

Wolves in human-modified environment of Finland

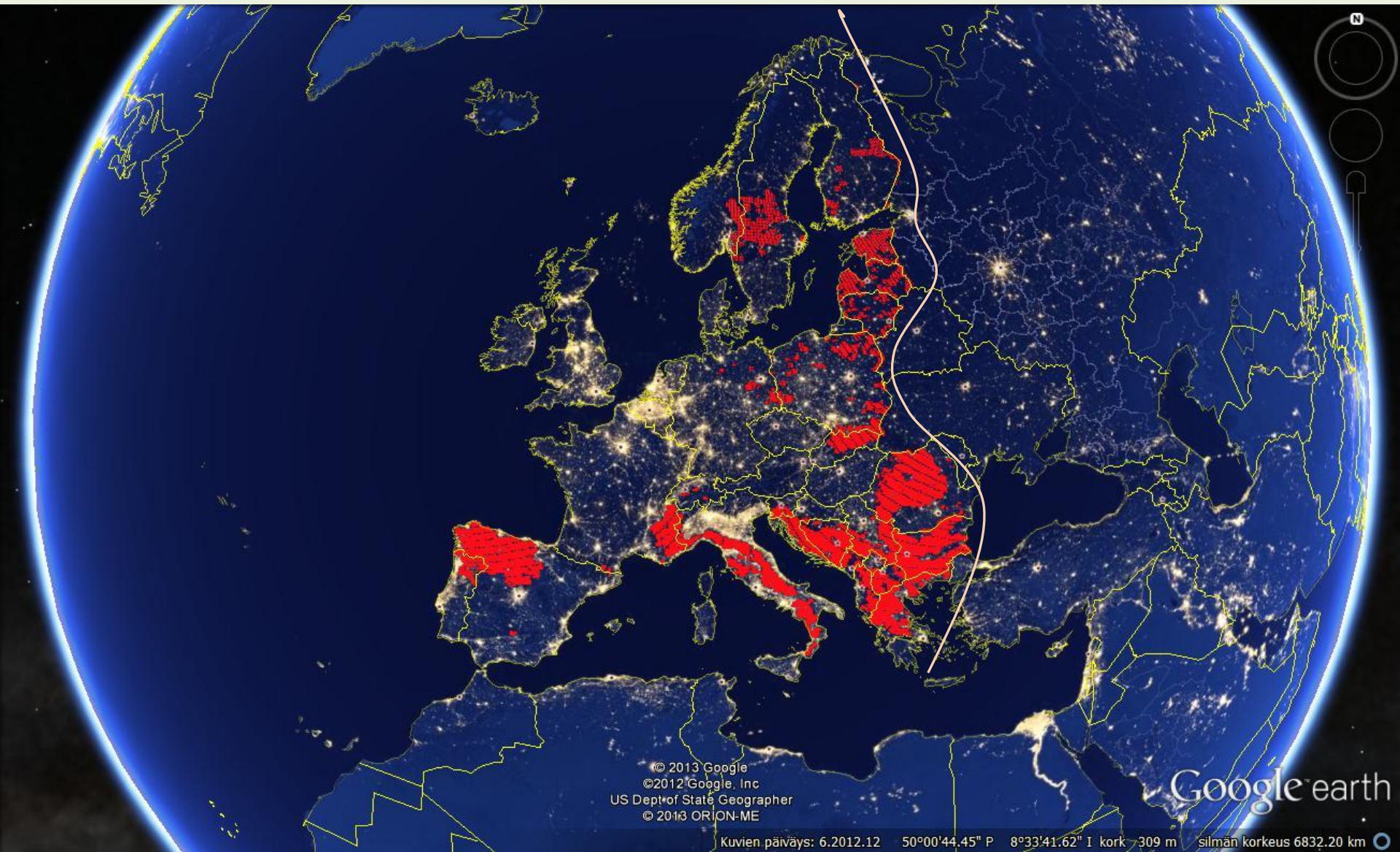
Ilpo Kojola; Natural Resources Institute (Luke)



- Reindeer husbandry and wolf population connectivity
- Human infrastructure and wolves, wolves near residential areas

