

## Final Evaluation Report

---

Your Details	
<b>Full Name</b>	Adla Kahrić
<b>Project Title</b>	Establishing the first MPA in Bosnia and Herzegovina: biodiversity assessment and highly endangered species protection
<b>Application ID</b>	37588-1
<b>Date of this Report</b>	5 December 2023

**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
Create a proposal for the first MPA in Bosnia and Herzegovina.				Based on the collected data, we have conducted a comprehensive analysis, identifying the current state, recognising gaps, and supplying the necessary information. Subsequently, we have formulated an initial proposal complete with recommendations for the establishment of the first Marine Protected Areas in Bosnia and Herzegovina.
Create a first marine checklist of the protentional first MPA.				We registered and compiled data on marine species from available literature throughout the project to facilitate the process of establishing Marine Protected Areas (MPAs) with the necessary baseline information. Additionally, our efforts led to the identification of two new species for Bosnia and Herzegovina.
Create the baseline for long-term conservation of endangered species such as vertebrates' dolphins, marine turtles, sharks, rays, skates and invertebrates' data shall, fan mussel and other important species.				We identified and registered highly important species during the project duration, and also, we collected data of important species for last 5 years, in order to create the baseline data for long-term conservation of biodiversity and their habitats. Additionally, we organised a meeting with main stakeholders to strength the relation for future activities. Thus, it has been organised meeting in Sarajevo, BiH with main stakeholders in region for EU Strategy for Adriatic-Ionian Region (EUSAIR), where we discuss about the possibilities for MPA establishment.
Conduct 4 field trips.				Despite originally planned 20 days, we conducted 25 days with support of local communities and NGOs that help and provides us to conduct field studies.

Over 100 young people directly informed and educated through presentation, workshop and educational events.			Successfully informed and educated more than 300 young people through presentation, workshop, educational event and promotional material.
Over 200 number people of local community well-informed about the current situation of Bosnia and Herzegovina Sea.			Successfully informed over 200 local people through educational events and promotional materials
Well-organized workshop on the topic of marine protection and conservation in Bosnia and Herzegovina.			Successfully organised workshop with local stakeholders with topic "Let's create more sustainable sea together" with total 10 representative of stakeholders. Identified needs and further steps of MPA development. Beside main workshop, additionally has been successfully organised educational events for youth, including, early-careers.
Create 400 leaflets, and posters and transport them to 8 different cities.			We meticulously designed and distributed promotional material across eight different cities, including Neum, Sarajevo, Travnik, Tuzla, Mostar, Zenica, Tešanj, and Vitez. Additionally, we ensured the delivery of promotional material within local communities, aiming to inform residents in areas where the suitability of our initiatives is of particular significance.
Current research and result presented to the public in 5 different ways of social media (Facebook, Instagram, websites, newspapers, TV shows).			Project successfully promoted through different social media platforms and interviews.
Published at least 2 publications.			Currently, published one scientific paper and one book. Additional results of this project will contribute to other future scientific papers and mentioned acknowledgement of Rufford foundation.
Create meetings with government and local stakeholders			We successfully organised a meeting with the Federal Ministry of Environment and Tourism to discuss the ongoing process and challenges related to the establishment of Marine

				Protected Areas (MPAs). During this session, we identified crucial needs and outlined the subsequent steps for MPA development. Additionally, we conducted meetings with local communities to ensure comprehensive engagement and understanding.
--	--	--	--	--

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

**a) Engaged different stakeholders and local community into the initiative of MPAs establishment**

The Marine Protected Areas (MPA) process is an interdisciplinary approach that requires engagement from multiple stakeholders, including government agencies, non-governmental agencies (NGOs), local community groups, and local communities. The initial movement aims to strengthen the bond between different stakeholders interested in marine resources, which has been successfully initiated and implemented, and progress towards establishing new marine protected areas.

