

### Final Evaluation Report

| Your Details        |   |
|---------------------|---|
| Full Name           | Marisa Carvalho Naia  |
| Project Title       | Assessment of the newly discovered population of the Globally Endangered Zolio's lizard in Mauritania |
| Application ID      | 30875-1   |
| Grant Amount        | 5970£   |
| Email Address       | marisanaia@cibio.up.pt  |
| Date of this Report | 15/11/2021  |



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

| Objective  | Not<br>achieved | Partially<br>achieved | Fully<br>achieved | Comments   |
|--|-----------------|-----------------------|-------------------|--|
| Assess the distribution of<br><i>Philochortus zolii</i> in the<br>Diawling National Park and<br>in surrounding humid<br>habitats along southern<br>Mauritania. |                 |                       |                   | Distribution fully assessed in the<br>Diawling National Park and in the<br>surrounding humid habitats in<br>southern Mauritania, where the<br>species was not detected.  |
| Estimate population abundance of the species.  |                 |                       |                   | Population abundance of the species<br>was estimated in the Diawling<br>National Park.   |
| Understand the habitat selection in the Diawling National Park.  |                 |                       |                   | Habitat selection of the species was<br>assessed in the Diawling National Park<br>and found to be very specific.   |
| Identify local suitable<br>areas for species<br>occurrence and<br>distribution.  |                 |                       |                   | We have identified the areas suitable<br>for the species occurrence but we<br>were unable to extrapolate to other<br>areas outside the Diawling National<br>Park due to limitations in the presently<br>available satellite imagery. |
| Identify threat risks in<br>Diawling National Park and<br>in surrounding humid<br>habitats.  |                 |                       |                   | We only observed the species in<br>Diawling National Park where we<br>identified the threat risks.   |
| Derive an action plan for<br>the conservation of the<br>species.   |                 |                       |                   | Considering the threats to the<br>population, we have defined an<br>action plan presented to Diawling<br>National Park.  |
| Disseminate the project<br>results among relevant<br>stakeholders.   |                 |                       |                   | We have disseminated the results<br>among the Diawling National Park<br>direction, but we were unable to<br>schedule an in-person meeting due to<br>the Covid-19 pandemic.   |

## 2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

There were two main unforeseen difficulties during the project development. The Covid-19 pandemic has delayed the fieldwork and prevented us working during the rainy season where we expected that the species would display a higher activity. However, in 2020 the rainy season extended to October (when the fieldwork was undertaken) and prey availability was high, therefore we have detected the species in the study area as well. The Covid-19 pandemic also prevented us scheduling an



in-person meeting with the Diawling National Park Director to present our results and discuss future directions. This was overcome with an in-person discussion with a park ranger about the discovery of the new population and with the delivery of two dissemination leaflets and one report to the Diawling National Park, expressing the results and an action plan.

The presently available satellite imagery placed the second difficulty to this work, which was unable to capture the detailed habitat heterogeneity of the study area in Diawling. Suitable habitats for the species occurrence inside the study area were identified but we were unable to make extrapolations to areas outside the Diawling National Park.

#### 3. Briefly describe the three most important outcomes of your project.

- 1) Clear understanding of the distribution of a Critically Endangered species at the national level in coastal Mauritania. It was possible to conclude that the species is locally rare, increasing the need for its protection.
- 2) Confirming that the species displays low detectability, exhibits a very short activity period, and inhabits very specialised habitats in Mauritania. This information allowed to gather ecological information for the first time on a poorly known species.
- 3) Gathering precise information on the population and its threats to derive an Action Plan presented to the Diawling National Park in order to preserve this threatened species in Mauritania.

## 4. Briefly describe the involvement of local communities and how they have benefitted from the project.

Local communities living in the area are mainly fishermen and shepherds who do not directly impact on the lizard population; therefore they were not involved in the project. Nevertheless, we developed dissemination leaflets specifically adapted to local communities for environmental education. In the Action Plan we have specified the importance of awareness of local communities, that is now under responsibility of the Diawling National Park.

#### 5. Are there any plans to continue this work?

The monitoring and preservation of this population in Mauritania is now the responsibility of the Diawling National Park.

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

We have achieved the following outputs in order to share our work:

• Scientific article "Distribution, ecology, and conservation of *Philochortus zolii* in Mauritania: implications for the long-term persistence of an endangered



lizard" in the African Journal of Herpetology, to share the results among the scientific community (DOI: 10.1080/21564574.2021.1980121).

