

Final Evaluation Report

Your Details	
Full Name	Diego Gallego García
Project Title	Rediscovering and protecting Chaco Eagle populations in a critical area for its conservation
Application ID	32612-1
Date of this Report	April 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
PERCEPTION AND AWARENESS (I): SCHOOLS Giving talks at 30 (or more) schools				A total of 56 talks were given at more than 40 schools, mainly at elementary and secondary levels, but also tertiary. We reached almost 1000 students from elementary level (aged 6-12), more than 1200 from secondary level (aged 12-18), around 200 from other levels (kindergarten, tertiary) and more than 200 teachers from all levels
PERCEPTION AND AWARENESS (II): LOCAL PRODUCERS AND RURAL WORKERS Reaching 800 landowners and rural workers with the interviews at ranches and the meetings with producers at Rural Associations				Due to COVID restrictions, some previously arranged meetings with producers were cancelled at the last minute. However, we were able to get very close (747) to the expected number of people. We reached 430 local producers, vets and landowners with our talks at Rural Associations, 168 rural workers with our personal interviews at private ranches and fields, and 149 people belonging to local communities (bird watchers, scientists, authorities and teachers), either at local communes or small town councils.
RESEARCH (I): NEST SEARCHING Discovery of 4 to 8 new reproductive Chaco Eagle territories and nests				We discovered 19 new reproductive Chaco eagle territories. In six of the territories, the old nests where Chaco eagle adults had bred in past years (according to the local people) were not occupied. In three of them, we found clear signs of activity (e.g., feathers, copulation and prey remains) but we were not able to locate the exact nest. In 10 of the territories, we were able to find the active nest.
RESEARCH (II): NEST MONITORING Breeding monitoring of 4 to 8 Chaco Eagle nests				Of the total of 10 Chaco eagle nests monitored. One failed even before we could install the camera trap in early October. Two were impossible to

				reach, due to the altitude and difficulty of climbing. One was found very late in the season (February) In the remaining six nests, we installed five camera traps and one live camera.
CONSERVATION: RESCUE RAMPS Installing ~100 rescue ramps at water reservoirs close to Chaco Eagle territories				55 rescue ramps were installed during December, February and March by us, while showing rural workers and local producers how to do it. The rest of the rescue ramps were given to the people at the ranches and private fields. During last 3 months, we have received pictures and confirmations of the installation of 40 more rescue ramps by people from local communities, with more ramps to be installed soon.

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

a). Involvement of communities; from lack of awareness to action.

One of the main outcomes of our project has been the extraordinary attitude of locals towards our conservation cause. In fact, less than 8% of the total number of people we reached knew that the Chaco eagle even existed or, else, were able to identify it correctly. However, from the moment that our project arrived at the area, their commitment increased significantly. Examples of this trend include:

- Schools: some schools were waiting for us with different arts and crafts exhibitions and, after our talks, started working in presenting proposals for science fairs. Children spread out our word to their parents, helping us to find Chaco Eagle territories. In fact, three of the new active nests were found thanks to the talks at schools.
- Rural Associations of Producers: rural workers, local producers and vets have created different ways of being aware of Chaco eagle sightings in the area (for example, WhatsApp and Facebook groups). Nowadays, they are working together with nature photographers and ornithologists of the area. Five of the new active nests were found thanks to our contacts with local producers and rural workers.
- Local councils and authorities: some departments of Santa Fe province are working in different projects to promote the protection of Chaco eagle. San Cristóbal department, for example, already declared our research and conservation project "of interest". Also, some towns are planning to run different workshops related to nature photography and ornithology, with the help of some locals that have learnt from our talks.

b). The discovery of 19 new Chaco eagle territories and 10 new active nests.

This is a huge milestone of our project. In an area where fewer than five active Chaco eagle nests have been found in the last 50 years, we were able to locate and identify 10 new active nests in only one reproductive season, which are added

to other nine territories where probably new nests will be found in the next few months. This gives our conservation cause a big boost to continue monitoring the status of this population in the area.

c). Conservation outputs: rescue ramps

The reception of rescue ramps by landowners has been very satisfactory. Indeed, lots of them told us that birds usually drown in these infrastructures. Camera trap pictures have shown us that there are some species that are able to use the ramp to safely drink water from the tank, and drowning events have drastically been reduced in those water reservoirs with a rescue ramp installed (data collected by conversations with the landowners over the last 4 months).

