

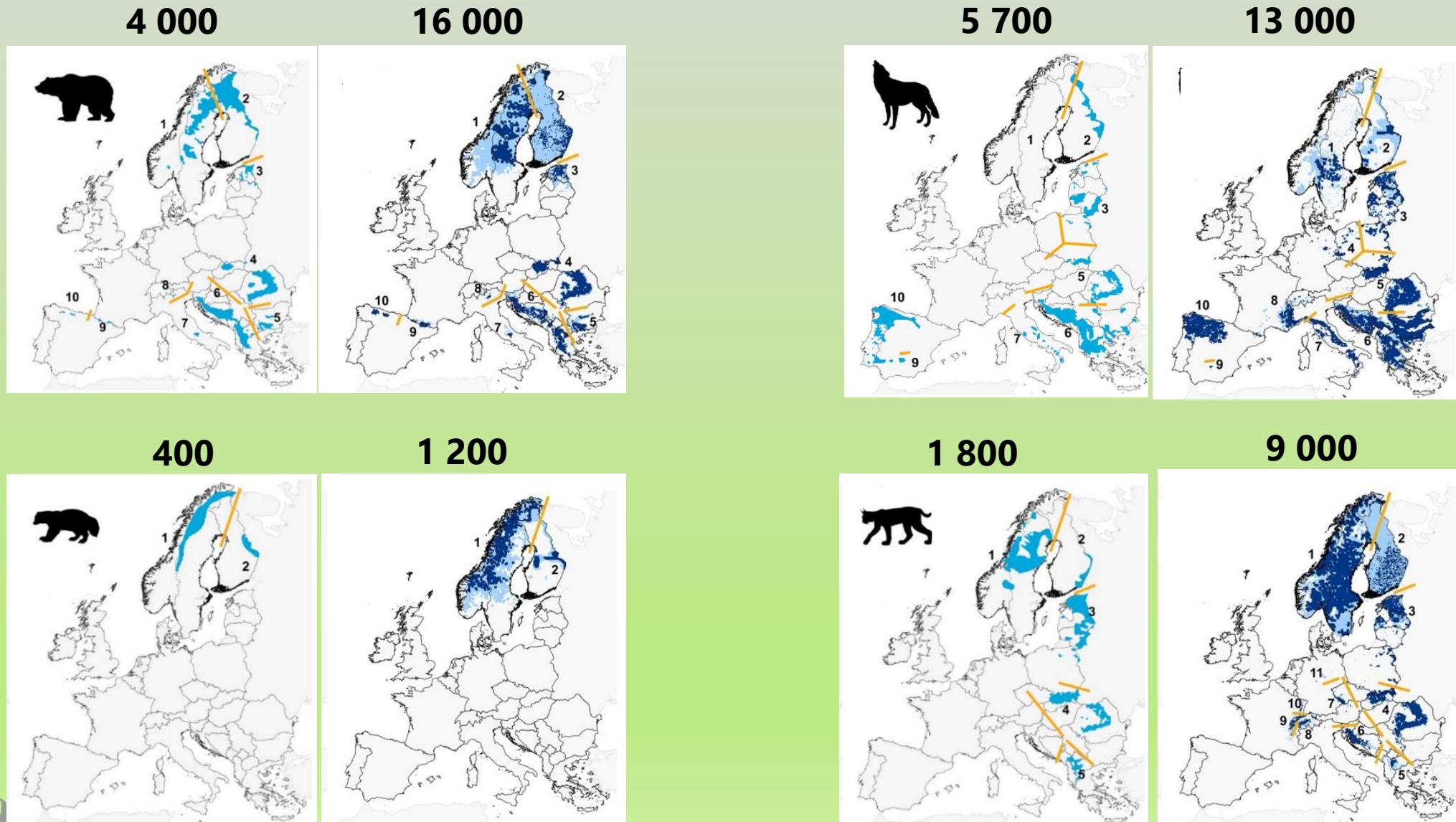
Large carnivores in reindeer husbandry district

