LIFE SAFE-CROSSING

ACTION A4. ANALYSIS AND MAPPING OF EXISTING CROSSING STRUCTURES FOR POTENTIAL USE BY THE TARGET SPECIES AND OTHER INTERVENTIONS ON THE ROADS

ACTION REPORT December 2020

EXECUTIVE SUMMARY

LIFE SAFE CROSSING
PREVENTING ANIMAL-VEHICLE COLLISIONS

Life

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Introduction

The LIFE SAFE-CROSSING (LIFE17NAT/IT/464) project aims at implementing actions to reduce the impact of roads on some priority species in four European countries: Marsican brown bear (*Ursus arctos marsicanus*) and wolf (*Canis lupus*) in Italy, Iberian lynx (*Lynx pardinus*) in Spain, and Brown bear (*Ursus arctos*) in Greece and Romania. This will be done mainly through

- Installation of Animal-Vehicle Collision Prevention Systems on most critical road segments;
- Adaptation of crossing structures to enhance connectivity for the target species;
- Development of activities to increase the attention of drivers about the risk of collisions with the target species.

The action A4 was a preparatory action to define the type of interventions that will be implemented the Action C2.

The field activities started in March 2019 and lasted until September 2020. This report presents the activities carried out in the different project countries.

The specific objectives of the action were:

- Mapping the already existing crossing structures in the project area;
- Monitor the current use of the crossing structures by the target species;
- Select the crossing structures to be readapted, and define the interventions to be made in order to favor their use by the target species

The action was implemented in Italy (Abruzzo Lazio e Molise National Park, and Majella National Park), in Greece, in Romania and in Spain.

In Spain the action focused mainly on monitoring the selected road segments in order to measure the vegetation status on the road verges. In this country the activity related to the crossing structures was already carried out in previous LIFE projects, however, although if it was not foreseen, the use of the crossing structures was monitored in the selected roads of the project area.

In Terni Province the activity was not implemented because in the project area there are no crossing structures that could be suitable for wildlife crossing. The role of Terni Province in the LIFE SAFE-CROSSING project is mostly related for the demonstration in the functioning of the AVC PS due to the previous participation in the LIFE STRADE project.

Progress

Overall, in the project area 404 crossing structures were mapped and characterized: 149 in Greece, 127 in Romania, 87 in Majella National Park, and 41 in Abruzzo Lazio e Molise National Park.

The characterization of the crossing structures was made following the field form elaborated by the associated beneficiary Minuartia. In the frame of this action Minuartia produced the "Guidance and information on the procedures and criteria to be used for the assessment of the potential interventions to be realized in existing crossing structures" (https://life.safe-crossing.eu/admin/uploads/157636.pdf). This document was the basis to analyze, monitor and manage already existing crossing structures in order to favour their use by the wild animals and particularly target species.

All the data collected during the characterization phase were stored in a common database, and then transferred to the geodatabase of the project developed in the frame of Action A6.

The selection of the crossing structures to be monitored was made according to the following main factors:

- Location;
- Uses of the structure;
- Dimensions of the structure.

In the selection process an important role was played by the results of the A3 action (identification of AVC clusters, and telemetry clusters), as well as the already existing knowledge and data about the target species.

The monitoring of the use of the crossing structures was mainly carried out through the installation of camera traps, and where this was not possible due to various reasons, especially the high risk of thefts of the cameras, we recorded the tracks of the animals through specific field surveys. We recorded the passages of all the different wildlife species not only the ones targeted by the project.
In Greece a specific prototype was developed and used to monitor 45 crossing structures. This prototype allowed not only monitor the use of the underpasses but to store and process automatically the videos and photos collected. In one year more then 60000 videos and photos were analyzed.
In Romania 20 crossing structures were specifically monitored through camera traps, while in Majella National Park only 8 over the 35 structures classified as priority 1 and 2, (the structures suitable to be adapted for the target species in the frame of Action C2).
In Abruzzo Lazio e Molise National Park over the 7 crossing structures identified as adaptable for the Apennine brown bear 3 were intensively monitored by camera trapping.
In all the areas specific field surveys were carried out to detect the sign of presence of the target species.
Tracks detection was also the mean used to monitor the 17 crossing structures in the select road segments Andalusia (13 in Donana area and 4 in Sierra Morena).

In Andalusia the main activity carried out in the frame of the action was the monitoring of 6 road segments with a total length of 77,5 km in order to classify them in 3 categories according to the possibility for the drivers to detect an animal approaching the road. The categorization was made considering the distance of the vegetation on the ditches from the roadside.

In Romania the concrete interventions to increase the attractiveness and the use and of the selected crossing structures by brown bears have already started (Action C2). The main interventions carried were vegetation cutting and removing the obstacles blocking the entrance of the selected structures.

Evaluation
Overall the action was implemented successfully and no major problems were encountered.
The results obtained set the basis to implement the interventions foreseen in action C2, as well as to evaluate their effectiveness.
The huge amount of work done to characterize and monitor the use crossing structure was made following a standard approach and based on scientific criteria. The results obtained are extremely important not only for the target species, but for the biodiversity in general.
To conclude it's also important to underline that the results of this action, as well the one of Action C2, will be spread to the different road management authorities to favor their replication, because the adaption of the already crossing structures is a very important tool to reduce habitat fragmentation, and improve habitat connectivity for the large carnivores and at the same time is also important for driver safety.
Another extremely important result was the prototype developed by the Greek partner Cosmote to monitor the use of the underpasses that surely can be replicated in other countries. This innovative device allowed a very detailed and accurate statistical analysis of the characteristics and the parameters selected by the brown bear in the use of crossing structures. This was also possible because we used all the experiences gained in previous LIFE projects, therefore it's also a very good example to show the importance and the best use of this financial instrument for nature conservation.
The details of the activities carried out in the different project areas are presented separately in order to highlight what was done by the different project beneficiaries.