

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

| Grant Recipient Details | |
|----------------------------|--|
| Your name | Kristina Cockle |
| Project title | Parana Pine Forest Project |
| RSG reference | 59.12.07 |
| Reporting period | Final Report |
| Amount of grant | £10,000 |
| Your email address | kristinacockle@gmail.com |
| Date of this report | 25 November 2009 |

1. Please 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 |
|---|--------------|--------------------|----------------|--|
| Study the natural history of threatened birds of the Parana pine forest. | | | X | We found seven territories of black-capped piprites in Argentina, all of them in <i>Ocotea pulchella</i> forest along Paraiso Creek in the Yaboty Biosphere Reserve. We published the results in a scientific paper and we also presented them in local presentations for the Ministry of Ecology and landowners. We collected data on ecology and distribution of bamboo specialist birds and we presented some of this information in the Rare Birds Yearbook 2009. We led two more counts of vinaceous amazons in March 2008 and March 2009, and we found the population to be stable or increasing; we are presenting the results in a forth-coming paper for a special edition of <i>El Hornero</i> . |
| Determine whether nest-sites limit populations of vinaceous amazons and other cavity-nesting birds. | | | X | Our nest-box addition experiment and observational study of cavity-nests shows strong evidence that the number of cavities in the forest determines the number of birds that can nest there. This is true in logged forest, as expected, but also, unexpectedly, in primary forest. |
| Educate children about conservation of threatened local wildlife in 12 schools and on farms. | | | X | We educated children, teachers, parents and park ranger students about the conservation of vinaceous amazon, white-bearded antshrike, brown-howling monkey, and other threatened animals through 26 visits to 16 full schools, three new posters and several bulletins, six field-days in Araucaria Provincial Park, the annual Araucaria festival, and repeated visits and discussions on 13 key farms. |
| Involve local farmers as volunteers in research and monitoring of birds. | | | X | 13 local farmers and their children collaborated with scientists and park ranger students in counting vinaceous amazons, finding and/or monitoring nests. |
| Develop a network of "parrot | | X | | We were successful in creating parrot-friendly farms in the sense that farmers are protecting nest trees and will not take chicks from their |

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|------------------|--|--|--|--|
| friendly” farms. | | | | <p>nesses. However, we were not successful in making this an official network of parrot-friendly farms because Marcos Debarba, the park ranger initially assigned to this project by the Ministry of Ecology, was transferred to a position inside a park. This was a result of political changes in the Ministry of Ecology intended to improve the protection of provincial parks.</p> |
|------------------|--|--|--|--|

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

When Marcos was transferred to Pinalito Provincial Park, we decided it was better to focus on schools, research, and involving local farmers in research and monitoring, rather than the farm-network. Since Marcos is a well respected farmer in Tobuna, we felt his presence was essential to the success of the farm network.

The epidemic of swine flu in winter 2009 and the tornado that hit our area in September 2009 resulted in the last minute closure of schools for several weeks, complicating our planned activities. We persevered and still managed to make 26 full school visits, including about 1000 children, over the 2 years of the grant. We are currently working with farmers to determine how we can help in the medium-term recovery from the tornado, which killed 12 people, destroyed 100 homes, and uprooted patches of forest including key vinaceous amazon nest trees in Santa Rosa.

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

- We showed that one of the key limiting factors for populations of cavity-nesting birds in both logged and primary Atlantic forest, is the paucity of suitable nest cavities. Our results show that cavity-nesting birds need deep, high cavities that form through decay processes in the largest live trees. This is the first study to experimentally test nest site limitation in cavity-nesting birds in tropical or subtropical forest, and shows the key role of large live trees, rather than standing dead trees, as nest sites.
- We reduced capture of vinaceous amazons, and local farmers are now active in monitoring and conserving this well-loved parrot and its nest trees. The population of vinaceous amazons appears to be stable, at least until the recent tornado. Luckily, Abilio Rodriguez, a farmer and project volunteer, has performed daily counts of the vinaceous amazons in Santa Rosa since 2005. He continues to count these birds from his home, and in a few months we will be able to assess the short-term local effect of the tornado.
- We successfully raised local awareness about the previously unknown white-bearded antshrike, through visits to farms, activities in schools, and a poster. Upon our second visit to schools, children remembered the antshrike and its need for *Guadua trinii* bamboo.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

