

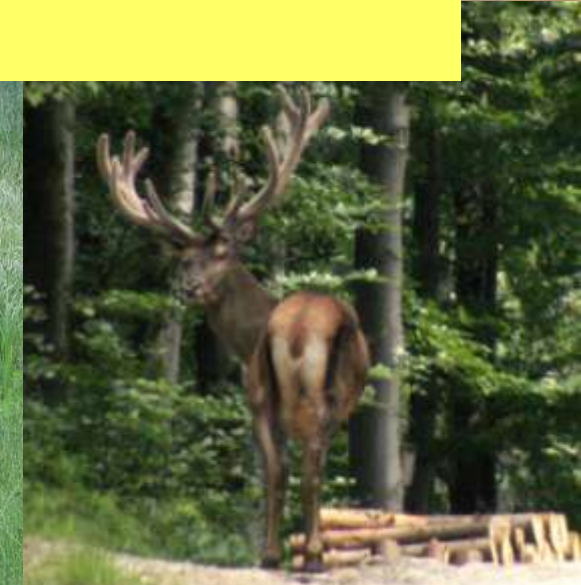
Protection of connectivity between large carnivores habitats in conditions of transportation infrastructure development in Poland

Dr. Sabina Nowak
Association for Nature "Wolf"-Twardorzeczka
Prof. Włodzimierz Jędrzejewski
Mammal Research Institute - Białowieża



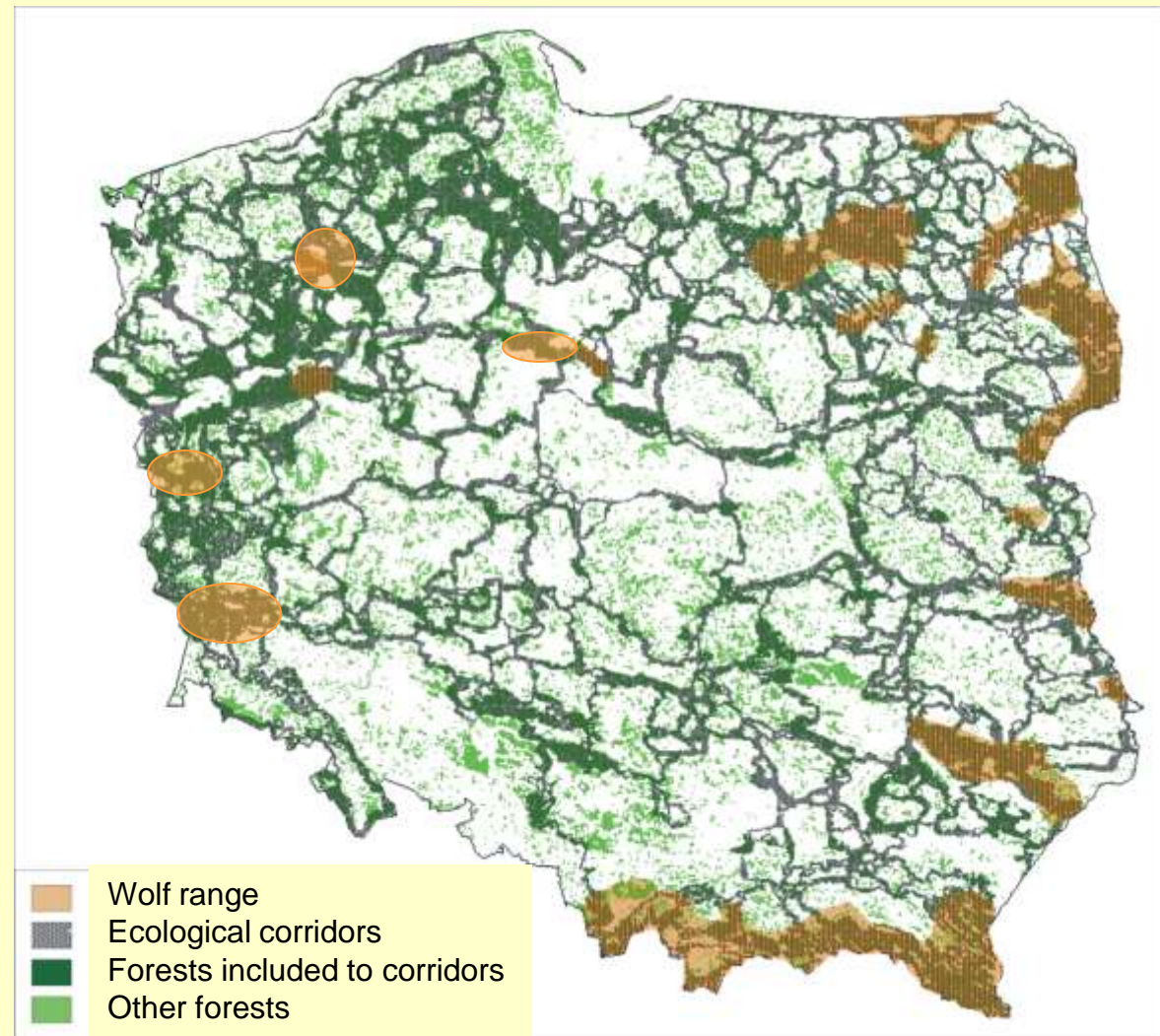


**All big predators are fully protected
in Poland**





Wolf range in Poland

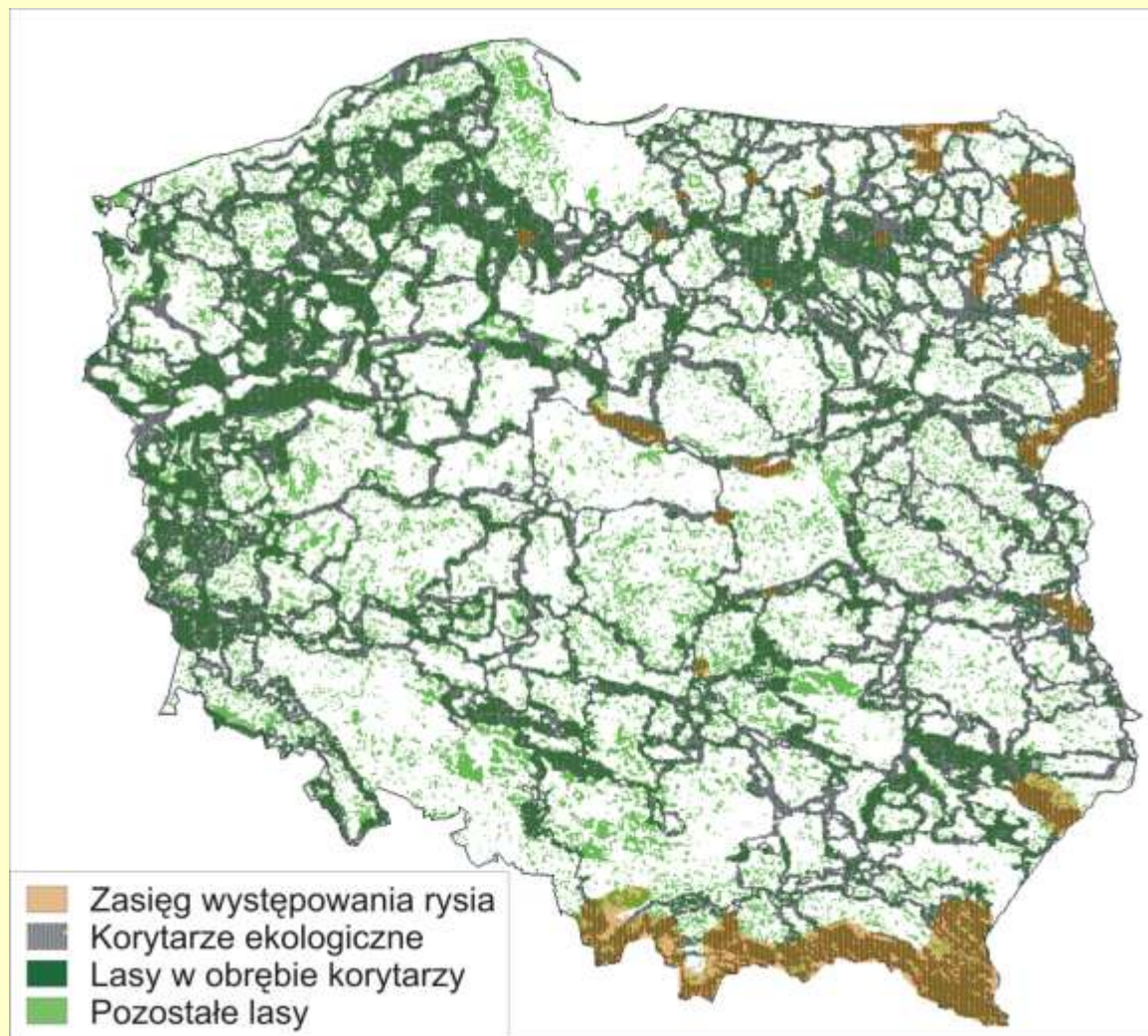


Source: Nowak et. al. unpubl.

