



LIFE
DINALP
BEAR



MONITORING OF THE EFFECTIVENESS OF MITIGATION MEASURES IN CROATIA

Action D.2: Evaluation (monitoring) of the effectiveness of mitigation measures implemented to prevent traffic related bear mortality

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1 INTRODUCTION

Traffic infrastructure significantly and in many ways affects the wildlife habitats through which it passes, and therefore wild animals. In addition to direct habitat losses, motorways cause population and habitat fragmentation, degradation of habitat quality and direct wildlife road-kill when crossing roads.

Traffic accidents involving wild animals (especially bears) also endanger road users, facing major economic damages (damage to vehicles, treatment costs, health care costs of injured persons, loss of lives), but also significant animal mortality including the loss of trophies.

According to the aforementioned, the presence of a wildlife and a brown bear particularly on Rijeka-Zagreb highway is a potential danger for all participants in the traffic.

The functional permeability of the motorway section comprises dedicated wildlife crossings (the "Green bridge Dedin") but also other structures such as bridges, viaducts and tunnels used as crossings by wildlife. Here we present on the evaluation (monitoring) of the effectiveness of mitigation measures implemented to prevent traffic related bear mortality.

2 MONITORING OF WILDLIFE USING CAMERA-TRAPS

2.1 Monitoring with cameras

Monitoring with video and photo cameras was done in four different periods:

1.) In 2015 from September till October monitoring with video and photo cameras was done in vicinity of newly installed electrical fences. No any brown bear was recorded.

2.) In April 2016 there were four cameras set-up for photo and two for video surveillance by Zagreb–Rijeka motorway to capture bears next to the electric fence.

There were no bears captured on these spots so the cameras were removed after four weeks on the field. It was decided to set up cameras in the woods near motorway on the spots where it was expected that bears would be captured by cameras.

3.) From July to the end of August of 2018 three cameras were set-up in the area Vrata/Fužine and three cameras in the area Vrbovsko/Bosiljevo.

There were a number of bears on the photos on both locations, and some of them probably were the ones that were collared before, which was decided by their appearance.

4.) In July 2017 all four cameras for photo and two for video surveillance were set-up along highway covering one jump-out ramp and wild-life crossing over highway.

The cameras remained on the positions until April 2019 with periodical check of photos captured and batteries to be changed.

All together several thousand photos have been taken and more than five hours of video of which only a small number with wildlife.

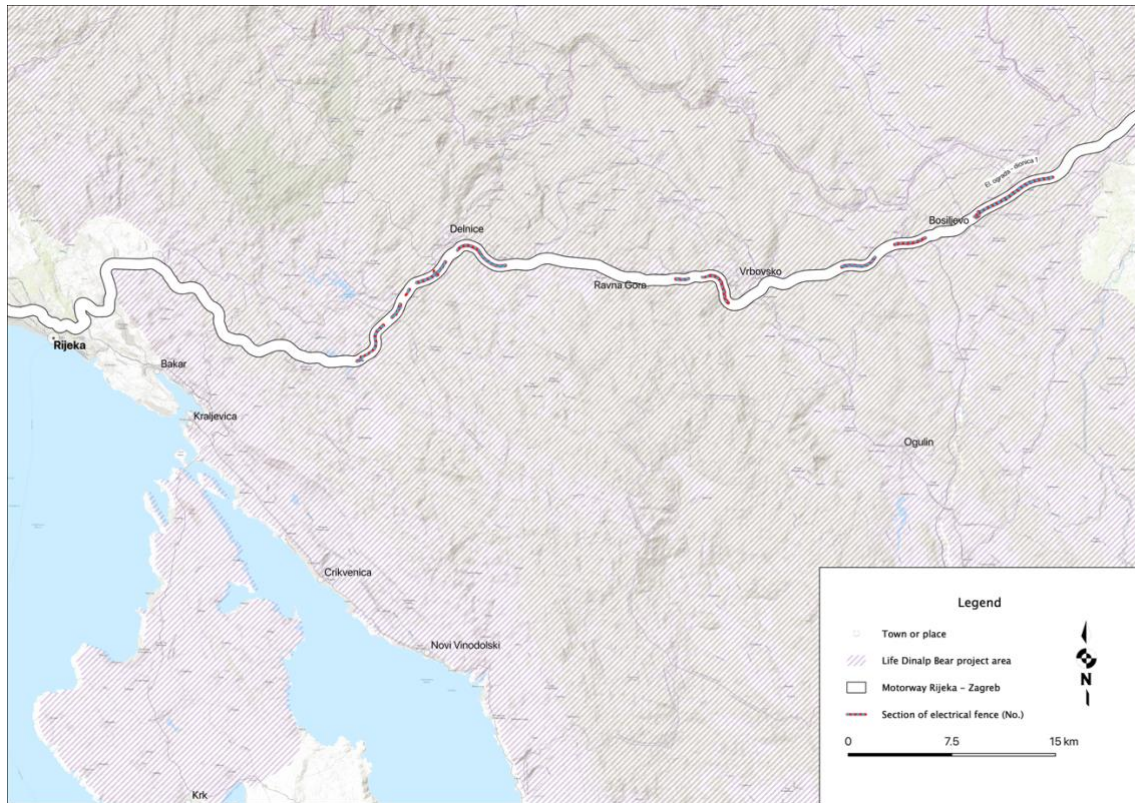


Figure 1 Map of the part of the Rijeka-Zagreb motorway within the Life Dinalp Bear project area

