

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	Ilija Četković
Project title	Reducing the negative impact of tuna fisheries on pelagic sharks and their conservation in Montenegrin part of the Adriatic Sea
RSG reference	21642-2
Reporting period	March 2017 – December 2017
Amount of grant	£4930
Your email address	ilija.cetkovic65@gmail.com
Date of this report	09.12.2017.

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
Implementing the fieldwork				All 30 planned fieldwork days were done. Beside them, as it is arranged with "The Rufford Foundation" trustees during the project approval process, we have done 12 more fieldwork days which are funded from the half of the funds intended for sardines. We have found five blue sharks on fieldwork. Beside these, data were collected for 12 more Blue sharks, six shortfin mako sharks and one sandbar shark. All of them were registered in seven different localities (two in front Bar, one near Ulcinj, two near Petrovac, one in front of Herceg Novi and one in Traste bay). The smallest individuals were found very close to coastline and the older juveniles and adults were found on the open sea. Of 24 sharks registered, nine of them were released back unharmed (seven blue sharks and two shortfin mako sharks), but others were found dead on longlines or in gillnets.
Expanding the existing database for sharks				During this year we have found bigger amount of data than in the previous one. Especially, significant number of blue sharks has been found. Beside them, there are several shortfin mako sharks and one specimen of sandbar shark. New localities were found and added into database. We started to collect detailed morphometry (over 20 measures) for individuals were it is possible and it has been done for five blue sharks for now.
Collecting the data about shark frequency				During the spring and summer season, these data has been

and fishing intensity across the Montenegrin coastal waters during the project period			collected in satisfying amount, but during the autumn, weather conditions were not so good. Because of that, we had a lack of data from fishermen during the past 2 months.
Finding does the Blue shark reproduces in Montenegrin waters			Yes! This goal has been not achieved during the previous project, but this year we found five newborn individuals alongside four localities just near the coastline. Even a pregnant female was caught, recorded by camera and released back by local fisherman. We wrote a scientific paper on these data and it has been submitted to the Croatian journal "Acta Adriatica".
Education of fishermen community			Fishermen were interested in the project activities and they gave us much help. We shared booklets for shark identification and leaflets among them. Booklets have been made from the waterproof material, so they can stay in use a long time on their boats.
Education of local community			Workshops and presentations in seven schools and on the university are done. Pupils and students showed interest about sharks and they achieved basic knowledge about these animals in the Adriatic.
Media coverage of the project			We published two articles about the project goals and progress in national newspapers "Vijesti" and "Pobjeda". Those have been shared on their websites, too. Project was presented on the radio station "Cetinje" and on the web portals " Cetinjski list ", " AntenaM " and " BARinfo ". Facebook page and YouTube channel of the Montenegrin Ecologists Society were used for the sharing knowledge about sharks and project progress. Scientific community will be informed by the paper about Blue shark reproduction in the journal "Acta Adriatica", than on the following conference of "The

				Rufford Foundation" in Montenegro and by one more scientific paper that is being prepared and contains data about pelagic shark's by-catch.
Workshop on the "Dan siruna" event				The workshop was not done due to bad weather conditions and small number of visitors this year. Funds have been transferred for the remaining fieldwork activities and other where needed.
Socio-economic analyses of shark importance for the fishermen community				This survey contained several questions about the economic importance of these animals for the market and how they contribute to fishermen. The results showed that shortfin mako shark and thresher shark are not targeted by tuna fisheries, but they can be sold easily for good price, so they are desirable to catch. On the other side, Blue shark is not desirable because of damage it is doing to the fishing gear, but in case it get caught they can sell it for very low price or change its meet for bait such mackerel. Other sharks are too rare and we didn't found information about their importance for fishery.
Informing the competent institutions				Meetings with the representatives of the national institutions that are dealing with nature protection have been done. They got information about the project goals and results, also advices about the shark protection. Especially, we found big interest for the project in the Institute of Marine Biology which offered us professional help and laboratories to use during this and the next projects.