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

Meetings with local producers: we had some issues when organising in-person meetings with Rural Associations of Producers. In fact, a pair of them were cancelled "at the last minute" due to COVID restrictions. However, we were able to get very close to the expected number of rural workers and producers thanks to some meetings that we organised virtually.

Deforestation and absence of Chaco eagle: eastern Santiago del Estero province has recently been devastated by deforestation due to the advance of the agricultural activities (soybean, cotton). Thus, according to local inhabitants, the presence of Chaco Eagle has decreased in the area. Although we were able to find some Chaco Eagle territories in eastern Santiago del Estero, it appears that the area is not very suitable for their reproduction anymore (i.e., highly fragmented forests, abundance of pesticides, and lack of prey...). However, the word spread out westward (central Santiago del Estero), where we have some people assuring that they have seen Chaco Eagles in the area. Future studies will confirm these trends.

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

As described above, locals have experienced a huge change, from lack of awareness on the Chaco eagle identification and conservation to a determined attitude towards helping this endangered species. Some specific milestones which show the commitment of local communities are:

- The declaration of our outreach project "OF INTEREST" by the 09 Regional of Education of San Cristóbal Department, Santa Fe province. Already signed.
- The declaration of the use of rescue ramps "OF INTEREST" by the towns of Tostado, San Cristóbal and Vera (all in Santa Fe province). In the process of signature.
- The organisation of a photographic exhibition of birds (and, between them, Chaco Eagle) in the Natural Sciences Museum of San Cristóbal Department.
- Our project has appeared three times on regional TV programmes, eight times on radio programmes and nine different newspapers have written about our research and conservation cause.

- The Bulletin of Argentinian National Parks issued a special section in September-October 2021 (N°353) where they talked about our official attendance to Copo National Park (Santiago del Estero), and our outreach and conservation actions carried out there.

Direct benefits for the local community have been:

- Chaco Eagle live nest cam: this has been the first experience with a live camera on a raptor nest in the Neotropical area. The live streaming video has been watched by thousands of people from the local community, from Argentina, from South America and from all over the world.
- At least seven rural schools have already applied to attend (and compete in) their respective regional science fairs with an issue related to Chaco eagle (conservation, identification and/or ecology).
- The Natural Sciences Museum of San Cristóbal department is going to organise and run, in the next months, a specific workshop (mainly for children, but open to the public) to build different tools needed for this (and other) research and conservation projects. For example, leather hoods for covering raptors heads while handling them, wire mesh rescue ramps for the water reservoirs, or "kennels" (specific boxes, similar to pet boxes, to carry injured raptors in case you find one in the wild).
- The local company "Sombra de Toro Records" has joined our fieldwork days to record our activities and make a documentary of the Chaco Eagle project. First materials include promotional videos that are already available online, and the full-length film is expected for 2024.

5. Are there any plans to continue this work?

Yes, there are. Our research, outreach and conservation project in the Chaco ecoregion (northern Argentina) has just started. Mainly, there are three aspects that we still have to tackle:

- The mystery of Santiago del Estero: although the research campaign was a success in Santa Fe province, it appears (due to the small number of sightings despite the big outreach effort) that Chaco eagle populations have decreased significantly in Santiago del Estero province (or, at least, in the eastern part), probably due to the deforestation events in the last few years. Thus, it is vital to carry out more specific research in that area, also covering the central (and western part) of the province, to correctly assess the conservation status of this endangered animal in the whole ecoregion.
- The electrocution issue: our conservation project was mainly focused on two threats, illegal killing and drowning in water reservoirs. Results are optimistic for the former (we registered very few events of direct persecution) and promising for the latter (the use of rescue ramps has received a positive feedback). However, we still need to tackle a major source of mortality for the species: electrocution in power lines. Indeed, some people have already expressed their concern about the issue, and nowadays there are active

conversations with authorities to start monitoring bird (and, of course, Chaco eagle) mortality at power lines.

