

Table S1

Model	QAICc	ΔQAICc	AICc Weights	Coefficient linking <i>adult</i> survival to specific climatic variables																Coefficient linking <i>juvenile</i> survival to specific climatic variables																	
				mT		SE		mT ²		SE		aT		SE		sT ²		SE		mR		SE		mR ²		SE		cvR		SE		cvR ²		SE			
mR_int	10572	0.00	0.300																																		
sT_mR_int	10574	1.97	0.112																																		
mT_mR_NoInt	10574	2.50	0.086	-0.195	0.243	0.009	0.101																														
mR_NoInt	10575	2.95	0.069																																		
mT_mR_int	10575	3.17	0.061	-0.233	0.294	0.027	0.120																														
mR_cvR_int	10575	3.67	0.048																																		
mT_sT_mR_NoInt	10576	3.93	0.042	-0.116	0.237	-0.026	0.102																														
sT_mR_NoInt	10576	4.12	0.038																																		
aT_mR_int	10576	4.50	0.032					0.048	0.105	-0.010	0.077																										
aT_mR_cvR_int	10577	5.68	0.018					0.081	0.121	-0.039	0.087																										
mT_sT_mR_int	10578	5.81	0.016	-0.130	0.293	-0.015	0.123																														
mT_NoInt	10578	6.12	0.014	-0.003	0.217	-0.088	0.089																														
mT_mR_cvR_NoInt	10578	6.46	0.012	-0.208	0.247	0.012	0.103																														
aT_sT_mR_NoInt	10578	6.48	0.012	-0.374	0.349	0.071	0.140	0.130	0.109	-0.051	0.079																										
all_mT_int	10578	6.62	0.011					0.128	0.142	0.001	0.092	-0.027	0.106	-0.114	0.091																						
aT_mR_NoInt	10578	6.71	0.010	-0.040	0.090	-0.012	0.066																														
mT_mR_cvR_int	10578	6.77	0.010	-0.217	0.300	0.015	0.122																														
mR_cvR_NoInt	10579	6.94	0.009																																		
mT_sT_NoInt	10579	7.35	0.008	-0.012	0.223	-0.084	0.095																														
sT_mR_cvR_int	10579	7.62	0.007																																		
aT_sT_mR_int	10579	7.64	0.007					-0.046	0.100	0.054	0.074																										
aT_int	10579	7.79	0.006					0.006	0.101	-0.019	0.069																										
aT_sT_mR_int	10579	7.79	0.006					0.050	0.114	0.033	0.084	0.024	0.100	-0.127	0.091	0.196	0.131	-0.009	0.147																		
all_aT_NoInt	10580	7.86	0.006	-0.115	0.242	-0.029	0.104																														
all_cvR_NoInt	10580	7.97	0.006	-0.157	0.279	-0.009	0.118	0.027	0.110	0.007	0.080	-0.024	0.099	-0.114	0.081	0.115	0.118	-0.203	0.126																		
sT_mR_cvR_NoInt	10580	8.16	0.005																																		
cvR_NoInt	10580	8.27	0.005																																		
mT_mR_NoInt	10580	8.59	0.004	-0.043	0.217	-0.054	0.092																														
all_sT_int	10580	8.66	0.004	-0.317	0.356	0.042	0.144	0.151	0.126	-0.096	0.097																										
mT_sT_int	10580	8.70	0.004	0.066	0.224	-0.109	0.090	-0.068	0.093	-0.031	0.060																										
g(p(L))	10580	8.72	0.004																																		
cvR_int	10581	9.16	0.003																																		
sT_NoInt	10581	9.50	0.003																																		
mT_aT_int	10581	9.73	0.002	-0.081	0.279	-0.064	0.107	0.075	0.102	-0.053	0.068																										
all_sT_NoInt	10582	9.95	0.002	-0.168	0.281	-0.015	0.117	0.015	0.114	-0.065	0.085																										
aT_NoInt	10582	9.97	0.002					-0.134	0.092	0.010	0.062																										
mT_int	10582	10.18	0.002	-0.010	0.263	-0.090	0.104																														
mT_sT_cvR_NoInt	10582	10.47	0.002	-0.017	0.223	-0.069	0.097																														
sT_cvR_NoInt	10582	10.50	0.002																																		
aT_mR_cvR_NoInt	10582	10.78	0.001					-0.048	0.108	-0.003	0.077																										
all_int	10583	11.03	0.001	-0.331	0.368	0.058	0.153	0.231	0.160	-0.045	0.102	-0.099	0.132	-0.093	0.095	-0.012	0.176	-0.135	0.171	-0.123	0.115																
all_cvR_int	10583	11.16	0.001	-0.312	0.349	0.051	0.144	0.139	0.124	-0.011	0.092	-0.024	0.116	-0.093	0.096	0.121	0.145	-0.084	0.152																		
mT_aT_sT_NoInt	10583	11.37	0.001	0.004	0.254	-0.087	0.105	-0.028	0.106	0.014	0.072	-0.080	0.095	-0.057	0.071																						
all_aT_int	10583	11.69	0.001	-0.113	0.298	-0.026	0.125																														
aT_cvR_int	10583	11.69	0.001					0.097	0.116	-0.039	0.070																										
all_mT_NoInt	10583	11.71	0.001					-0.062	0.127	0.060	0.083	0.016	0.093	-0.142	0.081	0.212	0.150	-0.123	0.131	0.022	0.105	-0.003	0.088														
sT_int	10583	11.73	0.001																																		
all_int	10584	11.97	0.001	-0.133	0.293	-0.023	0.127	0.020	0.143	-0.007	0.093	-0.021	0.108	-0.116	0.082	0.107	0.155	-0.220	0.142	0.007	0.105	-0.035	0.098														
aT_cvR_NoInt	10584	12.13	0.001					-0.046	0.106	-0.002	0.062																										

Table S1:

Statistical summary of the models linking survival rate to climate metrics.

The ‘model’ column provides a short model description, with: ‘T, R’ representing temperature and rainfall respectively; ‘m, a, s, cv’ the mean, amplitude of seasonal change, standard deviation and coefficient of variation (we used standardised variables); ‘Int , NoInt’ representing models with or without interaction terms (e.g. models with, or without, differential responses to climate metrics across age classes). The notation ‘.’ highlights the model including no climatic variables (e.g. estimating survival rates using a CMR model without covariates) while ‘all’ highlights the model with all climatic variables included (for simplicity, the model labelled ‘all –mT’ presents the model including all variables but the mean temperature and its quadratic component).

In the 3 next columns, the support for each model is presented, based on Akaike criterion and weight.

The furthest right column on the table presents the coefficient for each model linking the survival rate of juveniles and adults to specific climatic variables (we present the estimate for the linear and quadratic effect together with their standard error). When the model does not include an interaction term (noted ‘NoInt’), the coefficient(s) is the same for juvenile and adult survival.

Based on Akaike weight (w_i), the most supported model (μ_R) shows almost three times the support of the second ranked model (σ_T, μ_R). These two primary models both include an interaction term highlighting the importance of considering differential relationships between climatic variables and the survival rates of juveniles and adults. This table is the basis of the model averaging, for which results are presented in Table 1 of the main text.