Social Justice Through Sustainability: Acknowledging students of environmentally discriminated areas through sustainable efforts on campus

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Abstract

This project analyzes the need for inclusive sustainability and environmental justice awareness on college campuses, like CSUSM. This project acknowledges that some students that attend CSUSM come from places where the air quality, water quality, or other environmental injustices may have impacted their or their families lives. This project seeks to connect students on the top of environmental justice. It discusses the importance of acknowledging environmental justice at CSUSM and analyzes how students with environmental injustice backgrounds can be better represented in conversations related to sustainability. By utilizing student application data, and different ArcGIS databases, we are able to identify if they come from environmentally disadvantaged areas and discuss how sustainability efforts on campus are accommodating education and resources to support these students. We believe students coming to campus that have experienced environmental stressors due to structures like systematic racism can affect their relationships to environmental topics, such as sustainability, so it is important for us to acknowledge their experiences and adjust our programs to best represent these individuals while promoting both social and environmental justice through sustainability. This project analyzes data regarding students and provides suggestions for how to continue making sustainability more inclusive at CSUSM; while also providing an opportunity for future interested students to continue this research on campus with our Sustainability Program and Office of Inclusive Excellence through their Environmental Justice internship.

Introduction

The Environmental Movement, for many years, has focused on the physical aspects of environmental issues, most of which revolve around human impact and our actions affecting the environment. Topics such as conservation, protection of wildlife, ocean acidification, climate change, and other issues are what we see most commonly talked about when it comes to the Environmental Movement. This movement began in the 19th century, according to Chapter 7 of textbook, “Social Movements,” by Suzanne Staggenborg, and began with numerous protests around Europe, North America and Australia to promote national parks, wilderness preservation, resource management, and the exploration of nature, (Staggenborg, pg 111). It later reemerges during the protest cycles of the 1960s where activists promoted “citizen environmentalism and

held support towards fighting for a better planet which led to establishment of environmental organizations like Greenpeace and the creation of Earth Day, (Staggenborg, pgs 114-115).

This movement has heavily focused on impacts on the environment and environmental crisis, which is important; however a topic in this field that is not as commonly discussed is environmental justice. This area of the Environmental Movement focuses on, as the Environmental Protection Agency would define, "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies," (EPA, 2020). This issue is most commonly seen in communities of color, where individuals who identify as black, indigenous, or a person of color, also referred to as BIPOC, are more susceptible to environmental risk based on the quality of resources their environments have been provided. According to Joy Barua of the Center of Health, Environment and Justice, race is the number most common predictor of a person living near areas of high pollution like toxic waste sites, contaminated air and water, and overall being exposed to environmental issues; with statistics showing almost 56% of waste sites being near communities of color, (Barua, 2019). It's also noted that , "Environmental health is not only about being exposed to toxic components but also about the surroundings of a person's living and working conditions. Black people are some of the most vulnerable populations when it comes to neighborhood and community disparity," (Barua, 2019). Environmental justice not only affects a community's level of disparity and individuals' physical health, but it also takes a toll on their mental health. According to Liam Downey and Marieke Van Willigen, who co-wrote, "Environmental Stressors: The Mental Health Impacts of Living Near Industrial Activity," published to the Journal of Health and Social Behavior, environmental stressors produced from environmentally hazardous sites have an effect on the psyche of individuals experiencing them as well as physical effects (Downey & Willigen, 2005). Their research shows that individuals' experience with these stressors affects their views on societal roles like socioeconomic status as well as mental health due to what is called "ambient strains" from our surrounding environments. These strains are shown in studies which found that children's mental health who lived near industrial sites was worse compared to children living in not environmentally impacted areas.

