

Monitoring the effects of the “Egnatia” highway (Section Siatista – Kastoria – Krystallopygi) on brown bears in northern Greece

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Vehicle collisions have become an important mortality factor for brown bears in Greece, where the species is considered to be endangered. Since 1998 when the environmental, non-governmental organization ARCTUROS recorded the first fatal vehicle collision, more than 50 such incidents that have cost the lives to more than 30 bears have been recorded mainly in northern Greece.

In 2002 ARCTUROS initiated coordinated efforts to study this new mortality source in Greece mainly by genetically tagging individuals and by using satellite telemetry to study local bear activity and habitat use patterns.

Following a successful 7-year study of the section of the “Egnatia” highway at the prefecture of Grevena (Karamanlidis et al. 2011), and with the logistic and financial support of VODAFONE, ARCTUROS initiated in 2009 efforts to monitor the effects of the “Egnatia” highway (Section Siatista – Kastoria – Krystallopygi) on the brown bear populations in the Prefectures of Kastoria and Kozani in northern Greece. This section of the “Egnatia” highway has become the most dangerous part of the national road-network for bears, as more than 10 individuals have been killed in collisions with vehicles in this area lately.

In the first year of the study two bears (named “Kastoria” and “Argos”) in the central part of the study area were fitted with satellite collars, while in 2011 another 5 animals (i.e., Christakis, Lampros, Tzeni, Thanasis, Aris) (Fig. 1) in the southern part of the study area were tagged - at the same time genetic monitoring efforts identified 40 different individuals. These research efforts were carried out concurrently with efforts to genetically monitor the species in Greece [i.e., the “Hellenic Bear Register” project, see also IBA News 17(2)] that indicate that this part of the “Egnatia” highway is the converging point of two genetically distinct populations: the “Pindos” population to the west of the highway and the “Vernon – Varnoundas” population to the east of the highway. Considering the importance of maintaining connectivity and enhancing gene flow between these two populations, a specific focus of the current research efforts was set on evaluating the suitability of the mitigation measures in place in meeting this goal. The telemetry data indicate that all bears in the southern

