

SUPPLEMENTARY INFORMATION

Publication: Metapopulation effective size and conservation genetic goals for the Fennoscandian wolf (*Canis lupus*) population
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SUPPLEMENTARY TABLE 1:

Summary information on genetic parameters for wolf subpopulations of Fennoscandia and nearby Russia

Parameter	Wolf population					
	Scandinavia (Sweden & Norway)	Finland	Karelia, Russia	Kola, Russia	Russia (European)	Russia (total)
Census size (N_c)	400 ⁽¹⁾	220-245 ⁽²⁾	300-350 ⁽³⁾	~100 ⁽⁴⁾	12630 ⁽⁴⁾	48900 ⁽⁴⁾
Effective size (N_e)	~100 ⁽⁵⁾	20-67 ⁽⁶⁾ , ~50	40-47 ⁽⁷⁾ , ~50	~25 ⁽⁴⁾	134-312/1366 ⁽⁸⁾	NA
N_e/N_c ratio	0.24-0.46 ⁽⁹⁾	0.097-0.285/0.158-1.473 ^(6*)	0.114-0.156 ⁽¹⁰⁾	NA	NA	NA
Average inbreeding (f)	$f=0.25$ ⁽¹¹⁾	$F_{IS}=0.108$ ^(6**)	$F_{IS}=0.074$ ⁽⁶⁾	NA	NA	NA
Immigration (no immigrants per generation, m)	0.5-0.8 from Finland ⁽¹²⁾	1-3 ^(6***)	1-3 ^(6****)	NA	NA	NA
F_{ST} between neighbouring population(s)	$F_{ST(SCA-FIN)}=0.177-0.187$ ⁽¹³⁾	$F_{ST(FIN-KAR)}=0.087-0.151$ ^(6,7,14)	$F_{ST(KAR-ARK)}=0.051$ ⁽⁷⁾	NA	NA	NA
Generation time	5 years ⁽¹⁵⁾	3.4 years ⁽¹⁶⁾	NA	NA	NA	NA

1) Svensson et al. (2014)

2) Natural Resources Institute Finland 2015; available at: <http://www.luke.fi/tiedote/susien-maara-lisaantyi-reilusti-viime-vuodesta/> (in Finnish, accessed May 2015)

3) Jansson (2013): estimate for 2013

4) Bragina et al. (2015); Lomanova (ed.) et al. (2011): Estimates are from 2010. N_e estimated from $N_e/N_c=0.25$ as for Scandinavia (cf. (5))

5) Calculated based on N_e/N_c ratio of c. 0.25 from Forslund (2009) and Bruford (2015)

6) Jansson et al. (2012): N_e calculated based on LD- N_e method during five generations, smallest estimate is the most recent. F_{IS} calculated based on observed and expected heterozygosities for wolves born in 2007-2009. Proportion of immigrants in the Karelian population is 0.094, which is estimated to correspond into 1-3 immigrants.

7) Aspi et al. (2009). N_e estimated based on two different single sample estimation methods. See original article for references.

8) 134-312 are N_e estimates from limited areas in European Russia (Sastre et al. (2011); Pilot et al. (2014)), whereas 1366 is global estimate for "Eastern Europe" (including countries other than Russia; see Pilot et al. (2014)).

9) Andrén (2005); Bensch et al. (2006); Forslund (2009); Bruford 2015

10) Calculated based on N_c and N_e given above

11) Pedigree based estimate (see e.g., Laikre et al. (2013); Åkesson et al. (2014))

12) Calculated from 3 to 5 **genetically effective immigrants** in 1982-2012 (6 generations); Liberg & Sand (2012, 2009)

13) Seddon et al. (2006); Åkesson & Bensch (2009)

14) Niskanen et al. (2014)

15) Forslund (2009)

16) Aspi et al. (2006)

NA=not available, SCA=Scandinavian wolf population, FIN=Finnish population, KAR=Karelian population, ARK=Arkangelsk population

* First range of ratios based on single-sample N_e estimates, second range based on temporal N_e estimates

** Estimate for Finnish wolves born in 2007-2009

*** proportion of likely first-generation immigrants from Karelia 0.016-0.090, translates into 1-3 actual immigrants per generation. Note that the amount of effective immigrants is likely to be lower (Jansson 2013)

**** Proportion of likely first-generation immigrants from Finland 0.094 translates into 1-3 immigrants.

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