

**“Support to the management of protected areas in border region
of Albania, Kosovo, North Macedonia in monitoring of
endangered species”
-Report-**



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I. INTRODUCTION

The transboundary area shared between Albania, Kosovo and North Macedonia has an exceptionally high biodiversity. Due to these values the Albanian side is protected with the Nature Park status (IUCN category IV), the Kosovo side has the National Park protected status (IUCN category II), while the North Macedonian part recently got a temporary protection status until its declaration as a National Park (IUCN category II). Because there was lack of information about the presence of wildlife in this transboundary area, it was needed to carry out a study and while doing it train the administrators of the area.

The main aim of this project was to carry out a Large Carnivore study in this area and to have capacities and fully trained Protected Areas (PA) administration for wildlife monitoring. This aim was successfully achieved by conducting the foreseen training sessions and donating all the necessary equipment for such study.

In order to support this study, the following equipment were purchased and donated to all PA administrations (Table 1). The donation process was done in the same day of the training in Kosovo and North Macedonia, whereas in Albania it was completed separately with the donation process happening first and then the training sessions.

Tab 1. Equipment donated to PA administration.

| No. | Equipment description | Quantity | Donated by |
|-----|----------------------------|----------|------------|
| 1 | Camera traps | 24 | GIZ |
| 2 | Laptops | 4 | PPNEA |
| 3 | SD Memory cards | 24 | PPNEA |
| 4 | Batteries | 384 | PPNEA |
| 5 | Padlocks | 24 | PPNEA |
| 6 | The lynx monitoring manual | 25 | PPNEA |

These equipment were equally divided between the three countries, eight cameras and supporting equipment for each of them. Since in Albania there are two administrations managing the Korab-Koritnik Nature Park the eight cameras were split between them, four cameras for RAPA Kukes and four for the Dibra one.

In addition to that and because this study demands many camera traps, GIZ purchased 24 more cameras and supporting equipment that will be donated in the following months. This set of cameras will be divided in a way that all the PA administrations have the same amount. So, sixteen cameras will be donated to Albania, divided eight for RAPA Kukes and eight for RAPA Dibra, four cameras will be given to National Park Sharri in Kosovo and the last four to the FOSH platform in North Macedonia. In this way each institution has a similar number composed by 12 cameras and supporting equipment.

With regard to the trainings, they were held separately for each PA administration in two modules, theoretical and practical one. In total four training sessions were carried out with the three countries, two in Albania with the Regional Administrations for Protected Areas (RAPAs) of Kukes and Dibra, one training in Kosovo with the Administration of National Park Sharri and the last one in North Macedonia with the Platform Friend of Sharri (FOSH) since the area does not have a protected status yet, consequently no PA administration.

The theoretical session was attended by 34 PA representatives from the three countries, whilst in the practical one took part 13 participants divided in four teams. The teams from each country installed 14 cameras. Four other cameras were installed together with PPNEA representative making a total number of 18 cameras for the three countries in this transboundary area. After the removal of the cameras a total number of 130 wildlife photos/videos were captured. These images prove the presence of several important and protected large and medium sized mammals in this transboundary area.

In the following text it is described in details the training process in the three countries by giving the information on participation, theoretical and practical process and an evaluation for each participant. Moreover, it is described the methodology used for the wildlife monitoring and the obtained results. In the end of the documents are listed some main conclusions that need to be considered for the continuity of wildlife monitoring in this transboundary area. These details described below are divided per country where the study was carried out.

II. ALBANIA

KORAB – KORITNIK MANAGED NATURAL RESERVE (NATURE PARK)

Korab-Koritnik Nature Park or Managed Natural Reserve (MNR) has an exceptionally high biodiversity, represented by a large number of endemic and rare flora and fauna species. Due to these high natural values, this area was established as Nature Park, category IV according to the Albanian laws, on 21st of December 2011. Since 2015 the area is being managed by the National Agency for Protected Areas (NAPA), specifically by the Regional Administrations for Protected Areas (RAPA) of Kukes and Diber. The territory of Korab-Koritnik Nature Park is 555.55 km² making it the largest protected area in Albania.

The training for this protected area was done separately for the two RAPAs Diber and Kukes, respectively on date 28th and 29th September 2020. More details about the trainings are described below.

Summary

At Korab - Koritnik MNR were gathered important data on large and medium size mammals occurrence such as wild boar, roe deer, badger, brown hare and red fox. Most of these species are listed in the Europe and Mediterranean IUCN Red Lists, as well as National Red List of Flora and Fauna. Data gathered through camera-trapping and tracking methods show an outstanding high diversity of wildlife and habitats in Korab – Koritnik MNR.

Methodology

In total, 8 camera traps were spread in the study areas (see figs. 3-4). For each study areas were spread 4 camera traps (Kukes and Dibra regions). The major vegetation types of our samples were deciduous forest and deciduous – coniferous mixed forest. On a general basis after potential trails and camera traps locations identification during the theoretical and practical sessions of training, camera-traps were set and left to work approximately for two months and in the end of this period the cameras were checked and removed from the areas. This study was conducted by minimum 7 people for two months from end of September to end of November 2020. (Table 2).

