Wildlife corridors

Development of green infrastructure for viable populations of target species

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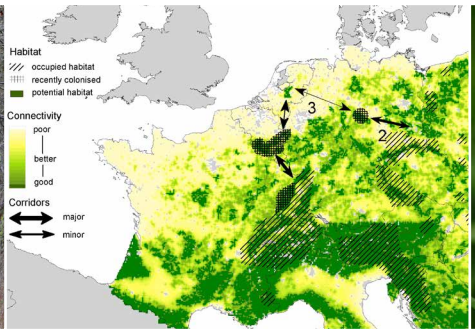

"The only way to save a rhinoceros is to save the environment in which it lives, because there's a mutual dependency between it and millions of other species."

David Attenborough, English broadcaster and naturalist

Ecological Networks

Our present-day landscapes are highly fragmented due to land use change, habitat loss, urban expansion and infrastructure development. As a result, biodiversity has declined generally, and some of our most striking and attractive wildlife species have disappeared from our landscapes. 'Green Infrastructure' is a strong and easily communicated concept that appeals to the general public and policy-makers and which links protected areas through corridors or 'Ecological Networks'. Within a coherent ecological network, corridors are critical for species migration and dispersal. Certain species, like large carnivores and herbivores, require corridors at an (inter) national scale for their long-term survival.

The establishment of green infrastructure comprising ecological networks and wildlife corridors can reverse landscape fragmentation and can also provide a strong platform for community and stakeholder involvement in the design, location and future management of the ecological networks.

Nature Based Solutions from Wageningen

Wageningen University & Research is a frontrunner in ecological innovation and in finding nature based solutions to environmental problems. It applies leading edge and up-to-date tools and expertise, often in a participatory setting. Landscapes can be mosaic of primary and secondary forests, agricultural land, roads and urban area. A tool to analyse the fragmentation of the landscape is the Spatial Planning Model LARCH. LARCH is an assessment tool which can evaluate the potential for biodiversity in different scenario's. Species' habitat is analysed based on vegetation or land use maps. The results of LARCH can be used in interactive processes with stakeholders such as planners, farmers or local communities. This approach is supported by our use of advanced (radar) remote sensing technology that is accurate enough to identify individual trees through cloud cover.

Examples from our track record

- WUR was centrally involved in the Pan European Ecological Network (PEEN) that was published in the form of maps showing the corridors and flyways of the European continent. A participatory approach was used in order to develop and implement green infrastructure projects for key species like the European Lynx and the Brown Bear in Bulgaria, Slovenia, Croatia, Bosnia-Herzegovina, Serbia and Italy. These programmes have been taken up in policy and practice at European level and within individual countries.
- WUR had a key role in the realization of the national nature network of The Netherlands, which has become a model for the EU Natura2000 network.
- Outside Europe we solved land use conflicts through development of transboundary wildlife corridors between Botswana, Namibia and Zimbabwe. We also developed ecological networks on small tropical islands in the Caribbean.

Challenges

- Maintain biodiversity in (sometimes highly fragmented) landscapes
- Integrate ecological needs and Green Infrastructures in spatial planning
- Realize ecological networks for key species, which ensure viable other species populations
- Protection of ecological networks with the help of radar remote sensing technology

Take-aways

- Integrated landscape planning
- Possible participation of local communities
- Action to reduce landscape fragmentation
- (Inter)national ecological network
- Assessment of the viability of species populations per network scenario
- Use of radar remote sensing technology to regularly monitor forest cover change

Contact
For more information, please contact:
Wageningen Environmental Research

René Henkens
P.O. Box 47
6700 AA Wageningen
The Netherlands
+31 (0)317 48 49 92
rene.henkens@wur.nl

Nature-based solutions for a greener world