



**Recycling Action Research Team**  
**Final Report**  
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## **Executive Summary**

The objective of the Recycling Action Research Team has been to contribute to the establishment of a campus recycling program that caters to the unique needs of each campus region. With the University of California's system-wide goal of Zero Waste to Landfill by 2020 in mind, our team has spent the last two quarters focusing on the characterization of campus waste and the development of strategies to reduce the amount of waste sent to landfill. This has been made possible through the support of our team's stakeholder, Jesse Escobar, UCLA's Recycling Coordinator.

We spent our first quarter collecting data on outdoor trash and recycling bins in North Campus. By conducting visual audits of bins to determine what materials were thrown away and which bins were consistently full or empty, we were able to better understand how to capture more recyclable material in the areas that we studied. Our winter quarter research culminated in the development of a recommendation report, which highlights the findings from our quarter-long study and provides recommendations for how to increase the amount of waste diverted from landfill.

The insights we gained during winter quarter shaped our spring quarter plans. Spring quarter had two major components: continued research within Macgowan Courtyard and educational outreach at various campus events. To test our recommendations that improved signage and updated bins in Macgowan Courtyard would increase waste diversion in that area, our team collected data in a similar fashion to our winter quarter research. Implementation of the recommendations proved effective, resulting in a major reduction of recyclable materials in the trash bins.

In terms of educational outreach, our team's participation in E3's Earth Day Fair and Ecochella helped teach the UCLA community about the campus waste system and the importance of proper waste sorting habits.

Our work over the past two quarters demonstrates potential for further research and initiatives to increase waste diversion rates. UCLA might find our site-specific approach to improving campus sustainability to be a useful tool in reducing its environmental impact.

### **Significance/Background**

The Recycling Action Research Team's project this year is part of a larger effort by the UC system to achieve 95% or more waste diversion from landfill by 2020. UCLA has already made significant progress towards this goal, reaching 75% diversion in 2012, and has encouraged participation from the entire campus population to continue this successful trend (UCLA Recycling and Waste Taskforce). Numerous waste reduction and recycling initiatives have been launched across campus, including the Education for Sustainable Living Program's student-led Action Research Teams (ART), in collaboration with UCLA faculty and staff.

Past waste-related Action Research Teams have focused on the outdoor bin system and bin signage. In 2010, the Recycling ART contributed to the launch of a single-stream recycling system on campus, which simplified recycling for the campus population and greatly increased UCLA's recycling rate. Other teams have focused on improving bin signage. The 2011 Recycling ART and 2013 ASUCLA ART both surveyed students on their perception of the effectiveness of current bin signage. The 2011 Recycling team found that only 32% of students found the current signage "clear and easily understood." The 2013 ASUCLA team found that 50% of students predicted recycling rates would increase with better signage.

## **Objectives/Project Goals**

The main goal of our team was to collect qualitative and quantitative data on outdoor waste bins in North Campus to assess the volume and type of waste generated in this area of campus. Based on this research, we aimed to make recommendations to our stakeholder about optimum bin placement, the introduction of specialized bins, and opportunities for education. We also hoped to implement some of these recommendations during spring quarter. Another key goal of our project was developing an educational campaign based on our insights to inform students about how to correctly sort their waste into recycling and trash bins. In the middle of our project, we also decided to contribute to the discussion of new bin signage on campus by designing and posting our own signage. At the beginning of our project, we were also hopeful that we could contribute to the development of a campus composting program. While we discussed the possibility of conducting research for a composting pilot, we ultimately decided that this was not feasible for our team this year. While we had to readjust our goals, we still aimed to make a big impact on campus. We hoped that the implementation of our recommendations, signage, and educational campaign would increase the amount of recyclable material captured and influence student waste sorting behavior.

## **Methodology**

### Initial Conditions

With a daily population of over 70,000 people, UCLA has an incredibly large and varied waste stream (UCLA Recycling and Waste Taskforce). One of the key goals our stakeholder

Jesse has identified for reaching Zero Waste is better characterizing the waste stream on campus. The volume and type of waste generated can vary greatly across campus, depending on the amount of foot traffic, nearby academic departments, and presence of campus eateries. Understanding how the waste stream differs throughout campus will allow UCLA to better target its recycling efforts. It will allow UCLA to identify opportunities for education, specialized bins, and other initiatives or strategies. Developing a system for monitoring outdoor bin stations on campus and compiling data on one area of campus were the main goals of our project.