This type of discrimination through environmental conditions is rooted to much deeper systems, like systematic racism, and have caused these issues to be normalized; hence the lack of

conversation about them. It has been noticed that there is a lack of representation of BIPOC individuals in the Environmental Movement and that leaders typically seen at the forefront of the movement tend to be white. This causes a divide within the movement and leads to frameworks surrounding the movement indicating it potentially being white-exclusive and elitist. Ellen Kohl, writer on an article titled, "'Some we's weren't part of we': intersectional politics of belonging in U.S. environmental justice activism," acknowledged these divides. This paper discusses how factors that make up a person's intersectional identity, examples including race, gender, ethnicity, etc. affect their interactions with activism and politics, (Kohl, 2020). Kohl analyzes the word "we" in conversations of environmental issues and politics and finds that the word used in context is not including individuals being disproportionately impacted by environmental injustices; therefore only serving individuals less impacted such as white identifying people. Studies like this shows the gap there is between the mainstream Environmental Movement and the aspect of the movement that seeks to make connections with social justice. Without addressing the social justice aspects of environmental justice, there is no logical way for us to move forward with implementing sustainable living alternatives into education or society; which is discussed in the article, "No Sustainable Development in the Lack of Environmental Justice," written by Hilmi S. Salem. This article talks about the need for environmentalists and this movement to have discussions about social justice in order to be fully able to talk about sustainability because we can't fix the environmental portion and not the discrimination portion when governments are continuously poisoning the land these communities live on, (Salem, 2019). This article goes over the principles of environmental justice and argues that with each of these statements, we should be doing a better job at implementing them into the movement. As individuals who uphold these principles and continue to push for the need of sustainability, it would be unethical and not logical to move forward without recognizing the importance of BIPOC representation in our movements and without acknowledging their experiences with environmental injustice.

Inclusive Sustainability at CSUSM

CSUSM prides itself on being an inclusive, diverse university that is preparing our students to be leaders in whatever field they choose upon graduation. In addition, CSUSM is working hard to create a culture of sustainability on campus. With goals such as, zero waste by

2025 and integrating sustainability into the curriculum, both which are statemented in the revised version of the CSUSM Sustainability Program's, "Sustainability Master Plan," our hope is that students are able to graduate sustainability literate, and knowledgeable in the connections between social justice and sustainability (CSUSM Sustainability Program, 2018).

CSUSM is a diverse campus. According to information gathered by Juliana Goodlaw-Morris and Ariel Stevenson for their project proposal on campus titled, "Creative Innovation Challenge," we are considered a Hispanic Serving Institution (HSI), more than 50% of our students are first generation college students and we also have a large population of veterans, (Goodlaw-Morris & Stevenson, 2020). Statistics presented by the proposal mentioned before, our campus demographics for Fall 2019 students were as follows: 27% white, 46% Hispanic/Latino and 3% Black/African American.

However, even with diverse demographics like these and our Environmental Studies program, which is growing exponentially since its establishment, doesn't align with our current campus demographic breakdown. It's been noted students are falling into the environmentalism stereotype noted before which is that this field is predominantly occupied by white individuals. According to the interactive Tableau dashboard on Student Profiles provided by the Institutional Planning and Analysis department on campus, in the Fall of 2020, there were a total of 197 students enrolled in the Environmental Studies Program, (CSUSM Institutional Planning and Analysis, 2020). Even with the numbers exponentially growing for this department, currently within the Environmental Studies major, 43.1% of our students identify as white, 37.1% Hispanic/Latino and only 1.5% of Black/African American, according to the Creative Innovation Challenge project proposal; meaning close to half of the students in this major are white, (Goodlaw-Morris & Stevenson, 2020).

Research question

As we've seen, although CSUSM is one of many campuses who are moving towards implementing more sustainable practices on campus, there is still a lack of representation of BIPOC students in the field of environmental studies and overall in conversations of environmental justice and sustainability. This lack of representation made us curious about whether where our students were coming from and if their relationships with environmental topics could be rooted to experiences of environmental injustice.

This created an opportunity to ask several questions, leading to our main focus for our research, being: are students at CSUSM coming from areas facing environmental injustice and if so, how can our program's efforts support students' academic success in the field environmental justice and sustainability while making them feel recognized and included in conversations about these topics?

Based on the diversity on campus and prior knowledge on environmental justice, we expect to find that students at CSUSM are coming from environmentally impacted areas and have experienced environmental injustice. The way we plan to proceed if our theory is correct is to find what percentage of students are coming environmentally impacted areas and find ways in which we can continue to support these resilient students towards academic success in fields of environmental studies as well as help students outside the field to learn about inclusive sustainability and make connections between social justice and sustainability.