650-700 wolves



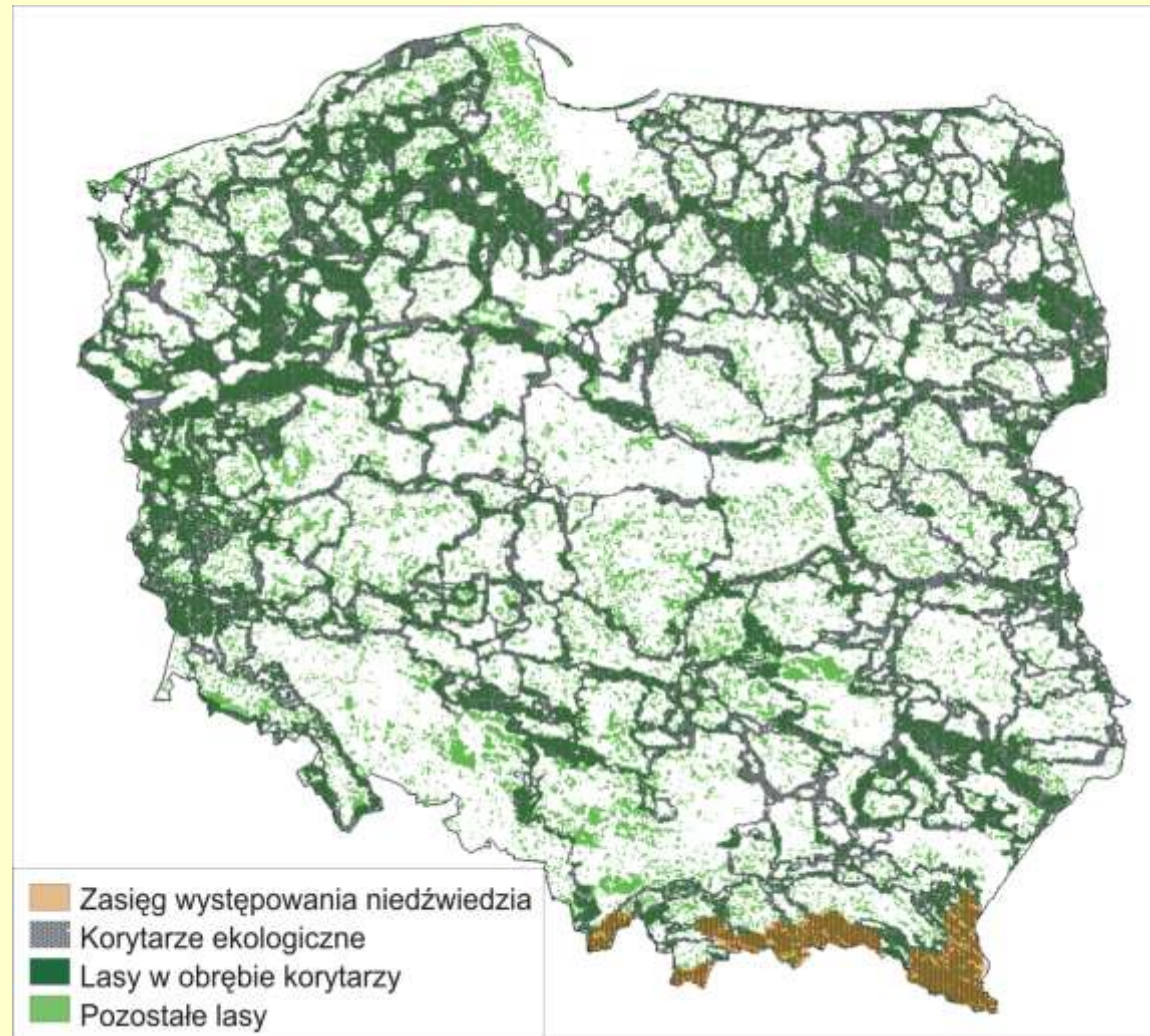
Lynx range in Poland



160-180 lynxes



Brown bear range in Poland



80-100 brown bears

Source: (Jakubiec 2001, modified)

