Final Evaluation Report

Your Details	
Full Name	Tijana Trbojević
Project Title	"Searching for the Balkan Lynx in southeast Bosnia and Herzegovina and western Montenegro - Part II"
Application ID	38405-D
Date of this Report	March 3, 2024

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
1. Determine the population affiliation of lynx in the researched area.				In order to achieve objective 1, it was necessary to carry out several activities: 1) Professional theoretical and field training of volunteers - Result: 22 volunteers were trained to collect signs of the presence of lynx (Figure 1). 2) Searching for signs of the presence of lynx and collecting samples for DNA analysis (footprints in snow and mud, marking sites with faeces, urine, hair, and remains of prey) - Result: Trained volunteers and the project team collected five pieces of evidence about presence of lynx in the researched area (two footprints, four photographs and one DNA sample). The DNA sample confirms belonging to the Carpathian population, subspecies *Lynx lynx carpathicus*.
1.1. Collect materials for morphological differentiation of lynx individuals.				Four photos of lynxes in the research area were collected. Conclusion: The photo of the lynx from the Volujak mountain is not clear and cannot be used for morphological determination (Figure 2), but it proves the presence of the lynx in the territory of Montenegro; The presence of one individual lynx was found on the Bjelasnica mountain and the images are usable for any future morphological determination

				(Figures 3-5).
1.2. Collect evidence of lynx breeding.				No footprints, photographs and DNA evidence of the current presence of young individuals were found.
1.3. Proving the permanent presence of lynx in the researched area (especially in Montenegro).				Lynx photographed on Volujak mountain (Figure 2, Figure 7) moved from the direction of the Piva Nature Park (Montenegro). This confirmed the previous evidence that one individual lives in the cross-border area between Montenegro and Bosnia and Herzegovina.
2. Initiate the procedure for declaring the species protected in Montenegro.				A meeting was held with a partner organisation from Montenegro, Center for Protection and Research of birds of Montenegro - CZIP (Figure 6). The project team submitted to CZIP all the evidence of the presence of lynx in the territory of Montenegro (and the border area with Bosnia and Herzegovina). CIZIP agreed and held a meeting with the Ministry of Ecology of Montenegro, and with its expert team participated in the adoption of a new law that would restore both subspecies of lynx (Balkan and Carpathian) to the law and the status of a protected species.

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

a). The permanent presence of the lynx on the Bjelasnica mountain (Bosnia and Herzegovina), and its population affiliation (Dinaric population, Carpathian subspecies), has been proven.

b). Proven presence of lynx in the territory of Montenegro. Although the individual was not photographed on the territory of Montenegro itself, its only approach to the installed camera trap was from the direction of Montenegro (which is 3 km away).

c). The process of returning the lynx to the list of species living in Montenegro, returning the species to the Law on Nature Protection, and thereby restoring the status of protection of the species in the territory of Montenegro, has been initiated.

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

There were no difficulties in carrying out the project activities.

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

Volunteers of the local community (citizens and members of the Mountaineering Association "Volujak" from the municipality of Gacko), a total of 20 people, participated in the training to collect evidence of the presence of lynx. Good business relations were established with the representatives of the Municipality of Gacko and the Forestry Organisation "Gacko". Several meetings were held with them, where it was agreed to establish a protected area that would continue from the Sutjeska National Park to the town of Gacko (covering the southern part of Mount Volujak, Mount Lebršnik, Lake Klinje and Gatački Karst).

5. Are there any plans to continue this work?

It is planned to apply for the last (fifth) small grant, which would provide part of the funds needed to declare the unprotected area protected. This unprotected area is located south and southwest immediately from the Sutjeska National Park to the municipality of Gacko (see Figure 7). These surveys are necessary and legally binding if we want to declare an unprotected area as protected. The purpose of protecting this area is to provide a larger protected area for the lynx (*Lynx lynx*), but also for other keystone and endangered species: greater horseshoe bat (*Rhinolophus ferrumequinum*), lesser horseshoe bat (*Rhinolophus hipposideros*), grey wolf (*Canis lupus*), brown bear (*Ursus arctos*), Balkan chamois (*Rupicapra r. balcanicus*), meadow viper (*Vipera ursinii macrops*), beech longhorn beetle (*Morimus funereus*) and other species.

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

The results of all research so far will be presented in writing to the Municipality of Gacko, the Sutjeska National Park, the Forestry Organisation "Gacko", the Hunting Organisation "Vranjača", the Mountaineering Association "Volujak" and the Center for Protection and Research of birds of Montenegro (CZIP). In addition, in order to bring our results closer to the world public, we plan to publish the results of our research in the journal Oryx and/or in the national journal Acta Scientifica Balcanica.

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

Given that in 4 years of research we have proven the constant presence of lynx in the researched area and beyond, the next step would be to protect the area where the lynx lives, which is currently unprotected. This would significantly increase the protection of the species and its chance of recovery.

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, the Rufford Foundation has been promoted several times in our four years of research.