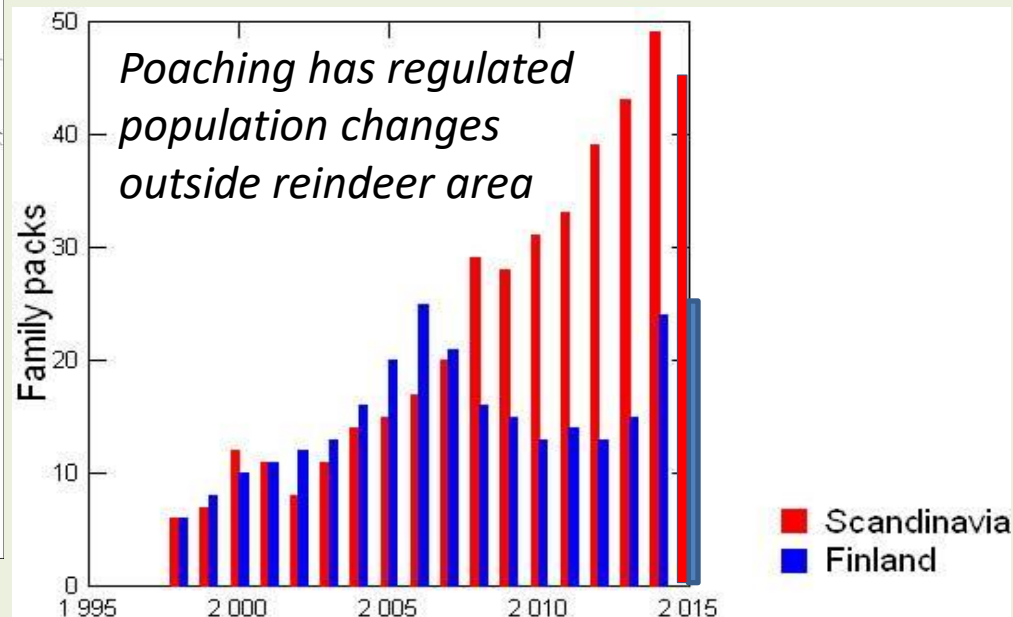
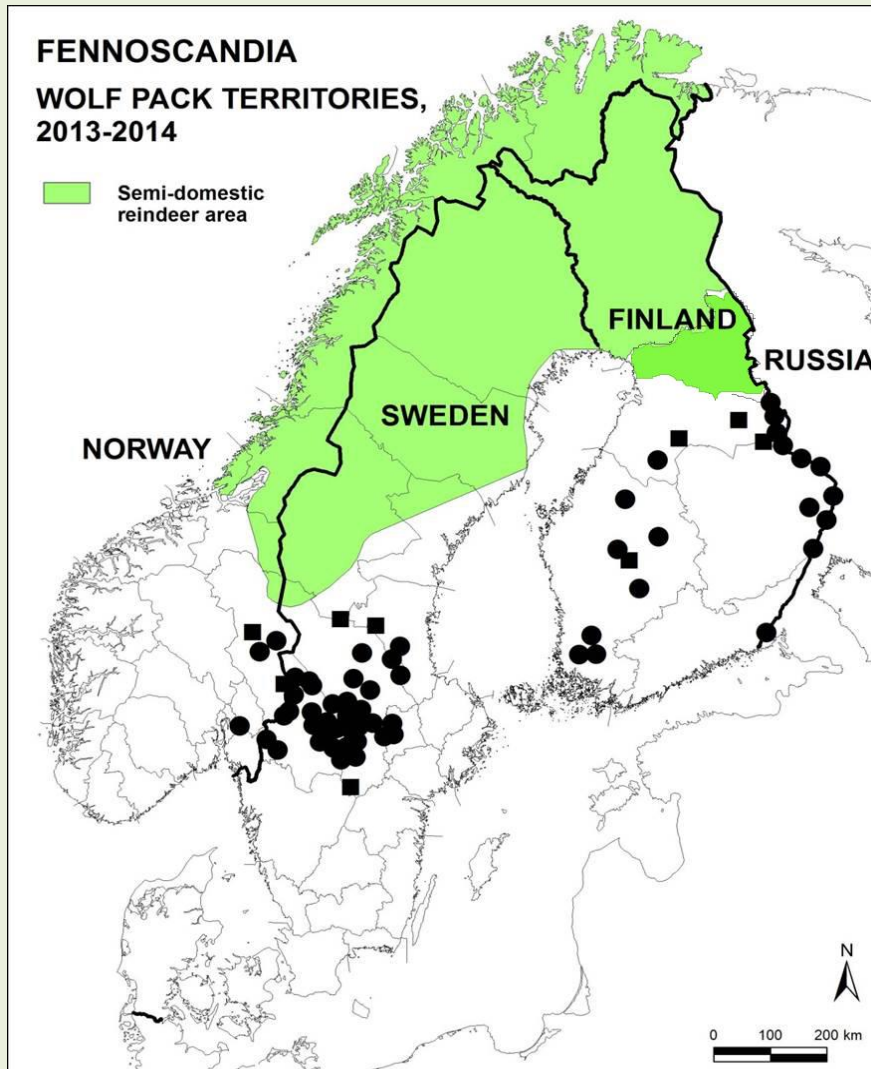


Lights and permanent wolf distribution



Distribution from LCIE report (Kazcensky et al. 2013)

Family packs in Finland and Scandinavia



ORIGINAL ARTICLE

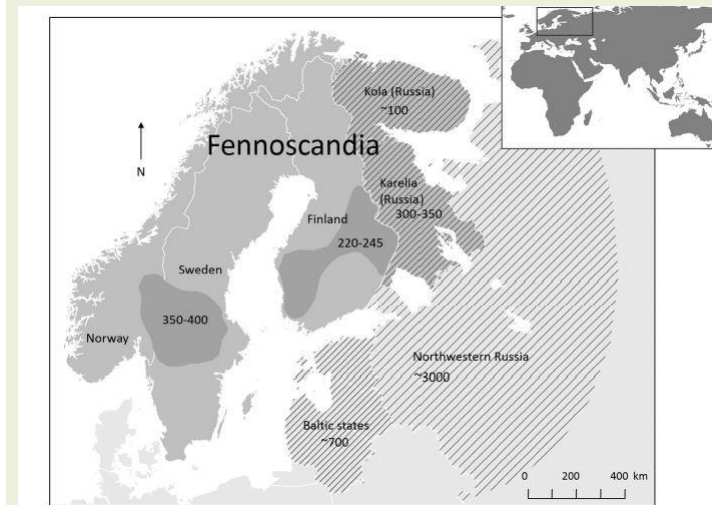
Metapopulation effective size and conservation genetic goals for the Fennoscandian wolf (*Canis lupus*) population

