

Final Evaluation Report

Your Details	
Full Name	Nur Bikem Kesici
Project Title	From Local Ecological Knowledge to Drone-based Monitoring Surveys: Addressing the Importance of Marine Top Predators
Application ID	34046-2
Date of this Report	07.07.2022

1. 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
Activity 1 – Questionnaires and LEK				Two different types of questionnaires were prepared and applied to students and stakeholders.
Activity 2 – Aerial Surveys, Offshore Surveys and Land Observations				Aerial surveys and land observations were carried out during the autumn of 2021 and spring and summer season of 2022. Offshore surveys were only conducted in October 2021 due to budget deficit.
Activity 3 – Education and Awareness Raising Campaigns				A training package was prepared according to the questionnaires. Visual and auditory activities were carried out with middle school and high school students. Other meetings with bachelor students were carried out via Zoom. Meeting with decision makers and other target groups of the project were carried out.
Activity 4 – Data Analysis				Images of the individuals were analysed. A density map of the target species has been created through QGIS.
Activity 5 – Publication				A publication to a peer-reviewed journal is in preparation.

2. Describe the three most important outcomes of your project.

a). One of the most important outcomes of the project was to collect data on marine top predators to propose the site as a Marine Protected Area. We have submitted an article with this intention to a peer reviewed journal, including the results of the 1st and 2nd RSG Project. Of course, long-term monitoring efforts should continue for a more solid outcome. Current project is continuation of a research effort that started in 2019 with the support of Rufford Small Grant. Since then, we have developed our survey techniques. Besides, the current project still remains as the one and only research in the area.



Figure 1. Density map of top predators in the study area.

b). Another outcome would be the increase in the ecotourism on the island. There are several recreational activities that one can do in Gökçeada such as diving and sailing. But people did not know what animals lived there and what they could see around. People who come to the island for such recreational activities are more curious and sensitive about these animals, both through capacity building activities we held on to the island and through our social media platform (MAPCON). We receive messages on whether they can join us on the fieldwork to encounter these species or if we can conduct sea-watching activities occasionally. Currently a dozen researchers and students actively joins to MAPCON research, conservation and outreach activities. Besides, relevant stakeholders and the local community were involved in every step of the awareness raising activities, encouraging a bottom-up approach to conservation.

c). We have conducted each of our surveys with young researchers. The early career researchers and students were included in all surveys, their expenses were covered and, most importantly, they have been trained and encouraged to stay in the field of marine biology.

The most significant achievement of this work is to conduct the first drone-based top-predator monitoring in Turkey. This work serves as a pioneering study, also a guide for people who want to work with these species in the future.



Figure 2. Meeting with the divers and harpooners.



Figure 3. MAPCON team members.



Figure 4. A drone shot of Gizli Liman, Gökçeada.



Figure 5. A drone shot of the team from one of the land observations points (Uğurlu station).



Figure 6. Dilara Zahir, during boat surveys.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

An unforeseen difficulty was the devaluation in Turkey. The Turkish currency crisis is an ongoing financial crisis since 2018 however, it has peaked this year. When compared to the beginning of 2021 and the end of 2021, TL lost its value by 75%. With the decreasing purchasing power, the price of each piece of equipment wanted to be purchased has increased significantly within 2-3 months. Besides, the hikes in fuel also forced us a lot. When applying to the 2nd RSG, the litre price of fuel was 7.08 TL. During our final survey (June 2022), the price has increased to 27,26 TL. Therefore, we had a "currency problem" when the sent amount was immediately converted into Turkish Lira, as the state demand from the associations.

Apart from that, the amount we predicted for the drone was 1,850 GBP but the drone fell into the water on the first survey, due to strong winds. For the next survey and future monitoring studies, we bought a DJI Mavic Pro that can withstand up to a limit of 43km/h. That cost around 4,500 GBP. We came out of such a crisis, which we could not foresee, with the increase in the support of HIDRA.

