

# Status of the brown bear in Poland

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CARPATHIAN  
BROWN BEAR  
PROJECT  
[carpathianbear.pl](http://carpathianbear.pl)



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# MANAGEMENT PLAN FOR THE BROWN BEAR

## URSUS ARCTOS IN POLAND



Nuria Selva  
Tomasz Zwijacz-Kozica  
Agnieszka Sergiel  
Agnieszka Olszańska  
Filip Zięba

University of Life Sciences  
Warsaw 2011

Strict protection since 1952  
Annex II and IV Habitats Directive

Art. 17 reporting

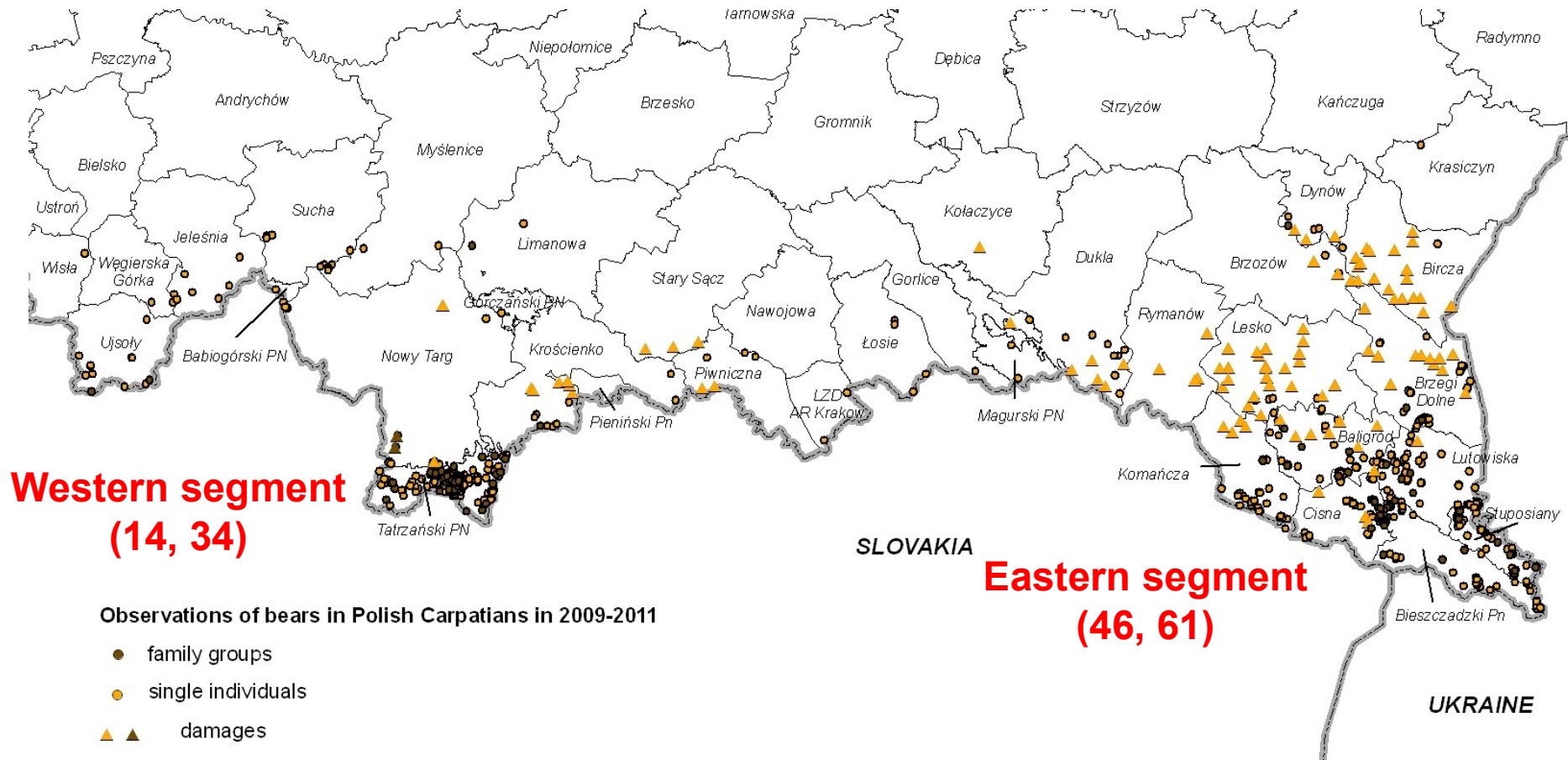
<u>Reporting period</u>	2007-2012
<u>Population size</u>	60-95 <u>individ.</u>
<u>Population trend</u>	<u>stable</u>
<u>Habitat occupied</u>	5400 km <sup>2</sup>
<u>Habitat suitable</u>	8274 km <sup>2</sup>
<u>Habitat trend</u>	<u>negative</u>
<u>Overall assessment</u>	U1 <u>unfavourable</u> <u>inadequate</u>

# MAIN LACKS

- (1) Reliable **monitoring** methods
- (2) Use of **scientific knowledge** in management
- (3) Implementation of existing **legislation**
- (4) **Coordination and communication** among institutions and sectors involved, also with neighbor countries



