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Habitat fragmentation and large carnivores in the Western Carpathians Do they still have a chance to survive?

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Nature Conservation Agency of the Czech Republic ,



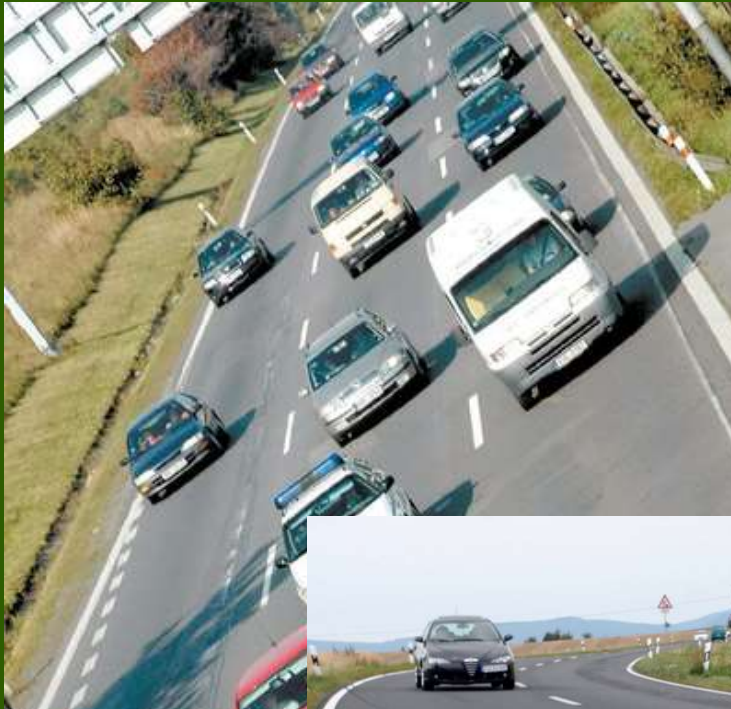
The Carpathians are still an area of extreme natural beauty and unique richness of biodiversity.....



Carpathians - still low-fragmented area - the last true wilderness in Central Europe with thriving populations of large carnivores and many other species



However, building of new transport infrastructure, growing intensity of traffic and spreading of new development go very fast also in Carpathians



Rapid development causes that most of animal migration routes are irreversibly broken, the landscape becomes fragmented and original ecological connectivity is destroyed.



...the crucial problem is the development in mountain valleys



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Image Landsat
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Google earth

Continuously built-up areas create a migration barrier for animals, often tens of kilometers long