The local community participated in designing the project, helped monitor parrots and other cavity-nesters, and benefited from educational activities in schools. We asked teachers to fill out

questionnaires and we very recently began interviewing randomly selected older students for our evaluation of our work. The responses included:

Ruben Oscar Maeler, 13 years old, student at Paraje Alegría primary school (translation of tape-recorded interview 10 months after previous visit):

“When I get home from school I help my mum look after my baby brother. I help in the tobacco, I hoe weeds, I help. We have cows, oxen, pigs and chickens. I feed the animals. I know lots of plants from the forest: cedro, araucaria, mermelero, angico, grapia, guayubira, lots of plants.....I’ve seen lots of animals too: armadillo, coati, snake, hawk, doves, little birds, the vinaceous amazon that comes to the paraiso trees, the maroon-bellied parakeet, the scaly-headed parrot....It’s important to help vinaceous amazons because when we’re big, we’ll want our children to be able to see the animals that we had the chance to know..... If [the parrots] just went somewhere else it wouldn’t be such a big deal as if they’re lost forever, because someone would still be able to see them, but if for example someone steals a female parrot that has chicks in the nest, the chicks can’t feed themselves alone, and they’ll die. And then the others will die of old age and maybe that will be the end of the species..... I think it was last year that you came and we talked about the parrots, the monkeys, everything, perching birds. And then we kept talking about it. I talked with my dad about what we could do to maintain, look after [these animals], so they wouldn’t be hunted, saying to the hunters that they should look after these animals because there are already few of them left. There are lots of people who see a parrot and think it’s pretty to take it home and keep it as a souvenir, until it dies, but they need to leave the parrot in the forest where they can grow and keep having parrots.”

Teachers’ responses to questionnaires:

“All three activities were motivating and the children worked enthusiastically the whole time. They really loved the play, which was something totally new for them.”

“Excellent work. Please keep visiting us. We are so fond of you and we really appreciate your work.”

“The whole day was excellent. The posters you left for the school are great, so the children can see the animals up close. Please visit us more often!”

“The volunteers were really well prepared and did an excellent job. The Parana Pine Forest Project is doing an excellent job and should be extended to all the schools in the north. “

“Excellent puppet show! The kids had a great time. Especially considering many of these children had never seen puppets. “

“The children learned about the importance of protecting the flora and fauna. Moreover, they’ll pass this knowledge on by talking about the visit with other children and adults. The way you carry out the activities, you catch even the teachers by surprise. I’m very pleased with the volunteers that led the activities because they captured the attention of the children in an educational way, something that is very difficult here. ”

“The posters are an important source of information and a teaching resource that we use with our students.”

“The children had a lot of fun and they never forget your visits. You are very significant to them.”

“More than just learning, the children feel good about receiving your visits and sharing with you. They are learning to care for and value the plants and animals they see every day. Not just the children but we adults are also learning a lot from your visits.”

5. Are there any plans to continue this work?

Yes.

Schools: We are now on our fourth round of visits to most schools. In this round of visits, we are evaluating what each child knows and feels about threatened animals through games that require circling different answers, short individual interviews with a puppet, taped interviews with randomly-selected older students, and drawing. After the evaluation, children act with volunteers in a short play designed to boost children's confidence to speak out about endangered animals. This work will continue in 2010 with funding from the Conservar La Argentina program at Aves Argentinas and BirdLife International.

Monitoring vinaceous amazon with help from farmers: We will count vinaceous amazons again in March 2010, with the help of local farmers and park ranger students. We will determine the short-term effect of the September 2009 tornado in Santa Rosa that destroyed nest-trees and possibly killed adult birds.

Study of cavity-nesting birds: We will continue to study the formation and persistence of cavities, especially through decay by fungi, and the use and competition for these cavities.

Studies of natural history of threatened birds: We will complete our study of the white-bearded antshrike and publish a scientific paper on its natural history and habitat. We continue to study the distribution and natural history of other threatened birds including the vinaceous amazon, black-capped piprites, and canebrake groundcreeper.

