

Paving a New Way for Brown Bears in Greece



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In a land tormented by historical and social changes, one monument has overcome history's adversities and become a trademark of continuity in the region. The Via Egnatia, one of Rome's first imperial roads, was initially destined to connect the Adriatic with the Aegean provinces of the empire. Based on a pre-Roman route, this ancient highway was constructed in the 2nd century B.C. and named after its builder, Roman proconsul Gnaeus Egnatius. Gaining importance, the highway was extended to reach Constantinople, capital of the Byzantine empire. Until the 16th century the road was a major trade route and important in the history of the Balkans.

Today, Via Egnatia is regaining prominence with the construction of a new, modern Egnatia connecting the western and eastern parts of Greece and serving as a trade route between the European Union (EU), through Italy and Greece, and the Orient. With funds allocated by the EU and Hellenic Government, the modern Egnatia is a 680 km long and 24.5 m wide, making it one of the largest construction projects in Europe. At its completion, the highway will connect Greece with all neighboring countries and serve five ports, six airports and 36% of the country's total population.

Following eight years of pressure from and tough negotiations with environmental NGOs including

Arcturos, the manager of the project, Egnatia Odos A. E. and the state authorities finally acknowledged the cultural, sociological but mostly ecological impacts of such a large-scale undertaking.

After a 1997 Council of the State verdict requiring the least environmentally costly alignment of the highway (especially in bear habitat), Egnatia Odos A.E. completed a new EIA (Environmental Impact Assessment) study for the most compromising (for the wildlife) segments of the highway, mainly the portion crossing the Pindus range. The EIA and new alignment incorporated the principles of environmental management and sustainable development, thus introducing a new concept and strategy in the construction of roads in Greece. One of the main concerns of this study has been to minimize negative impacts of the construction of the highway on the wildlife of Greece.

Throughout its course in northern Greece, the highway crosses the Pindus mountain range, one of the last strongholds of the brown bear (*Ursus arctos*) in the southern Balkans. Only 160 bears remain in Greece. Because of fears that the road might have a negative impact on the habitat, population structure and movement patterns of the Pindus brown bear population, Egnatia Odos A.E. has incorporated mitigation measures in the new alignment to prevent possible negative effects. Over a distance of 34 km in the main brown bear habitat, the new alignment includes the construction of tunnels, wildlife passages and bridges that will prevent serious habitat destruction and population fragmen-

tation. Additional mitigation measures include a ban on hunting in the area, the construction of noise barriers, fencing and appropriate ecological landscaping of areas affected by the construction of the highway.

As required by the EIA, a special research project has been set-up and launched in cooperation with Arcturos. The aim of this project is to monitor and assess the highway's impact on big mammals and their habitats. This project is being conducted in cooperation with two NGOs, two forest services and two universities and will include highway pre-construction, construction and operation. The first phase of the project (2003-2005) has a budget of 880,400 euros and is financed by Egnatia Odos S.A. and the EU.

October 2002 marked the beginning of monitoring and evaluating current conditions. Arcturos, a leading Greek conservation NGO, and scientific consultant to Egnatia Odos A.E. during the project, has been appointed the task of monitoring the brown bear and wolf populations. Another team from the University of Thessalia (Laboratory of Wildlife) is focusing on the ungulate species and a team of ornithologists from the NGO, Hellenic Ornithological Society, will monitor the flag bird species.

Fieldwork in 2002 and the beginning of 2003 has focused on gathering bioindicator data as well as the preparation of GIS maps.