



UCLA
Sustainability
Action Research



2018
Native Landscaping
Team

2018 Midterm Report

*An Institutional Guideline for Ecologically Sound
and Aesthetic Landscaping*

Team Leaders

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Stakeholders

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Abstract

Our team began the quarter as the Biodiversity and Urban Agriculture team, but as soon as we began our research, our team found a common passion for analyzing and improving UCLA's landscaping by incorporating more native flora to transform the landscaping from not only an aesthetic part of the campus, but into a functional habitat that promotes biodiversity. Once the team decided on campus landscaping and native fauna as its focus, we immediately began working to research everything we could about current landscaping practices at UCLA, prior research into the flora and fauna of the campus environment, and the people that could provide us with the information we needed to affect change. We found numerous resources on and off campus that were passionate and excited about trying to improve UCLA's campus landscaping. This is when we began organizing our key informant interviews to gather as much information as we could from landscape architects, native plant experts, professors, and others. We learned a good deal from these resources, and we hope to use the information we gathered from these leaders in their field to create a list of recommendations for any and all future landscaping changes and projects on campus. With the support of the administration and facilities managers, we hope to create a comprehensive set of guidelines to promote ecologically sound and aesthetic landscaping. We hope that by outlining the knowledge available on native landscaping education and best practices we can convince the key stakeholders on campus that just because there is a way campus landscaping has always been done, does not mean it needs to be that way, and that making the changes we recommend will lead to the campus being a model for landscaping as habitat and all the benefits it will bring the campus community.

Introduction

In recent years, the UCLA campus has blossomed with new developments, from the establishment of new outdoor study spaces outside of Bunche Hall and Powell Library to the heavily-anticipated opening of the Meyer and Renee Luskin Conference Center. Completing the exterior designs of these spaces has involved extensive landscaping. Yet, even with such acute attention to detail, there seems to be something amiss in the designs for an institution that prides itself on paving the way in research: most of the plants outside of these establishments are not native, and do not contribute to creating a healthy, productive ecosystem on UCLA's campus. Instead, non-native and often invasive species are introduced through campus landscaping plans that are developed when new building construction takes place on campus. These plants pose several issues for campus landscaping in both economic and ecological terms, as they often require water-intensive care, chemical fertilizers, and also threaten to degrade soil and hinder the growth of native species. When considering the negative impacts that these plants have on our campus, it not only makes sense to remove them, but it is also imperative to ensure that non-native species are not planted around new infrastructure in the first place, in order to mitigate any further negative impacts.

The pervasiveness of non-native plants in campus landscaping is not an issue that has gone unrecognized in the past either; plenty of student groups, past and present, have made an effort to tackle this problem. In 2010, Team Native and Drought Tolerant Plants from the *Education for Sustainable Living Program* at UCLA set out to address the non-native species issue. After visually assessing areas of campus that needed replanting and consulting with Cully Nordby, the School Architect, the Head of Landscaping, and the Head of Facilities, they decided

to replant the corner of Hilgard Avenue and Wyton Drive, a popular bus stop location that receives plenty of public attention. Their objective was to introduce new, less water-intensive plants than the existing ones to the area without jeopardizing the area's beauty; they also wanted to introduce a xeriscape irrigation system that would be better suited for the new drought-tolerant natives, and to design a new sign for the corner.

They were able to establish all the designs for their project by working with students from the landscaping architectural program at UCLA Extension who provided the ARP team with plant palettes and design plans. After the plans were completed, they gathered volunteers to help remove invasive plants and to replant natives through a Facebook event, and took about three days to complete the removal and replanting process. They also worked with Art Tieck to design their own drip-irrigation system and spent one day installing it. They felt that their project had been very successful, and were proud of the lengths that they had achieved to reduce water-waste in landscaping on campus through planting drought-tolerant plants and introducing xeriscape irrigation.

The efforts of this group have been mimicked in some areas around campus, but more can and should be done. It should be mandatory that any future landscaping projects meet the minimum standard of being drought tolerant since the UCLA campus is located in the arid LA Basin. It should also be mandatory that these projects meet requirements to implement landscape designs that are sustainable, ecologically sound, contribute to the health of the entire UCLA ecosystem, and thus support the creation of a beautiful habitat that can maintain itself long-term. Our team essentially hopes to continue the work of past SAR teams who have accomplished these individual replanting projects by making efforts to create ecologically sound

and appropriate planting into standards that are mandatory to meet when developing any future plans for UCLA landscaping projects.

