

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	Ricardo F. Tapilatu
Project title	Strengthening Conservation of Western Pacific Leatherback (and other Marine Turtles) at Bird's Head Seascape, Papua – INDONESIA
RSG reference	17595-2
Reporting period	September 2016
Amount of grant	£5,000
Your email address	rftapilatu@gmail.com
Date of this report	30 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
Discussion with Yapen Island, Wondama, Manokwari and Kaimana Kabupatens (regencies) government officials				Discussed local laws and adat (customary) rules at Kabupaten (regency) levels regarding sea turtle management and conservation with officials from relevant Kabupaten government bureaus. In Kaimana, the discussion will be held in a workshop format as a component of zonation for Locally Managed Marine Areas (LMMAs) scheduled in December 2016 and organised by Conservation International – Kaimana Office
Outreach to 15 coastal villages along the north and east coast of the Manokwari area				To support our conservation work in the Manokwari area, we conducted outreach in 15 villages along the north coast and east coast of Manokwari where leatherbacks have been known to nest. Principal community members attended our outreach sessions.
Discussion with Papua Barat Natural Resource Conservation Agency (BBKSDA)				We became aware of the Papua Barat Natural Resource Conservation Agency (BBKSDA) effort to designate the areas for wildlife reserves when we did the outreach in Sidey and Kaironi. Designating the areas as wildlife reserves will ensure that marine turtles that nest in Sidey-Wibain and Mubrani-Kaironi stretches and their eggs are protected. We supported BBKSDA effort by attending the

				public comment session for the management of the reserves.
Strengthening local surveillance and sea turtle monitoring teams				Our conservation programme strengthened current monitoring run by local surveillance teams, monitoring nesting marine turtles and protecting nests to increase hatchling production in Mubraidiba village (Manokwari), Etna Bay and Venu Island (Kaimana). The monitoring teams currently have 100% spatial coverage during nesting season.
Surveys on nesting north of Yapen Island and a few small islands at Wondama				<p>North of Yapen Island and nesting habitats on a few islands in Wondama were surveyed on foot in mid-October 2015 and mid-February 2016. These survey schedules were considered the appropriate time of year to record nesting activity for austral summer nesting season. Evidence of nesting was found and turtle tracks were seen, further corroborating that these islands support significant green and olive ridley turtle nesting, a medium level of hawksbill nesting and a low level of leatherback nesting.</p> <p>No turtle tracks were sighted during beach surveys during the survey period at Omba Nariki and Lakahia in Kaimana. However in Venu island, 214 turtle nests were found, mainly from green and hawksbill turtles. At Venu island, one of the green turtles encountered was nesting (84cm CCL) and a data logger was placed at the bottom part of the nest to record nest temperature during the incubation period. Considering Venu island is</p>

			an important nesting site for green and hawksbill turtles, two temperature data loggers were placed in the sand dune of the open beach section at the west and the east sides of Venu island.
Training on sea turtle species identification and data collection and management			<p>Basic training to identify sea turtle species with a standardised methodology. Training on data collection and management was provided to sea turtle monitoring teams in Mubraidiba village (Manokwari) and Venu Island, (Kaimana).</p> <p>The monitoring team in the Manokwari area is stationed at Mubraidiba village and works only during the boreal summer nesting season. The monitoring team on Venu Island (Kaimana) conducts daily nesting surveys and monitoring nest fates. The monitoring teams enter the information into datasheets.</p>
Recording beach and nest temperature			Data loggers were placed to record sand temperature at a hatchery in Mubraidiba (Manokwari) and also in nesting beaches close to Lakahia and Venu Island (Kaimana), and nest temperature at a hatchery in Mubraidiba (Manokwari) and on Venu Island (Kaimana).
Assessment of existing and potential threats			Exploitation of sea turtles, primarily for subsistence, is a long-standing practice by residents in the surveyed areas. Sea turtles have long been a source of protein for the locals. Residents admitted harvesting turtles for consumption and special events, such as