Table 2. Description of the study

| PA INVESTIGATED | SETTING OF THE CAMERA TRAPS | REMOVAL OF THE CAMERA TRAPS | NUMBER OF CAMERAS SET/SITES OR AREAS COVERED |
|-------------------------------------|--|-----------------------------|--|
| Korab - Koritnik MNR (Kukes region) | From end of September To beginning of October 2020 | End of November 2020 | 4 |
| Korab - Koritnik MNR (Dibra region) | From end of September To beginning of October 2020 | End of November 2020 | 4 |



Fig. 1. During camera – trapping setting process. Petrit Sinaj, Kujtim Krruci, Valdet Rexhaj – monitoring specialists, Kukes’s RAPA



Fig. 2. During camera – trapping setting process. Klodjan Sula, Taulant Sulejmani and Durim Kaba – monitoring specialists, Dibra’s RAPA

Table 3. The investigation team conducting the monitoring survey during October – November 2020 in Korab - Koritnik MNR

| Name and surname | Organization | Region | Country |
|-------------------|------------------------------|--------|---------|
| Bledi Hoxha | Large Mammals Expert (PPNEA) | Tirana | Albania |
| Olsion Lama | Project manager (PPNEA) | Tirana | Albania |
| Kujtim Krruci | Monitoring specialist | Kukes | Albania |
| Petrit Sinaj | Monitoring specialist | Kukes | Albania |
| Valdet Rexha | Monitoring specialist | Kukes | Albania |
| Taulant Sulejmani | Monitoring Specialist | Diber | Albania |
| Klodjan Sula | Monitoring Specialist | Diber | Albania |
| Durim Kaba | Monitoring Specialist | Diber | Albania |

CT Locations, Korab-Koritnik MNR, Kukes region

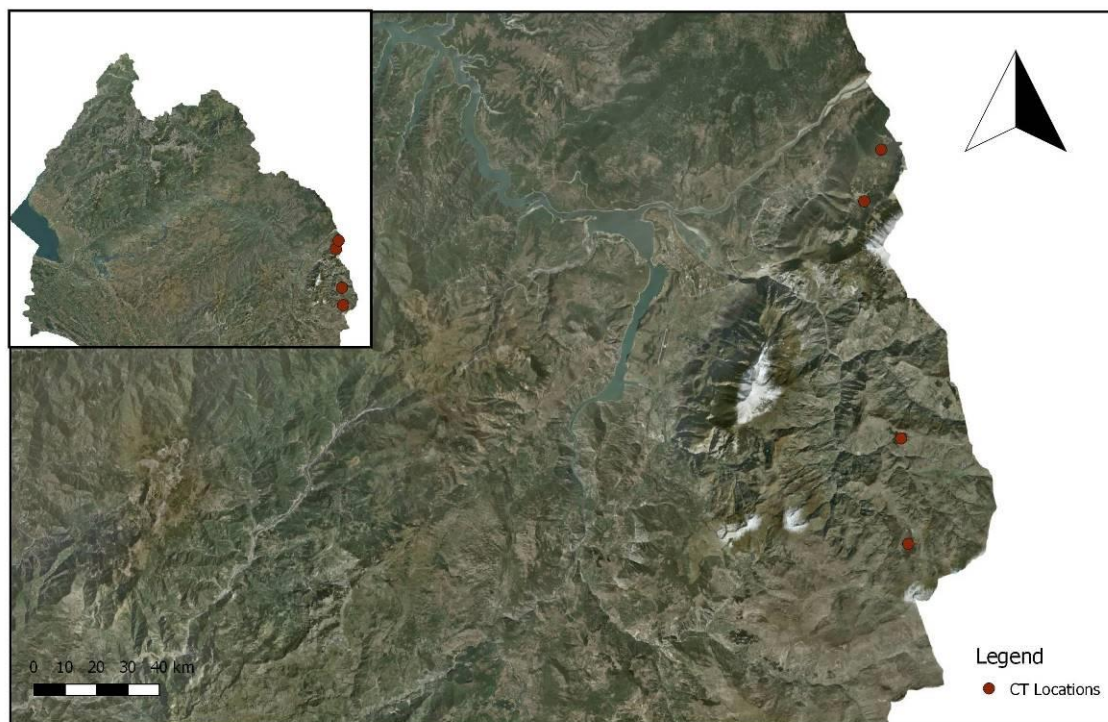


Fig.3: Location of camera traps and survey area in Korab – Koritnik MNR, Kukes region

