



Conference Abstract

Bat (Mammalia: Chiroptera) road casualties in the Kresna Gorge, Bulgaria

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Abstract

The Kresna Gorge is a biodiversity hotspot with high conservation value not only for Bulgaria, but the Balkan Peninsula. In the gorge region, many rare, endemic, and protected species and habitats are found (Hubenov 2012). Since the beginning of the 21st century, several road and highway projects have threatened the ecological prosperity of this area. Intensive chiropterological research in the last 25 years (beginning in 1993) has revealed that the Kresna Gorge is an area of great importance for bats, providing habitats for more than 50% of the 33 species present in Bulgaria (Petrov 2001). There is growing evidence that roads negatively affect bats' populations (Altringham and Kerth 2016). Theoretical studies have shown that in some situations, collisions might lead to population decline (see references in Altringham and Kerth 2016). Identifying parts of the road where bats experience collisions more frequently can have strong conservation implications. Between 2013 and 2016 we recorded roadkilled bats on a weekly basis, from March to October. We monitored a 16 km section of a high-traffic intensity road passing through the Kresna Gorge. We recorded 78 dead bats on the road, belonging to 10 species. During our survey, we recorded *Myotis brandtii* (Eversmann, 1845), a new species for the bat fauna of the Kresna Gorge. The presence of two species, *Nyctalus leisleri* (Kuhl, 1817) and *Miniopterus schreibersii* (Kuhl, 1817), previously with single or doubtful records, were confirmed. Statistically significant hotspots of roadkill were modelled using Getis-Ord Gi statistic. We identified five road stretches as hotspots for bat accidents. They are all relatively close to bridges, tunnel exits, and/or bat roosts. Our study adds new data on the bats' species

composition in the gorge, as well as it demonstrates that road elements in this section of the Pan-European Corridor IV concentrate and increase road accidents with bats.

Keywords

Chiroptera, roadkill, hotspots, species composition

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