# Brown bear distribution and numbers in the Polish Carpathians in 2009-2011



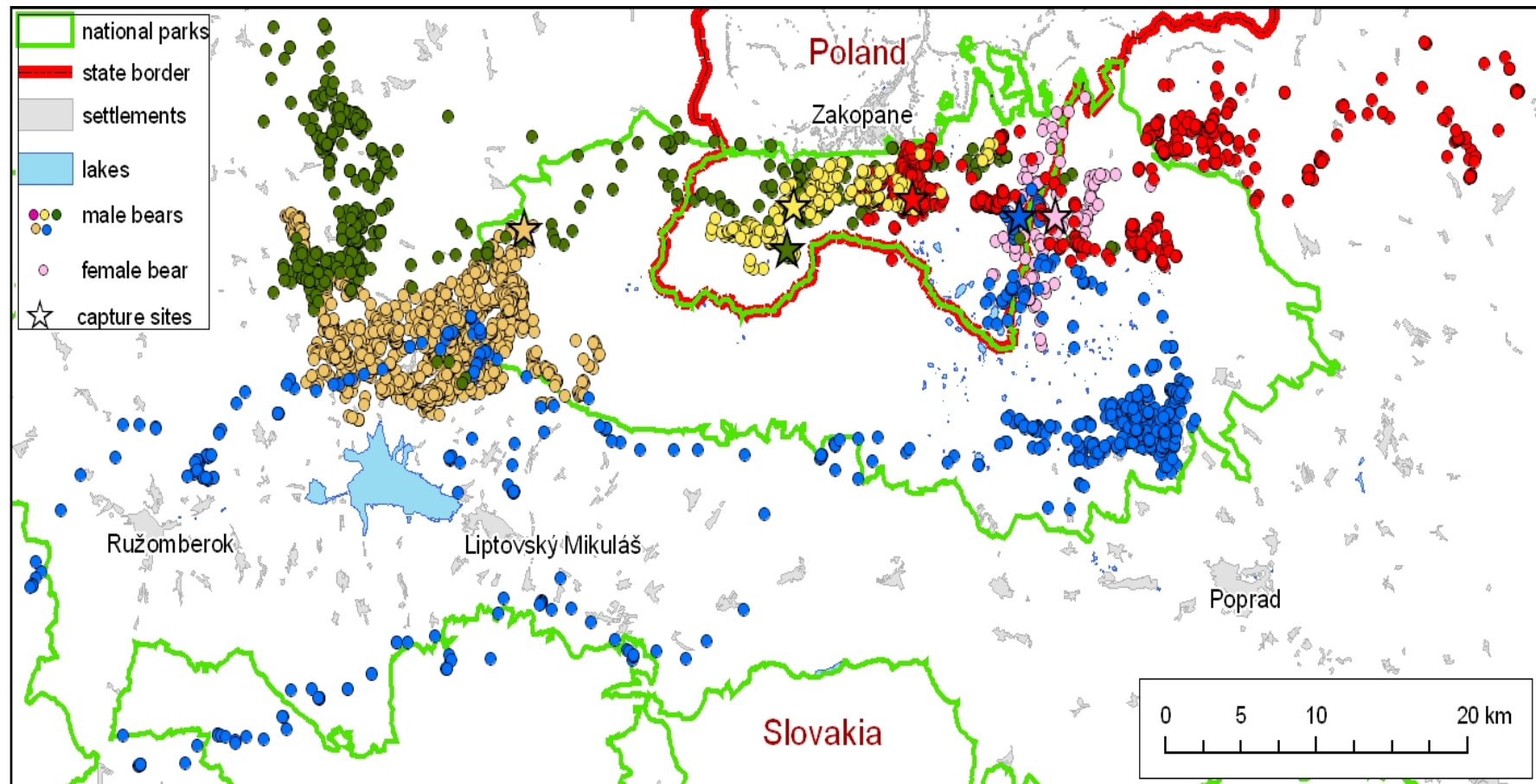
Lp.	Nadleśnictwo	Wilki	Rysie	Niedźwiedzie
1	2	3	4	5
1	Baligród	32	21	24
2	Bircza	23	21	3
3	Brzozów	23	8	0
4	Cisna	40	15	36
5	Dukla	24	12	1
6	Dynów	9	4	0
7	Głogów Małopolski	0	0	0
8	Jarosław	10	0	0
9	Kańczuga	12	0	0
10	Kolbuszowa	0	0	0
11	Kołaczyce	15	1	0
12	Komańcza	37	16	15
13	Krasiczyn	11	19	0
14	Lesko	51	33	18
15	Leżajsk	6	0	0
16	Lubaczów	33	15	0
17	Lutowiska	27	14	28
18	Mielec	0	0	0
19	Narol	26	10	0
20	Oleszyce	1	0	0
21	Rymanów	53	39	5
22	Sieniawa	16	0	0
23	Strzyżów	0	0	0
24	Stuposiany	16	4	18
25	Tuszyna	0	0	0
26	Ustrzyki Dolne	54	30	19
<b>Ogółem RDLP w Krośnie</b>		<b>519</b>	<b>262</b>	<b>167</b>