Trbojević T. & Trbojević I. 2018. Distribution of Eurasian lynx (*Lynx lynx* L., 1758) in Bosnia and Herzegovina. Survey of Hunting and Forestry Organizations. 27th Rufford Small Grants Conference "From Mountains to Deep Seas", 3–6 February 2018, Bar, Montenegro.

Trbojević, T., Trbojevic, I., Sekulić, Ž., Stevanović, O., Dekić, R., Perović, A. 2020. Lynx in the Dinaric Mountains of Bosnia and Herzegovina and western Montenegro. Rufford Balkan and East Conference 2020, International Rufford Small Grants Conference, 10 October 2020. Sarajevo, Bosnia and Herzegovina. 42-43 p.

Fležar, U., Pičulin, A., Bartol, M., Stergar, M., Sindičić, M., Gomerčić, T., Slijepčević, V., Trbojević, I., Trbojević, T., Jobin-Molinari, A., Molinari, P., Krofel, M., Černe, R. 2021. Eurasian lynx in the Dinaric Mountains and the southeastern Alps, and the need for population reinforcement. CATnews. Special Issue Nr 14. Autumn 2021. International Union for Conservation of Nature (IUCN), Species Survival Commission (SSC), Cat Specialist Group. 21- 24 pp. http://www.catsg.org/index.php?id=716.

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

Igor Trbojević, Assistant Profesor on Zoology and Ecology of animals at Faculty of Ecology, Independent University Banja Luka (Bosnia and Herzegovina). Expert collaborator on the project; Responsibilities: training of volunteers, expert opinion when examining signs of the presence of lynx, assistance in conducting meetings with representatives of the national and local authorities of Bosnia and Herzegovina and Montenegro.

Aleksandar Perović, BSc of ecology. Live and work in Podgorica (Montenegro). An employee of the Center for Protection and Research of Birds of Montenegro (CZIP),

as part of which he works on large carnivores. Collaborator on the project; Responsibilities: training of volunteers, assistance in conducting meetings with representatives of the national authorities of Montenegro. Collaborator in searching for signs of the presence of lynx in Montenegro.

Radoš Milošević, he lives and works in the municipality of Gacko (Bosnia and Herzegovina). Hunter (Hunting Association „Vranjača") and mountain guide (Mountaineering Association „Volujak"). Collaborator on the project; Responsibilities: searching for signs of the presence of lynx in the researched area; Lobbying of volunteers from the local community.

10. Any other comments?

Fig. 1. Education, training and field work of volunteers. Installation of camera traps and scent baits with hooks for DNA sampling

Fig. 2. Lynx on the Volujak Mt. © Tijana Trbojević.

Fig. 3. Lynx on the Bjelasnica Mt. © Tijana Trbojević.

Fig. 4. Lynx on the Bjelasnica Mt. © Igor Trbojević.

Fig. 5. Lynx on the Bjelasnica Mt. © Tijana Trbojević.

Fig. 6. Meeting with partners (CZIP) in Montenegro.