Research methods

For this project, we wanted to create an interactive map on ArcGIS online that provides a visual representation of where students were coming from and whether these areas have experienced environmental stressors and would therefore be classified as locations experiencing environmental injustice. This would help us determine whether or not students have been exposed to environmental stressors and if so what those stressors may be in order to better understand students' experiences and better represent them on campus in hopes to encourage them in becoming more involved in conversations of environmental justice and increase representation in this field.

The way in which we planned to begin this process was first collecting student data. Due to our limitations because of the pandemic, we were unable to reach out to actual students and make connections with them; however we decided we would gather this information with the help of faculty on campus.

We contacted Cheryl Landin, Decision Support Analyst on campus for our Institutional Planning and Analysis department, to get information about student applications from the Fall 2020 semester. To maintain the privacy of our students, she provided us with a data sheet including only location information and listed applicants as numbers rather than names. With the information Landin provided us which included addresses and zip codes, we were able to send

this data to GIS Specialist on campus, Allen Risley, to help us create a layer on ArcGIS online. Risley used these zip codes and created a layer that plotted every individual applicant on a general world map template provided by the ArcGIS online program and allowed us to see where students applied from in the Fall of 2020.

The next step was finding pre-existing layers on ArcGIS online that plotted environmental issues and related to environmental justice. Finding accessible layers online was complicated due to requirements of licenses and permission from creators, so after reaching out to a couple organizations, we landed on a layer created by the Office of Environmental Health Hazard Assessment (OEHHA). OEHHA created a map layer back in 2015 titled CalEnviroScreen 3.0, which plotted different environmental stressors and issues along with demographic information and created a calculation that determined a city's susceptibility to environmental injustice, which is what is represented on the map. Cities are evaluated and given a score that determines their vulnerability to environmental injustice. Scores are shown by percentages ranking from 0 being least at risk, to 100 being most at risk; and these numbers correspond to a color gradient colors shown on the map and legend where green is least at risk and red represents most at risk. This map includes only information provided by California, which limited our research in regards to our map, but could be analyzed with the further development of this project in the future.

After layering the CalEnviroScreen data on our map with student application data, we were able to see what areas students were coming from and whether these locations were at some point environmentally impacted; presented below as Figure 1.1.

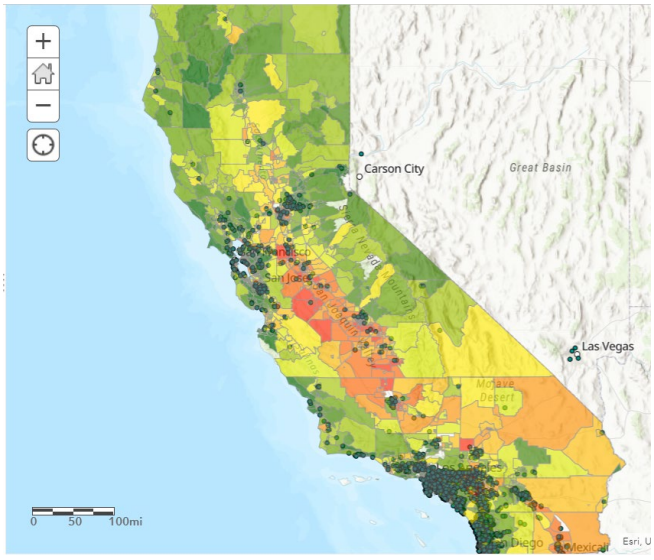

Figure 1.1

This image shows the first map created with the data provided by the CalEnviroScreen 3.0 layered over top of the data points representing the 5,116 student applicants to CSUSM from California.

After creating the first map, I wanted to create 2 separate maps that displayed more specific information. I took the data from the first map to start a new one, but this time editing the CalEnvironScreen 3.0 layer to only display areas with levels of environmental susceptibility of at least 55%. Along with this change, I altered the background world map to be more simple in order to not distract from the important information being presented by the map. With these changes added, we were able to get a better view of what areas are experiencing the most environmentally impacted and whether we had students in those areas; which is presented below as Figure 1.2.

