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	Maissa Louhichi
Project title	Evaluation of the impact of by-catches by fisheries on the Tunisian coast: proposed equipment and practices to mitigate the impact of fishing gears on the threatened sea turtles.
RSG reference	RSG Application maissa-21699-1
Reporting period	£18 months
Amount of grant	5000
Your email address	Maissa.louhichi7@gmail.com
Date of this report	11 months

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
Interview methodology				A total of 500 interviews were conducted in 19 different ports in our study area (more than expected). 500 boat owners were interviewed. These surveys gave us a clear idea about the fishing activity in the Gulf of Gabes and Gulf of Hammamet. We also identified the interaction of fishing gear with sea turtles.
Onboard observation campaign to assess by-catch per unit effort and mortality rate for different type of fishing gears				An on-board observations campaign has been conducted. Data collected during this campaign helped us to identify the impact of different fishing gear, such as the number of sea turtles per unit effort and sea turtle mortality rate. We decided to work with gill nets targeting sharks and rays as they have the highest rate of capture of sea turtles.
Creation of gear prototypes susceptible to reduce sea turtle by-catch and mortality				Thanks to the results of interviews and on-board observations, we created a new measure of mitigation that was tested. We will send our article to Rufford once it is published.
Experimental phase of the prototypes: Comparison of prototype vs non-modified gear				The calendar was shifted due to climatic factors. However, we already did on-board observations to compare prototype vs. non-modified gear by counting both target species captured and incidental catches of endangered species during paired fishing events. We noted that sea turtles were caught only on the part of nets without measures of mitigation. It seems that our new measures of mitigation are effective but we need

				more on-board observations.
Fishermen meeting				We already met with fishermen to discuss methods of mitigation. We took their advice to create our prototype. We organised another meeting at the end of the project to present the results to fishermen.

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

The most important difficulties encountered in the field were the climatic factors. Our work closely depended on climatic factors. Sometimes, bad weather caused a shift in the work schedule. The second difficulty was the availability of fishermen and their willingness to answer questionnaires. Now, we are in the process of convincing fishermen to use the new measures of mitigation.

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

- **Elaboration of a new database**

Thanks to questionnaires, we elaborated a database about fishing effort distribution and interaction between sea turtles and fishing gear in our study area. Second, the fishing gear was classified according to its impact on sea turtles (highest by-catch and mortality rate).

- **Creation of gear prototypes susceptible to reduce sea turtle by-catch and mortality**

We created a prototype that reduced sea turtle by-catch. We are now trying to convince fishermen to use this new prototype. We also identified the impact of our measure of mitigation.

- **Awareness raising**

The project has increased the understanding of local fishermen about conservation of sea turtles. We showed fishermen the importance of conservation of sea turtles as endangered species. We also permitted to fishermen to be involved in our scientific work.

As a PhD student, this project helped me to learn a lot about fieldwork. I learned how to use interviews methodology to collect data. On-board observation showed me the importance of integrity of fishermen in our scientific work. As a result of this project, I will deliver my thesis.

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

The first involvement of local community, which is presented by fishermen to this project, was their participation to the interview survey. They were also involved in on-board observations. They accepted to collaborate with us to make the realisation of this project possible.

Now, fishermen are more aware of the impact of by-catch on sea turtles. They try to propose their measures of mitigation that can be both commercially efficient and turtle friendly. Their essential benefit is to work with associations and scientists to ensure the good management of fish stocks and conservation of endangered species.

5. Are there any plans to continue this work?

Yes, we are looking forward to apply for a second RSG and others funders to continue the work we started with RSG.

It is necessary to do further research with other fishing gear since it is not yet documented to guarantee the conservation of sea turtles.

We are planning to make some collaborations with other colleagues to try new mitigation measures especially on trawls like turtle excluder devices (TEDs).

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

We are planning to share the result of our work by publishing a scientific article.
The results of this project will be published in a PhD thesis of the student involved in the different activities of the project. We also participated to national and international conference about sea turtles. Similarly, the results will be communicated to the Department of Fisheries in the Ministry of Agriculture.

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 total duration of the project are supposed to be 18 months from January 2017 to August 2018. We needed extra months to finish this project due to climatic factors.

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
Interviews	1000	2500	+1500	Finished. We used extra amount to do more interviews.
On-board observations	1200	1200	0	Finished
Gear prototypes	2000	2000	0	Finished
Fishermen meeting	350	350	200	Finished.

