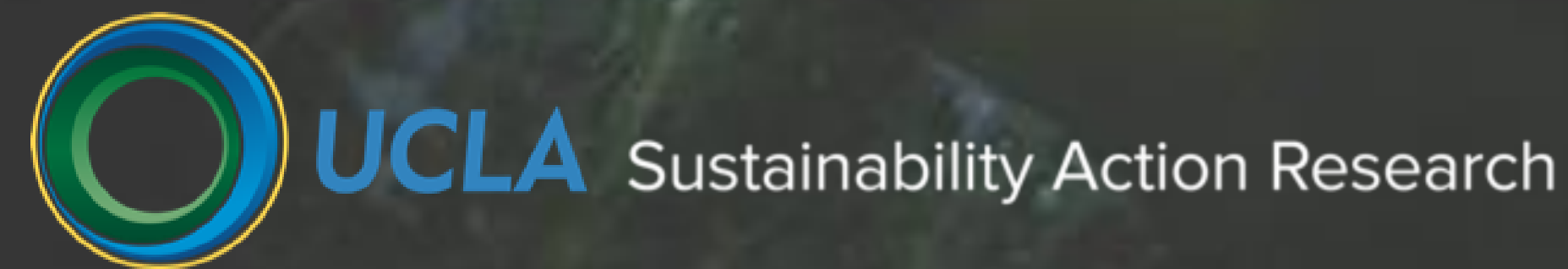


Reducing Rodenticide through the Use of Alternative Sustainable Methods

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Stakeholder: Bonny Bentzin, Deputy Chief Sustainability Officer, UCLA Sustainability



1 Introduction

Conventional pest management strategies, which are used at UCLA, use rodenticides to control rodent populations.

Rodenticides have drastic ecological complications, as rodenticides have been shown to bioaccumulate in predator populations and have been linked to the decline of local bobcat and mountain lion populations.

A new, more sustainable approach to controlling rodents is known as Integrated Pest Management (IPM), which focuses on preventive methods and eradicating rodents through alternative methods.

2 Objectives

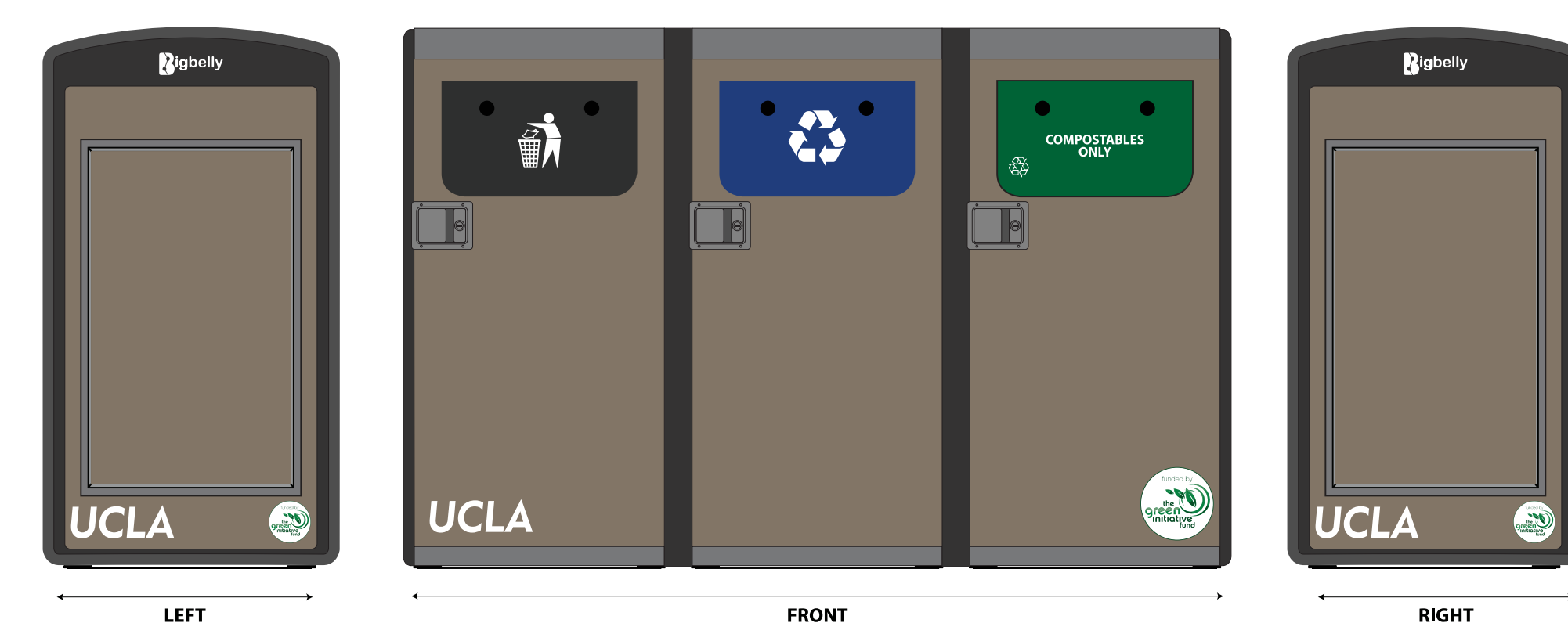
Goal: Reduce rodenticide use on the UCLA campus and implement new rat prevention and control methods. We tackled this challenge through three separate projects:

Implement a pilot program of **Bigbelly Waste and Recycling Stations** to in an attempt to reduce rodent access to food waste.

Conduct a **GIS study** to examine the relationship between rodent incidents and various factors.

Utilize **trail cameras** to obtain evidence of rats on campus and determine whether rats are getting into open-top trash cans on campus.

3 Bigbelly



A major component of our work is our project to install a pilot program of Bigbelly Waste and Recycling Stations on the UCLA campus. These waste receptacles use solar energy to compact waste, increasing the volume of trash that the units can hold, and also have a rodent-proof design. The idea for our Bigbelly project stemmed from meetings we had with pest management professionals from EH&S, UCLA Dining Services, and our current pest management contractor. These units have already been installed to great success at other campuses around the country, including UCSD, UCSB, and UC Berkeley. Funding for our pilot unit came from The Green Initiative Fund at UCLA, and the station is slated to be installed at Sunset Canyon Recreation Center in June 2017.

6 Conclusion

From the research we conducted and information we gathered from literature and other campuses with successful IPM programs, we determined that Bigbelly stations have been highly successful at reducing rodent access to food waste, water dishes attract rodents and may reduce rodent-caused damage to irrigation lines, and there is a moderate correlation between trash bins and rodent incidents.

4 Cameras

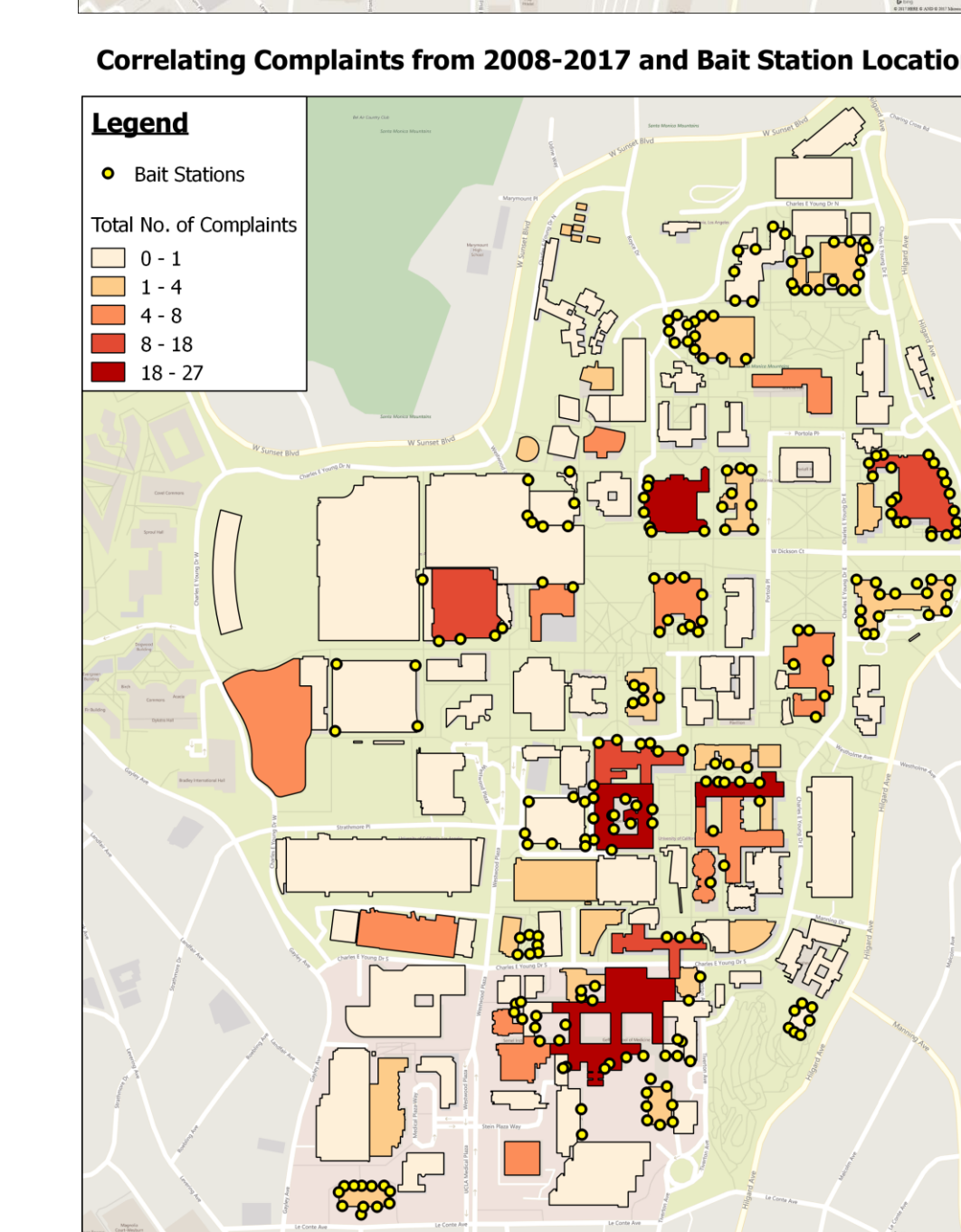
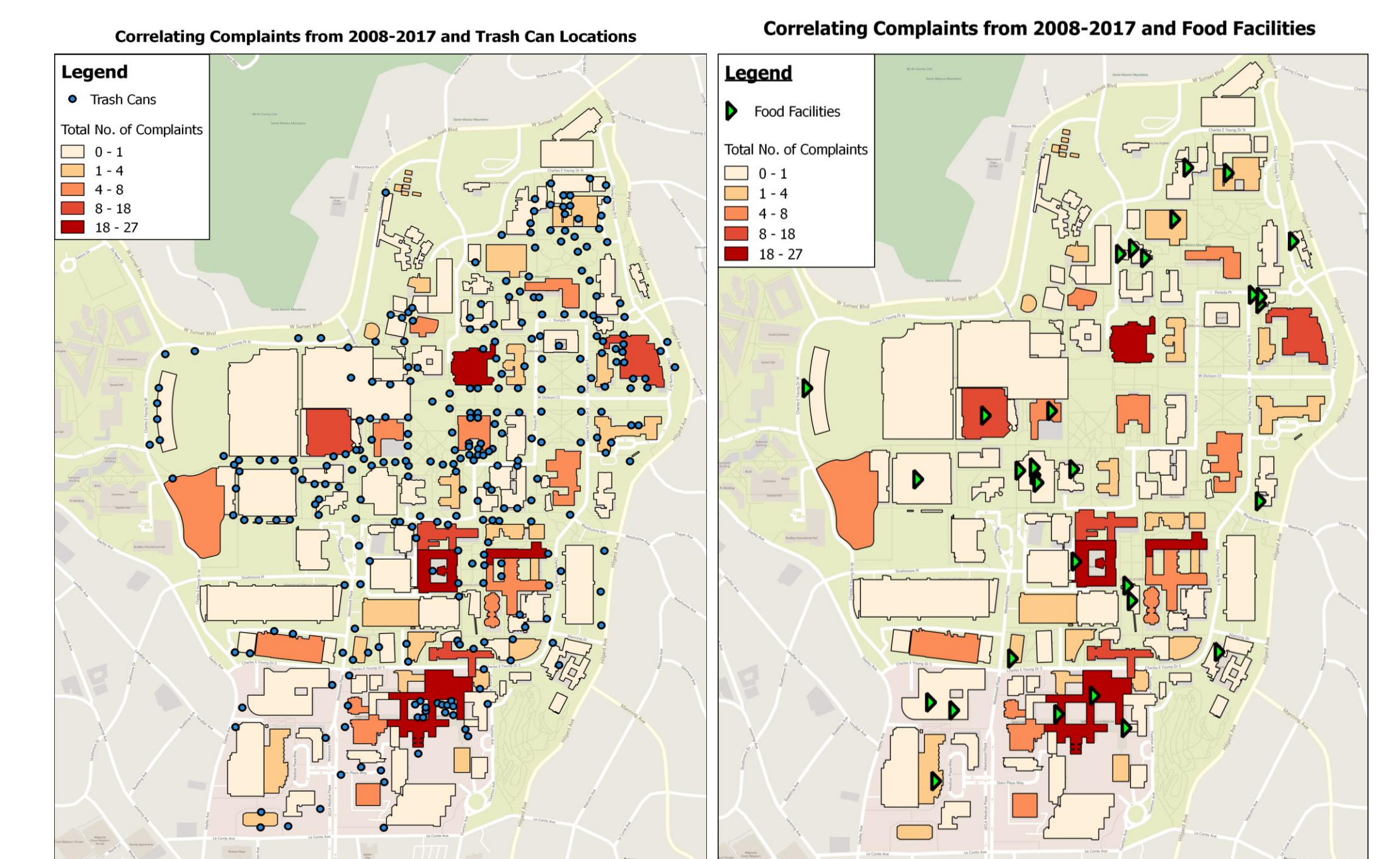
In order to acquire evidence of rat activity on campus, we set up trail cameras at different locations from 11 pm until 6 am over the course of four weeks. The trail cameras were motion-capture and recorded 15 second videos of anything that triggered the motion sensors. Different factors we searched for when setting up cameras included water sources, ivy, and trash overflow. We found that the cameras captured high levels of activity when placed in areas of heavy vegetation and ivy.



We suggest that UCLA look into replacing bait boxes with live traps, conduct a controlled experiment examining the impact of natural deterrents such as mint oil on rodents, and assess the impact of the Bigbelly pilot station on rodent incidents and waste management costs. We also recommend doing a more thorough GIS study to establish causal relationships between factors such as ivy and the presence of rodents.



5 GIS Study



We conducted a spatial analysis examining the relationship between rodent incidents and factors such as trash cans, food facilities, and ivy. We found a modest correlation between the frequency of rodent incidents and trash cans, bait boxes, and dining facilities, but further investigation is needed.

7 Acknowledgments

We would like to thank all those who helped us on this journey, including our stakeholder Bonny Bentzin, Cully Nordby, Carl Maida, Joshua Witt, Jenny Wung, Paul Townsend, Raul Magallanes, Katie Zeller, Emily Mead, and The Green Initiative Fund at UCLA. This project is part of Sustainability Action Research, a program the UCLA Institute of the Environment and Sustainability.