

### Final Evaluation Report

Your Details	
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Project Title	Managing Landscape Context to Preserve Birds' Biodiversity in Wetlands of the Wet Chaco
Application ID	32642-1
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#### 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
Use birds as a diversity indicator to contribute to the conservation of a highly complex and biodiverse biome.				Drought and fires in the region delayed field sampling, making it impossible to complete the sampling in wetlands (dry and inactive for most of the project), which meant partially changing the focus of the project. It also delayed the development of the statistical analyses required to achieve this objective.
Work in at least three ranches to provide and start applying specific landscape management recommendations				We contacted 62 landowners and a natural park that authorised sampling in their fields. Four landowners joined the initiative to conserve bird biodiversity throughout their property (not only in wetlands). Meetings were held to analyse the situation of their fields and potential management interventions, and a report was prepared for each landowner regarding the bird community present on their farms. The delay in sampling and data analysis led to the fact that a final version of the recommendations to be developed jointly with the landowners cannot yet be presented.
Produce technical and educational materials for local public, schools and NGOs, aimed to help local communities to value the high avian biodiversity they have in their properties and to understand the importance of protecting birdlife with a smart landscape design.				Technical reports were prepared regarding the bird communities present in each productive establishment. Collaborated with technical information requested for the development of the territorial ordering of the province of Chaco according to law 26331 of minimum budgets for environmental protection of native forests. We also collaborated with technical information requested by the NGO Alianza del Pastizal, which plans to start conservation tasks of natural environments within one of the farms where sampling was carried out. But due to the delay in the collection of field data, the outreach



		material	for	the	public	cannot	yet	be
		prepared	d.					

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

**a).** A database of bird biodiversity based on their habitat was generated, representing one of the first at a regional scale in the Argentinean humid Chaco. This database will significantly contribute to understanding the state of biodiversity in this understudied system and generate management recommendations for its conservation.

**b).** Preparation of bird biodiversity reports for the farms that participated in this study.

**c).** A network of landowners interested in monitoring the bird diversity on their farms (where project data was obtained) was established, which will be fundamental for the development of further studies in the area. Efforts were also initiated with producers interested in implementing management plans and redesigning their farms to align their production systems with the conservation of bird biodiversity and ecological processes.

A major achievement was the successful completion of samplings across most of the Argentinean humid Chaco ecoregion. A total of 25 wetland, 95 forest and 62 pasture sampling sites were visited, distributed among 62 different livestock farms and one provincial nature reserve. The support and interest of farmers, who manage 95% of the area within the ecoregion, were instrumental in this accomplishment. This region has been significantly underrepresented in ecological research, primarily due to the challenging fieldwork conditions imposed by harsh environmental circumstances and the lack of research institutions focusing on this type of investigation in the region.

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

The first difficulty we encountered were the restrictions implemented by local governments to prevent the Covid-19 pandemic, which were particularly intense and long-lasting in the study area. On the one hand, this led to requests for the money to be accredited later than originally planned and to requests for an extension of the project completion date. Second, the unprecedented drought that lasted in the region from 2019 to the end of 2022 greatly affected the functioning of the wetlands, as they were totally devoid of water for several seasons. Due to this drought, fire events in natural environments spread over most of the territory of the humid Chaco, eliminating the entire vegetal structure of most of the wetlands planned to be sampled. Due to the lack of water, the vegetation of many of these environments did not recover during the sampling period. Therefore, we had to partially change the focus of the project and work in environments where sampling could be carried out. For this reason, we decided to sample in those wetlands that have suffered less disturbance and dedicate more sampling effort to the surrounding forests.



In this way, the work with the landowners was changed to a more comprehensive vision of their ranch. The landscape management and redesign proposals focus on the total heterogeneity of environments on the property, with special interest in wetlands and forests. But the design proposals will integrate forest, wetland and pasture management.

From an economic point of view, the large rate of devaluation of the Argentine currency caused the original subsidy to be greatly reduced, which led to reformulate the budget and expenses, having to set aside investments in equipment and hotels to invest a larger budget in food and fuel expenses. On the other hand, to avoid lodging expenses, it was decided to camp in each of the farms where the field work was carried out.

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

The collaboration of the landowners was essential to complete this stage of the project, as they allowed us to carry out the sampling within their farms. Several institutions played a crucial role in establishing the initial contact with these farmers, including various birdwatching clubs in the region, technicians from the Instituto Nacional de Tecnología Agropecuaria (INTA) who work closely with agricultural landowners, employees from the provincial environmental department of Chaco, and park rangers from the Asociación Nacional de Parques Nacionales de Argentina.

In the first instance, all the landowners who allowed us to sample on their farms receive a technical report. The report explains how the samplings were conducted on their property, provides a comprehensive list of all identified bird species, and includes a description of the species communities present. Additionally, the report specifies any species that may be of importance due to their conservation status and cultural significance. This technical report is useful for farmers as a baseline for those who are planning to implement livestock management practices that are more focused on biodiversity conservation. This includes landowners who already have nature reserves or those planning to allocate part of their land as private nature reserves. Additionally, the report is valuable for landowners who are currently or intending to engage in rural tourism or nature observation activities.

