CRITICAL PLACES IDENTIFIED WITHIN WILDLIFE CORRIDORS OF THE BESKYDY PILOT AREA AND PROPOSED MITIGATION MEASURES

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**Pilot areas**

- **Beskydy** (Czech Republic, Slovakia)
- **Miskolc – Košice – Uzhgorod** (Hungary, Slovakia, Ukraine)
- **Tîrgu Mureș – Iași** (Romania)
- **Arad (Radna) – Deva** (Romania)
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• border area between CZ and SK in the neighborhood of PL
• 846 180 ha in total, 59% (501 365 ha) in CZ + 41% (344 814 ha) in SK
• The core area is mountainous; the rest are highlands and lowlands with altitude ranges between 220 m and 1709 m a. s. l.

Czech part of the pilot area “Beskydy” - large and diverse territory, with two main zones
• mountainous core area, with a regular or an occasional occurrence of all three large carnivores, formed by the Moravskoslezské Beskydy Mts. and neighboring mountain ranges
• outer zone - hilly lands and graben in the foothills of mountainous area ; which serves as a buffer that have to be overcome by dispersing animals migrating towards the NW to the Oderské hills and the Jeseníky Mts.
Threats to biodiversity:

- urban sprawl,
- rapid development of transport infrastructure
- recreation activities
- other barriers such as fenced pastures

Fragmentation:

- linear transport infrastructure coupled in the valleys
- fences being built around motorways
- technically modified watercourses and urban sprawl

✓ continuous barriers in the landscape in a length for even tens of kilometers.
Kysuce - Beskydy pilot area

Legend
- Pilot area
- State border
- Built-up area
- Larger settlements
- Watercourses

Nature protected areas
- Natura 2000 - SCI sites
- Natura 2000 - SPA sites
- National Park
- Protected Landscape Area
- Protected zone of NP/PLA
- Natural Park (CZ)
- Small-scale protected areas
- Ramsar sites

Transport infrastructure
- Motorways
- Expressways
- 1st class roads
- 2nd and 3rd class roads (selected)
- Railways
- Planned infrastructure

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Main criteria for identification of critical places:

- The absence of urbanization on transition area with a sufficient width in the urbanized landscape, taking into account the needs of large carnivores.
- Citation of the site in the literature, or in documentation of nature conservancy, and especially in documentation of Regional Territorial Systems of Ecological Stability.
- Documented translocations or collisions of large carnivores on transport infrastructure.
- Threats of the site according to a possible planned or unplanned "illegal" urbanization.
Summary of critical sites

Identified critical places in the whole model area- 24:

<table>
<thead>
<tr>
<th>CZ</th>
<th>SK</th>
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</thead>
<tbody>
<tr>
<td><strong>PLA Beskydy</strong></td>
<td><strong>PLA Kysuce</strong></td>
</tr>
<tr>
<td>5. Lidečko</td>
<td>5. Povina</td>
</tr>
<tr>
<td>7. Zubří</td>
<td></td>
</tr>
<tr>
<td>8. Trojanovice</td>
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<tr>
<td>9. Hostašovice</td>
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CP1: Mosty u Jabl.

Barriers:

- road I/11 (E-75), II/474
- rail: Mosty u Jablunkova - Čadca (TEN-T)
- the former customs house
- gas station

Crossborder corridor

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CP1: Mosty u Jabl.

Measure:

- Ecoduct over I/11 in critical place of corridor – cooperation with Slovaks

First visualization of ecoduct (source: Road and Motorway Administration, 2018)
General measures proposed in various corridors (where fit into place):

- road verges management – cut trees to make the verge more open (avoid unexpected wildlife intrusion on the road)
- install the traffic signs “Beware of wildlife” in the forested section of the roads
- if the major road will be fenced, new mitigation measures (overpass/underpass) has to be considered to maintain the permeability of the area
Proposed measures

General measures proposed in various corridors (where fit into place):

• install artificial deterrents - light reflectors
• introduce/agree on obligatory night use of warning horn by trains passing forested section on the Slovak side of the border
• avoid building of another linear infrastructure;
• beware of further house development / fencing the area
Case study: Hostašovice
Case study: Hostašovice

Barriers:

- road I/57
- railway: Val.Mez – Veřovice (regio)
- ammunition warehouse
• mobile automatic traffic counters -> gaps between vehicles
• time range: continuous 168 hours / consisted of 5 working days, one Saturday and one Sunday
• four gap classes defined with only gaps longer than 45 sec. were considered as permeable time. More details on methodology see Dostál et al. (2018).


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Variation of traffic

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Permeability during day

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Traffic mortality

Identified corridor
Biotope of Selected Wildlife Species
First Class Road
Railway in operation

Recorded road-kill by animal group
- Birds
- Small mammals
- Semi-aquatic mammals
- Squirrel

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Snow tracking

Identified corridor
Biotope of Selected Wildlife Species
First Class Road
Railway in operation

Animal
○ Hare
● Fox
● Roe Deer

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Measures:

• road verges management – cut trees to make the verge more open (to avoid unexpected wildlife intrusion on the road);
• install artificial deterrents - light reflectors next to the road I/57;
• avoid house development/complete fencing of the area;
• if road I/57 will be fenced, new mitigation measures (overpass/underpass) has to be considered to maintain the permeability of the area.
• ecological corridors and landscape permeability for wildlife was underestimated for many decades
• planning requirements are not always strictly followed
• few remaining possibilities for large mammals’ migration and
  these
• these are at risk to be interrupted by construction of a new
  infrastructure or other anthropogenic development
Thanks for attention

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