Another key step for reaching Zero Waste is addressing the confusing signage on outdoor trash and recycling bins on campus. The current signage was introduced in 2010 with the single-stream system. Although single stream has greatly increased UCLA's recycling rates, many find the wording of the signage to be confusing. Trash bins feature the phrase "For trash with food only" and recycling bins feature the phrase "For everything except food waste." Past Action Research Teams have studied signage and found that the most successful signage featured simple, straightforward phrasing and relied mostly on graphics. The 2012 ASUCLA Action Research Team found that students preferred graphics of common materials on campus to word-dominant signage. Given the confusion surrounding signage on campus, our team identified designing and implementing new signage as a key goal of our project.

### Initial Research/Development of Project

During the first few weeks of winter quarter we got to know our stakeholder and the UCLA recycling system. One of our first tasks was to research UCLA's waste hauler, Athens Services, to understand how material from UCLA is processed and what is considered recyclable and not recyclable. We were surprised to learn that many things we thought were not recyclable

could be recycled by Athens. We were also surprised to learn that items like candy wrappers and chip bags were not recyclable. Understanding the nuances of what materials are recyclable, under what condition, took time. Our stakeholder was our main resource throughout this self-education process, but we also completed online research and planned to visit Athens' Materials Recovery Facilities, where UCLA's waste is sorted. Unfortunately, we were not able to coordinate a tour of the facility due to scheduling difficulties. Instead, during winter quarter, we were able to complete a waste audit of three bins in North Campus with our stakeholder, which proved very informative.

During the next few weeks of winter quarter, we focused on choosing our study area and developing our research methodology. We completed a pilot data collection during week six of winter quarter to test our data collection questions and whether our study area was an appropriate size. After our week-long pilot, we adjusted several of our survey questions to make them more specific. For example, rather than just collecting data on the material type present in bins (like plastic or paper products), we decided to record specific items (like plastic food containers or loose paper). Additionally, we decided to reduce our study area to a smaller area in North Campus. Originally, we planned to include an area of South Campus in our study area, but it proved to be too time-consuming. In North Campus we could study high-volume and low-volume areas and the effect of a campus eatery, so we felt it was a sufficient study area. Macgowan Courtyard was also of particular interest to our stakeholder so it made sense to focus on North Campus. After adjusting our survey and study area, we conducted an additional piloting week during week eight to test our methodology adjustments. We then decided to make a few more changes to our survey questions before collecting our final data during weeks nine and ten of winter quarter.

## North Campus Data Collection - Methodology

Our final study area included a total of 21 outdoor bin stations (pairs of trash and recycling bins) in North Campus, as seen in [Figure 1](#). Our study area included bins in Lu Valle Commons, in front of the Public Affairs building, the Sculpture Garden, Coral Tree Walk, and Macgowan Courtyard. There were three different bin types within our study area: Victor Stanley, cluster, and aggregate. Victor Stanley was the most common, while aggregate bins were only found in Macgowan Courtyard. We collected data during weeks nine and ten once per weekday between 4 and 6 P.M. We chose this time period because Facilities Management empties bins for the last time each day at 3 P.M. While Facilities could monitor bins during the day, as students, we could collect this early evening data and provide a unique dataset for our stakeholder. We also wanted to see how quickly the bins filled up after Facilities Management had emptied them for the last time of the day. Two people split up the study area each day, and we completed a total of 15 observations for each bin we studied.



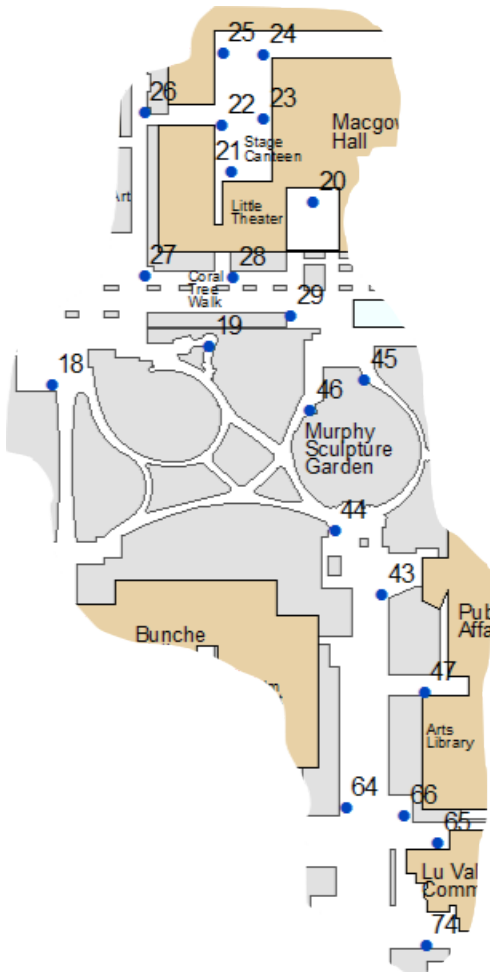


Figure 1. Study area for our data collection in North Campus.