2.1.1 Green bridge “Dedin”



Figure 2 Brown bear crossing the green bridge Dedin



Figure 3

Figure 3. Various animals recorded crossing the green bridge Dedin

2.1.2 Jump-out ramp Ravna Gora

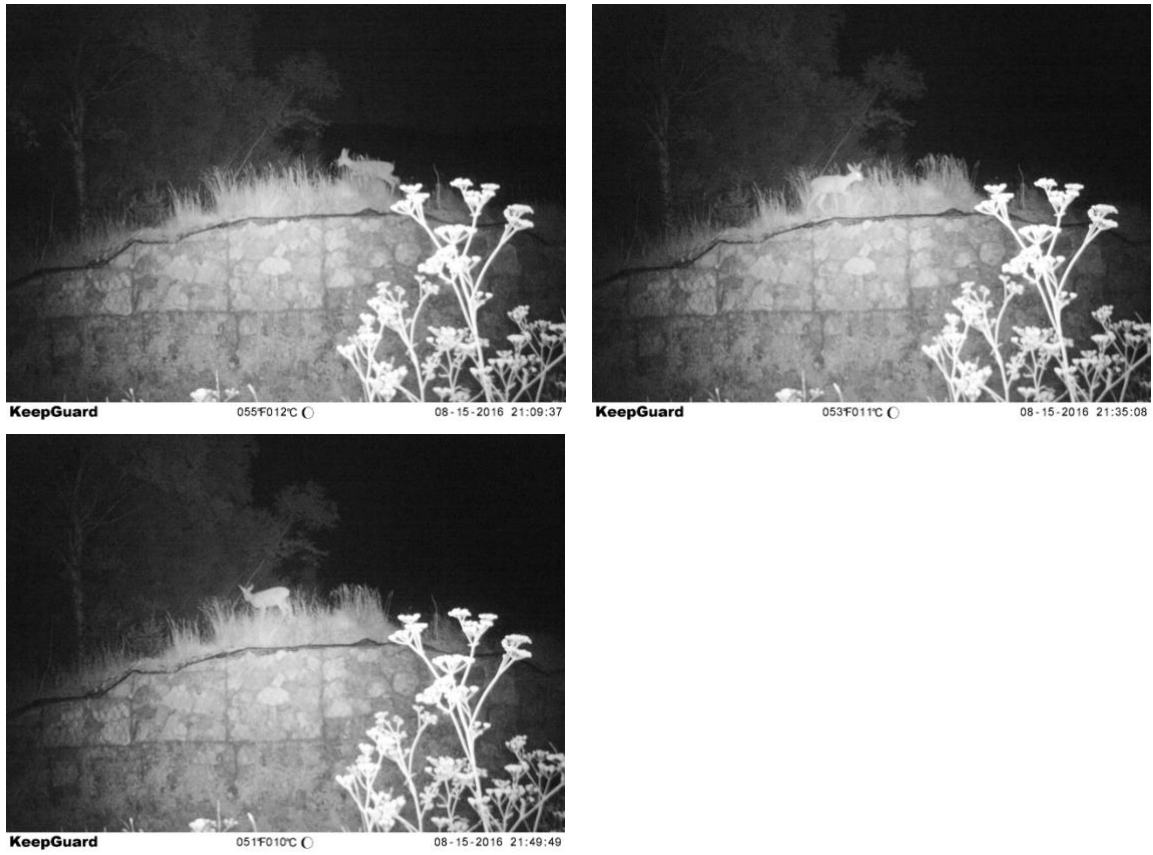


Figure 4. Roe deer using the jump-out ramp near Ravna Gora



Figure 5. Carnivores using the jump-out ramp near Ravna Gora

2.1.3 Vrbovsko area near the motorway



Figure 6 Brown bears (and wild boars) near the Rijeka – Zagreb motorway.



Figure 7 Brown bears at the feeding site near the motorway



Figure 8. Brown bears at the feeding site near the motorway



Figure 5



Figure 9. Brown bears at the feeding site near the motorway

3 Conclusion

Since the beginning of the LIFE Dinalp Bear project the number of bears have been pictured by several cameras in the woods near motorway and one was captured on the camera on the wildlife crossing Dedin over the highway. No bears have been captured near the electric fence placed along the highway.

It could be concluded that bears intensively use the habitat in the vicinity of the motorway. However, they use the available structures of the motorway and natural crossings as crossing paths in most cases (96%). The instalment of the electrical fence and other counter-measures prevented the most of unwanted situations when bears enter the enclosed area of the motorway. The work was done by ARZ and FVM.