While our project originally began as an initiative to bring urban agriculture to the UCLA campus, our team found that we were all very passionate about improving UCLA's ecosystem health. We originally hoped to replant a key area or two, but after sifting through past SAR projects, we realized how difficult the process of obtaining permission to replant spaces was. So we came up with a new idea: to establish methodology and guidelines for student projects and outside contractors to follow in replanting projects and new landscaping that increases ecosystem health. We want to make improving landscaping easy, and to make it a priority for UCLA going forward. So, after much deliberation, we decided on creating a set of recommendations to make campus landscaping practices ecologically sound by using the opinions and expertise of UCLA faculty, staff, students, and outside experts from organizations who focus on ecologically sound landscaping. We ultimately hope that UCLA will abide by these recommendations in the process of approving future landscaping projects on the campus.

Methodology

The initial topic assigned to us was Biodiversity and Urban Agriculture. This project title encompassed a very broad scope, so our first task was to explore the topic further and narrow down our project goals. As a team, we discussed possible projects that could stem from the blanket category of biodiversity. With our stakeholder, Bonny Bentzin, we considered the idea of an edible garden, but excitement over the idea was lacking. Then, while discussing the possibility of an edible garden, a team member mentioned looking into native plants that could be edible. The subject of native plants sparked enthusiasm, and the idea quickly snowballed into

a project idea emphasizing the use of native plants in campus landscaping. Our final topic was biodiversity and native landscaping. We all converged on this topic because biodiversity and native landscaping is something that we are all passionate about.

Once we had our project direction, we needed to narrow down our goals. From the beginning, we wanted to make sure our project goals were attainable, that our efforts would be worthwhile, and that our impact would last. In order to be efficient, we first had to do our research. We endeavored to find out what was currently known and what had already been done, so that we could identify what was unknown and figure out what we needed to do. Together, we researched native landscaping in general, to get a sense of what could be done. We also gathered data about the work of others regarding native plants and landscaping on campus. Based on what had been done, it was decided that our main goal would be to create an institutional set of recommendation for ecologically sound and aesthetic landscaping.

At this point we had started to become more knowledgeable about the topic of native landscaping. We had figured out what could be done to improve campus landscaping practices, and we honed our focus on increasing biodiversity and ecological function. We then identified people on and off campus who had expertise in the fields of landscaping and native plants. Our next step was to interview these key informants, so as to learn as much as possible before creating our landscaping recommendations. With what information we had gathered through our initial research, we crafted a list of interview questions that focused on general biodiversity, biodiversity at UCLA, and the logistics of incorporating natives into landscaping. Lastly, we conducted our interviews; the interviewing process will now be described.

The key informants we interviewed during weeks eight through ten were Thomas Gillespie, Wayne Dollase, Cully Nordby, Nurit Katz, Lisa Novick, and Allison Lipman. We asked them questions regarding their personal definition of biodiverse landscaping, their advice for how UCLA should approach integrating biodiversity and native plants on campus, and their expertise on maintenance of native plants. Through these interviews, we compiled data about ways current UCLA landscaping succeeds and how it needs to improve, as well as the best strategies for improving biodiversity and native plant integration on a campus known for its appealing flora. Next quarter, we plan on meeting with Stephanie Landregan, the Director for the Landscape Architecture Program and the Horticulture and Gardening Program at UCLA Extension, and Chris Gallego, Superintendent Grounds & Recycling, to finalize our data for best practices in native landscaping of urban areas.

Once we have finished our key informant interviews, we plan on compiling the data into a condensed survey that resembles our key informant interviews. We will send this survey out to a broader range of informants in order to ensure that the expertise we received regarding biodiverse, native landscaping at UCLA is, indeed, consistent with the opinions of a larger pool of informants. Once our key informant and surveys are both completed, we will compile the information into a set of recommendations for UCLA to refer to when hiring outside contractors to renovate outdoor places on campus. To ensure the finalized recommendations we compile reflect the want of students and faculty on campus, we plan on organizing focus groups to gauge interest in native landscaping. By the end of our project, our key informant and survey data will be compiled into a set of recommendations for UCLA landscaping projects which reflect the desires of students and faculty on campus.

