

## The Rufford Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford 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**

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Grant Recipient Details	
<b>Your name</b>	Julia Dombroski
<b>Project title</b>	Talking about conservation: Sound Production of Southern Right Whales in Brazil
<b>RSG reference</b>	14080-1
<b>Reporting period</b>	October 21, 2013 to October 9, 2014
<b>Amount of grant</b>	£4020
<b>Your email address</b>	<a href="mailto:jurgdombroski@gmail.com">jurgdombroski@gmail.com</a>
<b>Date of this report</b>	October 9th 2014

**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
Describe right whale vocal repertoire off Santa Catarina, Brazil			✓	We were able to describe right whales vocal repertoire however we had to use another dataset instead of using exclusively the one that resulted from this surveys to do it due to methodological reasons.
Link surface and calling behaviour of right whales.		✓		By observing behaviour and recording sounds simultaneously we were able to infer ecological significance of some right whale calls and compare our results with other studies contributing to expand scientific knowledge about the whales' communication system. However we believe that further studies are needed to complement our results. Due to unfavourable weather conditions, the number of surveys was smaller than planned and a greater number of observations are required to evaluate the use of all call types produced by right whales in the area.
Identify acoustic clues of habitat use.			✓	By analysing sounds recorded at the study area and by analysing behaviour of whales, we were able to confirm the use of the areas inside the APA as nursery ground for right whales.
Gather information about noise levels at the study area.		✓		We were not able to formally investigate noise levels in the area. However we have anecdotal evidence of increased intermittent noise levels under 1000Hz what could affect communication space of whales.

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

Due to unfavourable weather conditions, the number of surveys was smaller than planned. Increasing wind speed during the day let the team to interrupt recording effort in some occasions.

As we were able to extend the time spent in Santa Catarina for data collection, and also due to disagreements with a local inn concerning lodging arrangements, costs with hosting dramatically raised (however money that would initially be designated to pay for the boat rent was relocated to pay for hosting, so overall project budget was not affected). Moreover, costs with meals also increased not only because the estimated time spent in field increased from 10 to 45 days but also because in days of surveys, the grant was used to pay for meals of the all team including volunteers of Projeto Baleia Franca that helped in data collection (what as not included in the original budget).

We faced a few problems with equipment, for instance: the vessel hourmeter broke and a browed refractometer was damaged. Fortunately, we were able to quickly replace all broken equipment. Damaging equipment is very common especially when surveys involve being at sea. Having the grant support to replace damaged devices was fundamental and it will be prudent to designate more money to unpredictable situations like those in the future.

In 2013, whale-watching activities were suspended in southern Brazil so we had no major problems with other vessels close to whales interrupting or interfering in recordings. However, the proximity of our research boat to the whales could have awaked population mistrust (and in fact it did). To overcome this issue the team on board was wearing uniforms provided by Projeto Baleia Franca all times. When we had the opportunity to use larger vessels, similar to those used in whale-watching activities in the area, a banner clarifying the aim of survey (research) with the Sisbio license number and with logos of all partners (including Rufford's) was hung in both sides of the vessel. We also reported the status of all of our surveys to APA's management team.

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

1. This project is part of the initiative that aimed to record sounds of the Brazilian population of right whales. Results will contribute to expand knowledge about behaviour and sound production of this endangered population and will base management measures and conservation actions to protect whales off Santa Catarina and its environment. It is also the starting point to comparative studies and investigations concerning behavioural and communication disturbances in whales.
2. We were able to divulge the science of bioacoustics to the general public and we have made it clear to local authorities its importance as research tool to obtain relevant data for management and conservation purposes. We were also responsible for training volunteers to work with acoustic equipment and behavioural research.
3. Our work promoted collaboration between national and international universities with a federal institution and a research and conservation project. Our aim is to maintain collaboration to produce more cutting edge conservation-based science in the near future.

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

N/A

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

Absolutely, yes. Our main objective is to establish an acoustic based monitoring network that will encompass several (bio) acoustic techniques and principles to investigate and protect the Brazilian right whale population. Our team is fully committed with conservation-driven research and will continuously work toward our ideals.

The acoustic-based monitoring network will provide relevant acoustic data from the environment and from whales what will amplify scientific knowledge about the species and will contribute the conservation and management measures inside the APA Baleia-Franca. Results of this project will be taken in consideration for the monitoring system design and will contribute to its effectiveness.

We intend to further investigate acoustic behaviour of whales in the area repeating methods used in this project in the years to come. Complementary protocols will be established. Moreover, we are planning to start comparative studies aiming to better understand the impacts of anthropogenic activities in the Brazilian population of right whales.