## **Method to estimate population size- explanations by the State Forest Administration**

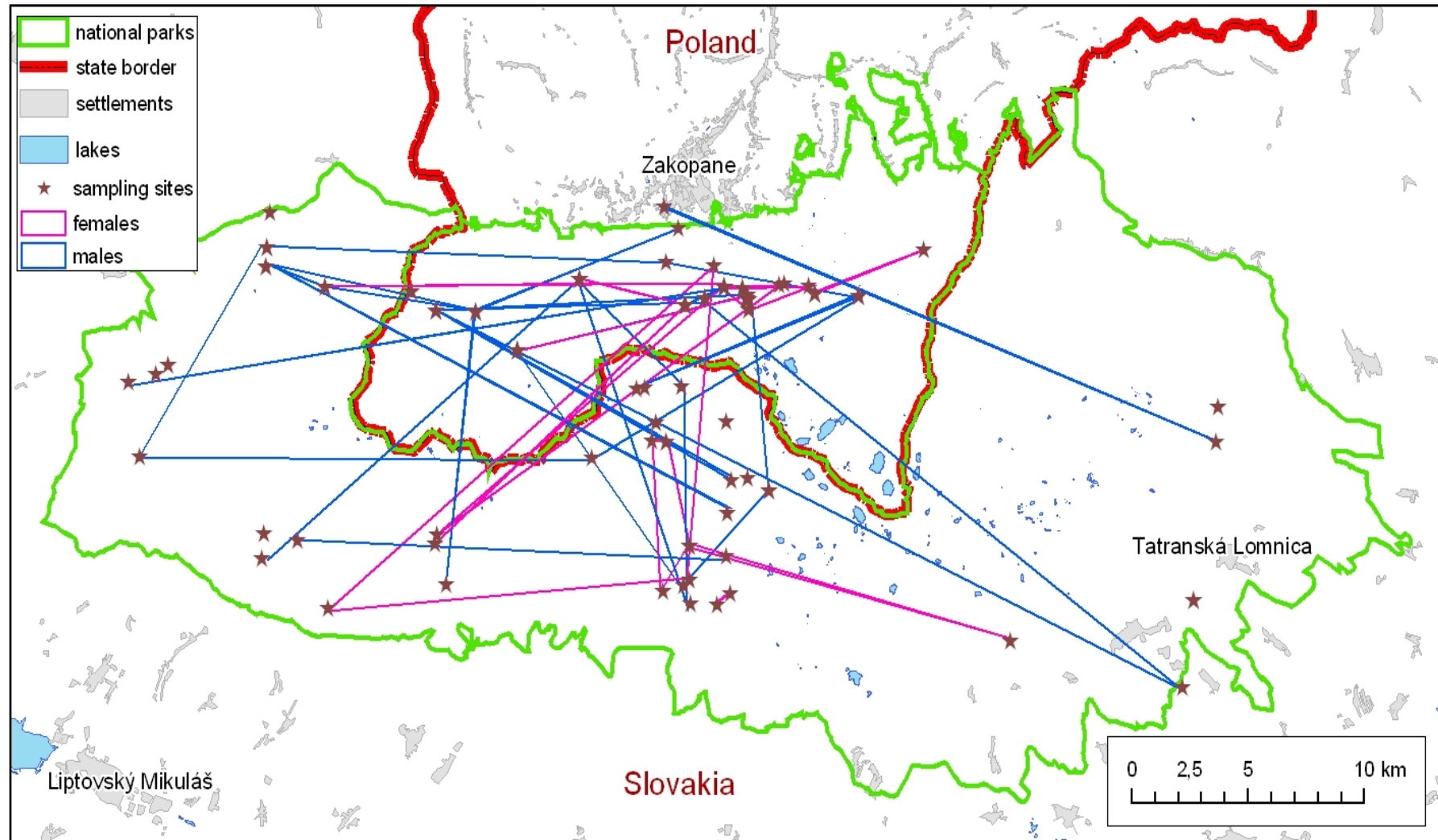
The number of protected animals, such as bison, bears, wolves, lynx and beavers, are assessed by the method of “year-round observations”, based on the observation cards filled by employees of every Forest District and hunters of the corresponding hunting club. In order to avoid counting the same individuals, “arrangements” are done between neighbor Forest Districts and/or National Parks.

# Movements of 6 bears in the Polish and Slovakian Tatras



Zwijacz-Kozica et al. 2014. Getting transboundary cooperation into practice: Brown bear genetic monitoring in the Tatra mountains. 23rd International Conference on Bear Research and Management.

# Hair sampling sites in the Polish and Slovakian Tatras (TPN, TANAP)



Zwijacz-Kozica et al. 2014. Getting transboundary cooperation into practice: Brown bear genetic monitoring in the Tatra mountains. 23rd International Conference on Bear Research and Management.

