

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	Gwenith Penry
Project title	Determining the current population size and foraging ecology of South African inshore Bryde's whales.
RSG reference	11700-1
Reporting period	January 2012 – February 2013
Amount of grant	£5749
Your email address	gpenry@iziko.org.za ; gwenpenry@gmail.com
Date of this report	26/02/2013

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
Estimating abundance using photo-identification data		X		Mark-recapture studies rely on two sampling periods for abundance estimates to be achieved. The first sampling period (2012) has been completed and I have identified 54 new individual Bryde's whales. On completion of the second year (2013) the individual capture histories of each animal will be incorporated into mark-recapture models for estimating abundance.
Estimating abundance using individual genotypes		X		Insufficient biopsy samples were collected for an accurate abundance estimate to be made. At least 80 individual identifications are required to achieve a reliable estimate from a population of ~600 (the only available estimate for this population). Due to the inherent elusiveness and fast swimming of this species it proved more challenging to reach our target number of biopsy samples. However, we did collect 26 and these will be used to test the efficiency of natural marks for identification purposes (double marking experiment), stable isotope analysis (foraging ecology) and in studies of genetic diversity within the population.
Determining the efficiency of natural markings through a double marking experiment.		X		26 biopsy samples were collected from different individual whales. The genotypes of each whale will be determined using microsatellite markers and used to confirm or disregard the identities made using photographs. Laboratory work has not yet started, however it is anticipated that this will commence once the 2013 field season has been completed.
Foraging Ecology.		X		We have collected 26 biopsy samples, one faecal sample and five baleen samples (from stranded individuals). These will be combined with samples collected in 2013 for a study on foraging ecology using stable isotope analysis.
Training			X	Throughout 2012 we provided training and fieldwork experience to one MSc and one PhD student from the University of Pretoria; one nature conservation student who had no previous cetacean experience and one independent South African

				assistant/volunteer who has proven to be very skilled in the technical aspects of fieldwork and biopsy sampling and will be joining us again in 2013. We also had one international intern who required field experience and data for her course in marine science.
Outreach			X	We gave public presentations at each of the field sites (PB, EL, FB). All were well attended. Newspaper articles and radio interviews were given before and during our fieldwork

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

Our major difficulty when planning our fieldwork for the year was deciding on the best timing for our boat surveys in East London (the most northerly site). The occurrence of Bryde's whales off East London is dependent on the northward migration of sardine (the sardine run). This migration only occurs when the environmental conditions are exactly right and a cold current of water moves up the east coast of South Africa. The sardines usually arrive off East London in late June, early July which was when we were there. Unfortunately this year the sardines didn't 'run' as expected and therefore the predators, of which Bryde's whales are the largest, that follow the run did not appear off East London. In the 3 weeks we were there only two Bryde's whales were sighted. This was a huge disappointment and also extremely costly which is why we have decided not to try and sample this area in 2013. We did however collect a large amount of data on humpback whales whilst we were there and this data will be used for the next population assessment which will be undertaken by researchers in our group.

Another major difficulty was obtaining sufficient biopsy samples. This is the first study on South African Bryde's whales that is dedicating effort to collecting biopsy samples for estimating abundance and a dietary study. Their inherently elusive nature and fast swimming speeds made collecting biopsy samples very difficult. We have doubled the amount of planned sea time for 2013 in order to increase our chances of collecting sufficient samples. Additionally we will be placing students on the whale watching vessels in both Plettenberg Bay and False Bay so that the photographic effort is doubled.

Inclement weather during the East London and False Bay field work resulted in fewer than expected sea days and therefore fewer data.

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

This project requires a minimum of 2 years worth of data before any of the overall project outcomes can be met. However, from the data collected in 2012 we have contributed another 54 newly identified individuals to the catalogue (of 83) and 26 biopsy samples. One surprising find to date is that there are no photographic matches between the field sites, i.e. individuals identified in Plettenberg Bay have not been re-sighted in False Bay. This will be explored further in 2013 but may be indicative of small scale site fidelity that was previously not known or considered for this population.

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

By engaging the local communities in our research through public presentations and newspaper articles we have raised awareness of the Bryde's whale as a resident whale in South African waters, a fact that many coastal residents are unaware of. We worked closely with the whale watching industry who assisted us by reporting sightings and in turn we provided further information for them to use on their tours.