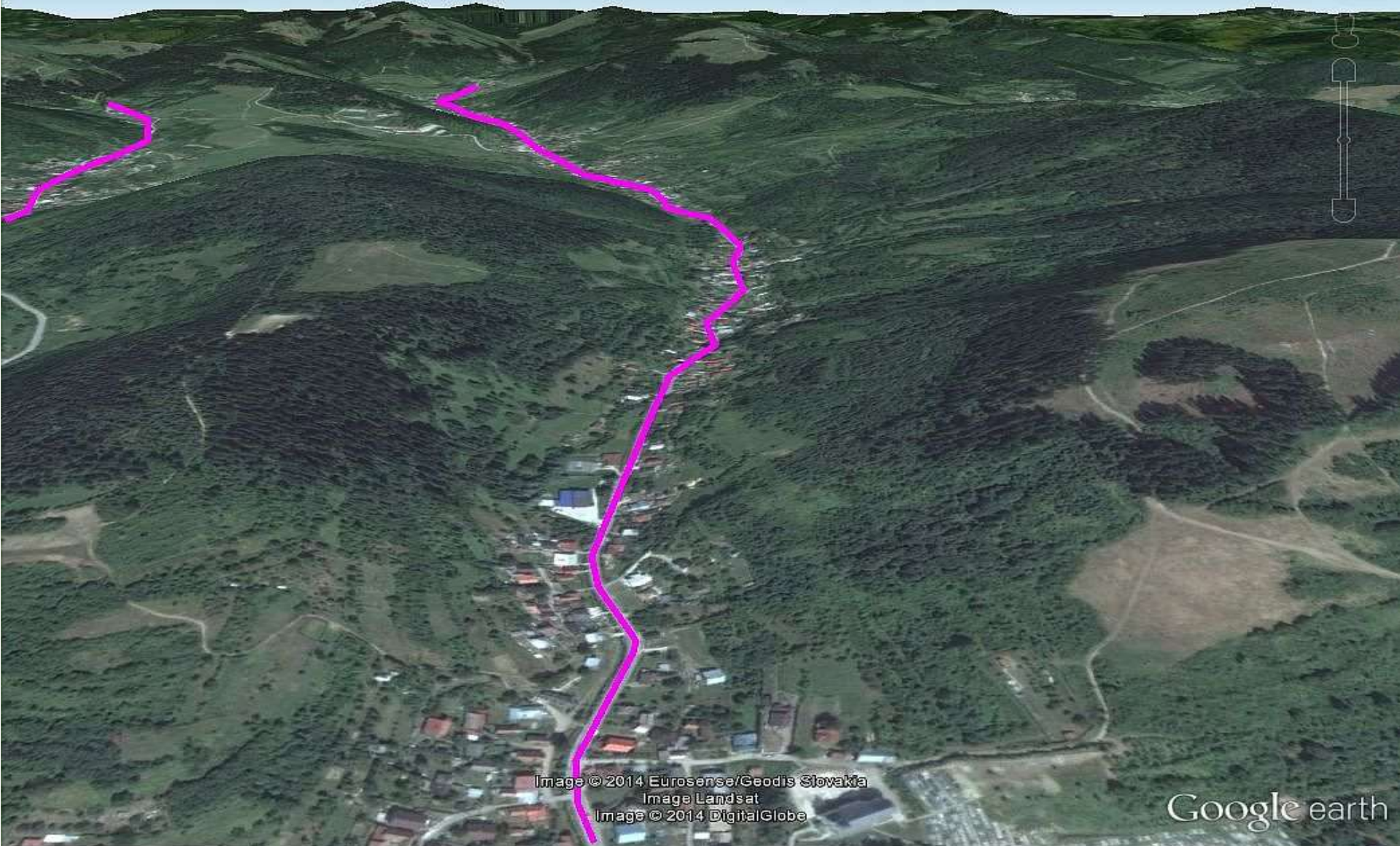


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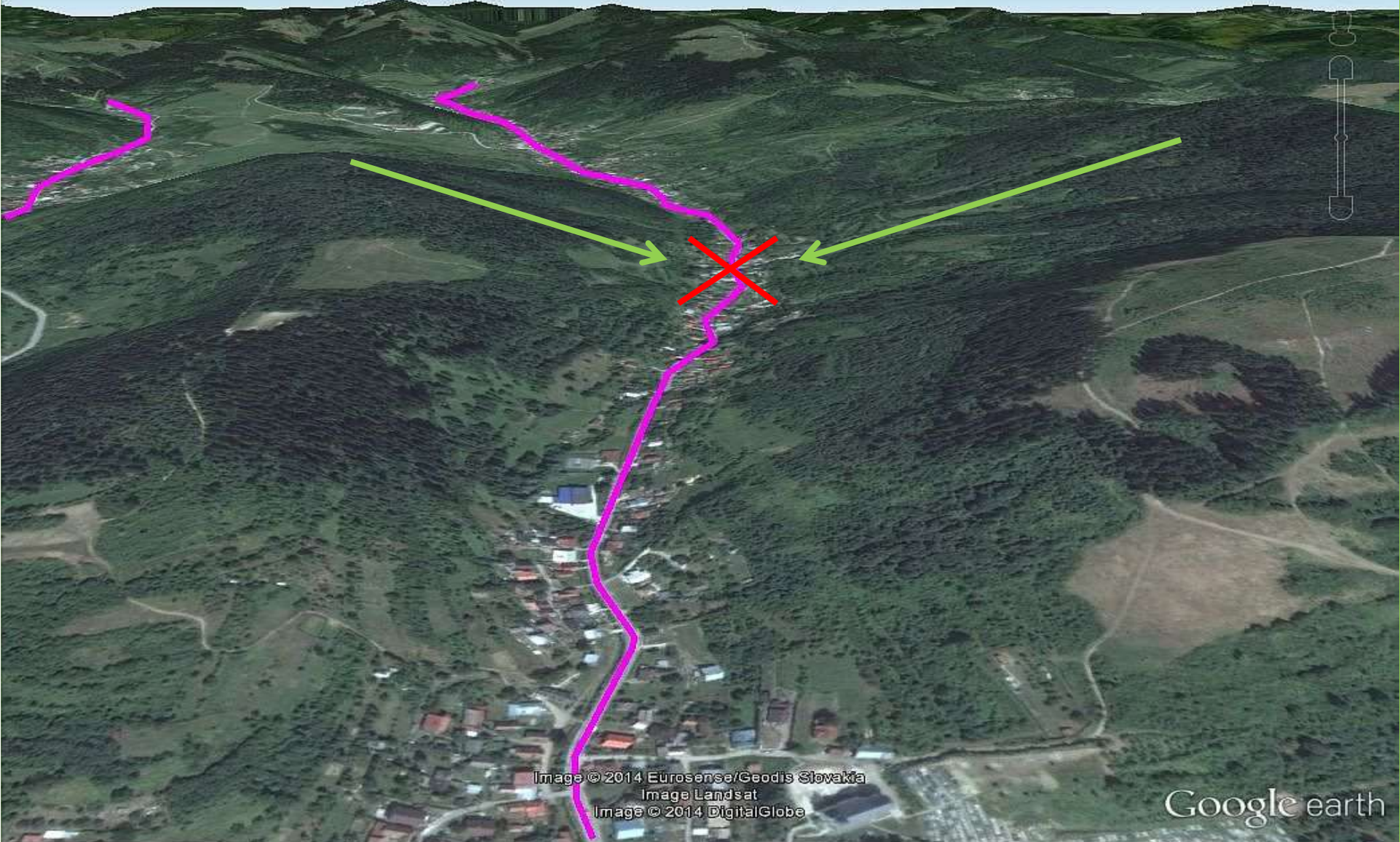
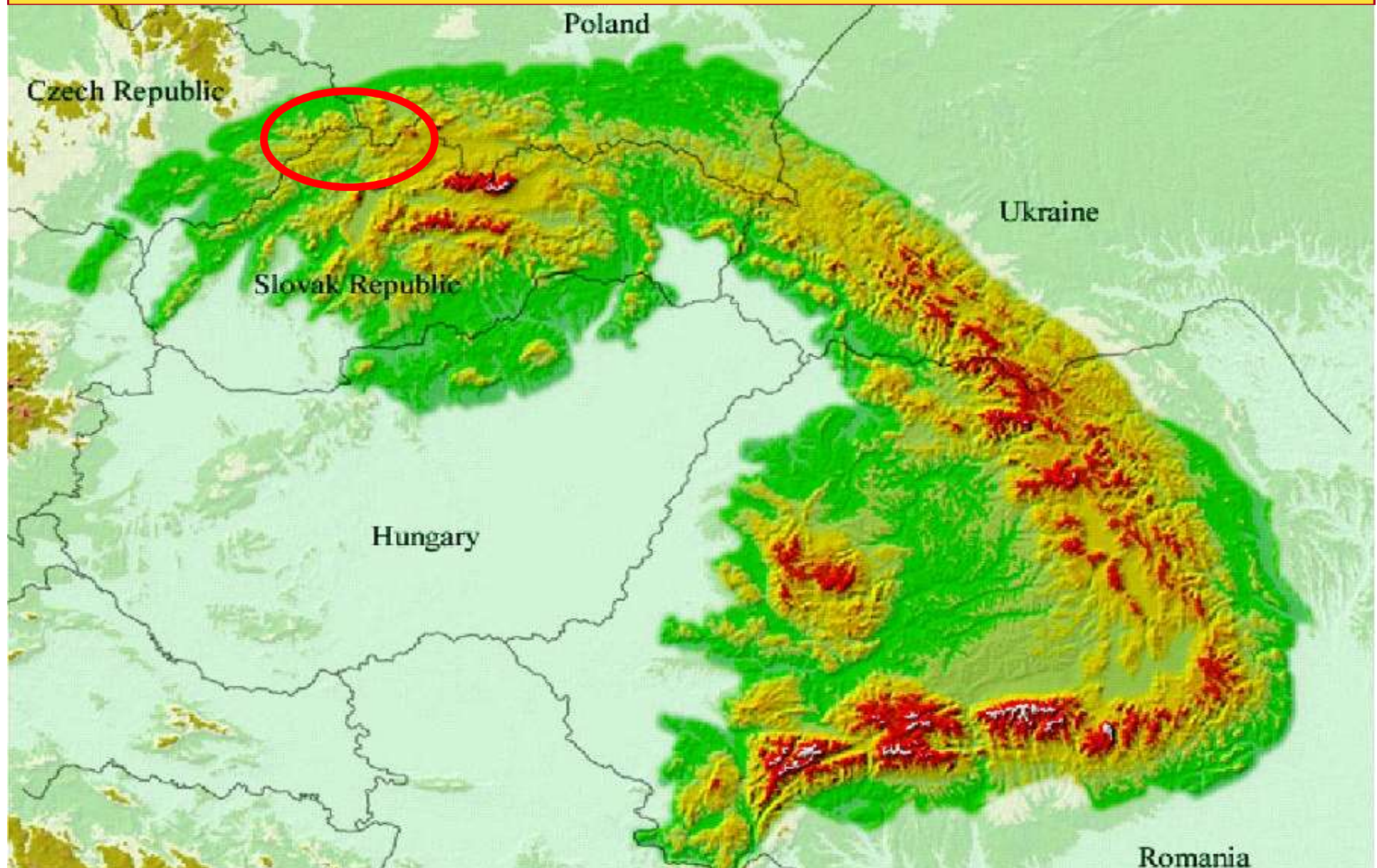


