A CONCEPTUAL MODEL OF TRANSPORTATION IMPACTS AS A COMMUNICATION AND PLANNING TOOL

Jan Olof Helldin[1], Malin Andersson[3], Marie Johnsson[3], Tommy Lennartsson[2], Mats Lindqvist[3], Ulrika Lundin[3], Martin Olgemar[3], Ida Schönfeldt[3], Andreas Seiler[2], Anders Sjölund[3] & Henrik Wahlman[3]

The problem

Transportation entails a number of qualitatively different impacts on nature and biodiversity.

The research conducted so far has not provided a uniform description of the different impacts, and has therefore not been able to point out what questions are the most crucial or urgent to address.

This lack of scientific foundation for prioritizing among different types of mitigation efforts has restricted the efforts overall (at least in Sweden). At present, mitigation of negative impacts lags behind in relation to what should or could be done, and the efforts conducted does not reach their full potential.

Our task

We took on the task to develop a conceptual model that embraces all impacts of transport infrastructure on biodiversity.

The model

- A polar diagramme with main aspects on the axes (see right)
- For each aspect, the long-term vision, strategic goal, present state and any legal requirement is specified

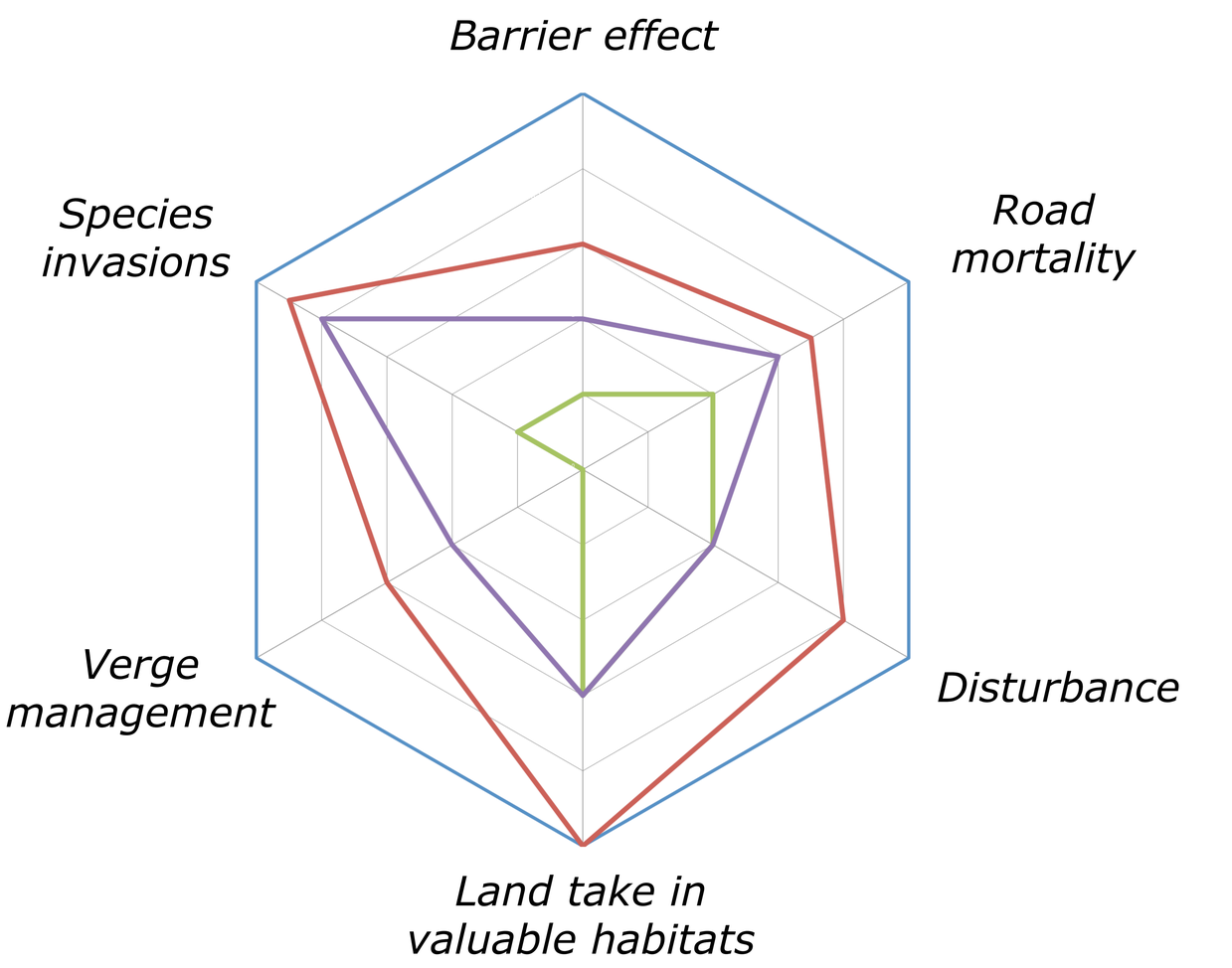
Benefits of our approach

- The model structures the complex impacts into comprehensible pieces
- The discrepancy between present state and a desired state is identified for each type of impact
- The ecological sustainability of the transport infrastructure is given at-a-glance (can even be described in one value)
- Enables comparing the ecological performance between management units, geographical regions, projects etc.

Conclusions, so far

- The model is an effective aid for strategic planning up to the highest levels
- This simplified illustration may facilitate communication with decision makers and the general public
- The model can clearly not cover the full array of impacts, but we believe that we have found a reasonable trade-off between rigour and accessibility
- The model development *per se* has provided a forum for in-depth interdisciplinary discussion that is on its way to create a consensus between scientists and practitioners

Draft example:



We brought this model to ICOET for discussion!

- What to measure? = What units to put on the axes?
- What are actually our visions, and can these be quantified?
- Can the minimum level of sustainability be defined in the model?
- Would you rather propose another concept?
- Or are such simplified models not the right way forward?

Bios
[1] senior researcher and environmental consultant at Calluna AB, Stockholm, Sweden
[2] senior researcher at the Swedish University of Agricultural Sciences (SLU)
[3] environmental specialists at the Swedish Transport Administration

Corresponding authors
J.O. Helldin j-o.helldin@calluna.se , Andreas Seiler seiler@wildlifeandtraffic.se

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