- population estimates & connectivities,
damages, future aspects

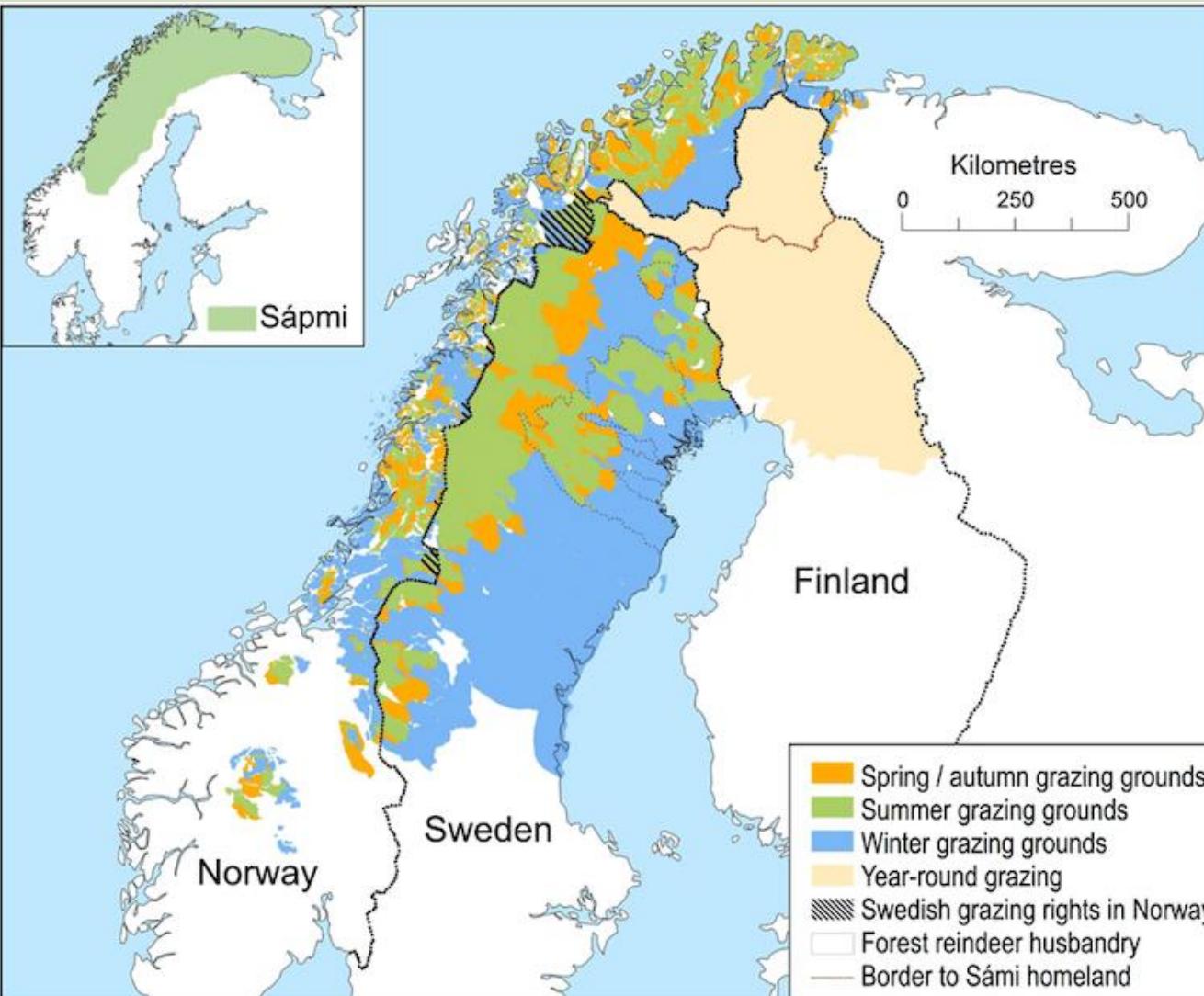
Ilpo Kojola, Natural
Resources Institute Finland



The return (1950-70 vs. 2011)



Large carnivore population estimates for reindeer husbandry districts in Fennoscandia



	Finland	Sweden	Norway
Wolf	10-20	10-50	sporadic
Lynx	100	700	200
Wolverine	100-150	700	250
Brown bear	300	2 000	> 100