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

We didn't have many difficulties due to previously established connections with significant number of fishermen. Difficulties were occurred in impossibility to collect morphometric measures of sharks, because fishermen often cut those which are found dead in pieces or we didn't succeed to get individuals caught on fieldwork.

Other difficulties were caused by weather conditions as it is already described in the previous table with the project goals.

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

- 1) Finding of the new data about pelagic shark's distribution, frequency, biology and interaction with tuna fisheries in our coastal sea. This will be used to improve scientific knowledge about this group of elasmobranchs in Montenegro. It can be used by competent institutions and other scientists to improve the status of these animals here. 24 new sharks were found, five new localities were registered and reproduction of blue shark has been confirmed here. Spatial/temporal analyse of pelagic shark occurrence in Montenegrin waters was done and compared with the data about the use of pelagic fishing gear.
- 2) Raising awareness among local fishermen and local community and their education about the importance of sharks for the sea. Sharing of booklets and leaflets, alongside with presentations and talks helped to build real knowledge of these people. This is particularly significant because people here almost don't have a way to learn true facts about sharks and they are often terrified by media when these animals are in focus, so education is more than needed. We continued to give accurate information by media and held educational activities in order to reduce these beliefs at some point.
- 3) Informing the competent institutions in order to establish better protection of sharks in Montenegrin coastal sea. As shark catches are rare here there is no much interest to explore these animals, so there is a lack of data for the Adriatic Sea. As it is mentioned, now there is enough distribution data to enable spatial protection of these animals. Their representatives were encouraged to use and adopt these data during the processes dealing with the protection of sea habitats, establishment of marine protected areas and similar.

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

Local community benefited in several ways.

Fishermen benefited from this project because they achieved knowledge about pelagic sharks and get educational material (Available at: https://drive.google.com/drive/folders/1W4MsjOIFGw5A_MUeOBsfl3APjGPhIANF?usp=sharing), especially booklets for the identification of species which will be used in the following period, too. Also, fishermen interested in conservation work were told about the problem in details and we gave them the chance to contribute directly by recording sharks they find at sea or those that someone else caught.

Other members of coastal communities benefited with school and university presentations which informed younger generations about the bycatch problem and pelagic sharks. They also benefited with getting the true information about sharks in

Montenegro that we have published in media. Some of the students that were interested in this kind of research have got a chance to volunteer and achieve more knowledge about the ecology of sharks.

5. Are there any plans to continue this work?

Yes, there are several plans to continue the work on shark conservation. We already applied for the Mohammed bin Zayed Species Conservation Fund with the project that will continue research and protection of blue shark and shortfin mako as the two most common pelagic sharks here. If this project proposal gets approved, we will succeed in making a study with an action plan for the monitoring and management of pelagic sharks which will be given to the competent institutions. Other plans are to expand research and monitoring of sharks to the benthic species, too. These sharks are targeted by several types of commercial fishing gear and their abundance is much lower than before and they are becoming threatened significantly. We found very good cooperation with the Institute of Marine Biology and we have plans to implement further research together with their assistance. We will continue to cooperate with Environment Protection Agency in order to apply these data into national documents dealing with protection of marine habitats.

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

As it is mentioned, scientific community will be informed by scientific paper sent to the "Acta Adriatica" journal which is currently on their review and the other one we are preparing. Project results will be presented in the upcoming conference of "The Rufford Foundation" in Montenegro in February 2018. Local community will be informed by media as it was until now. Representatives of the competent institutions were informed by meetings. Community will be informed continuously by the social networks of Montenegrin Ecologists Society. We will take part in the following public debates that will deal with marine habitats protection and marine fisheries in order to exchange knowledge with other scientists and institutions.

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 grant was used from March 2017 to the end of November 2017. There weren't bigger displacements under the predicted period except the impossibility of implementing the workshop at the "Dan siruna" event.