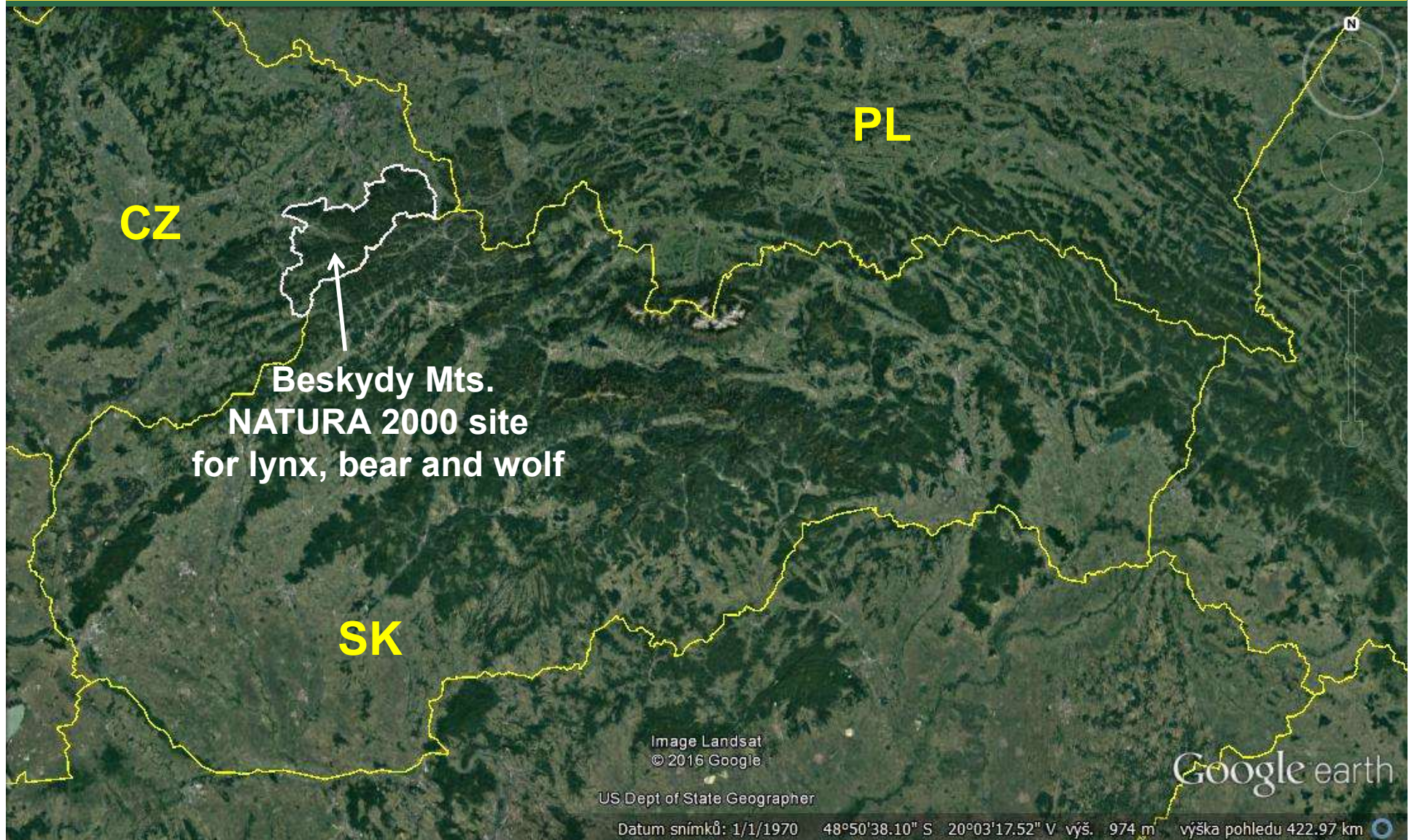
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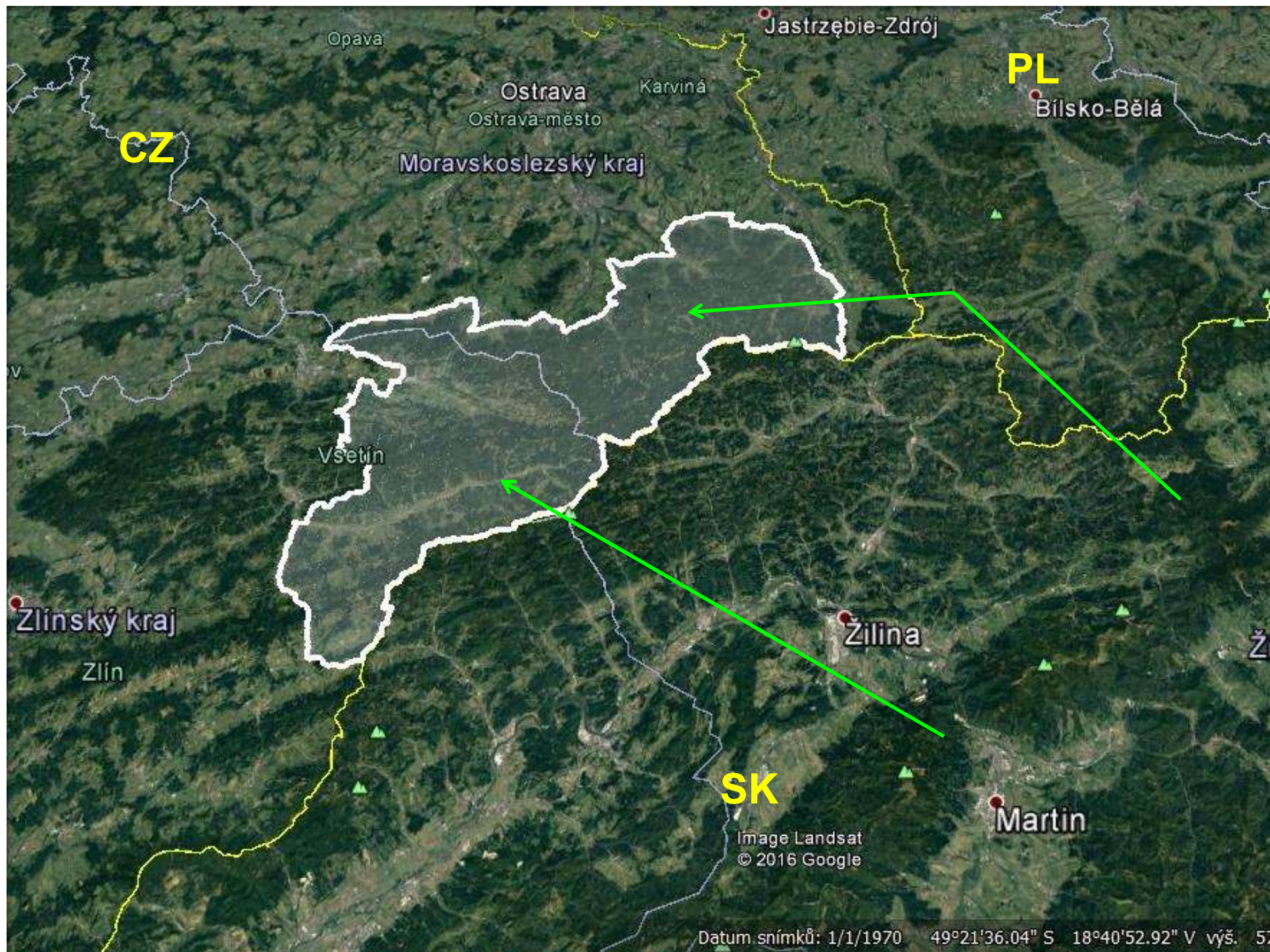
Google earth