4. Describe the involvement of local communities and how they have benefited from the project.

- The fishermen (especially harpooners) and divers formed the most important stakeholder of the project. Despite the pre-judged negative approach of fishermen to the marine top predators, it was revealed that fishermen were knowledgeable about the importance of marine megafauna on their catch

rate. They ended up being one of the biggest supporters of the project.

- Over 50 bachelor students have joined our online workshops. Later, four of them who joined our workshops, also joined our surveys to gain practical skills. As promised, we also conducted presentations to the middle schools and high schools.
- Fishers within the Gökçeada coasts were visited during the surveys where they were informed about the current project. They have displayed project posters in the fishery cooperatives as well as their sightings reported to us which revealed sightings of many top predators as swordfish and Risso's dolphins.
- Lastly, current project was released in newspapers which reached to the general public and increased their awareness on these species and the threats they are facing.



Figure 7. Meeting with the divers and harpooners of the island.

5. Are there any plans to continue this work?

We are in our 2nd year on the project. In the 1st year, we have understood the strengths and weakness of the project and tried our best to develop better survey techniques and to improve ourselves in survey planning. As our target animals are k-selected species that has long life spans and late maturity ages, the research has to be continuous for multiple years for a more precise and accurate interpretation of the inhabiting populations.



Figure 8. Informing the district governorship of Gökçeada about the project.

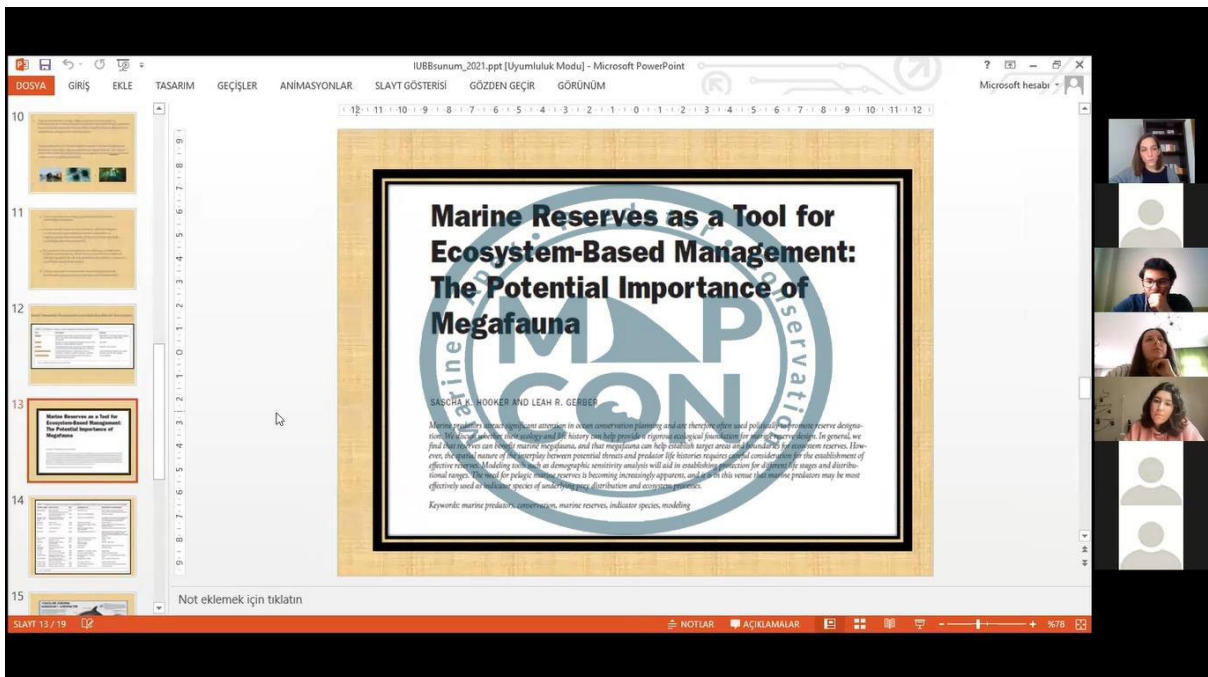


Figure 9. From the Zoom meetings with bachelor students.