Wolf and Lynx Census in Poland

Since 2000, more than 30 000 records about wolves and lynx have been collected

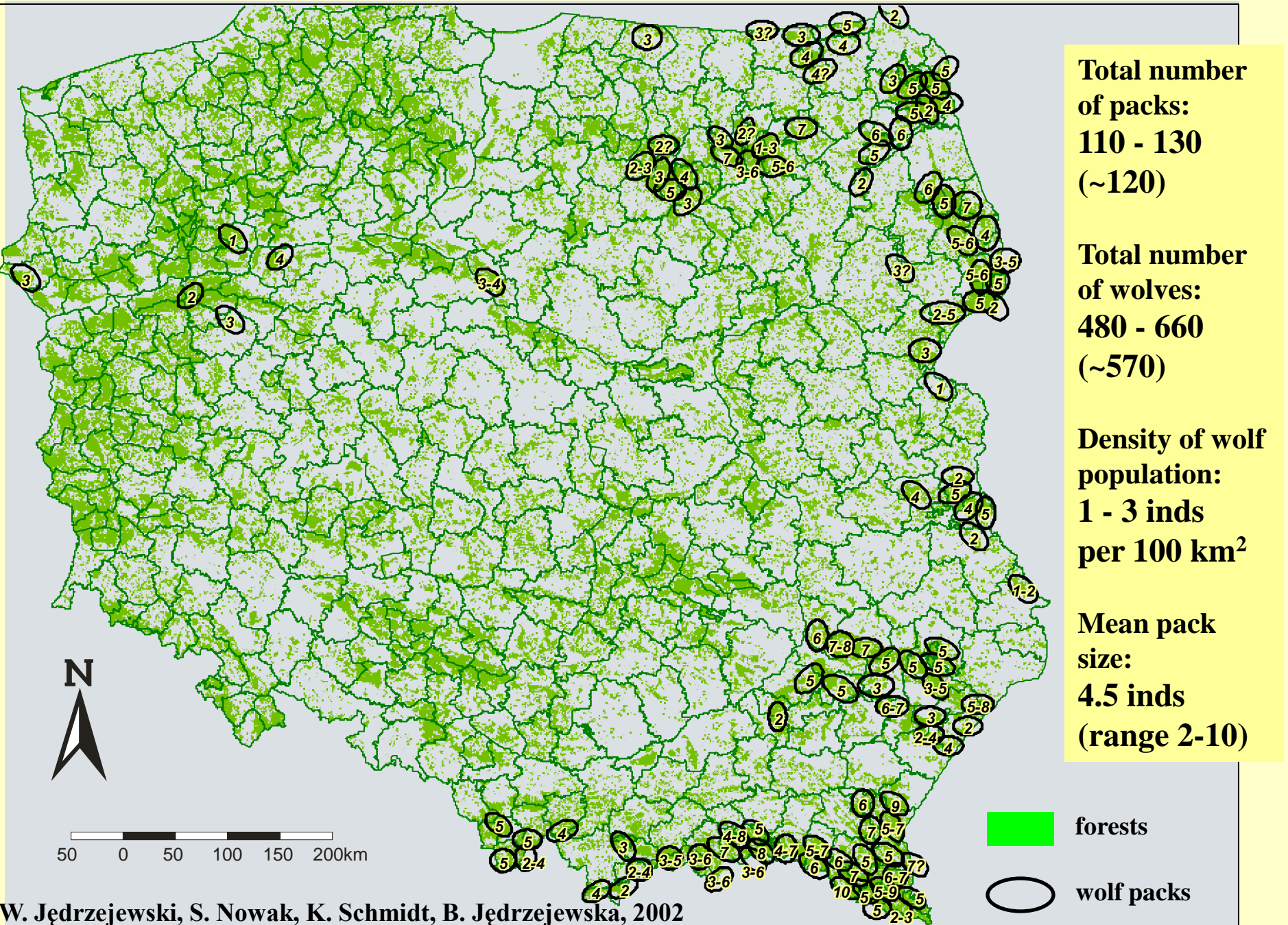
Co-ordinators

The Mammal Research Institute, PAS

The Association for Nature WOLF

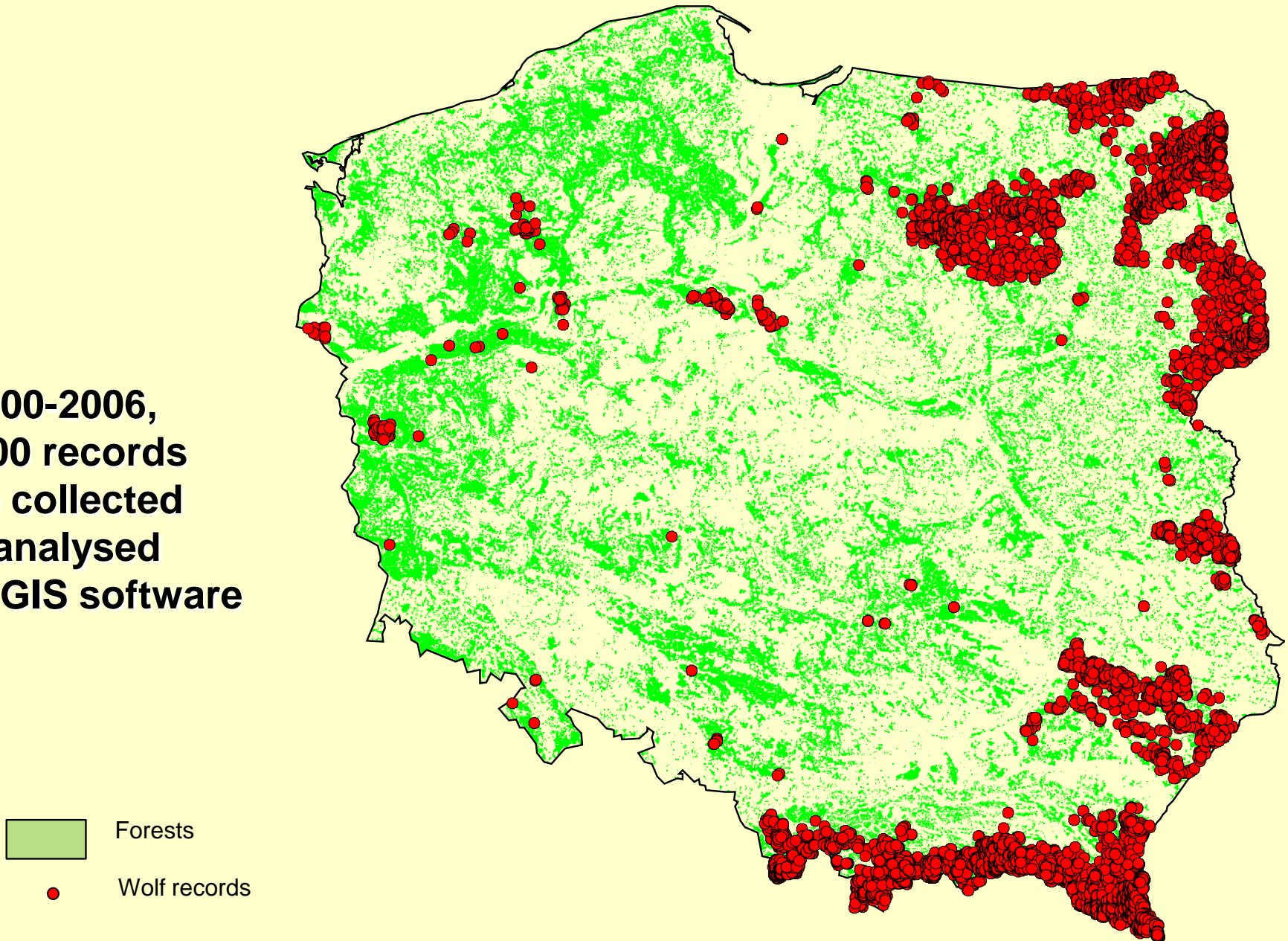


Distribution and number of wolf packs in Poland in 2000/2001



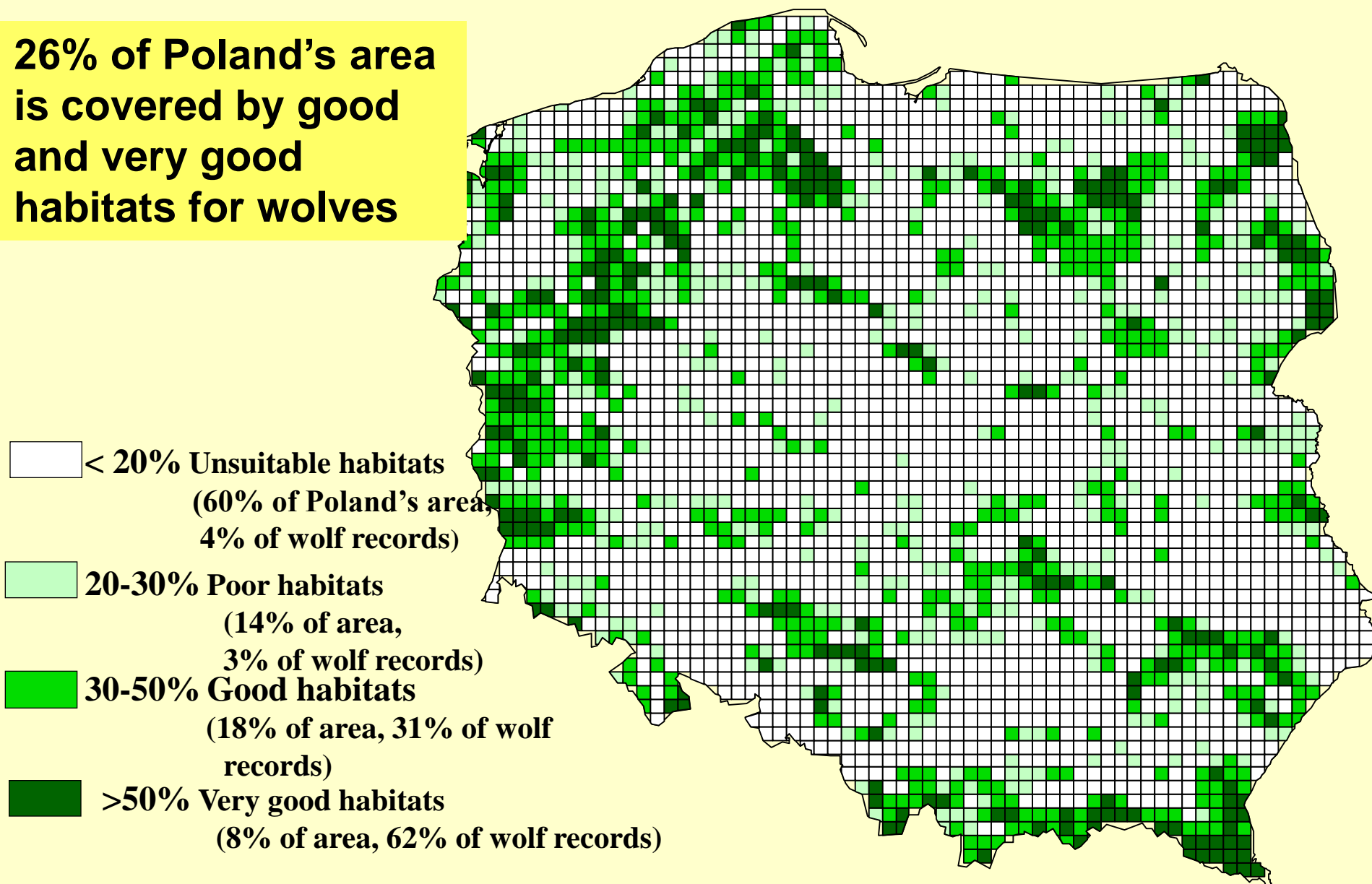
Analyses of habitat suitability for wolves in Poland

In 2000-2006,
22 000 records
were collected
and analysed
with GIS software



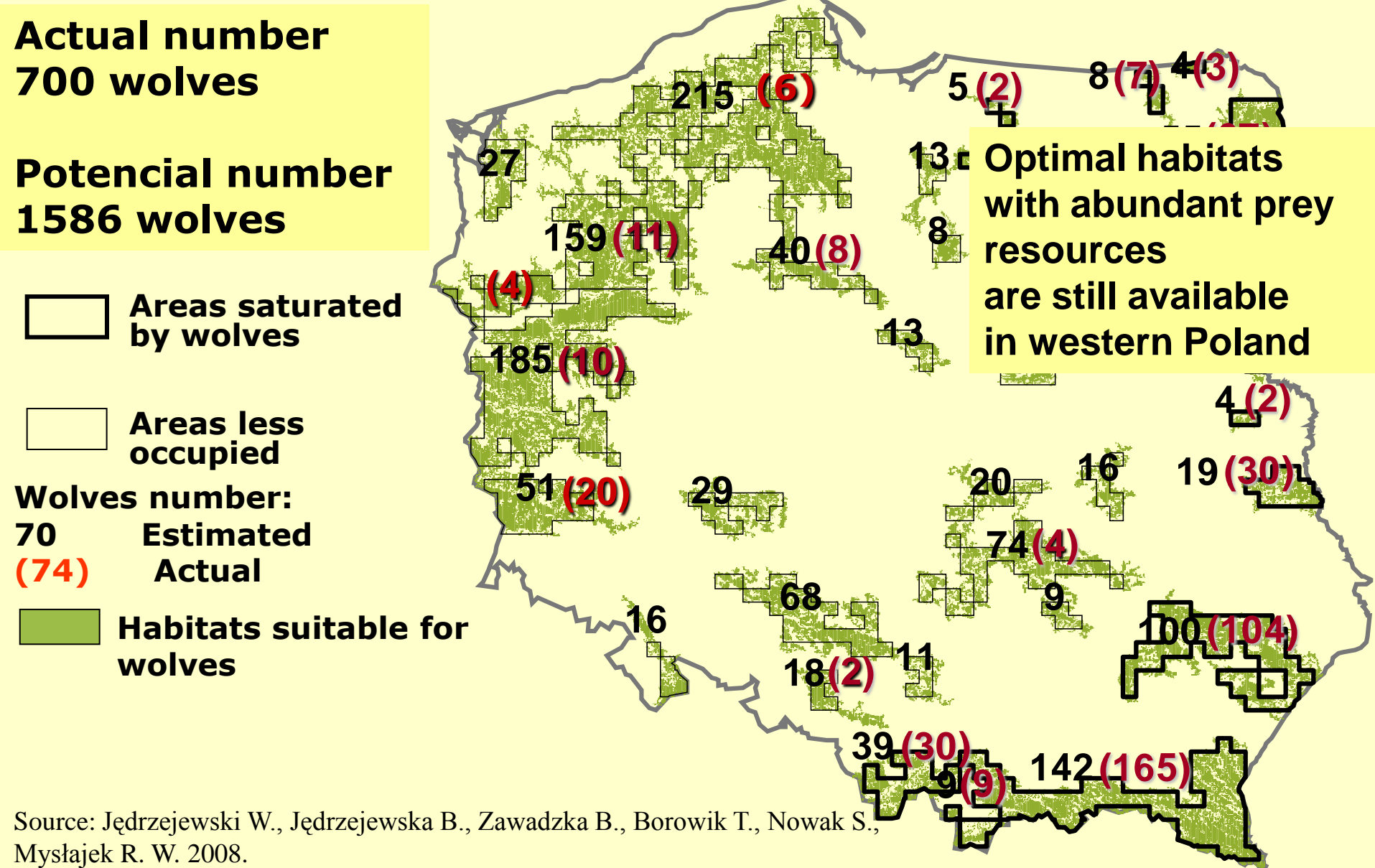
Wolf habitat suitability model

**26% of Poland's area
is covered by good
and very good
habitats for wolves**



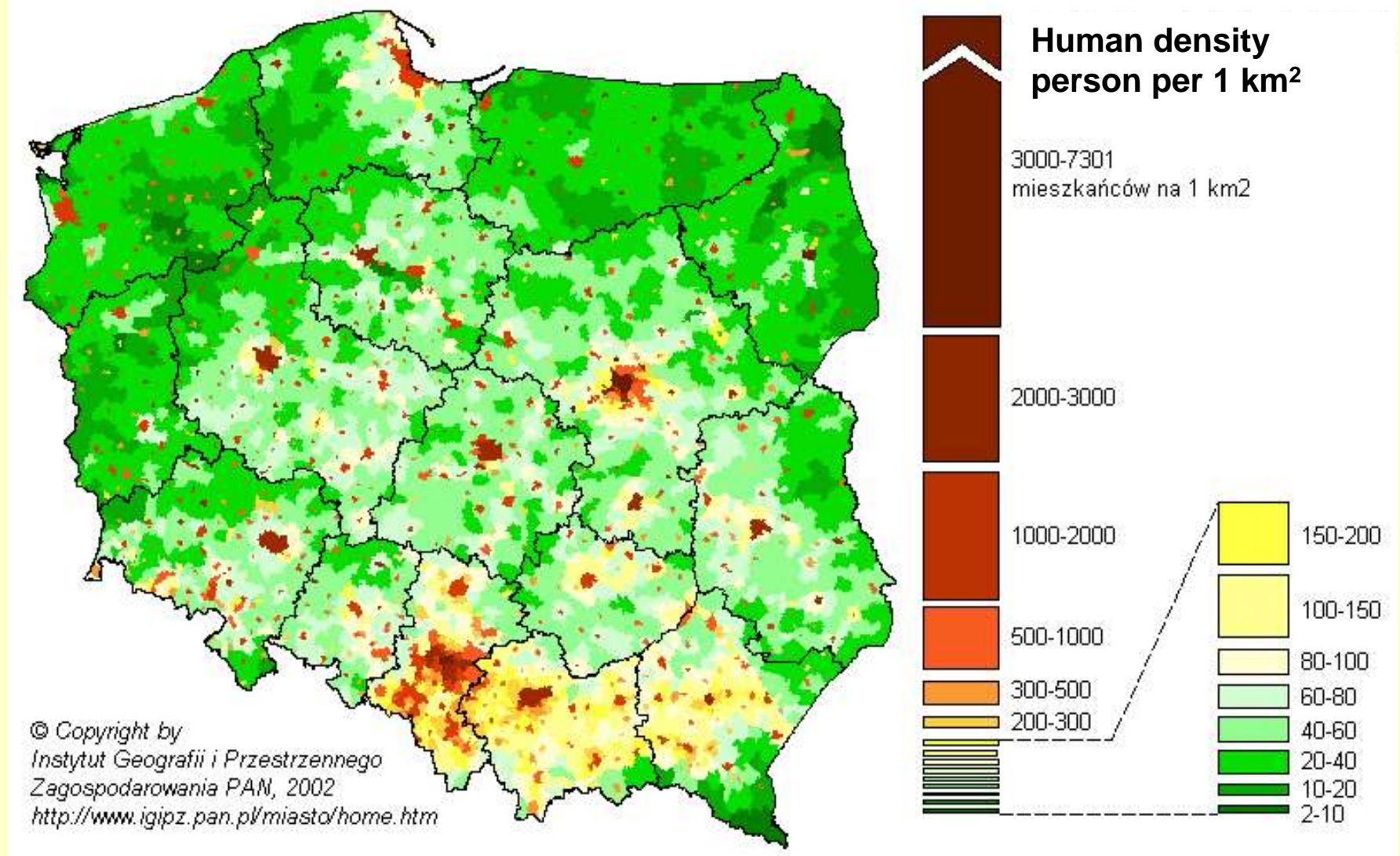
Source: Jędrzejewski W., Jędrzejewska B., Zawadzka B., Borowik T., Nowak S., Mysłajek R. W. 2008.