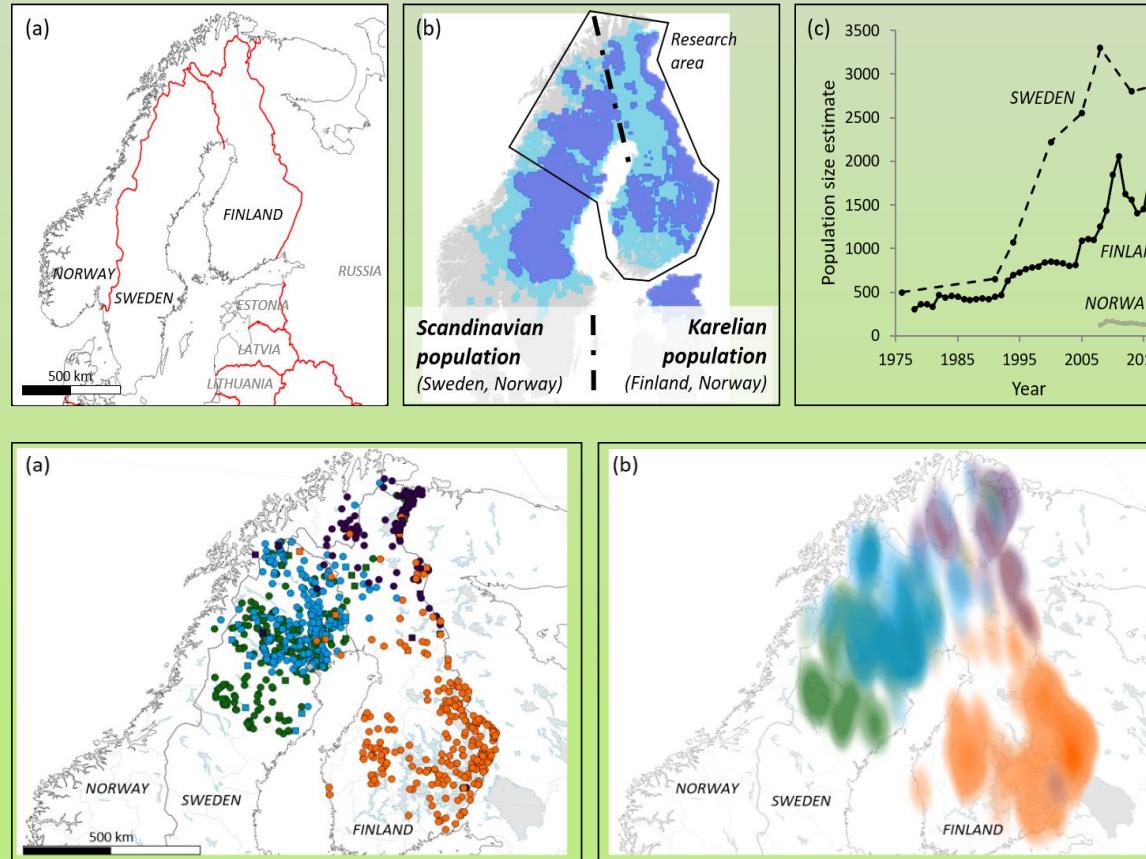
Åhman et al. 2022



Photo Ilpo Kojola

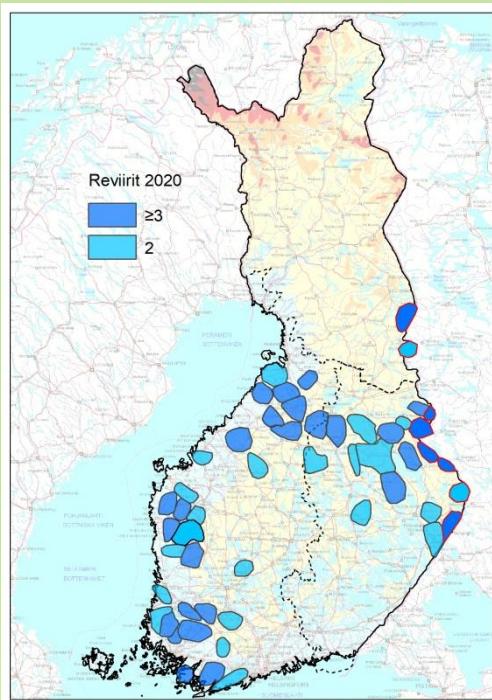
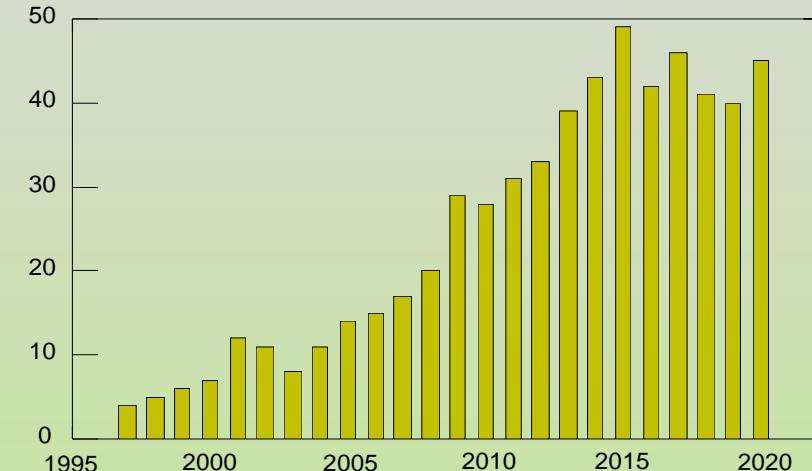
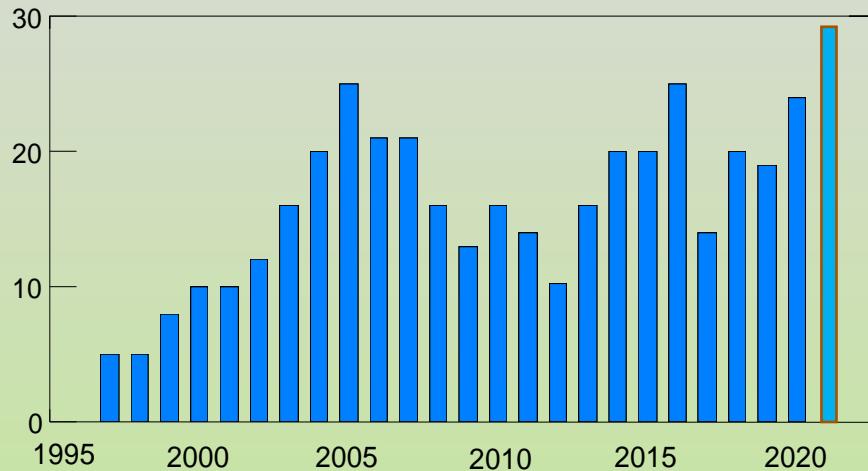


Connectivity between Scandinavian and Karelian brown bear populations



- Assymmetrical gene flow:
- 1% rate from Karelian population into Scandinavia while 8% from Scandinavia into the Karelia.
- Roughly 1 bear within two years had moved from Finland to Scandinavia
- 1 750 bears genotyped (STR or y-STR) for year period 2005-2018

