

## Project Update: October 2021

### INTRODUCTION

The Dinaric Alps are a mountain range in southern and south-eastern Europe, separating the continental Balkan Peninsula from the Adriatic Sea. This area is characterised by a high degree of freshwater habitat types. They are under strong anthropogenic influences. The main aim of this project is a continuation of long-term monitoring of these habitat types on Vranica mountain. However, special emphasis will be placed on the restoration of peatlands and further research of the diversity of photo-autotrophic organisms in the selected mountain lakes. Results of the project will enhance the conservation of these habitats and the protection of endangered species.

#### **Five main practical conservation outputs will be derived from this project:**

1. Establishment of the first ecological station for biomonitoring of biodiversity and ecological state of freshwater oligotrophic habitat types on Vranica mountain.
2. Restoration of peatland ecosystems on Vranica and Zvijezda mountains (practical approach).
3. Assessment of the ecological state of three mountain lakes (Prokoško lake, Boračko lake and Kukavičko lake) using phytoplankton assemblages as bioindicators.
4. Transfer of knowledge and training of young researchers in the field of restoration and conservation ecology (working with young researchers).
5. Dissemination of knowledge and raising of ecological awareness about the values and importance of oligotrophic freshwater habitats (publications and promotional materials, social networks, etc).

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| Before the realisation of the detailed field survey, we have already successfully implemented the following activities: |
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| • <b>Activity 1:</b> <i>Preliminary field survey</i> |
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| • <b>Activity 2:</b> <i>Literature analysis</i> |
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| • <b>Activity 3:</b> <i>Preparation of the general map of the investigated area</i> |
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| • <b>Activity 4:</b> <i>Application of the robust field protocol for long-term monitoring</i> |
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| • <b>Activity 5:</b> <i>Promotion of our project through social media</i> |
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#### **Activity 1. Preliminary field survey**

In order to determine the experimental sites, during July and August (2021), a preliminary field survey was carried out. Detailed research will be continued in the future as indicated in the dynamic plan.

Preliminary fieldwork includes habitat types which are the subject of research through our first Rufford project (Vranica mountain) and also includes new freshwater oligotrophic habitat types located in the area of the mountain Prenj (Boračko Lake) and Kupres (Kukavičko Lake).

A detailed description of our preliminary survey is presented on Microsoft Sway site and the presentation could be seen following the next link:

[https://sway.office.com/PqzMm8lrVF92OfAt?ref=Link&fbclid=IwAR2bAvvORAayERnt\\_4vVbxsosjKU7UrFWAX5VVsePedxJHJXstP1emKz8G0](https://sway.office.com/PqzMm8lrVF92OfAt?ref=Link&fbclid=IwAR2bAvvORAayERnt_4vVbxsosjKU7UrFWAX5VVsePedxJHJXstP1emKz8G0)

### **Activity 2: Literature analysis**

In order to understand the structure and dynamic of selected habitat types, a large number of original scientific papers have been collected and analysed. These papers will serve as a basis for the establishment of a large database of references, which will be expanded and analysed in the next period of realisation of our project.

Mendeley reference software has been selected to manage the collected original scientific papers ([Mendeley Reference Manager](#) – Library for our project).

### **Activity 3: Preparation of the general map of the investigated area**

A general map of the investigated area was prepared using GIS software ArcView 10.1. In the future stages of our project, this map will serve as a basis for geocoding of freshwater oligotrophic habitat types and for the establishment of distribution of rare and endangered species of diatom in the investigated area.

### **Activity 4: Application of the robust filed protocol for long-term monitoring**

Our protocol for long-term monitoring is updated and modified with new information, and also our Android app which is prepared during the first Rufford project. As in the previous project all our filed protocol, as well as a sample of phytobenthos and permanent slides, will have a unique QR code, which will facilitate finding in the database (<https://qrcode.tec-it.com/en>).

### **Activity 5. Promotion of our project through social media**

In order to raise ecological awareness about the importance of freshwater oligotrophic habitat types, during current phases, continuous promotion of our project was carried out. For the promotion of our results and current activities, we relied on social media. Facebook and Instagram account are established which are available for a broad public, scientific and non-scientific.