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

We plan to share results in scientific meetings and publications and by giving talks about the project. The matter of acoustic communication of whales will be included in future educational initiatives of PBF and a description of our project findings will be displayed in PBF's visitor's center.

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

From October 2013 to December 2013.

**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.**

Exchange rate: 1 = 3.4 £

Item	Budgeted Amount	Actual Amount	Difference	Comments
Transportation Expenses	-	470£	-470£	Costs of fuel used for transportation to and from the study area, trips to replace damaged equipment and other locomotion needs including inflatable boat transportation. As we stayed for a longer period in Santa Catarina, costs

				with transportation increased in comparison to the original budget.
Travel Expenses (Plane Tickets)	120£	450£	-330£	
Meals	-	365£	-365£	Original budget counted for only 10 days of fieldwork, and meals costs included were only for the lead researcher meals. The amount reported here is equivalent to 45 days of water and meals in Santa Catarina and it covers meals for all field team (including volunteers) in survey days plus on board snacks and water.
Miscellaneous	-	100£	-100	In miscellaneous are included costs of the array structure as pipes, buoys and rope, office supplies and banner costs.
Vessel Rent	3900£	200£	+3700£	We were able to arrange an inflatable boat to use in our surveys (as previously reported to RSGF). In only one situation we rented a vessel. Funds that would initially be used to pay for boat rent were relocated to cover other expenses as the inflatable boat maintenance, gas and oil and lodging.
Inflatable boat costs	-	1800£	-1800£	Gas, oil, hourmeter and maintenance costs of the inflatable boat.
Lodging	-	925£	-925£	As we were able to extend time spent in Santa Catarina (because we arranged a boat that would be available to us for up to 45 days), and also due to disagreements with a local inn concerning previous lodging arrangements, costs with hosting dramatically raised.
Batteries, plugs, connectors and tools	-	150£	-150£	Batteries for the hydrophones, recorders, and other equipment. Plugs and connectors for recording equipment and tools are also included.
Refractometers	-	120£	-120£	A browed refractometer was damaged so we replaced it and returned it. We bought an extra one for the team use in the field.
Solid State Portable Recorder	-	340£	-340£	
HTI Hydrophone	-	400£	-400£	
Total	4020£	5320£	-1300£	Difference covered by Cetacean Society International Grant

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

First of all, it is important to finish data analysis in order to provide detailed final report to the foundation, to conclude the master dissertation associated with the project and to publish our findings in peer reviewed journals.

Secondly we will gather and evaluate data and knowledge that resulted from this projected and will start planning the next project based in scientific questions and conservation needs of right whales. Then, we will determinate a schedule and apply for new grants.

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

Rufford Foundation logo was used in several materials related to the project:

- Presentations done at Projeto Baleia Franca to train interns.
- Banners that were hanged on the vessel to clarify the survey aim.
- Presentation of “Acoustic Partitioning in a marine vertebrate community off brazil” at the Ecoacoustics: Ecology and Acoustic meeting held in Paris in June 2014 (the foundation name is also cited in acknowledgments session in the abstract of the presented work).
- Poster presentation about our project at the Marine Bioacoustics Summer School held in Leesburg DC, USA in June 2014.
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The foundation’s name was included in all technical reports and press releases produced during the course of our fieldwork.

Our project also received the media attention and several articles in local newspapers were published during field season. A national TV station recorded a reportage exhibited during popular Sunday news show (find it at this link in Portuguese: <http://noticias.r7.com/domingo-espetacular/videos/pesquisadores-aproveitam-temporada-para-decifrar-comunicacao-entre-baleias-11022014>).

Future presentations and materials related to this project will use the Foundation logo. The Foundation will be acknowledged in Julia’s master dissertation and the grant will be cited in “founding and acknowledgments” of all future scientific publications and/or presentations related to the project.

### **11. Any other comments?**

Our team would like to congratulate and express deepest gratitude to Rufford Foundation. Conservation driven research is not easily done (especially in developing countries) and the support provided by Rufford Foundation is vital to initiatives like ours. Without the Foundation’s support we would be one step back in our journey. Thank you.

We would like to thank all people who helped us and made this project come true: Projeto Baleia Franca and PBF volunteers in 2013, Carolina Bezamat, Daiane Anzolin, Carolina and Osmar Dombrowski, Base Cangulo, Polícia Ambiental de Laguna, Camila Morais, APA Baleia Franca, APA Anhatomirim, Rebio Arvoredo and Esec Carijós. Thanks to Alessadra Fidelis and Arrilton Araújo for

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Paulo Flores, thank you for infinite dedication and sea-wisdom.

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