

## 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

Grant Recipient Details	
<b>Your name</b>	Soledad Diaz
<b>Project title</b>	<i>Enicognathus ferrugineus</i> (Aves, Psittacidae) habitat selection in <i>Araucaria araucana</i> forests
<b>RSG reference</b>	57.09.09
<b>Reporting period</b>	Final Report
<b>Amount of grant</b>	£6,000
<b>Your email address</b>	<a href="mailto:jisdiaz@gmail.com">jisdiaz@gmail.com</a>
<b>Date of this report</b>	18 <sup>th</sup> January 2013

**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
Determine <i>Enicognathus ferrugineus</i> population status after 2008-09 declines			x	We determined the population trends of <i>Enicognathus ferrugineus</i> in <i>Araucaria araucana</i> forest, showing a strong positive relationship between the parakeets' relative abundance and the previous years <i>Araucaria</i> seed production.
Determine the effect of <i>Araucaria araucana</i> masting – massive seed production- year on <i>Enicognathus ferrugineus</i> breeding behaviour.			x	We documented a positive relationship between the Austral parakeet clutch size and the pollen production of <i>Araucaria araucana</i> . Also, the parakeets' reproductive success was related with the <i>Araucaria</i> seed production.
Quantify <i>Enicognathus ferrugineus</i> nesting sites key characteristics			x	Nesting site characteristics were studied extensively at three levels (plot, tree and cavity), showing selection of particular features. This baseline information will allow delineating more accurate timber and wood extraction from native forests, as well as other forest uses, with special emphasis in retaining habitat features important for the parakeets.
Environmental Education Programme			x	The programme was extended to 15 schools in San Martin de los Andes and San Carlos de Bariloche (children from 4-12 years old), and some high schools (13-18 years old). Also, the programme was included in an Ecology Programme for elderly people conducted in Bariloche.
Posters			x	New posters were designed (see attachment). Posters were delivered to all visitor centres and park ranger stations throughout Patagonia, and also to several schools in San Martin de los Andes, Bariloche and Villa la Angostura.
Stickers			x	New stickers were designed (attachment). Stickers were delivered to children after the class, and also

				during the International Birds Day activities in Bariloche.
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**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

Funding requested from another source for the Educational Programme was not obtained. After asking for permission from the RSG grantees, the situation was solved by funding all the Educational Programme expenses with the funds requested for the PI expenses.

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

\*After several years studying Austral parakeet population dynamics and general ecology, there is a better understanding of how this species uses the forest, not only as a food source but also for nesting. A strong link between the Austral parakeet relative abundance, breeding timing and reproductive success with respect to *Araucaria araucana* pollen and seed production was found. This might be of concern in years of *Araucaria* low production (papers attached).

\* Austral parakeet nesting ecology data allow me to work in conjunction with the Lanin National Park Conservation Department to delineate new guidelines for timber and wood extraction in the area. The old guidelines did not take into account fauna use of the forest (guidelines attached).

\* Educational Programme: schools are asking for the programme to be taught to their children, increasing the number of children involved in the programme each year. Also, we were able to teach in native Mapuche schools. That was one of our main goals from the beginning of the programme, allowing us to develop ecological conscience in Mapuche children for the forest and fauna they live surrounded by every day (attached pictures).

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

During all Austral parakeet studies, we worked close together with the staff of Lanin National Park (park rangers, emergency department and conservation department). We offered workshops for San Martin de los Andes and Alumine communities. In this manner, we were able to spread our educational efforts rapidly to the general public. The work done in close contact with the Conservation Department of Lanin National Park allowed to use our scientific knowledge gathered by this study to provide accurate advice for timber and wood extraction regulation within the park. I hope this technical advice will have important and long-term beneficial impact in local forest management.

Also, local educators and teachers from both communities of San Martin de los Andes and San Carlos de Bariloche volunteered their time to contribute to the Education Programme by developing new educational materials each year.

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

We continue with this work as follows:

\* We are continuing with the Educational Programme. So far, the programme has been successful in both localities (San Martin de los Andes and San Carlos de Bariloche), and one more city (Villa la Angostura) will be involved beginning in 2013. Our goal is to keep children aware and caring for the forest and fauna that they are surrounded by.