Challenges and Difficulties

As the Native Landscape team came together to accomplish our goals, we faced numerous challenges that we had to recognize and overcome as the quarter and our research progressed. Institutionally, UCLA is a large campus with multiple groups, both internal and external, that are involved in the landscaping plans and projects across its 419 acres of space. Some projects we learned are outsourced to architecture firms, some are handled by various UCLA offices such as OID, and we discovered that there is no single master plan or guideline for every group to follow. Our greatest challenge, with this project, has been learning how these projects come about, what parties are involved, and how plants actually get planted on this campus. Overcoming this has been simply a matter of making contact with all of the involved parties and learning what the processes are, with the formidable assistance of our stakeholder.

Once we learned more about how these processes worked at UCLA, our next challenge was to reach out and make contact with these people, as well as with others in the UCLA community and experts in native landscaping projects outside of UCLA. As with all projects, it can be difficult in just 10 weeks to make these contacts and to develop the necessary lines of communication with everyone necessary for this project to succeed. The major strength of our project is that our stakeholder Bonny Bentzin has been incredibly instrumental in reaching out to some of the institutional people we had difficulty meeting with and it is her assistance that will undoubtedly help our project to succeed. In addition to her efforts, we have found that so many people affiliated with the campus, from Faculty and Grad Students, to the UCLA Extension and the Theodore Payne Foundation have given us their time, knowledge, and incredible support for what we hope to achieve. This isn't just our project, but a project that means a lot to such a

sweeping number of people on this campus, and they have also helped with educational materials and helped us make contact with others who have assisted our project.

A key challenge that all teams face when starting their SAR project is an educational one. When we started this project, none of the members of the Native Landscaping team were experts on native plants beyond the very basic concepts. We have all had an incredible crash course on their impact to biodiversity and ecology of an area, their importance in the food web that sustains so much of the life on our campus and the surrounding area, their effects on the aesthetics and biophilic design of landscaping plans, how those plans are created, and their effects on water and maintenance. With the assistance of various people we reached out to, we have learned just how important native plants are and the role they play in everything from shade to providing food, shelter, and life for so many species. From the literature review, long hours reading about native landscaping, talking to experts like Lisa Novick at the Theodore Payne Foundation (see Appendix 1), and faculty on campus, we have all had the opportunity to really learn about native landscaping in a way that has formed our robust research project. More importantly, It's reinforced to all of us why our project is so important for UCLA to be a good neighbor to the Santa Monica Mountains and the entire ecosystem around us.

It's a lot to accomplish in the next 10 weeks, and time will be working against us as our biggest challenge, but with a team of such eclectic backgrounds and numerous strengths, we all strongly feel that the scope of our project is one that can be done in the time frame allotted and in a way that allows for future groups on this campus to follow up and ensure the recommendations are being implemented to increase the native plants, prohibit the planting of invasive species, and

work toward these 419 acres being a partner in the ecosystem of the area and the Santa Monica Mountains.

Plans for Spring Quarter

Our plans for Spring Quarter will primarily focus on developing a rough draft of our landscaping recommendations, and fine-tuning them as we receive more feedback through additional interviews, surveys, and focus groups to formulate our final set of recommendations. Fortunately, we have already collected most of our baseline data from our Key Informant Interviews with Nurit Katz, Cully Nordby, Lisa Novick, Wayne Dollase, and Thomas Gillespie (See Appendix A). During week one of Spring Quarter, the Native Landscaping plans to come together to discuss key themes that arose throughout the interviews that would be suitable to turn into recommendations. We will also discuss other ideas and issues brought up by our key informants that may need further research or discussion with other experts to complete our set of recommendations. With the rough set of recommendations and additional research, we plan to create a survey to send out to informants that we were unable to meet with personally to gather feedback about our recommendation set. We then plan to conduct focus groups with students to determine whether our landscaping recommendations also meet their needs in terms of creating ecologically-sound, biophilic, outdoor study spaces. Our primary goal in conducting focus groups is to gain insight into the opinions of students from diverse backgrounds and majors on native landscaping. This will ensure that our set of landscaping recommendations will be representative of the views of the UCLA population as a whole and not just of students within IoES.

Going forward into the next quarter, we are also looking to take what we have learned and get started on the actual deliverables we will achieve. One of our biggest challenges going forward is in the collection of current data on green spaces on campus. There have been many new projects implemented that need to be analyzed such as the Bunche and Math/Sciences new landscaping projects. We hope to reach out to both Geospatial at UCLA and other groups to see what the most current data is, and if we have to, survey, and use GIS/Remote Sensing techniques to update it for future use by all parties interested. Once we have that data, our next challenge will be in taking what we've learned here at UCLA and looking at what has occurred successfully at other institutions with similar native landscaping recommendations. The challenge will be in creating them in a way that address cost, maintenance, aesthetics, and the absolute importance of the effect of native plants on the biodiversity of the area around the project, and the campus as a whole so that we get full buy-in from all of the parties involved in landscaping at UCLA.