Wolf family packs in Finland and Scandinavia



Kojola et al. 2020



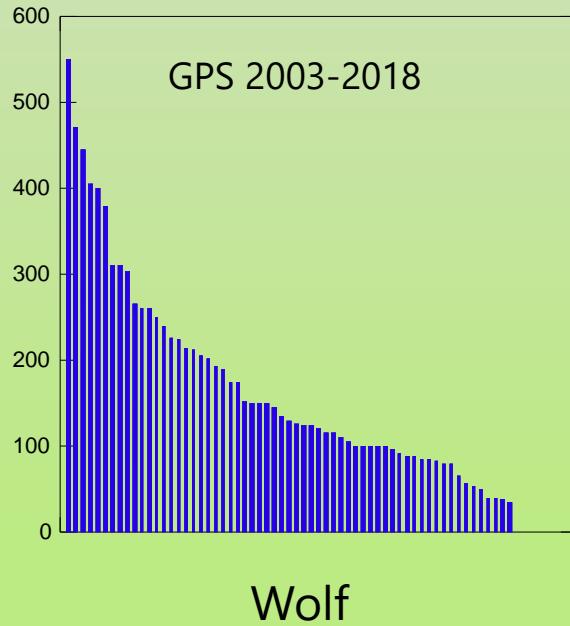
Photo: S. Ronkainen



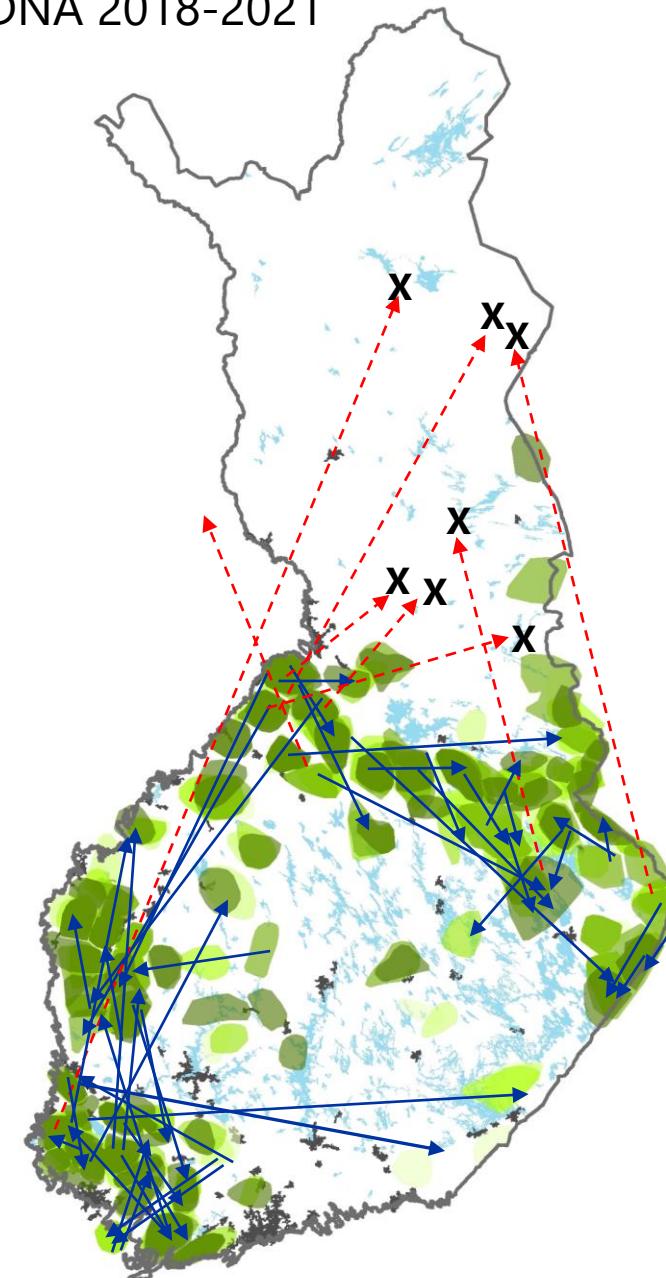
Wabakken et al. 2020

Movements by vagrants

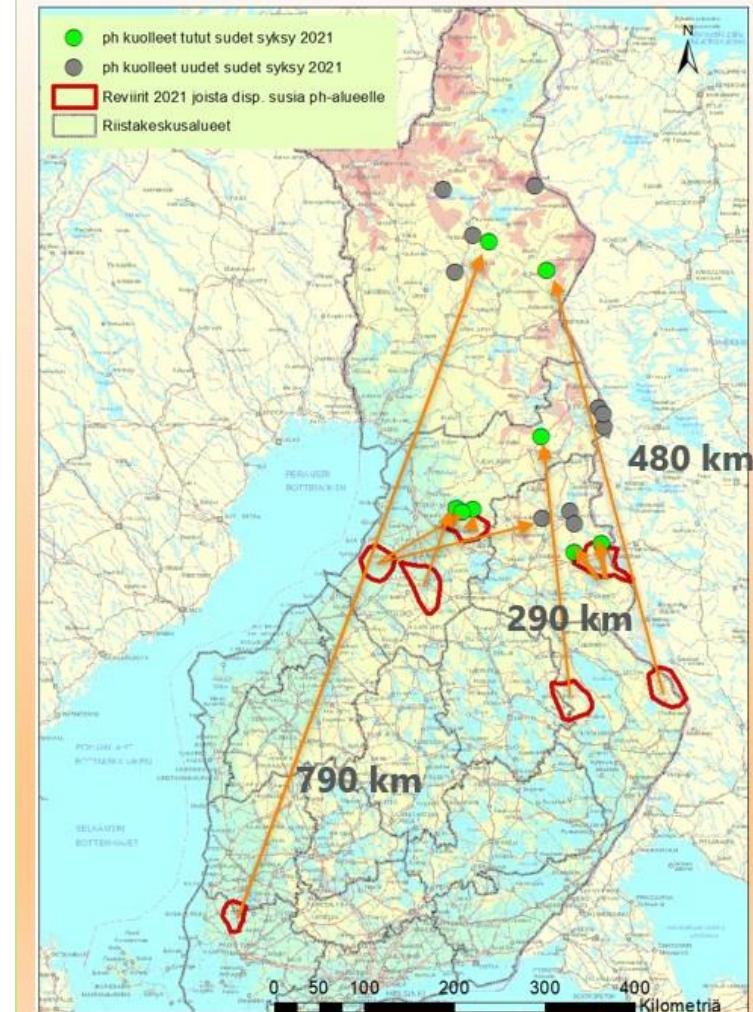
Distance from
natal territory
(km)