We monitored bins for fullness and materials present. We collected both qualitative and quantitative data and our survey questions can be seen in the [Appendix](#). We used Google Forms to collect and analyze our data. We created an individual Google Form for each study area we chose to facilitate more accurate data collection and analysis. We relied on visual observation in our data collection and many of our measures of trash fullness were rough estimates. Thus, it must be acknowledged that our data is subjective in nature. We also completed a waste audit with our stakeholder to supplement our data. We audited station 22 and station 23 (a standalone bin) in Macgowan Courtyard to give us a better understanding of the waste generated in

Macgowan. For bin station 22 and 23, we found that there were more recyclable material present in the trash bin than the the recycling bin. The results of our audit as well as our winter quarter research led us to focus the following quarter's research on Macgowan Courtyard.

### Macgowan Research - Methodology

For spring quarter, we focused our research efforts on Macgowan Courtyard. Many of the bins in this area have signage that is faded or non-existent, as seen in [Figure 2](#), making the recycling and trash bins almost indistinguishable. The only difference between some of the recycling and trash bins is the color of their liners, where clear signifies recycling and black or green signifies trash. For the bins that do have signage, the signage is removable and has been absent from some bins periodically during our data collection ([see Figure 3](#)).



Figure 2. Lack of any signage on aggregate Station 22 in Macgowan Courtyard.



Figure 3. Signage on aggregate bins in Macgowan Courtyard is easily removable.

During Spring Quarter, we designed and posted our own signage in Macgowan Courtyard to see if we could educate students about how to correctly sort their trash and increase the amount of recyclable material diverted from landfill. We referred to research done by previous Action Research Teams to inform our design. For instance, the 2013 ASUCLA ART found that students preferred images over words, pictures of general types of recyclables over specific examples, and graphics over actual photos.

We used our research from winter quarter to determine the types of waste we wanted to include on our signage as graphics. We made sure to feature items that were commonly mis-sorted, including plastic food containers, cardboard food containers, coffee cup lids, soda cup lids, chip bags, and bar wrappers. During our previous research, we found that students often throw away food and beverage containers with food or liquid residue, when if emptied, these items can actually be recycled. We tried to target this misconception in our signage by featuring

those items prominently on our recycling sign. We also included the slogan: “When in doubt, RECYCLE!” at the bottom of each sign to encourage students to dispose of waste in the recycling bin if they were unsure of where it belonged. Any non-recyclable items in recycling bins will be sorted out by Athens. However, it is very unlikely that recyclable items will be recovered from trash bins. Our signage design is seen in [Figure 4](#), which was designed by one of our team members using Photoshop.

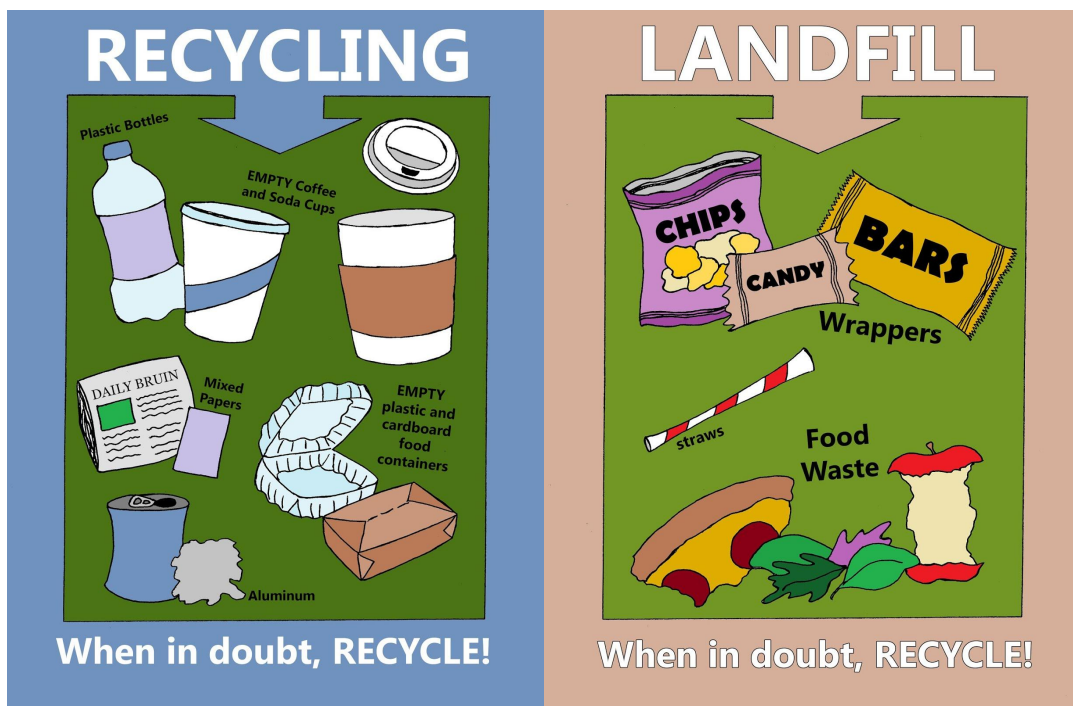


Figure 4. Signage designed by our team for our Macgowan research.

