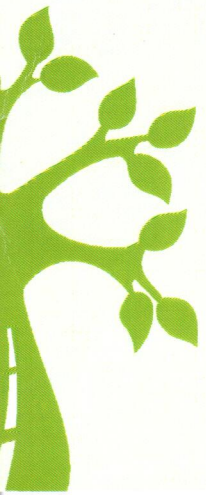
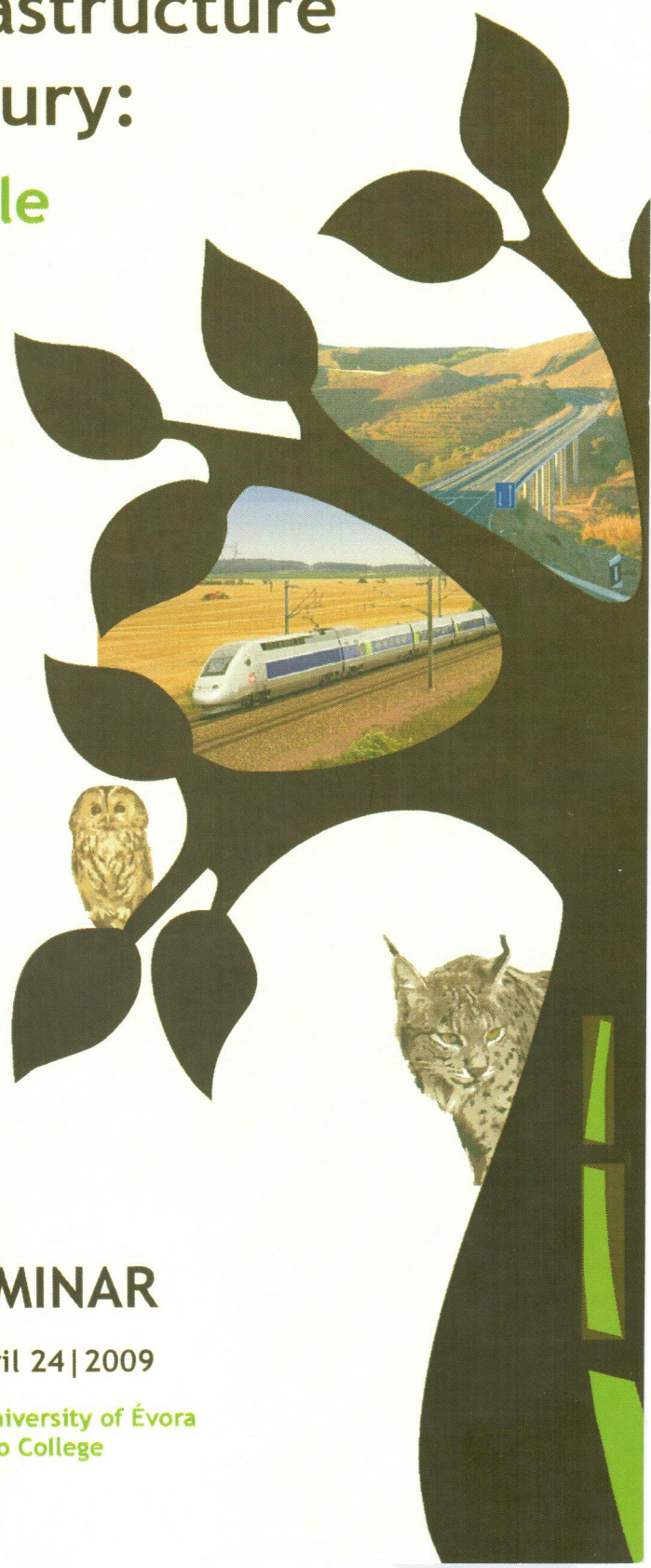


Infra Eco Network Europe

Transport infrastructure of the 21st century:

connecting people
and wildlife

Abstracts



IENE SEMINAR

Open Day | April 24 | 2009

Auditorium of the University of Évora
Espírito Santo College

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IENE
Infra Eco Network Europe

Transport Infrastructure of the 21st Century: Connecting People and Wildlife

IENE OPEN DAY
ÉVORA, PORTUGAL, APRIL 24th, 2009

Over the last decades the number and extension of linear transport infrastructures (roads, motorways, railways and navigation water channels) has increased exponentially in Europe and worldwide. The impacts of these structures on wildlife have risen concomitantly, and the barrier effect to animal movements and fauna roadkills are of particular concern. The awareness of this problem lead to the implementation of different types of measures, aiming to mitigate the impacts of transportation projects on the environment. Road planners, decision makers, technicians and researchers are now working together towards the implementation of a sustainable transport network, compatible with the new millennium goals of biodiversity conservation, coupled with satisfaction of main social demands. However, in spite of the growing sustainability of the transport network, many questions concerning the real impacts of this network on species and communities, wildlife population dynamics and long-term viability, individual space use and movements, efficacy of mitigation measures, and compatibility between social and wildlife use of some infrastructures still need to be addressed. This seminar aims to contribute to the implementation of the main IENE targets: the conservation of biodiversity coupled with the promotion of a safer and more sustainable pan-European transport network.

