

Electronic Supplementary Material

Demographic responses to a mild winter in enclosed vole populations

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Appendix S1. Description of climatic conditions at the study site.

Climatic data were obtained from two nearby meteorological stations. The station situated about 100 m from our study enclosures only recorded temperatures, while data on snow conditions were obtained from a station located approximately 40 km away. First frost night occurred on October 24 (-0.8 °C) and the first day with mean temperature below 0 °C was October 27 (-2.8 °C). The first “permanent” snow appeared on November 18, with a snow depth of approximately 20 cm. A time line with the dates of trapping sessions showing the mean temperatures and mean snow depth in the periods between trapping sessions, and other major climatic events is presented in Fig. S1.

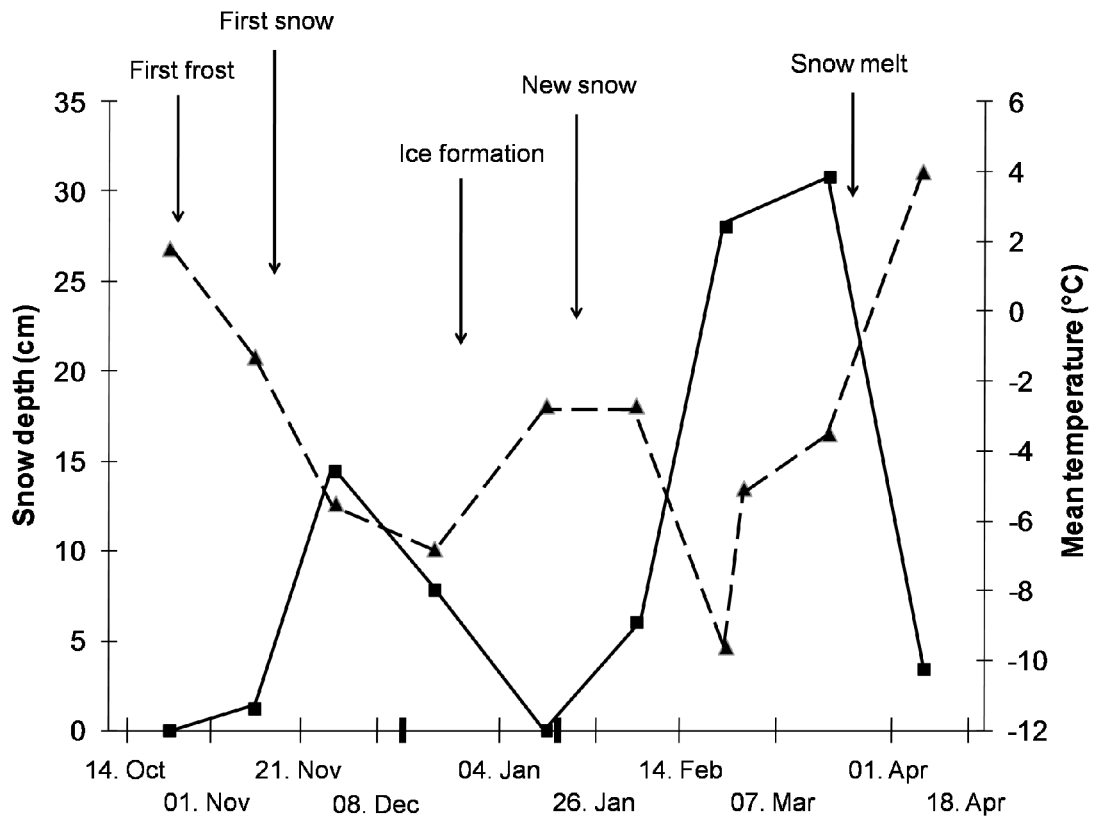


Figure S1. A time line that show the mean snow depth (solid black line) and mean temperature (stippled grey line) between trapping sessions from October 2004 to April 2005. Time of PIT-tag monitoring is shown as thick marks on the date line. The occurrence of important climate events are shown with arrows, detailed dates of these events can be found in the main text.

Table S2. Table of competing models used for model averaging.