L Laikre¹, F Olsson², E Jansson^{1,3}, O Hössjer² and N Ryman¹

Concluding recommendations on Fennoscandian wolves

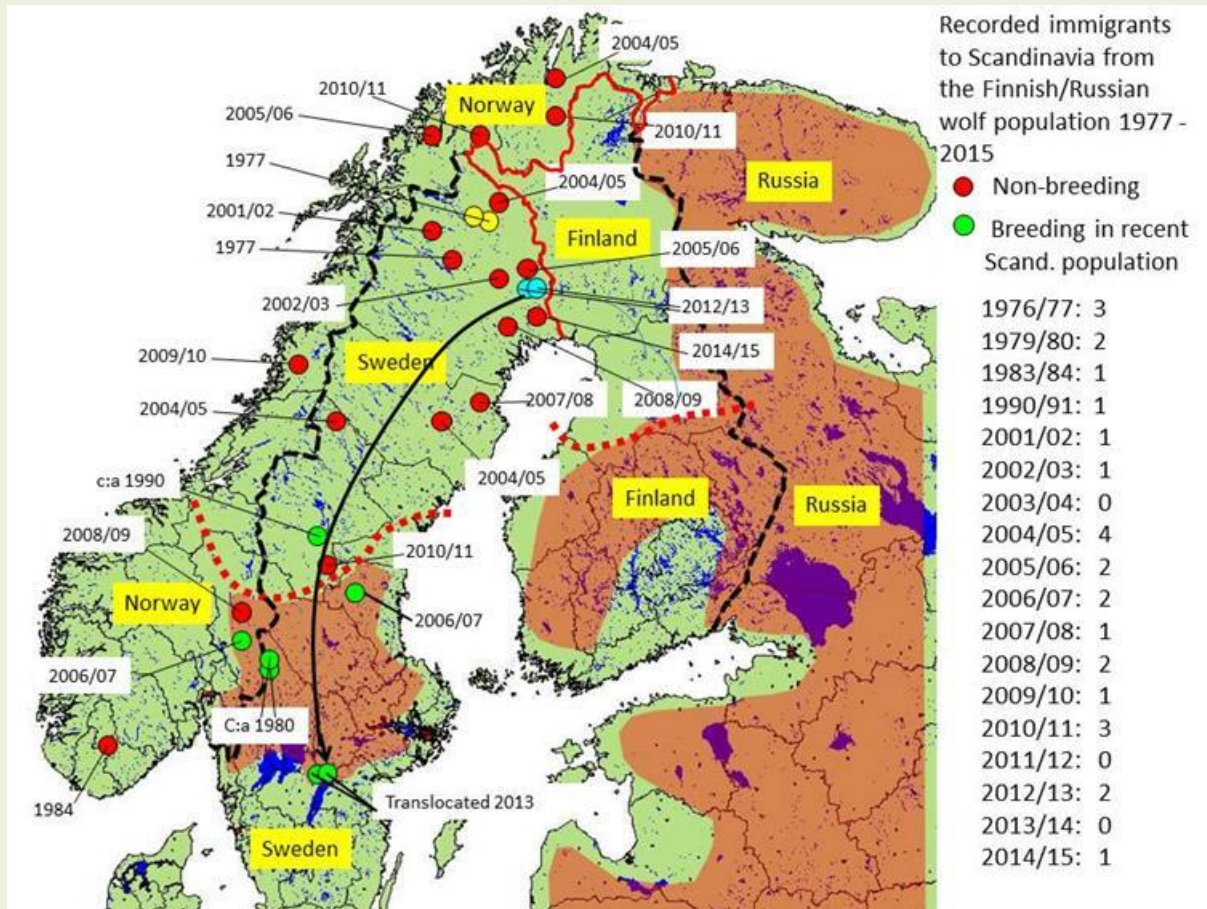
On the basis of the results from this study we find the following management recommendations warranted for the Fennoscandian wolves.

1. Two-way migration between Finland and Scandinavia needs to be secured.
2. Monitoring of migration rates among all subpopulations of Fennoscandia is required.
3. The degree of connectivity needed among subpopulations is in the order of c. 3–5 genetically effective migrants per generation.
4. Local effective population sizes need to increase such that the sum of the subpopulation N_e s that comprise the metapopulation approaches 500.
5. Owing to the lack of a common conservation policy between EU member states (Sweden and Finland) and Russia, we propose that the conservation target of meta- $N_e \geq 500$ should be reached for wolf populations of Scandinavia and Finland.



Immigration to Scandinavian population

- 0.3 wolves/generation (0.6 among subpopulations ?)



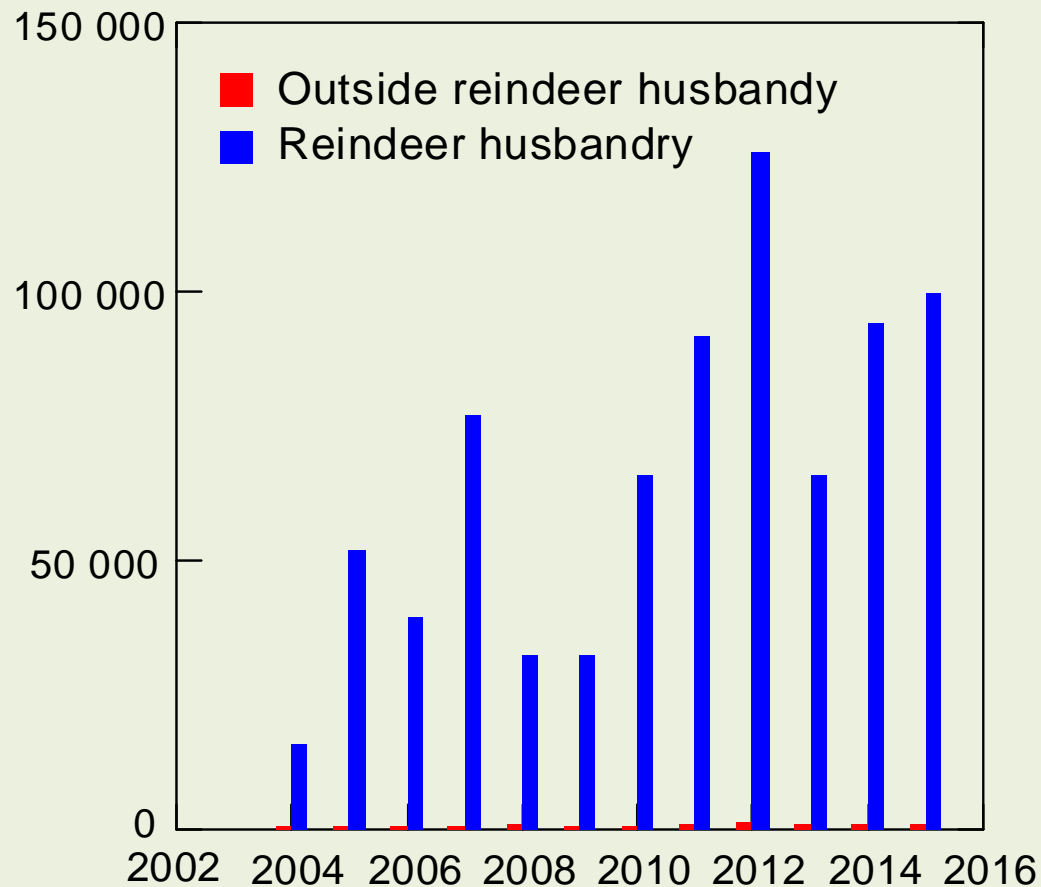
PERIOD	IMMIGRANTS
1976/77 - 1980/81	5
1981/82 - 1985/86	1
1986/87 - 1990/91	1
1991/92 - 1995/96	0
1996/97 - 2000/01	0
2001/02 - 2005/06	8
2006/07 - 2010/11	9
2011/12 - 2015/16	7 *
TOTAL RECORDED	31

* In 2015/16 three males to Central Scandinavia and one to northern Norway.