Actual and potential number of wolves in suitable habitats in Poland



Obstacles for the large predators dispersal –

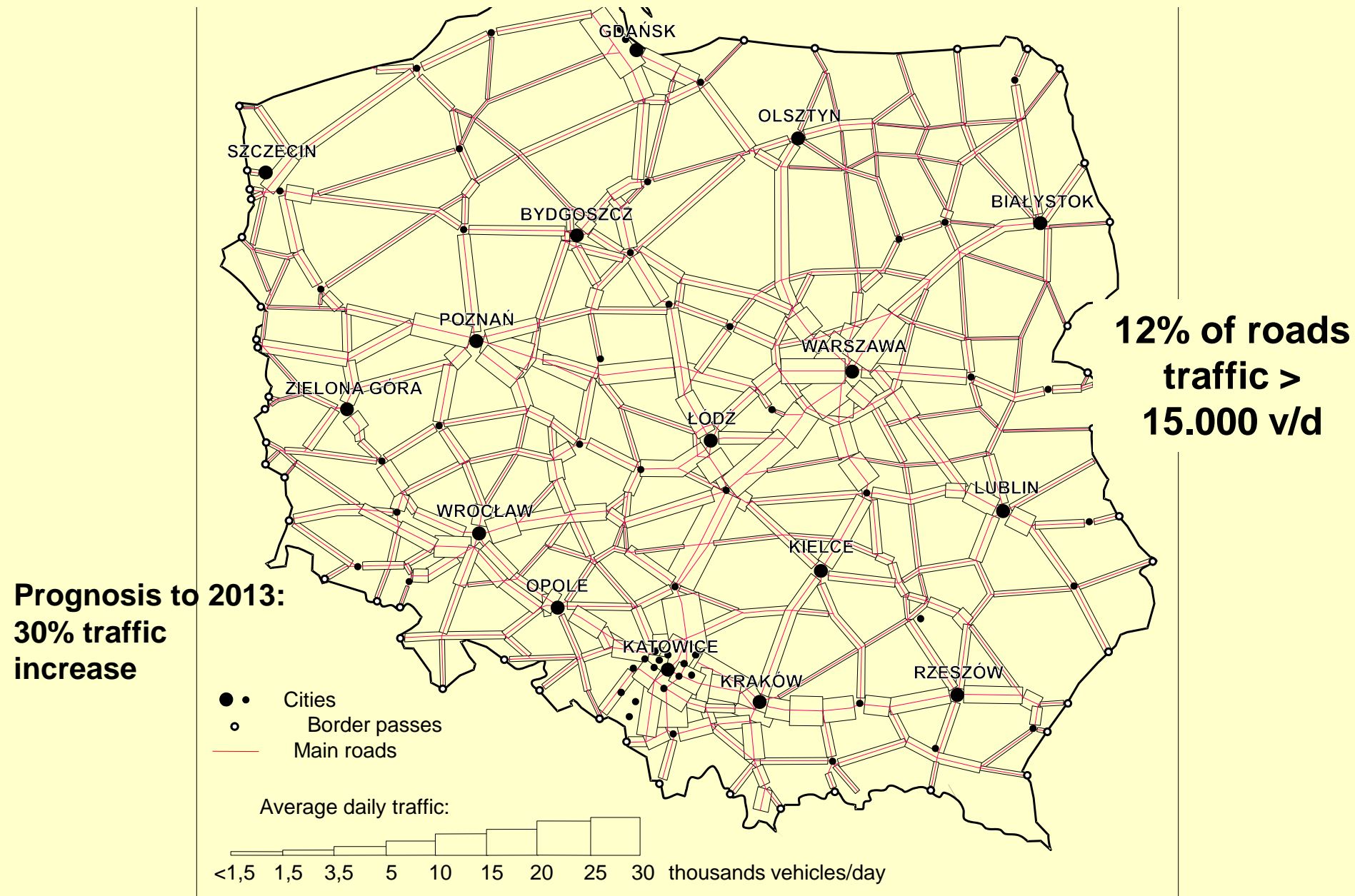
1. Densely urbanised central and southern part of Poland



Obstacles for large carnivores dispersal – 2. High traffic on roads



55% of existing roads deter animals from crossing (traffic > 6.000 vehicles/day)

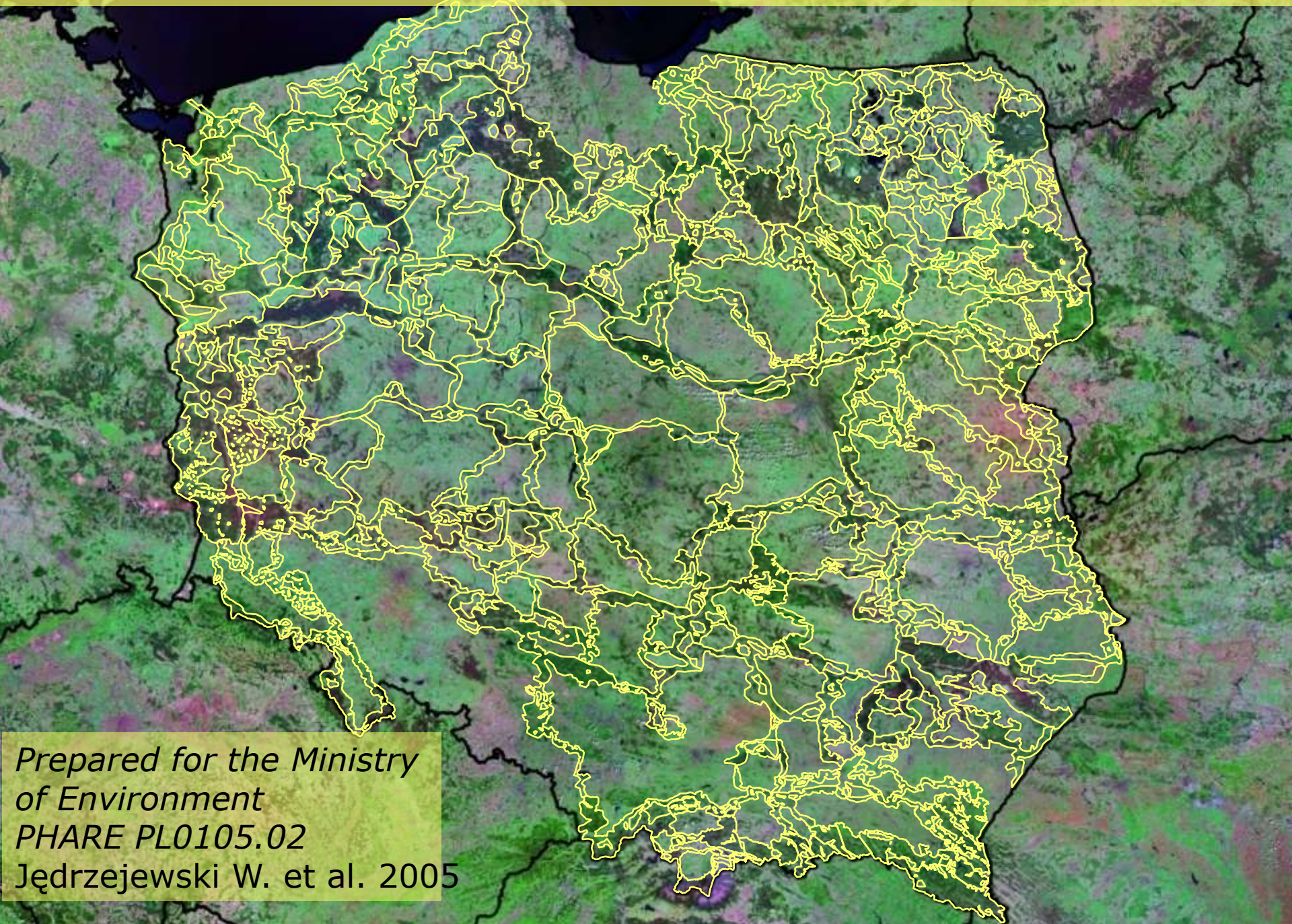




Habitat fragmentation is the main threat to large animal populations



Project of ecological corridors in Poland



*Prepared for the Ministry
of Environment
PHARE PL0105.02
Jędrzejewski W. et al. 2005*

