

The Rufford Foundation Final Report

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Betty Jean Lili Laglbauer
Project title	Impacts, Alternative Solutions, and Awareness of Mobula Fisheries in Indonesia
RSG reference	17212-1
Reporting period	June 2015-January 2017
Amount of grant	£5000
Your email address	b.laglbauer@gmail.com
Date of this report	30 April 2017

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
1. Use fishing market surveys and citizen science to conduct a preliminary assessment on mobula ray density and species-specific abundance in main fishing and diving grounds.				<p>The first part of this objective, which concerns abundance at key fishing grounds, was fully achieved. Field trips were conducted to survey fishing markets in Tanjung Luar, Lamakera and Muncar in 2015, while market surveys were replicated in Muncar in 2016.</p> <p>The second part of this objective, which was the collection of photos from divers via a photographic database repository created on our website, was not fully achieved since only a few photos were uploaded by divers. This is possibly due to the elusive behaviour of mobula rays at diving sites. However, the database will be maintained as a</p>
2. Determine species-specific foraging habits of mobulas landed in Indonesia.				<p>Stomach contents were collected from mobula species landed at key aggregation sites (<i>Mobula tarapacana</i>, <i>Mobula japanica</i>, and <i>Mobula thurstoni</i>) to provide information on short-term trophic level and main prey sources. The results from this objective will be submitted for publication with a stable isotope study of <i>Mobula</i> from Indonesia to provide a</p>

<p>3. Develop an educational program to raise the awareness of stakeholders about the importance of conserving mobulas for long-term sustainability and identify alternative solutions to reduce mobula target and by-catch</p>			<p>Educational activities were conducted with local schools to raise awareness of mobula biology, ecology and conservation. Meetings and workshops were conducted with the Indonesian government and other stakeholders to promote policy change at a local and international level and to initiate national level measures and informed policy change.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Unforeseen difficulties included the delays in obtaining research permits from Indonesia at the start of the project in 2015, and delays in renewing the research permit in 2016. These difficulties were overcome by delaying the start of field work and extending project duration overall.

Project activities in eastern Indonesia (Lamakera) were partly cancelled and the duration of fishing market surveys in that location was shortened due to a tense climate in the region linked with the recent ban of manta ray landings. In order to compensate for these changes, an additional project site was chosen: Muncar, where the majority of our activities continued.

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

The most important achievements of our project include:

- the identification of an area of high importance for mobula ray reproduction in Eastern Java,
- an understanding of mobula ray feeding ecology specific to the region, with clues as to the importance of key fishing grounds for the foraging of mobula species encountered,
- a novel and increased interest of stakeholders in the management of mobula ray populations

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

Local communities were involved in the project through: (1) the participation of volunteers in field work, (2) outreach activities conducted in primary schools, (3) daily interaction with fishermen and mobula processors to gather data on landings and stomach content samples, and (4) interviews with fishermen in Lombok and Muncar to study socio-economics and trends in mobula fisheries.

5. Are there any plans to continue this work?

There are plans to continue this work and build upon objectives achieved during the first phases of this project, through a collaboration with the Manta Trust. Especially building upon links with stakeholder groups, namely local level fishermen associations, national level institutions (Indonesian Institute of Sciences, Ministry of Marine Affairs and Fisheries etc.), and non-governmental organisations (WCS Indonesia, WWF Indonesia, CI Indonesia, etc.).

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

The results from the project will be shared through a publication on the feeding ecology of *Mobula tarapacana*, *Mobula japanica* and *Mobula thurstoni* in Indonesia, which includes samples collected in 2015 and 2016 in Tanjung Luar (Western Nusa Tenggara), Lamakera (Eastern Nusa Tenggara) and Muncar (Eastern Java).

Additionally, a report of the project will be made available online in our website (Mobulaproject.com).

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

The Rufford grant was used from June 2015 to December 2016. Our initial proposed project duration was June 2015 to June 2016. The project was extended with approval from the Rufford Foundation to encompass fishing market surveys in the second half of 2016 and workshops with the Indonesian government until January 2017.

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
Communications	80	72	-8	
Insurance and medical supplies	180	0	-180	Team members had ongoing insurance meaning purchasing a new one was unnecessary.

VISA and research permit	650	400	-250	Included getting a Research VISA in Indonesian Embassy of Singapore, and costs related to getting the research permit and associated documents in Jakarta.
Scientific and field equipment supplies	300	373	+73	Funds were used to purchase dissection kits, ice boxes, containers, reagents/ fixatives, a fridge for the samples, etc.
Accommodation	1000	1132	+132	Accommodation for team members during field work and laboratory analyses in East Java and Jakarta.
Food	800	987	+187	Food for team members during field work and laboratory analyses in East Java
Outreach and workshops	1200	1241	+41	Workshops with the Indonesian Ministry of Fisheries and other stakeholders in mobula ray fisheries management. Workshop venue rental, catering for participants, printed materials, transport costs to the workshop for team members.
Travel and local transportation	790	795	+5	Included one flight from Portugal to Indonesia and local transport between Jakarta and Eastern Java/ Nusa Tenggara.
Total	5000	5000	0	

Exchange rate used: 1 GBP = 16 185.9 IDR (as of 31 December 2016).

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

Further objectives will include: (a) performing further fishing market surveys to provide a longer term species-specific abundance data, (b) investigate population genetics with an ultimate goal to estimate effective population size to inform policy change, (c) building upon awareness activities on a local and national level (management and policy change) to reduce mobula target fisheries, and (d) reduce mobula bycatch.

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?

The RF logo was used on educational materials, such as a booklet distributed to primary school children, and one distributed to secondary school children (these can be seen in our final report appendices). The logo

was also shown on power points during workshops and on identification guides distributed to dive centers and used in the interviews with fishermen.

11. Any other comments?

We are extremely thankful for the support of the RF, which enabled the setting up of our project and the collection of crucial data on mobula fisheries in Indonesia, which had not benefitted from adequate attention in the past. Through this support, we were able to help bring mobula rays to the table in priorities of the Ministry of Fisheries of Indonesia, along with many stakeholders on a local and national level, and established a longstanding collaboration with the Indonesian Institute of Sciences. Our project organised workshops with the government prior to the CITES meeting in 2016, in order to raise awareness concerning the need to regulate the exportation of mobula parts. After the addition of mobula rays to the Appendix II of CITES on October 3rd 2016 (which came into effect on April 3rd 2017), we held another workshop in collaboration with the Wildlife Conservation Society, the Manta Trust and PEW Trusts to discuss national policy change. A new policy valid for 1 year was announced by the Ministry of Fisheries at the workshop, which will ban the export of mobula parts, with the possibility to raise the level of protection on a national level in the future. For this reason, we aim to continue to gather data to support mobula policy and management measures in Indonesia.