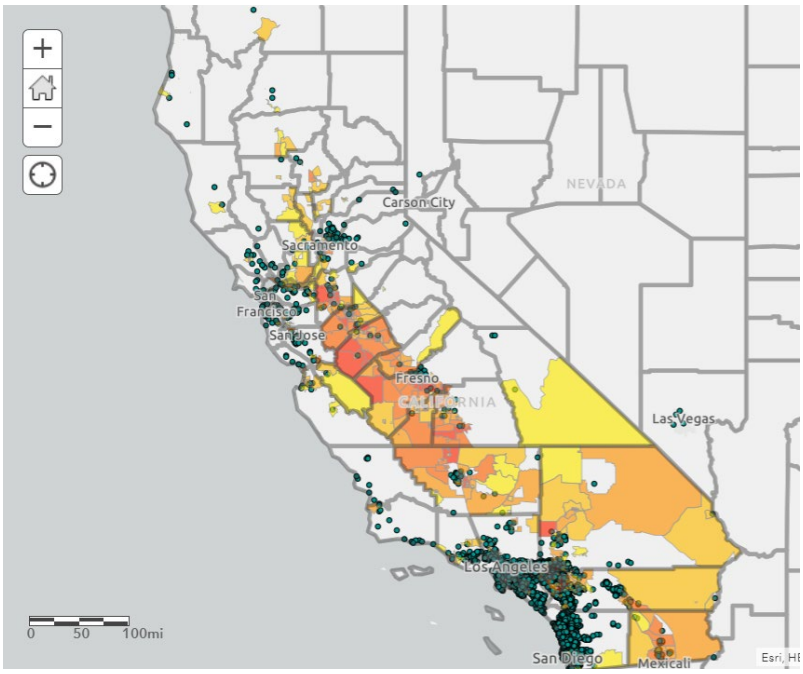

Figure 1.2

This map shows the altered layers of CalEnviroScreen 3.0 that show areas with at least 55% susceptibility to environmental risk as well as the data points of student applicants from the first map.

Lastly, I wanted to get a clearer view of what student data points were in these locations and a precise number of students, so I created a third map. This map was a duplicate of the second; the main difference implemented in this map was running an analysis through ArcGIS to plot and enlarge the points on the map that overlaps with the impacted areas from the CalEnviroScreen layer that represented that 55% and above environmental risk susceptibility. The program analyzed these points and located the information needed for our final map; which is included below as Figure 1.3.

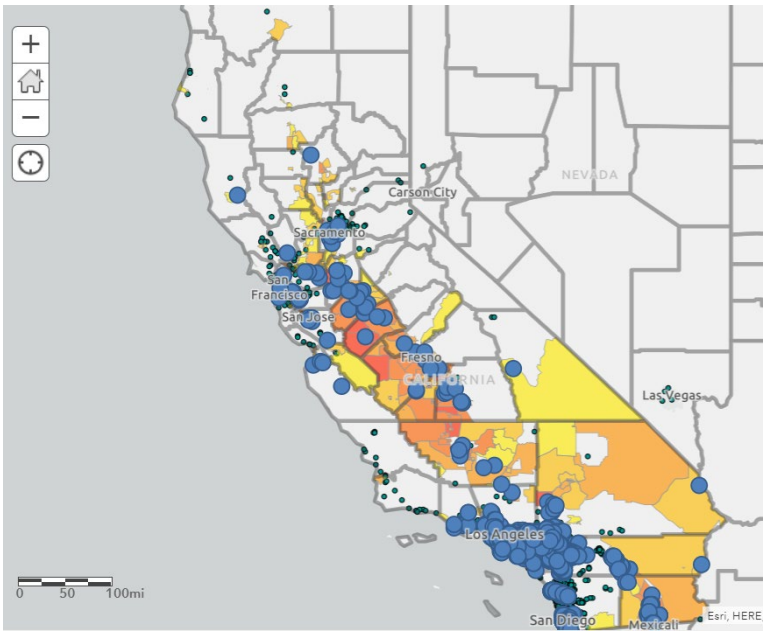

Figure 1.3

This map represents the analysis needed to show us the number of students being impacted by environmental injustice before coming to CSUSM and includes the same layers as the Figure 1.2.

Results

From the data shown on our maps, we were able to determine several important points. For some background, the data on Figure 1.1 demonstrated less than 1% of our students are coming from outside of the United States, and within the United States, 98.5% of students are coming from the state of California.

Now, in Figure 1.2, we were able to determine that in California, about 3,608 cities scored 55% or higher on the CalEnviroScreen 3.0 environmental susceptibility calculation, meaning all these cities are in environmental risk and considered to experience environmental injustice.