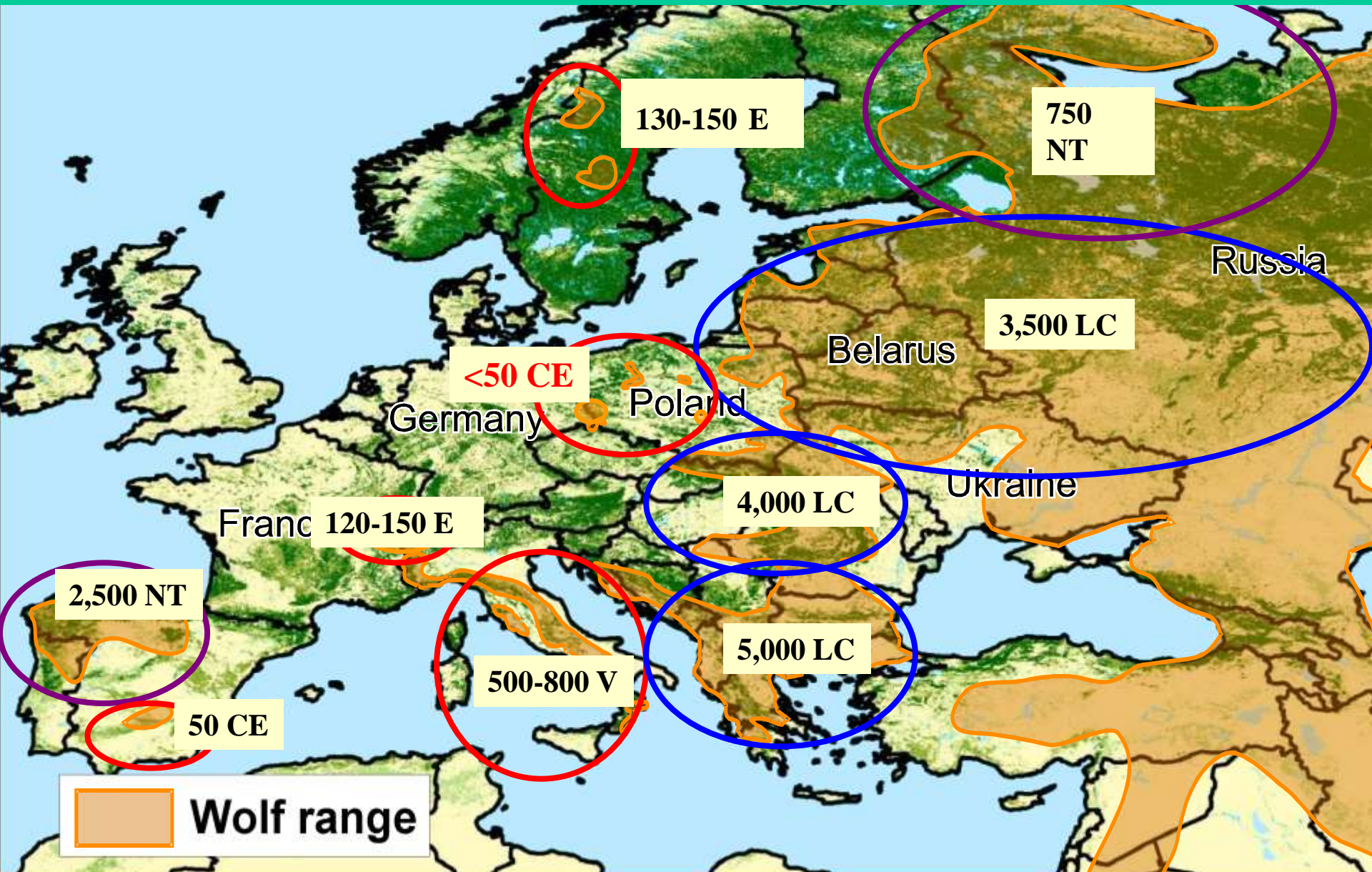


Wolf and lynx as indicator species for defining ecological corridors

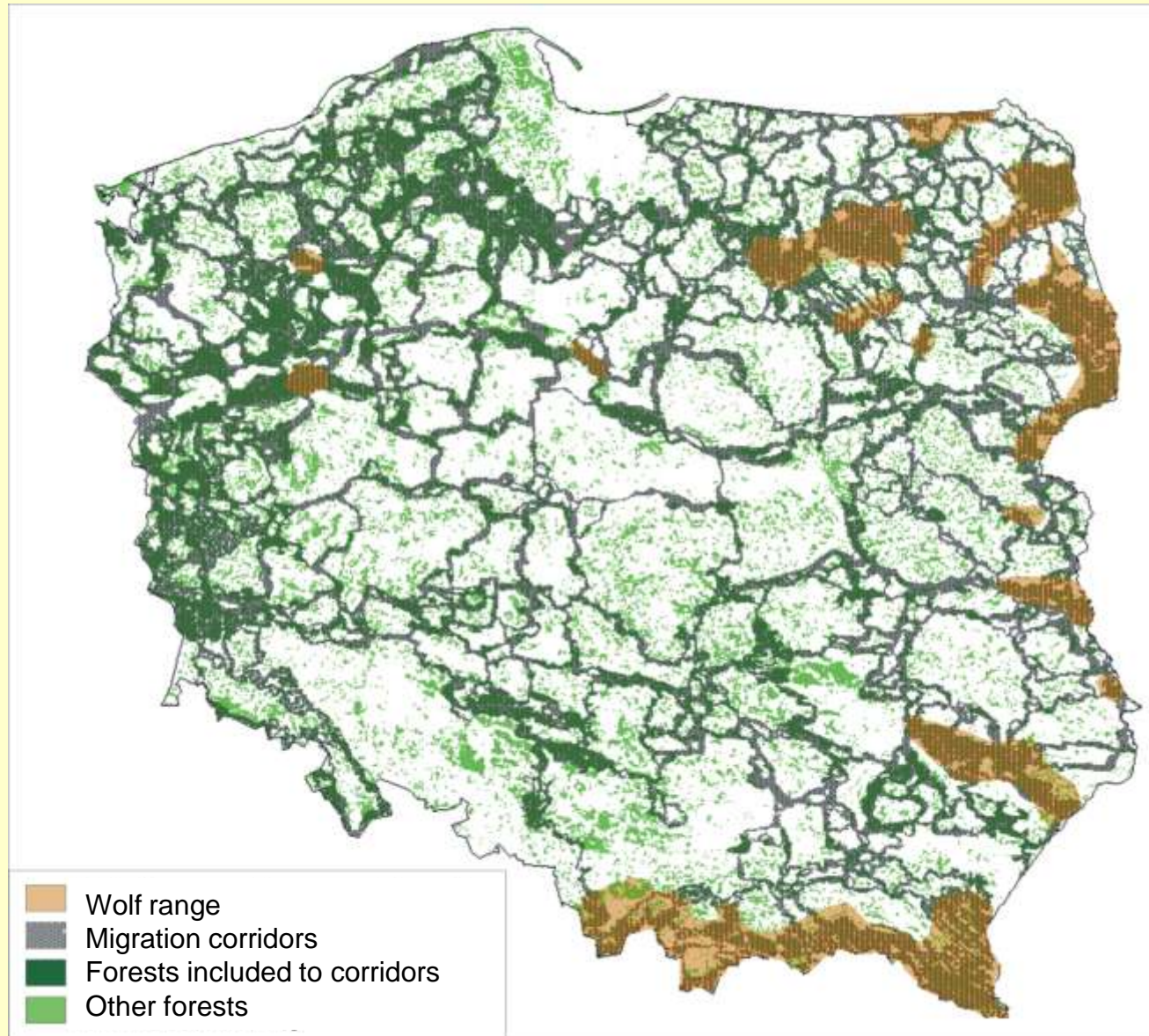
- priority species (Annex II Habitat Directive)
- big abilities for long distance movement and dispersal along forests
- corridors suitable for large carnivores are useful for other species



Population structure of wolves in Europe (according to Guidelines for Population Level Management Plans for Large Carnivores management - LCIE)



Ecological corridors linking wolf populations and habitats in Poland



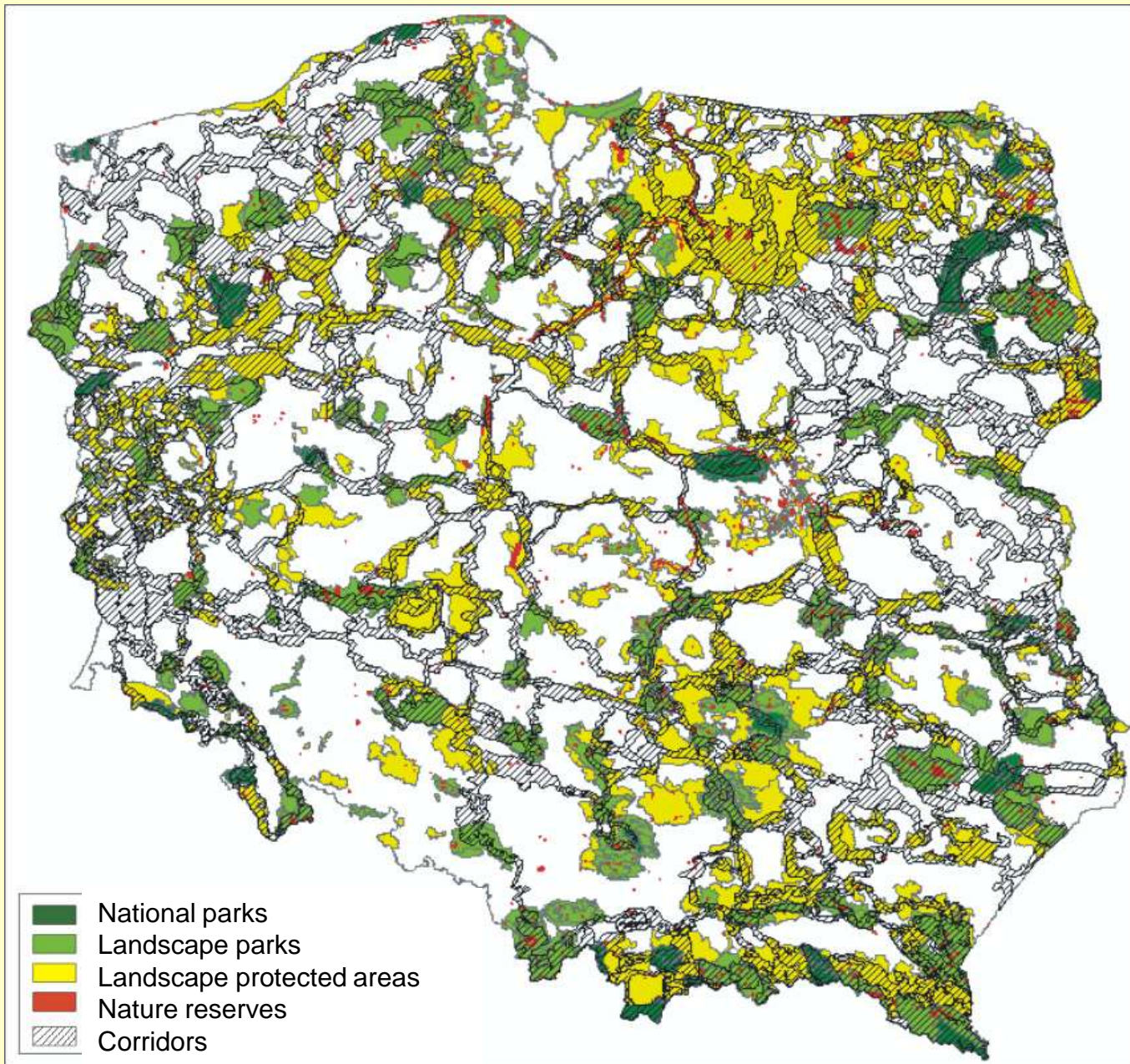
Source: Jędrzejewski i in. 2001, 2002, data from „Wolf and lynx census in Poland”)

Ecological corridors linking lynx populations and habitats in Poland

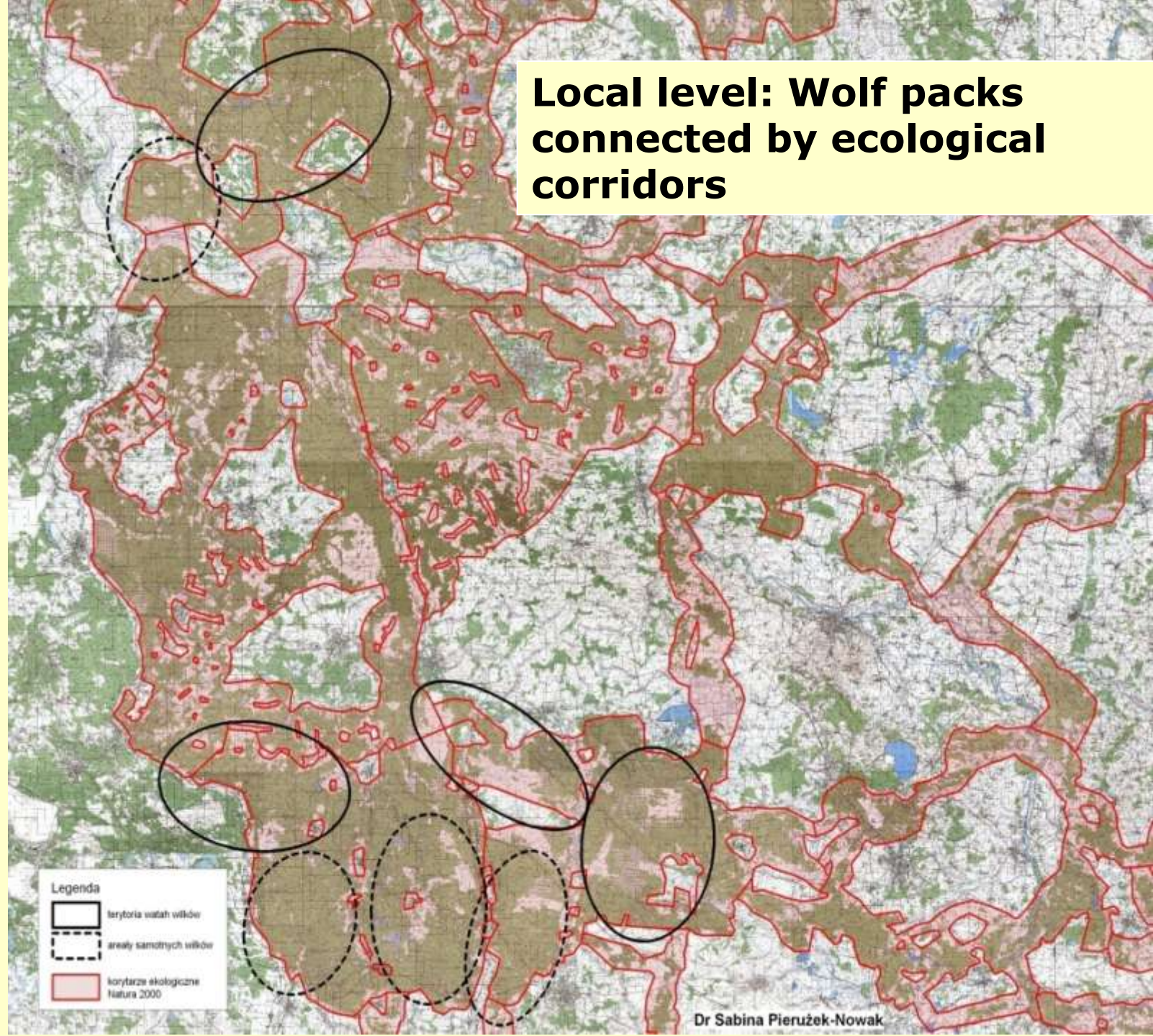


Źródło: (Jędrzejewski i in. 2001, 2002, dane z Ogólnopolskiej inwentaryzacji wilka i rysia, koordynowanej przez ZBS PAN)

