

# Conservation needs of the Carpathian lynx population

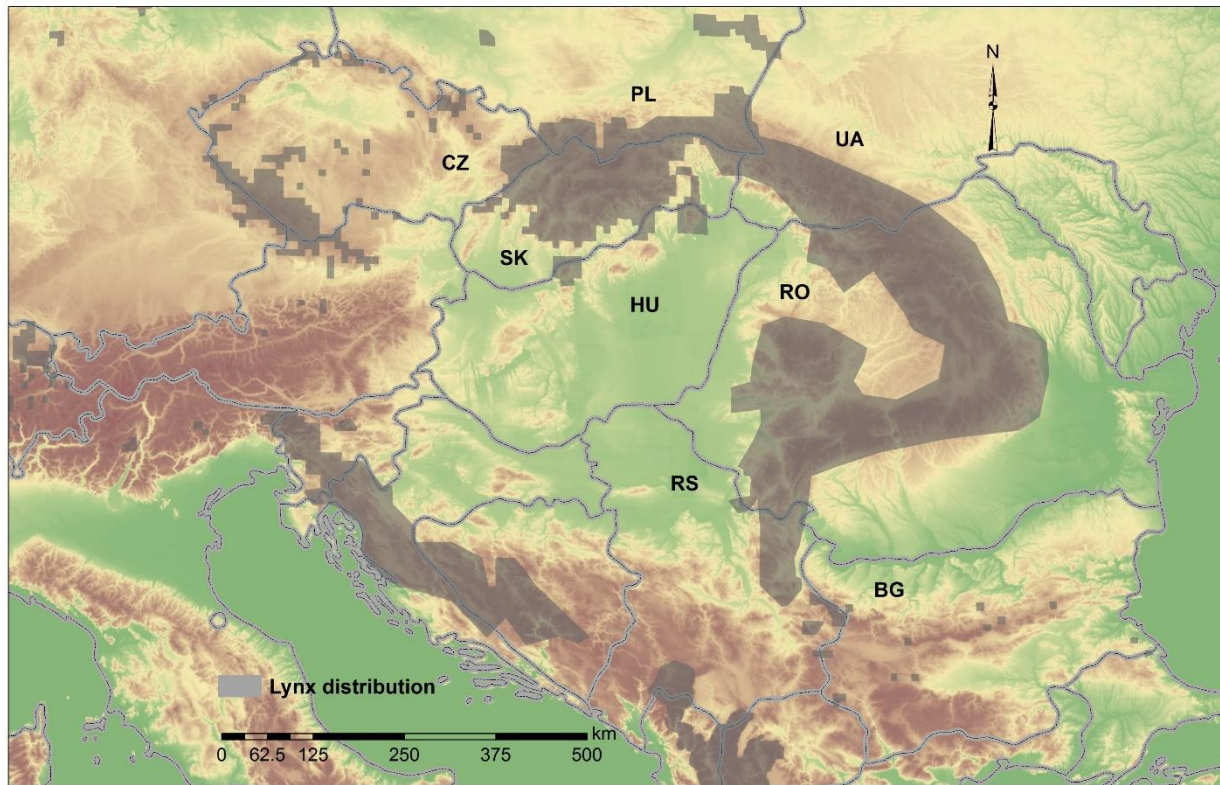
Kubala J., Breitenmoser-Würsen Ch., Ćirović D., Duľa M., Kutal M., Mysłajek R. W., Nowak S., Pop M., Shkvyria M., Sin T., Szemethy L., Tám B., Zlatanova D., & Breitenmoser U.



Based on proceedings from the „Conservation of the Lynx in West and Central Europe“ symposium and workshop in Bonn, Germany, 16–19 June 2019 (Kubala et al. in prep.)

Carpathian Mts. – 209 256 km<sup>2</sup> area, RO 50%, SK 17%, PL 10%, UA 10%, CZ 5%, HU 4%, RS 3%,

Population size – 2 300 to 2 400 lynx, RO 57%, UA 16%, SK 15%, PL 9%, RS 2%, CZ 0,5%, BL 0,5%, HU <0,05%



Based on the data from: <https://www.iucnredlist.org/search?query=lynx%20lynx&searchType=species>

# Source population for the past and current Eurasian lynx reintroduction and reinforcement projects in Europe. Natural recovery /expansion.



