Supplemental Materials: Photoperiod and temperature interactively drive spring phenology in multiple species

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Supplemental Figures and Tables

Table S1: Summary of mixed effect model of budburst day by species.

	mean	sd	25%	50%	75%	Rhat
Temperature	-6.80	1.71	-7.95	-7.02	-5.63	1.05
Photoperiod	-3.96	1.67	-5.13	-4.13	-2.80	1.05
Chilling 4 °C	-22.09	2.84	-24.05	-21.75	-20.26	1.03
Chilling 1.5 °C	-19.79	2.96	-22.32	-19.90	-17.78	1.13
Site	2.59	1.88	0.93	2.54	3.93	1.13
Temperature × Photoperiod	-0.60	0.72	-1.07	-0.46	-0.24	1.02
Temperature × Site	9.17	1.00	8.50	9.32	9.77	1.03
Photoperiod × Site	9.68	1.06	9.11	9.57	10.33	1.00
Temperature × Chilling 4 °C	-0.18	0.96	-0.82	-0.06	0.47	1.04
Temperature × Chilling 1.5 °C	-0.02	1.03	-0.67	0.14	0.48	1.02
Photoperiod × Chilling 4 °C	-1.48	0.76	-1.99	-1.35	-1.00	1.04
Photoperiod × Chilling 1.5 °C	0.05	0.79	-0.52	0.09	0.76	1.10
Site × Chilling 4 °C	-1.96	1.33	-2.84	-1.86	-0.85	1.09
Site × Chilling 1.5 °C	-3.49	1.23	-4.14	-3.55	-2.78	1.01

Table S2: Summary of mixed effect model of leafout day by species.

	mean	sd	25%	50%	75%	Rhat
Temperature	-21.91	1.72	-23.05	-21.90	-20.75	1.01
Photoperiod	-13.68	1.69	-14.79	-13.71	-12.56	1.02
Chilling 4 °C	-26.37	3.09	-28.41	-26.41	-24.41	1.01
Chilling 1.5 °C	-26.14	3.09	-28.29	-26.23	-24.03	1.01
Site	3.00	2.05	1.67	3.00	4.43	1.02
Temperature × Photoperiod	3.54	0.77	2.99	3.54	4.07	1.02
Temperature × Site	10.19	1.16	9.47	10.12	10.93	1.00
Photoperiod × Site	11.29	1.25	10.44	11.26	12.09	1.01
Temperature × Chilling 4 °C	0.77	1.05	0.08	0.79	1.48	1.00
Temperature × Chilling 1.5 °C	2.41	1.27	1.60	2.41	3.24	1.01
Photoperiod × Chilling 4 °C	-0.59	0.82	-1.11	-0.58	-0.04	1.03
Photoperiod × Chilling 1.5 °C	-1.00	0.83	-1.55	-1.01	-0.42	1.02
Site × Chilling 4 °C	-1.87	1.26	-2.67	-1.92	-1.05	1.01
Site × Chilling 1.5 °C	-3.46	1.38	-4.39	-3.44	-2.52	1.01

Figure S1: Model estimates of budburst, including species-level effects.