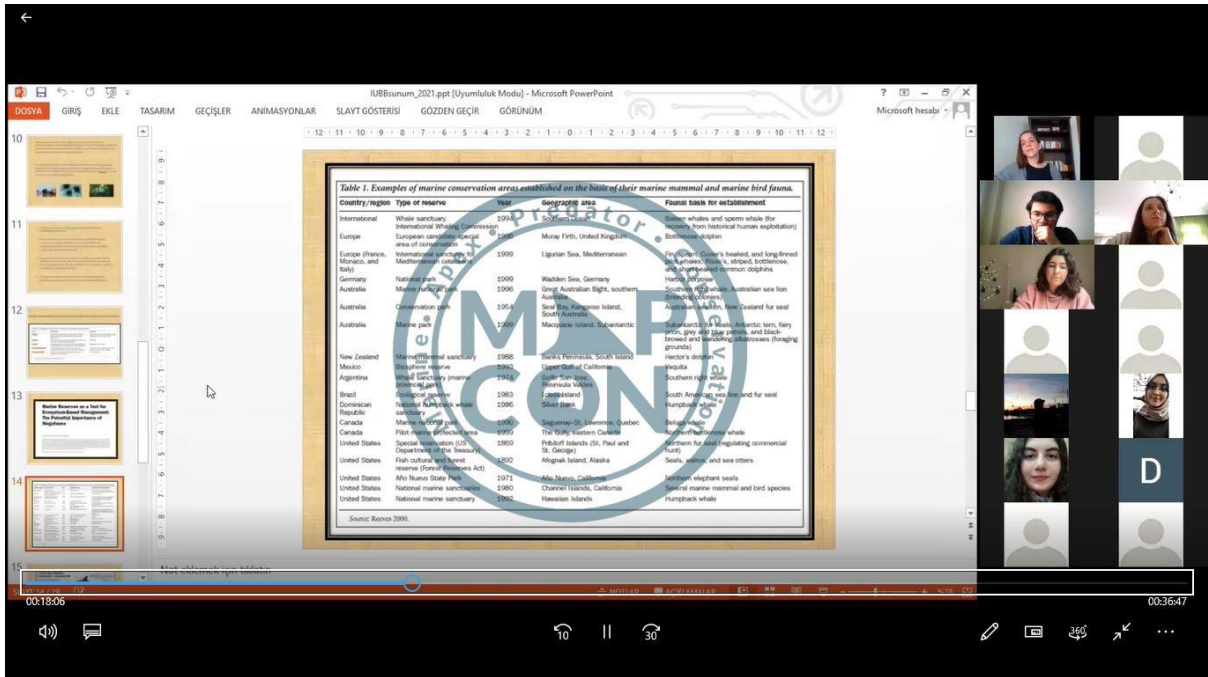


Figure 10. From the Zoom meetings with bachelor students.



Figure 11. Meeting with fishermen of the island.

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

- The results from the 1st RSG were presented in a peer-reviewed journal with the title of "A preliminary study on marine top predators inhabiting Gökçeada Island, the North Aegean Sea" in 2021. The results of the current project have already prepared for a publication for a peer-reviewed journal.
- A presentation based on the overall results will be conducted in the Istanbul University.
- The project was released in local newspapers. You may find the link below. <https://yesilgazete.org/gokceada-denizlerinde-buyuk-deniz-canlilari-incelendi-denizlerimiz-onlar-var-oldugu-surece-saglikli/>

MANŞET EDITÖRÜN SEÇTİKLERİ EKOLOJİ HAYVAN HAKLARI

Gökçeada sularında büyük deniz canlıları incelendi: Denizlerimiz, onlar var olduğu sürece sağlıklı

*İstanbul Üniversitesi'nden deniz biyolojisi bilimcilerinin Gökçeada sularındaki büyük deniz canlıları üzerinde çalıştığı projenin asıl hedefi, onların yaşadıkları alanı koruma altına almak. Ekipten **Nur Bikem Kesici** "Onlar ekosistemin kilit unsurları ve dikkatli gözlerle bakarsak, bize bir şeylerin yolunda olup olmadığına dair ipuçları veriyorlar" diyor.*