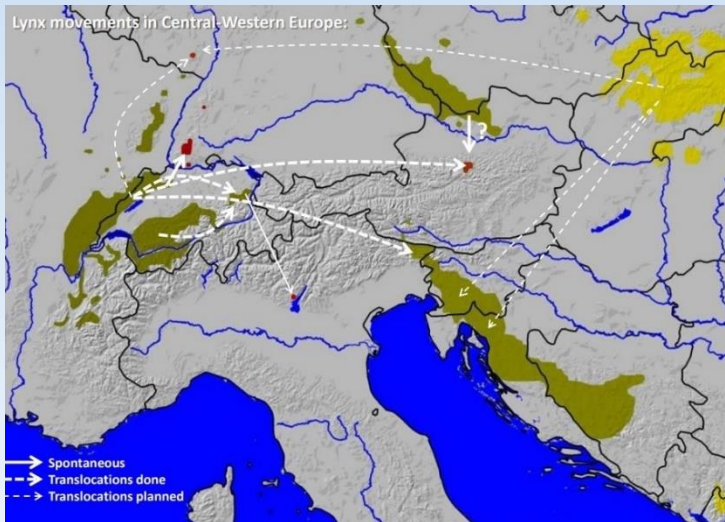
Source: Smolko P.



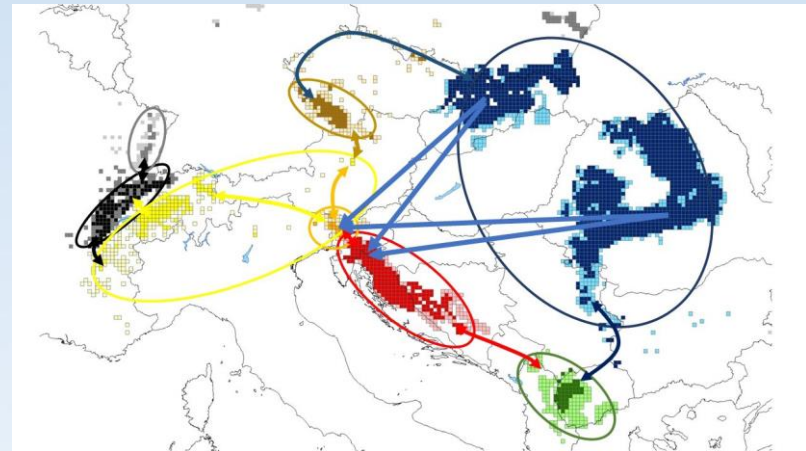
Source: Kunc L.



Source: Greve M.



Source: Breitenmoser & Breitenmoser-Würsten (2016)



Source: Wilson et al. (2019)

## Size of the population

Country	Estimation 2001	Estimation 2011	Estimation 2019	Density (lynx per 100 km <sup>2</sup> of area)	Trend 2001 - 2011	Trend 2011 - 2019
Romania	2050	2290-2540	not available		stable	stable
Slovakia	400	300-400	250-400	0.96*	likely increase	stable to decreasing
Poland	96*	no reliable data	no reliable data	1.3** - 2.4***	unknown	unknown
Ukraine	314	403	336			
Czechia	NA	10-12	10-12		stable to decreasing	stable to decreasing
Hungary	5-15	5-15	12-20	0.68	stable	stable or likely increase
Serbia	-	40-60	40-60	1	Increase	stable/slightly increasing
Bulgaria	2	2 (3-24)**	currently unknown	currently unknown	likely increase	likely decrease, due poaching

\* suitable lynx habitat

\*\* 2 confirmed lynx through camera trapping, the numbers in brackets are based on tracking data and extrapolation methods in colors has to be finished

Data from systematic robust monitoring (e.g. systematic camera trapping, etc.)

Data from opportunistic monitoring (e.g. opportunistic camera trapping, snow tracking etc.)

Data from chance observations and opportunistic monitoring and (e.g. opportunistic camera trapping, snow tracking etc.)

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**Management**

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<b>Country</b>	<b>Legal status</b>	<b>National institution in charge</b>	<b>Conservation plan status 2011</b>	<b>Conservation plan status 2019</b>
Romania	fully protected	Ministry of Environment	none	none
Slovakia	fully protected	Ministry of Environment	none	implemented*
Poland	fully protected	Ministry of Environment	none	none
Ukraine	fully protected	Ministry of Environment	none	none
Czechia	fully protected	Ministry of Environment of the Czech Republic	none	none
Hungary	fully protected	Ministry of Agriculture, National Parks	Conservation plan announced in 2004. Ended in 2011	no actual plan. Revision and elaboration is planned.
Serbia	Fully (strictly) protected	Ministry of Environment protection	Management plan*	Management plan*
Bulgaria	fully protected	Ministry of Environment and Waters	none	none**

