ELECTRONIC APPENDIX

This is the Electronic Appendix to the article

Constraints on plastic responses to climate variation in red deer.

by

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Supplementary Online Material.

A linear mixed-effects model of offspring birth weight in red deer on the Isle of Rum, Scotland. Fixed effects terms are included for factors and covariates known to influence offspring birth weight independent of climate conditions (offspring sex, date of birth, female's reproductive status and female's age as a quadratic). The random effect for female identity ensures that all fixed effects are tested against variance in birth weight within females. Estimates of effect size and direction for fixed-effects are shown for covariates. The significance of the negative spring temperature by density in female's year of birth interaction confirms the finding using regression estimates for individual females (Figure 2): the tendency for birth weights to increase following warm springs declines as population density increases. The model includes 1,557 birth weight observations from 414 different females.

Random Effects			
Term	Standard Deviation		
Female	0.81		
Residual	0.93		
Fixed Effects			
Term	F	P	Estimate
Offspring sex	45.14	<0.001	
Female's reproductive status	37.42	<0.001	
Female's age	19.67	<0.001	0.324
Female's age^2	35.77	<0.001	-0.020
Offspring date of birth	34.84	<0.001	0.011
Spring temperature	23.96	<0.001	0.593
Density in female's year of birth	0.03	0.86	0.028
Spring temperature * Density in female's year of birth	21.52	<0.001	-0.003