In addition to posting our signage, we also were able to get a new set of bins in Macgowan Courtyard. Per our request, Facilities Management installed a new Victor Stanley set in Macgowan Courtyard at station 23, where there was previously only a standalone aggregate

trash bin with no accompanying recycling bin. We hoped to see a change in recycling rates after this installation.

We created a survey ([see Appendix](#)), similar to the one we used for our North Campus data collection, to monitor Macgowan trash and recycling bins before and after putting up our signage. For this survey, we recorded the materials present in trash and recycling bins but also recorded the percentage of trash bin contents that was recyclable so we could measure the effectiveness of our signage. Originally, we collected data around 4 to 6 P.M., similar to our general North Campus surveying. However, we found that the bins had barely any waste to collect at this time in Macgowan Courtyard. We decided to move our data collection time to 12 to 1 P.M. as there was more foot traffic and waste disposal during lunch time. We collected our baseline data without signage for two weeks and collected data again for one week after putting up our signage.

### Educational Outreach

We decided early in winter quarter that we wanted to include educational outreach as part of our project. Already, there was so much we had learned from our stakeholder about the UCLA recycling system and we wanted to share this knowledge with the rest of campus. We had two opportunities to reach out to students: E3's Earth Day Fair and Ecochella.

During the Earth Day Fair, our team partnered with the Zero Waste Pauley Action Research Team to lead a waste sorting game. This event was our most concerted educational outreach. We designed a hands-on waste sorting game where students could engage in their disposal habits and become active learners. In the game, we had three mock disposal stations for trash, compost, and recycling. We gave each participant a bag of a variety of types of waste

(clean items that were not pulled from actual waste bins) and had them sort all of the waste in one minute. We had students compete to see who could sort their waste quickest with the fewest errors. We then evaluated their sorting and corrected any misconceptions they had.

We also tabled at Ecochella, UCLA's second annual bike-powered concert. We continued an eco-friendly tradition that the ASUCLA ART began last year, coordinating a clothing swap. Our booth was like a mini thrift shop where the currency was clothing. We asked attendees of the concert to bring lightly-used clothes, which they could exchange at our booth. We provided the initial stock of clothing, but soon much of what we had at our booth was donated by concert-goers. At the end of the festival we gave away any leftover clothing to participants. One of our team members also created a sign for our clothing swap table that highlighted major points to keep in mind when disposing of waste ([see Appendix](#)). We advertised our swap beforehand by posting on the Ecochella Facebook event and sending out invitations to the E3 listserv.

## **Results**

### North Campus trash and recycling bin research

In our study area, we found that the most common items in trash bins were cardboard food containers, wax-lined coffee cups and soda cups, candy wrappers and chip bags, plastic food containers, and food, as seen in [Figure 5](#). The most common item, cardboard food containers, was present in trash bins (in quantities of two or more) 65% of the time, while the second most common item, coffee cups or soda cups, were present 50% of the time. In contrast, plastic bags, plastic bottles, and aluminum cans, were found infrequently in trash bins, present between 2-12% of the time. There was not a large variation in the materials present in different

parts of our study area. Cardboard food containers, wax-lined cups, and wrappers and chip bags were the top three most common materials in every portion of our study area.

