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Danube Transnational Programme
SaveGREEN

Wildlife and Traffic in the Czech Republic

methodologies and guidelines to solve habitat fragmentation caused by traffic

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Project co-funded by European Union funds (ERDF)

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Introduction

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The Czech Republic is a country with a high density of transport infrastructure. However, compared to Western European countries the motorway network is not complete yet and further development is expected.

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History

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As the negative impacts of transport on nature, including habitat fragmentation, are already well known in Europe, several handbooks and guidelines aimed at preventing habitat fragmentation have been published in the Czech Republic over the last twenty-five years.

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new methodologies

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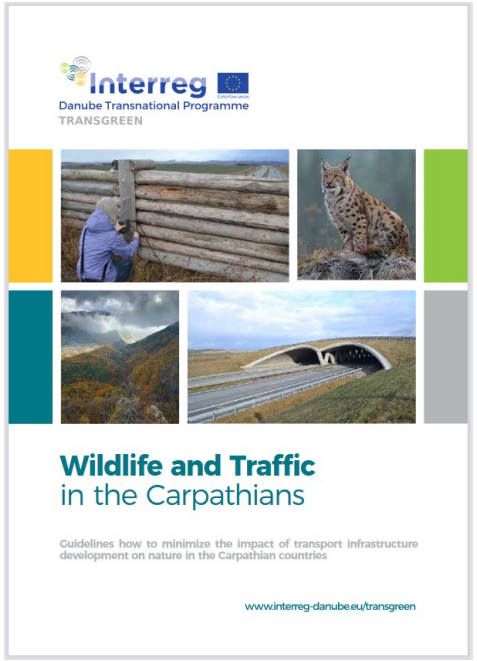
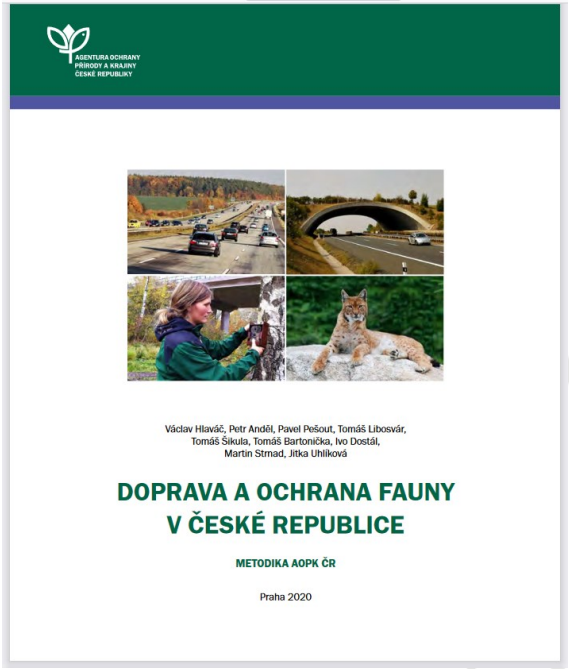
2019: Wildlife and Traffic in the Carpathians



2020 Doprava a ochrana fauny v České republice



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- Prepared in close cooperation with the Directorate of Roads and Motorways of the Czech Republic
- Fully accepted by transport authorities
- The Ministry of Transport and the Directorate of Roads and Motorways will implement the recommendations of this handbook into their internal regulations and guidelines

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Content:

- Animals and their demands on the passability of transport infrastructure
- Fauna passages density in different types of habitat
- Protection of fauna during the planning and designing process
- Measures to ensure the passability of TI for fauna
- Monitoring and evaluation of the impact of transport infrastructure on the fauna

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Chapter 6

Animals and their threat by traffic

- Terrestrial invertebrates
- Fish and other aquatic animals
- Reptiles
- Amphibians
- Birds
- Bats (27 species with different biology)
- Mammals up to the size of a fox (otter, ground squirrel, hare, dormouse)
- Medium-sized mammals (roe deer, wild boar)
- Large mammals (deer, moose, large carnivores

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Density of fauna passages in different types of habitat

Type of fauna passages Typ of habitat	Big mammals	Roe deer	Fox, badger
Forest	On migrration corridors each 3-5 km	2 – 5 km	0,5 – 1 km
Dry grassland, Alpine meadows, Wetlands	On migrration corridors	2 – 5 km	0,5 – 1 km
Agriculture landscape	On migrration corridors	2 - 5 km	0,5 – 1 km
Urban areas	On migrration corridors	depending on local conditions	0,5 – 1 km

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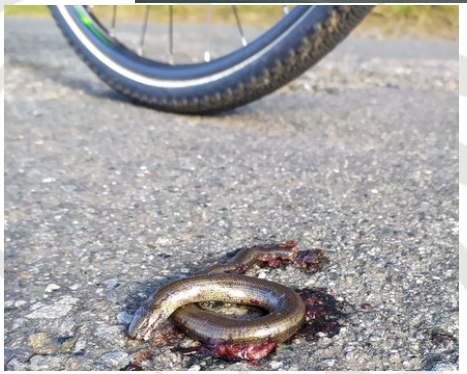
Recommended measures for individual types of TI

