

Final Evaluation Report

Your Details	
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Project Title	Importance of Tunisian IBAs for waterbirds during the wintering period
Application ID	29020-1
Date of this Report	September 30, 2022

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
Assessment of the population size of waterbirds wintering in the main Tunisian IBAs				We determined for each observed species its abundance in the wetlands visited (For more detail, please see the first report).
Composition of the avifaunal diversity inhabiting these wetlands in terms of families, migratory status, conservation status and foraging guilds (i.e., shorebirds, wading birds, open water birds and waterfowl).				During our fieldwork, using direct counting method, we determined a list of observed species. We also classified the observed species by foraging guild, family, migratory and conservation status (For more detail, please see the first report).
Quantify the impact of environmental variables such as, salinity, wetland size and cover of emergent vegetation on waterbird species richness and abundance.				A total 27 environmental variables were collected for each wetland. These data will be used to identify the ecological factors and processes affecting the distribution, abundance and diversity of waterbirds in Tunisian IBAs. From these analyses, scientific manuscripts will be produced and submitted to a peer-reviewed journals for publication.
Develop predictive models of habitat suitability for individual waterbirds species, which will help geographically prioritize the focus of conservation activities.				The collected waterbird data (species richness, abundance and distribution) will be combined with a large number of environmental variables, mostly related with habitat characteristics, water chemistry and anthropogenic factor. Thus, these data will allow developing predictive models of habitat suitability for individual waterbirds species. The results of these analyses will be published in international scientific journals.
Increase public awareness and advocate for the conservation of waterbirds, and their				During our project, we carried out sensitisation workshops and training with local communities adjacent to the wetland to enable them to conserve and access wetland resources in a

<p>wetland habitats, which are also crucial for local livelihoods.</p>			<p>manner that is sustainable for the future generation. We have also developed a partnership with the Ministry of Education. This partnership has allowed us to conduct at least 15 information sessions to local schools. These information sessions were conducted in three regions: Gabès, Medenine and Djerba. In each session promotional material was spread to help raise awareness for wetlands and the conservation of waterbird. A field visit was also organized for a group of students from the "EcoRecycling Al Manara School club" and their parents. This visit was conducted in two wetlands of international importance for birds: lagoon of Boughrara and El Grine. In collaboration with the association « Oasis des Sciences », a field visit for Sebket Dreiaâ (IBA) was also carried out for the Volunteers of the Student Organization (AEISEC, Gabes) and the Students of the Youth School 2 (Matoouia, Gabes).</p>
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2. Describe the three most important outcomes of your project.

a) The population sizes of large number of endangered species (e.g., Eurasian curlew, Eurasian oystercatcher, ferruginous duck, marbled teal and white-headed duck) have been estimated. In addition to these species, the population sizes of a large number of waterbirds rated as Least Concern by the IUCN have been also estimated (e.g., dunlin, common redshank, little egret, grey heron, great egret, Eurasian spoonbill, greater flamingo, slender-billed gull, black headed gull, Eurasian wigeon, northern pintail, northern shoveler and common shelduck). These data will allow you the identification of key wintering sites for waterbirds and they provide basic information for the management and conservation of waterbirds and their aquatic ecosystems.

b). Many environmental variables, mostly related with habitat characteristics, water chemistry and anthropogenic factor have been collected. Thus, they will allow the identification of key parameters (e.g., habitat features, hydrological characteristics) that shape the use of Tunisian IBAs by waterbirds during the wintering period. These data will provide baseline information that is crucial for implementing conservation activities in Tunisian wetlands.

c). We have raised awareness about the value of wetlands and waterbird conservation. In particularly, many people from the local communities were oblivious to the diversity of species that used wetlands just next door to them, but

through our project, we were able to make them aware of not just the species present, but also their importance. In addition, the development of a partnership with the Ministry of Education has allow us to deliver talks and conducting awareness activities directed to children and young adolescents. The purpose of this partnership is to raise environmental awareness regarding the conservation of waterbirds, and their wetland habitats, which are also crucial for local livelihoods.

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

The global Covid-19 pandemic has affected the development of our project and we had to postpone some activities. For example, we expected to develop the environmental education workshops with schoolchildren in 2021. However, due to this pandemic the school was closed. For this reason, we could not do promote talks and presentations at local schools, and we had to wait until the beginning of the next school year, 2022. In addition, the Covid-19 pandemic has affected the number of participants in the fieldwork. To minimise the risk of infection by Covid-19, we have decided to reduce the number of volunteers and keep as possible the same team.

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

The local community members were actively involved in the project implementation such as through a school information session. The participants (students and their teachers) have gained knowledge and experience from the talks and presentations at local schools.

5. Are there any plans to continue this work?

Yes, we plan to continue this project to understand the effect of climate change on waterbirds and their habitats. With the change in the abundance of some species and their conservation status, our second long-term goal is to revise the Tunisian IBA network. We plan also to continue build capacity of local community members to enable them to preserve wetlands and waterbirds.

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

1. The results of our work will be shared directly with key stakeholders and policy makers, including the Ministry of Agriculture, Water Resources and Fisheries and/or the Ministry of Environment, Coastal Protection and Planning Agency during workshops and conferences.
2. We intend to disseminate the findings from this project in peer reviewed scientific journals such as Conservation Biology, Animal Conservation, Bird Conservation International, Wetlands Ecology and Management, and Hydrobiologia.
3. We already shared the progress of our work and will continue to share updates of our project on our social media sites and platforms such as Facebook, Twitter and ResearchGate.

4. We plan share the results of our project in national and international upcoming conferences.

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

This project has generated important data and information on the use of wetlands by wintering waterbirds, which constitute a baseline for implementing conservation plan in Tunisian wetlands. In addition, we found that many threatened waterbirds use these wetlands as wintering area. These species include the ferruginous duck *Aythya nyroca*, marbled teal *Marmaronetta angustirostris* and white-headed duck *Oxyura leucocephala*. The first species is listed as Near Threatened in the IUCN Red List, while the marbled teal and white-headed duck are listed as Vulnerable and Endangered, respectively. These species are also known to use Tunisian wetlands as breeding sites. Therefore, we believe that it is important to continue the efforts started in this project to understand the ecological factors and processes affecting the distribution and abundance of these threatened species during the breeding seasons. Such project will provide baseline information that is crucial for developing successful management strategies for these threatened species.

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, the Rufford logo was used on all project documents. For example, the logo was used in educational materials such as flyers, posters and hats used for awareness activities. We will also indicate in the upcoming scientific papers that the results of this work were supported by Rufford Small Grant Programme.

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

Dr. Saâd Hanane: Participated in the planning of data collection. He will be involved with data analysis and scientific papers development.

Dr. Abdulhakim Abdi: Participated in the planning of data collection. He collected the landscape variables describing wetlands. He will be also involved with data analysis and manuscript development.

Mr. Naoufel Hamouda: Participated in fieldwork (counting waterbirds) and outreach programs and created the educational materials.

Mr. Abdenaceur Ghlis: Participated in fieldwork (counting waterbirds) and created the educational materials as well as conservation education.

Miss. Marwa Fatnassi: She has been replaced with Mohamed Ali Chokri and Habib dlensi. M. Chokri and dlensi have been participated in fieldwork.

10. Any other comments?

We thank The Rufford Foundation for their financial support provided to our project. Without this funding, this work would never have been successful.