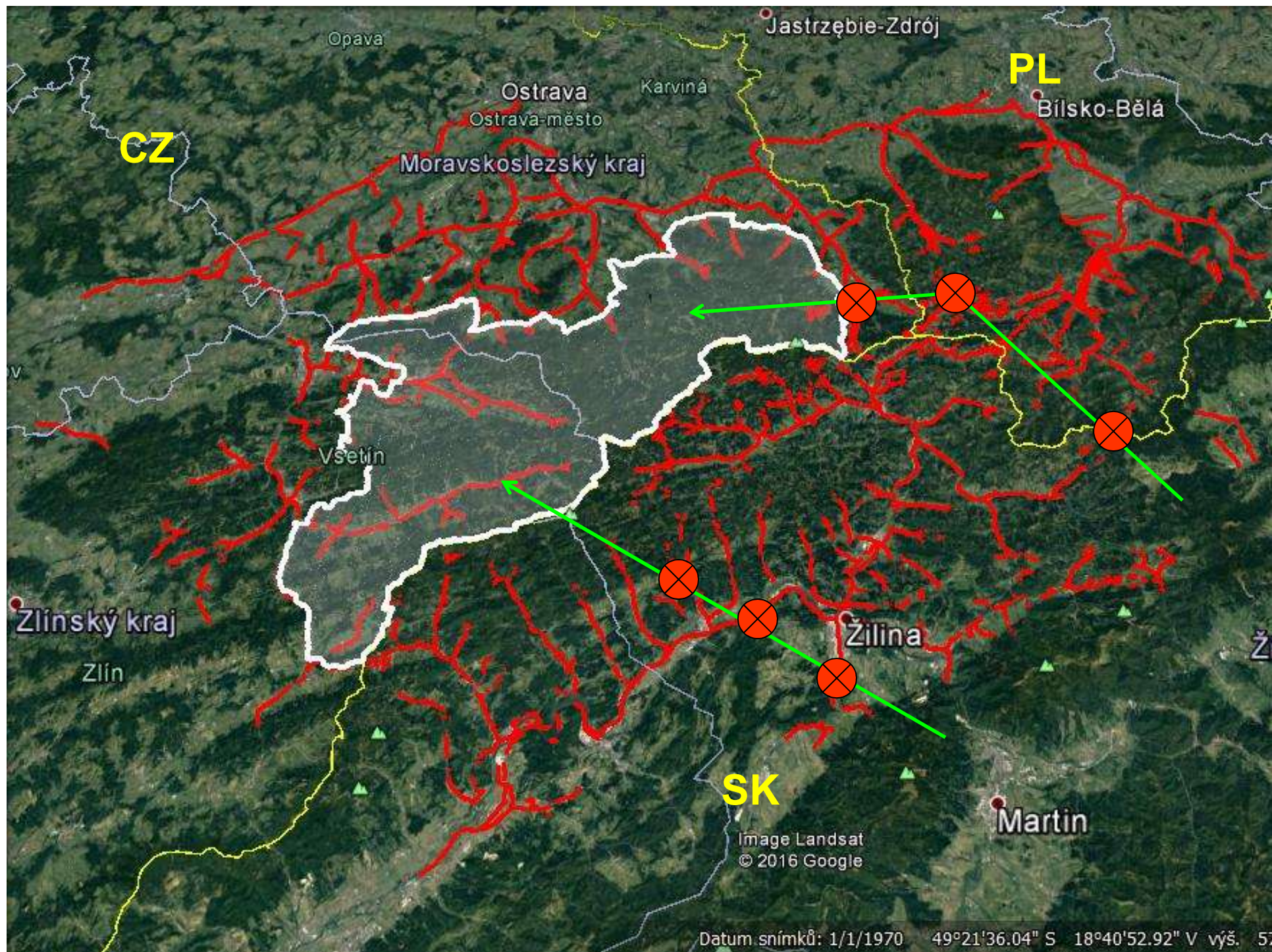
Future existence of large carnivore populations is endangered in western Carpathians due to heavy fragmentation of their habitat, especially in peripheral parts of distribution area (CZ, PL)

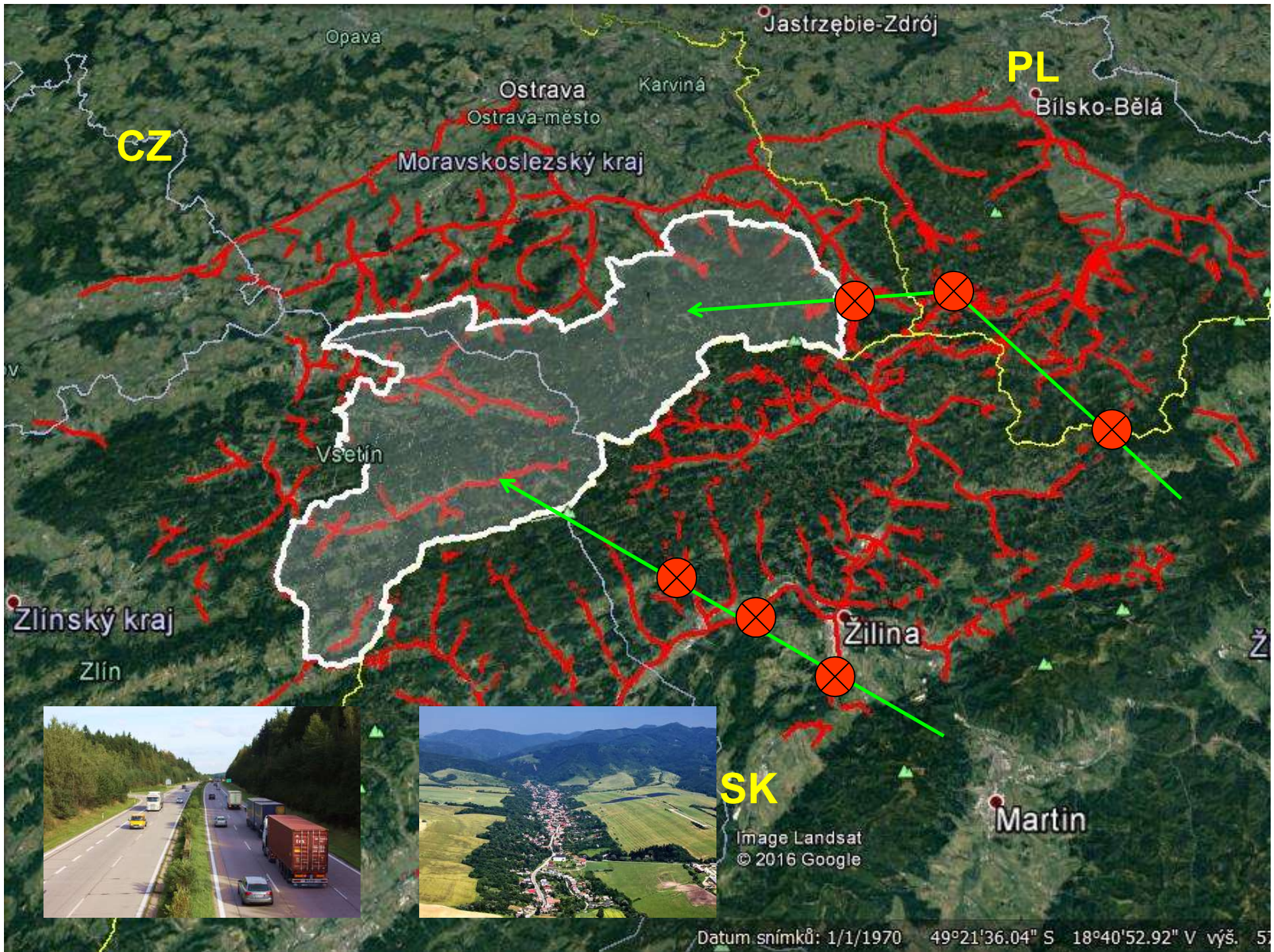


Beskydy Mountains is a Natura 2000 site for lynx, wolf and bear. Population of all three species are declining in the long term. Recently, there have been recorded about 8 - 12 lynx, 1-3 bears and 1-5 wolves.