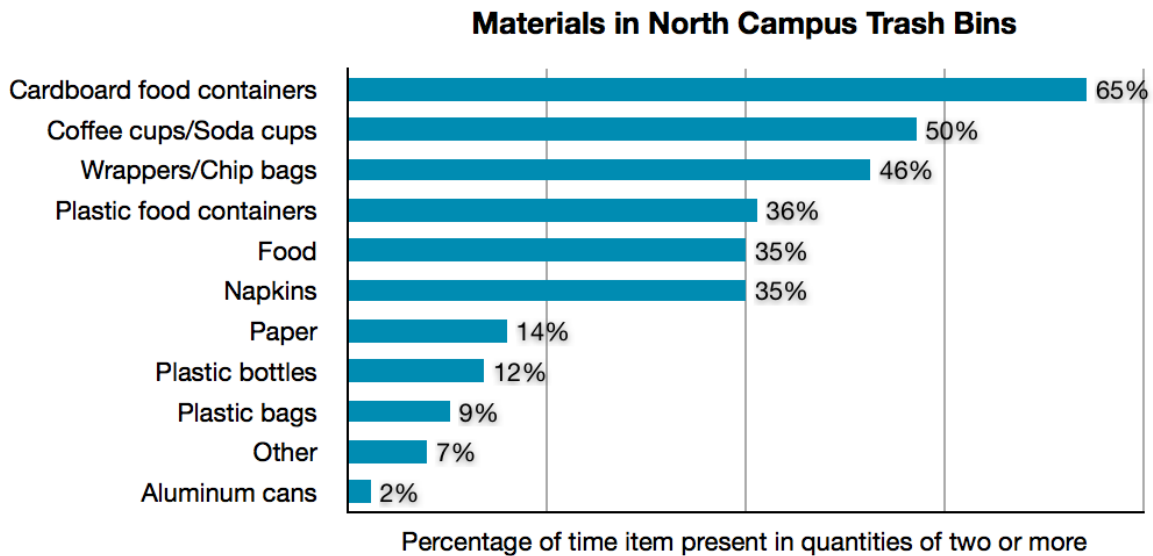


Figure 5. Most common items found in North Campus trash bins.

On average, most of the contents of the recycling bins were recyclable and there was little non-recyclable contamination. Generally, 15-25% of the contents of recycling bins were non-recyclable. The most common contaminants were wrappers and chip bags by far. Food was also a contaminant, though less common. Coral Tree Walk and the Sculpture Garden had the most contamination, with most recycling bins containing 25% non-recyclable material.

We found that trash bins were fuller on average in our study area than recycling bins. Trash bins were 50% full on average, while recycling bins were 25% full on average. The trash bins that had the least material were bins 24 and 25 in MacGowan Courtyard, bins 46 and 45 in the Sculpture Garden, and bin 74 in Lu Valle Commons. Bin 25 in MacGowan Courtyard was

the least utilized and was most commonly 0% full. Since we were collecting data late in the day, very few bins were extremely full. However, the most utilized trash and recycling bins on average were in Lu Valle Commons or outside the Public Affairs building. The trash bins 47 and 64 were the most full in our study area, averaging between 50-75% full. Recycling bins had a more consistent volume throughout our study area, with only a few bins in Lu Valle Commons averaging more than 25% full.

### Macgowan signage research

Before posting signage, we found that 50-75% of the contents of trash bins were recyclable on average in Macgowan courtyard. The most common materials found in trash bins were plastic food containers, cardboard food containers, and wax-lined coffee and soda cups. These items were highly prevalent in trash bins; they were observed 77% of the time, 68% of the time, and 59% of the time respectively. Other recyclable materials were also found in trash bins, with other paper items present 66% of the time and other plastic items present 48% of the time.

After posting signage above recycling and trash bins, we saw a reduction in the number of recyclable materials present in trash bins. While 50-75% of the trash bin contents were recyclable on average before implementing signage, we found that was reduced to 50% after posting our signage. As seen in [Figure 6](#), the frequency of plastic food containers disposed of in trash bins was reduced almost 50%, from 77% of the time to 40% of the time. Cardboard food containers were reduced from 68% of the time to 43% of the time. Coffee cups and soda cups were also found less frequently, reduced from 59% of the time to 47% of the time.



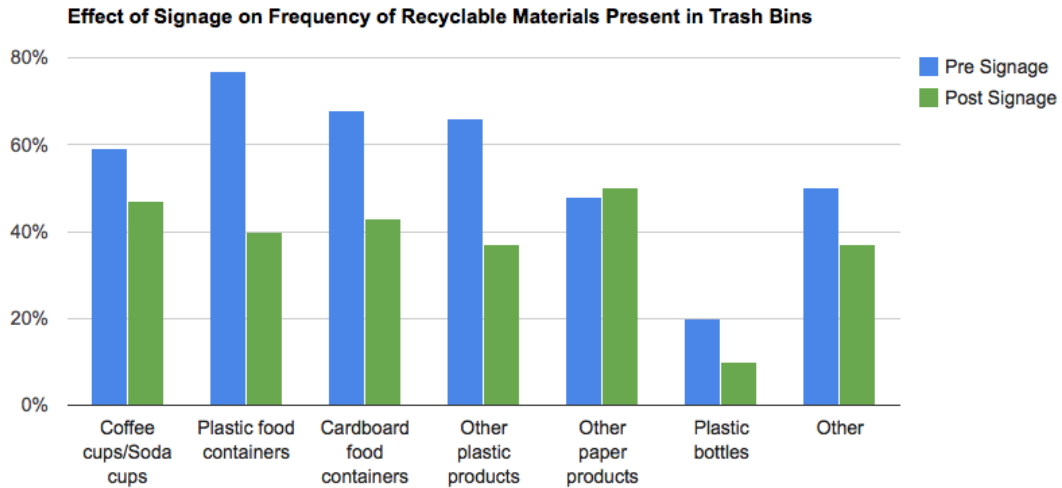


Figure 6. The amount of recyclable material in trash bins before and after our signage.

