# 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** | Keshni Gopal |
| **Project title** | A conservation genetic study of Heaviside's dolphins (*Cephalorhynchus heavisidii*) along South Africa's coastline |
| **RSG reference** | 8863-1 |
| **Reporting period** | Final |
| **Amount of grant** | £2890 |
| **Your email address** | k.gopal@sanbi.org.za |
| **Date of this report** | 15th November 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 |
|---|---|---|---|---|
| Assessing the population genetic structure of Heaviside's dolphins in southern Africa | | | X | Skin biopsy samples were taken from Heaviside's dolphins from seven sampling sites along the South African and Namibian coastline. All samples were collected over a four year period during the period November – May. The two genetic markers used were the mitochondrial control region DNA and thirteen microsatellite loci. |
| Patterns of relatedness and population connectivity was investigated between Heaviside's dolphins sampling localities and between the genetic populations identified above | | | X | Microsatellite genotypes at thirteen loci were obtained from 395 individuals of *Cephalorhynchus heavisidii*, an endemic delphinid species found along the west coast of southern Africa, to determine the genetic relatedness and population connectivity of two known populations and amongst the sampling localities, found off the west coast of southern Africa. |
| What is required to assess the conservation status of Heaviside's dolphins by identifying knowledge gaps | | | X | Knowledge and data gaps were identified by using population viability analysis and in turn a population growth model derived for future use when parameters become available. |

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

Sampling Equipment: The sampling equipment used to take skin biopsies was the Hawaiian sling, which was on loan to me for the duration of the project. Half-way through my sampling, the sling was misplaced; therefore fieldwork was postponed for approximately 2 months in order for the necessary parts to be replaced.

Field assistant: The most suitable field assistants used in this project were scientific people that have had experience with working in the coastal areas I needed to visit as well as those that had experience with dolphins. Since obtaining biopsies from this small cetacean requires skill, it worked out better that I had someone on board that knew how to manage the situation in order for me to obtain samples and have minimal impact on the animals. I tried to make use of the local fishermen, however they were biased in the where they could take their boat and also how to approach the animals.

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

1. This study represents the first in-depth genetic study for Heaviside's dolphins across the Southern African coastline. The additional sampling done by receiving this fund made it possible for suitable analysis to be conducted on the species which included gender analyses.
2. Due to the robust genetic sampling, genetic structure was found, however contrasted by the two types of genetic markers used. In addition, genetic relatedness and population connectivity of the two known populations and amongst sampling localities confirmed that connectivity and relatedness exist among the sampling sites.
3. The genetic knowledge obtained during this study will contribute to future research conducted on this species as well as towards establishing a proper conservation management strategy for coastal delphinids around the South African coastline.

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

The local communities in Lamberts Bay, Hondeklipbaai and Port Nolloth were well received when asked for assistance, even when it was just to ask if they noticed in which bays the dolphins were regularly seen. Curious fishermen made an effort to assist when launching the research boat or approach our boat when out at sea to let us know where they spotted dolphins. Returning to certain sites where additional sampling was required, we noticed that the locals have indeed become more aware of the dolphins in their areas to such a point that they spoke of new born calves and the number of dolphins they often come across.

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

Not at this point in time.

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

The results of this study will be published in appropriate scientific journals along with additional work which formed part of a PhD thesis at the University of Pretoria, South Africa.

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

The funds received from RSG were spent on field trips to Table Bay, St. Helena Bay and Lamberts Bay to collect additional skin biopsies from Heaviside's dolphins. The time period the funds were used was spread over the summer and autumn months when weather conditions were favourable for dolphin sampling.

**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 |
|---|---|---|---|---|
| SANBI Vehicle | £300 | £578.51 | £-278.51 | A hired vehicle was used on one trip because all SANBI vehicles with a tow-bar were booked out. |
| Accommodation | £990 | £361.58 (21 nights) | £628.42 | Less trips outside of Cape Town was necessary after RSG funds were received. |
| Skipper | £700 | £186.27 | £513.73 | Due to the nature of the research I was doing, the skippers were grateful to be part of the study and charged me less |
| Boat Petrol | £750 | £173.71 | £576.29 | Most dolphins were found close to launch site, hence it was not necessary to travel far to find them. |
| Sampling Material and Supplies | £150 | £762.85 | £-612.85 | Additional materials were purchased after sling was misplaced. |
| Equipment and Laboratory Supplies | 0 | £806.38 | | It was not expected that the original funding would be received, hence special permission was granted from RSG to use remaining funds to purchase lab consumables and equipment. |
| **TOTAL** | **£2890** | **£2869.3** | | |

** Note – I've used the exchange rate of £1: ZAR 13.69 when funds were received, with the cost bank charges excluded in the above costs (£ 12.55). A balance of £ 7.80 exists. The exchange rate is now at £1: ZAR 16.4288 (15 November 2013).*

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

In terms of genetics, it is important to understand the entire species population genetic structure and the number of existing populations including their genetic variability. This can be accomplished by sampling in the areas further north of Walvis Bay, Namibia. In addition, determining what the northern extent of this species distribution will also assist in filling in the knowledge gaps.

Lastly, for appropriate conservation measures to be established, the additional genetic knowledge stated above as well as information on habitat loss, threats, population size trends and distribution sizes will greatly assist in assessing this species status. As a result, conservation planners and researchers will be guided by the above so appropriate measures and studies can be conducted in the future to monitor this 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?**

The RSGF logo has not yet been used in any materials as this study formed part of a PhD thesis which has been recently submitted for external examination. Once received from the external examiners, I anticipate publishing my thesis chapters, where the RSGF will receive publicity.

**11. Any other comments?**

Receiving the Rufford Small Grant has allowed me to add additional samples to my dataset which made my dataset robust. The RSG Foundation is a great initiative and I am grateful for their support.