- **Motorways** (fauna passages, fencing, edge treatment, protective walls)
- **1st class roads** (maintenance of road verges, artificial repellents, traffic signs, fauna passages, detection and warning systems, special measures to protect amphibians or bats)
- **Lower class roads** (verges maintenance, artificial repellents, traffic signs, multi-purpose fauna passages, special measures to protect amphibians
- **Cycling paths** - locate outside reptile habitats
- **One-track railway** (warning hooting in high-risk sections)
- **Double-track railways** (acoustic repellents)
- **High-speed rail** (same as motorways)



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Fauna passages - overpasses

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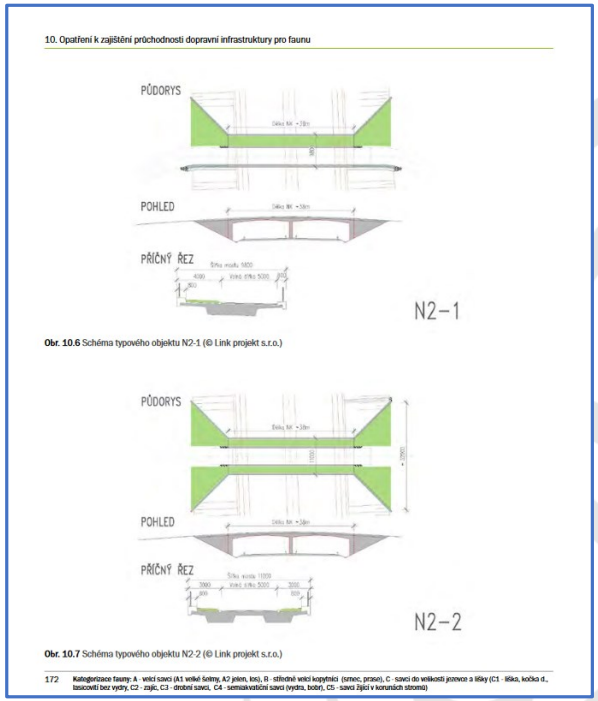
Standard solutions of fauna passages

- six standardized projects of typical overpasses - prepared in collaboration with biologists and engineers (from narrow overpasses of forest and field roads, extended by a green stripe to large green bridges 40-60 m wide)

- the solution is based on the biological demands of the animals, each solution describes for which species it is intended and where it is appropriate to use it



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Fauna passages - underpasses

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Demands of different groups of animals on the size of the underpass

	Roe deer		Red deer	
	i	parameters w x h : l	i	parameters w x h : l
Ideal state	above 30	60x15:30	above 40	80x15:30
Practical optimum	7 - 30	60x10:30	8 - 40	70x10:30
Everage	1,5 - 7	24x5:30	3 – 8	36x5:30
Practical minimum	0,5 – 1,5	6x5:30	1 – 3	12x5:30
Unfunctional	less than 0,5	4x4:32	less than 1	6x5:32

i – openness index

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Fauna passages - underpasses

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- seven main types of underpasses are described (from culverts to large viaducts across the valley)
- as the variability of conditions requires different solutions, compared to overpasses standardized projects are not developed for underpasses
- suitability for individual species and possibilities of use in different conditions are described in detail for each type of underpass

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Measures to reduce animal mortality

- **Fencing** (location, technical parameters, risks of inappropriate fencing)
- **Protective walls**
- **Cattle grids**
- **Artificial detterens**
- **Warning signs**
- **Wildlife detection and warning systems**

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Special measures for selected groups of species

- measures to protect amphibians
- measures to protect bats
- Badger and otter tunels

New handbook: Protection of the habitat of protected species in spatial planning

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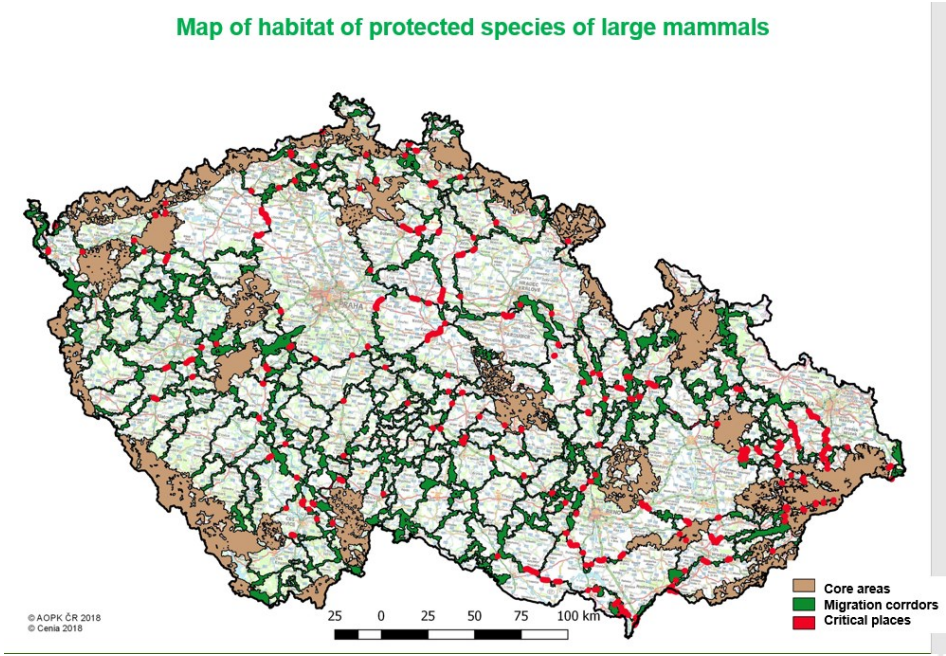