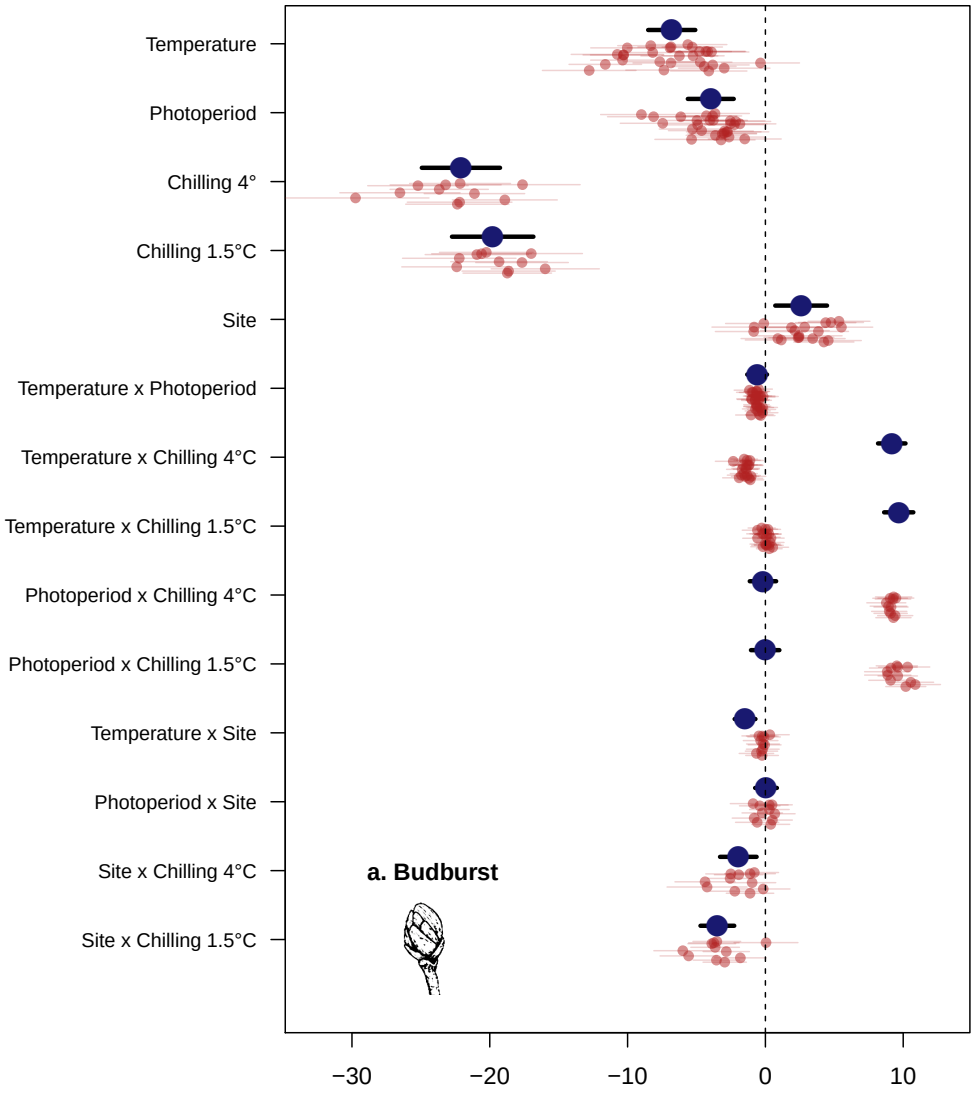

Figure S2: Model estimates of leafout, including species-level effects.

