

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. 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. 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	Francisco A. Viddi
Project title	The Kepenclu Project – behavioural ecology and conservation of small cetaceans in the northern Patagonian fjords
RSG reference	52.06.08
Reporting period	September 2008 – September 2009
Amount of grant	£11,900
Your email address	fviddi@gse.mq.edu.au
Date of this report	09 October 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
Modelling habitat selection of dolphins.			Fully achieved	
Modelling dolphin movement.			Fully achieved	
Prediction maps of dolphin occurrence.			Fully achieved	
Proposal on areas to be protected.			Fully achieved	
Illustrated book, video documentary and website.		Partially achieved		The release of the book, video and website are pending. This has been generated because: a) The analysed data to be included in these media has just been finished; b) Due to the salmon farming environmental crisis which occurred during December 2008 - March 2009, some of the goals our strategies to be included the publications have changed. Strategies have been discussed with other NGOs about how to raise awareness of consumers and general public about salmon production; c) Considering the importance of climate change, we will include a strong component on this issue in all the media we are preparing. We have decided to postpone the release of our publications, until the meeting in Copenhagen is finished, so we can also include the results of these that concerns Chile and marine conservation.

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

Major problems were related to the environmental crisis of the salmon industry in the area. The presence of the virus ISA (Immune Salmon Anaemia) caused major human health and environmental problems. This virus caused the death of thousands of fish, which were left in the water for weeks. The dead fish caused a dramatic biological pollution, which it seems was then followed by some

chemical “cleaning”, which deteriorated even more the environment and caused even public health problems, as many children and fishermen got skin lesions after being in the water. The total loss of sightings of Chilean dolphins, imperial shags, and other marine birds, in addition to the presence of dead crabs and other invertebrates in the nearby beaches was a clear evidence of the damage. After a month and half, dolphins and other apex marine predators came back to the area but unfortunately we have no information of what was the real effect at the marine ecosystem level. Dolphins were observed with strange skin lesions which are now being analysed through visual inspection from digital photographs. This has also implications to the data we collected but also changes provoked critical changes in our strategies to deal with the salmon industry, the local stakeholders and authorities. This has been reflected in part in the development of our book, website and video documentary, which is planned to be released in the second semester of 2010. The information which will be published in these media is planned to have important impact not only at the local or national level, but at the international one. The main goal has been changed in the sense of making people aware as consumers, in particular to the international consumers of the Chilean cultivated salmon.

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

The most important outcomes from our project are the results of our habitat modelling on the Chilean and Peale’s dolphins. Robust analyses, using sophisticated techniques which included Geographic Information Systems, Generalized Additive Models, Correlated Random Walk models and Generalized Additive Mixed Models, have identified important ecological determinants in dolphin distribution, habitat selection and habitat use.

This first outcome led us to our second most important outcome which was the development of predictive maps of habitat occupation of these endemic species, and the information generated is at present being used to for the fine-scale zoning for a marine protected in the area. This proposal is being developed by Centro Ballena Azul in conjunction with WWF-Chile. A final formal full proposal will be submitted to the government in February 2010.

A third important outcome is the development of cooperative efforts between our NGO and local leaders (mostly fishermen) engaged in finding solutions to the environmental problems caused by salmon farming, in particular after the environmental damage originated in December 2008.

As soon as the audio-visual material is ready (book, website and video), these will be other major outcomes, which we expect to have an important impact on the community.

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

In truth, it was not the community that got involved with the project, but rather our project got involved with their problems. Main involvement originated, and still on course, as a way to put more efforts in the struggle from local fishermen to fund ground solutions to the rather overwhelming environmental and social damage that salmon farming is causing in southern Chile. This year we were not able to work much with children, as most of our energy and effort concentrated in meeting and dealing with management officials and local fishermen. Meetings with the industry representatives were difficult, as after the depressing event in December 2008, they seem to be reluctant to discuss. A sue is at the moment under way made by the local community against the

salmon companies responsible for the environmental damage. This has obviously caused tension between the industry and the local community.

Furthermore, we are working with same fishermen to help out in designing guidelines and management plan to develop future ecotourism, which seems an appropriate option for sustainable exploitation of natural resources, and at the same time find a way to decrease and control the extensive expansion of aquaculture in the area.

5. Are there any plans to continue this work?

Urgent work is being planned, which will be based on previous years, and will be continuation from the last year project.

Short-term

We are surely living in one of the most critical times in the human history regarding environmental issues. We are at the limit of a turning point where decisions at local and global level need to be taken. Climate change is nowadays one of the main concerns worldwide. Scientists worldwide have unanimously agreed that climate change is taking place and is having already noticeable effects on natural processes, processes which have major roles in shaping ecological structure, economy and human health.

The main next step is to carry out a campaign on climate change including research and environmental education, outreach and advocacy. On the scientific aspect, a study needs to be designed and developed regarding the effects of climate change on the distribution and abundance of cetaceans in southern Chile. The information that can be collected regarding the effects of this global issue on marine mammals will be of importance to: a) understand how animals might respond or are responding to changes in the environment; and b) give recommendations to national authorities on mitigation and monitoring procedures. In addition, an outreach and advocacy campaign needs be undertaken to raise awareness at the local, national and international level about climate change, its effects and the potential actions to be taken.