As with most other sustainability initiatives, our biggest challenge is persuading the client, which in this case UCLA, that being sustainable does not equate to sacrificing economic gain or other benefits. Specifically, one of our overarching concerns is the general misconception that native plants are not aesthetically pleasing and will bring down the overall appeal of our campus. To tackle this issue, we plan to run an experiment in which we identify the positive effects of native plants on human interaction with space, a concept closely related to biophilic design. We will first canvass the campus to select several underutilized areas. These include barren areas, non-prominent locations covered in turf, and open spaces seldom visited by people. We will then try to change their landscape by placing plant pots and benches. This is an

alternative to direct planting, which will require prior approval and might have unanticipated negative impacts. We will record the entire process by taking Synapse videos with a GoPro. By comparing clips before and after the plant pots have been installed, we will be able to observe how native plants potentially increase space use. Ultimately, we plan to use this data as evidence to persuade the administration that native plants can be a gain for the university not just in their existence but in how they can transform overlooked areas into ecologically-sound study spaces.

Our plan to develop these recommendations has coincided with a crucial moment for UCLA: administration is currently seeking a new head architect, and is considering searching for candidates with a landscape-architecture background. Hiring a head architect with a background in landscaping is vital to steering UCLA's landscaping practices into the right direction. The head architect oversees plans for new construction on campus, and those plans include the landscaping around those new buildings. An architect who understands how an ecosystem thrives, how planting native or climate-appropriate plants will sustain the campus landscape long-term or how planting invasive species might destroy it, will prioritize building plans that include ecologically-sound landscaping designs. A landscape architect will recognize the importance of our recommendations, and will enact them. An architect without a background in landscaping might simply choose the most aesthetic, cost-effective design without anticipating what the future costs to the campus could be if the landscaping is inappropriate for the climate. Thus, hiring a landscape-architect will be of the utmost importance in ensuring that future of landscaping at UCLA promotes biodiversity and ecological productivity that will thrive for years to come. With a collection of faculty, staff, outside-expert, and student opinions that demonstrates cross-campus advocacy for ecologically sound landscaping, and their approval of

our recommendations, we hope to convey to administration how important hiring a landscape-architect is to the UCLA community.

Conclusion

While our team at first struggled to establish a project concept that we were truly passionate about, we were ultimately able to design a project that we feel will impact the UCLA community positively. We hope to create a comprehensive set of good-practice, ecologically sound landscaping recommendations that will be used for approving future landscaping plans on campus. If our recommendations are institutionalized as standards for UCLA landscaping practices, ecosystem health at UCLA will improve dramatically and will hopefully pave the way for other projects to improve campus ecosystem health, such as student projects that aim to replant areas with invasive species on campus. We still have much to accomplish before this set of recommendations is finalized, but we are proud of our progress and excited for the work ahead of us nonetheless.

Thank you to Bonny Bentzin, Nurit Katz, and Stephanie Landregan for your unwavering support throughout our research project, and thank you to everyone of our interviewees for your passion and enthusiasm for improving ecosystem health at UCLA.

Appendix

Appendix A

List of interviewees

1. Thomas Gillespie
UCLA Geography Department Professor
2. Wayne Dollase
UCLA Earth, Planetary, and Space Science Department Professor Emeritus
3. Cully Nordby
Associate Director Institute of Environment and Sustainability
4. Nurit Katz
Chief Sustainability Officer
5. Lisa Novick
Director of Outreach Theodore Payne Foundation
6. Alison Lipman
Professor and President of SELVA International

Appendix B

Below is a rough diagram of the Campus Turf Replacement Initiative Map. This initiative is already targeting underutilized areas around campus that are opportune for conversion into study spaces and more sustainable landscapes.



