# IENE 2010 international conference

## Improving connections in a changing environment

*by Andreas Seiler*

We live in a changing environment, we always have! But the pace of change is probably unprecedented and its cause can likely be attributed to a single species alone - us. We are quickly approaching our planetary boundaries, but at the brink of a global climate change and in the aftermath of extensive industrial pollution, habitat destruction and species extinctions, that characterised the past decennium, our concern for Nature has probably never been greater than now, during 2010, the International Year of Biodiversity.

The transport sector plays a significant role in this process! Besides the overwhelming CO2 emission and the gulpy consumption of non-renewable resources, traffic and transport facilities affect our environment to a much greater extent than what is obvious at first sight, and is dealt with in standard EIA procedures.

Every year, billions of animals are killed on roads and railways across Europe. Traffic noise and exhaust toxins pollute and degrade habitat quality far into the adjacent landscape, while the physical imprint disrupts ecological and cultural linkages and create division lines that disintegrate natural and human living spaces alike. However, we need to look at the broader picture to fully grasp the extent of the actual impact. It is then we see a growing fragmentation of entire landscapes into smaller and more isolated patches of often lesser quality. These patches may, eventually, no longer support viable populations of their own and wildlife will increasingly depend on its ability to move across the patchwork. To protect biodiversity, we must hence safeguard and improve connections in this changing environment.

This requires i) a large-scale development of ecological transportation and habitat networks, and ii) more permeable human transport corridors that provide safe passage for both animal and human travelers.

It is in this dualism, I believe, that the key lies to a successful defragmentation of landscapes. And it is this dualism that is in the focus of the 2010 IENE conference.

During the next days, we will learn about new approaches to integrate ecological concern into the plans and policies of the transport sector; how to work with defragmentation programs, and to assess and evaluate critical fragmentation levels. We will see extensive evidence for the actual barrier effect of roads and railroads on wildlife; the death toll of traffic and its disturbance effects, but also learn about the potential of verge habitats as a refuge to rare and

endangered species. We will further see how ecological networks can be developed and used as a tool in defragmentation programs.

Yet, to accomplish defragmentation, we must employ adequate technical measures that effectively mitigate the physical severance, disturbance effect and mortality, all of which contribute to the barrier effect of transport infrastructure. We will learn from case studies around the globe about the significance of passage design, dimension and embedding in the surrounding landscape. We will hear how automated warning systems can be used to defuse accident hotspots and restore connectivity for wildlife.

Indeed, there is comprehensive practical experience and knowledge on such matters, but what does it help if it is not communicated and shared? The whole idea with IENE is to provide a forum for exchange and collaboration - not only among scientists, but rather between science and practice. As such, the conference hosts a number of open workshops, among which there is e.g. the meeting of the CEDR task force on Wildlife and Traffic.

In the name of IENE, I am very grateful for the broad interest that the conference has received so far. I am honoured by the presence of our plenary speakers from Japan, Canada, and the US and heartily welcome all participants from outside Europe who help us show that improving ecological connections in our changing environment is a global responsibility.

On behalf of the 2010 IENE programme committee,

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