Map: Åkesson, Liberg, Sand, Flagstadt, Kojola & Aspi (manuscript)

Wolves dispersed to reindeer husbandry area become costly

Compensation costs paid by Finnish government per wolf (€)

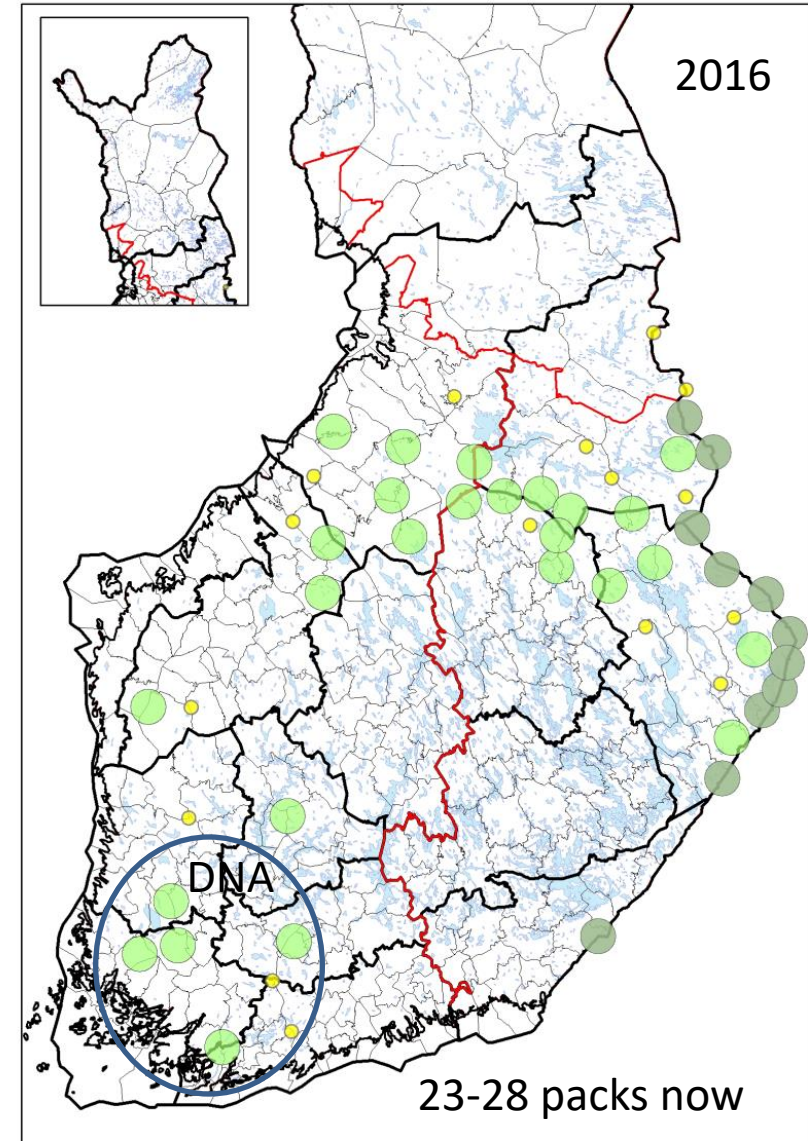
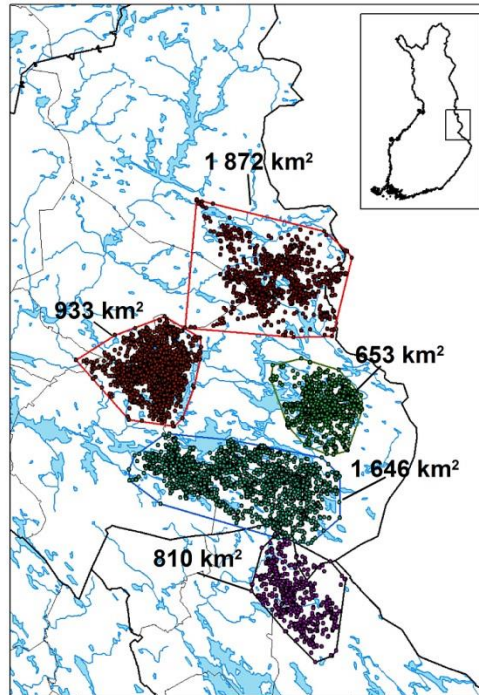
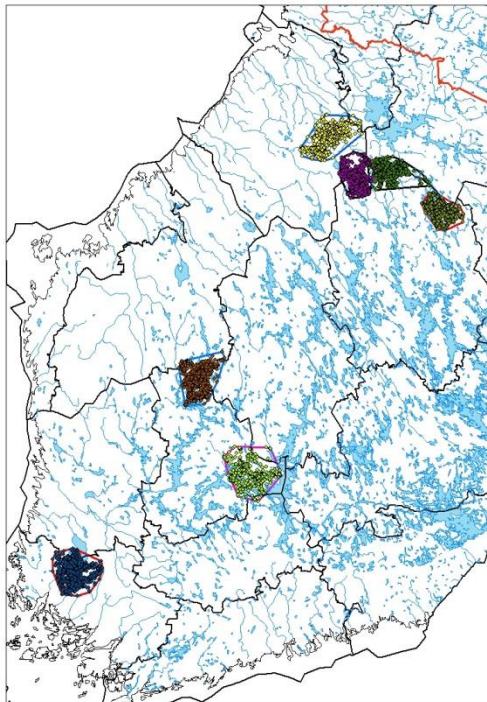


Practically each wolf from the reindeer husbandry area become legally eliminated during Oct.-Dec.