As a developing country, Chile contributes only about 0.2% of the world carbon emissions. However, the effects of global warming are already impacting Chilean marine ecosystems. Glacier melting, unusual drought and other conditions may cause unexpected shifts in fine and meso-scale oceanography, with subsequent repercussion to marine life, including dolphins. Information regarding the effects of these global issues on marine ecosystem in Chile, might certainly have a more remarkable effect in the international community, as dolphins and whales can be used as flagship and umbrella species for a conservation campaign.

Other important steps which need to be taken at the short-term is to enhanced leadership on local communities to find solutions to salmon farm problems, garbage and general pollution in the area. A networking of NGOs is essential to be able to tackle these issues.

Mid-term

A major goal which will be addressed is designing and implementing a study on the abundance on small cetaceans. No study has ever been developed dealing with this, and the need for having abundance estimates is highly needed.

Mid-term steps include the implementation of programs to evaluate how local fisheries might be affecting cetacean populations and how it can be diminished or prevented. Fishery management policies, which in Chile also comprise aquaculture activities, need to include information on the distribution and abundance of cetaceans and other marine mammals. Coordinated works with authorities need to be secured at the mid-term.

Broad educational goals will be implemented at the national level, in conjunction with other NGOs and networks. It will be necessary to cover more areas to create more general conservation awareness and disseminate projects goals and results.

In order to make this project sustainable over time, we aim to establish a local (run by locals) monitoring programme on marine conservation, as well the implementation of a marine station where school students and other participants will get involved.

Long-term

Main goals at the long-term include maintaining a monitoring programme on the distribution and ecology of cetaceans, relating their distribution to oceanographic variables and anthropogenic impacts, especially regarding global warming, climate change and ozone depletion.

Nevertheless, the major aim at the long-term is to attract the involvement of the local communities, stakeholders and government authorities in conservation planning, management and sustainable exploitation of natural resources, such as ecotourism.

Finally, one of the only ways to achieve robust conservation goals is by making major modifications in education programmes, in particular targeting the new generations, as these will be more affected by environmental changes and will be the ones who will make the decisions for the tomorrow.

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

The scientific aspect of this project (which has been running for more than four years) is part of a finalizing PhD thesis, which is already being published in scientific journals and conferences, such as the Congress of Conservation Biology. The results of this project have been presented already in four international conferences (which include two on Conservation Biology). Seminars, talks and workshops are held habitually, both in Chile at universities, local schools, as well as in Australia, in particular in environmental related talks. Posters, calendars, book and video documentary as well as the website have included all the information we have gathered so far.

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

The project was expected to start in September 2008, but because some logistical problems (vehicle and the ferry that runs between Melinka Island and the mainland), the project was delayed. Proper data collection on site begun only in December but meetings and workshops were still carried out before arriving to the island, as well logistic preparation. We left the island in April 2009, but worked on proposals, meetings and data analysis thereafter. Complete data analyses were only finished at the end of September, a month later of what it was expected.

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
Itemized equipment (cameras, VHF radio, etc)	£4,040	£4,260	£220	Binocular and VHF radio had to be bought, as I could not bring these from Australia as first planned.
Travel, running costs, subsistence, vehicle/boat maintenance	£3,590	£4,308	£718	Major difference occurred for important and unexpected malfunction of 4x4 vehicle, which had to be fixed urgently before fieldwork.
Outreach, advocacy and education	£4,270	£3,012	-£1258	To be able to pay the difference items above, budget was extracted from this item.
Expendables (navigation, batteries, tools, photography, etc)	£0	£186	£186	As new boat and engine was boat for this year, a few expendable items had to be bought, in particular those required by the Chilean navy, not previously budgeted.
Internet, telephone, report production	£0	£98	£98	Minor expenses not budgeted.
TOTAL	£11,900	£11,864	-£36	

Local exchange rate: £1 = CL\$ 1,056 (Chilean Pesos)

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

The local problems we have been facing, in particular related to salmon farming, will be surely increased by global issues such as climate change. The most important step is to tackle this issue, bringing it at the local level and spread a strong campaign, as well develop robust studies on the effects of climate change in marine ecosystems.

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?

The RSGF logo has been displayed in four international conferences (two in USA, South Africa and Uruguay). The last oral presentation, where the logo was displayed was in Uruguay in October 2008. All four conferences (where two posters and two oral presentations has been given), had a conservation theme. In particular the conferences organized by the Society of Conservation Biology. The next conference on Conservation Biology will be held in Edmonton, Canada, where the results of this project will be presented and the RSGF logo will be exhibited.

Posters and calendars, book, website and vehicle will have or already have the logo of the RSGF.

11. Any other comments?

There are many things we still need to do, and as we walk along the path and try to solve some problems, new concerns arise. The amount of global and local problems might be overwhelming at times, and dealing with some of the authorities is in many cases frustrating, as political or economical interests predominate. However, every step counts, every one counts, and as we move on we join energy and efforts from all those who believe that we can make a real difference. We are constantly reminded that we are short of time, but as time goes by, more fighters come together, and this, brings more inspiration and energy to keep the fight.

We are sincerely thankful to The Rufford Small Grants Foundation, as its support has helped us to go stronger in our dreams and ideals of making a long lasting difference.