DNA 2018-2021



2021

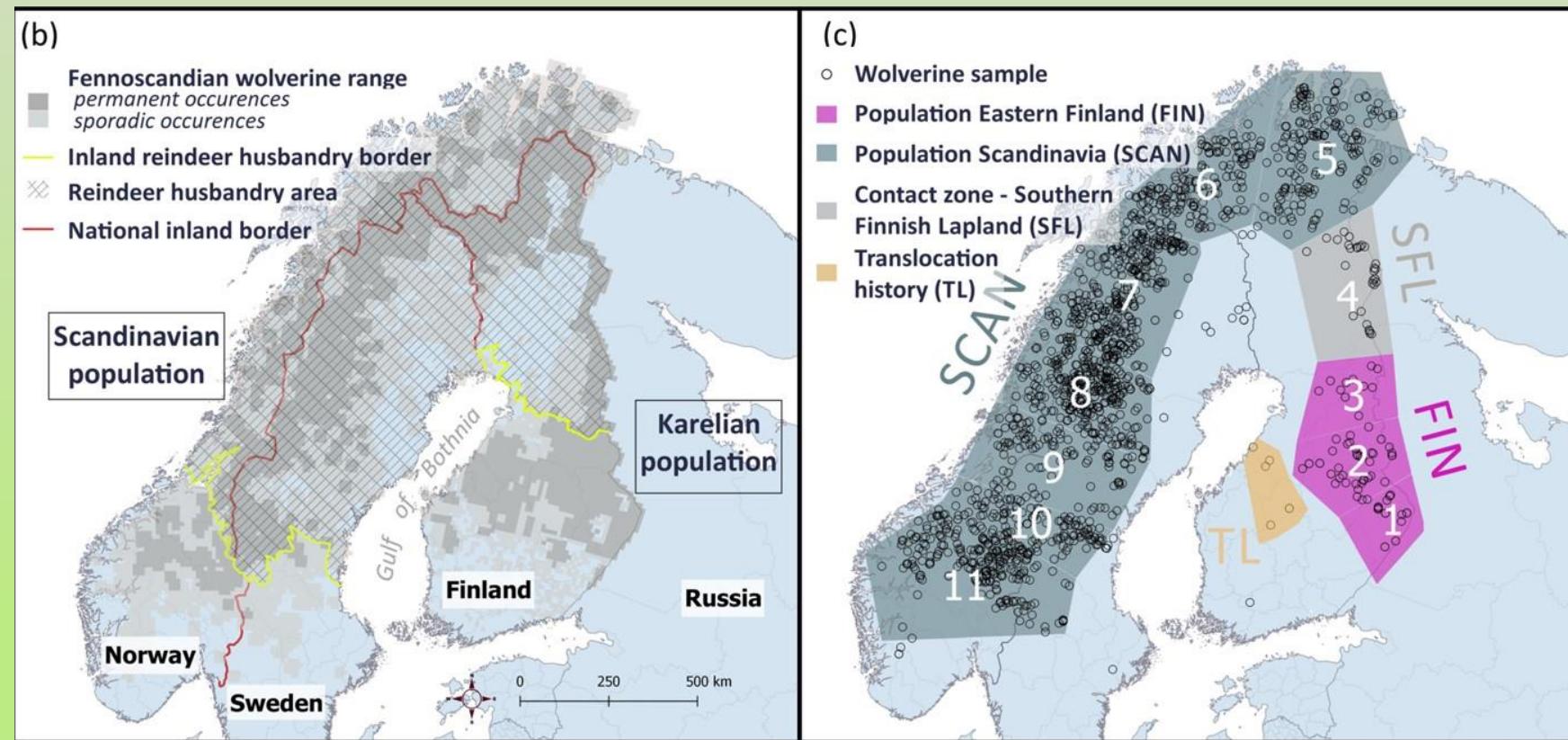


Kojola et al. 2022

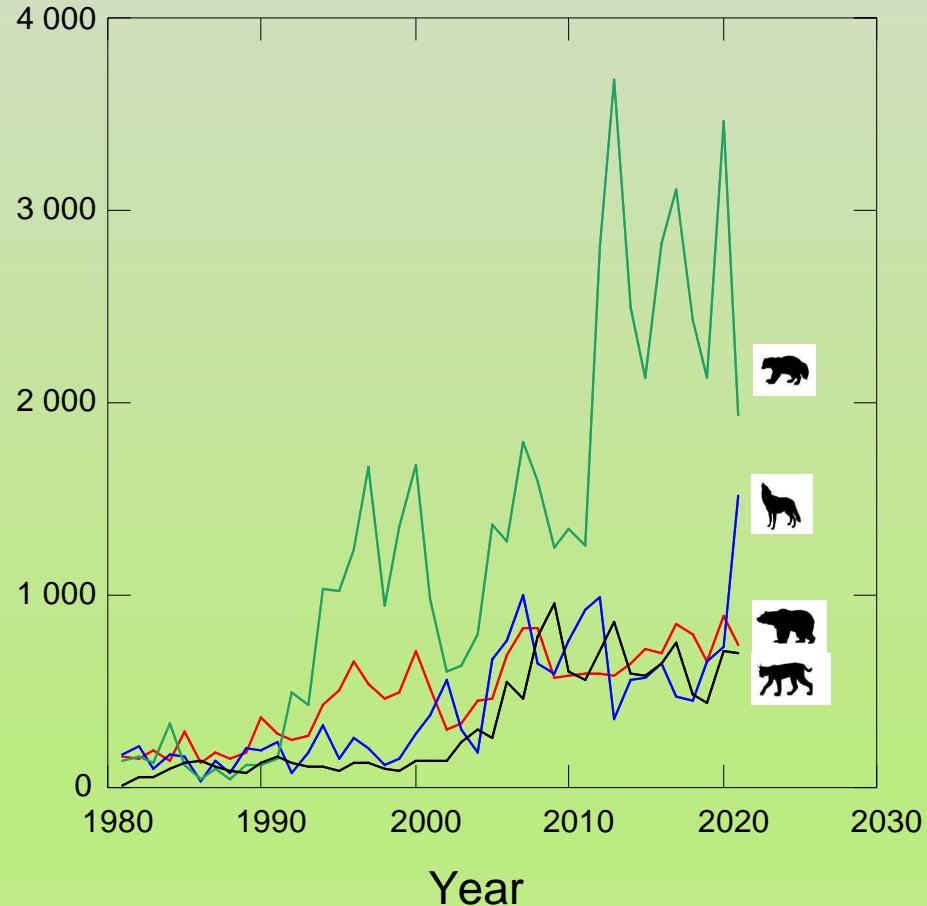


Wolverine population connectivities in Fennoscandia

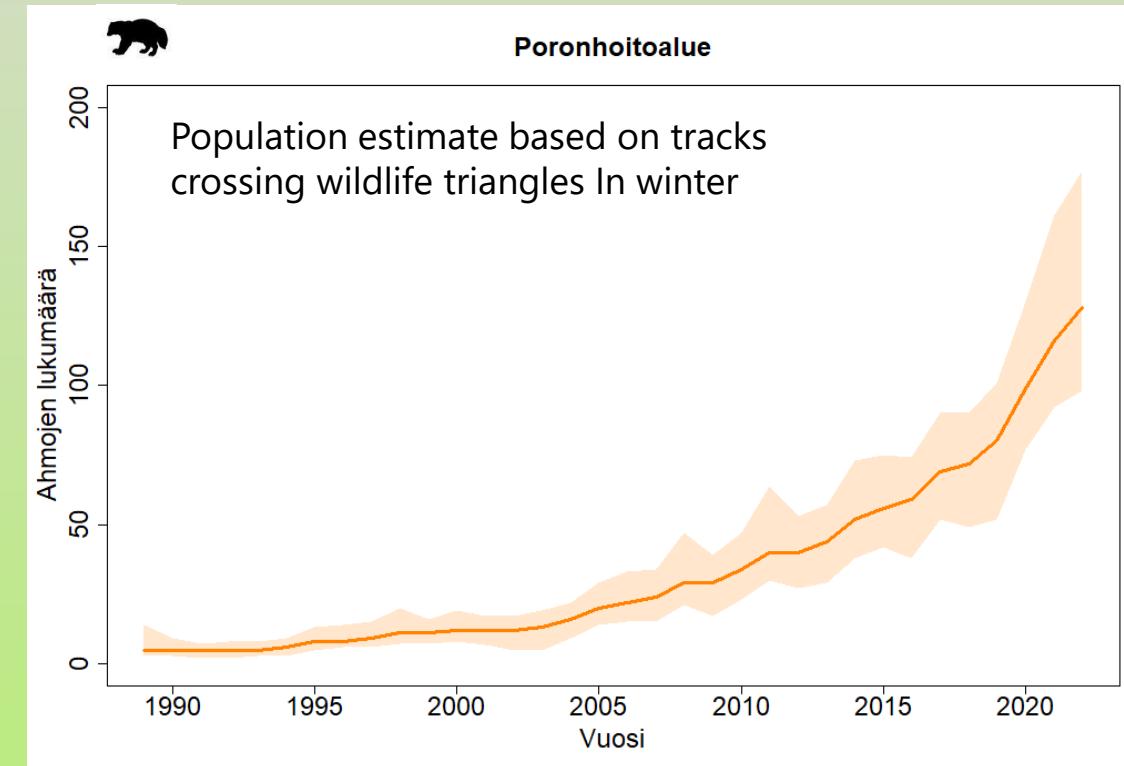
- Lower genetic variation in Scandinavian than Karelian subpopulations
- A weak gene flow exists between Scandinavian and Karelian populations



Carnivore-killed reindeer and wolverine population in Finland's reindeer herding district