BAHAR ÜNLÜ 22/03/2022



Doğa koruma örgütü **Rufford Vakfı ve Hidrobiyolojik Araştırmalar Derneği (HİDRA)** çatısı altında ve **Deniz Memelileri Araştırma Derneği (DMAD)** katkılarıyla gerçekleştirilen proje kapsamında, **İstanbul Üniversitesi Biyoloji** bölümü öğrenci ve akademisyenleri **Gökçeada**'daki büyük deniz canlılarını inceledi.

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

Top predators are k-selected species therefore they have a long-life cycle. That's why any short-term study won't reveal realistic results. For accurate interpretation of the data, the research must be conducted with multi-year research effort. Our project forms the one and only top-predator monitoring survey in the Aegean coasts of Turkish waters. A comprehensive data set will help to understand the population status and assist the decision makers for effective conservation decisions. Besides, the durability of the project necessitates capacity building as an important building block. Therefore, improving the capacity of the islanders automatically increases the longevity of the project.

During the project, seabirds have caught our attention while conducting land observations and offshore surveys. Gökçeada is known to be home to many seabirds such as the great cormorant, European shag, small shearwater, Scopoli's shearwater, Caspian gull, Audouin's gull and storm petrel which are also considered as marine top-predators. The Saros Bay is known to be an important migration route for the above-mentioned species. Moreover in 2019, the island was determined as an important breeding ground for the Audouin's gull, which has recently been categorised as Vulnerable in the IUCN Red List. In April 2022 while conducting land observations, we witnessed a migration of about 5,000 shearwaters coming from the Dardanelles and passing over the south of the island. The global population of all the seabird species are known to be declining and there is a huge knowledge gap on the seabirds in Turkey. It is very important that we protect the bottlenecks, islands and islets where these species are found. Therefore, our future projects will cover seabirds as well.



Figure 12. A Scopoli's shearwater (*Calonectris diomedea*) flying above the waters of Gökçeada.

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

Yes, all presentations, both verbal and poster-based, contained the Rufford Foundation logo. At the end of any submission for a peer-reviewed journal, The Rufford Foundation is always acknowledged and thanked for their contribution. Similarly, any documentation distributed related to the project also has the logo on.

