

Final Evaluation Report

Your Details	
Full Name	Paula Vargas Pellicer
Project Title	Pollinators as indicators: Assessing the effects of ecological restoration on plant-pollinator interactions
Application ID	35433-1
Date of this Report	23 rd April 2024

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Generation of a protocol for the assessment of restoration success schemes		X		The evaluation of restoration success in the area has been addressed through the development of a peer-reviewed journal manuscript currently under review. However, a protocol for assessment is under revision.
Creation of guidelines for assessing plant-pollinator interactions that can ultimately be carried out without specific taxonomic expertise.	X			We have successfully evaluated plant-pollinator interactions in the restoration area. However, we are working in translating this assessment for inexperienced biologists to utilise.
Create a reference data set for plants and pollinating insects for Sierra de Huautla.			X	We have created a comprehensive reference data set (in revision) for pollinating insects and the plant species that they visit in the locality.

2. Describe the three most important outcomes of your project.

a). With this project, we have established that pollination networks have similar robustness across restored and conserved habitats. This finding is crucial to communicate, particularly because we have discovered that the areas under natural succession (i.e., those excluded from disturbance) play a significant role in sustaining these networks. This is noteworthy as it offers a cost-effective restoration alternative.

b). We've devised an effective method to discern insect and plant taxa within plant-pollinator mutualisms. Drawing from our findings, I can now offer recommendations regarding the specific plant species, as well as the optimal season of the year for directing monitoring efforts in the dry forest. As a result, we've identified the role of key species to evaluate the success of forthcoming restoration initiatives.

c). We have collaborated with the local community to know the plants they utilise, their methods of use, and the timing of their utilisation. Through our research, we've unveiled that pollinators from the dry forest ecosystem also play a crucial role in pollinating plants commonly used by the community, such as chili, avocado, papaya, mango, tomato, and others. This discovery underscores the profound interaction between the forest and the people residing within it, adding even greater relevance to the relationship between the two.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

Obtaining the fieldwork collection permit was significantly delayed due to the pandemic. Nonetheless, we initiated pollinator monitoring activities by conducting site visits and undertaking periodic observations without collecting insects while awaiting the permit approval.

4. Describe the involvement of local communities and how they have benefited from the project.

The local community plays an integral role in the project as they are the landowners. They are actively engaged in project planning and are regularly informed about fieldwork events and outcomes. A workshop was organised, encompassing participants of all ages, from the youngest at 8 years old to the eldest members, including women and men. During this session, they were briefed on the project's objectives and contributed their insights on the utilisation of local plants, discussing strategies to enhance and ensure their survival.

5. Are there any plans to continue this work?

The experimental restoration efforts have been ongoing for 18 years, providing a continuous platform for the development of insights into the ecology of restoration within the dry forest ecosystem. The pollinator project holds the potential for continuation, contingent upon securing additional funding.

6. How do you plan to share the results of your work with others?

We currently have a peer-reviewed journal manuscript undergoing review, focusing on pollinator networks. Additionally, we are in the process of preparing two more manuscripts for publication. Furthermore, we are planning to publish a science communication article emphasising the significance of dry forests and their pollinators for local communities.

Additionally, two theses have developed from this project: one authored by a master's student and the other by an undergraduate. I have had the privilege of

serving as a co-supervisor for both, and they will soon be accessible to the public at the university library.

7. Looking ahead, what do you feel are the important next steps?

I believe that is very important to implement monitoring protocols for ecological communities based on interaction network theory to advance long-term conservation objectives and gain valuable insights into ecosystems' functional responses to human interventions. Utilising appropriate indicators facilitates efficient monitoring and adaptive management practices. Consequently, I propose leveraging the structural attributes of ecological networks as indicators to steer and evaluate conservation efforts effectively.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

Yes, I used it on three different conferences presentations. And will be acknowledge in the published papers.

9. Provide a full list of all the members of your team and their role in the project.

Dr. Cristina Martínez-Garza.

In 2006, she initiated the delineation of the study's excluded areas.

She serves as the lead of the Restoration project at El Limón de Cuauchinchinola. She has overseeing fieldwork, data analysis, community engagement, and co-authoring manuscripts related to the project.

Dr. Alejandra Vázquez Lobo

She has supervised every aspect of the laboratory work, encompassing tasks such as procuring lab materials, offering expertise in DNA extraction, providing guidance on troubleshooting, and facilitating the identification of plant species through genetic analyses of pollen samples.

Biol. Laritza González Leiva

She is a master's student at the host University actively engaged in fieldwork. She has utilized sections of the dataset, focusing on insect and vegetative data across time, to develop her own thesis for her degree.

Karina Matías Ocampo

She is an undergraduate student at the host University actively engaged in fieldwork. She has utilized sections of the dataset, focusing on the comparison of plant-pollination interaction in El Limón and areas affected by mining activities.

10. Any other comments?