



The Rufford 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	Louw Claassens
Project title	The distribution and ecology of the endangered Knysna seahorse (<i>Hippocampus capensis</i> Boulenger, 1900) in the Thesen Islands Marina, South Africa.
RSG reference	17442-1
Reporting period	September 2015 – September 2016
Amount of grant	£4480
Your email address	Kyss.louw@gmail.com
Date of this report	21 September 2016

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
Quantify the Knysna seahorse population in Thesen Islands Marina on a habitat-specific level			x	The seahorse population within Thesen Islands Marina was quantified by a summer and winter population assessment in 2015 and 2016. Focus was placed on seahorse density in specific habitat types. Furthermore monthly surveys was done within and outside the marina development from October 2015 to August 2016.
Establish habitat and holdfast preference			x	The habitat use by the seahorse was established during the seasonal population assessments, and significantly higher seahorse densities were found within artificial Reno mattress habitats. We further investigated the observed distribution by an <i>in situ</i> habitat choice experiment to ascertain if the seahorse showed any preference for artificial habitat as opposed to natural vegetation.
Provide a detailed description of specific habitat types utilised by the seahorse (physico-chemical, hydrological and biological aspects)			x	The marina environment and all identified habitat types were described as well as the utilisation of these habitats by the Knysna seahorse.
Describe the use of artificial structures by seahorses			x	The use of artificial structures by the Knysna seahorse was investigated during the habitat choice experiment as well as using cameras deployed within the

				specific habitat type and the assessment of seahorse behaviour.
Describe the feeding and foraging behaviour of <i>H. capensis</i> within the marina environment			x	
Describe the feeding and foraging behaviour of <i>H. capensis</i> within the marina environment		x		Feeding behaviour was investigated using cameras within artificial Reno mattress habitat only. Prey animals within different habitat types were also investigated – although further research is needed.
Identify suitable habitats that should be earmarked for protection.	x			Specific areas important for the conservation of the Knysna seahorse were identified and this information will be submitted to the management authority (SANParks). Our aim is to establish these specific areas as protected areas within the estuary.

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

No major problems were experienced.

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

- The assessment of the current Knysna seahorse population within Thesen Islands Marina (establishment of a baseline).
- Greater understanding of the habitat use and habitat choices made by this species and the usefulness of artificial structures.
- Identification of important conservation areas.

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

Presentations were used to inform and educate the local community. As part of the Knysna Basin Project (www.knysnabasinproject.co.za) we also focused on environmental education of local groups – specifically the importance of the estuary. This entails field outings, specific projects etc.

5. Are there any plans to continue this work?

Yes. We aim to continue our work on the Knysna seahorse, specifically:

- The establishment of effective conservation areas by the identification of the home-range and site fidelity of *H. capensis* using visible implant fluorescent elastomer (VIFE) tags. Focus will be placed on the seahorse population within the marina development as well as the larger Knysna Estuary.
- Research on the underlying process of habitat use and preference by *H. capensis* with specific focus on the use of gabion structures – a continuation of the habitat choice experiment.
- Further investigation of the behaviour of *H. capensis*.

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

We will attend the international Syngnathid conference (Syngbio) in 2017 – where we aim to present our work.

One scientific paper has been published (Claassens, 2014) and another is in preparation.

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

The grant was used over a year and compares well with what was envisioned.

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
Funding of PhD student. Funding required for time period November 2015 - July 2016	3659	3830	171	Money left over from the macro-invertebrate assessment was used to fund the PhD student for another month
Habitat preference investigation	476	550	74	The cages used during the Choice experiment cost more than anticipated and more fieldwork was required which resulted in higher fuel and SCUBA air costs. Money left over from the macroinvertebrate assessment was used for the habitat choice experiment.
Habitat specific macroinvertebrate assemblage assessment	345	100	+ 245	A detailed assessment was not conducted and thus less money was spent on this.
TOTAL	4480	4480	0	

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

Continuation of the work – specifically the assessment of the home range of this species and the implementation of conservation measures. It is also important to share the results of our work thus far – particularly with the international community.



**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 – the Rufford foundation was acknowledge in our published article as well as in all presentations given. The logo will also be included in the presentation at the SYNGBIO conference in 2017 as well as a presentation at the South African Marine Science Symposium in 2017.

11. Any other comments?

This grant allowed me to complete this research and I am grateful for this opportunity! I am also investigating possible seahorse research in Mozambique and will again turn to the Rufford Foundation for support.