We observed no fewer non-recyclable items in recycling bins after posting signage. Before posting our signage, we found recycling bins contained about 15% non-recyclable material in Macgowan Courtyard. The most common contaminants were wrappers and chip bags, followed by food. After posting signage, recycling bins still contained about 15% non-recyclable material on average. Wrappers, chip bags, and food remained the most common contaminants.

During our baseline data collection, trash bins were more full than recycling bins on average. On average, the trash bins were 50% full, while recycling bins were 25%-50% full. After implementing our signage, trash and recycling bins were less full on average. Trash bins were 25-50% full, while recycling bins were 25% full.

## Discussion

Our research in North Campus bins indicates that overall, students appear to have a good understanding of what is recyclable and what is not. Only 15-25% of the materials in recycling bins were non-recyclable on average. However, we did see several common sorting mistakes that

should be remedied. Of the five most common items in trash bins, three were food or beverage containers that can be recycled if they are emptied of food or liquid waste. These include plastic food containers, cardboard food containers, coffee cup lids, and soda cups lids. It seems that students are either unaware that items with some food residue are recyclable or they do not take the time to sort recyclable waste from food waste. The other main misconception we found was that students believe chip bags and candy bar wrappers are recyclable, as this was the most common contaminant in recycling bins.

During our research in Macgowan courtyard, we found that the posting of additional signage resulted in a reduction of recyclable material in trash bins. This indicates that the current signage on the waste bins in Macgowan is not sufficient. As one of the last areas on campus utilizing aggregate bins (as opposed to Victor Stanleys or clusters), Macgowan seriously lacks comprehensive waste signage. Thus, it is logical that adding new illustrated waste signs in Macgowan would make a difference. Furthermore, these results are promising enough to try to expand this research into other areas of North Campus. Although places like the Sculpture Garden, Lu Valle Commons, Public Affairs, and Coral Tree Walk have Victor Stanleys or clusters with clearer signage, it would still be worthwhile to experiment with adding additional waste sorting information in these areas.

Future researchers would also benefit from learning about how our team's research methodology could be improved. While looking at the results of our research, it must be noted how subjective our data is. Our reliance on visual observations conducted by five different people has most likely skewed our data. This is also exacerbated by the limited samples utilized in our study. Another methodological issue to consider is how we were not able to account for when the trash or recycling bin was last emptied when analyzing bins' average fullness. This is

especially important to note when looking at the effects of implementing signage and Victor Stanleys in Macgowan. While we observed a reduction in recyclable materials in trash bins, we also observed a reduction in trash bin volume overall. These potential flaws in our study must be taken into account, possibly through additional research. Once this research is conducted, the results of our study and further studies should be acted upon in order to move UCLA closer to becoming a zero-waste campus.

## **Recommendations**

After two quarters of research and observations, we can provide several recommendations for how UCLA can be more sustainable and how its community can be more recycling-proficient. We hope that our recommendations will eventually be implemented with the help of future Recycling Action Research Teams. Additionally, we hope that the research we have conducted can benefit future Action Research Teams and they can learn from the challenges we faced.

## Challenges

One of our greatest challenges during our research was developing an accurate visual audit methodology. Our observations were just that - purely observational - which likely resulted in some inaccuracies our data. We would recommend future teams complete more waste audits in addition to visual audits. The one waste audit we completed with our stakeholder gave us a much more comprehensive understanding of our study area. The audit was also a great personal educational experience for our team.

Another challenge we faced was itemization. Particularly in the beginning stages of our data collection, there were several items that we did not know whether to classify as recyclable or non-recyclable, such as waxy pastry bags. Confusion over certain items may have skewed the data in the beginning of our research. We recommend completing a waste audit or walk-through of items with team members so that everyone knows how to classify each item according to UCLA's recycling policies.

We also had difficulty devising appropriate and effective questions for our research. Because we were only looking into bins, and not sorting through each item, it was difficult to determine how to get the most accurate data from these rough estimates. It also took time to find a good mix of questions that would result in qualitative and quantitative data that we would be able to analyze. We recommend completing more waste audits to gain more quantitative data, as this would provide more accurate results that are easier to analyze. We also recommend trying different survey forms for data collection. We used a Google form for its not-so-tech-savvy-user-friendliness. However, this could have limited our data analysis, as we could only view the summary of responses, and could not view individual responses. We encourage future teams to find a mode of data collection and analysis that works best for them.