5. Are there any plans to continue this work?

Yes. We are now entering the second year of fieldwork and by the end of the year should have some informative results that will address the primary aims of the project. I foresee this becoming a long term project which will build on the findings of the current study to increase our knowledge on Bryde's whales and their role in the marine ecosystem. It is rare that a large, primarily coastal, marine predator is so poorly understood.

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

We intend to present the findings of this research to the following stakeholders and decision makers once they have been accepted as peer reviewed publications in scientific journals.

The government Departments of Environmental Affairs (DEA) and Agriculture, Forestry and Fisheries (DAFF) Both departments are real and potential decision makers in the marine environment and are responsible for setting catch limits for the target fish species (sardine and anchovy). Data on the prey requirements of predators should be incorporated into the models for determining fishing quotas.

The South African Boat Based Whale Watching Association (SABBWWA) The outcomes of the proposed work can be used to inform this forum about the resident population of Bryde's whale and the value of marketing year round whale watching. It is hoped that by increasing interest for this population in the tourism industry, the importance of non-consumptive use will be highlighted and also the need to conserve such a valuable resource. There are currently three whale watching companies along the coastline that contribute photographs and sightings data to our research. Other operators will be encouraged to do the same.

The Responsible Fisheries Programme (RFP) This was established in South Africa in 2009 to enhance the implementation of an Ecosystem Approach to Fisheries (EAF) management in South Africa. Members include the World Wildlife Fund (WWF) and four major fishing companies. This programme currently supports a project on the energy requirements of African penguins (dependent on sardine and anchovy) and aims to grow a database of information on other predators also dependent on these fish species, of which the Bryde's whale is one. This sort of information is critical for an effective EAF. The results of this study should be incorporated into a multidisciplinary (predators, pelagic fish and climate change) approach to ecosystem management.

The dissemination of the findings of this project will also occur through popular media platforms such as the SANCOR (South African Network for Coastal and Oceanic Research) and MARMAM (international Marine Mammal list server) newsletters and institutional mailing lists. Presentations will also be given at national and international conferences, academic institutions and the Iziko South African Museum in Cape Town.

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

The RSG was awarded in June 2012 and covered the costs of fieldwork up to the end of August 2012. This period matches what was planned for the grant.

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.

NB - Amount in brackets refers to amount requested from RSGF. Exchange Rate at time of work: ZAR/GBP = 1/0.083.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Costs for boat operations	4482 (2822)	2689.3	-1792.7 (-132.7)	Bad weather severely impacted the amount of time spent at sea in East London and False Bay.
Road travel to field sites	404 (404)	509.9	105.9	Commuting to slipways and around town for supplies.
Accommodation at field sites	3685 (2191)	3077.70	-607.3 (+ 886.7)	Food costs have increased dramatically over the past year in South Africa.
Food expenses for Plettenberg Bay field site	332 (332)	377.2	45.2	We had an additional student with us for one week
Total	8903 (5749)	6654.10	2248.9 (754)	We were GBP 754.00 over budget for the amount requested from RSGF.

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

The most important steps for 2013 are to increase (almost double) our field work effort to increase sample size of both photographic identifications and biopsy samples so that statistically significant results can be achieved.

To increase capacity through Honours and Masters projects within the greater project so that the objectives can be met within a reasonable time frame.

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 was used in all public presentation slide shows as well as being verbally acknowledged during these presentations. Three publications to the public were given, one scientific conference and one internal university presentation. I also requested that the RSGF was acknowledged in all newspaper articles, but due to word limit counts this was not always followed through. Attached is one example a newspaper report in a national paper of where the RSGF was acknowledged (see Cape Times_MGosling_bryde's whale; top right hand column of page). I have used the RSGF logo in my email signature for all work related correspondence.

11. Any other comments?

The Rufford Small Grant covered the majority of fieldwork expenses in 2012. There were several unforeseen expenses along the way but fortunately we were under our overall budget which absorbed these costs. A small grant from the Society of Marine Mammalogy was also awarded to this project but this is primarily to cover the costs of laboratory work.

In 2013 we will be doubling our field work effort to ensure sufficient samples are collected and to allow for higher than expected bad weather days which had a severe effect on our data collection in 2012.

We have learned a lot about what is required in terms of financial and logistical effort in order for this project to be a success and will be increasing our effort in 2013. I do feel that we made significant progress towards achieving the objectives set out in the funding application and that the Bryde's whale project will grow into a long term programme that will address the conservation concerns for this population.