CT locations, Korab-Koritnik MNR, Dibra region

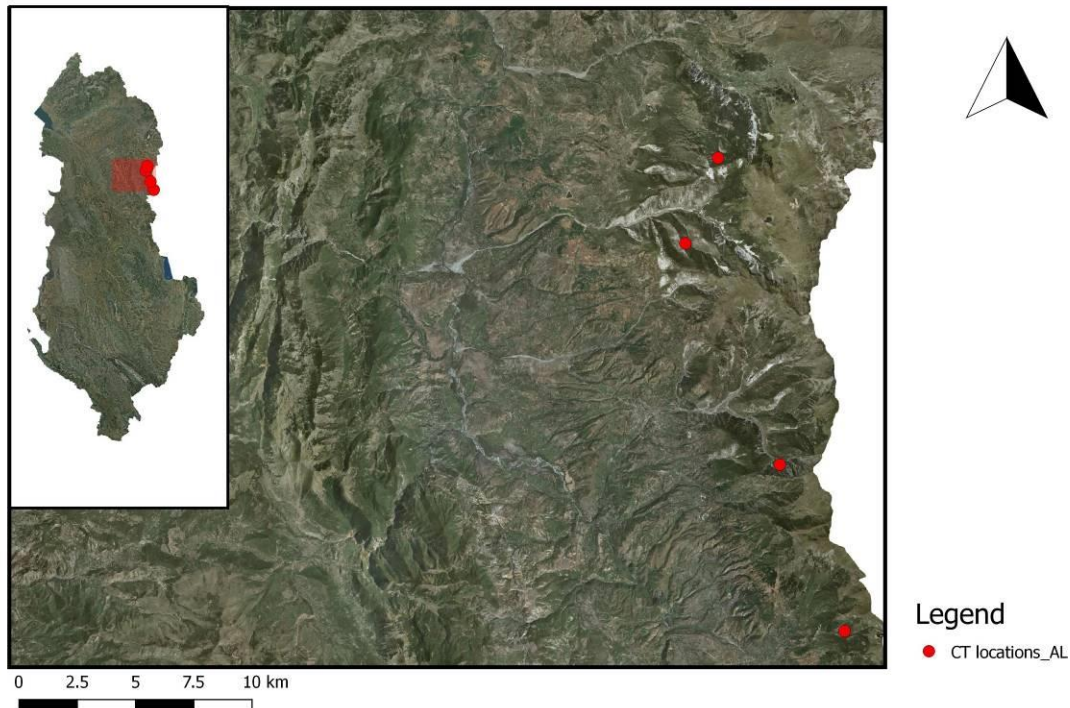


Fig.4: Location of camera traps and survey area in Korab – Koritnik MNR, Dibra region

Results

a) Training on the job.

At Korab – Koritnik, 28th September – 29th September 2020, the specialists of Protected Area (Kukes and Dibra) were trained on large mammals monitoring methods. The training was conducted in two sessions: theory and practice. The theory part consisted on giving technical information about species composition and their ecology, identification of species based on tracks and scats, identification of species based on morphology, key habitat for particular species and setting up camera traps for terrestrial large mammals. In the theory session took part 18 specialists from both RAPAs, Kukes and Dibra regions. The practice part consisted on identification of appropriate paths using by large mammals, identification signs of species presence (scats, tracks, other signs, e.g., hairs left on logs, feeding remains etc) and setting camera traps in the field. In Korab - Koritnik practice session took part 7 specialist for both RAPAs, Kukes – Dibra regions. (Table 4-5)

Table 4. RAPA Kukës

| Nr. | Name of the training participants | Theory session | Practice session | Evaluation level |
|-----|-----------------------------------|----------------|------------------|------------------|
| 1 | Petrit Sinaj | + | + | 4 |
| 2 | Besnik Hallaci | + | | 5 |
| 3 | Shefki Nika | + | | 3 |
| 4 | Valdet Rexha | + | + | 4 |
| 5 | Kujtim Kruci | + | + | 4 |
| 6 | Bledar Bulica | + | | 3 |
| 7 | Perparim Cela | + | + | 4 |

Table 5. RAPA Diber

| Nr. | Name of the training participants | Theory session | Practice session | Evaluation level |
|-----|-----------------------------------|----------------|------------------|------------------|
| 1 | Bekim Qosja | + | | 5 |
| 2 | Gazmir Mera | + | | 3 |
| 3 | Bledar Spahiu | + | | 3 |
| 4 | Roland Doda | + | | 3 |
| 5 | Artur Kaja | + | | 3 |
| 6 | Aurel Osmani | + | | 3 |
| 7 | Njazi Osmani | + | | 3 |
| 8 | Latif Dedja | + | | 3 |
| 9 | Tulant Sulejmani | + | + | 4 |
| 10 | Durim Kaba | + | + | 4 |
| 11 | Klodjan Sulaj | + | + | 4 |

Note: Performance evaluation terms of the RAPA's Monitoring Specialist, Dibra region. The evaluation is done based on their performances (participation, level of motivation, etc.) in both parts of the training.

- 6 – Excellent
- 5 – Very good
- 4 – Good
- 3 – Average
- 2 – Fair
- 1 – Poor

b) Camera – trapping results

The extensive monitoring survey was successful in terms of the amount of information and results

generated with a diverse number of wildlife species photographed. Camera traps photographed 23 photos and 16 videos of wildlife species, where are identified 5 species from 7 locations in both regions. Two large mammals, wild boar and roe deer were photographed in both regions.