Stakeholder engagement plays a vital role in strategic planning for MPAs, ensuring that the needs of all stakeholders are considered. Although aiming all stakeholders towards the same goal can be a significant challenge, especially given the complicated country structure and policy in Bosnia and Herzegovina, both the federal government and many local community groups should express interest in MPA establishment. However, we have stronger support from federal government than from the local community. Thus, different key local stakeholders have different opinion, where idea is not support but all local communities, but some of them, which urgently need to work in this process in order to achieve the same aims and interest.

However, this initiative has opened the door to discussions that have been held back for a long time, and we have embarked on a journey towards establishing new protected areas in Bosnia and Herzegovina. Establishing MPAs is a long-term process in every country, particularly in a country with a complicated structure like Bosnia and Herzegovina. Although to already well successful results in project, further action requires better ongoing communication and collaboration between multiple stakeholders, which will be crucial for future activities and actions required to successfully establish the first marine protected areas in Bosnia and Herzegovina.

**b) This project contributed to new knowledge and data on the MPAs importance and establishment**

Scientific knowledge and data are essential for effective management and can be further enhanced through science-policy actions. It is crucial for all good practices and protected areas management to be based on scientific evidence, as it provides a foundation for establishing and sustaining protected areas. This project aims to contribute to the field by generating new knowledge and data through the creation of a marine checklist for Bosnia and Herzegovina, as well as by discovering new species in the region. As a result, this project has identified gaps, established new criteria, and set future goals to guide our actions. One of the outcomes of this

project are the publications, and currently publish publication are provide below, but collected data will be used for future publications.

Fortic, A., Al-Sheikh Rasheed, R., Almajid, Z., Bedridden, A., Baez, J.C., Belmonte-Gallegos, A., Bettoso, N., Borme, D., Camisa, F., Caracciolo, D., Çinar, M.E., Crocetta, F., Četković, I., Dogan, A., Galiya, M., Los, G., Huertos, A., Grech, D., Gullart, J., Gundeger, G., Kahric, A., Karachle, P.K., Kulijer, D., Lombarte, A., Markovic, O., Jiménez, E., Sukran Okudan E., Orlando-Bonaca, M., Sartoretto, S., Spinelli, A., Kizilkaya, I.T., Virgili, R. (2023). New records of introduced species in the Mediterranean Sea Mediterranean Marine Science, 24(1), 182-202.

One specimen of species *Melibe viridis* (Kelaart, 1858) was found slowly moving during daytime on the bottom below a vertical rocky surface covered with algae, at 3 m depth, approximately 50 m from a fish farm. The species was identified based on elongated brownish body with white dots covered with rounded tubercles, well developed oval hood with numerous tentacles and the presence of large cylindrical cerata on dorsal surface, flattened at their ends, and located along the edge of the mantle. The observed species is the first records in Bosnia and Herzegovina,

Kahrić, A., (2023). Rays and skates of Bosnia and Herzegovina, Center for marine and freshwater biology, Sarajevo, BiH.

This book provides details on rays and skates in Bosnia and Herzegovina, their ecology, distribution and their habitats and they importance in marine ecosystems. An overview is given to understand the importance of sharks and rays and why is important to protect their habitats.



43. The first record of mudflat species *Melibe viridis* (Kelaart, 1858) in Bosnia and Herzegovina

Adla KAHRIĆ and Opaq KULIJER

*Melibe viridis* (Kelaart, 1858) is a mudflat gastropod that naturally occurs in the Indo-Pacific region (Eaton & Smith, 2005). In the Mediterranean it was recorded for the first time in Greece in 1982 as *Melibe bedfordi* (Thompson & Compton, 1984). According to Zentgraf et al. (2019) and Lopez & Morici (2017) from the Adriatic Sea this species has been known from Slovenia, Croatia, and Montenegro. Here we report the first observation of the species in Bosnia and Herzegovina and give further data on the species spreading in the Adriatic Sea.