Technical information was provided as requested by the project coordinators of the project "Actualización del ordenamiento territorial de la provincial del Chaco" in accordance with National Law "No. 26331: Presupuestos mínimos de protección Ambiental de los bosques nativos". This law regulates the sectors within the province where changes in land use in forests can take place. We also collaborated by providing the technical information requested by the NGO Alianza del Pastizal, which plans to initiate conservation efforts for natural grasslands within one of the farms where we conducted samplings. This farm is home to relict populations of endangered species, including the strange-tailed tyrant (Alectrurus risora), a specialised bird of flooded grasslands, and the bare-faced curassow (Crax fasciolatta), a Near Threatened species that exclusively inhabits gallery forests.



We are working on the required technical reports to be submitted to the governmental entities dedicated to monitoring natural resources in each province. These reports will provide information on bird communities in each establishment and distributions of species of interest based on their conservation status at the international level (according to IUCN) or at the national level. This includes species such as the undulated tinamou (Crypturellus undulatus), Chaco owl (Strix chacoensis), black-bodied woodpecker (Dryocopus schulzi), collared forest-falcon (Micrastur semitorquatus), turquoise-fronted Amazon (Amazona aestiva), Nanday parakeet (Aratinga nenday), orange-backed troupial (Icterus croconotus), Muscovy duck (Cairina moschata), Chilean flamingo (Phoenicopterus chilensis), upland sandpiper (Bartramia longicauda), bearded tachuri (Polystictus pectoralis), bobolink (Dolichonyx oryzivorus), scarlet-headed blackbird (Amblyramphus holosericeus), dark-throated seedeater (Sporophila ruficollis), and greater rhea (Rhea americana).

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

We will continue this work for at least 2 more years, during which we will focus on completing the work with landowners interested in developing biodiversity management plans. The continuation of the project is ensured through funding from INTA (Instituto Nacional de Tecnología Agropecuaria) under the new institutional project 196. We will also finalise the analysis of the collected data and publish the obtained results. We will continue to provide information and technical support to governmental entities that require it for decision-making regarding the management of their natural resources in the humid Chaco region, based on the data obtained with the support of Rufford funding.

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

Technical reports were prepared and delivered to the environmental departments of the provinces where the sampling was carried out. Workshops will also be conducted, targeting NGOs, institutes, and governmental entities involved with farms or natural resource management and conservation. Plans are in place to publish the results in specialised scientific journals, as well as in popular science magazines.

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

The next steps involve advancing with the data analysis to determine if there are landscape structure thresholds in relation to the expansion of agricultural and livestock activities that impact bird communities. Based on these findings, providing management recommendations and proposed designs for the participating landowners, generating outreach materials and workshops to make this information accessible to the community, and publishing the obtained results.



# 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 technical reports submitted mention that the project was made possible thanks to the grant provided by The Rufford Foundation, and their logo is included. When creating the outreach materials, the logos will also be added.

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

**Biol. Leandro Bareiro:** General project coordinator. Responsible for logistics and implementation of field campaigns, searching for livestock farms for sampling, selecting, training field assistants, and communicating with landowners and government entities. Responsible for data processing and analysis, as well as the development of technical and outreach materials.

**Dr. Gregorio Gavier:** Project director, primarily contributing as an expert in landscape ecology. Also participated in some field sampling.

**Dr. Sebastián Dardanelli:** Project director, mainly contributing as an expert in avian ecology. Also participated in some field sampling.

Biol. Helen Pargetter: Assisted in field sampling.

**Biol.** Noelia Got: Assisted in searching for livestock farms for sampling and participated in field sampling.

Federico Rosas (Park ranger student): Assisted in field sampling.

Narela Cañete (Park ranger student): Assisted in field sampling.

Bruno Bareiro (Member of Muitu Bird Observers Club): Assisted in searching for livestock farms for sampling and participated in field sampling.

Mirian del Río (Member of Guaicurú Bird Observers Club): Assisted in searching for livestock farms for sampling and provided assistance in field sampling.

Walter Ramirez: Assisted in field sampling.

Agustín Camargo: Assisted in field sampling.

Hernan Rojo: Assisted in field sampling.

#### 10. Any other comments?

Rufford's support was essential for the development of this project, without which the great work of sampling throughout the humid Chaco ecoregion could not have been carried out. This allowed us to contact many producers who would allow us to



sample on their farms, establishing a relationship of trust and promoting their interest in the biodiversity that they harbour within their farms.

Some landowners have committed to ongoing collaboration in the future to enhance their livestock management practices and promote greater conservation of their ecosystems. By setting positive examples, these practices can inspire other farmers to adopt more environmentally friendly approaches to their operations.

This is of utmost importance because farmers hold most of the land within this ecoregion, and thus the conservation of the environment heavily relies on their practices and decisions. Despite the obstacles and difficulties encountered throughout the project, it will significantly contribute to the conservation of the humid Chaco providing valuable information in a region where ecological research has been scarce.

Personally, overseeing a project of this magnitude for the first time was a great challenge for me. I had to learn how to manage a project of this scale, which involved organising and coordinating a team, required extensive training in fieldwork, and necessitated effective communication with different members of the local communities. Additionally, I had to learn how to handle a significant amount of money in a fluctuating economy like Argentina's, and the assistance provided by the Whale Conservation Institute was indispensable in this regard.



Bird Sampling at Caraindotá Lagoon (Formosa, Argentina).





Planning the Samplings with a Landowner.





Alectrurus risora.



Counting Phoenicopterus chilensis during Wetland Samplings.





Sporophila ruficollis.



Strix chacoensis.