We spent the Rufford grant as it is programmed and we use extra amount to do extra work.

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

The most important next step is to generalise the work on all fishing gear and extend the study area to include all Tunisian coasts. We can also try to propose other measures of mitigation. We really need to do more fieldwork and on-board observations to have a complete database.

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?

Yes, I used the Rufford logo in two posters in two symposiums to present the preliminary results. I participated in ISTS (International Sea Turtles Symposium) Kobe, Japan 2018 and BIODIV, Monastir Tunisia (National conference). I sent some pictures to the RF.

I also used the Rufford logo in an oral presentation in the 6th Mediterranean Conference on Marine Turtle Porec/Croatia 2018. I won the award for best student oral presentation.

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

Maissa Louhichi: She was responsible for coordinating the implementation of the project activities. She ensured that the field data was properly collected. She did a lot of fieldwork as interviews and on-board observation.

Imed Jribi and **Alexandre Girard:** they provided to maissa, the PhD student, all the necessary scientific support that she needed. Thanks to them, we were able to implement our measures of mitigation and create our prototype. They contributed to analysist of collected Data.

Fishermen: they were involved in all project activities as interviews and on-board observations. We contributed also to propose mitigation measures while fishermen meeting.

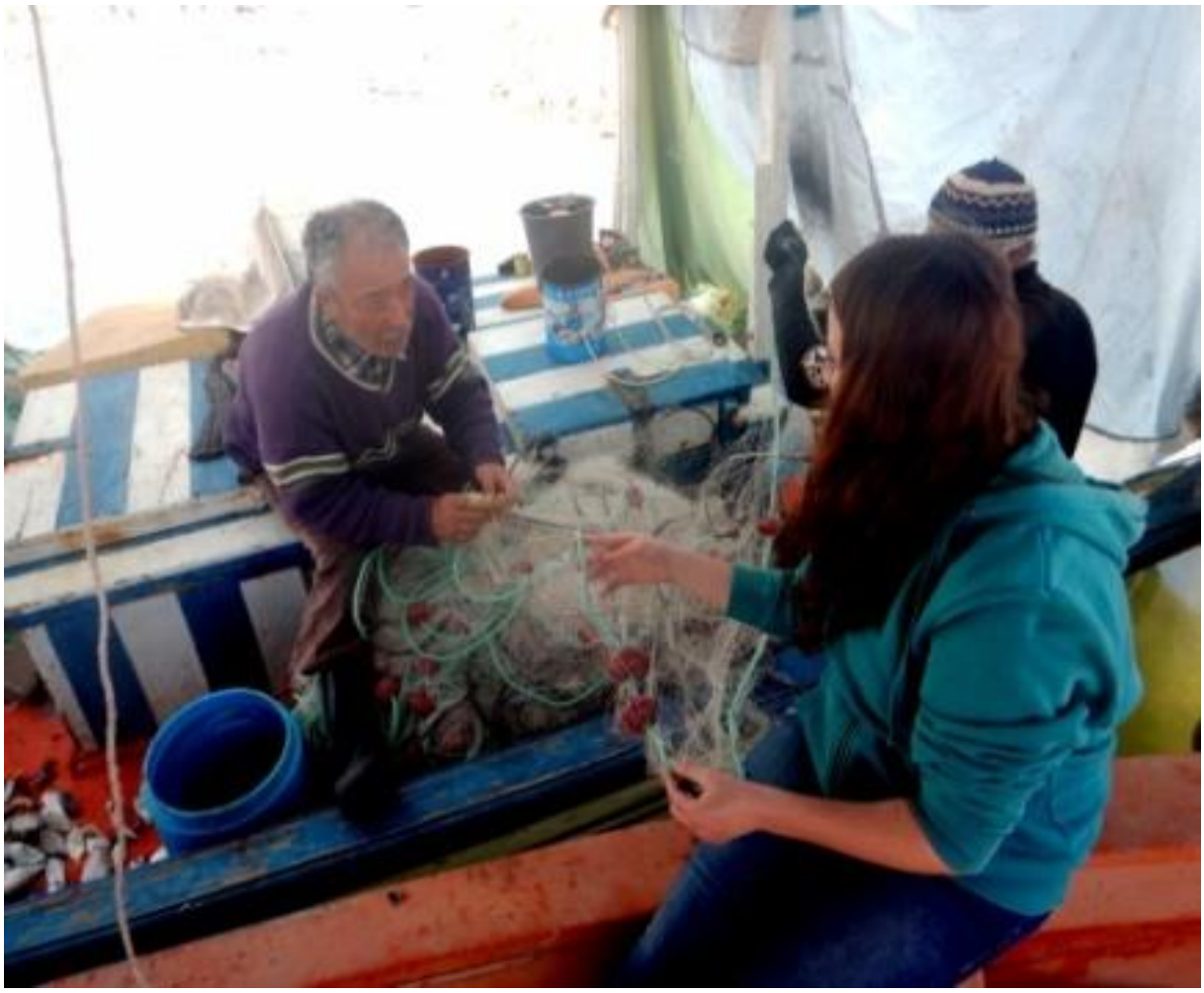
Notre Grand Bleu: As an NGO, they contributed by volunteers and awareness activities