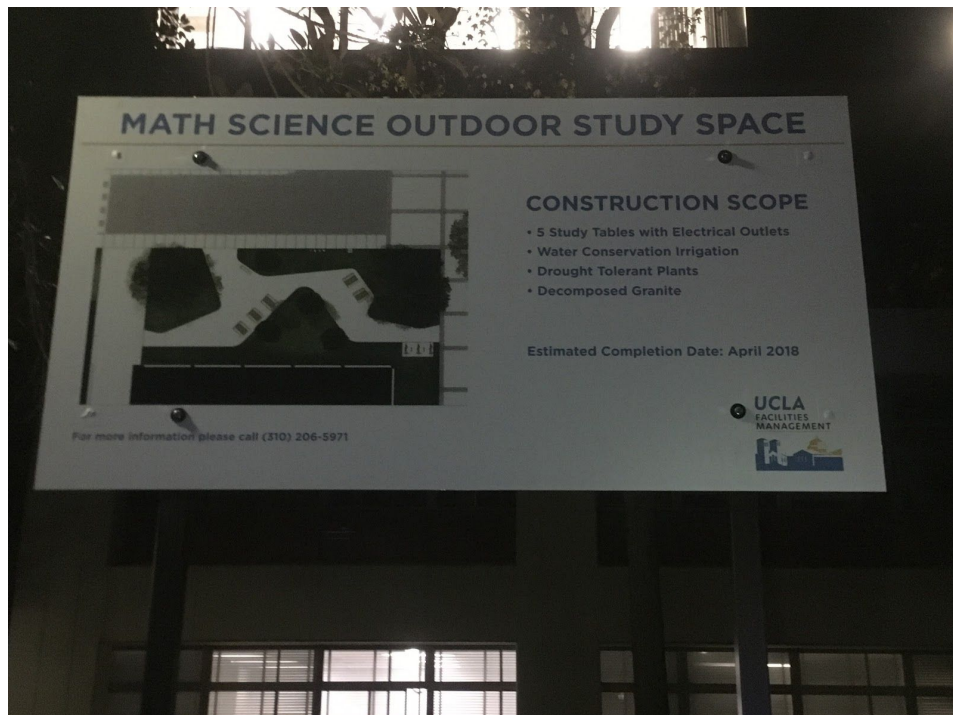
Appendix C

The area in front of Bunch Hall is an example of an underutilized area already converted to a outdoor study space with more sustainable landscaping. However, the space does not completely utilize native plants in a beneficial way.



Appendix D

The area in front of the Mathematical Sciences Buildings along Portola Plaza is an example of another underutilized space being converted into an outdoor study space. However, this space is currently under renovation and will be completed by April 2018.



Appendix E

The template for our questionnaire including the key informant interview questions.



Sustainable Action Research Native Landscape Team Questionnaire

Hogan Fenster and Chloe Ney

Peter Lee, Michael Peters, Audrey Salinger, Lea Le Rouzo, Kyle Crowley

Introductory Questions

1. How do you define a biodiverse landscape that reflects sustainability values?
2. With respect to landscaping, what are the best ways to enhance biodiversity and what are the main values to consider?
3. What are the values that UCLA should take into account when planning and carrying out landscaping projects on campus?
4. In what ways does the university currently do well with regards to sustainability and biodiversity when landscaping? In what ways does it fail to do so?

Main Questions

5. Why should UCLA pursue landscaping that has native California flora?
6. What are some of the pros and cons of mixing native plants with non-native plants in one area and on campus as a whole?
7. When establishing plants, UCLA looks for plant species that are easy to maintain and that possess longevity. However, looking to the future, California will have more extreme weather patterns (i.e. longer droughts, warmer winters, fewer but more intense storms, etc.). How should planting practices be shifted to account for the changing climate?

8. When it comes to biodiversity on campus, are there any insect or animal species that you feel we should target for habitat creation, such as hummingbirds, butterflies, etc.?
9. Why are certain plants picked for certain locations?
10. How should the maintenance crews at UCLA be introduced to maintaining native landscaping? Are there already guidelines for maintaining current flora?

Logistical Questions

11. One of our ultimate goals is ensuring that our set of recommendations for future landscaping is embraced as a university standard, so contract landscape architects, architects, and landscape maintenance companies are required to meet the standard. Based on your previous experience, do you have any advice on communicating with outside contractors and holding them to a UCLA standard?
12. How could the university become a pinnacle of conservation, biodiversity, and sustainability with respect to landscaping?
13. What is the best way to promote changes in landscaping practices at UCLA?
14. How can we shift campus perception so that native landscaping is held in higher esteem than non-native landscaping?

“Just because it is, does not mean it should be.”

Thank you for the time you took to answer these questions and the support you have shown our project.



Sincerely,

The Native Landscaping Team