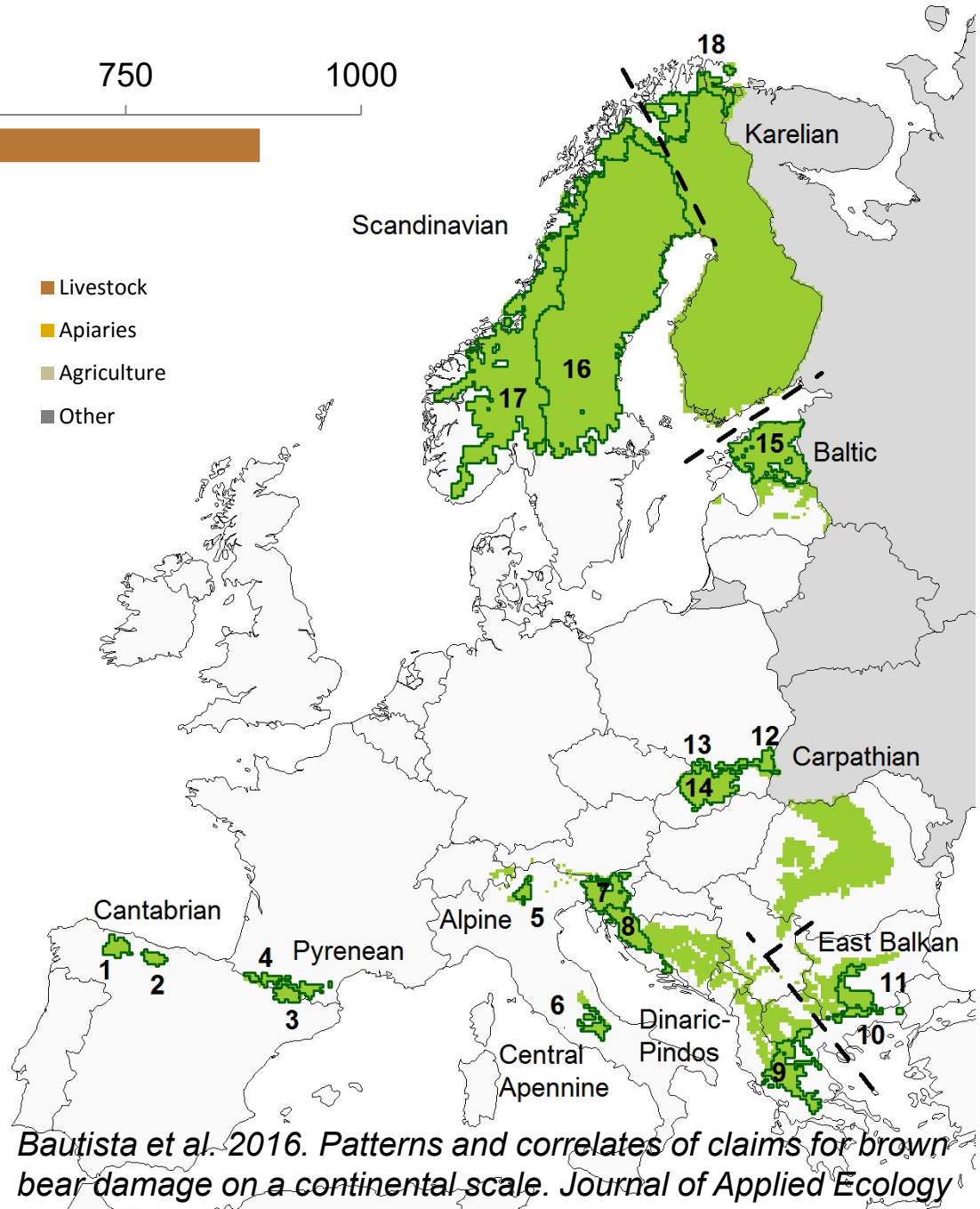
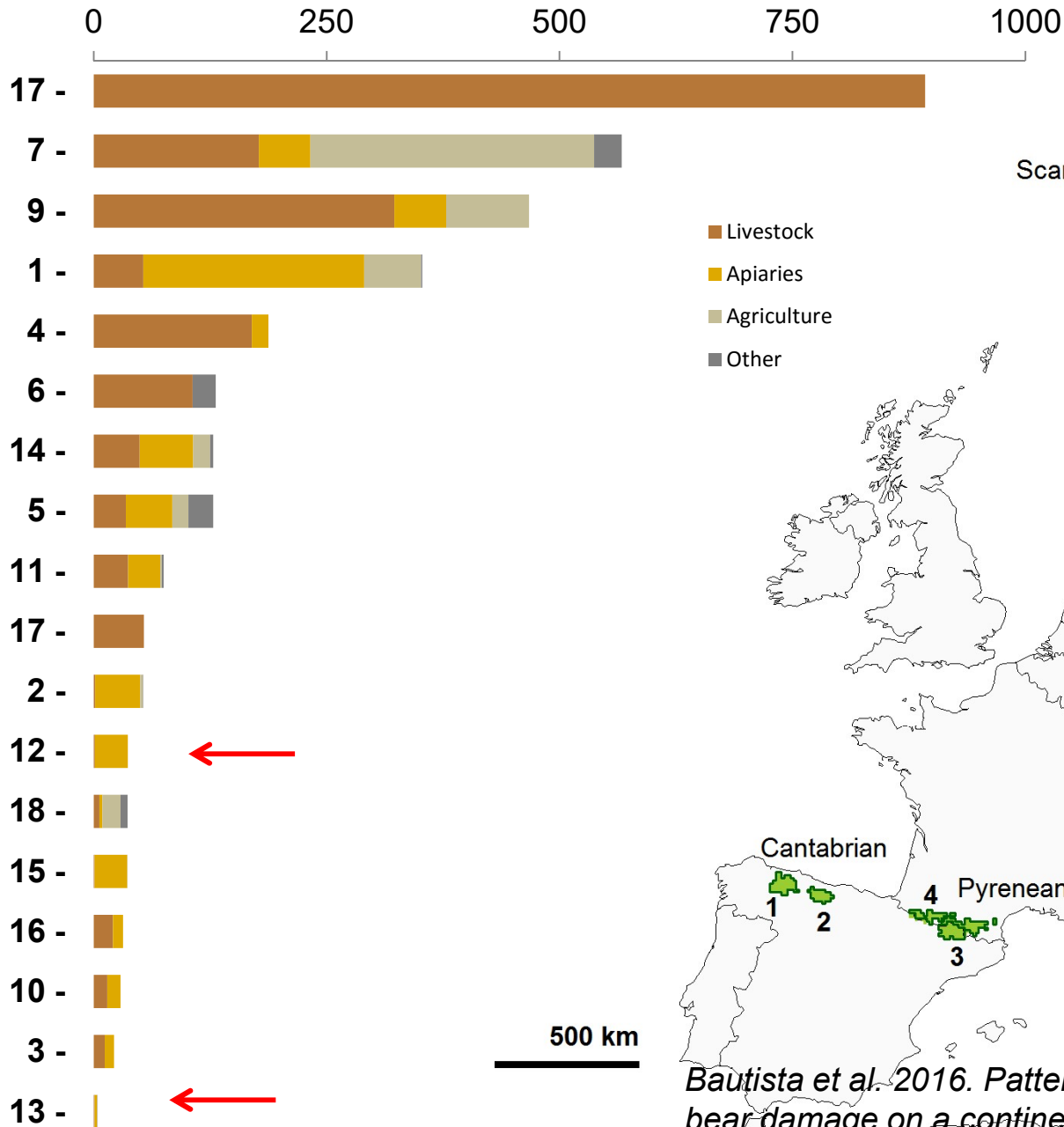


## Estimations of bear numbers in the Polish TPN, Slovakian TANAP and the whole Tatra National Park

Estimates	Polish Tatra	Slovakian Tatra	Whole Tatra
No. collected samples	143	228	371
No. genotyped samples	48	47	95
<hr/>			
No. unique genotypes	30	24	42
No. genotypes found more than once	6	5	18
<b>Total no. bears in 7-month period</b>	<b>47.4 (±11.5)</b>	<b>60.4 (±21.4)</b>	<b>63.5 (±9.2)</b>

