

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	Brent Chiazzari
Project title	Population connectivity of the KZN Sardine (<i>Sardinops sagax</i>) using meristic, morphological and genetic data
RSG reference	12475-1
Reporting period	January 2013 - January 2014
Amount of grant	£5000
Your email address	Brent.chiazzari@gmail.com
Date of this report	10/01/14

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
Complete sampling of sardine run individuals during sardine run				I collected as many as was permissible
Complete a morphometric study into the South African sardine, and individuals of the sardine run				Successful account of the differences in morphology of the sardine were elucidated.
Complete a genetic study into the South African sardine, and individuals of the sardine run.				The genetic connectivity of the South African sardine was elucidated, and presented in dissertation form.
Present findings at scientific conferences				Findings were presented at the 8 th Western Indian Ocean Marine Science Association (WIOMSA) conference in Maputo, Mozambique, 2013 as well as at the 15 th South African Marine Science Symposium (SAMSS) Conference, 2014.
Consult with interested and effected parties				Contact made with scientists at the Department of Agriculture, Forestry and Fisheries (South Africa), namely Dr Carl Van Der Lingen, to discuss findings and possible future work for the sardine run as a phenomenon, and possible future genetic work on <i>Sardinops sagax</i> using next generation sequencing, conducted by Dr Peter Teske, University of Johannesburg.
Complete MSc Degree				Currently in the process of having MSc dissertation marked.
Produce two peer reviewed scientific journal articles.				With the completion of my MSc dissertation, I am currently awaiting final comments for my dissertation, after which I will be submitting the content as two papers in a relevant peer reviewed scientific journal.

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

The biggest issue during my project was collecting sardines during the 2013 sardine run. Unfortunately considerably fewer individuals were collected compared with previous years, chiefly due to the low biomass of *Sardinops sagax* migrating from the Eastern Cape into KwaZulu-Natal during the 2013 sardine run.

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

The most important outcome both personally and for the project as a primary research outcome was the production of my MSc Dissertation, describing the genetic structure of the sardine run. This is currently in review and upon completion, will be submitted to members of the Department of Agriculture, Forestry and Fisheries, who are responsible for the fished *Sardinops sagax* stock in South Africa.

The data generated has furthered our understanding about why (ultimate hypothesis) the sardine run actually takes place.

The third outcome was the data generated that are important to future research, which will continue along the same path; to describe the sardine run using next-generation sequencing.

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

Although local communities will not see direct benefit from this study immediately; the understanding gained in a possible multi-stock approach to the beach seine fishery and west coast purse seine fishery may have future benefits to local fishermen and ecotourism enterprise.

5. Are there any plans to continue this work?

Future work is planned to further elucidate the genetic structure of the sardine run, however, not personally. Nevertheless, future work undertaken by Peter Teske at the University of Johannesburg using next generation sequencing is currently underway. Nevertheless, I will be hoping to collaborate with him and possibly supply sardine samples and possible personal insights into hypotheses that may relate to fine scale intra population structure of the sardine run.

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

Personal communication, poster presentations, oral presentations and scientific journal papers.

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 used over a period from May 2013 to July 2014. The project lasted from February 2012 to current time, where I am awaiting results of my MSc dissertation.

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
Field trips, Car rental CT etc. chiefly Umgazana (Transkei trip)	4597.66	1940.18	2657.48	Reduced rates on ski boat hire allowed for an under-budgeted trip to the Transkei.
Sequencing	866.69	3125	2258.31	As was under budget for field trips, used more money for sequencing of DNA, which made up a substantial amount of overall budget.
Equipment	80	260.95	180.95	Under budgeted originally on tackle, etc.
Printing of posters, stickers, dissertation, stationary, etc.	195.31	164.06	164.06	Yet to complete full printing of dissertation.
Sardine samples, air freight shipping, etc.	390.63	546	155.37	The transport of sardine from Cape Town and Port Elizabeth and the addition of Mossel Bay, added to costs of shipping.
TOTAL	6130.29	6036.19	94.10	

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

A finer resolution look at the genetic structure of *Sardinops sagax* of the sardine run, which is currently underway by members of another university.

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 used the RSGF tiger logo on the watercraft we used for the collection of sardine in the Transkei and KwaZulu-Natal, as well as on a poster presentation at the 8th WIOMSA symposium and in an oral presentation at the 15th SAMSS symposium.

(<http://sancor.nrf.ac.za/SiteAssets/Reports/SAMSS%202014%20Abstact%20Book.pdf>).

A link to the RSG website has been posted on my research group's website page with acknowledgement to the RSG Foundation:

<https://sites.google.com/site/marineevolutionlab/brent-chiazzari>

Acknowledgements section in my MSc dissertation.

11. Any other comments?

I would like to thank the RSG committee for choosing to fund this project. I believe the generous funding by the RSG foundation has gone toward generating meaningful scientific information that will be of use to fisheries scientists, and ecologists alike.