ABSTRACT

ACTION A3

The main goal of this activity (technical) report, is the identification of and spatial designation of sectors with high risk of human-bear conflicts. In order to achieve this goal we collected and processed data from four different categories in order to source the appropriate statistical tool that has been used for the identification of these sectors. Bear damage on farm production over the last decade, data obtained from interviews and questionnaire dissemination, telemetry data as well as incidents dealt by the Bear Emergency Team constituted the main data sources. These data were used to develop the statistical model “Hot Spot analysis - Geti-Ordis” in order to define, identify and map those sectors and evaluate the probability of human-bear conflict intensity within the project area. The overall data were homogenized and embedded in the relevant geo data base. The purpose of this processing was to detect in which field the information on conflict was present. For each of the above figures, the Gi Z score was calculated based on the value distribution and its spatial relationship (i.e. whether there is a repeat pattern). This value, after being normalized, resulted in the bear's conflict areas for each of the above values (corresponding to the different data categories). Subsequently, from the GiZ Score individual values, the mean was calculated, which is the final value of the Z Score, which shows the final association of human-bear conflict hazard location in the study area.

Two important sectors where the highest human-bear conflict intensity probability is expected were identified with the help of the model.

Road mortality and habitat fragmentation are two of the main cause of brown bear (Ursus arctos) was another aspect of human-bear conflict examined in the area. In order to have a better comprehension of this situation we conducted a field work (collect of bears’ evidences, camera trapping survey) to estimate the presence of bears near the roads in “Kleidi” sector and the frequency they cross it. Secondly, we worked on cartography to study the connectivity between two sub-populations of bear who is supposed to be the origin of the high number of collision with vehicles. To do this we developed 3 least “cost distance” models. They were used to visualize the localization of the most suitable biological corridor between the two sub populations in the highly roaded sector. Built with different resistance matrix, those 3 models confirm the two roads with high risk of collision are in the middle of the corridor. We used the telemetry data to validate this hypothesis.