### Recommendations for Future Research

We recommend future teams carry out additional waste characterization studies of different areas of campus. Through our research we gained a better understanding of bin-user behavior and common misconceptions, allowing us to make site-specific recommendations directly to our stakeholder and the Facilities Department. We recommend future teams look specifically at whether there is a need for site-specific bins in departments. For example, our

stakeholder provided a “Pizza Only” recycling bin in Dickson Court, because there were frequently pizza parties in nearby buildings. There may be a need for other specialized bins throughout campus, which could increase our recycling rate.

Like the 2013 ASUCLA ART, our research indicates the need for a composting program on campus. We found that the most common item in trash bins in North Campus is cardboard food container bins with food residue. Thus, implementing a composting program would divert a significant amount of material from landfill. Food waste was also common throughout our study area. Additionally, our research indicates that students are confused when they have a recyclable item with food or liquid residue. A composting program would solve this problem because compostable food and beverage containers could be thrown right into the composting bin with any residue. We suggest future teams conduct research on the economic feasibility of a composting program because it would have such a huge impact on the campus’s diversion rate.

In addition to implementing a composting program, we recommend ASUCLA switch to compostable food and beverage containers. We highly recommend switching to compostable coffee and soda cups and eliminating plastic food containers. Coffee and soda cups were the second most common item in trash bins in North Campus and plastic food containers were the fourth. Switching to compostable packaging and a composting system would eliminate all of this waste from landfill. We also recommend future teams investigate whether wax-lined cups are recyclable. There was some confusion during our research as to whether Athens Services recycles soda cups and coffee cups and we were unable to reach a conclusion by the end of spring quarter.

We also recommend a reboot of the current waste signage on campus outdoor bins. Past research by Action Research Teams and our research indicates that the current signage is

considered confusing and additional signage could improve recycling rates. We recommend signage with graphics, concise wording, and designs that will grab students' attention. It would be worthwhile to investigate whether common signage across campus, but with different graphics depending on the type of waste in that area, would be effective and feasible. We recommend further research on the UCLA community's opinions of current bin signage and proposed changes.

The greatest recommendation we can make is to increase student education on campus. Even as team members on the Recycling ART, we sometimes struggled to determine what was recyclable and what was trash. How, then, can we expect the general student body to understand the nuances of recycling? Coordinating hands-on learning activities, like our waste sorting game at the Earth Day Fair, can be a great way to educate students. Additionally, developing a large scale educational campaign or program would have a big impact. Future teams could look into developing a mandatory campus-wide education program, similar to the online alcohol education program for incoming students. The Hospital Sustainability ART worked on an education module that will be implemented for all incoming Reagan hospital staff this coming year that could be looked at for guidance. Additionally, developing a recycling certification program for students and faculty who would like to become recycling leaders on campus would be a great future project.

With student education, there also needs to be a change in student culture and how students view waste. We see the need for outreach campaigns to encourage students to scrape or separate food waste from recyclable containers. We would also like to see an increase in student awareness of the life-cycle of their waste. One way our team tried to address this was in our signage, referring to the trash as "landfill" instead of "trash." Additionally, it is important that

sustainability issues become more accessible to our entire campus. Reaching out to students through tabling at the Earth Day Fair and Ecochella is a great way to get people more involved and invested in sustainability issues. Future teams may also come up with new ways of getting students involved, such as holding a design contest for new bin signage with the student body voting on the most effective signage.

## **Conclusion**

Understanding UCLA's complex waste system and determining a project to simplify the system were daunting tasks for our team. However, with the hard work of our team members and our stakeholder, Jesse Escobar, we have helped UCLA get a few steps closer to the UC-wide goal of Zero Waste to Landfill by 2020.

Our creation of a framework for collecting waste data will provide future Action Research Teams and other sustainability initiatives with a tool to continue researching the campus waste system. The findings from our research will contribute to the body of knowledge about waste at UCLA. Adding on to the conclusions of previous Action Research Teams, our project highlights the need for a campus-wide composting program as well as a widespread education program on proper waste sorting, which might include updated signage as a portion of the program.

In addition to the research our team conducted, we also made an impact on campus sustainability through education. The signage that our team created to determine the effect of signage on waste-sorting behaviors was not only useful for research purposes; it also educated the community within Macgowan on how to live more sustainably by sorting their waste properly. Our team's presence at E3's Earth Day Fair and Ecochella also contributed to the

establishment of a campus culture in which students, staff, faculty, and visitors are more aware of how to reduce their waste's impact by disposing of it properly.

While change, especially at a major institution like UCLA, takes much time and effort, our team's work over the past two quarters demonstrates how change is possible. By investing resources into increasing education and updating infrastructure in the small space of Macgowan Courtyard, we have found that sustainability efforts do make a difference. Through further research and advocacy, this success can be expanded to the campus as a whole and take us even closer to becoming a more sustainable campus.