*Zwijacz-Kozica et al. 2014. Getting transboundary cooperation into practice: Brown bear genetic monitoring in the Tatra mountains. 23rd International Conference on Bear Research and Management.*

# Mean number of damage claims from 2005 to 2012



Bautista et al. 2016. Patterns and correlates of claims for brown bear damage on a continental scale. *Journal of Applied Ecology*

# Factors affecting the number of bear damage claims

Journal of Applied Ecology



Journal of Applied Ecology 2016

doi: 10.1111/1365-2664.12708

## Patterns and correlates of claims for brown bear damage on a continental scale

Carlos Bautista<sup>1\*</sup>, Javier Naves<sup>2</sup>, Eloy Revilla<sup>2</sup>, Néstor Fernández<sup>2,3</sup>, Jörg Albrecht<sup>1</sup>, Anne K. Scharf<sup>4</sup>, Robin Rigg<sup>5</sup>, Alexandros A. Karamanlidis<sup>6</sup>, Klemen Jerina<sup>7</sup>, Djuro Huber<sup>8</sup>, Santiago Palazón<sup>9</sup>, Raido Kont<sup>10</sup>, Paolo Ciucci<sup>11</sup>, Claudio Groff<sup>12</sup>, Aleksandar Dutsov<sup>13</sup>, Juan Seijas<sup>14</sup>, Pierre-Ives Quenette<sup>15</sup>, Agnieszka Olszańska<sup>1</sup>, Maryna Shkvyria<sup>16</sup>, Michal Adamec<sup>17</sup>, Janis Ozolins<sup>18</sup>, Marko Jonozović<sup>19</sup> and Nuria Selva<sup>1</sup>

The number of claims per bear are **related to**:

- Compensation schemes
- Management practices
- Human land-use

The number of claims per bear are **NOT related to**:

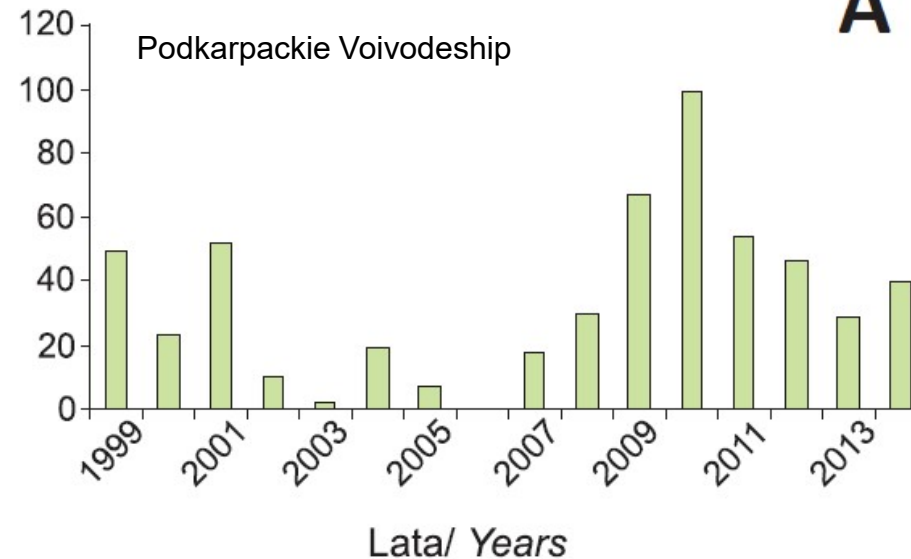
- Bear population size

# Human- bear relations

## Damages to properties



Liczba szkód zgłaszanych i rekompensowanych  
*Number of compensated damages*



## Money spent in bear damage compensations in Poland (2003-2010)

Mean:	17,000 euro/year
Maximum:	62,000 euro/year
Minimum :	0 euro/year

# Main threats Carpathian population

**Habitat (infrastructure)**

Disturbance

Low acceptance

## Action 1 Europe

Protection of **bear habitat** and enhancement of connectivity within each population and between populations

## Action 1 Carpathian population

Promote naturalness of **bear feeding habits** and provide guidelines for supplementary feeding practices

## Action 1 Poland

Conservation of **brown bear habitat** and ecological connectivity



Status, management and distribution of large carnivores

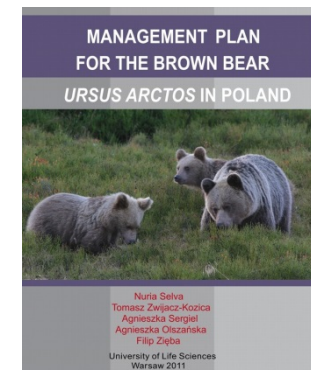
– bear, lynx, wolf & wolverine –  
in Europe