			<p>custodial feasts. Hawksbills are least favoured for consumption by villagers due to poisonous effects while greens are most favoured. They also reported that greens and hawksbills occasionally get entangled in gillnets, indicating overlap between local fishing areas and turtle corridors. This makes the turtles vulnerable because entangled turtles of any size would not be released but instead consumed. Hunting for subsistence typically occurs when the turtles are nesting.</p> <p>Predators such as monitor lizards and domestic dogs are clearly major natural factors threatening sea turtle populations. It is suggested that a high level of nest predation would likely cause a decline in numbers over the next decade. Moreover, potentially lethal sand temperatures due to global climate change and beach erosion on several islands in Wondama and Kaimana particularly on Venu, reduced the size of nesting habitats. Another factor such as the root invasion of casuarinas on beaches could hamper nesting at Lakahia and Venu Island.</p> <p>Natural predators of sea turtles at sea were recorded during the village surveys in Kaimana. Numerous sharks were recorded and may be capable of feeding on hatchlings and small juveniles. The tiger shark (<i>Galeocerdo cuvier</i>), is the only known major predator of</p>
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				juvenile, sub-adult, and adult green turtles. This shark is nocturnal and likely occurs at Kaimana.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

We initially thought that beach and village surveys during the boreal summer season would be all fine throughout the Bird's Head seascape. In fact, we have had difficulties with unfriendly sea conditions at Omba Nariki and Lakahia of Kaimana and once we got to the beaches, we were bitten by extreme sand-flies and mosquitoes. Thus, to tackle the difficulties, we recheck the nesting beaches for only a half day during the austral summer season (October) to remove temperature data loggers.

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

I. Monitoring team and local patrol

A few villagers in the north coast of Yapen have conducted sporadic sea turtle monitoring since 2014 and a local NGO stationed in Yapen is interested in running a permanent sea turtle monitoring programme in the north coast of Yapen by hiring those villagers. In Wondama, sporadic monitoring is being conducted by Cenderawasih Bay National Park rangers. Meanwhile, a sea turtle conservation group was established in the north coast of Manokwari in 2014. The formation of the monitoring team ensures that multiple beaches on the north coast of Manokwari are being monitored for nesting on a daily basis during the boreal summer nesting season. In addition to nest monitoring, the team also relocates nests laid in high risk beach areas/zones to prevent potential poaching and predation events on nests. In Kaimana, local surveillance teams have been formed by the Kaimana government in multiple areas including in Lakahia and Venu Island. The presence of the conservation teams is significantly enhancing hatchling production and the overall reproductive success of sea turtles, in particular the critically endangered leatherback.

II. Environmental education

We carried out education and outreach through extension and focus group discussions with villagers, community figures and government officials in Yapen, Wondama, Manokwari and Kaimana. We identified that Inggresau beach in Yapen and a few other beaches in the north coast of Manokwari may represent nesting sites for green, olive ridley and hawksbill turtles as well as satellite nesting beaches for leatherbacks that primarily nest at Bird's Head during the boreal summer nesting season. Additionally, waters in Wondama and Kaimana may represent foraging

grounds for leatherbacks and other sea turtles. This corroborates with previous satellite tracking studies that indicate that leatherbacks nesting on Bird's Head often travel near Yapen Island, Manokwari and islands in Wondama during their inter-nesting periods, and could potentially use the north coast of Manokwari and Yapen Island for some of their nests (Bird's Head leatherbacks lay an average 5.5 nests per season, Tapilatu et al. 2013). Moreover, we also found that the beaches in Kaimana might not be ideal for leatherback nesting due to several factors: the beach is narrow and it lacks a sufficient sand dune, the close proximity to multiple rivers and estuaries results in the overgrowth of mangroves and casuarinas, during low tide the beach is long and flat, and the water in the area is dirty. These conditions are completely different than the typical nesting beach for leatherbacks at the north coast of Bird's Head. However, waters in Kaimana are important foraging grounds for leatherbacks migrating to the south of Bird's Head during the austral summer season. We also found that the beaches in Kaimana are important for smaller turtle species such as hawksbill, olive ridley and green turtles, which are listed as Endangered by the IUCN.

