

## The Rufford Foundation

### Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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#### Grant Recipient Details

Your name	Branko Anđić
Project title	Research and protection the moss biodiversity on Cijevna River
RSG reference	23650-2
Reporting period	October 2017- October 2018
Amount of grant	£5000
Your email address	brankoan@yahoo.com
Date of this report	21October 2018

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
Creating the list of bryophyte on Cijevna				In general, 203 bryophyte species are registered at the research area. We find six taxa now for Albania and one taxa new for Montenegro. Also four taxa are treated as interested species because they are till to now registered only once for Montenegro and Albania.
Supplemented the knowledge about bryophyte in Montenegro and Albania, which in future can be used in protection on moss and forming the Red list.				Some of the species ( <i>Hygroamblystegium tenax</i> , <i>Fontinalis antipyretica</i> , <i>Rhynchostegium rotundifolium</i> ) which is registered at Cijevna river are on the Red Book of European Bryophytes (Hodgetts, 2015) and some other ( <i>Grimmia crinite</i> , <i>Fissidens rufulus</i> , <i>Didymodon cordatus</i> , <i>Anoetangium aestivum</i> ) are candidate for this books so outcomes of this research will be very useful to final treatments and protection of this species.
Scientific publications with result of the project.				<p>The results of the project are presented at three scientific publications:</p> <p>1. <i>Fissidens fontanus</i>, a new species to Montenegro, available at: <a href="http://www.bioone.org/doi/abs/10.2527/li.nbg.01094">http://www.bioone.org/doi/abs/10.2527/li.nbg.01094</a></p> <p>2. Diversity and ecological analysis of the Liverworts in the Cijevna River (Montenegro and Albania), available at: <a href="https://www.rufford.org/files/Montenegro%20Conference%202018.pdf">https://www.rufford.org/files/Montenegro%20Conference%202018.pdf</a></p> <p>3. New and interesting bryophytes of Albania and Montenegro, the paper will be published at journal <i>Herzogia</i> (expected time for publication are November-December 2018.)</p>
Defining threats				We determined main threats to moss on Cijevna river. These are illegal urbanisation, water pollution, fires and sand exploitation. In the area of illegal urbanisation special dangerous for moss of Cijevna river are

				hydroelectric power plants which start with illegal building in Albanian part of river.
Promoting the importance of moss and the project to target groups				<p>The values of Cijevna river moss are represented through lecturing in primary and secondary school, also at university. Schools received promotion materials (posters and leaflets) with information about the studied species of moss and their importance. Also at the moss richest location we are installed the information boards with information about moss values. In the aim to present the moss value for wider public in Montenegro we are doing some TV promotion of the project. Some of promotional materials are available at:</p> <p><a href="https://botanik.uni-graz.at/de/neuigkeiten/detail/article/aktuelle-vortrag-e5ff0ef010/">https://botanik.uni-graz.at/de/neuigkeiten/detail/article/aktuelle-vortrag-e5ff0ef010/</a></p> <p><a href="https://www.youtube.com/watch?v=eP1UiUeLqHU&amp;t=441s">https://www.youtube.com/watch?v=eP1UiUeLqHU&amp;t=441s</a></p>
Linking different institutions and strengthen inter-institutional cooperation through the project.				<p>During the realisation of the project are established cooperation with several organisations, such as Municipality of Podgorica, Tuzi City, University of Montenegro, Natural History Museum of Montenegro, Karl-Franzens-Universität Graz, and Hungarian Natural History Museum. We had a big problem to make a connection between organisations in Albania, the reason are bad political relation between Montenegro and Albania.</p>
Ex- situ protection of moss				<p>In botanical garden in Kolašin we are created moss box which represent the second ex situ protection of moss in Montenegro and Albania. The first ex situ conservation are also created by our previous project.</p>

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

We had a problem with high water level during the field trip in April 2018 so some fieldwork days were moved to May 2018.

We also had a problem to make an official contact with stakeholders from Albanian side, we solved this with a help of local Albanian NGO and local community.

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

The most important outcomes of this project are:

1) Registration of six new moss species for Albania and one new species for Montenegro. New species for Albania are: *Anoetangium aestivum*, *Didymodon cordatus*, *Fissidens rufulus*, *Heterocladium heteropterum*, *Homalia trichomanoides*, and *Tortula caucasica*. New species for Montenegrin flora are *Leptobryum pyriforme*. Also some species which we are registered at Cijevna River are registered only once in this countries, that species are *Grimmia crinita* for Montenegro, and *Blepharostoma trichophyllum*, *Nowellia curvifolia*, *Taxiphyllum wissgrillii*, and *Tetraphis pellucida* for Albania. The scientific paper with detailed information about this species are accepted for publication in one of prestige journal Herzogia, which is on SCI list. Full title of paper are: Branko Anđić, Christian Berg & Danijela Štešević (2018): New and interesting bryophytes of Albania and Montenegro. Herzogia 31 (1) Teil 2, 2018.