- Chaco province (or the new horizon): geographically speaking, Chaco ecoregion covers the provinces of Santa Fe, Santiago del Estero and Chaco. This last province (which not in vain brings the name of the ecoregion) has a significant amount of Chaco eagle sightings and is also suffering from a high deforestation rate. The exploration of this new area (where no nests have been officially documented) will probably be a next step towards understanding the dynamics of Chaco eagle populations in northern Argentina.

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

Regarding social media, we have been sharing content on our campaign in Santa Fe, through more than 70 publications between the different networks since The Rufford Foundation project started:

- Facebook: <https://www.facebook.com/cecaraunlpam>; 4,050 followers.
- Instagram @proyectoaguilachaco; nearly 2,000 followers.
- Twitter: @CECARA_ARG; 31 followers.
- YouTube: <https://www.youtube.com/channel/UC1iLabx8wpl1sV-5bQQ8KiA>; 215 subscribers.

Also, as mentioned before, we have appeared in several mass media programmes (local radio, TV and newspapers), where we have shared the preliminary results of our campaign. Regarding scientific papers, we are preparing and about to submit a manuscript to Conservation Letters to be published as a peer-reviewed article to make it available for the international scientific community. The topic of the paper is the direct (and indirect) impact of the talks and outreach activities on the sightings and discoveries of new territories and nests of Chaco eagle, and we plan to have it published by 2023. We are also preparing a short communication to account for the unusual concentration of Chaco eagle juveniles and immatures that we had in three occasions while we were searching for territories, which we will probably send to The Journal of Raptor Research and hope that it will be published in 2023. Thirdly, a paper on the results of all interviews performed on the perception of Chaco eagle will be prepared during 2023.

Last but not least, our research group (CECARA) is currently looking for a new PhD student who will likely work with other data taken from this research (e.g., habitat structure of territories, diet...). The new member of CECARA will probably start the thesis in 2023 and have it ready by 2027.

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

Next steps should take into account: (1) exploring more areas in central and western Santiago del Estero, (2) adding Chaco province to our study area, (3) assessing the impact of power line poles in the mortality of Chaco Eagles in the area and (4)

signing agreements with local, regional and provincial councils and administrations in order to secure Chaco eagle territories.

1. As mentioned before, it appears that Santa Fe province (the north-western part) could be a small “refuge” for Chaco eagle. Indeed, we did not find much evidence of human-eagle conflict (other than a small number of anecdotal cases). What is important is to keep on raising awareness in the province, since most people reached did not know the Chaco eagle before we arrived. However, the results are not that promising in Santiago del Estero province, where although we had a great attitude and commitment of locals, Chaco eagle sightings are scarce. Therefore, it is important to focus on Santiago del Estero during next years to correctly assess the status of conservation of the species in this province.
2. The “last” of the Chaco ecoregion provinces to be monitored is Chaco province. This place has not been explored yet but holds many sightings of Chaco eagle. A similar campaign that the one performed in Santa Fe and Santiago del Estero should be carried out in this province in order to have a better idea of Chaco eagle in this province.
3. In arid and semi-arid areas of central Argentina, electrocution in power line poles has always been an issue for Chaco eagle. We have no data available from northern Argentina, so it would be necessary to start monitoring mortality at power lines to evaluate the impact of this human infrastructure on Chaco eagle (and other raptor) populations.
4. To make our project remain in time and, taking into account that some administration officers and bureaucrats are only for a few years in their position, we have to make sure that Chaco eagle is legally secure. Thus, we are already working in declaring Chaco eagle as “Natural Monument” in Santa Fe province, which is one of the maximum categories of protection in legal terms. More actions like this should be performed in other regions and provinces.

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, it did. All the brochures and leaflets had the logo of The Rufford Foundation. Thus, all announcements of our talks had the logo of The Rufford Foundation on them. For example, this is a picture of an advertisement by Vera council (Santa Fe).

QUIÉNES SOMOS

El Centro para el Estudio y Conservación de las Aves Rapaces en Argentina (CECARA) tiene por finalidad contribuir a la protección y conservación de las aves rapaces y de sus hábitats, incluyendo la investigación, difusión, asesoramiento y promoción del entendimiento público de la importancia de las aves de presa en los ecosistemas de la región.