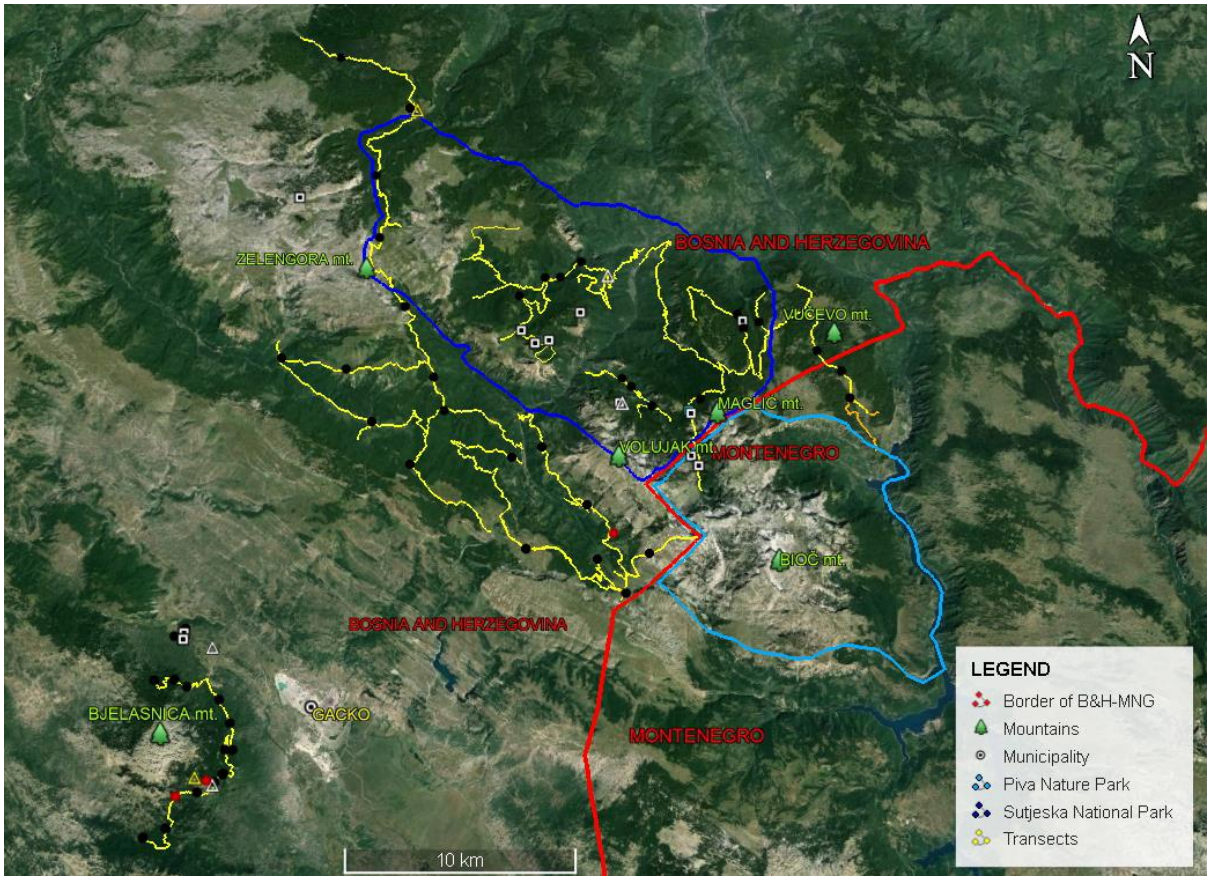

Fig. 7. Transects, camera traps and lynx data on the field. Black dots - camera and hair traps; Red dots - lynx on camera traps; White Triangle - lynx sightings from 2014-2022; Yellow triangle - DNA sampling of lynx; White square - lynx footprints from 2017-2023.

Answers to Rufford Foundation reviewers' questions:

- **The number, locations and duration of installed cameras and hair traps. -** Sixteen camera traps and 16 hair traps were installed on the Bjelasnica Mountain in the period from February 2023 to February 2024. In the area of the Sutjeska National Park and its surroundings, 34 camera traps and 46 hair traps were set every year in the period from June 2019 to February 2024. All cameras and hair traps were in the field for the whole year.

- **A map with locations where camera and hair traps were installed. -** This report includes a comprehensive map (Figure 7) showing camera and hair trap locations, transects, lynx sightings, lynx footprints, and sites where lynx DNA was successfully sampled.

- **The number of people interviewed. -** From 2019 to 2023, 112 people were interviewed, who live in the area of the Sutjeska National Park and its

immediate surroundings + 47 people from the area of the Gacko municipality.

- **The length (km) of transects inspected for lynx footprints and a map of those. -** The length of transects that were visited in the field:
  - 2019 - 2020 was 68 km
  - 2021 - 2022 was 64 km
  - 2023 - 2024 was 92 km.

- **A map with locations of findings of lynx presence. -** This report includes a comprehensive map (Figure 7) showing camera and hair trap locations, transects, lynx sightings, lynx footprints, and sites where lynx DNA was successfully sampled.

- **The presence of lynx in Sutjeska NP since 2014 - There is no evidence lynx was not present there before 2014). -** We did not find evidence that the lynx inhabited that area before 2014. Before we started the project, the official finding of lynx in the area of the Sutjeska National Park dates back to 2018. It should be remembered that there was no evidence of the presence of lynx in the region beyond the Sutjeska National Park, only in the central part of the country.

- **That the lynx in Montenegro is Balkan lynx and the lynx found in Sutjeska is Balkan lynx – There is no scientific background to claim this. You cannot claim this based on one footprint. -** In the report from August 2020, page 4, first paragraph, we wrote"...there is a high probability that the lynx registered in the vicinity and in the Sutjeska National Park, as well as in the border area of the MNG belongs to the subpopulation of critically endangered Balkan lynx (*Lynx lynx balcanicus*)." We based this statement on the basis of the scientific work of Melovski et al. 2018 and the distances of the known finds of the Balkan and Carpathian subspecies from the finds from our project.
  Now we know for sure that one young male of the Carpathian subspecies lives in the area of the Sutjeska National Park (based on DNA and microscopic analysis of the found hairs) - Zelengora Mountain, as well as that one adult male inhabits the Bjelasnica mountain area (according to DNA and microscopic analysis of found hairs), but we still do not know of one individual inhabiting the border area of Montenegro and Bosnia and Herzegovina (Maglić and Volujak mountains).

- **The size of the lynx territory in Sutjeska NP – you don't have data to prove this but are speculating on the number of individuals present in Sutjeska NP. -** In the report from August 2020, page 4, c), the third paragraph, we wrote "The size of the territory of the lynx has been established in approximately 89

km²...". This is approximate, i.e. the best that could be determined based on the findings. It should be remembered that the lynx territories in the rest of Europe are similar in size. The precise territory can be determined using a GPS collar, but we did not do this (the project did not foresee it).