

Brown bear connectivity in Bulgaria and the effect of the highways

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There are two bear sub-populations in Bulgaria which until recently were thought to be isolated – the Central Balkan (Stara Planina) and the Rila-Rhodopean. During a project in the frame of national bear management plan preparation (2005-2008), the current distribution and important connectivity areas for bears were identified and studied in attempt to understand better the threats and other issues for the species in the country. Additionally, an assessment of bear habitat suitability was done for the whole country by the means of inductive modelling, using Mahalanobis distance approach. This theoretical approach was combined with a detailed analysis of field data for the impact of transport infrastructure on the habitat fragmentation. Highways, although currently few in Bulgaria are found to be significant barriers for the free movements of the animals. Out of the two main highways, concerning the bear distribution in the country, Trakia highway being poorly equipped with structures suitable for bear crossing and wide enough habitat corridors leading to them, proved to have the major effect on the bear habitat fragmentation and thus – the two sub-populations isolation. After the accession of Bulgaria in the European Union, there is a pressure for prolongation of the current highways and building new ones (Struma highway), which will also have impact on the bear population connectivity. These highways routes were also analyzed in attempt to propose solutions for dealing with the barrier effect of the highways.