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\* implementation of the plan in progress

\*\* not foreseen in the near future (within next 5 years)

<b>Threats</b>								
<b>Country</b>	Romania	Slovakia	Poland	Ukraine	Czechia	Hungary	Serbia	Bulgaria
<b>Threat</b>								
Extraction of wood		X	X	X	X	X	X	not assessed, most likely
Infrastructure development: Tourism / recreation	X	X	X	X	X			
Infrastructure development: Road building	X	X	X		X	X		not assess, most likely
Shooting (illegal)	X	X		X	X	X	X	X
Trapping / snaring (illegal)				X		X	X	X
Vehicle and train collision	X	X			X	X	X	

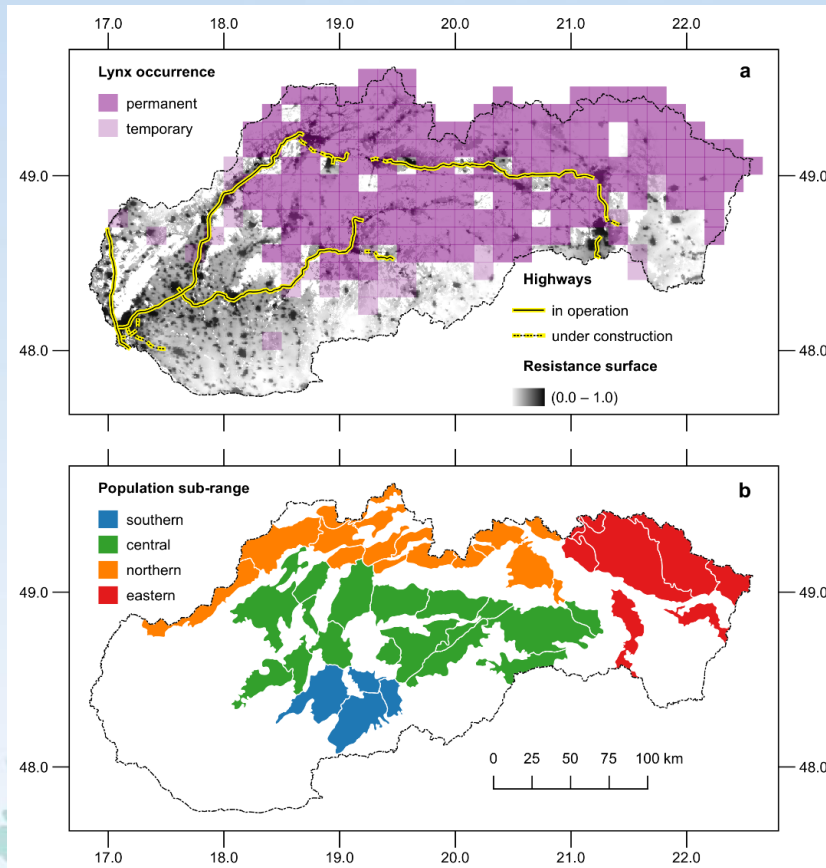
<b>Threats</b>								
<b>Country</b>	Romania	Slovakia	Poland	Ukraine	Czechia	Hungary	Serbia	Bulgaria
<b>Threat</b>								
Competitors	X	X				X	X	
Limited dispersal		X	X		X	X	X	X
Poor recruitment / reproduction / regeneration		X			X	X	X	X
Inbreeding		X			X		X	most likely
Low densities		X			X	X	X	X
Population fluctuations		X			X	X		X
Transport		X	X		X	X		

\* lack of systematic research / poor knowledge

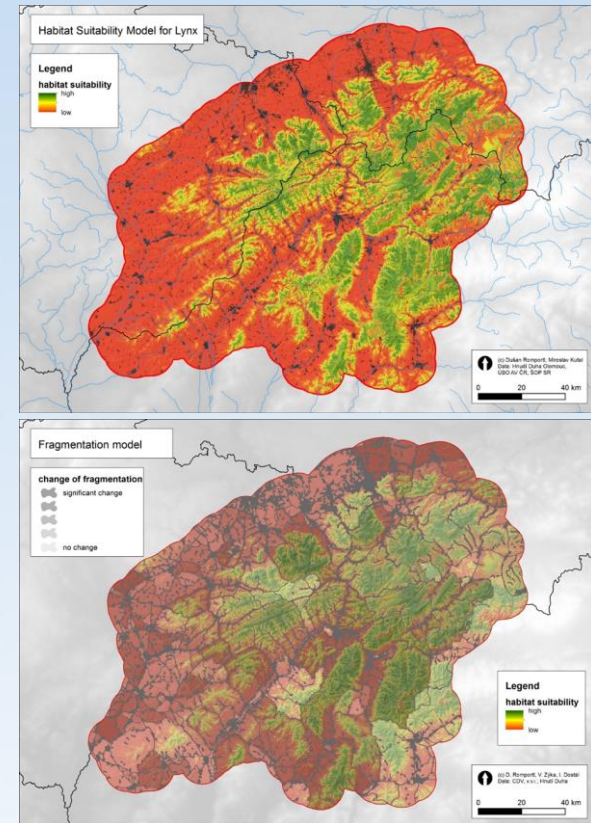
\*\* lack of interest from the responsible authorities to ensure the species protection and to collect enough data on the current lynx population status.