Kukes region

There are 13 photos of wildlife species including 6 photos of *Sus scrofa*, 3 photos of *Vulpes vulpes*, 1 photo of *Lepus europaeus*, 3 photos of *Capreolus capreolus*, (Table 6).

One camera trap has been stolen in Kukes region. Camera CM 04 (E 464631 N 4643823) was located in Novosej area near to the lake. Unfortunately, there is no additional information about the camera.

Table 6. Number of species photos in Korab – Koritnik MNR – Kukes region

| | CM 01 | CM 02 | CM 03 | CM 04 (Stolen) | Total |
|----------------------------|-------|-------|-------|-------------------|-------|
| <i>Sus scrofa</i> | 2 | 3 | 1 | | 6 |
| <i>Vulpes vulpes</i> | | 2 | 1 | | 3 |
| <i>Lepus europaeus</i> | | | 1 | | 1 |
| <i>Capreolus capreolus</i> | | | 3 | | 3 |

Dibra region

There are 10 photos and 16 videos of wildlife species including 2 videos of *Vulpes vulpes*, 3 photos/4 videos of *Capreolus capreolus*, 1 video of *Meles meles*, 4 photos/ 4 videos of *Lepus europaeus*, 3 photos/5 videos of *Sus scrofa* (Table 7).

Table 7. Number of species photos in Korab – Koritnik MNR – Dibra region

| | CM 01 | CM 02 | CM 03 | CM 04 | Total |
|----------------------------|-------|-------|-------|-------|-------|
| <i>Vulpes vulpes</i> | | | 2 | | 2 |
| <i>Meles meles</i> | | | | | 1 |
| <i>Lepus europaeus</i> | 4 | 3 | 1 | | 8 |
| <i>Capreolus capreolus</i> | 3 | | 4 | | 7 |
| <i>Sus scrofa</i> | 3 | | | 5 | 8 |

III.KOSOVO

SHAR MOUNTAIN NATIONAL PARK

After training of Kukes's and Diber's RAPAs in Albania on medium and large mammals monitoring technics and setting in Korab-Koritnik MNR, the next Transboundary Protected Area was Shar Mountain NP in Kosovo. During the first half of the day on 30th September 2020, it was conducted the theoretical part of the training which consisted on giving technical information about species composition and their ecology, identification of species based on tracks and scats, identification of species based on morphology, key habitat for particular species and setting up camera traps for terrestrial large mammals. In the theory session took part 10 specialists of Shar NP Administration, two representatives of FINCH NGO and one representative from ERA NGO. Related to the practical session, in the second half of the day it was visited the core area of the NP together with two rangers and FINCH NGO representatives where PPNEA demonstrated and installed one camera in the field. The core area of Shar NP comprises different types of habitats, such as beech forest and pine forests that makes it suitable for medium and large mammals camera trapping.

Summary

At Shar National Park were gathered important data on large and medium size mammals occurrence such as brown bear, wolf, wild cat, red fox, brown hare, roe deer, wild boar and chamois. Most of these species are listed in the Europe and Mediterranean IUCN Red Lists. Moreover, some of these species such as brown bear, wolf, wild cat and chamois are listed in Annex II, Annex IV and Annex V of European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) (the Habitats Directive). Data gathered through camera-trapping and tracking methods show an outstanding high diversity of wildlife and habitats in Shar NP.

Methodology

In total, 4 camera traps were spread out of 8 planned in the study area (see fig. 6). The major vegetation types of our samples were deciduous forest and deciduous – coniferous mixed forest. On a general basis after potential trails and camera traps locations identification during the theoretical and practical sessions of training, camera-traps were set and left to work approximately for two months and in the end of this period the cameras were checked and removed from the areas. This study was conducted by minimum 2 people for two months, from October to November 2020. (Table 8)

Table 8. Description of the study

| PA INVESTIGATED | SETTING OF THE CAMERA TRAPS | REMOVAL OF THE CAMERA TRAPS | NUMBER OF CAMERAS SET/SITES OR AREAS COVERED |
|-------------------------------|--|------------------------------|--|
| Sharri National Park (Kosovo) | From end of September To beginning of October 2020 | From end of November 2020 | 4 |



Fig. 5. During camera – trapping setting process. Bekim Bytyqi, Valton Ceko, Azem Ramadani and Flutra Ramadani - monitoring specialists, Shar Mountain NP Administration