Poaching of wolves takes place south from reindeer husbandry area and is motivated by social factors and wolf attacks on domestic dogs

Monitoring

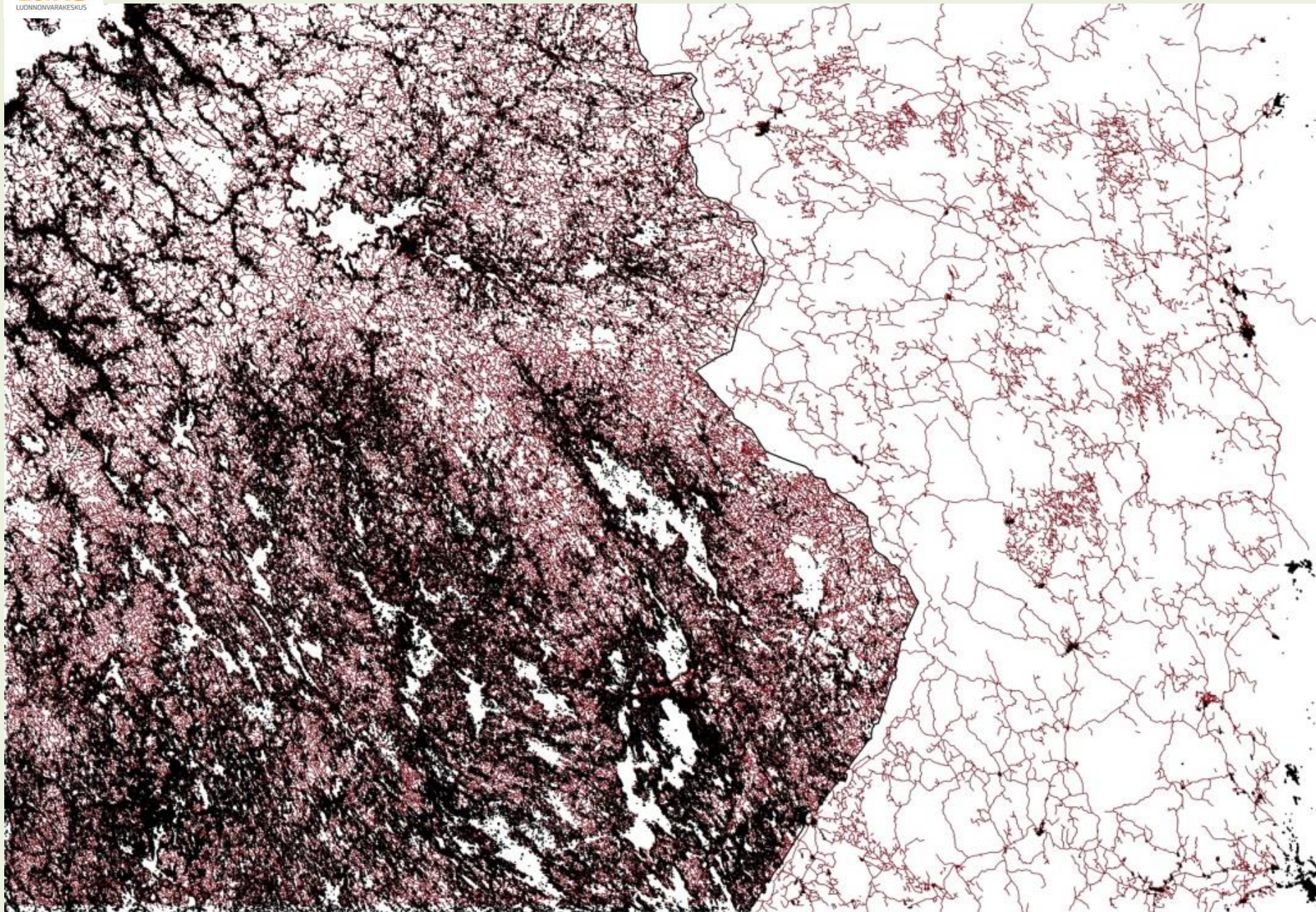
Network of 2 000 voluntary contact persons uploading 5 000 point observations per year; 20% (formerly 40%) of packs with GPS collars to map territory boundaries, genetic monitoring only within a few southern territories.