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## Appendix

Waste audit with our stakeholder



Our signage posted above bins in Macgowan



Waste sorting game at the Earth Day Fair

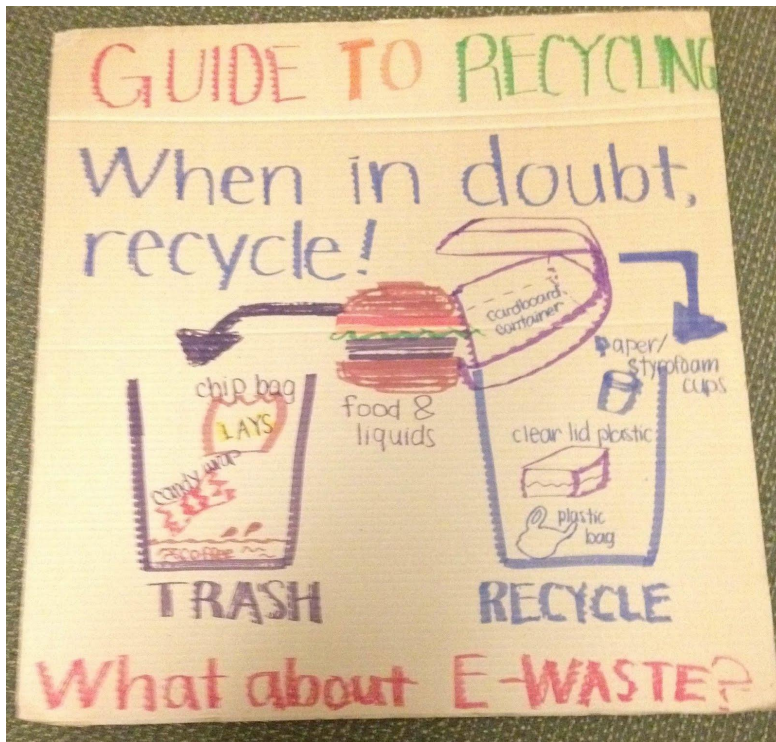


Clothing swap at Ecochella





“Guide to Recycling” displayed at our Ecochella table



Survey Questions - General North Campus Research (Winter Quarter)

**How full is the trash bin?**

- Empty
- 25%
- 50%
- 75%
- 100%

**The materials in the trash bin are mostly...**

Choose at most 3 categories

- Food & Napkins
- Trash (Chip bags, Candy wrappers, etc.)
- Plastic Materials (including food & beverage containers, even the waxy stuff)
- Paper/Cardboard Products (including food & beverage containers)
- Other Recyclables (Aluminum, Glass)
- Other:

**Check off all materials present in quantities of 2 or more.**

- Coffee cups/Soda cups with plastic lids
- Plastic food containers
- Plastic food containers with food
- Paper/Cardboard food containers
- Paper/Cardboard food containers with food
- Wrappers & Chip Bags
- Food
- Napkins

- Paper
- Plastic bottles
- Plastic bags
- Aluminum cans
- Other:

**How full is the recycling bin?**

- Empty
- 25%
- 50%
- 75%
- 100%

**What % of the material in the recycling bin is not recyclable? (i.e. food, compostable packaging, chip bags, candy wrappers, etc.) \***

- 0%
- 25%
- 50%
- 75%
- 100%
- Other:

**What non-recyclable materials are present in the recycling bin?**

- Food
- Compostable packaging

Chip bags, candy wrappers

Other:

**Any notes about the waste station?**

Please mention vermin or litter around the bin here.

\_\_\_\_\_

Survey Questions - Macgowan Signage Research

**How full is the trash? \***

---

- 0%
- 25%
- 50%
- 75%
- 100%

**Which of the following items are present? \***

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Check all that apply

- Paper/Cardboard Food Containers (w/o food)
- Paper/Cardboard Food Containers (w/ food)
- Plastic Food Containers (w/o food)
- Plastic Food Containers (w/ food)
- Other Paper products
- Other Plastics products
- Plastic bottles
- Coffee cups/Soda cups w/ lids
- Other:

**What percentage of the trash is recyclable? \***

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- 0%
- 25%
- 50%
- 75%
- 100%

**Roughly, how many items is that? \***

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**How full is the recycling? \***

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- 0%
- 25%
- 50%
- 75%
- 100%

**What is the percentage of contamination? \***

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- 0%
- 25%
- 50%
- 75%
- 100%

**Roughly, how many items is that? \***

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**What types of contamination are there?**

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- Candy wrappers/chip bags
- Food
- Liquids
- None
- Other: