

Final Evaluation Report

Your Details	
Full Name	Jorge Ernesto Becerra Lopez
Project Title	Landscape effects and anthropogenic habitat degradation on genetic diversity and gene flow in a freshwater turtle in the North of Mexico
Application ID	39749-1
Date of this Report	October 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
Participatory workshops in local communities of the Nazas River will be conducted to explain the importance of turtle diversity, exotic species introduction, and conservation of aquatic ecosystems.			X	
Writing articles for the general public aimed at increasing awareness for the conservation of riverine habitats.		X		The article is currently under review for publication
Elaboration of infographics that will be printed and placed in different communities and on social networks to promote the conservation of freshwater turtles and their habitats.			X	
Peer-reviewed scientific articles in international journals related to conservation.		X		I am currently working on writing scientific articles

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

a). Fieldwork and laboratory work to capture turtle specimens, take blood samples, perform DNA extractions, and genotype nuclear microsatellites for each captured specimen.

b). Participatory workshops in local communities and elaboration of infographics to promote the conservation of freshwater turtles and their habitats.

c). Data analysis that includes estimates of genetic diversity and structure, and the characterization of the riparian landscape.

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

One of the biggest challenges in the project was that no individuals were found in five collection sites, even though sampling efforts were made. In addition, the standardization of 13 microsatellites took longer time than expected.

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

Two approaches were taken: the first involved workshops held in schools and community meeting rooms, where participants discussed the river's turtle species, potential threats, and the impact of habitat modification. The second approach used infographics displayed in small shops and shared with small groups or individuals, encouraging conversations about native and exotic species present in the river.

5. Are there any plans to continue this work?

Currently, there are no plans to expand the study of this species, however, the information derived from the project is still being analysed to elaborate scientific articles and science outreach articles. Alternatively, another turtle species endemic to the Nazas River (*Kinosternon durangoense*) may be studied, which can be found in the area surrounding the Nazas.

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

The results have been shared through workshops, infographics and outreach articles (in revision) to the public and the local community. The more technical results will be shared as specialized talks at international conferences as well as in publications in scientific journals.

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

The next step is to analyze the information generated and write at least two peer-reviewed scientific papers and another science outreach article.

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?

The Rufford Foundation logo was used in infographics, as well as in presentations, workshops and talks held in different schools and communal halls. As well as presenting the results at international conferences.

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

The team consisted of ten people who have been contributing in different ways, from field assistance for capturing the samples, laboratory work for processing samples, advising on data analysis, and obtaining landscape data. Team members are as follows:

Dra. Yessica Rico. Instituto de Ecología A.C. Centro Regional del Bajío, Pátzcuaro Mich. She has extensive experience in landscape genetics and population genetics.

Dr. Eduardo Pineda Arredondo. Instituto de Ecología A.C. Xalapa, Ver. He has extensive experience in the study of amphibians and reptiles in freshwater environments.

Dr. Miguel Borja. Universidad Juarez del Estado de Durango, Gomez Palacio Dgo. Doctor in biomedical sciences, with experience in biochemical and molecular techniques.

Dr. Armando Sunny. Universidad Autonoma del Estado de Mexico, He has extensive experience in molecular biology and landscape connectivity.

M.C. Bruno Rodriguez Lopez. Universidad Juarez del Estado de Durango, Gomez Palacio Dgo Experience in digital mapping, geographic information systems, bioinformatics analysis.

Biol. Areli Gutiérrez Martínez. Universidad Juarez del Estado de Durango, Gomez Palacio Dgo. Experience in fieldwork and monitoring of reptiles

M.C. Juan Jose Castaneda Gaytan. Director of the Municipal Ecological Reserve: Sierra y Cañon de Jimulco. Experience in monitoring biological groups, as well as in fieldwork with reptiles.

Luis Terrazas - President of the fishermen society of "Lazaro Cardenaz" Dam. Inde, Durango. Knowledge of the study area and local guide.

Tomas Arzola- President of the fishermen society of "Francisco Zarco" Dam. Lerdo Durango. Knowledge of the study area and local guide.

Pablo Salazar- fishermen at Carranza Locality. Knowledge of the study area and local guide.

Luna Munoz Payan. Fieldwork and laboratory support student

Gael Guzmán Meraz Fieldwork support student

Salvador Rodriguez Aguilar Fieldwork support student

Citlali Moreno Gonzalez Fieldwork support student

Kevin Fajardo Avila. Fieldwork support student

Sofia Alejandra Lopez Arciniega Fieldwork and laboratory support student

10. Any other comments?