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

We share the results of our work with others through our website, scientific papers, popular articles, presentations at national and international meetings, school visits, personal visits to farmers, colourful posters and our own small bulletin. In 2008 and 2009 we presented our research results at ornithological meetings in Argentina and Canada and at local events including meetings of the Yaboty Biosphere Reserve Steering Committee, a workshop on the Ecosystem Approach for conservation of the Yaboty Biosphere Reserve, and classes at the local Park Ranger College. We submitted several research papers for publication in national and international journals. In 2010 I am organizing two symposia – one on cavity-nesting birds and another on bamboo-specialist birds – at the International Ornithological Congress (Brazil) and the American Ornithologists Union Meeting (USA). I am also co-organizing a round table to discuss international priorities for research on threatened Atlantic forest birds, and a workshop on how to improve collaboration between academic and non-academic institutions.

Scientific publications resulting from this work:

2008:

Cockle, K, K Martin, & K Wiebe (2008) Availability of cavities for nesting birds in the Atlantic forest, Argentina. *Ornitologia Neotropical* 19 (Suppl.):269-278.

Cockle, K, C Maders, G Di Santo & A Bodrati (2008) The Black-capped Piprites (*Piprites pileata*) builds a spherical moss nest. *Cotinga* 29:166-168.

Cornelius, C, K Cockle, N Politi, I Berkunsky, L Sandoval, V Ojeda, L Rivera, M Hunter Jr & K Martin (2008) Cavity-nesting birds in neotropical forests: cavities as a potentially limiting resource. *Ornitologia Neotropical* 19 (Suppl.):253-268.

Bodrati, A, C Maders, K Cockle, G Pugnali & G Di Santo (2008) The Amethyst Woodstar (*Calliphlox amethystina*) in Argentina. *Nuestras Aves* 53:39-41.

2009:

Cockle, K & A Bodrati (2009) Nesting of the Planalto Woodcreeper (*Dendrocolaptes platyrostris*). *Wilson Journal of Ornithology*. 121:789-795.

Areta, JI, A Bodrati & K Cockle (2009) Specialization on *Guadua* bamboo seeds by three bird species in the Atlantic Forest of Argentina. *Biotropica* 41:66-73.

Bodrati, A, C Maders, G Di Santo, K Cockle, JI Areta & JM Segovia (2009) Distribution, habitat, and natural history of the Black-capped Piprites (*Piprites pileata*), a critically endangered species in Argentina. *Cotinga* 31:95-100.

In review:

Cockle, K, K Martin & K Wiebe. Nest tree selection by cavity-nesting birds in a Neotropical forest: targets for conservation. *Biotropica*.

Bodrati, A, K Cockle, JM Segovia, JI Areta & E Mérida. La Paloma Trocal (*Patagioenas speciosa*) en Argentina. *Nuestras Aves*.

Bodrati, A, K Cockle, JM Segovia, I Roesler, JI Areta, E Jordan. La avifauna del Parque Provincial Cruce Caballero, Provincia de Misiones, Argentina. *Cotinga*.

Presentations at scientific conferences:

Fariña, R, K Cockle, E Mérida, JM Segovia & A Bodrati. Applying environmental education for the conservation of threatened species in an anthropogenic environment: the Atlantic forest of Misiones, Argentina. *VI Congreso Iberoamericano de Educación Ambiental*, San Clemente del Tuyú, 16-19 September, 2009.

Cockle, K & K Martin. Nest-site selection and community dynamics of cavity-nesting birds in a Neotropical forest. *XXVII Meeting of the Society of Canadian Ornithologists*, Edmonton, 20-22 August, 2009.

Cockle, K & K Martín. Cavity-nesting birds of the Atlantic forest: interactions in a nest web (Oral). *XIII Argentine Ornithological Conference*, Tafí del Valle, 3-6 June, 2009.

Segovia, JM, K Cockle & A. Bodrati. Reproductive biology of five species of parrots from the Atlantic forest (Poster). *XIII Argentine Ornithological Conference*, Tafí del Valle, 3-6 junio, 2009.