Respondents reported that it has become more difficult to catch turtles now than 10 or 20 years ago; they do not encounter as many turtles nowadays. This is an indication that the turtle population has declined, likely caused by unsustainable exploitation. Carrying out extension activities and discussions resulted in increased awareness and community commitment to initiate and continue conservation actions to save the sea turtles nesting on the beach. In Manokwari, we set two billboards along the trans-Manokwari road to encourage local villagers to take actions to save leatherbacks and other smaller turtle species. Another important result was the introduction of the Bird's Head Leatherback Conservation Programme at the north Bird's Head seascape under the Research Centre for Pacific Marine Resources (RCPMR) - University of Papua (UNIPA, the only state academic institution in the region) to children in the villages. These children were previously unaware of both the RCPMR and UNIPA, and have now become aware of the higher educational opportunities available to them at UNIPA.

III. Training and support

We trained local patrol teams in Manokwari and Kaimana in standardised data collection methods for documenting sea turtle nesting, nest monitoring, and hatching success. We developed a simple database for the spreadsheets from Kaimana and Manokwari so data from the field can be entered in electronic format once the crew is rotated and new supplies are provided on a monthly basis. In addition, we also provided photos of different sea turtle species to assist local patrollers in identifying sea turtle species correctly. Moreover, we introduced standardised nest relocation for the conservation group in Manokwari so that they are able to relocate vulnerable nests with optimum hatching success and fitness.

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

The community and village elders in Manokwari, Yapen, Wondama and Kaimana have played an important role in the current project, because one of the goals is to engage local community members at the village level so that they become an active stakeholder in marine and sea turtle conservation. This includes educating the communities on the conservation and cultural importance of the marine ecosystem in general and sea turtles in particular. The engagement and education is continuing to improving their understanding and appreciation of sea turtle biology and conservation. Further, hiring people from surrounding villages to work in the sea turtle project provides local jobs and income for unemployed community members. At this initial phase, responses from local communities are twofold:

In Yapen, Wondama, and Kaimana, we stayed at local villagers' houses which stimulated motivation and interest of the artisanal fishers during our stay with them. At Venu island of Kaimana, we stayed in the local surveillance station and actively interacted with the sea patrol team and their families, who lived close to the station.

We shared lectures, multiple short entertaining sea turtle videos and articles related to marine and sea turtle biology and conservation (main subjects: life cycles, habitats, and threats on the beach and at sea, emphasising conservation actions and how the community can participate and contribute to the success of the conservation programme).

The community involvement, and the community-based conservation are a critical component of the sea turtle nesting beach programme. It is the heart and soul of successful sea turtle conservation programmes around the world. The success of the sea turtle conservation programme in Manokwari, Yapen, Wondama and Kaimana is dependent upon enabling community benefits and development, and thus helping the community as a whole. It is expected that this programme will continually strengthen and become a long-term initiative which acts as a driving force for conservation in the Bird's Head seascape as a whole.

5. Are there any plans to continue this work?

Yes, we envision our recent accomplishments as the initial stage of establishing a long-term, community-based sea turtle conservation program in satellite nesting areas of Manokwari, Yapen, Wondama and Kaimana for supporting the wider program in the entire Bird's Head Seascape. We plan to continue the work in two ways. First, we will utilise the conservation teams that have been formed either by

local, government, and/or NGO initiatives to verify the conservation and biological importance of the areas in Manokwari, Yapen, Wondama and Kaimana to the conservation status of sea turtle populations. The results will indicate to what extent sea turtle nesting at surveyed areas contributes to the conservation and population status of sea turtles of the entire Bird's Head seascape. Second, we will continue to strengthen the sea turtle conservation programme in Manokwari, Yapen, Wondama and Kaimana by networking with other partners such as Sarerei Foundation in Yapen, Local Conservation Group in Manokwari, CI-Indonesia, Cenderawasih National Park, WWF, and the Manokwari, Yapen, Wondama (also Nabire) and Kaimana regional governments to ensure that the surveyed areas are included as a critical component in the development of an ecologically connected network of locally managed marine protected areas (LMMPAs) in the Bird's Head region. Thus, the success of this programme is contingent upon the continuation and enhancement of this project on several fronts. Therefore, a third Rufford Small Grant Fund (RSGF) will be applied for 2018.