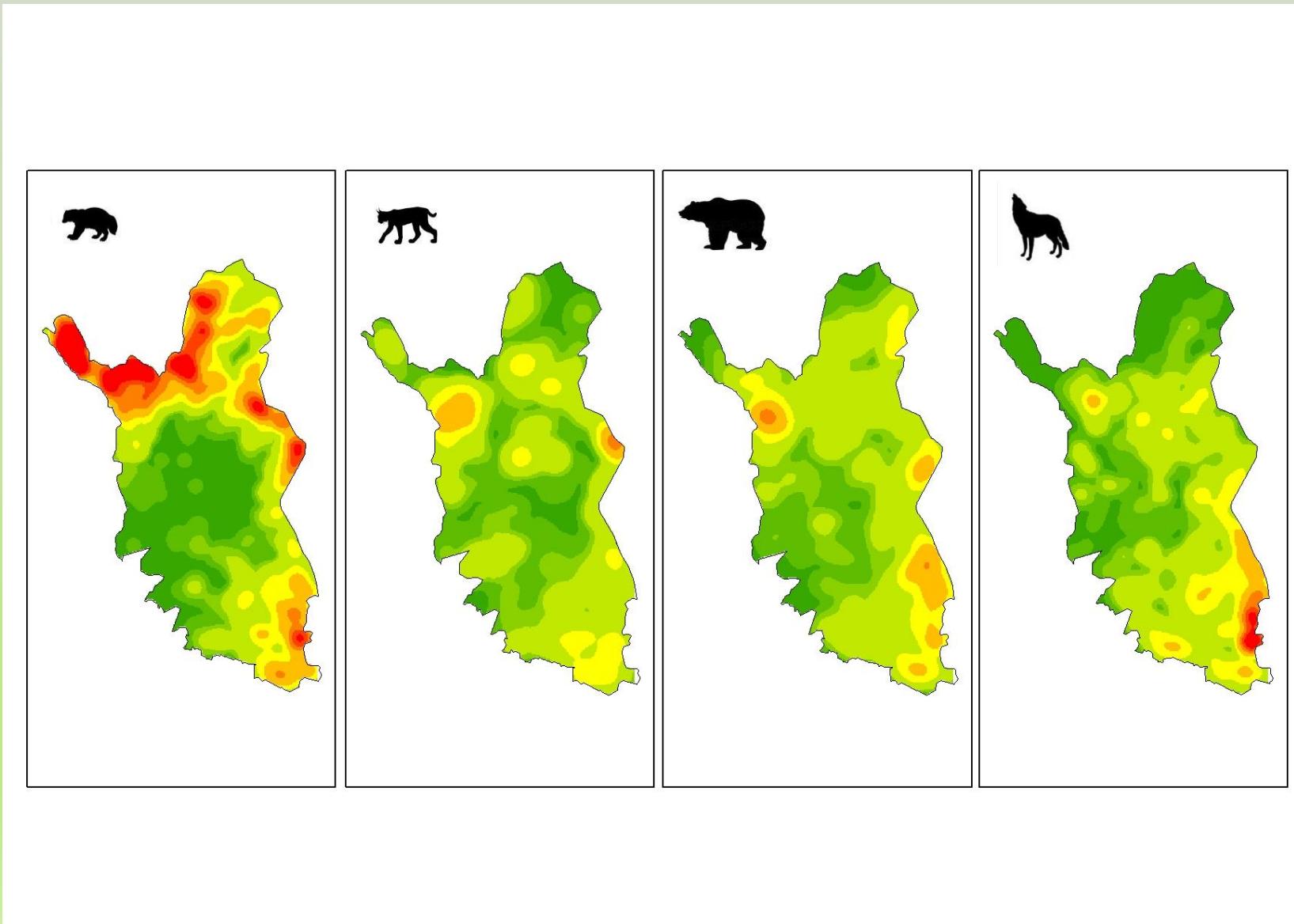


Damage data from Harri Norberg/
Finnish Wildlife Agency



Kojola et al. 2022 (in prep.)

Carnivore-killed reindeer 2017-2021





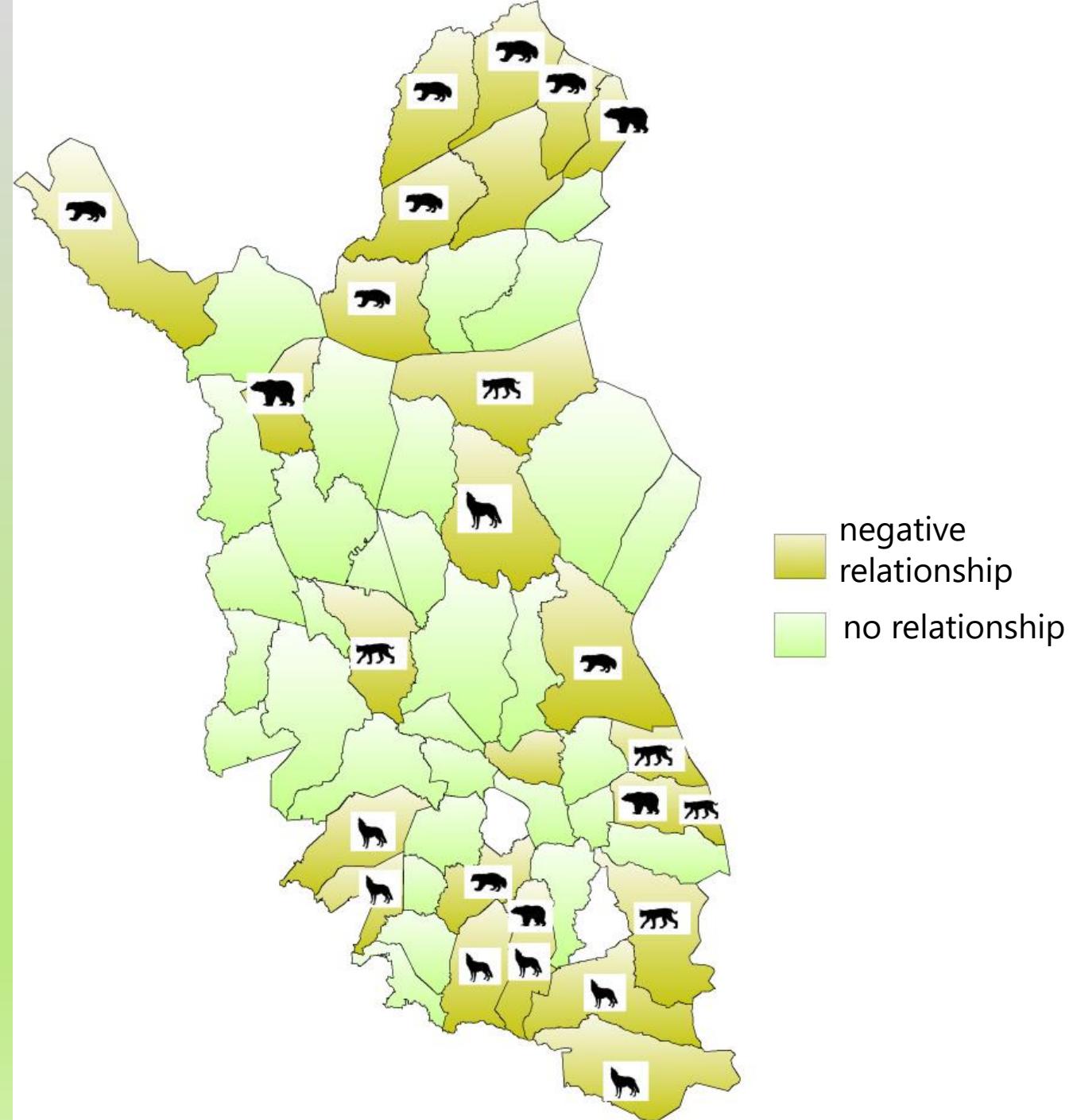
Relationships of yearly calf/female ratio to the proportion of carnivore-killed reindeer in 1991-2015



