

## **CSUSM Library Award Reflection Summary**

**Kennedy Caudle, Student Researcher**, *Environmental Studies, California State University San Marcos, 333 South Twin Oaks Valley Road, San Marcos, CA 92096 USA. E-mail:*  
[caudl002@cougars.csusm.edu](mailto:caudl002@cougars.csusm.edu)

**Courtney Johnson, Student Researcher**, *Environmental Studies, California State University San Marcos, 333 South Twin Oaks Valley Road, San Marcos, CA 92096 USA. E-mail:*  
[johns543@cougars.csusm.edu](mailto:johns543@cougars.csusm.edu)

Our research, “Examining the Impact of Human Presence on Native Insect Pollinators in Coastal Sage Scrub Habitat in North San Diego County” stems from the Research Methods course we took the semester of Spring 2021. We became more interested in studying pollinators after attending the CSUSM Environmental Stewards Association club meetings held in the campus Pollinator Garden. Through these club meetings we learned how vital pollinators are for the overall health of the planet, especially during the climate crisis. We both became very interested in learning more about what we could personally do to protect pollinator species and conserve their natural habitats.

In the current state of our environment, we experience the loss of biodiversity in many ecological communities, including a loss in pollinators. Numerous factors contribute to the decline in pollinator populations, some of which stem from human activities, including agriculture and habitat fragmentation. While there is some literature available on pollinators there is very little about the pollinator ecology of southern California. Databases and other scholarly sources have helped us to not only understand more about pollinators but allows for us to create a proper monitoring technique to investigate the significance of pollinators in San Diego county.

The first step we took in formulating our research question was to conduct a literature review on the research published related to our topic. We felt confident in ourselves diving into our literature review because our class had just completed a workshop with Lalitha Nataraj, the CSUSM Social Sciences librarian. Through this research workshop, Ms. Nataraj explained to our class how to successfully and efficiently access the databases from the CSUSM Library. We gained a better understanding of what databases catered best to our Environmental Studies major

and how to narrow down our research topic to analyze specific research articles that helped to create our project.

Some of the key terms we searched for included pollinators, plant-pollinator interactions, coastal sage scrub plant community, native invertebrates, gardens, human foot traffic, urban design, and pollinator gardens. The databases we primarily used were GreenFILE/Academic Search, ScienceDirect, and Google Scholar. We recognized the importance of staying well organized in our literature review early on due to the fact that we had several key terms and many social and environmental factors to research.

Our literature review consists of three subtopics: the coastal sage scrub plant community, the effects of human pathways in urban areas, and the decline of pollinators. By investigating these three subtopics we not only gained background information on our line of questioning, but we were also able to help formulate our methodology.

Our role as student-scholars is constantly evolving as we continue our longitudinal survey. Through our research, we are pushing ourselves to stay up to date with current pollinator research, expand our skills in geographic information systems (GIS), data collection, statistical analysis, and quarterly report writing. Additionally, our work has led us to develop our public speaking skills. Our professor mentor has allowed us to present our research in front of their classes to gain practice in communicating our research in front of an audience. Furthermore, this semester we had the opportunity to present our research to a panel of judges at the CSUSM 2022 Symposium on Student Research, Innovation, and Creative Activities. We are fortunate to have been selected as a part of the ten finalists that will advance to the 36th Annual California State University Student Research Competition held on April 29-30, 2022, by San Francisco State University.

The knowledge and skills gained throughout our research has encouraged us to further our education into graduate school. Before we began our undergraduate studies, it never occurred to us that we could become involved in undergraduate research or take a project we created from a course and turn it into a year-long research project with a partnership with the San Diego Wildlife Alliance. Our research experience has positively contributed to creating a more meaningful experience at CSUSM and we feel proud to be able to contribute new scientific research to our local north county community.