- Oral communication in the Sahelo-Saharan Interest Group (SSIG) meeting on May 19 (presented online, via zoom), to share the results with the scientific community working in the study area.
- Technical report to the Diawling National Park with our results and Action Plan "Biodiversité et Conservation des Amphibiens et Reptiles au Parc National du Diawling: Distribution, Ecologie et conservation de Philochortus Zolii" (https://cutt.ly/rTwg8dE).
- Leaflets in French and English versions for environmental education, to be distributed to local communities and visitors of the Diawling National Park (EN: https://cutt.ly/nTwhaN7; FR: https://cutt.ly/BTwhdjs)

## 7. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

The grant was used during the one year of the project between October 2020 and October 2021.

8. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in  $\pounds$  sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

| Item                                | Budgeted<br>Amount | Actual<br>Amount | Difference | Comments   |
|-------------------------------------|--------------------|------------------|------------|--|
| Expedition: vehicle<br>rental       | 1900               | 2400             | +500       | We increased our stay in Mauritania<br>for another week to increase the<br>effort in sampling humid areas in<br>southern Mauritania, which increased<br>the value of vehicle rental. |
| Expedition: fuel costs              | 550                | 690              | +140       | The extra week in Mauritania increased the fuel costs.   |
| Expedition:<br>accommodations       | 320                | 320              |            | We have maintained the accommodation costs, as the extra week of field sampling was done bush camping.   |
| Expedition: food and water supplies | 1900               | 2350             | +450       | The extra week in Mauritania increased the food and water supplies costs.  |
| Expedition: field                   | 250                | 250              |            | We have maintained the field   |



| supplies                         |      |      |      | supplies costs.  |
|----------------------------------|------|------|------|--|
| Dissemination:<br>accommodations | 450  |      | -450 | Due to the covid-19 pandemic it was<br>impossible to return to Mauritania for<br>the meeting with the DNP direction. |
| Dissemination:<br>meals          | 600  |      | -600 | Due to the covid-19 pandemic it was<br>impossible to return to Mauritania for<br>the meeting with the DNP direction. |
| TOTAL                            | 5970 | 6010 | +40  |  |

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

In the short term it is important to restrict human activities, especially the growing industrial activities in the coastal areas, in the region where *Philochortus zolii* is distributed, and to monitor the population as the disclosure of the new location may stimulate direct persecution of individuals for collection (pet trade). In the long-term, the Ministry of the Environment of Mauritania should thoroughly consider the westwards expansion of the Diawling National Park to include the coastal habitats where *P. zolii* is known to occur. The reasons for such expansion include the national and global relevance of the conservation status of the species, and the observed continuing decline in the availability of suitable habitats.

# 10. 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?

We have used The Rufford Foundation logo and/or state the financial support in the following outputs:

- Scientific article published in the African Journal of Herpetology "Distribution, ecology, and conservation of *Philochortus zolii* in Mauritania: implications for the long-term persistence of an endangered lizard" (DOI: 10.1080/21564574.2021.1980121).
- Oral presentation on the Sahelo-Saharan Interest Group (SSIG) meeting on May 19 (presented online, via zoom).
- Final report provided to the Diawling National Park "Biodiversité et Conservation des Amphibiens et Reptiles au Parc National du Diawling: Distribution, Ecologie et conservation de *Philochortus Zolii*" (https://cutt.ly/rTwg8dE).
- Leaflets in English and French provided to the Diawling National Park to be shared with local communities and visitors (EN: https://cutt.ly/nTwhaN7)
- Scientific article on "New records of bird species in Mauritania", which some results resulted of the fieldwork developed in Mauritania during the work supported by this grant. This manuscript is currently under review in Malimbus journal.



## 11. Please provide a full list of all the members of your team and briefly what was their role in the project.

**Marisa Naia**, **MSc**: collaborator at CIBIO/InBIO. MN participated in the field surveys, conducted the ecological analyses, and participated in the dissemination of projects results.

José Carlos Brito, PhD: principal investigator of BIODESERTS - Biodiversity of Deserts and Arid Regions research group at CIBIO/InBIO. JCB coordinated the fieldwork activities, supervised the ecological analyses, and participated in the dissemination of projects results.

**João Carlos Campos, PhD**: post-doctoral researcher at CIBIO/InBIO and member of BIODESERTS research group. JC participated in the field surveys and performed the remote sensing analysis, which was not used in the final results of this project to its imprecision in the study area.

**Zeine El Abidine Sidatt**, **MSc**: regional officer at Diawling National Park. ZS provided logistic support for the development of the fieldwork, including permits and access to the area and participated in the dissemination of project results, via transfer of scientific results to the direction of the Diawling National Park.

Andack Saad Sow, PhD: researcher in the Mauritanian NGO - Green Sahel Expertise: Bureau d'Études Spécialise en Environnement, and external collaborator of BIODESERTS. As participated in the dissemination of projects results, via transfer of scientific results to local communities (adapting to the local cultural background and dialects).