CZ

PL

SK

Opava

Jastržebí-Zdrój

Bilsko-Bělá

Ostrava
Ostrava-město

Karviná

Moravskoslezský kraj

Vsetín

Zlínský kraj

Zlín

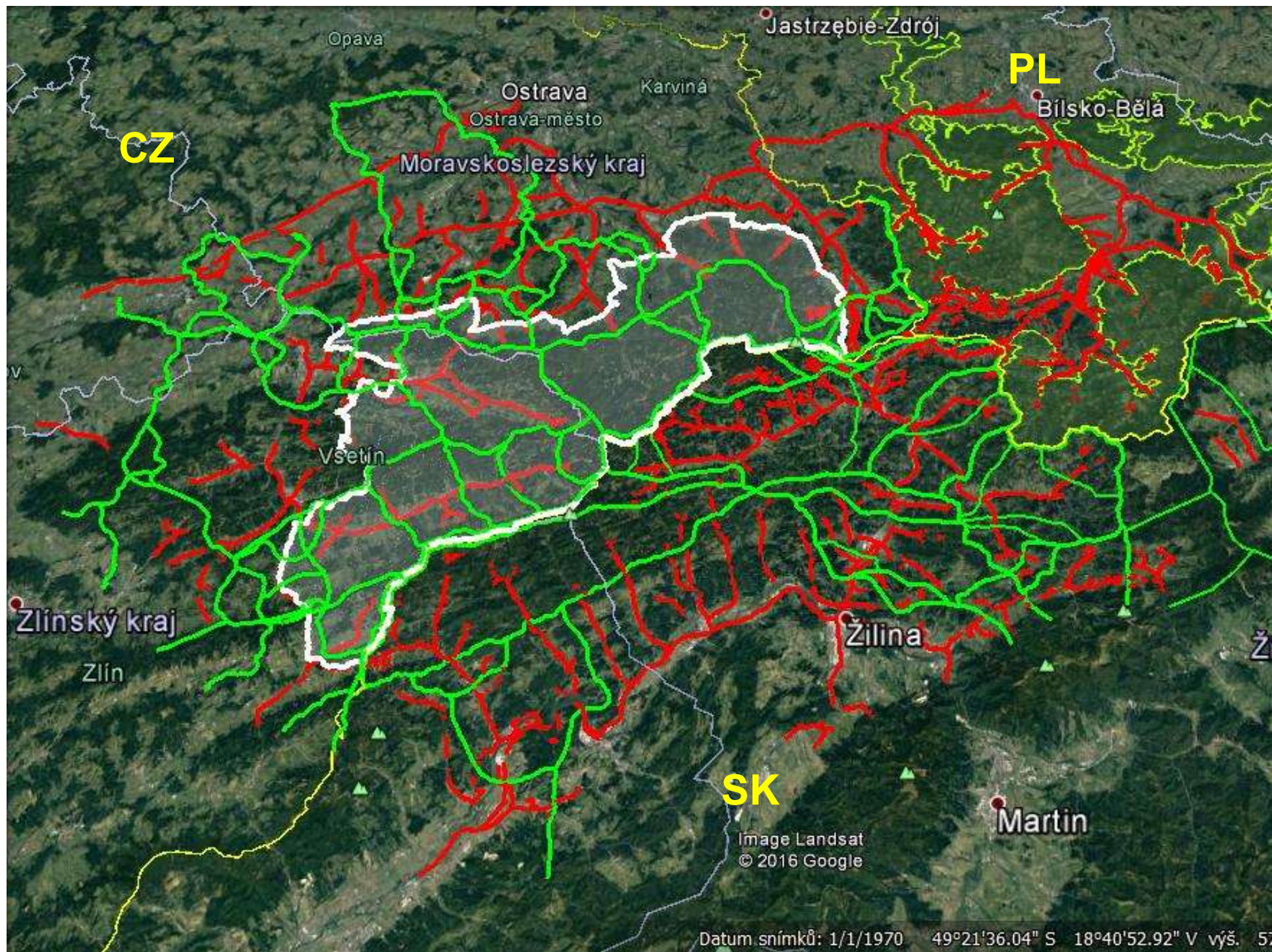
Žilina

Martin

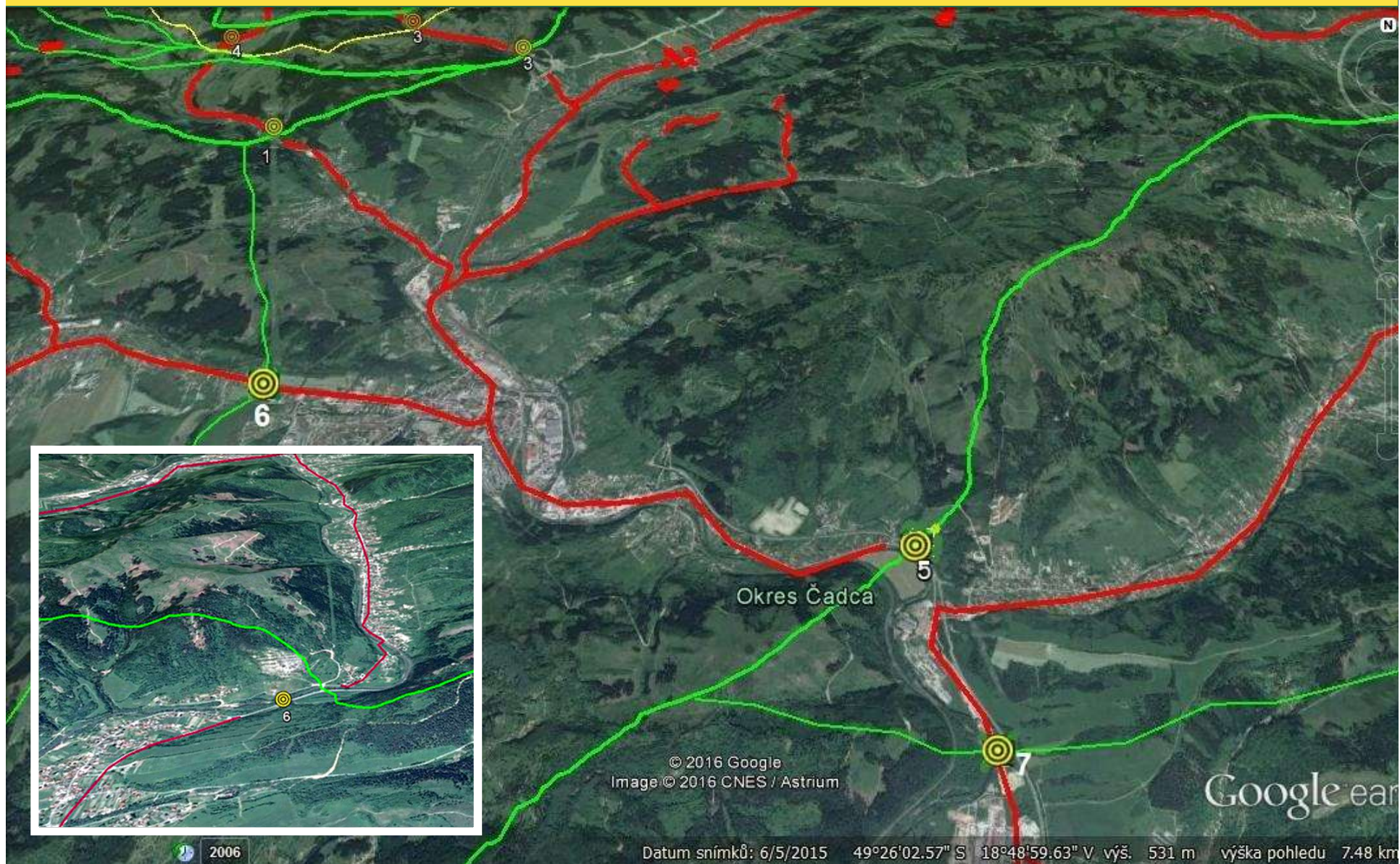
Image Landsat
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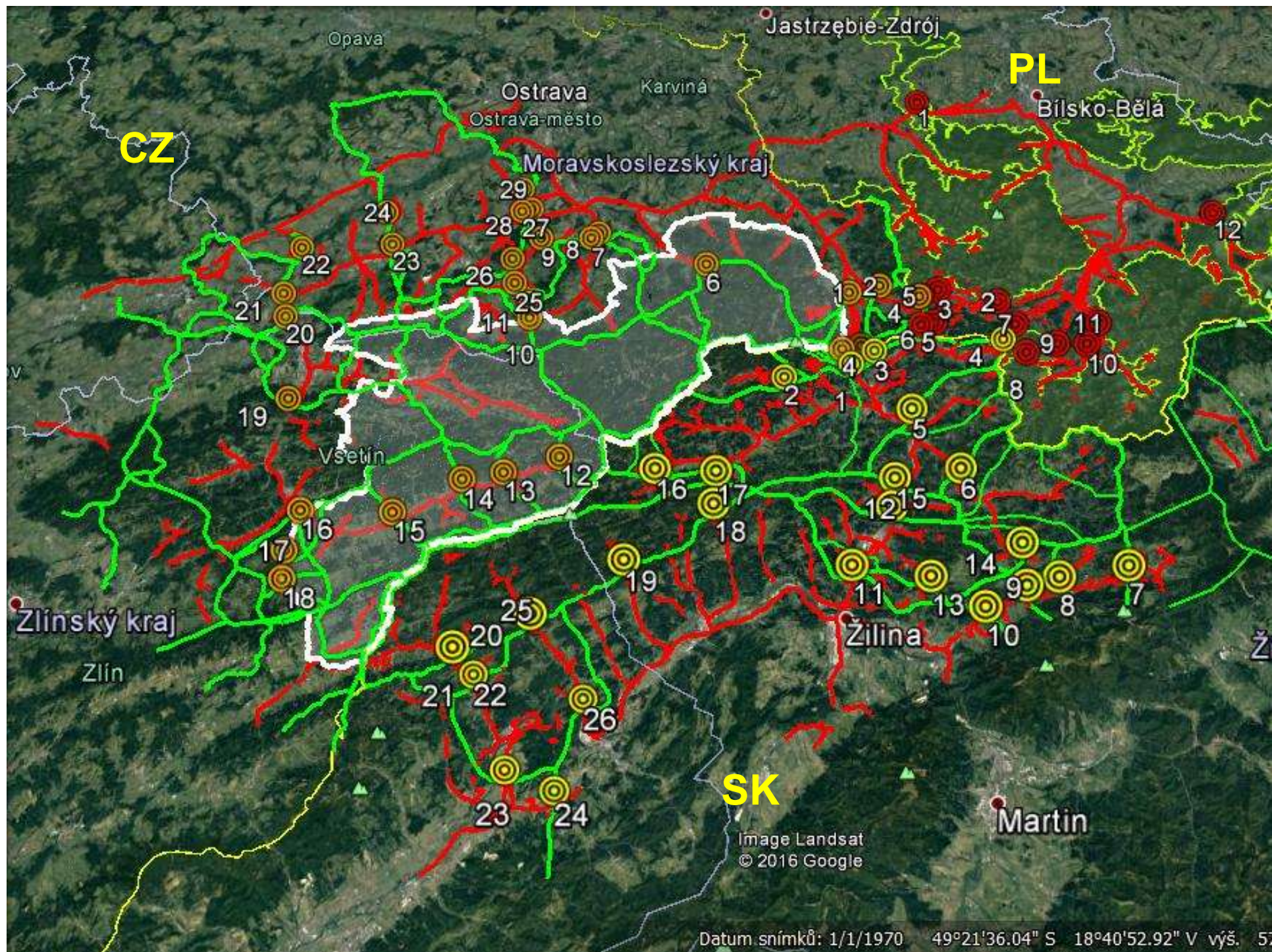
Datum snímku: 1/1/1970 49°21'36.04" S 18°40'52.92" V výš. 51