The survival (Φ) and recapture rate (p) models evaluated during model selection and the global model with the number of parameters in the models (No. par.), deviance, and QAIC_c (AIC values corrected for small sample size and over-dispersion by $\hat{c} = 2.84$). The models are sorted according to the model selection procedure as described in the main paper. The subscripts: t = time, s = sex, a = age class (adult and juvenile), d = density, tp = mean temperature, sn = snow depth, mlt = snow melt, i = presence of ice cover, and ic = proportion ice cover in experienced by each individual.

Model	No. Par	Deviance	QAIC _c
Climatic constrained survival models			
$\Phi_{a+d+i+tp+(a*i)}$	8	292.7	309.0
$\Phi_{a+d+i+mlt+(a*i)}$	8	294.1	310.3
$\Phi_{a+d+i+tp+(a*i+a*tp)}$	9	292.7	311.0
$\Phi_{a+d+i+mlt}$	7	302.9	317.1
$\Phi_{a+d+i+tp+(i*tp)}$	8	301.3	317.6
$\Phi_{a+d+i+tp}$	7	303.5	317.7
$\Phi_{a+d+i+tp+mlt}$	8	301.5	317.8
$\Phi_{a+d+i+mlt+(i*mlt)}$	8	302.2	318.5
$\Phi_{a+d+i+tp+(a*tp)}$	8	302.7	319.0
Φ_{a+d+tp}	6	310.6	322.7
Φ_{a+i+tp}	6	310.9	323.1
$\Phi_{a+d+tp+mlt}$	7	309.9	324.1
Φ_{a+d+i}	6	314.2	326.4
$\Phi_{a+d+i+sn}$	7	313.6	327.9
$\Phi_{a+d+i+sn+(i*sn)}$	8	313.1	329.4
Φ_{a+d+sn}	6	321.5	333.6
$\Phi_{a+d+mlt}$	6	322.5	334.6
General survival models			
Φ_{t+a+d}	13	293.3	320.0
$\Phi_{t+a+d+ic}$	14	292.6	321.4
$\Phi_{t+s+a+d}$	14	293.1	321.9
$\Phi_{t+s+a+(s*a)+d}$	15	292.0	322.9
$\Phi_{t+s+a+d+ic}$	15	292.4	323.3
$\Phi_{t+s+a+(s*a)+d+ic}$	16	291.3	324.3

Φ_{t+a}	12	300.4	325.0
Φ_{t+a+ic}	13	299.2	325.9
Φ_{t+s+a}	13	299.6	326.2
$\Phi_{t+s+a+ic}$	14	298.5	327.3
$\Phi_{t+s+a+(s*a)}$	14	298.6	327.4
$\Phi_{t+s+a+(t*a)+d}$	21	283.9	327.7
$\Phi_{t+s+a+(s*a)+ic}$	15	297.4	328.3
$\Phi_{t+s+a+(t*a)+d+ic}$	23	283.3	331.5
$\Phi_{t+s+a+(t*s)+d}$	22	288.6	334.5
$\Phi_{t+s+a+(t*a)}$	21	291.1	334.9
$\Phi_{t+s+a+(t*s)+d+ic}$	23	287.8	335.9
$\Phi_{t+s+a+(t*s)}$	21	295.7	339.5
Φ_a	4	334.1	342.2
Φ_{s+a}	5	332.2	342.3
Φ_{t+d}	11	320.8	343.3
Φ_{t+s+d}	13	317.7	344.4
$\Phi_{t+s+d+ic}$	14	317.3	346.1
Φ_{t+d+ic}	13	320.2	346.9
Φ_{t+s}	12	322.4	347.0
Φ_t	10	326.8	347.2
$\Phi_{t*s*a+d}$	39	275.1	359.3
Φ_s	4	352.5	360.6
$\Phi_{t*s*a+d+ic}$	40	274.7	361.3
$\Phi_{intercept}$	3	358.1	364.1
Recapture models			
p_a	38	282.4	364.4
p_{s+a}	39	281.4	365.7
p_{s*a}	40	280.6	367.3
$p_{constant}$	37	290.2	369.9
p_s	38	289.7	371.6
p_t	44	280.5	376.5
p_{t*a}	52	271.5	386.8
p_{t*s}	52	277.1	392.5
Global model			
$\Phi_{t*s*a} p_{t*s*a}$	68	267.0	423.1