DECEMBER 2012

- Part 1 -

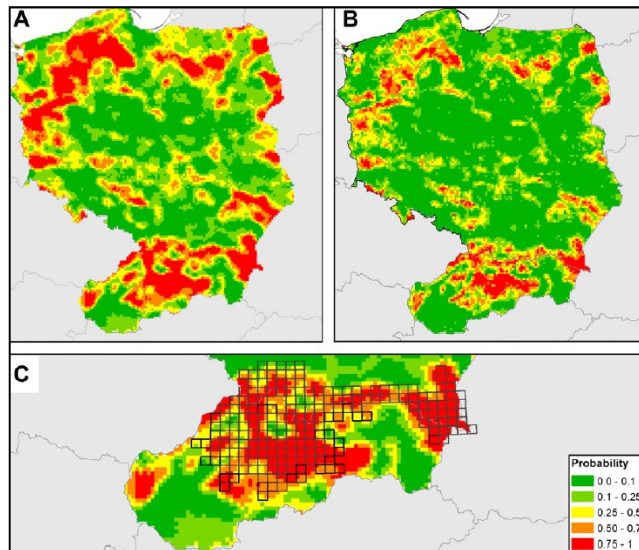


Key actions for Large Carnivore  
populations in Europe



# Suitable bear habitat- low human pressure

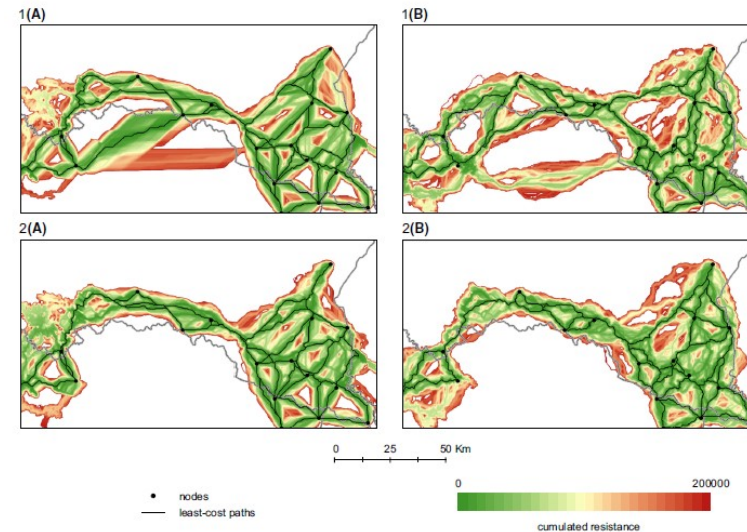
## Occurrence & Reproduction



Low no. human settlements  
Low human density

*Fernández et al. 2012. Brown bears at the edge: Modeling habitat constrains at the periphery of the Carpathian population. Biological Conservation*

## Movement



Low density of roads and settlements  
Far away from roads and settlements

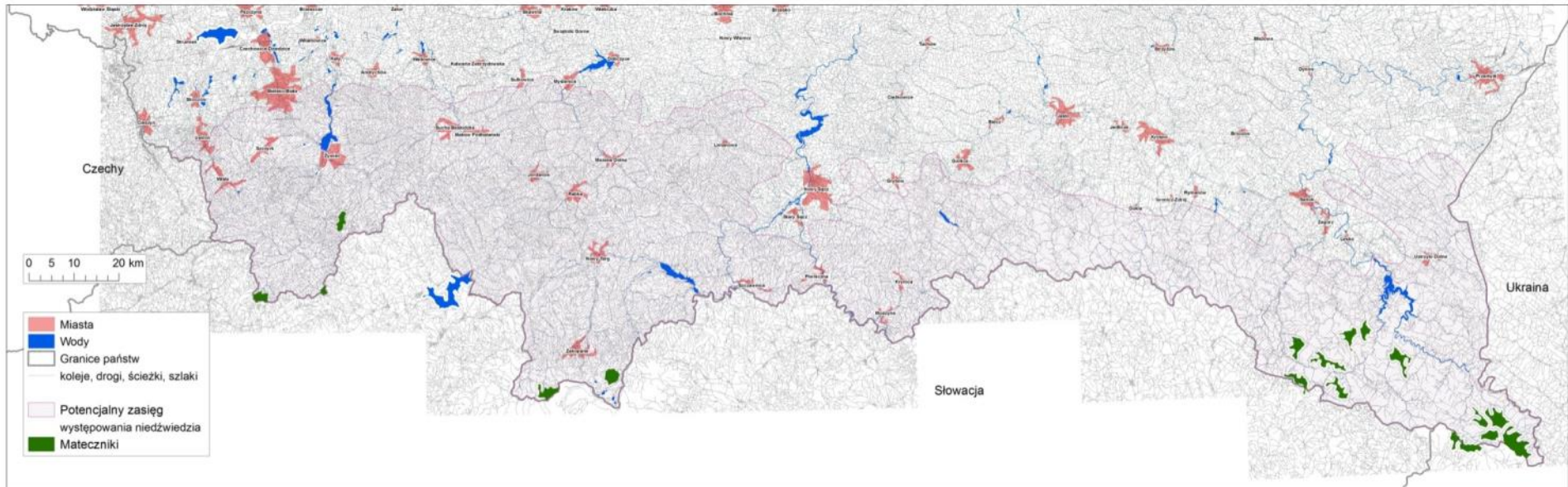
*Ziółkowska et al. 2016. Assessing differences in connectivity based on habitat versus movement models for brown bears in the Carpathians. Landscape Ecology*

# Main threat: HABITAT LOSS

- Habitat loss and fragmentation by **transport infrastructures**
- The lack of **urban spatial planning** in Poland
- Development of **winter sport infrastructures**
- Blocking **ecological corridors** and disruption of habitat connectivity
- Importance of keeping **large unfragmented areas** in bear habitat ----- **HIGHLIGHT!**