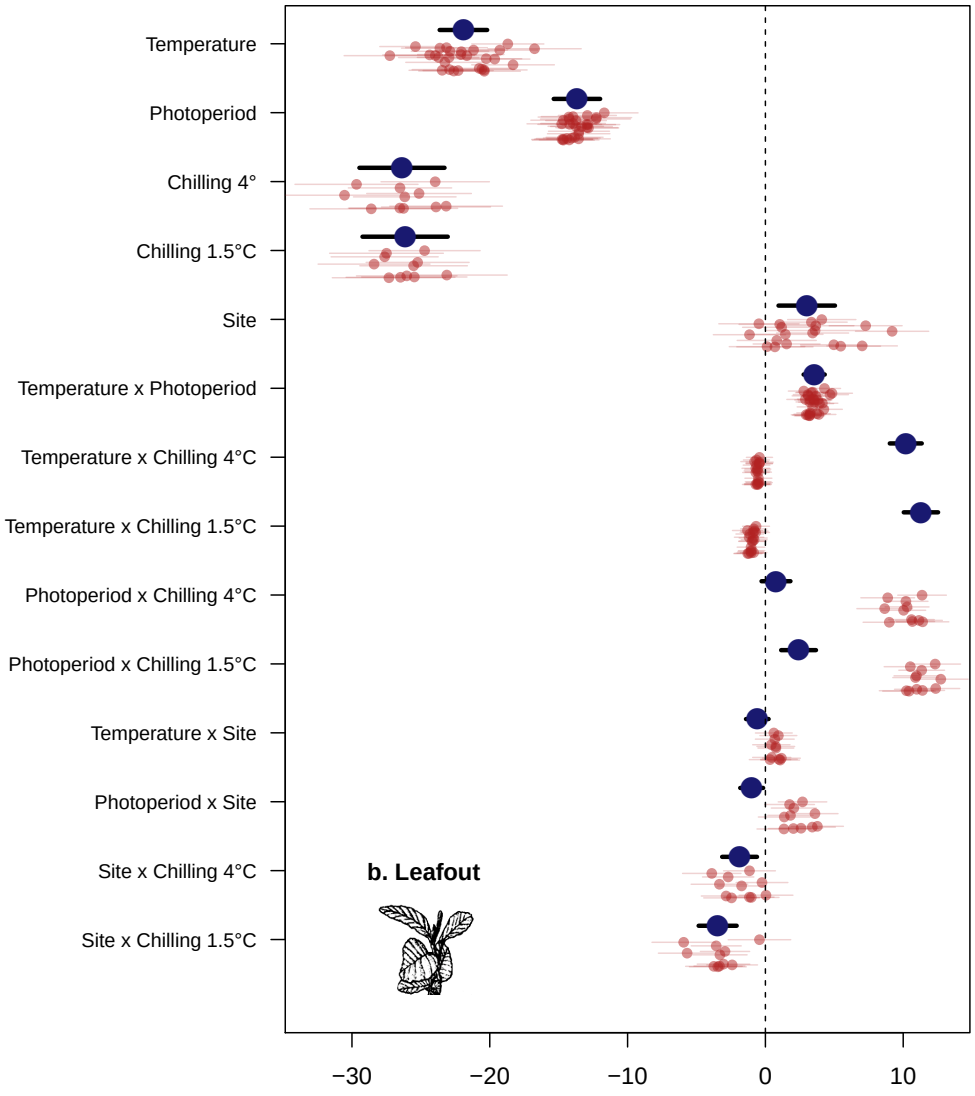

Figure S3: Model estimates of sensitivity to warming, photoperiod, and chilling, compared to day of budburst (upper panels) or leafout (lower panels) across all experimental conditions.