A short field study has been conducted from 1 to 11 October 2021 in a small bay at the outskirts of Opaq village located on Ključ Peninsula at the entrance to the Neum Bay. Neum Bay represents the major part of the sea territory that belongs to Bosnia and Herzegovina, located in western part of Eastern Adriatic Sea coast, completely enclosed by Croatian waters. It is approximately 6 km long, 1.2 km wide and up to 30 m deep. It is characterized by mostly sand and sandy bottom with rocky intertidal zone. We conducted visual inspection on algal habitats in the littoral zone up to 1 m depth and the rocky coastal area was inspected by snorkelling to up to 4 m depth along the 100 m stretch of the northern and eastern part of the Opaq Bay (42°33'00"N, 17°34'20"E) on 2 October 2021. One specimen was found slowly moving during daytime on the bottom below a vertical rocky surface covered with algae, at 3 m depth, approximately 50 m from a fish farm. The species was identified based on elongated brownish body with white dots covered with rounded tubercles, well developed oval hood with numerous tentacles and the presence of large cylindrical cerata on dorsal surface, flattened at their ends,



Fig. 4. *Melibe viridis* (Kelaart, 1858) photographed in Bosnia and Herzegovina, Neum Bay. Photo credit: Opaq Kulijer. The individual was approximately 25 cm long. The specimen was photographed *in situ*, preserved in 70% ethanol and deposited in the zooplankton collection of National Museum of Bosnia and Herzegovina. Investigations of the distribution of alien and invasive species in the Bosnia and Herzegovina are scarce and their discovery is mainly accidental. Furthermore, the marine benthos fauna of Bosnia and Herzegovina has never been investigated in detail and therefore only seven species have been reported for the country until now (Kahrić et al., 2022). Systematic research of marine ecosystems in Bosnia and Herzegovina is necessary in order to achieve better understanding of marine biodiversity and potential negative impact of alien species.

### c) Raise awareness by educating and informing the public and key marine stakeholders about the importance of MPAs.

Raising awareness is a crucial activity that involves engaging various stakeholders. It is not limited to local stakeholders alone, as sustainable long-term actions require the involvement of a wider community, including institutions, NGOs, organisations interested in the project, as well as tourists and citizens. Through a range of activities such as workshops, social campaigns, and events, we have successfully reached a significant number of citizens, exceeding more than 500 people (in person), and

provided them with knowledge about the importance of biodiversity and ecosystem services.

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

While we received significant support, the establishment of marine protected areas in Bosnia and Herzegovina has highlighted the challenges posed by the country's complex organisational structure and legal framework. These complexities have made it difficult to find the optimal solution for establishing MPAs in line with the specific challenges faced in BiH. Moving forward, our efforts will focus on strengthening engagement with key stakeholders and exploring possibilities to overcome these challenges.

To address the intricate nature of the project, it is crucial to enhance the involvement of key stakeholders. This can be achieved by actively engaging local communities, government agencies, NGOs, and other relevant parties in the decision-making process. By fostering collaboration and open communication among stakeholders, we can work towards finding the most suitable solutions for establishing marine protected areas in Bosnia and Herzegovina.

It is important to recognise that each situation is unique, and therefore, specific strategies and approaches may vary depending on the context. Therefore, a thorough assessment of the challenges and active engagement with relevant stakeholders will be essential in navigating the complexities and finding effective solutions for establishing marine protected areas in Bosnia and Herzegovina.

Additionally, it is important to note that the field work was subject to weather conditions. In some cases, certain field activities had to be rescheduled or relocated to different periods based on the prevailing weather conditions. This adjustment was necessary to ensure optimal efficiency and achieve accurate results.

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

This project has undertaken a range of activities aimed at involving diverse local stakeholders in the journey toward sustainability, establishing a robust foundation, and identifying the necessary elements for future Marine Protected Areas (MPAs).