For more information about the IENE network, please visit the following webpage:

www.iene.info

Program

- 08:30 am Reception of participants
- 09:15 am Opening session
- 09:30 am **IENE, background and future** - *Bjorn Iuell*, chairman of the IENE Interim Steering Committee; Norwegian Public Roads Administrations. Norway
- 09:50 am **Towards a better treatment of landscape fragmentation in transport infrastructure management.** *Andreas Seiler*. SLU, Department of Ecology. and *J.O. Helldin* SLU, Swedish Biodiversity Center. Sweden.
- 10:10 am **The Dutch long term defragmentation program.** *Hans Bekker*. Centre for Traffic and Navigation. The Netherlands
- 10:30 am **Defragmentation in Germany - combining measures to overcome barrier effects of the transportation network with measures to establish a functional large scale ecological network.** *Marita Böttcher*. German Federal Agency of Nature Conservation and *Heinrich Reck*. University of Kiel, Ecology Centre. Germany
- 10:50 *Coffee/tea break*
- 11:20 am **The MOVE Project - Studying the effects of roads on wildlife.** *António Mira*. Univ. of Évora. Conservation Biology Unit; Mediterranean Ecosystems and Landscapes Group, ICAAM. Portugal
- 11:40 am **Spatial and temporal patterns of road effects on Mediterranean carnivores.** *Clara Grilo*. *Road Ecology Working Group*. Fac. Sciences of Lisbon. Portugal
- 12:00 pm **Wolf monitoring in the mountain corridor Marão/Alvão/ Padrela: 4 years after the construction of the A24 and A7 highways.** *Gonçalo Costa*. Grupo Lobo (Wolf Group). Portugal
- 12:20 pm General Discussion
- 01:00 pm *Lunch Break*
- 02:30 pm **Ungulate vehicle collisions. measures for the mitigation of the conflict in existing roads.** *Carme Rosell*. MINUARTIA. Estudis Ambientals. Departament de Biologia Animal, Universitat de Barcelona. Spain
- 02:50 pm **The need for monitoring. Guidelines for monitoring the impacts and efficacy of mitigation measures.** *Edgar van der Grift*. Alterra, Wageningen University Research Centre. The Netherlands
- 03:10 pm **Monitoring of environmental effects of transport infrastructure and efficacy of mitigation measures: Poland as a case study.** *Sabina Nowak*. Association for Nature „Wolf”. Poland
- 03:30 pm **Road impacts on Biodiversity: Roads of Portugal (EP) actions to avoid, minimize and monitor.** *Graça Garcia*. Estradas de Portugal (Roads of Portugal), SA. Portugal.
- 03:50 pm *Coffee/tea break*
- 04:20 pm **The High Speed Line and the Biodiversity. Case Study: Great and Little Bustard.** *Marisa Lamego*. RAVE – Rede de Alta Velocidade (High Velocity Train). Portugal
- 04:40 pm **Business and Biodiversity. Brisa approach to conservation.** *António Sousa*. Brisa, Auto-Estradas de Portugal (Motorways of Portugal). Portugal
- 05:00 pm **Transport infrastructure and Nature Conservation: guidelines for impact minimization.** *Margarida Fernandes*. Institute for Conservation of Nature and Biodiversity. Portugal.
- 05:20 pm General discussion
- 06:00 pm Conclusions and Closing session

The MOVE project Studying the effects of roads on wildlife

António Mira

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Keywords: Road impacts, wildlife, monitoring, roadkills, barrier effect, fragmentation, population parameters, Mediterranean ecosystems, Portugal

The MOVE project begun in December 2004 among a research program of the Road Ecology team of the University of Évora (UE). The project which has a strong link to the UE Masters in Conservation Biology intends to strengthen the connections among Research, Education and Road Management in practice. The overall goal is to get scientifically sound information that will help to improve the effectiveness of mitigation measures and monitoring programs. We want to MOVE FORWARD towards the implementation of a modern and sustainable road network where People and wildlife can share the same environment without severe constraints to their movements or risks for their lives.

From the scientific point of view, the main aims are: i) to quantify roadkills, road-permeability and road disturbance effects on species abundance and richness, population parameters (density, survival, recruitment) and space use and movements; ii) to evaluate the role of road verges as refuges and/or corridors for small vertebrate fauna (and implications for predator roadkills); and iii) to test field and analytical methodologies for surveying and monitoring impacts of roads on fauna. The project focuses on terrestrial vertebrates and is structured on several subprojects defined on the basis of the previous goals and on the selection of target species or groups particularly suitable for each study, as follows: (a) quantification of road fatalities and determination of environmental factors that promote roadkill hotspots (all species); (b) evaluation of permeability and road influence on space use and movements (carnivores, bats, small mammals); (c) Description of road effects on species abundance and population dynamics (carnivores, rabbits, small mammals, owls, passerines and amphibians).

Common and widespread species, for which data can be easily acquired in the field, have been used to model and evaluate broad road effects on wildlife. However, particular attention has been given for threaten, rare or declining species/groups which are the subject of unique case studies. These include bats, to evaluate the relationship between space use and road mortality; the Cabrera vole, to assess the role of road verges as corridors and refuges for small fauna and the impact of roadkills on small size populations; owls, to analyse long term population trends in high road density areas; and the European polecat and otter, to weight up relationships among abundance, culvert use, roadkills and space use.

Concerning methodologies, the probability of detection of carcasses on the road and the adjustment of time interval between roadkill surveys in order to obtain realist estimates of mortality, are two major areas of research. Several methods of monitoring passage/culvert use, including records of footprints on layers of marble dust, video and photographic records and genetic fingerprinting are being evaluated.

An entire year of diary roadkill surveys in a ≈37 km road stretch revealed a high total mortality rate (120.6 animals/km/year) when compared with the results of other studies. Culvert monitoring results have shown that all carnivores species use these structures to cross roads. However, the use is not proportional to species abundances. Rarer species, such as the European polecat, present a poor culvert use and simultaneously have higher roadkill rates than expected. The presentation, besides showing preliminary results of the different subprojects, will focus on these issues and also on methodological questions concerning monitoring roadkills and road permeability.

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