CT Locations, Shar NP, Kosovo

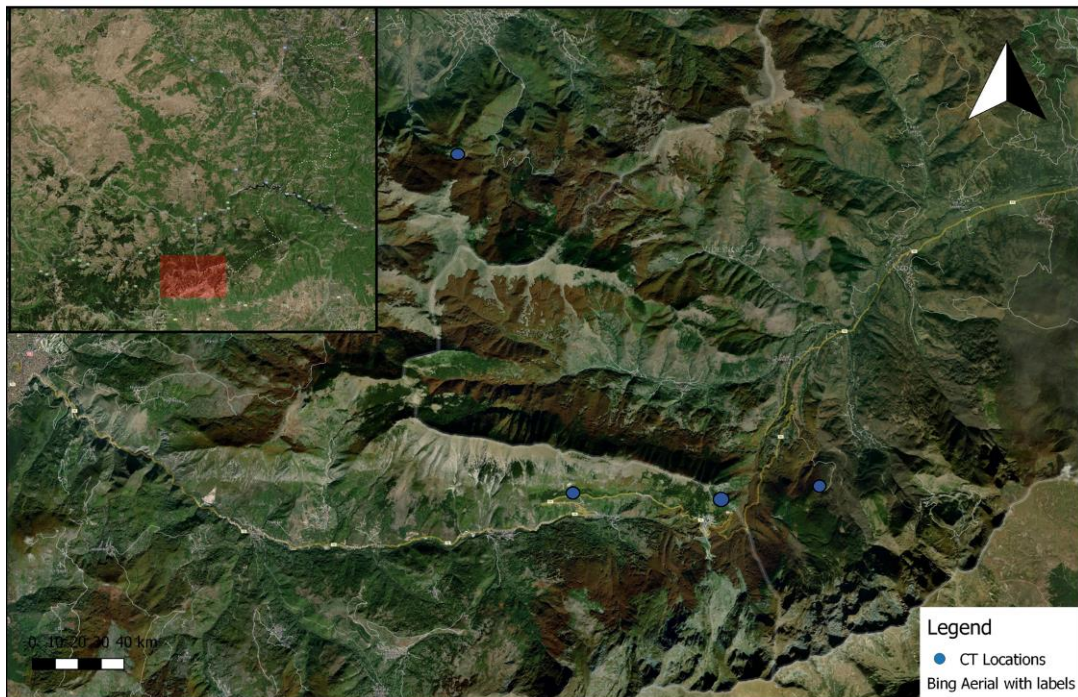


Fig.6: Location of camera traps and survey area in Shar National Park, Kosovo

Table 9. The investigation team conducting the monitoring survey during October – November 2020 in Shar NP

| Name and surname | Organization | Institutions | Country |
|-------------------------|-----------------------|---------------------|----------------|
| Bledi Hoxha | Large Mammals Expert | PPNEA | Albania |
| Olsion Lama | Project manager | PPNEA | Albania |
| Bekim Bytyqi | Monitoring specialist | Shar NP | Kosovo |
| Valton Ceko | Monitoring specialist | Shar NP | Kosovo |
| Azem Ramadani | Wildlife expert | FINCH | Kosovo |
| Flutra Ramadani | Wildlife research | FINCH | Kosovo |

Results

a) Training on the job.

The specialists of Shar Protected Area and representatives of local NGOs in Kosovo were trained on large mammals monitoring methods, on 30th September 2020. The training was conducted in two sessions: theory and practice. The theory part consisted on giving technical information about species composition and their ecology, identification of species based on tracks and scats, identification of species based on morphology, key habitat for particular species and setting up camera traps for terrestrial large mammals. In the theory session took part 5 specialists of Shar NP administration and 4 representatives from two local NGOs. The practice part consisted on identification of appropriate paths using by large mammals, identification signs of species presence (scats, tracks, other signs, e.g. hairs left on logs, feeding remains etc) and setting camera traps in the field. In Shar NP practice session took part 4 specialists. (Table 10)

Table 10. National Park Sharri administration

| Nr. | Name of the training participants | Theory session | Practice session | Evaluation level |
|------------|--|-----------------------|-------------------------|-------------------------|
| 1 | Bekim Bytyqi | + | + | 4 |
| 2 | Valton Ceko | + | + | 4 |
| 3 | Flutura Ramadani | + | + | 4 |
| 4 | Azem Ramadani | + | + | 6 |
| 5 | Zafir Azizavuq | + | | 3 |
| 6 | Bardh Sanajs | + | | 3 |
| 7 | Mrika Nikai | + | | 3 |
| 8 | Hasim Kryeziu | + | | 3 |
| 9 | Bajram Kafexholli | + | | 3 |
| 10 | Ekrem Hyseni | + | | 3 |

Note: Performance evaluation terms of Monitoring Specialist, Shar NP, Kosovo. The evaluation is done based on their performances (participation, level of motivation, etc.) in both parts of the training.

- 6 – Excellent
- 5 – Very good
- 4 – Good
- 3 – Average
- 2 – Fair
- 1 – Poor

a) Camera – trapping results

Camera traps photographed 49 photos and 6 videos of wildlife species, where are identified 8 species. It is important to mention the presence of wild cat. Two large carnivores, (brown bear and wolf) were photographed in the area. Also, it is important to highlight the brown bear and wolf reproduction in Shar NP, proved by taken videos with two individuals together, specifically in location CT 02. Moreover, the prey of large carnivores such as roe deer, wild boar and chamois had a good presence in the area.