## Threats:

- Increasing fragmentation and splitting into subpopulations (Ukraine!);
- Habitat deterioration and prey depletion due to the infrastructure development;
- Unknown, but likely high anthropogenic mortality.



Source: Kubala et al. (in press)

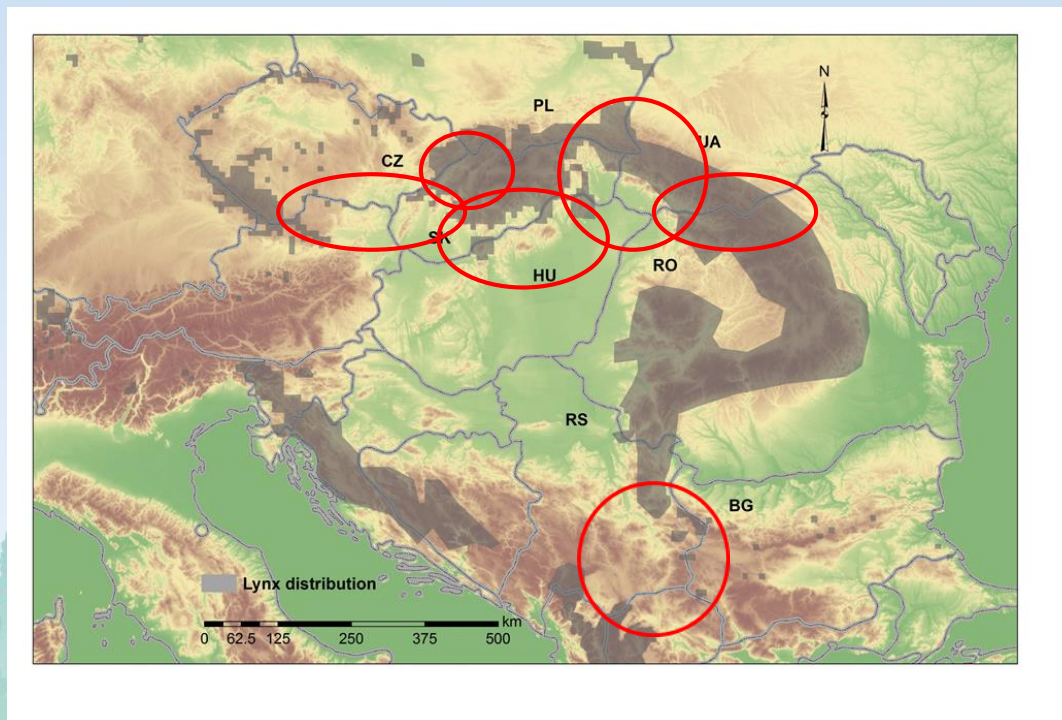


Source: Kutal et al.



## Challenges:

- Lack of robust monitoring (overestimation of population size in official reports);
- Lack of information on population dynamics (trends, fluctuations);
- Lack of population-level approach (e.g. Carpathian strategy) and transboundary cooperation;
- Lack of National Action Plans.



## Conservation needs:

- Rigorous and robust assessment at population level (Carpathians);
- Establishment of a reliable monitoring system;
- Research on human-induced mortality and mitigation where needed;
- Maintenance of connectivity and metapopulation management;
- Sustainable approaches for habitat (e.g. forest) and wildlife management and harvest.

## Next steps:

- Comprehensive status review for each Carpathian country;
- Establishment of standardized monitoring scheme;
- Development of a common Carpathian lynx conservation strategy;
- Development of National Action Plans as implementation instruments;
- Meeting in Bojnice in 2021.



# Thank you for your attention and cooperation!

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