12. Any other comments?

All my apologies for the delay observed before submitting this final report. This was due to extra professional duties.

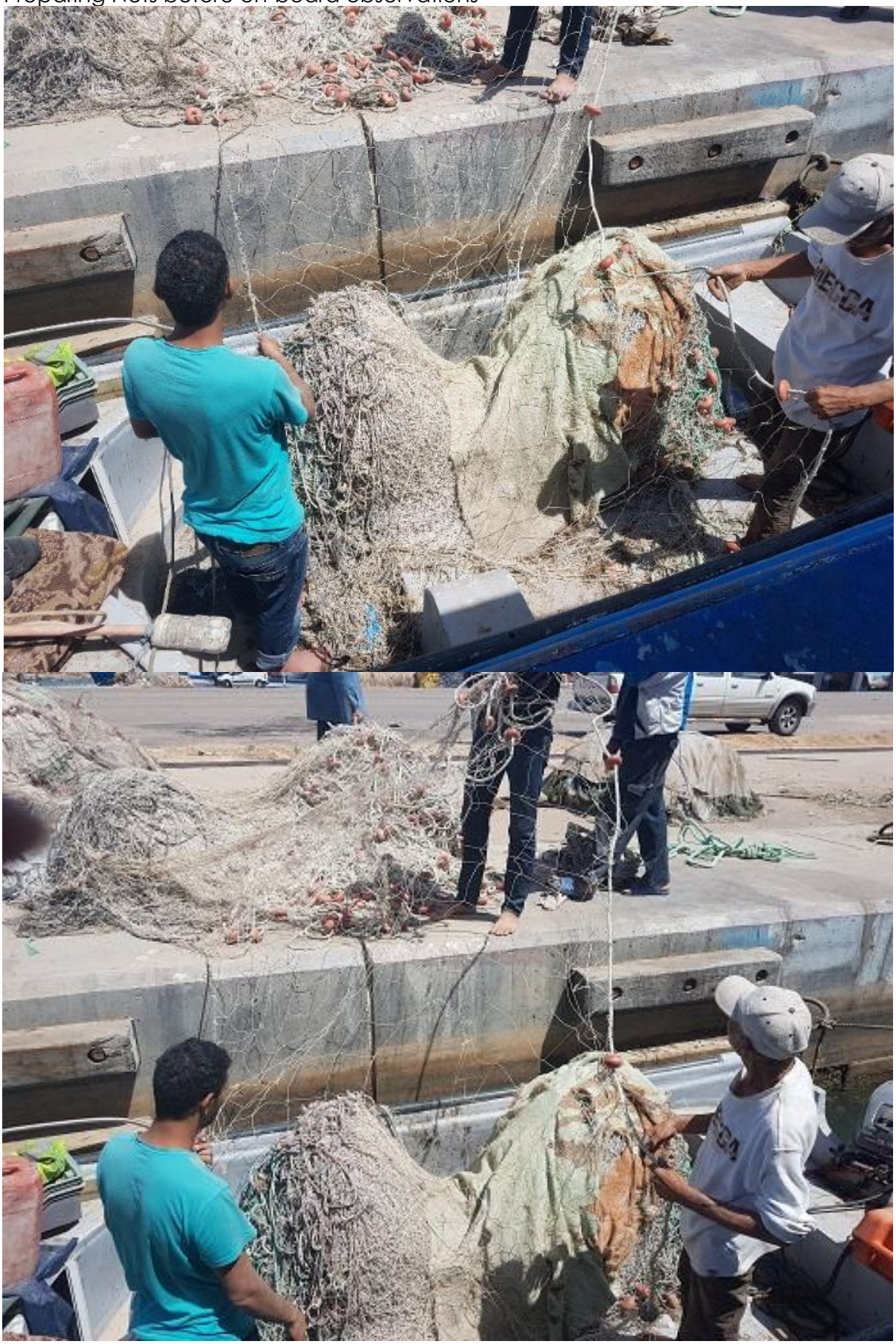
I sincerely thank RF for supporting this research on Tunisian coasts where data are deficient. Without RF support this study would not have done. The data will form part of the baseline that will help us to more understand sea turtle by-catch and the impact of different fishing gear. This project will provide an invaluable contribution for future conservation. Many thanks for this support that has positively changed the behaviour and attitudes of fishermen. I am looking forward to extend this project with other fishing gears. I hope that I will benefit from your continued support.