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

The scientific results regarding the population and conservation status of sea turtles in surveyed areas of Manokwari, Yapen, Wondama and Kaimana have been compiled in a scientific publication format and published in the Biodiversitas Journal (<http://biodiversitas.mipa.uns.ac.id/D/D1801.htm>). In addition, the results will also be compiled as a report to the Manokwari, Yapen, Wondama and Kaimana regencies and Papua Barat provincial governments as well as to the conservation NGOs (Sarerei Foundation in Yapen, Local Conservation Group in Manokwari, CI and WWF) as a foundation for developing a science-based sea turtle conservation strategy for the Bird's Head seascape. We also have participated in an interactive radio section of National Public Radio of Programma-1 Manokwari to give a talk about the importance of the ocean and sea turtles.

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 RSG was used for surveys in Manokwari, Yapen and Wondama for 12 months from October 2015 to October 2016. Due to funding constraints, the survey in Kaimana was supported by CI-Indonesia Program. The timescale was similar to the proposed time schedule.

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 (telephone and internet)	100	110	-10	Due to the utilisation of satellite phone in remote survey sites
Printing materials (posters)	100	100	0	
Team training	450	500	-50	Covered by other source
Medical supplies	50	50	0	
Field equipment and supplies	500	500	0	
Field logistics	500	600	-100	Covered by other source
Field Guides	500	500	0	
Boat	500	500	0	
Fuel	500	500	0	
Accommodations for team members	250	250	0	
Food for team members and local guide	600	600	0	
Land transportation (Manokwari, Yapen, and Kaimana)	250	250	0	
Air transportation	250	350	-100	Due to increase in air fares
Presentations	100	100	0	
Educations and outreach activities	250	250	0	
Post-Project Expenses	100	50	+50	
Publication fee at Biodiversitas	175	50	-125	Covered by other source
Total	5,175	5,260	-325	

Note: £ sterling = IDR 18,000. We were assisted by other sources to cover areas over budget

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

- To update information on sea turtle conservation in the Management Plan of the Connected Locally Managed Marine Protected Areas in Manokwari, Yapen, Wondama, and Kaimana and on the wider scale throughout the Bird's Head seascape.
- To solidify the regional sea turtle conservation strategies on the beach and improve the environmental education among different conservation groups (BHL-UNIPA, RCPMR-UNIPA) in conjunction with CI Indonesia-Kaimana Program and the local governments of Manokwari, Yapen, Wondama and Kaimana.
- To apply for a third RSGF to ensure the production of an extensive database for verifying the significance of sea turtle nesting in Manokwari, Yapen, Wondama and Kaimana to the recovery of the critically endangered population of leatherback nesting at Bird's Head. Further, the 3rd RSGF will facilitate capacity building by continuing to train monitoring teams for developing skills in nest relocation, nest protection, hatching success evaluation, and predator control in Manokwari, Yapen, Wondama and Kaimana.

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 RSGF logo has been used in all our presentations during meetings and discussions with communities, as well as with government officials. In addition to its logo, RSGF was stated in the acknowledgement section of the published paper and reports resulting from this project.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

12. Any other comments?

The RSGF was instrumental in covering a new sea turtle conservation program in Manokwari, Yapen, Wondama, and Kaimana of the Bird's Head Seascape, Indonesia. That program has the potential to significantly contribute to the recovery of sea turtles in general and in particular to the recovery of the western Pacific leatherback. We are very thankful for the support Rufford Small Grants Foundation has granted us.

Awareness and Education program in north of Yapen



Meeting government officials and village figures in Kaimana



Placement of temperature datelogger in Lakahia, Kaimana



Nesting survey in Venu Island, Kaimana



Measuring curved carapace length of a green sea turtle in Venu Island, Kaimana



Survey team with villagers and survey boat



Interactive talk on marine life and sea turtle at National Public Radio,
Programma-1 Manokwari