Photo Ilpo Kojola

(linear mixed model, the proportion of reindeer found
killed by different carnivores and the year as fixed factors)

Kojola et al. 2018



Observations of golden jackal and Finnish wolf territories 2018-2022

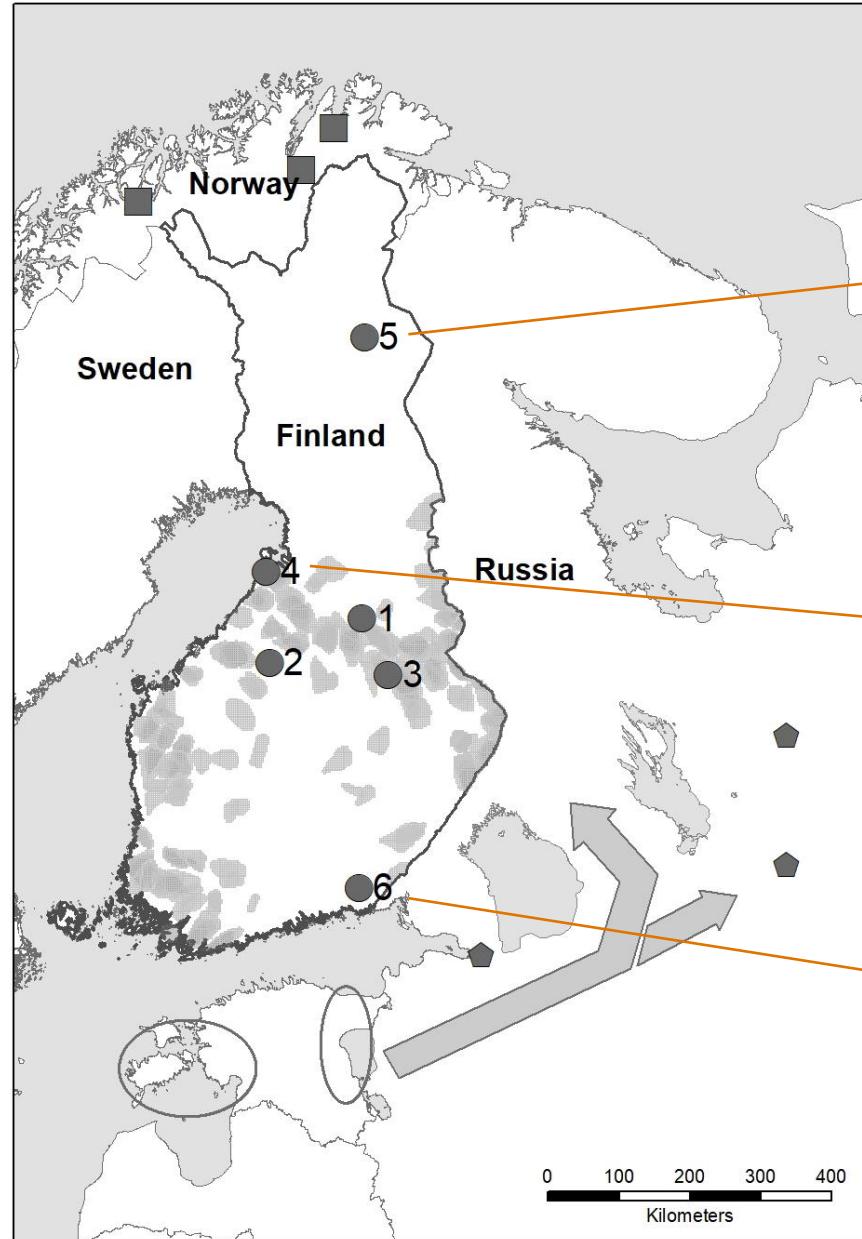


Photo:
S. Muttilainen



Photo: T. Linnas



Photos: T. Kimmo



Future aspects

- Harmonisation of monitoring methods in Fennoscandia (**DNA, wolverine**) with local involvement
- Transboundary collaboration in management and conflict mitigation
- And **thanks a lot!**