After evaluating the calculations from each city on the CalEnviroScreen 3.0 layer and seeing what points overlapped with those areas, which is shown in Figure 1.3, we were able to find that 1,073 points overlapped these two layers. After exploring a variety of these locations on the map as well and looking into the details provided by the demographic statistics of the CalEnviroScreen 3.0 data, we noticed a trend amongst these areas which was that the majority of the populations in these cities were BIPOC.

What this data indicates to us is that in the Fall 2020 semester alone, CSUSM received 1,073 students from cities in California that experienced some kind of environmental injustice; this is almost 21% of our students applicants and a majority predicted to be BIPOC based on the

background research provided by CalEnviroScreen 3.0. Not to mention, we are also receiving students from outside the state and even outside the country, so in further development of this research, these areas should be investigated for environmental impact as well.

This shows us that we have students attending CSUSM who come from areas that have environmental stressors, such as poor air or water quality and that students coming from these areas might have different relationships to the environment than those who come from areas not impacted by environmental injustices. This supports our idea that Inclusive Sustainability at CSUSM is on the right path to ensuring students who may not consider themselves environmentalists or connect to sustainability in the traditional sense, might connect on a deeper level, due to this connection between social and environmental justice.

Discussion & Conclusion

Statistical evidence from our map has shown us we are receiving resilient students from environmentally impacted areas, but some of us already had an idea about this information. Although the main reason for this project was to find out if students at CSUSM were coming from environmentally impacted areas and represent them in discussions of inclusive sustainability, another one of the reasons we started this project was because I am a student who has experienced environmental racism before coming to CSUSM. I didn't realize it when I was there, but with the knowledge I've gained in the past 3 years of my academic journey at CSUSM, I've learned that what I've experienced in regards to my environment is not necessarily normal.

I come from a small agricultural community in Southern California known as the Imperial Valley. This predominantly low-income Latinx community provides renewable energy with our solar panel plants and fresh produce all over the state of California; however goes unnoticed by many. Our county is small, but has suffered numerous counts of environmental injustice, most surrounding air and water quality. I gave little thought to these issues when I lived there, but after entering a new environment and learning about environmental justice and how it intertwines with social justice, I began to see the injustices more clearly and how I am one of a few individuals who's been able to overcome them.

Leaving home and immersing myself into the field of Environmental Studies helped me realize the lack of representation there is in this field and the importance of individuals like me to become more involved in environmental issues; being we are the ones being impacted the most.

Through the help of fellow peers, professors, and faculty on campus, I've been able to find a place for myself in the world of environmental studies and create paths for a future career in this field.

This project is meant to reach students like me, possibly unaware of the environmental obstacles they've overcome and the resilience they possess, to become part of these conversations and make an impact in the field of environmental studies, science, and justice. Representation of BIPOC in this field is important in order to create change for both our communities and our planet, so promoting ideas like inclusive sustainability will allow voices like mine to be heard and solutions to be made. With the statistical data we've gathered, we can see we receive students from environmentally impacted areas like me, but aren't seeing them getting involved in the field of Environmental Studies, which was previously displayed in the pie charts. My hope with this project, and one of the goals of the Inclusive Sustainability Program is to change that. We hope to help more BIPOC students connect to this issue and possibly find themselves in careers that help diversify the field of sustainability to ensure more voices are represented across our region.

Future Developments

With new students coming in every semester, the main purpose of this research is for it to be ongoing. This internship allows students to pick up where this research leaves off in order to continue gathering data about the students on our campus and what we can do to make those who experience environmental injustices feel seen and heard while getting them involved on campus through inclusive sustainability.

One of the ways we plan on increasing representation of BIPOC in issues of environmental justice on campus next semester is with an Environmental Justice Workshop. This semester, we applied for a co-curricular funding grant on campus to host an Environmental Justice Workshop in hopes to promote ideas like inclusive sustainability. This event would be open to all students and would touch on issues involving BIPOC representation in environmental issues and how these topics connect to social justice. It is an opportunity for our campus community, departments, student centers, students, and faculty to come together and discuss how intersectionality plays into environmental justice. This workshop will cover the basics of environmental justice and intersectionality for reference and allow students to voice their

experiences and or views on environmental justice and the ways it can be more inclusive and diverse.

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