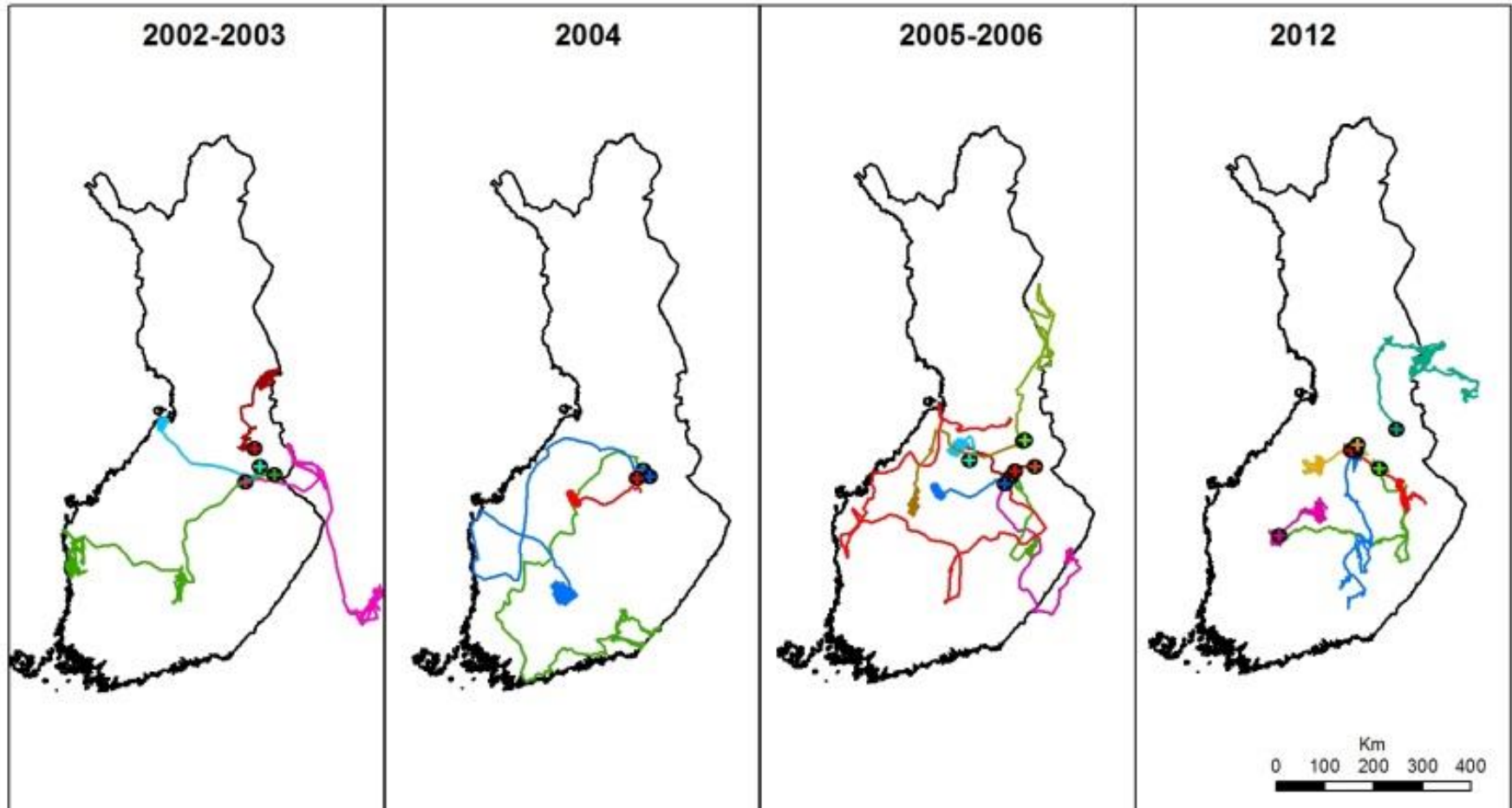
FINLAND

Roads

RUSSIA



Examples of dispersal routes



WILDLIFE MANAGEMENT

Dispersal Behavior and the Connectivity Between Wolf Populations in Northern Europe