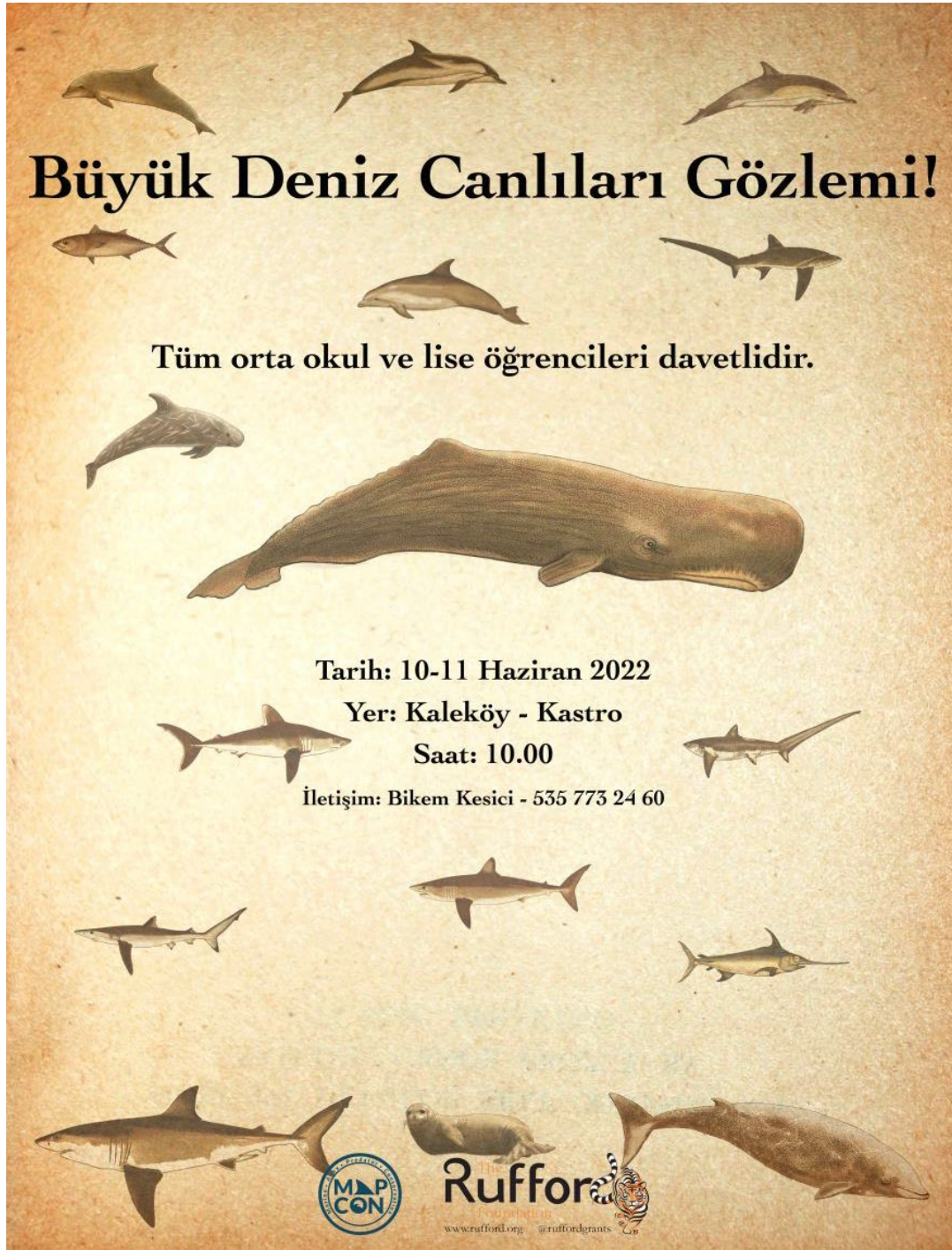


Figure 13. A poster of the stakeholder meeting event.



Figure 14. A picture from the day I conducted a presentation to middle school and high school students.

9. Provide a full list of all the members of your team and their role in the project.

Nur Bikem Kesici - Project coordinator who was responsible for conducting/supervising the project's core team. Also worked as social media account manager.

Asst. Prof. Cem Dalyan - Worked on a number of tasks such as coordinating the team, transportation, accommodation, communication with all stakeholders and capacity building activities.

Dilara Zahir (digital advertiser) - She led the MAPCON social media platforms and worked as a researcher as well on field surveys.

Suna Tüzün (post-doc researcher) - Worked as a researcher during field surveys.

Melis Töke (MSc student) - Worked as a researcher during field surveys.

Yunus Gönül (bachelor student) - Worked as a researcher during field surveys.

Berat Tunuz (bachelor student) - Worked as a researcher during field surveys.

Zeynep Dilan Seyhan (bachelor student) - Worked as a researcher during data analysis.



Figure 15. From left to right: Berat Tunuz, Yunus Gönül, Dilara Zahir, Cem Dalyan.



Figure 16. From left to right: Cem Dalyan, Nur Bikem Kesici, Melis Töke.

10. Any other comments?

The Rufford Foundation is the first foundation that encouraged me to take the first step to study the marine mega-fauna of the Turkish waters. With this aim, I have established the Marine Apex Predator Conservation (MAPCON) that aims to research and protect animals at the top of the food chain in marine ecosystems. We are slowly growing our resources and developing our research techniques with a team of dedicated young researchers. None of this was possible if The Rufford Foundation doubted our intentions. Therefore, I would like to once again thank The Rufford Foundation for their trust!



Figure 17. A pair of fins of the common dolphins (*Delphinus delphis*) off the coasts of Gökçeada.



Figure 18. A jumping bottlenose dolphin (*Tursiops truncatus*).