SU CONSERVACIÓN DEPENDE DE TODOS NOSOTROS



CONTACTO

- cecaraunlpam
- @cecara_unlpam
- @proyectoaguilachaco
- CECARA_ARG
- info@cecara.com.ar
- + 54 2954 630477
- cecara.com.ar
- CECARA_UNLPam



PROGRAMA DE CONSERVACIÓN DEL ÁGUILA CORONADA

Y ÁGUILA DEL CHACO



CHARLA ALUSIVA

Lunes 6 de Septiembre de 2021

08 hs. Instituto Inmaculada Concepción.

14 hs. Cine Teatro Español para Nivel Secundario.

20 hs. Paseo de las Artes para EFAS e Instituciones afines.

Invita





Organiza: MUNICIPALIDAD DE VERA

Also, during the outreach campaign, the Power Point presentation that I used for the talks at schools and local producers had the logo of The Rufford Foundation in its last slide. Some pictures as examples:



Rural school in Constanza, San Cristóbal department, Santa Fe province



Rural school in Los Pirpintos, Copo department, Santiago del Estero Province.

Finally, during virtual talks, The Rufford Foundation was also acknowledged:



Virtual talk with a group of birdwatchers ("COA Kakuy") from Santiago del Estero.

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

Diego Gallego García, M.S. Zoology: I was in charge of every step of this project, from the writing and structuring of the proposal to the writing of this final report. I was present and took a primary (main) role in every activity concerning education, research and conservation. I organized and carried out the outreach campaign (talks at schools and meetings with producers), performed several interviews with local people, kept contact with everyone involved in nest searching, gathered information about potential nesting sites, actively searched for territories, installed camera traps at nests, installed rescue ramps at water reservoirs and caught the fledglings in order to be ringed and satellite tagged. I will also be in charge of analysing the data during next months.

José Hernán Sarasola, Ph.D. Biology: supervisor of my PhD and my director in this project. José has joined me in almost all campaigns. Our complementary and collaborative work (sometimes we divided the activities between us so as to be more efficient) has been key in order to reach different kinds of people. Also, he has provided the project with different materials that have completed our mission. For instance, the live cam, a big ladder to climb the nests and the ringing materials. His experience attaching GPS-satellite transmitters to raptors was very important to safely develop this activity in Chaco Eagle fledglings. He is nowadays supervising the process of declaration of the Chaco eagle as Natural Monument with the bureaucrats and natural resource managers in Santa Fe province.

Beatriz Martínez-Miranzo, Ph.D. Biology: post-doctoral researcher at CECARA. She took part in the designing and printing of the leaflets and other promotional materials that we used during the outreach and field campaigns.

Unai Ormazabal Santa Cruz, M.S. Zoology / Ainhoa Lekuona, M.S. Conservation Biology / Beñat García, B.S. Biology: they are all international biologists from the Basque Country who are working as research assistants in CECARA. They joined most field expeditions and participated in research and conservation activities.

Mauricio Flores: cameraman, he came with us during one of the field campaigns, documenting the activities we usually perform.

Also, our project in Santa Fe and Santiago del Estero cannot be understood without the participation of people from local communities. Fortunately, lots of them have joined us in our research and conservation mission, making our path easier towards giving talks at schools or Rural Associations of Producers, discovering new Chaco Eagle territories or installing rescue ramps, to name a few. Although they are not part of our scientific team at CECARA, I will outline our main collaborators in the territory because of the key role they have played in this project:

Victor Merlino, B.S. Veterinary Sciences: veterinary and photographer from Elisa (Las Colonias, Santa Fe), he discovered three Chaco Eagle territories, and has joined every campaign we have made in the province. He has installed more than 10 rescue ramps at different fields, and he has promoted our work in several meetings with vets and landowners.

Eduardo Trivero, B.S. Veterinary Sciences / María Inés González, B.Ed.: native from Constanza (San Cristóbal, Santa Fe). They discovered an active Chaco Eagle nest in a field where Eduardo works as a vet, which eventually became the first Chaco Eagle nest ever recorded with a live camera. Additionally, they helped in the organization of school talks at Constanza, they have installed 10 rescue ramps at different fields and have promoted our work in the vicinity.