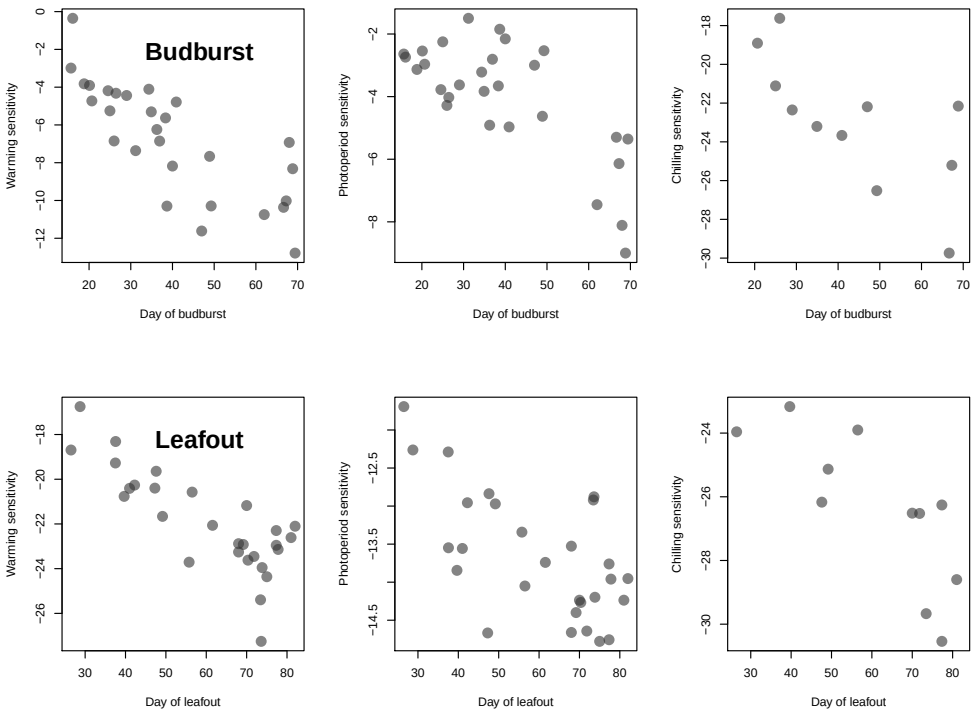

Figure S4: Trait sensitivity based on specific leaf area

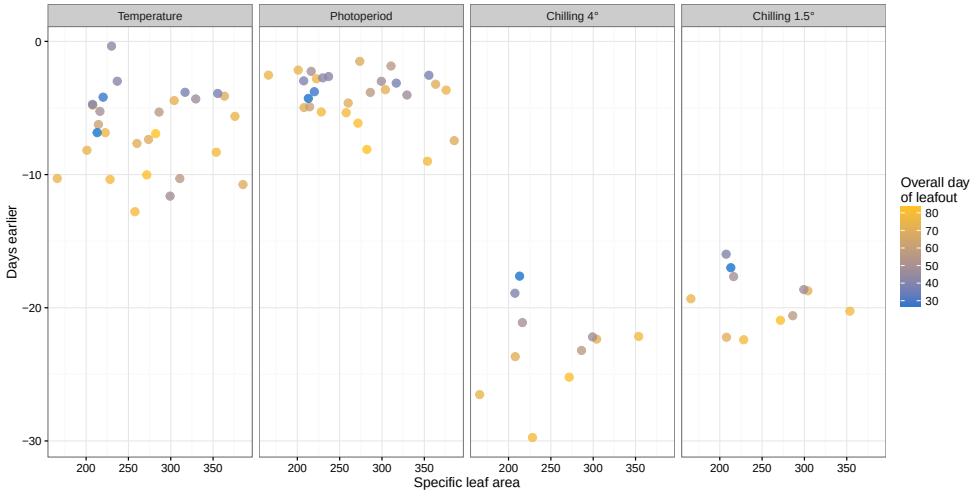

Figure S5: Trait sensitivity based on stem density

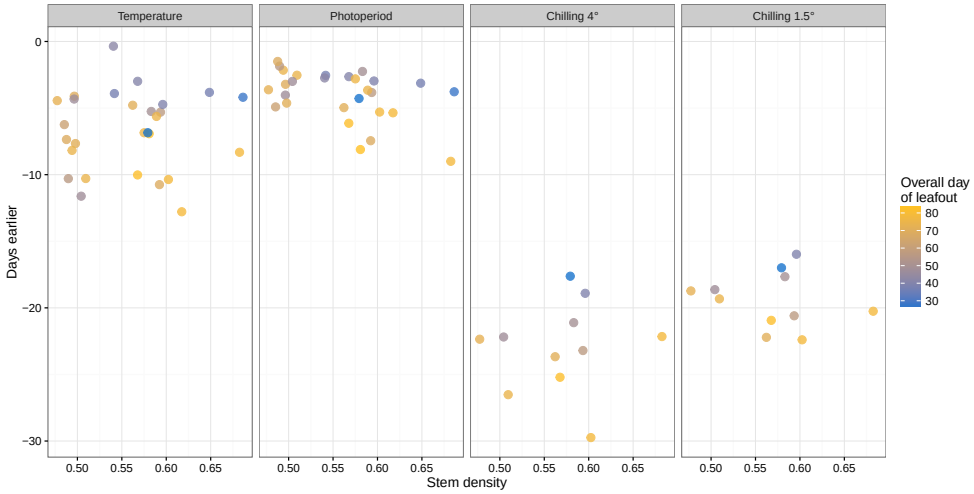

Figure S6: Trait sensitivity based on % nitrogen

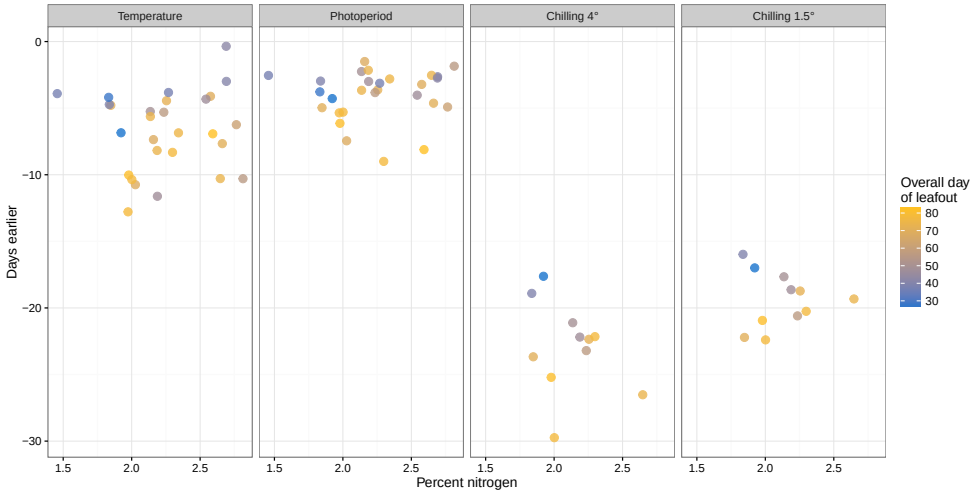

Figure S7: Specific leaf area and stem density by trees vs shrubs

