

## 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>	Diego Ricardo González Zevallos
<b>Project title</b>	Magellanic Penguin diet requirements and its relationship with commercial fisheries: a case study in Golfo San Jorge, Patagonia Argentina.
<b>RSG reference</b>	Pablo García Borboroglu, AVECITA Chicchón and Esteban Frere
<b>Reporting period</b>	November 2011 to November 2012
<b>Amount of grant</b>	£4842
<b>Your email address</b>	<a href="mailto:diegue@cenpat.edu.ar">diegue@cenpat.edu.ar</a>
<b>Date of this report</b>	December 10 <sup>th</sup> 2012

**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
Analyse the diet requirements of Magellanic penguins nesting in the Patagonia Austral Marine Park			X	The field work was completed without problems. Representative diet samples were obtained from Magellanic penguins during the incubation period, the early and late chick stages, and the moulting period. The analysis of samples in the laboratory is in progress but has not been completed yet.
Characterise the catch and discard composition generated by the main trawl fisheries operating in the gulf		X		Information is still being processed. We thank the Secretaría de Pesca de la Provincia de Chubut for logistical support and providing the data from their On-board Observer Program.
Explore the potential overlap in the use of resources by breeding penguins and fisheries	X			The assessment of the potential overlap in the use of resources will be done once the analysis of diet samples is completed.
Promote the improvement of the On-board Observer Program protocols, through the inclusion of information related to species found in the discard fraction which are potential prey for Magellanic penguins		X		I continue working actively in this objective in association with personnel of the Provincial fisheries agency and the regular interaction with on-board observers. The update and improvement of on-board protocols will be completed when we finish analysing the data, as this type of information is essential for the implementation of an ecosystem-based management of fisheries.
Implement educational activities in schools in the cities of Puerto Madryn, Rawson, and Comodoro Rivadavia, and in the Fisheries		X		I prepared education and outreach activities and implemented them with the institutional support of Centro Nacional Patagónico (CONICET) and in partnership with the Puerto Madryn Art Museum. These were based on a photographic exhibition and a video. During October 2012, these activities were conducted at the Art Museum and

Engineering program of the Universidad Tecnológica Nacional.				directed to the general public with the participation of four high schools and the Fishing School of Puerto Madryn. During November 2012, the photographic exhibition was taken and exhibited in several high schools (itinerant photographic exhibition). The activities at the Fisheries Engineering program of The Universidad Tecnológica Nacional have been arranged with University authorities and will take place soon, once the analysis of data is completed.
Organise a workshop with members of the Association of Employers and Fishing Captains in the city of Comodoro Rivadavia to discuss issues related to the interactions between penguins and fisheries.	X			This workshop will be implemented once the data analysis is completed, as results are needed to provide the correct message and discuss operational issues with the stakeholders. .

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

No relevant unforeseen difficulties arose during the project.

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

(1) This project allowed us to obtain the first information on the food requirements of Magellanic penguins breeding in the Patagonia Austral Marine Park, one of their main nesting sites in Patagonia, and which forage in an area affected by commercial trawl fisheries. Preliminary data show that Argentine anchovy, Argentine hake, Argentine red Shrimp and Argentine shortfin squid are the main components in penguin diet. All of these species are of commercial interest. (2) This information will be of great value during the development of the marine park's management plan, which will be taking place in the next few months. (3) The potential effects of commercial fisheries on penguin populations were communicated and discussed with children from several schools in Puerto Madryn.

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

Local communities were not directly involved with project activities but part of the community had the chance to learn about aspects of relationship between commercial fisheries and Magellanic penguins, an iconic and charismatic species in coastal Patagonia. In addition, we will soon provide information to the Provincial fisheries agency and the marine park authorities that will contribute to the management and conservation of coastal waters and wildlife.

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

I am now working on a second field season to assess potential inter-annual variability in the use of food resources by Magellanic penguins. After completing my work with penguins, I'm planning to tackle similar issues on another of the main top predators in coastal Patagonia, the imperial cormorant.

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

- -With the scientific community: through publications in peer reviewed journals and presentations in scientific meetings.
- -With schools, universities and general public: through education and outreach activities (f.e., photo exhibitions, documentary videos, workshops and talks).
- -With government agencies in charge of the management of natural resources: through technical reports, workshops and meetings.

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

RSG funds were used to acquire the necessary equipment and cover the cost of the first breeding season (2011-2012). My post-doctoral fellowship also covers the 2012-2013 breeding season. The idea is to compare two breeding seasons and then integrate and communicate the results and their conservation and management implications.

**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	Difference	Comments
Food 4 persons (£ 15/person/day for 15 days)	900,00	1100,00	-200	Five persons were finally involved per field trip
Fuel 3 trips (£ 90/trip)	270	310	-40	
Portable centrifuge	550	440	110	
Portable freezer	549	660	-111	
Mp3 recorder	77	0	77	This equipment was finally acquired using another

				funding source
Batteries	153	190	-37	
Callipers (2)	92	80	12	
Pesola spring scales (2)	92	81	11	
Laptop <b>a</b>	537	710	-173	
Multimedia projector <b>b</b>	767	653	114	
Laboratory supplies (alcohol, syringes, test tubes, others)	230	270	-40	
Stable isotopes analysis (100 samples)	625	437,5	187,50	70 samples were analyzed
<b>Total</b>	<b>4842</b>	<b>4971,5</b>	<b>-89,5</b>	

**a** For downloading information, videos and images in the field and for education and outreach activities.

**b** For education and outreach activities.

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

Clearly overfishing affects seabirds and other marine organisms in different ways, which is why issues related to the biology of birds at sea act as environmental indicators permitting to understand and interpret the study system and assess the conservation status of certain environments used by them. Knowing the diet of relevant top predators in Patagonia and their interactions with commercial fisheries I hope to provide and contribute with a more realistic fishing management.

### 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 I did. The RSG logo accompanied my education and outreach activities together with other logos from institutions that provided logistical and institutional support (see pdf attached). These activities were promoted in social networks, radio and television.