There are 49 photos and 6 videos of wildlife species including 7 photos/ 1 videos of *Ursus arctos*, 2 photos of wolf *Canis lupus*, 6 photos of *Vulpes vulpes*, 16 photos of *Lepus europaeus*, 5 photos of *Felis silvestris*, 7 photos of *Sus scrofa*, 3 photos/ 2 videos of *Rupicapra rupicapra balcanica* and 3 photos/3 videos of *Capreolus capreolus* (Table 11).

Table 11. Number of species photos in Shar Mountain NP, Kosovo

| | CT 01 | CT 02 | CT 03 | CT 04 | Total |
|--------------------------------------|-------|-------|-------|-------|-------|
| <i>Ursus arctos</i> | 2 | 5 | | | 7 |
| <i>Vulpes vulpes</i> | 2 | 4 | | | 6 |
| <i>Felis silvestris</i> | | 5 | | | 5 |
| <i>Sus scrofa</i> | 1 | 6 | | | 7 |
| <i>Lepus europaeus</i> | | 16 | | | 16 |
| <i>Rupicapra rupicapra balcanica</i> | | | 3 | | 3 |
| <i>Capreolus capreolus</i> | | | | 3 | 3 |
| <i>Canis lupus</i> | | | 2 | | 2 |

NORTH MACEDONIA

SHAR MOUNTAIN

The trainings were completed with the one held in North Macedonia and specifically in the Shar mountain. Even though this area still does not hold a protected status, a tremendous work has been done by FOSH and others for many years on declaring it as a National Park. Due to this hard work, the area recently holds a special protected status. This status will be active until the moment that the North Macedonian government will approve the law for the proclamation of the Shar Mountain as a National Park. Because there is no PA administration for this area, the training was done with FOSH as the initiators of the campaign for Shar as PA. The equipment were also donated to FOSH. This was done with the idea that they will transfer the knowledge and equipment to the PA administration when established.

Summary

At Shari Mountain, were gathered data on large and medium size mammals occurrence such as wild boar, roe deer, wild cat, brown hare, red fox, beech marten and red squirrel. Most of these species are listed in the Europe and Mediterranean IUCN Red Lists. Moreover, the wild cat is listed in Annex IV of European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) (the Habitats Directive). Data gathered through camera-trapping and tracking methods show an outstanding high diversity of wildlife and habitats.

Methodology

In total, 6 camera traps were spread in the study area (see fig. 8). The major vegetation type of our samples was coniferous forest. On a general basis after potential trails and camera traps locations identification during the theoretical and practical sessions of training, camera-traps were set and left to work approximately for two months and in the end of this period the cameras were checked and removed from the areas. This study was conducted by minimum 3 people for approximately two months (Table 12)

Table 12. Description of the study

| PA INVESTIGATED | SETTING OF THE CAMERA TRAPS | REMOVAL OF THE CAMERA TRAPS | NUMBER OF CAMERAS SET/SITES OR AREAS COVERED |
|-----------------|---|-----------------------------|--|
| Shar Mountain | From end of October to beginning of November 2020 | From end of December 2020 | 6 |



Fig.7. During camera – trapping setting process. Lirim Alimi and Metin Muaremi– monitoring specialist of CED