Significant efforts have been made to engage various stakeholders, including local communities, encompassing both commercial and small-scale fishermen, biologists, and local non-governmental organisations (NGOs). While local decision-makers express support and willingness, effective management and organisation based on their intent are vital. Despite recognising the importance of MPAs, the intricate legal structure in Bosnia and Herzegovina instils apprehension. Addressing this concern requires a focused approach on education and information sharing. Providing comprehensive information is key to fostering a better understanding of MPA management and the regulations governing it.

Successful workshops, meetings, and events have already been organised. However, achieving our goals demands increased collaboration through additional meetings and diverse events specifically tailored to engage local communities, especially decision-makers.

#### **5. Are there any plans to continue this work?**

This project is a vital component of an initiative aimed at the long-term establishment of the first marine protected areas (MPAs). Given the exhaustive nature of this ongoing process, sustaining momentum demands a multidisciplinary approach. We recognise the necessity to continue our current activities and strengthen relationships among diverse stakeholders. Additionally, the continuation of research is imperative, as the foundational data for these actions is derived from field observations.

Having successfully cultivated strong ties with the local community and non-governmental organisations (NGOs), we are committed to furthering our efforts in raising awareness and education. These initiatives are pivotal triggers for effecting future policy changes.

These proposed plans embody a vision not just for the upcoming year but extend over the next five years. This extended timeframe is essential, aligning with the overarching goal of the long-term process required to achieve meaningful and sustainable outcomes.

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

To ensure the project has a positive impact, effective dissemination is crucial, influencing the community and fostering meaningful changes.

The project's endeavours have already gained substantial visibility through diverse media channels, including newspapers and social networks. It has become a well-recognised initiative within the country. Beyond this, our influence has extended as we organised various events and workshops, emphasising the significance of Marine Protected Areas (MPAs) not only within Bosnia and Herzegovina but also drawing interest from participants across borders. Promotional materials have been widely shared during these and other different events.

Moreover, our commitment to knowledge dissemination extends to the publication of materials significant for the scientific community. These publications not only contribute valuable data but also serve as crucial resources for decision-makers, aiding them in making informed decisions related to biodiversity and habitat management.

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

As existing gaps have been identified through our ongoing activities, our future plans as a next step must address, but not be limited to, the following issues:

### **1. Expand Outreach and Education:**

Our commitment to raising awareness extends beyond engaging with interested groups. We aim to delve deeper into educating key stakeholders. While we have established a solid foundation for connecting with various stakeholders through education and awareness initiatives, there is a need to broaden our reach. This involves organising more meetings, events, securing increased media coverage, and enhancing our presence on social media platforms.

### **2. Research and Data for Informed Policy:**

The research and data derived from our studies serve as the foundation for future policy actions. As a pioneer in contributing to marine biodiversity data in Bosnia and Herzegovina over the past nine years, our focus has been on an area rarely explored in terms of biological diversity, particularly the sea. Given the significant anthropogenic pressures and various direct and indirect drivers, the Mediterranean Sea is undergoing substantial changes, resulting in a decline in biodiversity.

### **3. Strengthening Policy for Biodiversity Conservation:**

National policy serves as a well-established framework, employing various tools and methodologies to safeguard biological diversity. However, the intricate structure and organisation of Bosnia and Herzegovina pose challenges, making it more arduous to effectively manage and conserve nature. To address this, we aim to enhance relationships with key stakeholders, collaborating to refine the proposal for the first Marine Protected Areas (MPAs) in a manner that is both acceptable and functional. We will actively assist stakeholders in navigating other regulations crucial to the marine environment and biological diversity, ensuring alignment with international conventions.

### **4. Regional Networking for Territorial Waters:**

Given the significance of territorial waters, networking with regional stakeholders is imperative. The proposed MPA includes Malaston Bay, they are shared by Croatia and Bosnia and Herzegovina. While designated as an MPA in Croatia, it lacks such status in Bosnia and Herzegovina. Recognizing the paramount importance of this area, establishing connections with key stakeholders in Croatia is a crucial step for future initiatives.