\* This study provided us with meaningful data that can be used for Patagonian forest management and conservation. However, we need more information on other bird guilds and mammals regarding forest use. In particular, we plan to study the ecology and tree use of several cavity nesters endemic to western Patagonia forests, the interaction between them, and the availability of key resources for each species. For that we have requested funding that is pending.

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

We share the results through scientific papers and popular articles, both national and international, presentations at national and international meetings, visits and lectures to rural and local communities, school visits, posters and stickers.

### Scientific publications resulting from this work:

\* Díaz S. & T. Kitzberger (in prep.). Spatial habitat modeling and foraging patterns of Austral Parakeets in *Araucaria araucana* -*Nothofagus pumilio* mix forest.

\* Díaz S. & T. Kitzberger (2013). Nest Habitat Selection by the Austral Parakeet in Northwestern Patagonia. *Austral Ecology* XX: XX-XX. DOI: 10.1111/j.1442-9993.2012.02400.x

\* Díaz S. (2013). Biología y conservación de la Cachaña (*Enicognathus ferrugineus*) en Argentina. *El Hornero* 27(1) in press.

\* Díaz S., T. Kitzberger & S. Peris (2012). Food resources and reproductive output of Austral Parakeet (*Enicognathus ferrugineus*) in forests of northern Patagonia. *Emu* 112 (3): 234-243.

\* Díaz S. & S. Peris (2011). Consumption of Larvae by the Austral Parakeet (*Enicognathus ferrugineus*). *Wilson Journal of Ornithology* 123(1): 168-171.

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

Anticipated: From November 2009 to March 2010

Actual: From January 2010 to December 2011

The extension of the length of the project beyond the anticipated time frame resulted from the following circumstances: First, we received the funds later than expected (late January 2010) and although we began some field work in November 2009 as anticipated, several field activities were delayed until funds were received. Second, we expanded our educational effort beyond the anticipated project by increasing the number of schools visited, thereby reaching more children and youth. We used the money asked for the Principal Investigator expenses to cover the Educational Programme expenses during 2010 and 2011 school season (March-December).

**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.**

Item	Budgeted Amount	Actual Amount (£=6,4 \$)	Difference	Comments
Field assistant Tents (x2)	180		180	Global Vision International donated tents to be used during the field season
Snowshoes (x1)	120	120		
Rope(x1)	120	120		
Carabiners (x5)	100	100		
String (x 200 m)	100	100		
Transport to the Study Area (fuel + bus)	500 PI + 680 field assistants	680	500	<i>See comment below the table</i>
Transport in the Study Area	120 PI		120	<i>See comment below the table</i>
Food Expenses	750	750		
Fieldwork assistant's salary	2750	2750		
Didactic Material and others	300	300		Posters and stickers
Educational Programme Expenses		800	-800	Projector for the classes
Discretionary/contingency	280	280		
<b>Total</b>	<b>6000</b>	<b>6000</b>	<b>0</b>	

**Comment:** Because external funding requested specifically to fund the Educational Programme was not obtained, the PI decided to spend the money requested for the PI expenses on the Educational Programme (as previously consulted with RSG grantees).

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

One of the most important next steps is to use this baseline information to regulate timber management and wood use in western Patagonia native forest.

Another important priority is to understand the relationship between tree cavity users (primary and secondary cavity nesters, mammals and birds), a relationship I am beginning to explore in conjunction with colleagues from Comahue University among different forest types.

In terms of our educational programme, early results from our visit to schools suggest students now know they must leave parakeets and other birds in the forest (anti-pet trade message) and that it is a protected species. We are working now on creating awareness of the importance of the habitat (natural forests and wetlands) for native species.

**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 RSGF logo in all instances where we presented our results and acknowledged the Rufford Small Grants in the appropriate section of submitted manuscripts, and also in the posters designed for the Educational Programme.

**11. Any other comments?**

I just want to thank RSG and all the grantees that were (and are!) an essential part of this conservation and educational programme since 2008. Without their trust and support all our achievements would not have been possible. Better things are happening in northern Patagonia as we spread the word among children that forest and bird conservation is possible. Education is a big part of conservation, and this program was an essential part of what schools are now asking for to keep in track with their ecological goals. Thanks for being part of a good change!