Social networks related to the current project are:

1. Facebook: <https://www.facebook.com/Cijanobakterije-i-alge-Bosne-i-Hercegovine107903224904126>
2. Instagram: <https://www.instagram.com/algbih/>

We continued also with the promotion of our work to a broad range of the public through very popular media as follows: **iNaturalist**<sup>1</sup> and **YouTube**<sup>2</sup>.

Progress about our project is also available on [ResearchGate](#).

Further in this report, future planned activities are summarised.

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<sup>1</sup> <https://www.inaturalist.org/projects/conservation-of-freshwater-oligotrophic-habitats-on-vranica-mountain?tab=about>

<sup>2</sup> [https://www.youtube.com/channel/UCSZBVEUVQG04oETRFVYGieA?view\\_as=subscriber](https://www.youtube.com/channel/UCSZBVEUVQG04oETRFVYGieA?view_as=subscriber)

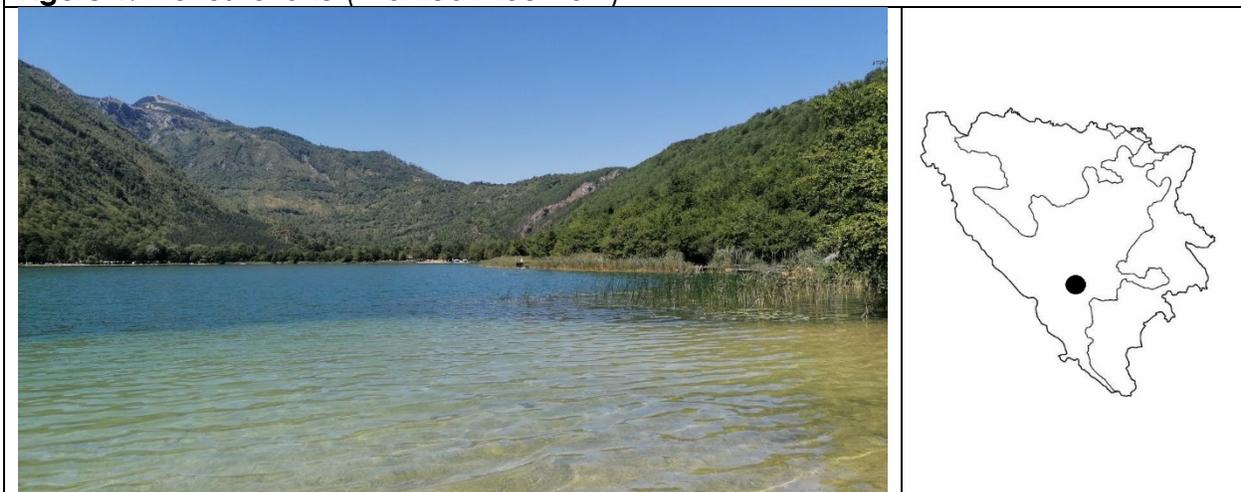
## FUTURE ACTIVITIES

Detailed field survey is planned during September-November 2021, and later in 2022 following our dynamic plan. Fieldwork will be realised on the Vranica mountain (selected freshwater oligotrophic habitat types), Prenj mountain (Boračko lake) and Kupres (Kukavičko lake). Physical and chemical parameters of water will be collected, as well as a sample of phytobentos and phytoplankton. Databases of basic physical and chemical parameters will be established, as well as a database of biotic parameters. Equipment for collection of phytoplankton assemblages and analysing of phytoplankton will be purchased. After completion of the extensive field survey, detailed laboratory analysis will be performed. Results of the detailed field survey and later laboratory analysis will be presented in our addition and more detailed second project update.

Sarajevo, 12-10-2021.



**Figure 1.** Prokoško lake (Vranica mountain)



**Figure 2.** Borako lake (Prenj mountain)



**Figure 3.** Kukavičko lake (Kupres)