These proposed next steps represent a visionary approach not just for the coming year but for the next 5 years. This extended timeframe aligns with our commitment to a long-term process, fostering sustainability and protected areas. As part of this strategy, Bosnia and Herzegovina is aligning with international conventions, such as the United Nations Convention on Biological Diversity and the new Kunming-Montreal Global Biodiversity Framework, which advocates for the effective management and conservation of 30% of areas. This includes adherence to the Barcelona Convention and other relevant agreements. Notably, with only 3.5% of the country currently designated as protected areas, expanding these areas stands as a top priority for Bosnia and Herzegovina.

**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?**

Throughout the entire project, The Rufford Foundation has garnered substantial publicity through regional media campaigns and promotional materials such as posters, leaflets, and presentations. The project logo has been prominently featured in all created materials and even on t-shirts. We take great pride in showcasing the logo of The Rufford Foundation, our longstanding and steadfast partner in conservation efforts.

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

<b>Full name</b>	<b>Role in the project</b>
<b>Adla Kahrić, MA., Ad. MSc,</b>	Principal investigator responsible for project management and implementation, quality of the conducted research, meetings and workshops. Responsible marine biologist for all issues related to this project.
<b>Dalila Delic, MA</b>	With her great experience in marine biodiversity, especially marine gastropods and bivalves, her role was as marine biologist expert where she contributed to research and educational activities.
<b>Ermina Memišević, MA</b>	With her great experience in marine biodiversity, especially echinoderms, her role was as marine biologist expert where she contributed to research and educational activities.
<b>Mario Lovrić, President, NGO “Mare Nostrum”</b>	He was a local community parented on behalf the local NGO “Mare nostrum”. With his experience in marine management and great knowledge about marine biodiversity he contributes to local management activities, including research, workshop and meetings. His main role would be a field work assistant and community outreach assistant.
<b>Marija Lovrić, representative of local community</b>	She was representative of local community that coordinated and contributed to local community management and engagement.
<b>Ivica Krmek, fisherman</b>	is a fisherman with over 40 years' experience in fishing and fishpond management. He is director of local fishpond. With his amazing experience in marine biodiversity and fishing techniques his main role in this project was a field work assistant.
<b>Hrvoje Gavrančić, Director of diving club “RK Bosna”</b>	He is director of diving club RK Bosna. He has over 10000 dives in his career, and he is diving instructor (three star), one of two instructors with three stars in the country. With his amazing experience in diving expeditions and diving marine research, His role in this project was to coordinate and assist as diving expert.

## 10. Any other comments?

As the core focus of this project revolves around the establishment of Marine Protected Areas (MPAs), our endeavours have been actively showcased in various events and engagements. Below are some of the key activities that have underscored our commitment:

Throughout the year, Bosnia and Herzegovina assumed the year-long presidency of the European Union Strategy for the Adriatic-Ionian Region (EUSAIR). This strategic forum fosters collaboration among four EU members and six non-EU countries in the domains of transport, environmental protection, and tourism. It has been organised a workshop dedicated to the Preparation of the Action Plan for Biodiversity and Marine Protection, with a specific focus on the establishment of marine protected areas in the Adriatic Sea region under BIH jurisdiction. This workshop served as a platform to present the current status of Bosnia and Herzegovina regarding MPA establishment. Our team actively participate the workshop, presenting our activities, and engaging in discussions about the potential opportunities and avenues for MPAs.



Fig. 1. Adla on the EUSAIR meeting.

The project's activities were effectively showcased, and The Ruffod Foundation was actively promoted among the youth. Adla Kahric, the project coordinator, served as a presenter at the Biodiversity Academy, organized by YOUNGO, GYBN, and BIODIVER CITES. This significant event drew participation from over 200 young individuals and experts alike.



Fig. 2. Adla as a lecture at the Biodiversity Academy.

