Some remarks concerning International Scientific Technical Conference 'Influence of Transport Infrastructure on Nature', September 13-15, 2006, Poznań, Poland

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1. Putting transport infrastructure into a broader frame of sustainability

Railways and roads are two most important types of transport infrastructure on land. These two modes of transportation often complement each other but in many cases may be substitutive and/or compete with each other. Railway transportation is recognised as more environmentally friendly due to lower levels of gas emissions (Facanha & Horvath 2006). Studies explicitly contrasting environmental effects of two main modes of land transportation at regional scale are rather uncommon (e.g. Wacker & Schmid 2002). It is highly desirable that also the influence of railway versus road infrastructure and traffic on nature i.e. species, communities and ecosystems will be addressed by future studies. It would provide decision-makers with additional dimension in assessment of different scenarios of regional development.

2. Call for a more rigorous research addressing effects of transport infrastructure on nature

Research examining the effects of transport infrastructure on nature is a potential source of very important information for decision-makers, planners and environmental consultancy. Therefore, it is highly desirable that quality of this applied research correspond well with international standards set by modern science. In studies assessing the environmental impacts the scientific scrutiny often demands application of advanced methods to account for the complexity of studied systems (Mapstone 1995). The papers presented at the conference ranged from cases with anecdotal observations through descriptive studies to more advanced research examining predictive models. Overall impressions from the conference is that standards for making research addressing the effects of transport infrastructure on nature are set rather low in comparison with investigations dealing with other environmental impacts of anthropogenic origin (e.g. deforestation). In particular, the assessment of different mitigation and compensation measures needs well-designed and repeatable studies that may provide us knowledge regarding good solutions for different regional or local settings. Here, for instance, stringent behavioural studies on affected species would be very desirable. We have to make decisions on evidence-based research and not on common beliefs!

3. Effects of transport infrastructure in international perspective

The European continent encompasses large number of relatively small countries. Therefore, many environmental initiatives and activities are of pan-European character to account for the spatial extent of natural and antropogenic processes (e.g. Tillman 2005). Several papers presented on the conference dealt with impact of highways on large carnivores. In several instances, the isolation of the problem to just one country appeared to be insufficient since both the international highways and population processes of the studied species covered entire regions. In these cases, a more suitable approach would include trans-boundary analyses with several neighbouring countries. This would allow for integrated, regional management of environmental issues and facilitate international exchange and mutual learning.

4. Towards optimal and robust decisions

Our quest for ecological sustainability demands that its different components are balanced to achieve the most desirable result. In biodiversity conservation, several methods have been developed to deal with complexity of this issue (e.g. Pressey & Taffs 2001). The successful mitigation and compensation measures counteracting the negative effects of transport infrastructure on ecological sustainability are usually very expensive, Therefore, it is important to perform rigorous cost-benefit analyses that allow us to select the optimal or near-optimal solutions both from ecological and economical perspective. These analyses should include the uncertainty assessment in order to secure the most robust decisions.

References

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