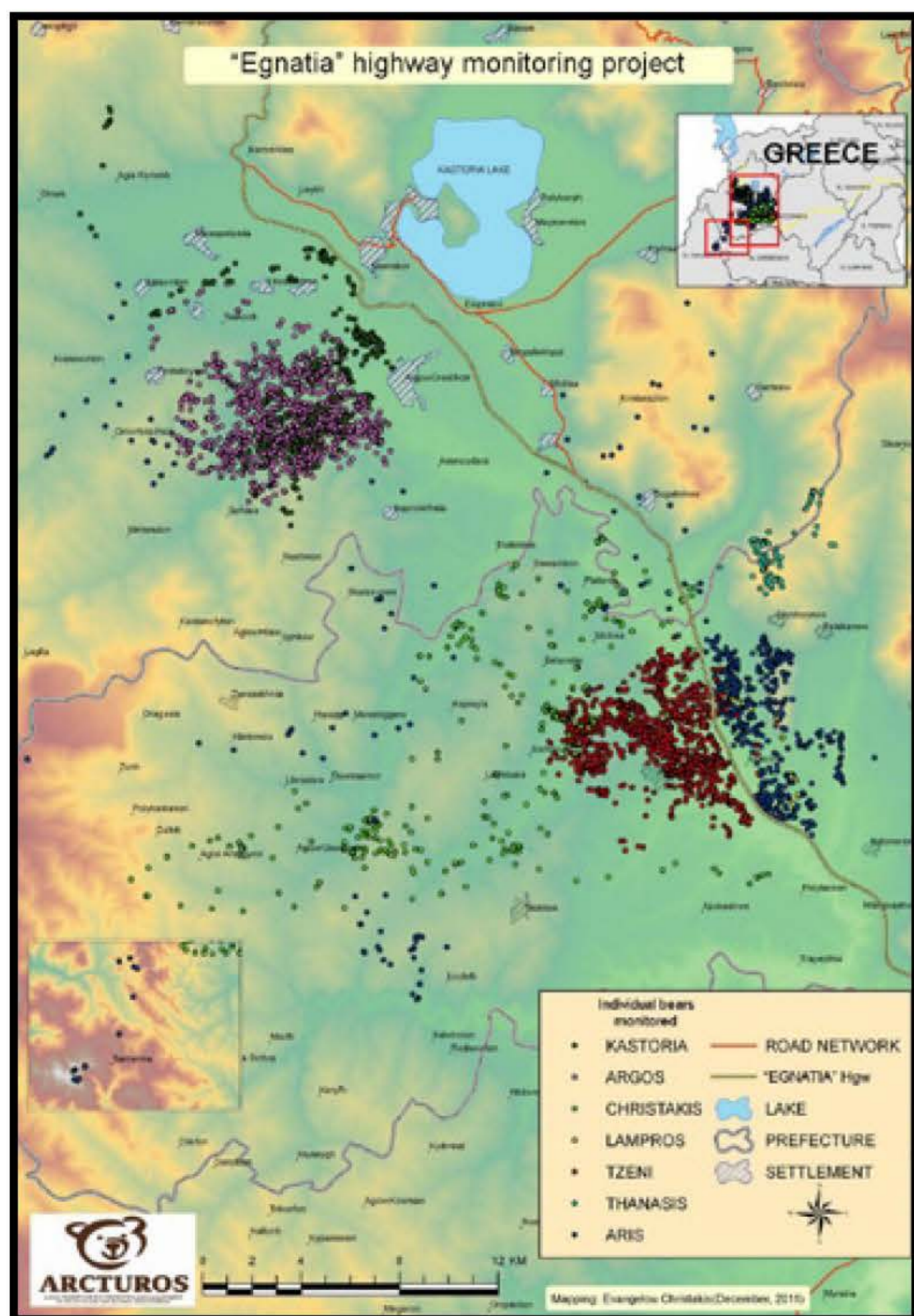


Fig. 1. Map of northern Greece, indicating the alignment of the Egnatia highway (Section Siatista – Krystallopygi) and the GPS positions recorded from seven bears fitted with GSM collars.

part of the study area crossed the highway alignment several times – it is not clear however if this was done by using the mitigation structures in place (Note: as the highway was built prior to the widespread presence of bears in the area, the mitigation structures are not specifically designed for large carnivores) or by simply climbing over the fence and crossing the highway. There is ample proof of both!

Fact remains however that this part of the “Egnatia” highway remains a deadly spot for bears in the region – this was highlighted in the most tragic way in May 2011, when a male bear tagged by the team of ARCTUROS was killed in a car accident while trying to cross the highway – in October an adult female bear was also killed. In view of the urgency of the situation ARCTUROS has drafted management recommendations towards Egnatia Odos S.A. and the relevant state authorities – based also on the results of this study urgent efforts are currently underway so that the “bear-proof” enclosure fence at the sides of the highway is completed as soon as possible.

In the final year of the study in 2012 - 2013, research efforts will focus at the northern part of the highway that has not been constructed yet. At the same time ARCTUROS will intensify efforts to increase public awareness concerning this problem, by educating the general public and the relevant state authorities. Within the framework of these activities ARCTUROS held the first scientific conference on this issue in the country – in September 2011 attendants from more than 20 different countries of the Annual Infra Eco Network (IENE) conference at the town of Kastoria in northern Greece had the opportunity to present to the Greek audience how similar problems are solved in other parts of the world. Finally, considering the results of the genetic monitoring efforts of the species in the country that indicate that bear – vehicle collisions affect less than 2% of the minimum population estimate for the species in the country, ARCTUROS intends to engage national and international experts in an evaluation of this mortality factor as a conservation threat to the survival of the species in the country.

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