The United Nations Convention on Biological Diversity established an Expert Group on Ecologically or Biologically Significant Marine Areas (EBSA), comprising approximately 20 individuals from diverse global locations. Adla Kahric was honored to be selected as an expert for the EBSA group under the United Nations Convention on Biological Diversity, contributing expertise to crucial areas of protection and conservation. This involvement holds significant importance for all countries, Bosnia and Herzegovina included.



Fig. 3. Expert Group meetings on Ecologically or Biologically Significant Marine.

Various meetings and workshops have been conducted with stakeholders to enhance knowledge, identify gaps, and raise awareness about the importance of protected areas. Additionally, successful research initiatives have been undertaken. The figures below highlight some of these successful activities.



Fig. 4. Presentation held in Neum, with different representatives of local communities.





Fig. 5. Promotional material dissemination and sharing.



Fig. 6. Meetings with local communities.



Fig. 7. Field work and collecting the samples.



Fig. 8. Field work and collecting the samples.



Fig. 8. Field work and collecting the samples.

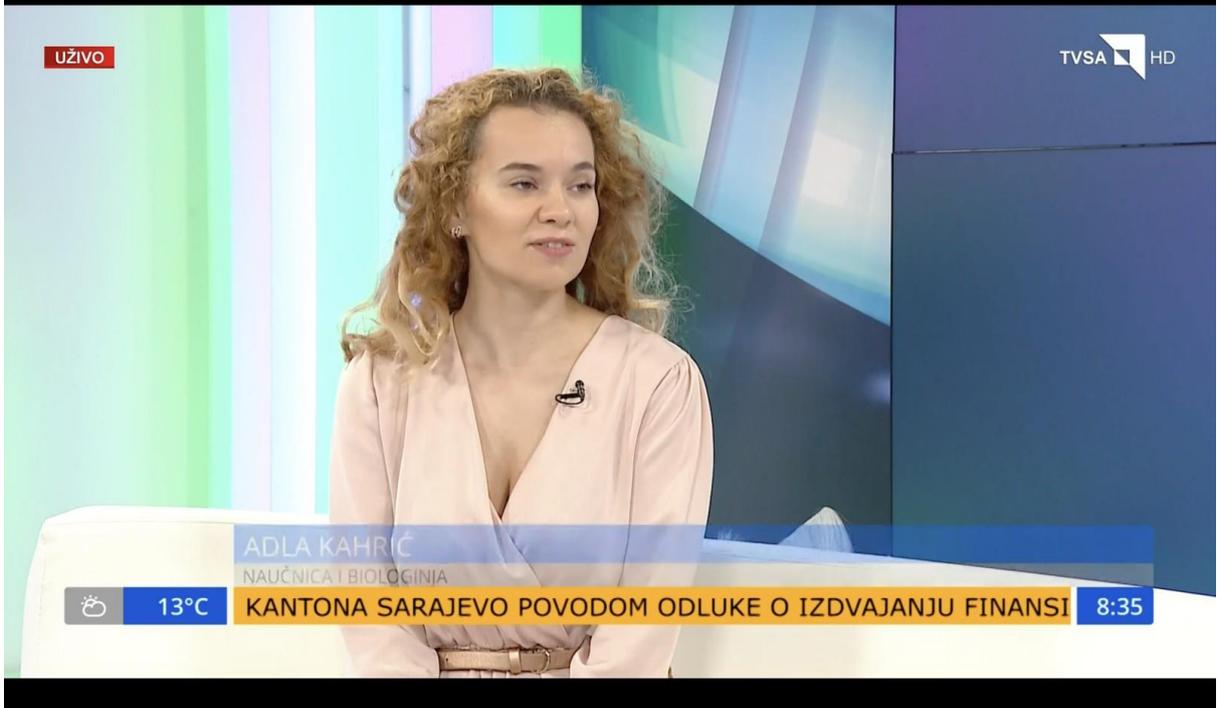


Fig 9. Project promotion and campaign.