# Roadless areas as secure bear habitat



## **HABITATS DIRECTIVE (1992)**

Art. 6. HABITAT CONSERVATION AND PROTECTION

Art. 12. PROTECTION OF BREEDING SITES

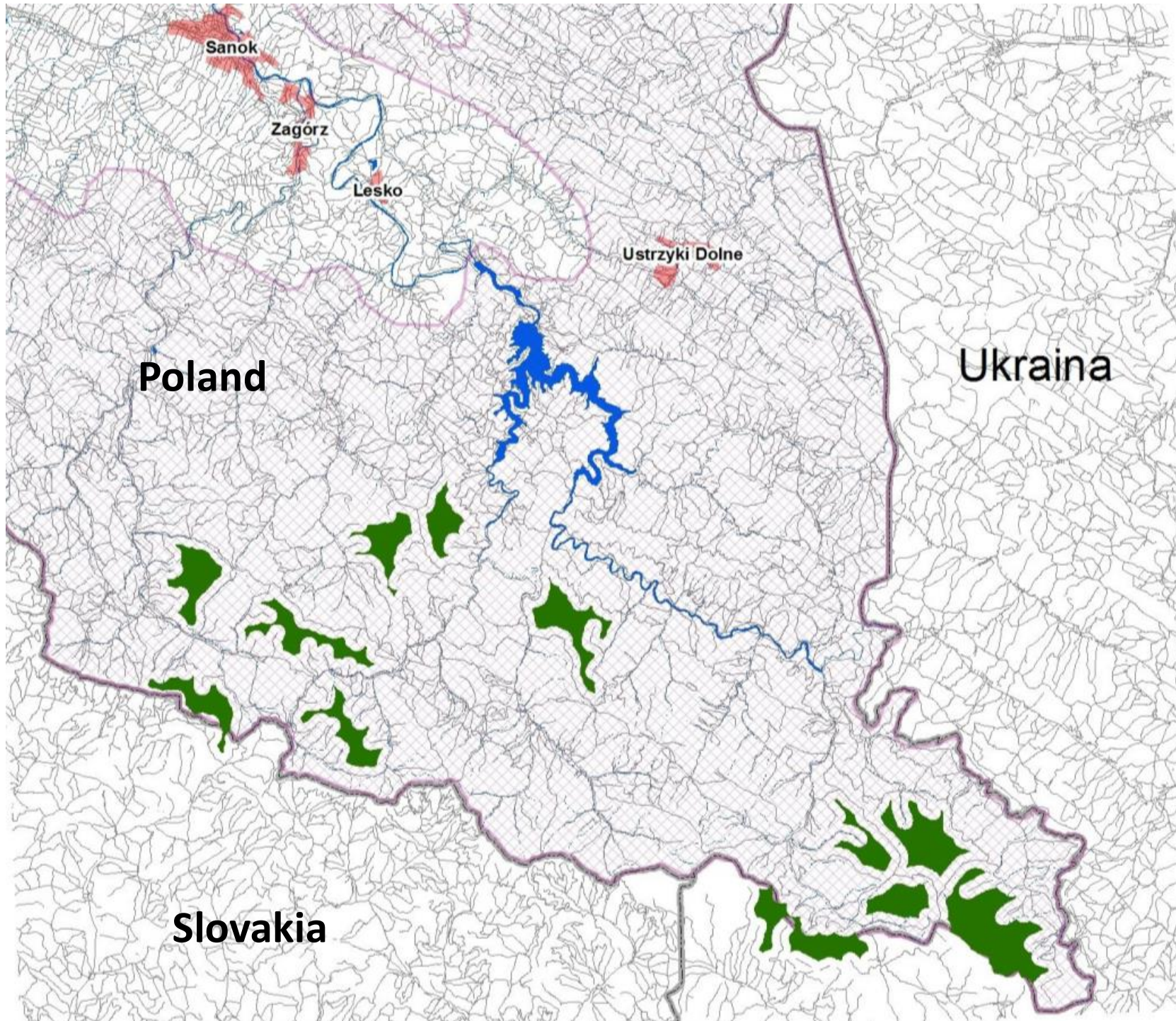
## **CARPATHIAN CONVENTION (2003)**

Art. 5. SPATIAL PLANNING

Art. 8 SUSTAINABLE TRANSPORT AND INFRASTRUCTURE

Art. 9 SUSTAINABLE TOURISM





By Nuria Selva, posted on November 5, 2012

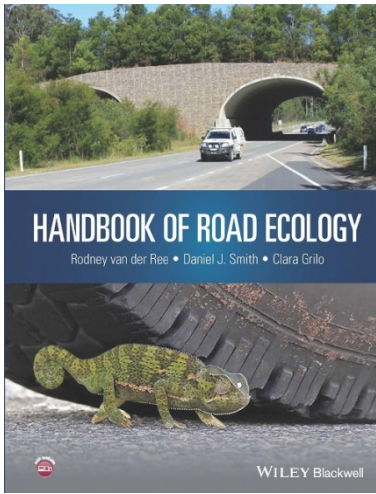
## SCB Roadless Areas Initiative Goes Global



With an assist from Google, an initiative of the SCB Europe Policy Committee to protect the world's remaining roadless areas is gaining momentum in scientific forums and conferences around the world, most recently at the Convention on Biological Diversity in Hyderabad, India.

Read More →

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  - Conservation Letters
  - Affiliate Publications
  - SCB News Blog
  - Wildlife Conservation Program
  - The Science of Conservation
  - SCB Peer Review Services
  - Free Textbook



### Chapter 3

## WHY KEEP AREAS ROAD-FREE? THE IMPORTANCE OF ROADLESS AREAS

Nuria Selva<sup>1</sup>, Adam Switalski<sup>2</sup>, Stefan Kreft<sup>3</sup> and Pierre L. Ibisch<sup>3</sup>

<sup>1</sup>Institute of Nature Conservation, Polish Academy of Sciences, Krakow, Poland  
<sup>2</sup>InRoads Consulting, LLC, Missoula, MT, USA  
<sup>3</sup>Centre for Economics and Ecosystem Management, Eberswalde University for Sustainable Development, Eberswalde, Germany



IENE 2014 Declaration final version  
2014-09-18

## IENE 2014 declaration Protect remaining roadless areas

### We, the participants of the IENE 2014 International Conference, acknowledge that

- the mobility of people and goods is important for economic development; transportation facilities such as roads, railroads and canals bring benefit to people and are essential components of present-day human societies,
- transportation infrastructure with its associated traffic exerts substantial pressures on biodiversity that extend far from individual transportation corridors and may interact and even accumulate at network level,
- even minor infrastructure is of significance as it prepares for exploitation of natural resources and secondary development,
- the detrimental environmental impacts of traffic and transportation infrastructure can only in part be mitigated effectively, but not entirely avoided.