CT Locations, Shar Mountain, North Macedonia

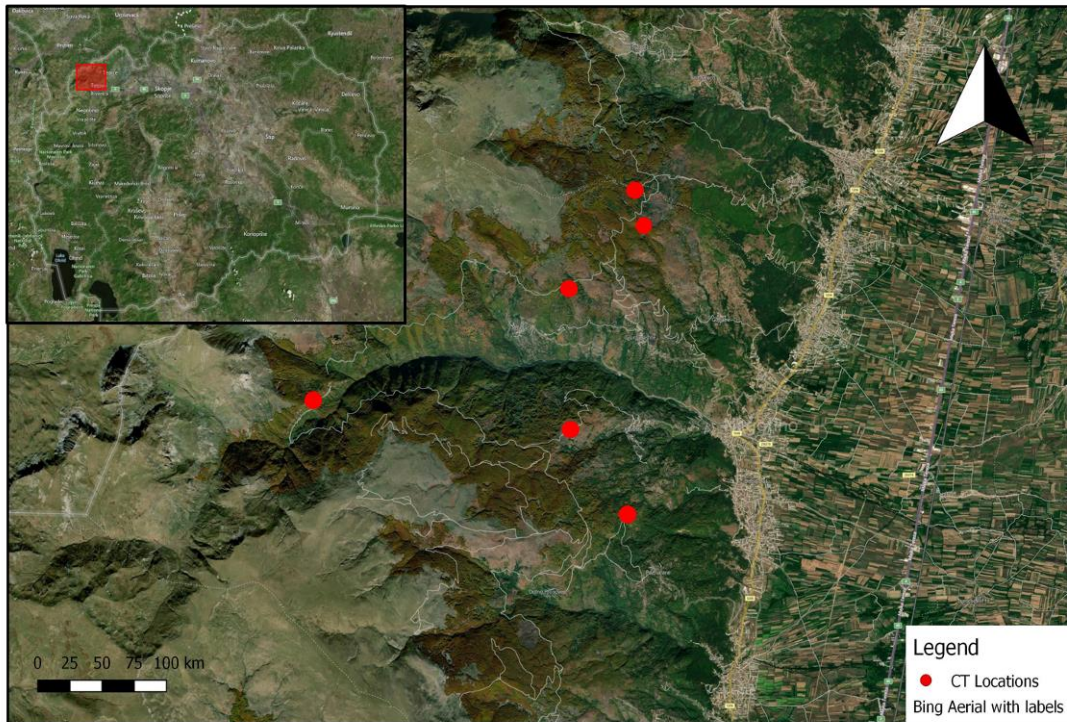


Fig.8: Location of camera traps and survey area covered in Shar Mountain

Table 13. The investigation team conducting the monitoring survey during October – December 2020 in Shar Mountain

| Name and surname | Organization | Institutions | Country |
|-------------------------|----------------------|---------------------|-----------------|
| Bledi Hoxha | Large Mammals Expert | PPNEA | Albania |
| Olsion Lama | Project Manager | PPNEA | Albania |
| Lirim Alimi | Wildlife Research | CED | North Macedonia |
| Andrej Gonev | Wildlife Research | MES | North Macedonia |
| Metin Muharremi | Wildlife Research | CED | North Macedonia |

Results

b) Training on the job.

At Shar Mountain, the specialists of NGO were trained on large mammals monitoring methods. The training was conducted in two sessions: theory and practice. The theory part consisted on giving technical information about species composition and their ecology, identification of species based on tracks and scats, identification of species based on morphology, key habitat for particular species and setting up camera traps for terrestrial large mammals. In the theory session took part four specialist. The practice part consisted on identification of appropriate paths using by large mammals, identification signs of species presence (scats, tracks, other signs, e.g. hairs left on logs, feeding remains etc) and setting camera traps in the field. In Shar Mountain practice session took part two specialist. (Table 14)

Table 14. Frieds of Sharri representatives

| Nr. | Name of the training participants | Theory session | Practice session | Evaluation level |
|------------|--|-----------------------|-------------------------|-------------------------|
| 1 | Lirim Alimi | + | + | 4 |
| 2 | Metin Muharremi | + | + | 4 |
| 3 | Andrej Gonev | + | | 4 |
| 4 | Frosina Panduska | + | | 3 |
| 5 | Stefani Trokoska | + | | 3 |
| 6 | Jovana Bogoeska | + | | 3 |

Note: Performance evaluation terms of the Monitoring Specialist, CED and P.K Ljuboten NGO. The evaluation is done based on their participation, level of motivation, etc. in both parts of the training.

6 – Excellent

5 – Very good

4 – Good

3 – Average

2 – Fair

1 – Poor

c) Camera – trapping results

Camera traps photographed 43 photos/ 12 videos of wildlife species, where are identified 6 species. Specifically there are 12 photos /2 videos of *Sus scrofa* , 11 photos of *Vulpes vulpes*, 6 photos/ 5 videos of *Sciurus vulgaris*, 7 photos/ 6 videos of *Capreolus capreolus*, 1 photo of *Felis silvestris*, 6 photos of *Marten foina*, (Table 14). No large carnivores were photographed in the area. Moreover, the prey of large carnivores such as roe deer and wild boar had a good presence in the area. The presence of the wild cat was proved by camera traps. In addition, the area was occupied by a large number of livestock, people and hunters which have a negative impact on large carnivore’s habitat.

Table 15. Number of species photos in Shar Mountain, North Macedonia

| | CT 01 | CT 02 | CT 03 | CT 04 | CT 05 | CT 06 | Total |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| <i>Sus scrofa</i> | | | 3 | 5 | | 4 | 12 |
| <i>Vulpes vulpes</i> | | | | 11 | | | 11 |
| <i>Sciurus vulgaris</i> | | | | | 6 | | 6 |
| <i>Martes foina</i> | | | | 1 | 5 | | 6 |
| <i>Capreolus capreolus</i> | | 5 | | 2 | | | 7 |
| <i>Felis silvestris</i> | | | | 1 | | | 1 |

IV. CONCLUSIONS

Below are listed the conclusions of the training and recommendation to be followed for the upcoming studies in the Korab – Koritnik / Sharr transboundary area.