Ecological corridors linking protected areas (including Natura 2000 sites) in Poland

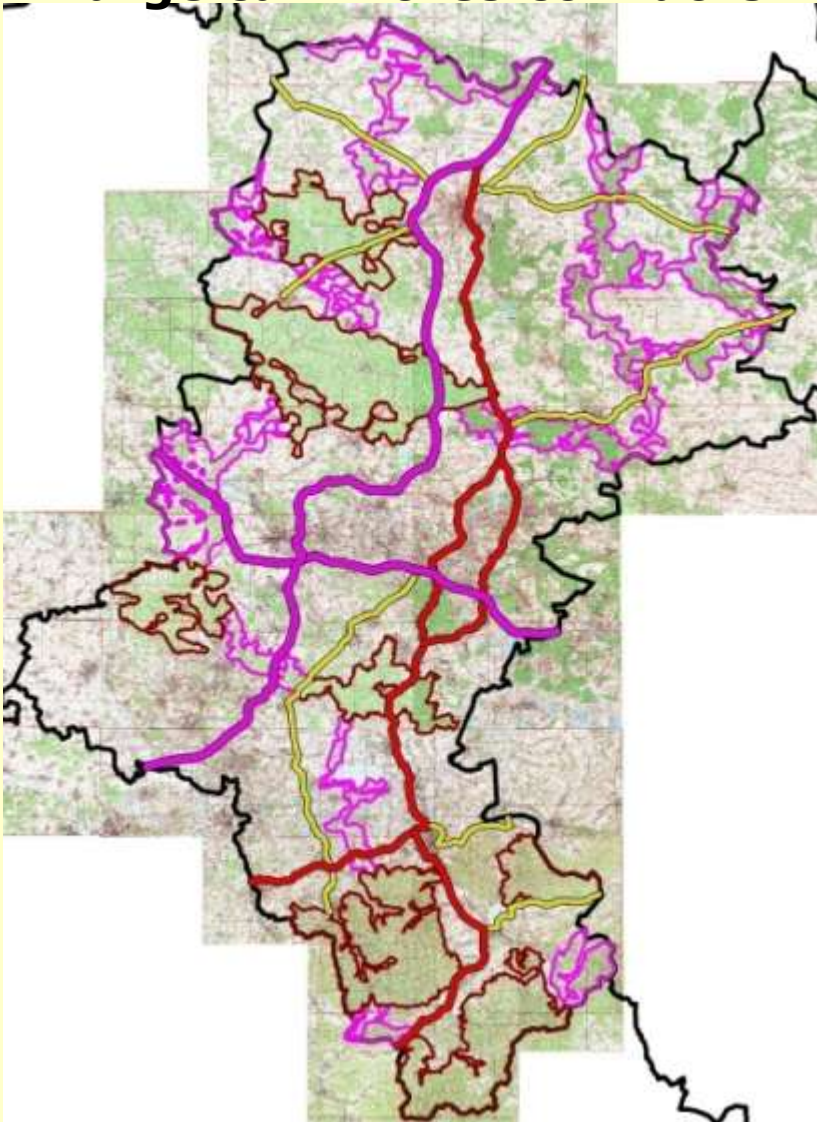


Local level: Wolf packs connected by ecological corridors

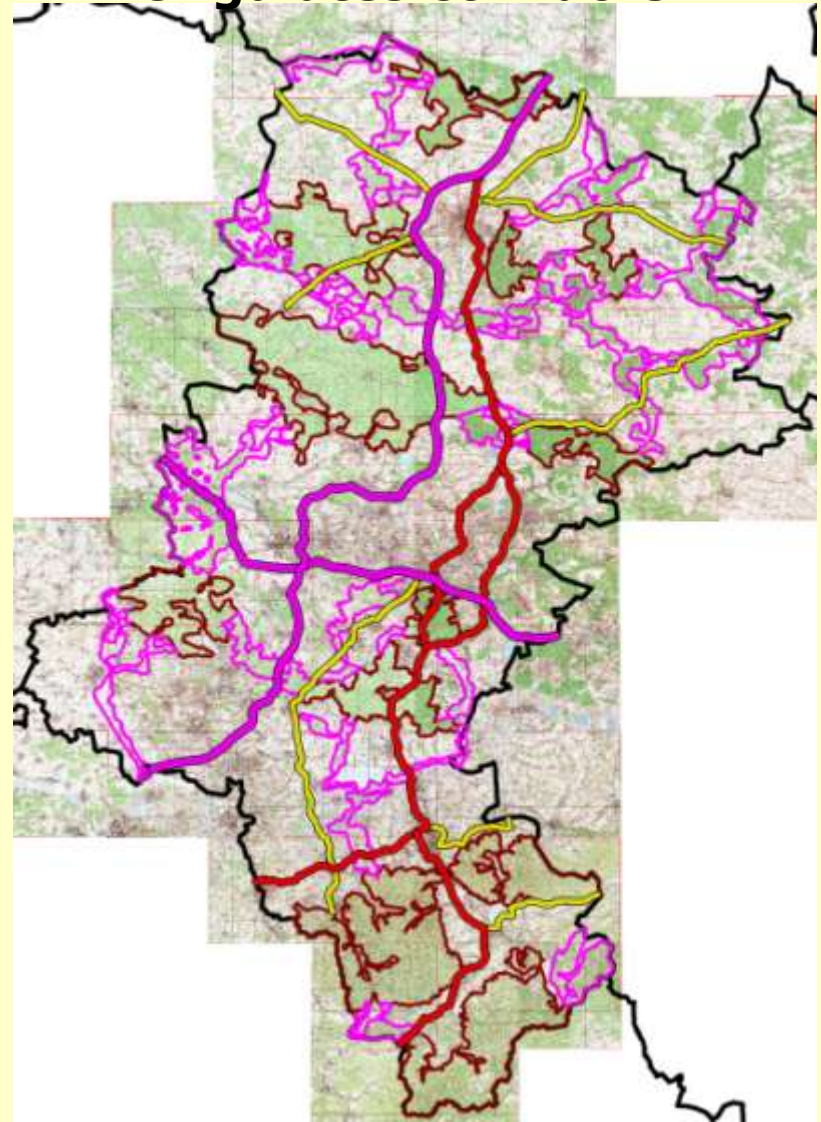


Regional level: Ecological corridors for large mammals in the Silesian Province (S Poland)

Large carnivores corridors



Ungulates corridors



Existing transportation network and planned (up to 2013) highways and express roads

in 2007

690 km of motorways

300 km of express roads



Up to 2013:

1778 km of motorways




2274 km of express roads

TOTAL: about 4000 km of new roads


Planned:

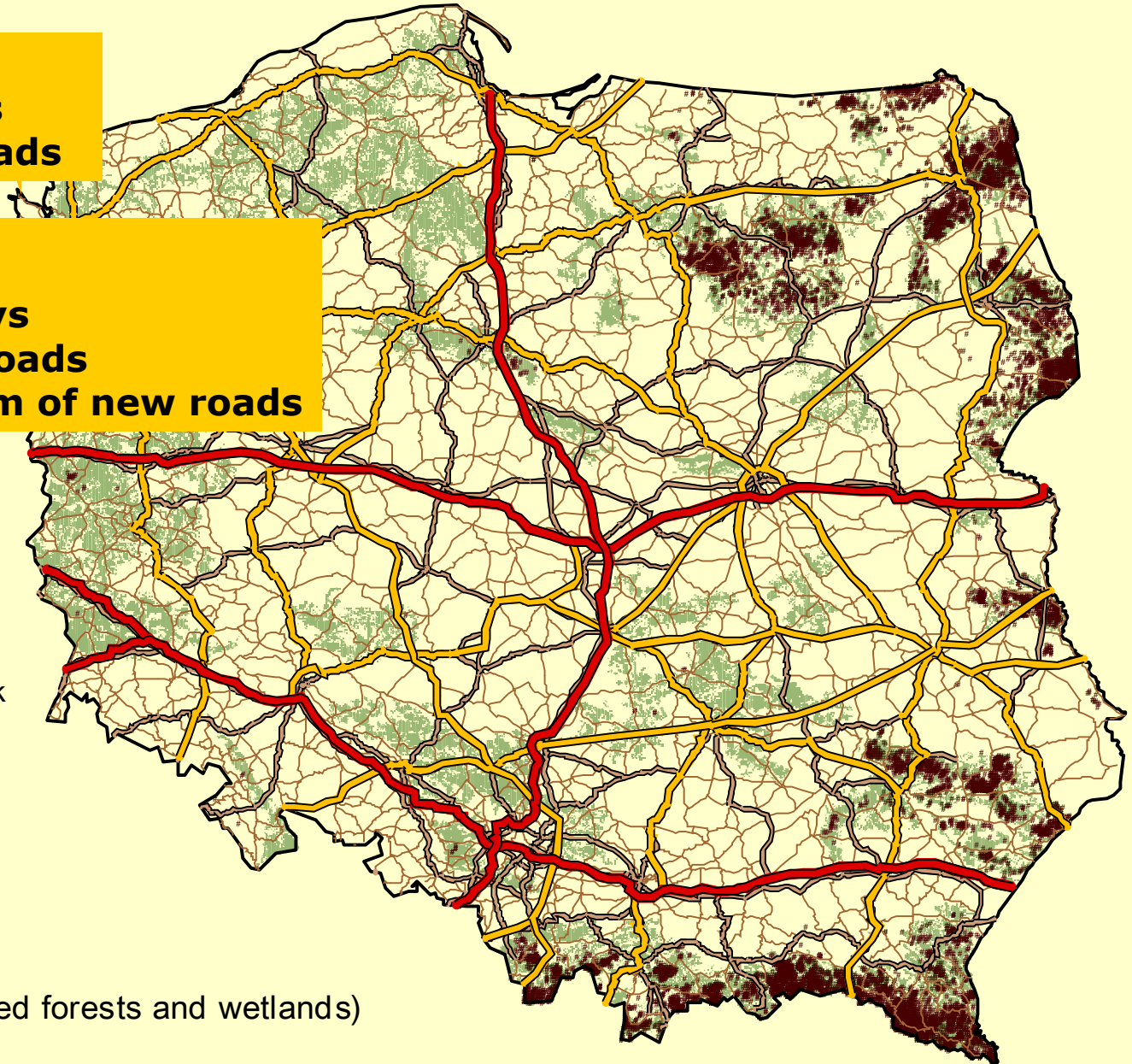
-  Highways
-  Express roads

Actual transportation network

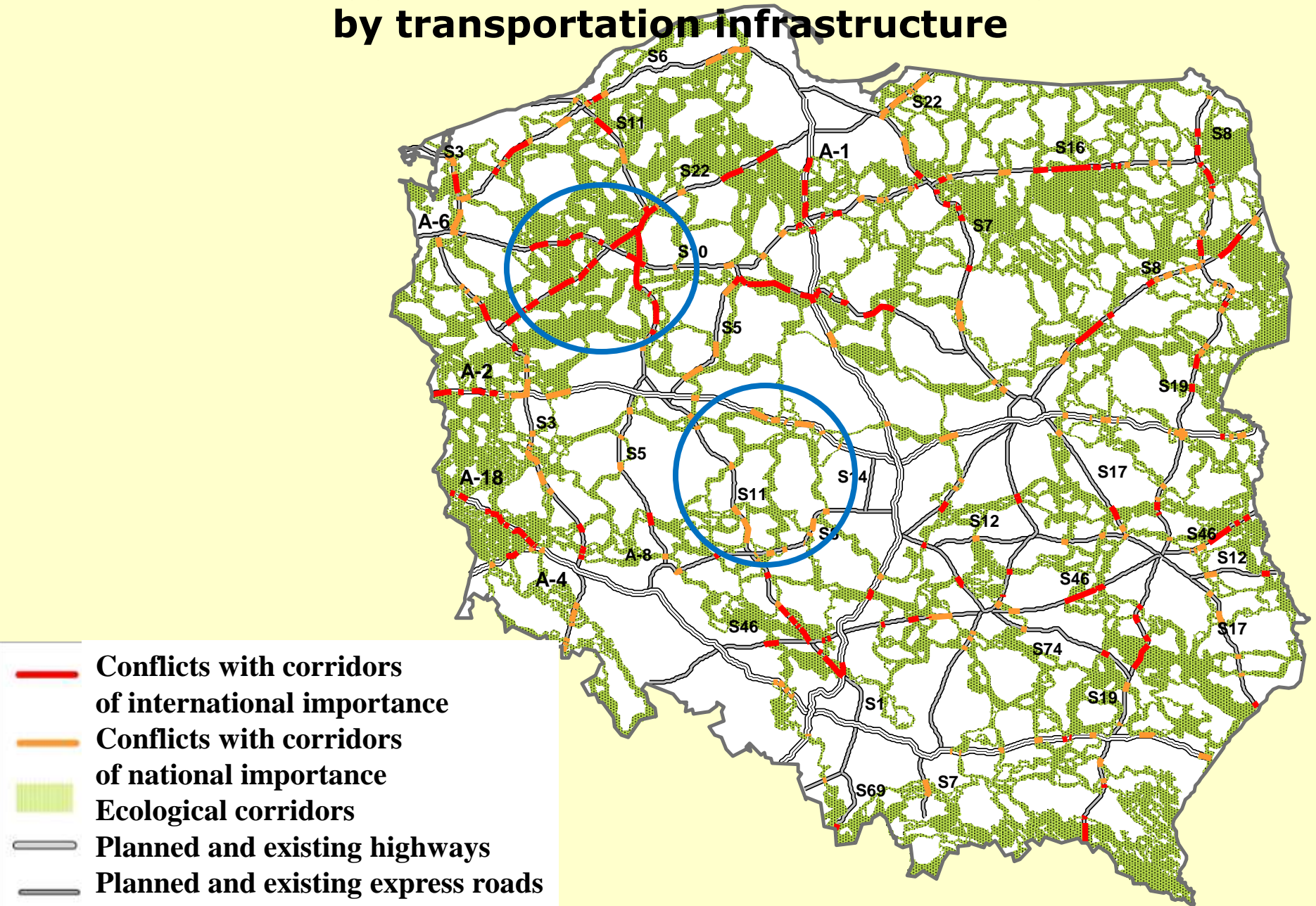
-  Highways
-  Main roads
-  Other roads

Wolf records

 Suitable wolf habitats
real borders of combined forests and wetlands)



Currently the biggest threat: Disruption of ecological corridors by transportation infrastructure



Manual for EIA, road planners and investors

“Animals and roads: Methods of mitigation the negative impact of roads on wildlife”

Zwierzęta a drogi

Metody ograniczania negatywnego wpływu dróg
na populacje dzikich zwierząt

Włodzimierz Jędrzejewski, Sabina Nowak,
Rafał Kurek, Robert W. Mysłajek, Krystyna Stachura



Zakład Badania Ssaków Polskiej Akademii Nauk
Białowieża 2004

Animals and Roads

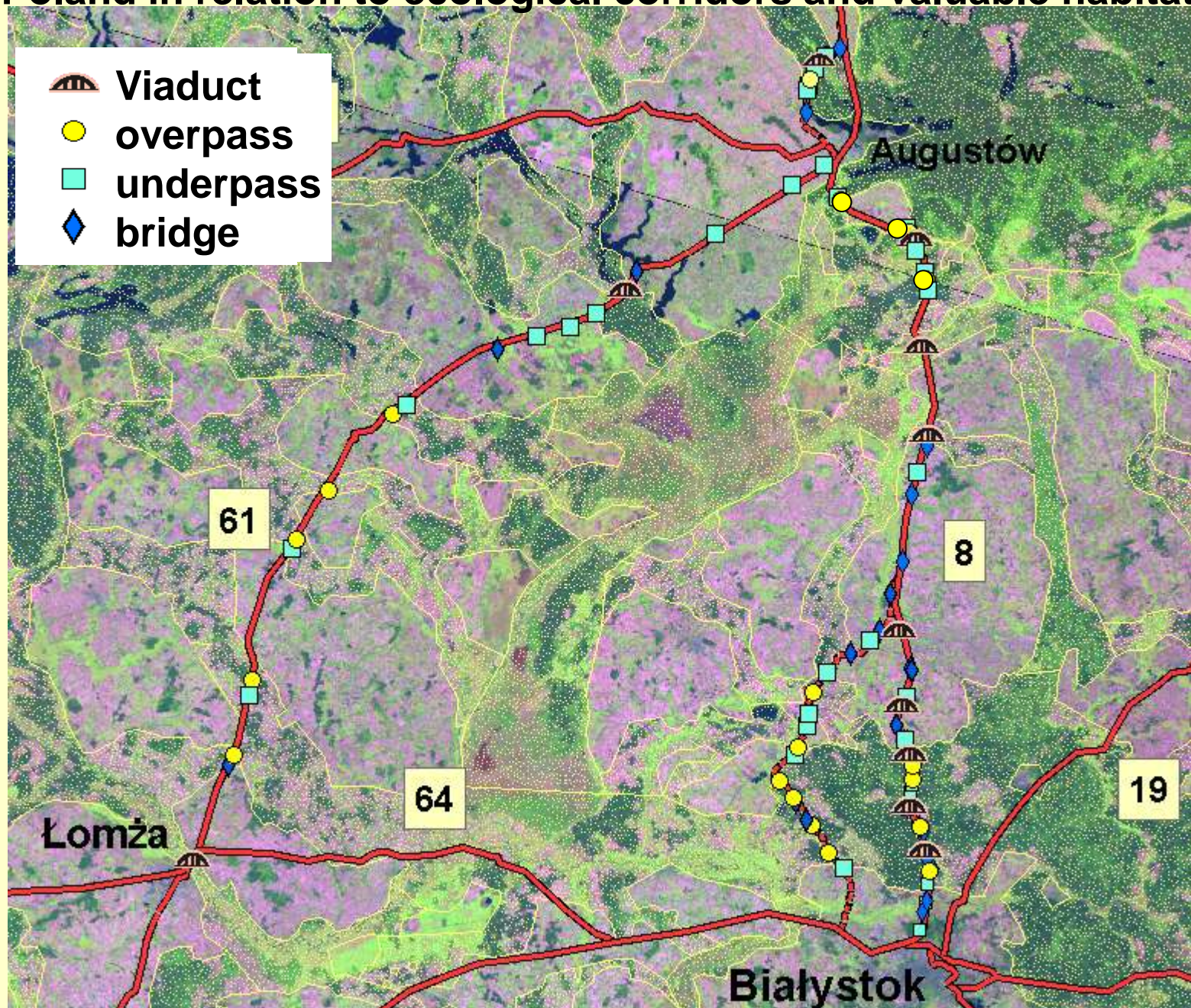
Methods of mitigating the negative impact
of roads on wildlife

Włodzimierz Jędrzejewski, Sabina Nowak,
Rafał Kurek, Robert W. Mysłajek, Krystyna Stachura,
Bernadetta Zawadzka, Marcin Pchalek