ILPO KOJOLA¹*, SALLA KAARTINEN²,
ANTERO HAKALA², SAMULI HEIKKINEN⁴
and HANNA-MARJA VOIPIO⁵

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Issue



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Dispersers and roads

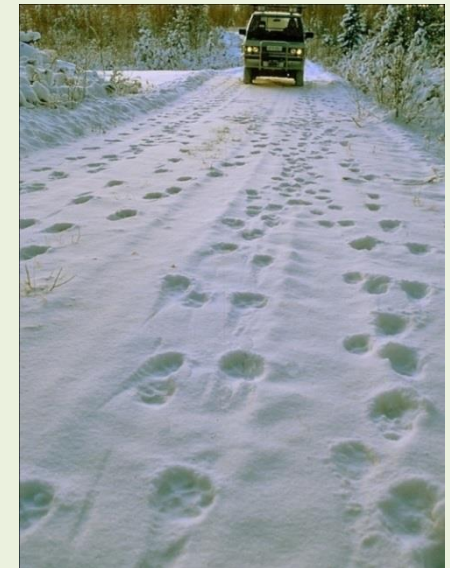
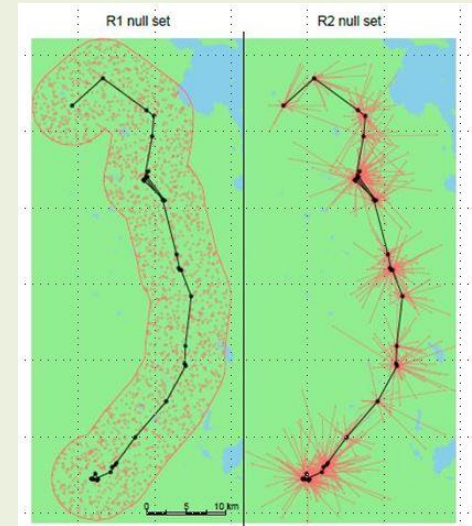
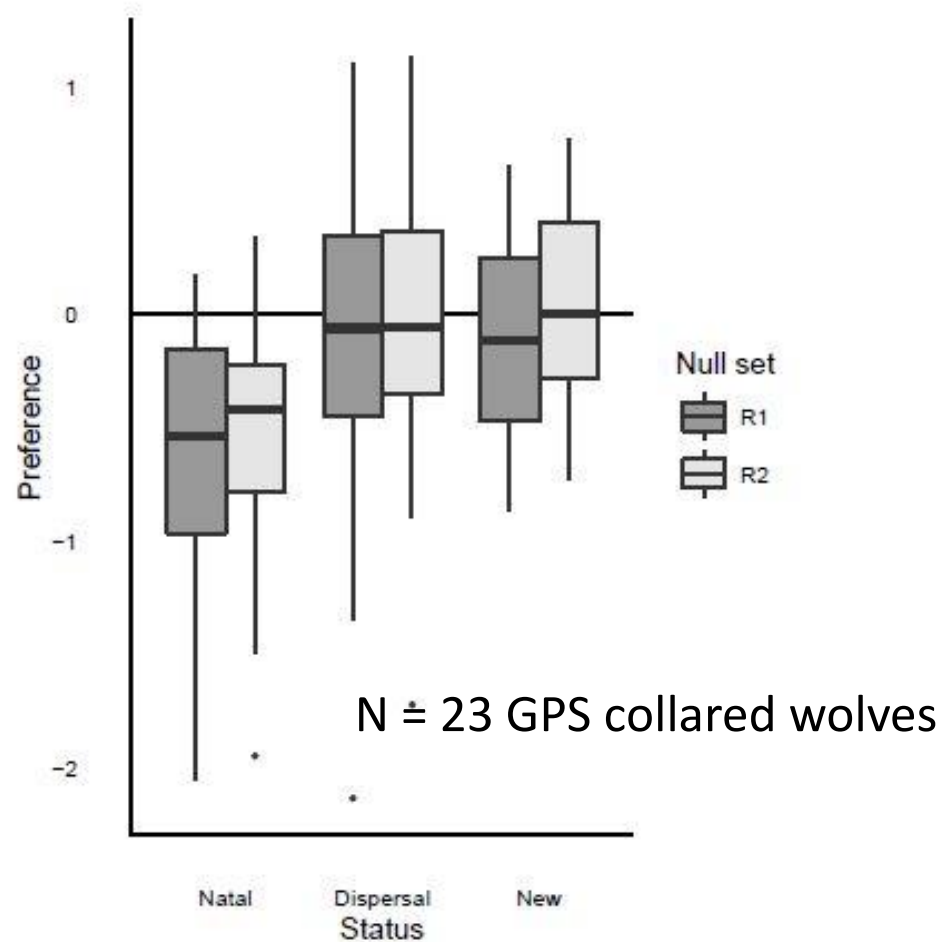
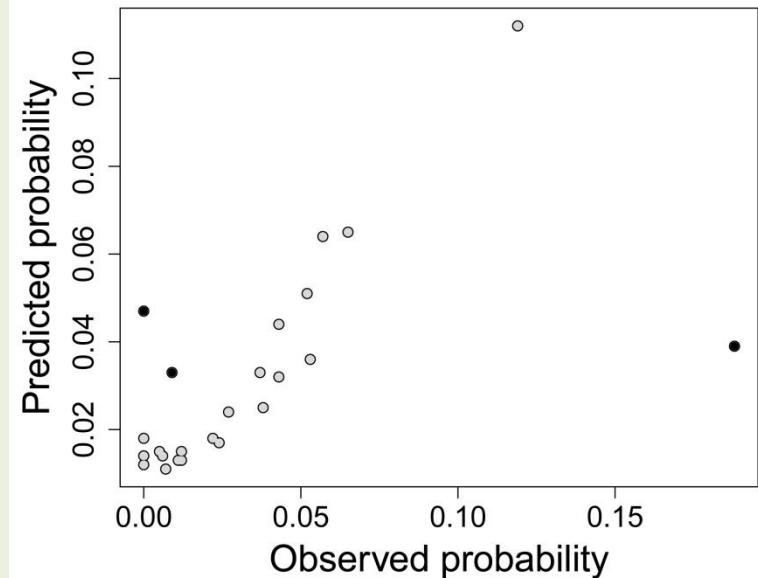
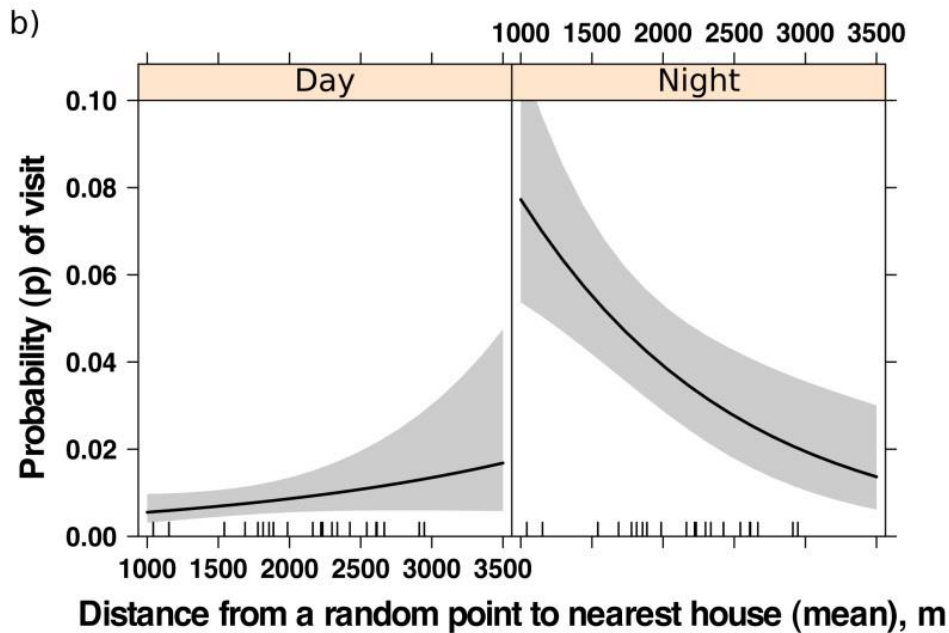
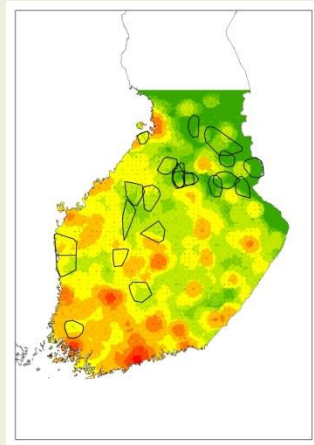