- a) RAPA's, Shar NP Administration and local NGOs monitoring specialists, respectively from Albania, Kosovo and North Macedonia were trained to implement the reliable methods such as tracking and camera-trapping, in order to gather data on presence and distribution of large mammals. They expressed interest and motivation on setting and checking camera-trapping process. Moreover, they learned how to identify species through signs (tracks, scats, scratch marks or kills), left by animals during their activity in the field. Both methods were conducted during September- December 2020 as a continuation of the training exercises.
- b) Depending on the area, 4 to 8 cameras were set in each protected area (Korab – Koritnik MNR, Shar Mountain NP and Shar Mountain). Camera - trapping results were positive in terms of species presence, distribution and reproduction. The winter/spring season is more appropriate to do camera-trapping monitoring survey, because the probability to take more pictures of animals is higher, due to reproduction season (in the reproduction season the animals move a lot to find their partners). Moreover, during winter/spring season, human activity in the Protected Areas is low, which means less disturbance for the wildlife species in their habitat. Also, the number of cameras damaged and stolen by people will be lower.
- c) To have a clear and full picture on large mammals occurrence it is required to be conducted more monitoring surveys in the Regional Transboundary Protected Area between three countries.
- d) The areas form an important cross-border ecosystem by including the deciduous forest and deciduous – coniferous mixed forest, suitable habitats to carry out opportunistic camera – trapping monitoring. For purposes of opportunistic camera-trapping, at least 20 camera-traps should be available for each study area. To have better animal picture identification it is recommended to use Cuddeback model C1 20.0 Megapixel resolution camera traps, as it was done in this study.

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Annexes

Annex I: List of camera-trapping sites and signs per each study area in each country.

ALBANIA

KORAB - KORITNIK MNR

| Locality name | Locality number | X | Y | Habitat | Functioning time | Remarks |
|-----------------------------|-----------------|--------|---------|-------------------------------|---|-------------------|
| Koritnik Mt. – Kukes region | CT 01 | 462181 | 4661436 | Mixed forest | From end September to end November 2020 | |
| Koritnik Mt. – Kukes region | CT 02 | 463070 | 4664133 | Mixed forest | From end September to end November 2020 | |
| Novoseje – Kukes region | CT 03 | 464049 | 4649002 | Oak forest | From end September to end November 2020 | |
| Novoseje – Kukes region | CT 04 | 464631 | 4643823 | <i>Betula pendula</i> forest | From end September to end November 2020 | Camera was stolen |
| Korab -Dibra region | CT 01 | 454280 | 4622178 | <i>Fagus sylvatica</i> forest | From end September to end November 2020 | |
| Korab -Dibra region | CT 02 | 455681 | 4625860 | <i>Fagus sylvatica</i> forest | From end September to end November 2020 | |
| Korab -Dibra region | CT 03 | 461112 | 4605485 | <i>Fagus sylvatica</i> forest | From end September to end November 2020 | |
| Korab -Dibra region | CT 04 | 458330 | 4612652 | <i>Abies alba</i> forest | From end September to end November 2020 | |

KOSOVO
SHAR MOUNTAIN NP

| Locality name | Locality number | X | N | Habitat | Functioning time | Remarks |
|--------------------------------|-----------------|--------|---------|---------------------------------------|--|---------|
| Uji Verdh Gardac_Shar NP | CT 01 | 490029 | 490029 | Mixed forest | From end Septemebr to end November 2020 | |
| Oshlak_Shar NP | CT 02 | 493034 | 4670246 | <i>Fagus sylvatica forest</i> | From end Septemebr to end November 2020 | |
| Oshlak_Shar NP | CT 03 | 497429 | 4669962 | <i>Fagus sylvatica forest</i> | From end Septemebr to end November 2020 | |
| Brezovica | CT 04 | 499952 | 4669630 | <i>Fagus sylvatica forest</i> | From end Septemebr to end November 2020 | |

NORTH MACEDONIA
SHAR MOUNTAIN

| Locality name | Locality number | X | Y | Habitat | Functioning time | Remarks |
|---------------------|-----------------|---------|---------|-------------------------------|---------------------------------------|---------|
| Gradecko Ezero | CT 01 | 7488925 | 4641716 | <i>Fagus sylvatica forest</i> | From end October to end Devemebr 2020 | |
| Canak (nad ezeroto) | CT 02 | 7489138 | 4641398 | <i>Fagus sylvatica forest</i> | From end October to end Devemebr 2020 | |
| Kaj Rekata | CT 03 | 7487620 | 4640025 | <i>Fagus sylvatica forest</i> | From end October to end Devemebr 2020 | |
| Kaj Tunelite | CT 04 | 7482511 | 4637728 | <i>Fagus sylvatica forest</i> | From end October to end Devemebr 2020 | |
| Raskrsnica | CT 05 | 7486987 | 4637925 | <i>Fagus sylvatica forest</i> | From end October to end Devemebr 2020 | |
| Pozarane | CT 06 | 7488596 | 4635563 | <i>Fagus sylvatica forest</i> | From end October to end Devemebr 2020 | |

Annex II: Photos from some of the camera traps installed in the three countries.



Chamois *Rupicapra rupicapra balcanica*



Brown bear cub *Ursus arctos*



Brown bear *Ursus arctos* reproduction evidence



Wolf *Canis lupus* reproduction evidence



Roe deer *Capreolus capreolus*



Wildcat *Felis silvestris*