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
Sardines	1200	566,5	-633,5	During the project proposal approval process, it was arranged with "The Rufford Foundation" trustees to cut funds for sardines in half and spend the rest for the bigger number of fieldwork days in order to establish better connection with fishermen community.
Daily allowance (food, drink etc...)	1200	1807,7	+607,7	This amount was raised from the funds primary intended for sardines and other.
Fishing equipment	350	370	+20	Some parts of the equipment were more expensive.
Laptop for database	350	279,5	-70,5	We have bought a "HP" laptop that was cheaper than we expected.
Fuel for fieldwork	300	455	+155	The difference was added from the money for sardines and other.
Educational leaflets (1500)	300	320	+20	We needed more funds than it was expected.
T-shirts (30)	210	290	+80	We made 10 more T-shirts.
Guide for identification of pelagic sharks (100)	500	461,6	-38,4	Difference was used where needed.
Printing of survey for fishermen	50	55	+5	We needed more funds for printing of surveys.
Fuel for school presentations and meetings with representatives of competent institutions	200	230	+30	We needed more fuel than it was expected.
Workshop at the "Dan siruna" event (making of educational posters and stand)	170	0	-170	Workshop wasn't organized due to bad weather conditions and small number of visitors. Funds were used for other purposes.
Additional expenses (fees, taxes etc...)	100	100	0	Used for bank fees and other were needed.
Totals	4930	4935,3	+5,3	1€ = 0,83935 £ according to the Central Bank of Montenegro (09.12.2016.)

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

- Continuation of shark and other bycatch research in Montenegrin pelagic fishery as one of the most important marine conservation problems.

- Starting of the research of benthic shark species and their interaction with fishing gears.
- Involving bigger number of both commercial and sport fishermen in finding solutions for shark bycatch.
- Continuation of the raising awareness and media promotion of this problem.
- Establishing of the more detailed cooperation with the Institute of Marine Biology as the only national institute that is dealing with marine fisheries and Environment Protection Agency, because it will have main role in the implementation of Natura 2000 network in Montenegro.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did The Rufford Foundation receive any publicity during the course of your work?

"The Rufford Foundation" logo was used on all promotional materials designed for the project and their design is available here:

"The Rufford Foundation" achieved publicity in the newspaper articles in "Vijesti" and "Pobjeda". Also, on the web pages of "Cetinjski list", "AntenaM", "BARinfo" and in the hosting at radio station "Cetinje". It received publicity in the posts on the Facebook page of Montenegrin Ecologists Society. The foundation was mentioned in the Acknowledgements section of the scientific paper sent to "Acta Adriatica" journal. Also, it will be mentioned in the future in other scientific paper that we are preparing.

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

Beli Alivodić was involved in the project as a local fisherman dealing with big game fishing. His role was to help us in fieldwork activities in finding localities where sharks could be found and catching of their individuals. Also, he helped to improve connections with local fishermen and to collect data about catches and sightings of sharks among them.

Jovana Đokić helped in preparing of educational material, presentations and finding volunteers interested in the project among students on the University. She also helped in the fieldwork activities.

Nemanja Malovrazić helped in fieldwork and with advices about the meetings with the representatives of the competent institutions. We plan to write a study with an action plan for pelagic sharks where his help will be needed.

Vuk Iković and Mihailo Jovičević, as supervisors, gave us advices on the collecting data, establishing and design of the database, they gave their comments on our work and showed us mistakes. They were consultants about the strategic and planning documents and legal framework in the field of environment. Also, they want to help the team in the future steps, too.

International cooperation contacts, Andrej Gajić and Boris Davidov from the Sharklab Adria, gave us necessary assistance and advices in collecting biological and ecological data.

12. Any other comments?

I want to thank to The Rufford Foundation for funding of this conservation project and for recognizing the importance of sharks and collecting of the data about these animals in Montenegrin part of the Adriatic Sea. Hope the foundation will continue to fund this work when it will be needed.