

**Supplementary material**

**Appendix 1.** Summary table of median hatching date, first, last and median capture dates, mean 9<sup>th</sup> primary length and sample size during the 22 years of sampling (dates are in day of the year)

Year	Median hatching date	First day of capture	Last day of capture	Median date of capture	Mean 9 <sup>th</sup> primary length (mm)	Total number of females measured
1992	197	224	229	226	132.1	78
1993	184	221	226	224	188.5	82
1994	188	221	225	222	164.4	63
1995	188	221	227	224	175.6	96
1996	193	221	224	223	147.8	77
1997	188	221	226	221	138.3	32
1998	185	221	226	223	188.9	80
1999	193	222	225	223	133.8	101
2000	195	223	227	224	135.8	57
2001	190	222	225	223	175.7	81
2002	192	219	226	224	124.4	73
2003	187	221	226	224	168.5	92
2004	189	221	230	230	170.0	125
2005	189	221	227	224	175.0	69
2006	191	217	223	221	137.1	103
2007	192	221	228	226	155.9	95
2008	188	221	227	224	148.9	66
2009	190	220	227	224	168.4	85
2010	190	220	223	222	156.2	65
2011	189	218	224	223	149.7	73
2012	191	218	227	224	142.3	185
2013	191	217	225	221	126.9	189

**Appendix 2.** Eigenvalues and factor loadings extracted from the principal component analysis of morphometric measurements of adult female greater snow geese.

		Axis 1	Axis 2	Axis 3
Eigenvalues	Variance	2.04	0.73	0.23
	Percentages of variance explained	67.9	24.2	7.8
Factor loadings	Tarsus length	0.65	0.76	0.03
	Head length	0.91	-0.23	-0.35
	Culmen length	0.89	-0.32	0.33

**Appendix 3.** Model selection for the effect of capture Date, Year and their interaction on body condition (SMI, see methods for details) of moulting adult female greater snow geese (mixed linear model with catch size as the random factor;  $n = 1383$  individuals over 15 years). We present the difference in AICc value between each model and the top-ranked model and AICc weights ( $K =$  number of parameters in the model).

Variables	K	Log-Likelihood	$\Delta$ AICc	AICc Weight
Date + Year + Date $\times$ Year	32	-8873.3	0	1.0
Date + Year	18	-8905.5	35.3	0.0
Year	17	-8910.7	43.6	0.0
Date	4	-9011.9	219.6	0.0
Null	3	-9014.7	223.6	0.0