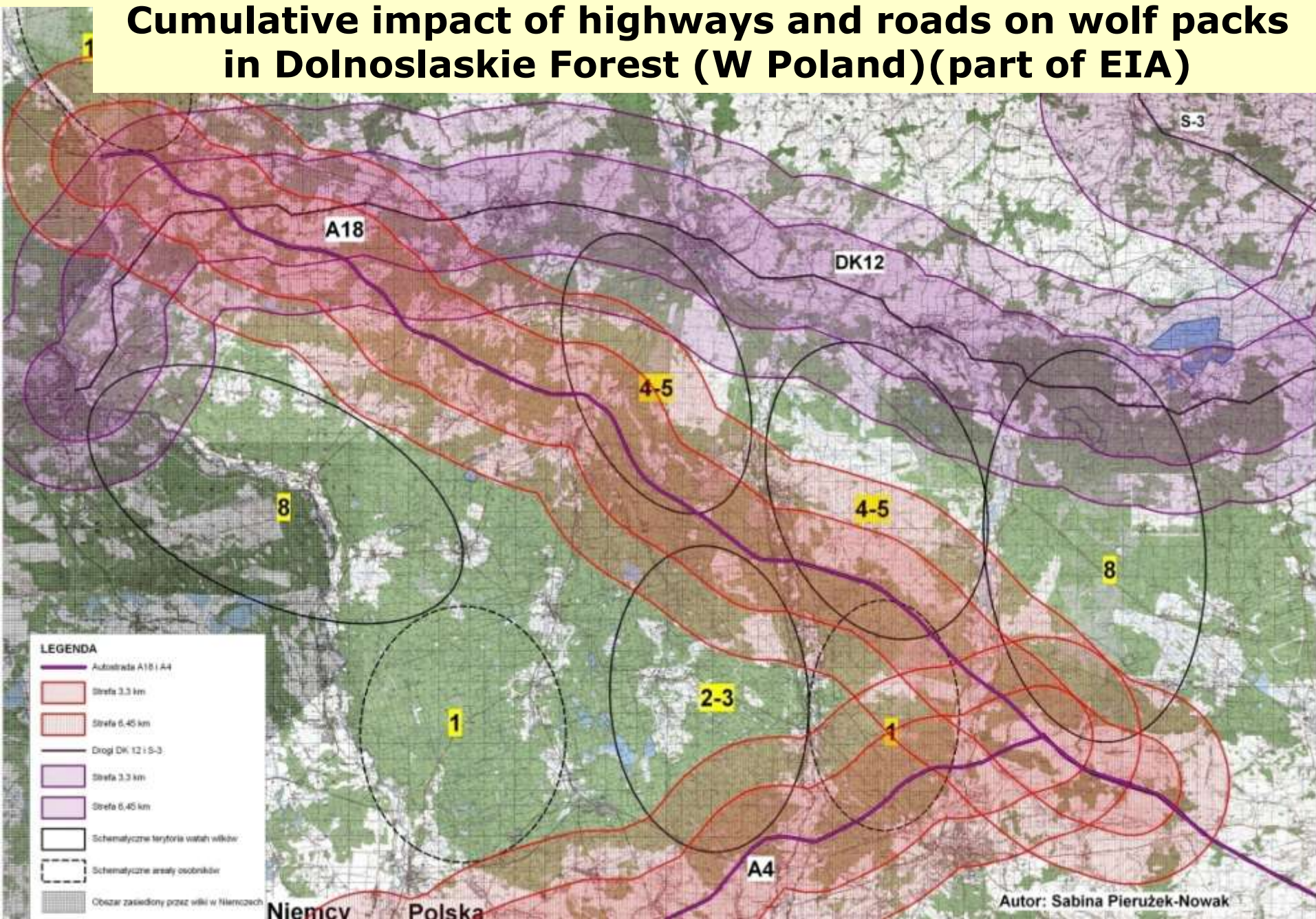


Mammal Research Institute, Polish Academy of Sciences
Białowieża 2009

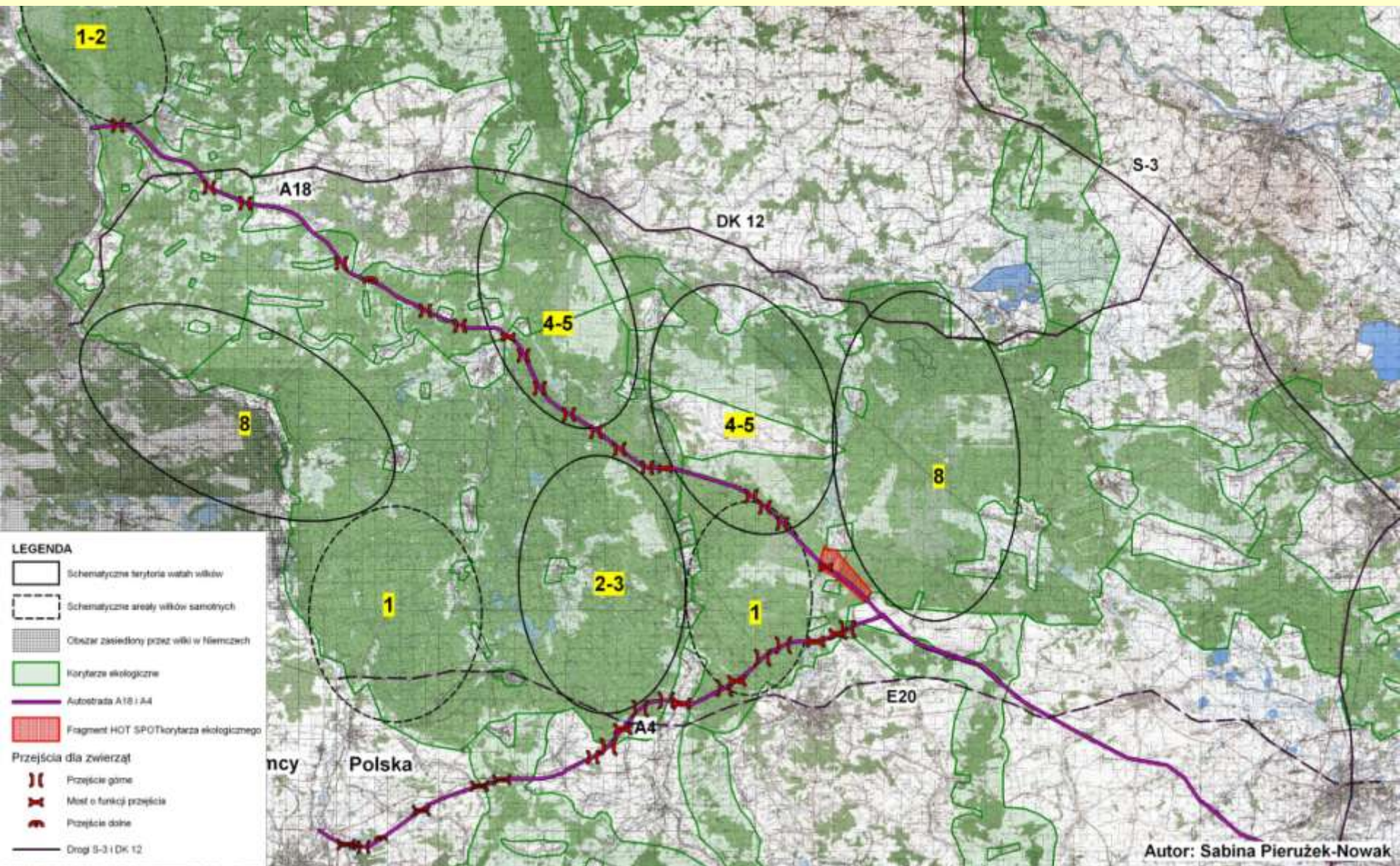
Recommendations for animal passes on planned highways in North Poland in relation to ecological corridors and valuable habitats



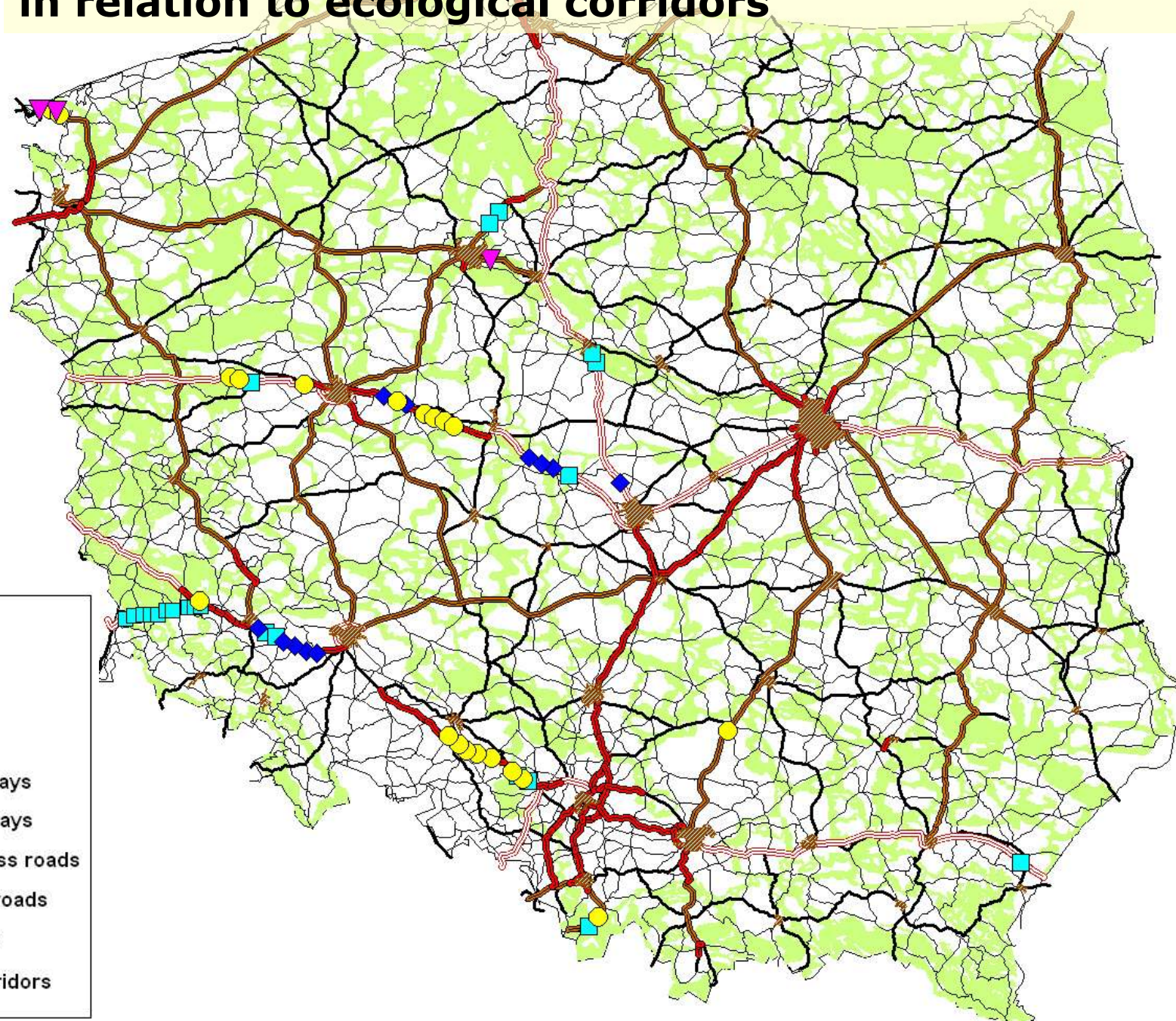
Cumulative impact of highways and roads on wolf packs in Dolnoslaskie Forest (W Poland)(part of EIA)



Recommendations for passages for big and medium-sized animals on A4 and A18 highways in Dolnoslaskie Forest (West Poland)



Existing passes for large animals on the Polish roads in relation to ecological corridors



Animal passages built on Polish highways and railways in the last 10 years

Type of passage	Number in whole Poland	
Overpasses (green bridges) on highways	25	47
Overpasses on railways	2	
Underpasses for: large and medium mammals culverts (amphibians, rodents etc.)	20	
Viaducts	221	36
Widened bridges	18	
Joint-use passages	18	
Others	31	
	10	
Total	343	



Passages for big animals recently built in Poland



Passages for small animals



Animal passes planned to be built in Poland

843 crossing structure for the use of animals movement are planned in nearest future

-
- viaduct
 - overpass
 - bridge
 - underpass
 - existing highways
 - planned highways
 - planned express roads
 - existing main roads
 - regional roads
 - ecological corridors

Project of monitoring of wildlife passages in Poland

Association for Nature WOLF
prepared for the Ministry of Infrastructe



Projects are supported by:



Partners of TEWN project



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Mammal Research Institute
Polish Academy of Sciences
Białowieża



And financially supported by



Thank you for the attention



**www.polskiwilk.org.pl
www.polishwolf.org.pl**