Francisco Buyatti, B.Acc. / Carol Bernardi, B.Ed.: landowners from Vera (Santa Fe). They discovered a Chaco Eagle nest in their field, and helped organizing the talks at schools in Vera, as well as some talks with producers in their own ranch. Moreover, they have installed over 10 rescue ramps at water reservoirs in their field.

Graciela Rochetta, M.Ed. / Gustavo Contreras, M.Ed.: supervisor and delegate from the Regional Direction of Education of San Cristóbal department (Santa Fe). They arranged all the talks at schools in San Cristóbal department during the outreach campaign. After, they signed the Declaration of Interest of this project, in order to add the material of the talks (research and conservation of Chaco Eagle) to the education programs of schools all over the department.

Norma and Esteban Fernández: rural workers of Huanqueros (Santa Fe). They discovered the first nest of the season and joined all the campaigns thereafter. Norma has installed 10 rescue ramps in the field where she works.

Pablo Capovilla, Sergio Capovilla and Lidia Martínez: native from San Cristóbal (Santa Fe). they run a Museum and a School of Natural Sciences, where we gave some talks. They disseminated our work with their radio station. Pablo helped me

during the outreach campaign, and joined most fieldwork activities in San Cristóbal department, and he has installed 5 rescue ramps at water reservoirs on his own.

Maximiliano Churruarín: naturalist and ornithologist from Tostado (9 de Julio, Santa Fe). He helped me during the outreach campaign and joined most of our fieldwork activities in 9 de Julio department.

Roque Gambatese, B.S.Ed.: supervisor from the Regional Direction of Education of 9 de Julio department (Santa Fe). He arranged most of the talks at schools in 9 de Julio department during the outreach campaign.

Enrique Mualem, B.S. Veterinary Sciences: major from Tostado (9 de Julio, Santa Fe), and veterinary. He helped organizing the outreach campaign in 9 de Julio department and found two Chaco Eagle territories (one with an active nest). He is nowadays promoting the use of rescue ramps at water reservoirs, working with the local council to sign a decree that encourages producers to install them.

David Franco and Matías Kussrow: photographers from Reconquista (Santa Fe). They joined our fieldwork campaigns, documented our work and facilitated some local radio and TV interviews.

Ricardo Battistino and Laura González: photographers from Vera (Santa Fe). Together with Lautaro, a rural worker from Vera, they discovered the last nest (number 10) near Fortín Charrúa. They have also installed 5 rescue ramps in the vicinity of the nest.

Eliana Alzogaray, park ranger: native from Copo (Santiago del Estero). She was responsible for organizing the outreach activities around Copo National Park.

Guillermo Carignano, B.S. Biology: director of Copo National Park (Santiago del Estero). He organized our visit to the protected area and was in charge of the permissions to make it possible.

Lucas Gelid, M.S. Veterinary Sciences: native from Quimilí (Santiago del Estero). He organized and arranged some of the meetings and talks at schools in Moreno and Juan Felipe Ibarra departments (Santiago del Estero).

Gustavo Gerlero, B.S. Natural Resources Management: outreach specialist at INTA (National Institute of Farming Technology) in Malbrán (Santiago del Estero). He organized some meetings with local producers, rural workers and students of all levels and is now promoting the use of rescue ramps as a way to reduce wildlife drownings.

10. Any other comments?

We acknowledge The Rufford Foundation for their financial support to this research through the Rufford Small Grant. These types of grants make a big difference to the conservation of several species on our planet.

Since the biology and status of conservation of the Chaco eagle is still unknown in many territories, we need to continue working. The evidence gathered in this project evokes the necessity to continue working hard in outreach, research and conservation of the Chaco eagle in order to acquire more knowledge on the causes of its decline across its area of distribution. Thus, I will probably apply to a new Rufford Small Grant in the near future. I really hope that I (we) can continue expanding this project with the support of The Rufford Foundation.

Thank you very much! (Or, as we say in our native Basque tongue: "Eskerrik asko!").