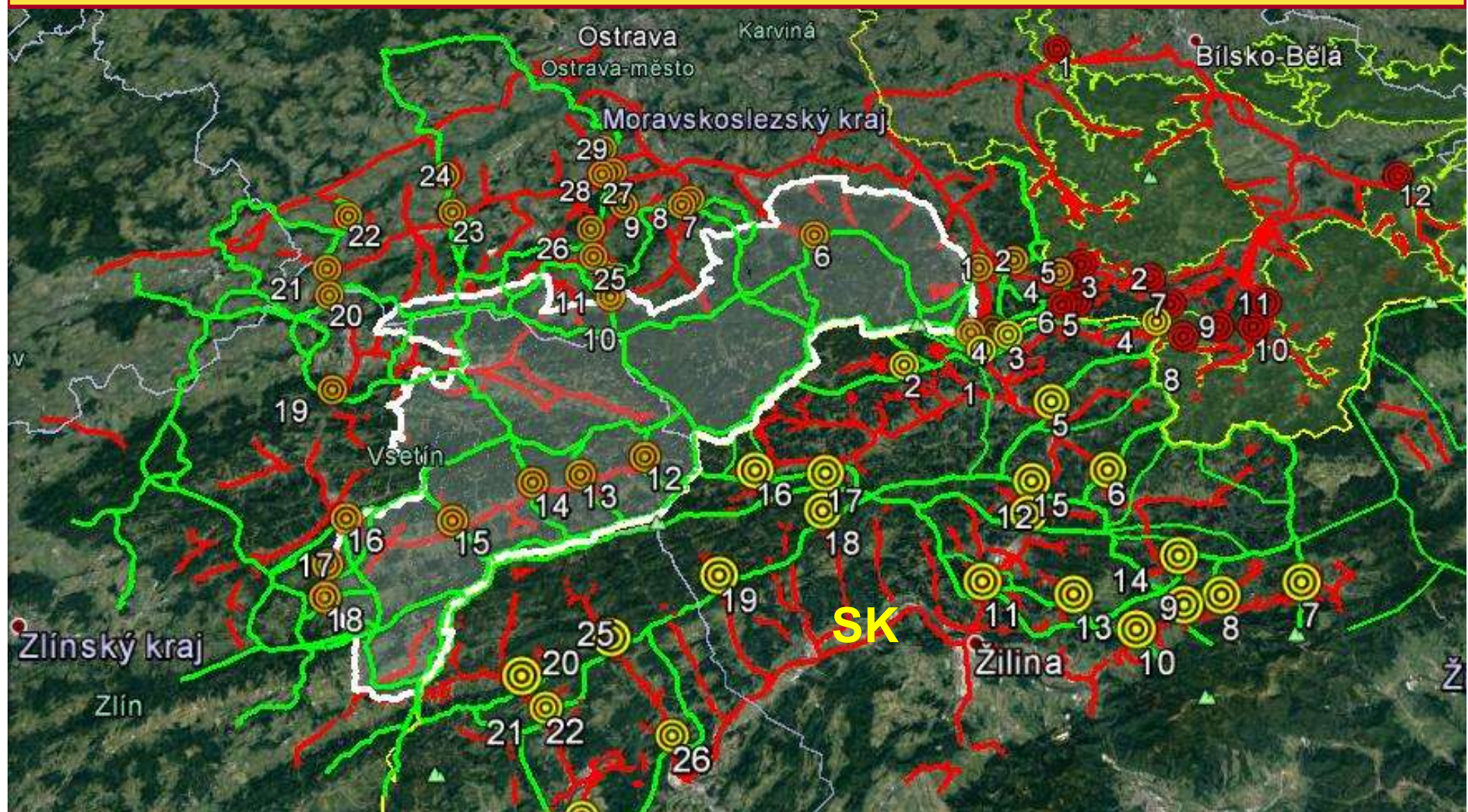


Migration corridors are in serious conflict with barriers. They cross it often in places where the continuous barrier is interrupted only for a few tens of meters. The permeability of corridors in these bottle necks is already difficult – In the project these places are identified as „critical points“