### Roadless areas (RLA) are of particular importance for biodiversity conservation, because they

- are the least disturbed natural areas in the world,
- are characterized by high ecological value, integrity and connectivity,
- act as refuges for native and endangered wild animals and plants,
- provide vital ecosystem services such as clean water and air, opportunities for recreation, and protection against pests and invasive species,
- are more resistant to and resilient from catastrophic events,
- help species to adapt to new conditions created by climate and landscape change.

Thus, roadless areas far exceed roaded areas in the ecological benefits they provide.

Europe has been fragmented by transportation infrastructure for a long time. Accordingly, preserving the continent's last remaining roadless areas will significantly contribute to prevent further loss of biodiversity. Preserving roadless areas is hence necessary for reaching the UN Aichi strategic goals and EU biodiversity targets.

Therefore we, the participants of the IENE 2014 International Conference, call for a pan-European strategy to protect roadless areas.

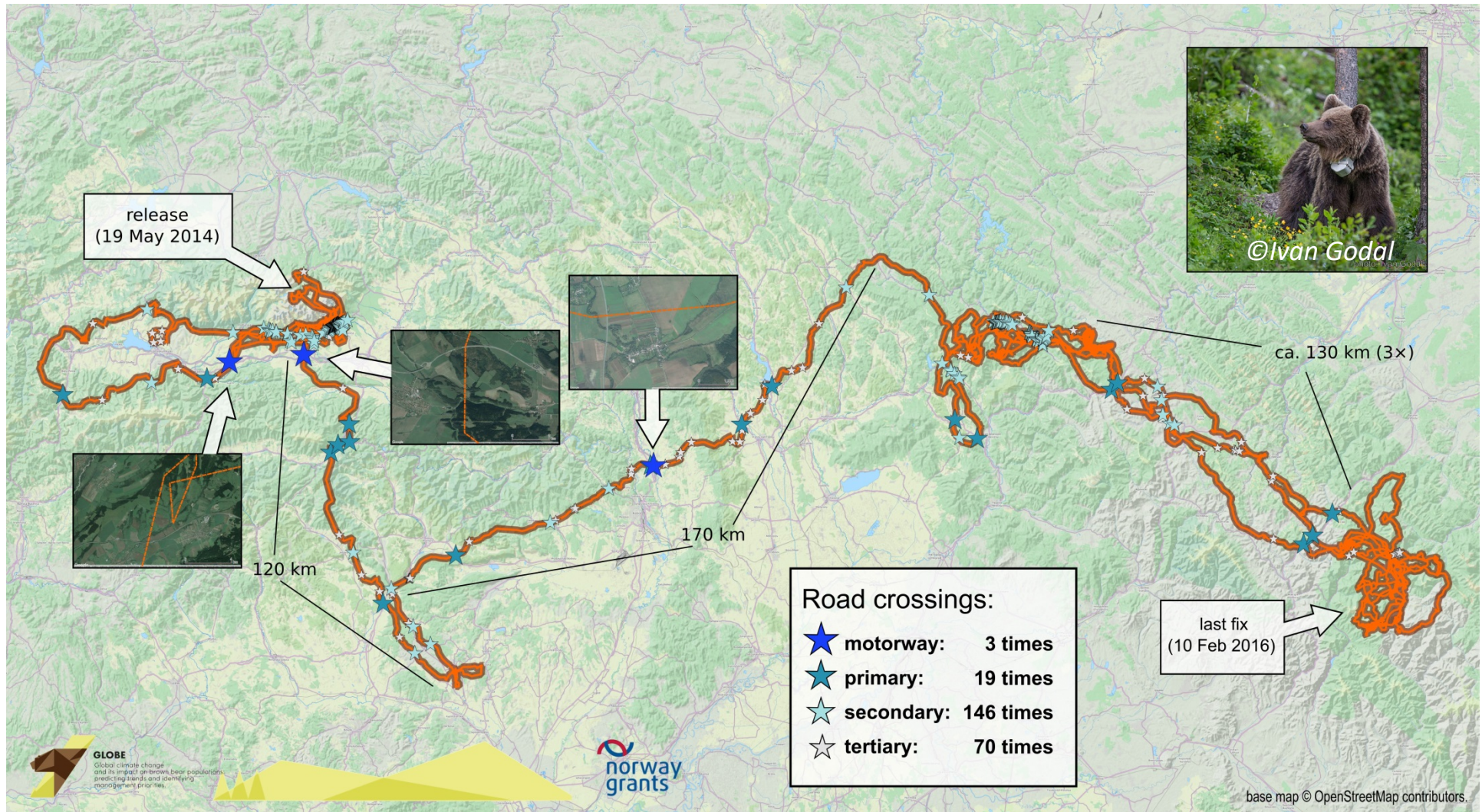
### We urge that such areas are given a stronger conservation status in policy, planning and practice, both nationally and internationally, by

- mapping and monitoring roadless areas at national as well as European level,
- incorporating roadless areas explicitly as conservation targets in national and European policy and legislation,
- avoiding infrastructure development in roadless areas,
- identifying areas of particular value for restoration as roadless areas,
- regularly monitor and evaluate the efforts to protect roadless areas,
- re-creating roadless areas by means of road closure and removal.

The IENE 2014 International Conference has highlighted the ecological and social benefits of roadless areas, outlined solutions for how transportation infrastructure can be developed without compromising these benefits, and shown that the transport sector is able and willing to contribute substantially to implementing these solutions.

# The dispersal of Iwo

3650 km in 21 months  
63 border crossings (4 per month)  
238 road crossings (3 per week)

















**Go beyond numbers  
Focus on habitat**

**Thanks for your attention**