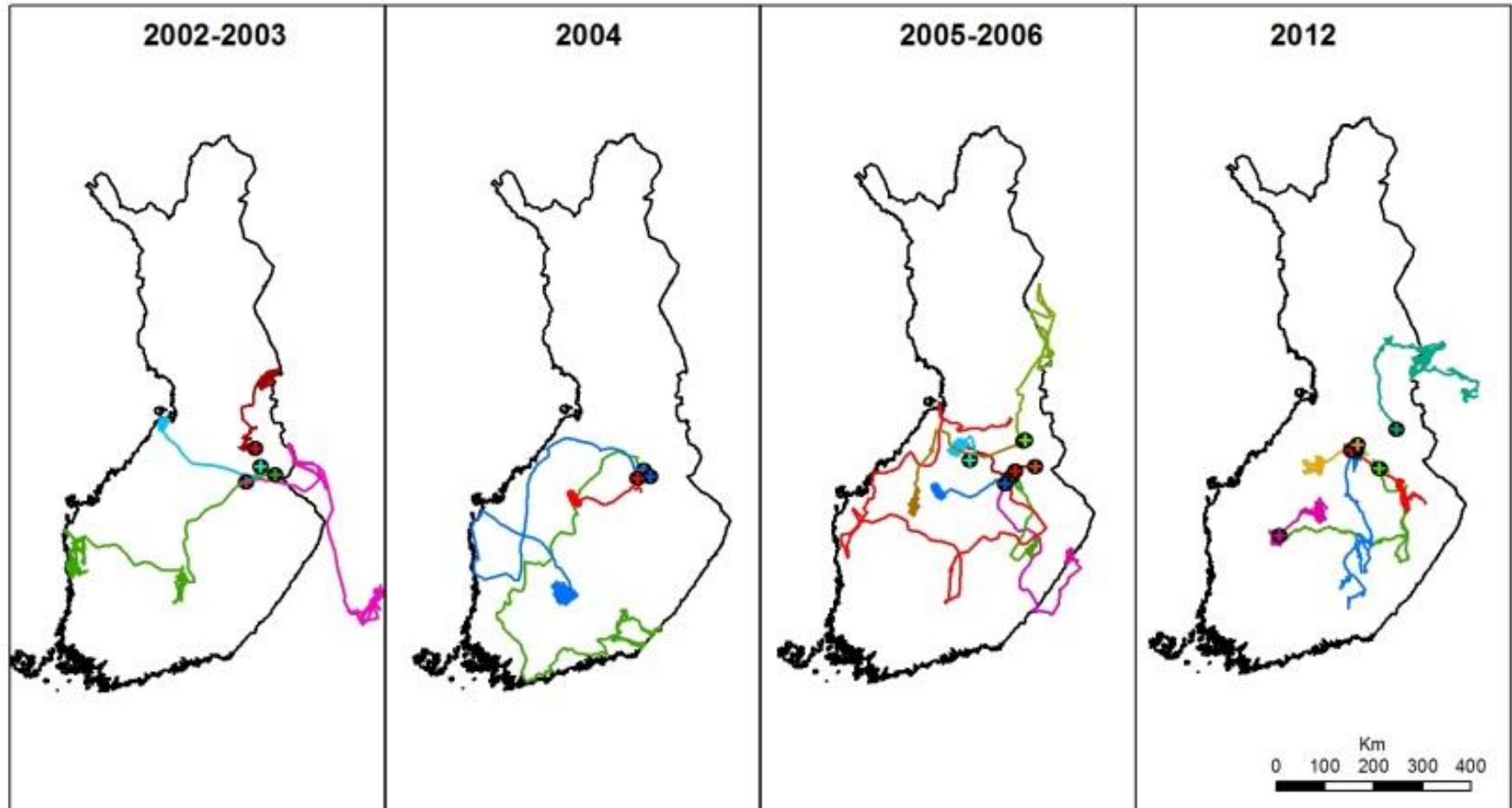
Photo Ilpo Kojola

Figure 3: Forest road preference with respect to R1 and R2 in the natal territory, dispersal phase, and new territory. The outliers of the two dispersal distributions belong to Saturnus, and were estimated rather than actually observed (see Statistical methods).

Wolves's visitations close human residences



Examples of dispersal routes



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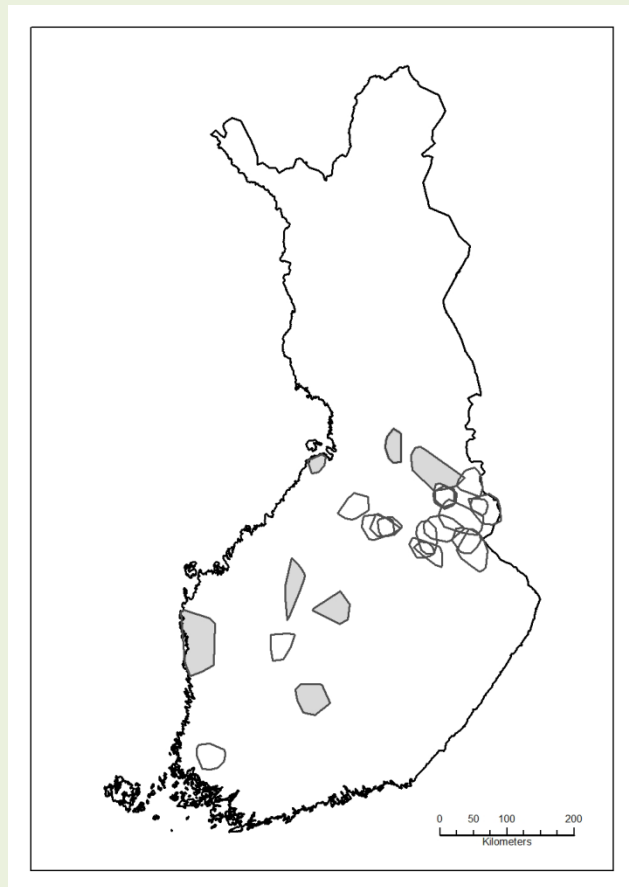
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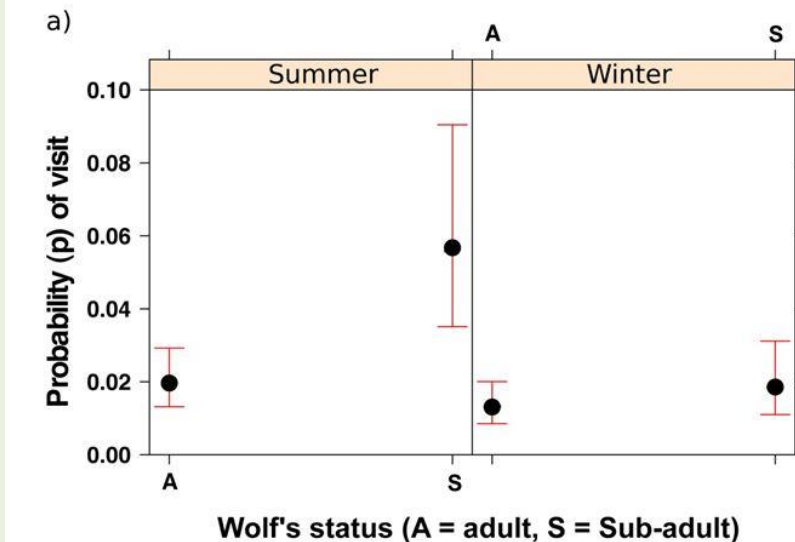
Just established territorial sub-adults moved more often close (< 150 m) to human residences than territorial adults, but in the next winter such a difference did not exist



Sub-adults



Adults



Thank you for your attention



Photo Seppo Ronkainen