I will send you more pictures of mitigation measure once we publish our scientific article.

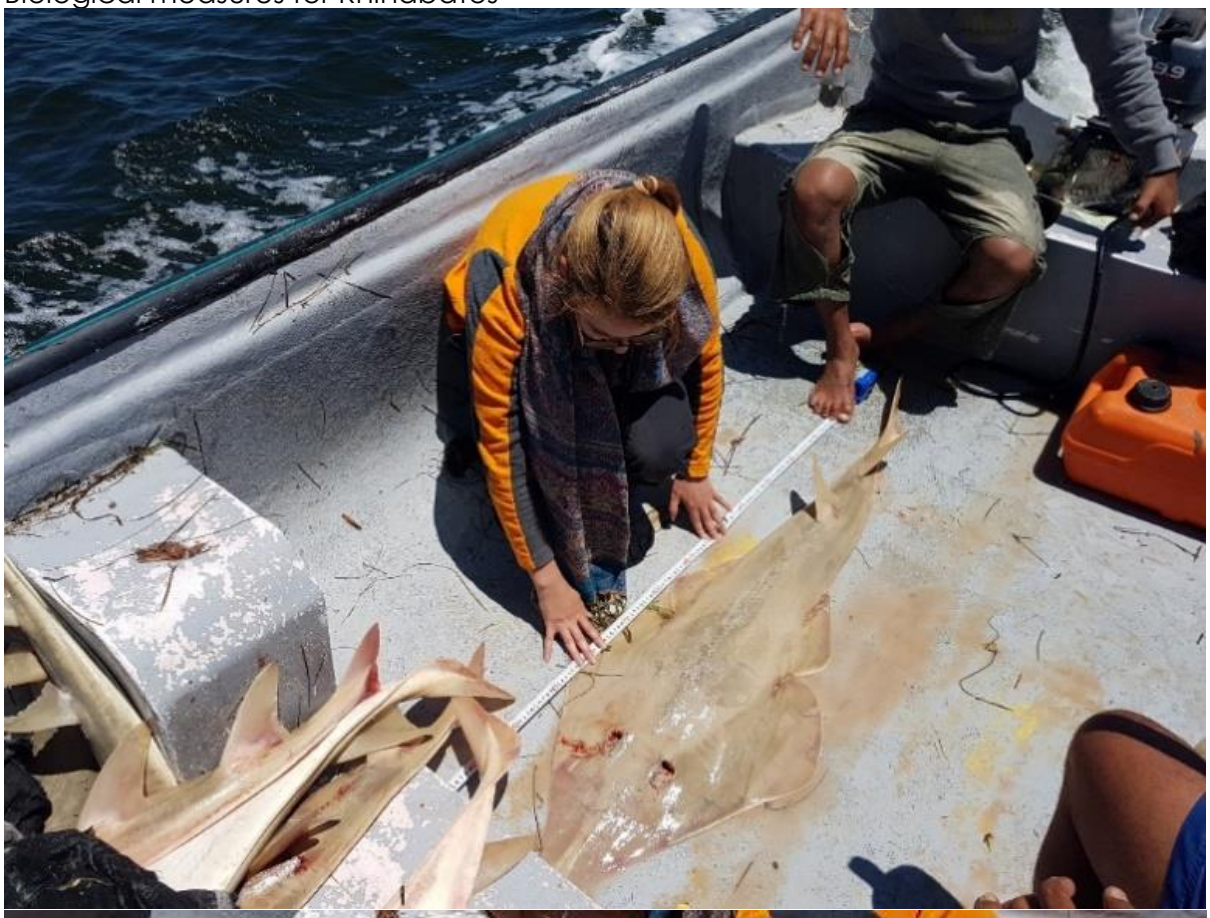


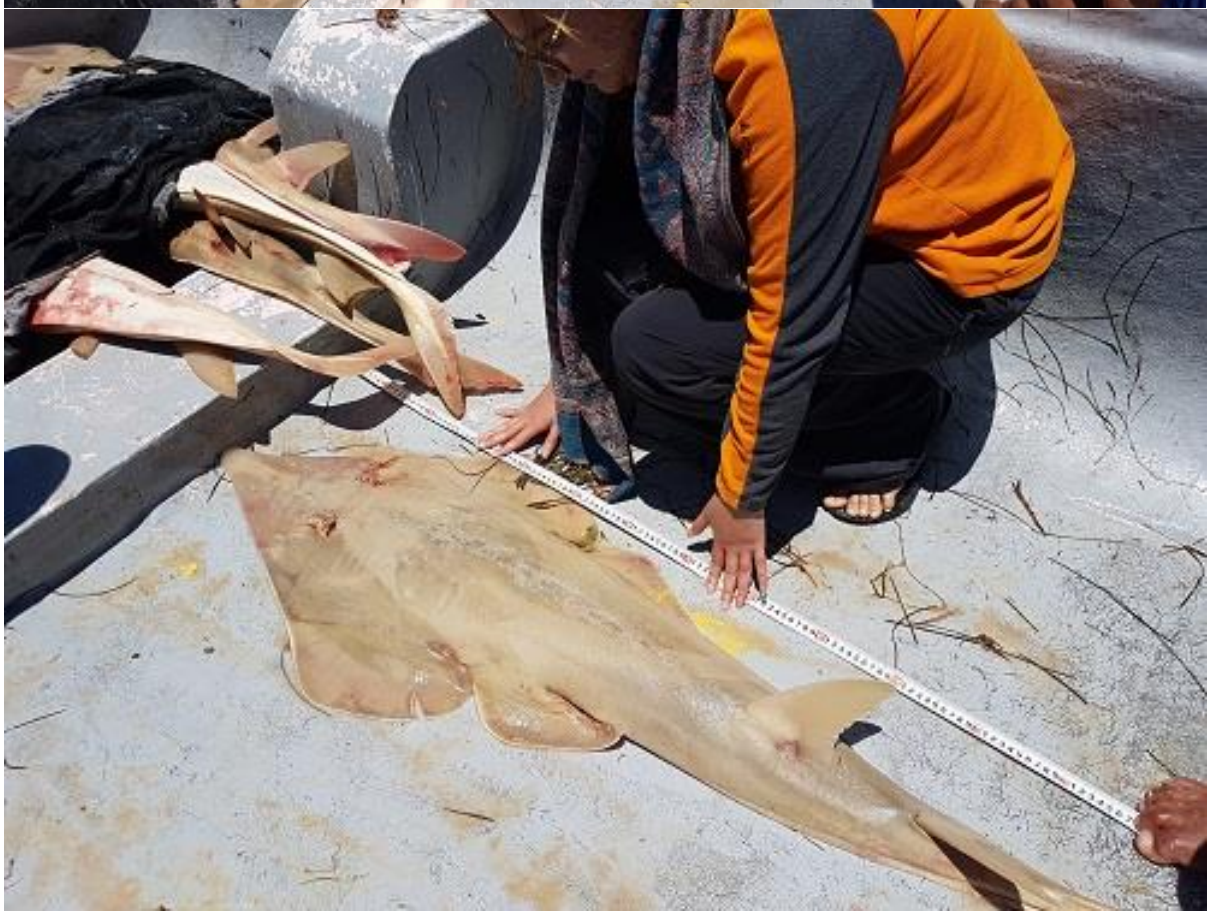
Interviews with fishermen at Zarzis.

Preparing Nets before on-board observations



Biological measures for Rhinabatos





Sea turtle caught in Rays Nets.