Cockle, K and K Martin. Dynamics of nest cavities in a Neotropical forest: key processes for creation and persistence (Oral). *Meeting of the Canadian Society for Ecology and Evolution*, Halifax, 14-17 May, 2009.

Fariña, R, K Cockle, A Bodrati, N Fariña, C Ramón, M Debarba & J Segovia Conservation of threatened

birds in an anthropogenic landscape: five years of the Proyecto Selva de Pino Paraná (Oral). *XII Argentine Ornithological Conference*, San Martín de los Andes, 5-8 March, 2008.

Bodrati, A, JI Areta & K Cockle Bamboo specialist birds of the Atlantic forest of Argentina (Poster). *XII Argentine Ornithological Conference*, San Martín de los Andes, 5-8 March, 2008.

Bodrati, A, C Maders, K Cockle, N Fariña & G Di Santo. Natural history of the Black-capped Piprites (*Piprites pileata*) in Argentina (Poster). *XII Argentine Ornithological Conference*, San Martín de los Andes, 5-8 March, 2008.

Fariña, N, J Segovia, K Cockle & A Bodrati. Conservation and reproductive biology of the Vinaceous Parrot (*Amazona vinacea*) in Argentina (Poster). *XII Argentine Ornithological Conference*, San Martín de los Andes, 5-8 March, 2008.

Ramón, C, R Fariña, A Bodrati & K Cockle. Environmental education prioritizing the threatened birds of the Parana Pine forest in Misiones (Poster). *XII Argentine Ornithological Conference*, San Martín de los Andes, 5-8 March, 2008.

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

I initially proposed to use the RSG over the period from January 2008 to May 2009. Because of school closures due to Swine Flu and the tornado in Santa Rosa and Tobuna, we had to re-organize our schedule of school visits and we finished spending the RSG funds in October 2009.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

£1 = \$6.29 Argentine pesos

| Item | Budgeted Amount | Actual Amount | Difference | Comments |
|--|-----------------|---------------|------------|---|
| Food and accommodation | £5493 | £5823 | + £330 | |
| Truck and fuel for field research | £3130 | £2149 | - £981 | We shared the cost of the truck and fuel with another PhD student, Andrea Norris, allowing us to save money on this item. |
| Bus | £650 | £497 | - £153 | |
| Supplies (educational, field, local dissemination) | £563 | £1308 | + £745 | The extra funds were spent printing three new posters and a series of small cards about threatened birds. |
| Other (communication, accident insurance, | £160 | £223 | + £63 | |

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| certificates of participation) | | | | |
| TOTAL | £9,996 | £10,000 | | |

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

One of the most important next steps is to determine how the tornado in Santa Rosa affected the Argentine population of vinaceous amazons. We will have an idea about this after our annual vinaceous amazon count in March 2010.

Another important priority is to understand the relationship between the formation of tree cavities and the invasion of trees by wood-decaying fungi, a relationship I am beginning to explore with the help of mycologist Gerardo Robledo, another RSG recipient.

In terms of our educational programme, early results from our fourth visit to schools suggest students know they must leave vinaceous amazons in the forest, and they know it is a threatened species. They can identify *Guadua trinii* bamboo – habitat of the white-bearded antshrike – from other bamboos, and they know that some species of birds only live in one kind of plant. However, they did not have a clear idea of which other species are threatened. For example, they thought red-breasted toucans were more endangered than brown-howling monkeys. Few included “children” or “farmers” among those who could help endangered animals, instead selecting “park rangers” and “teachers”. We hope that our new interactive theatre, where children have to convince an authority figure not to cut down a tree with a vinaceous amazon nest, will help build their confidence and convince them that they too can help. I think we need to design more activities where children can be protagonists for conservation of threatened animals, so they feel they can personally make a difference.

10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

Yes, we used the logo on a poster about the 17 species of threatened birds that inhabit farms from San Pedro to Santa Rosa. I am attaching the poster.

11. Any other comments?

My only other comment is: Thank you!!!! RSG support allowed us to start this project in 2003, and you have been our biggest supporter over the last six years. This support has meant my friends and I could build a project to make a change in the world, and follow through on our dreams to have some of the most rewarding experiences and results that any young conservationist could hope for.