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Protection of the habitat of protected species in spatial planning

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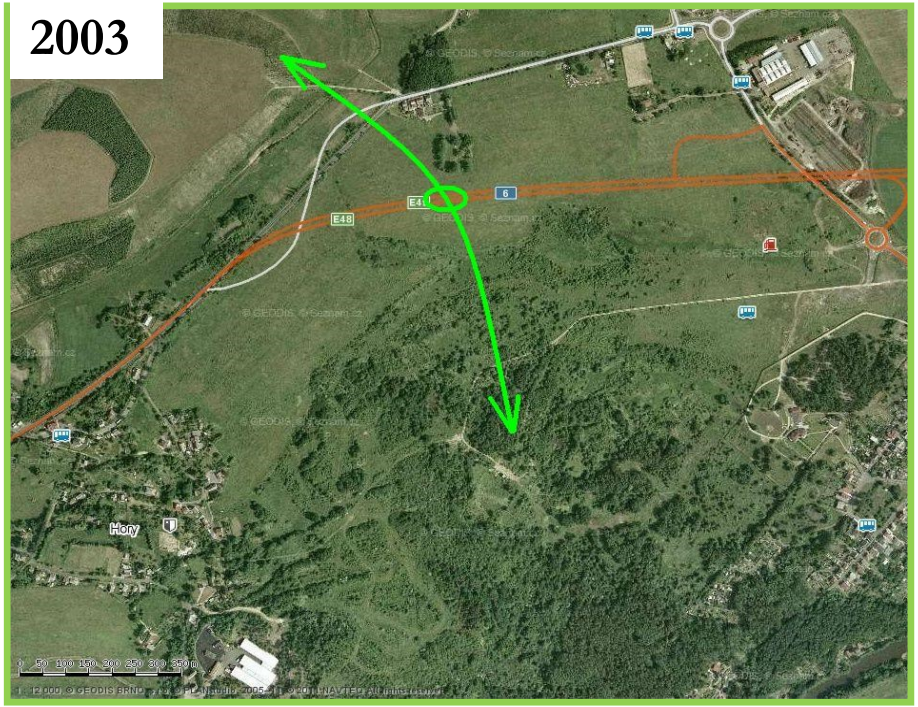

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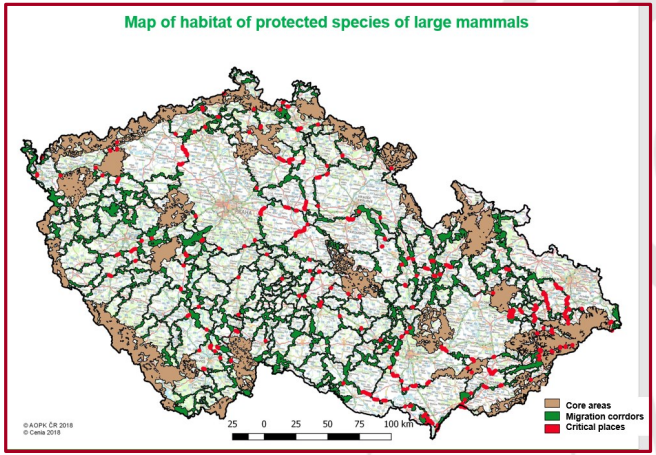
Migration corridors can be efectively protected only through their incorporation into spatial planning. A project aimed at protection of the migration corridors of large mammals started in the Czech Republic in 2015 (target species: lynx, wolf, bear, moose)

Map of habitats of protected species of large mammals:

- **Migration corridors**
- **Core areas**
- **Critical places**



- represent the minimum connectivity necessary for the long-term survival of populations
- scale of the map: 1: 50.000 (1: 10.000 in critical places)
- the recommended minimum width of the corridor is 500m
- built-up areas are not part of the habitat

Nature protection law:

- **Habitat of protected species - it is forbidden to damage the habitat of protected species**

Building law

- **In 2019 the Decree on the Building Act included the habitat of protected species of large mammals among the obligatory "territorial-analytical documents". The habitat of protected species of large mammals is therefore a binding basis for spatial plans of all levels in the Czech Republic**

New handbook:

Protection of the habitat of protected species in spatial planning

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- **sets out the procedure of authorities in the protection of habitats**
- **describes in detail which interventions in the habitat are possible and which are not.**

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Thank you for your attention

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