Conclusion: The analysis showed that most of the original migration routes has been already irreversibly interrupted. To rescue the populations of large carnivores in the Beskydy, it is necessary to start with strict protection of existing corridors. However, there are also several places, where measures for restoration of original connectivity will be necessary (ecoducts on existing roads, etc.). If no action is taken in a short time, the population of large carnivores will be doomed to extinction in the Western Carpathians.





Effective protection of migration corridors can be done only through their incorporation into spatial planning. A new project aimed at protection of the migratory routes of large mammals started in the Czech Republic last year.

Objectives of the project:

- Delimitation of the migratory routes of large mammals on the basis of actual data
- Assurance of protection of the migratory routes through their incorporation into spatial planning

Legal principles of the project:

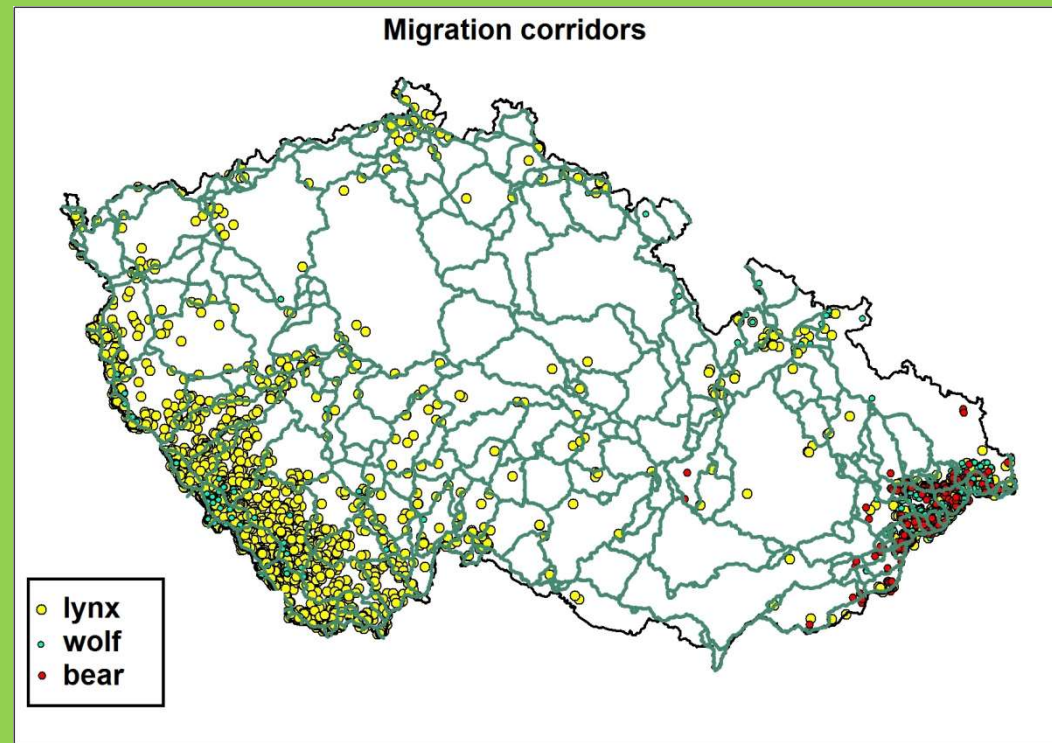
- ❑ Large carnivores belong to the species of **national importance**.
- ❑ Habitat of species of national importance has to be obligatory incorporated into spatial planning
- ❑ Habitat of protected species includes both the core areas and migration routes connecting them



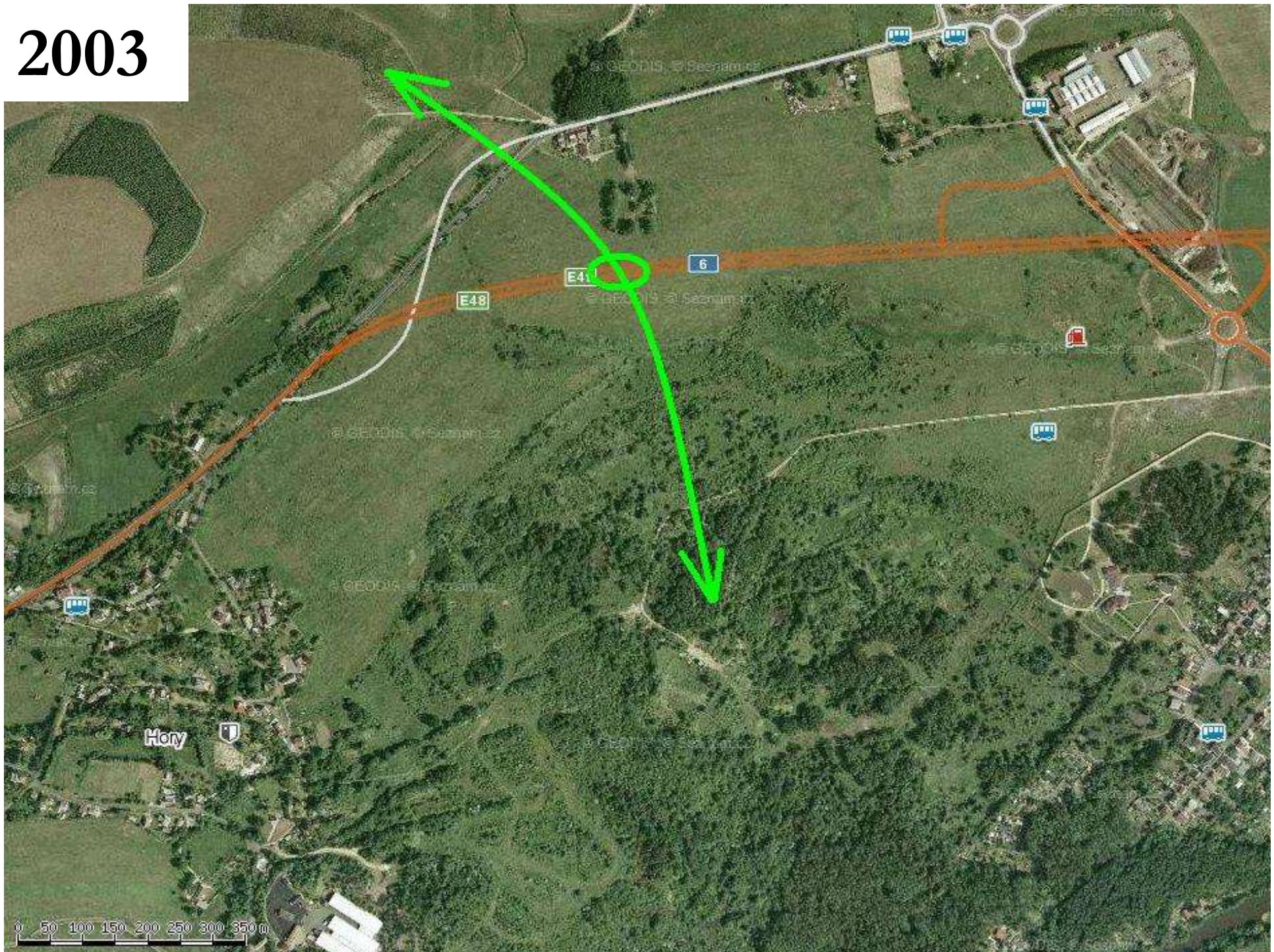


History: Migration corridors of large mammals were identified in the Czech Republic already in 2010.