2. Material collected during this project are stored at herbarium collection at: University of Montenegro, Natural History Museum of Montenegro, Hungarian Natural History Museum, Karl-Franzens-Universität Graz. Storing and protection of this material is very important as genetics base, and also could be used for future research.

3. Information boards which is installed during this project have a big value because they promote the importance not only the bryophytes but also the whole richness of Cijevna River. Also they raise the awareness of local community about this river and protection of this area.

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

The local communities was very included in activity during this project. Local community was included in public lecture in primary, secondary school and universities. This educational institutions are received the promotion material such as posters and leaflets which can be used in future education. Also during the lecturing special information was provided for practical and sustainable using the moss. Also local community are got the information about the moss influence on bees, trees, grass.

One of most important benefits for the local community are data about moss richness of Cijevna River. The main occupation the local community around the Cijevna River are agriculture. But Private Corporation in collaboration with government have a plan to building hydropower plant on Cijevna River. Local community are strongly against this. So the new scientific data about the flora of this river are big argument on the side of local community. This is especially important for Albania part of the river.

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

There are several plans for continuing of this research.

- First of all we want to follow the moss population condition during the future period, because they are of Cijevna River brook a strong anthropogenic influence.
- We will try to make an action plan to manage with Cijevna River.
- We will continue to raise awareness about the moss and their importance in ecosystem and agriculture.
- There is a plan to apply for bigger projects during which will be created special website which will included information about all moss species in Montenegro, with educational materials and vulnerability information.

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

Results are already shared through scientific journal which is on prestige SCI or SCOPUS list. Second part of result are shared through the YouTube and other social media. We shared project results with competent institutions and we send them outcomes of project, scientific publication and promotion materials.

## 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 project started in October 2017 and finished in October 2018. All planned activities were done during this period. We are waiting for publication one of paper which we are mentioned above, we will send this after the publication (November - December 2018).

## 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
Workshop for local people (rental of meeting room, coffee break).	250	200	-50	Because this project was very important for local community they give discount for a conference room.
Sending potentially new species at revision in Graz Austria	180	220	+40	We are find a lot of new species for Albania and Montenegro. In the aim to check the reliability of species determination we are sent the material several time in

				Graz.
Promotional material for lecture at school and lecture (posters- 70 copies, flyers-200 copies, pencils with project logo 200 copies).	470	470		
Exhibition on First Lego League Montengro (preparation moss species, posters and photographs, frames, translation, transportation to schools).	220	220		
Material for creating mural of moss (box moss) in Botanical garden	330	350	+20	20£ were spent on the cement for fixing the box.
Information borders	600	600		
Material for moss collecting (bags for field collection, material for herbarium mosses)	370	360	-10	During the realisation our first project we was bought this material in the same store. So this time we get discount.
Field trip: 1 cars x 28 field trips	224	224		
Field work daily allowance: 4 persons x 28 days	1,456	1,456		
Field work accommodation: 4 persons x 15 nights	900	900		
Total:	5000	5000		

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

Prevention of building the hydropower plants on the Cijevna River is one of must important next step. Beside of this monitoring of the moss population is one of important activity especially because here is seven new species for both countries.

## 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 logo was used in all promotion material, such as: posters, presentation, information tables, in the part of the botanical garden which serves to protect the moss, brochure, books stops, TV shows. Also the Rufford Foundation and this grand are mentioned in all scientific publication.

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

**Branko Andjic MSc**, project leader, field research, determination of species, preparation of scientific publication.

**Dr Danijela Stešević**, project supervisor, Professor at the University of Montenegro field research preparation of scientific publication.

**Dr Snežana Dragičević**, field research, determination of species, preparation of scientific publication.

**Dr Christian Berg**, University Karl Franz Graz, checking the correction of moss determination, preparing the scientific publication.

**Mihailo Savović**, graduate student at the "University of Montenegro field research.

**Sladjana Gvozdenovic**, doctoral candidate at the University of Montenegro, field research.

**Marija Stanisic**, communication with local authority and stakeholders.

**12. Any other comments?**

I am grateful to the Rufford Foundation to support this project, without which I could not complete this research. I hope that RF will continue to fund activities that are dealing with bryophyte conservation in our country, because this is one of biggest problem in plant protection. We would like to thank Jane Raymond for wonderful communication during project reporting.