- Migration corridors are generally accepted by planners and designers of new transport infrastructure
- Problem: by the nature protection law migration corridors are not obligatory incorporated into spatial planning and therefore they are not protected against further construction and development



2003



2006





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Basic information about the new project:

Participating organizations:

- Nature Conservation Agency
- EVERNIA s.r.o. , Liberec
- Transport Research Centre, Brno
- The Silva Tarouca Research Institute for Landscape and Ornamental Gardening

Period: 2015 – 2016

Supported by: EEA grants, Norway grants

Target species:



wolf

lynx

bear

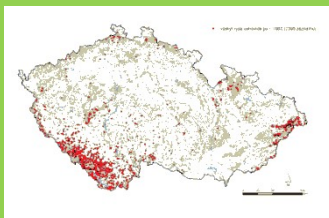
moose

- Protected species migrating for long distances,
- Umbrella species for many other species associated with forest habitats

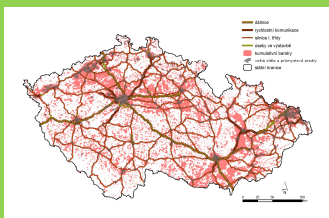




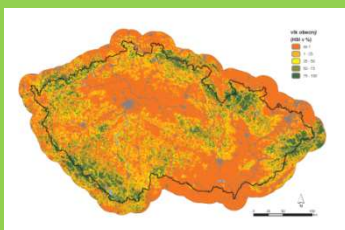
Sources and results



Distribution
data



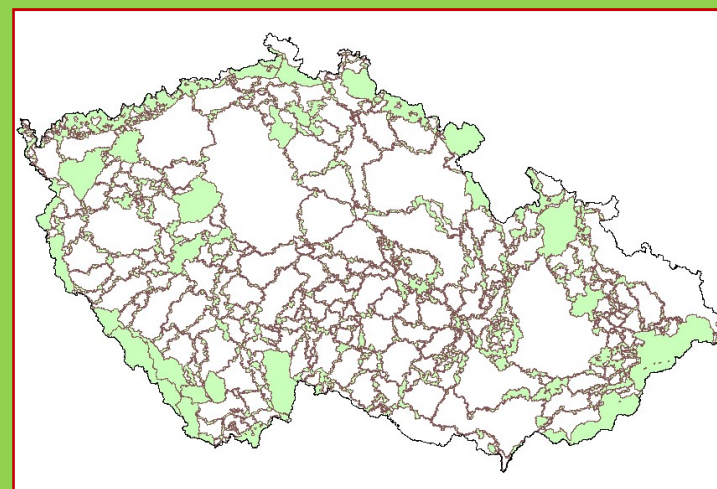
Barrier
analysis



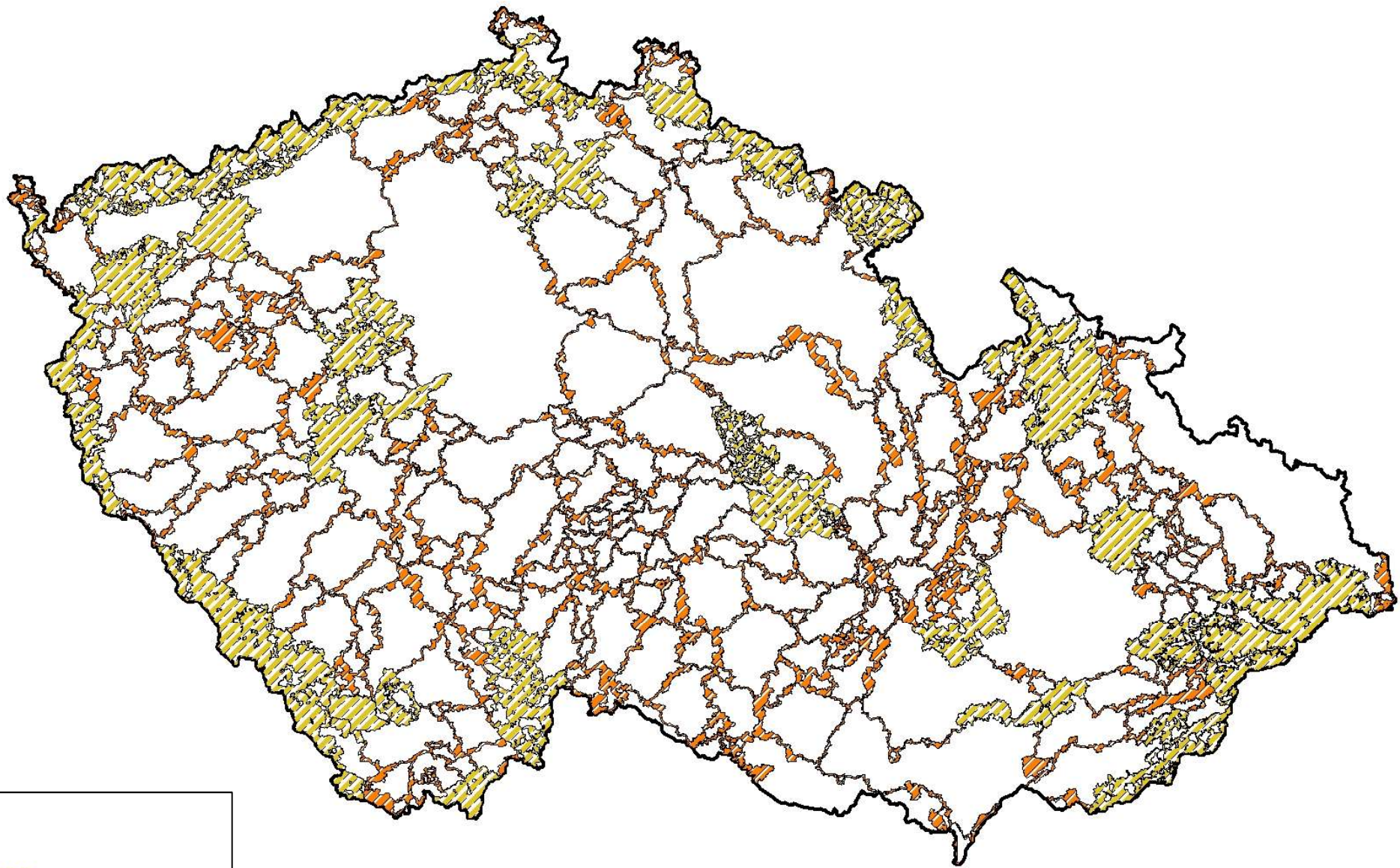
Habitat
suitability
models





Map of habitats of protected
species of large mammals



Habitat of protected species of large mammals



-  Core areas
-  Migration routes



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**Thank you for your
attention**

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