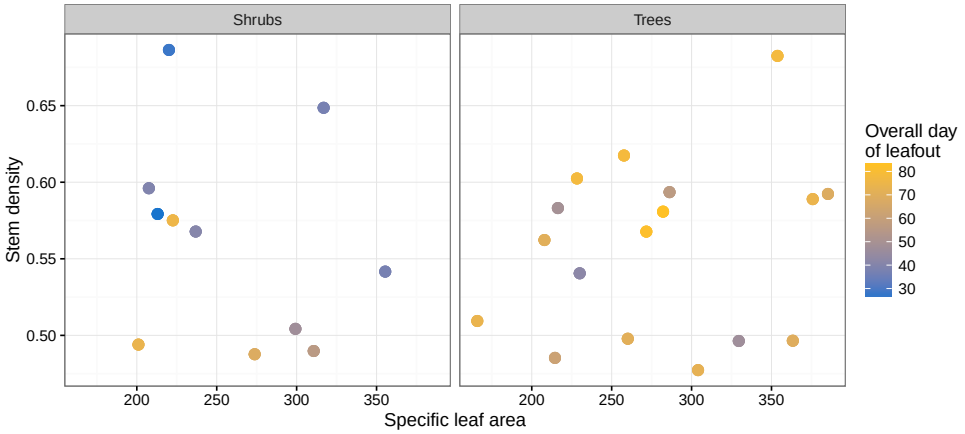

Figure S8: Specific leaf area and percent nitrogen by trees vs shrubs

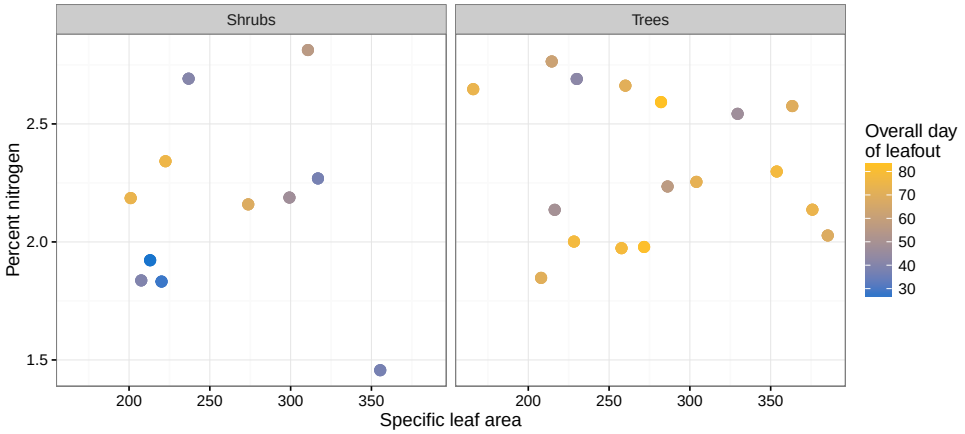

Figure S9: Stem density and percent nitrogen by trees vs shrubs

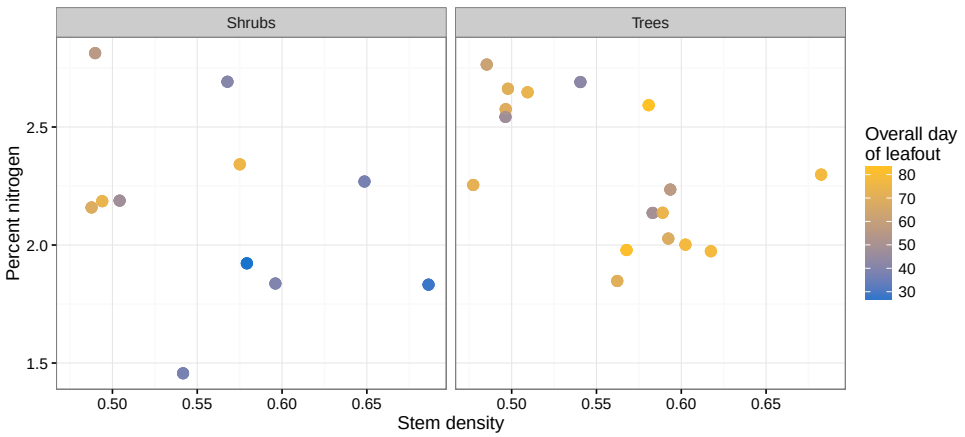

Figure S10: Leafout rank order in experimental treatments vs. O'Keefe observations

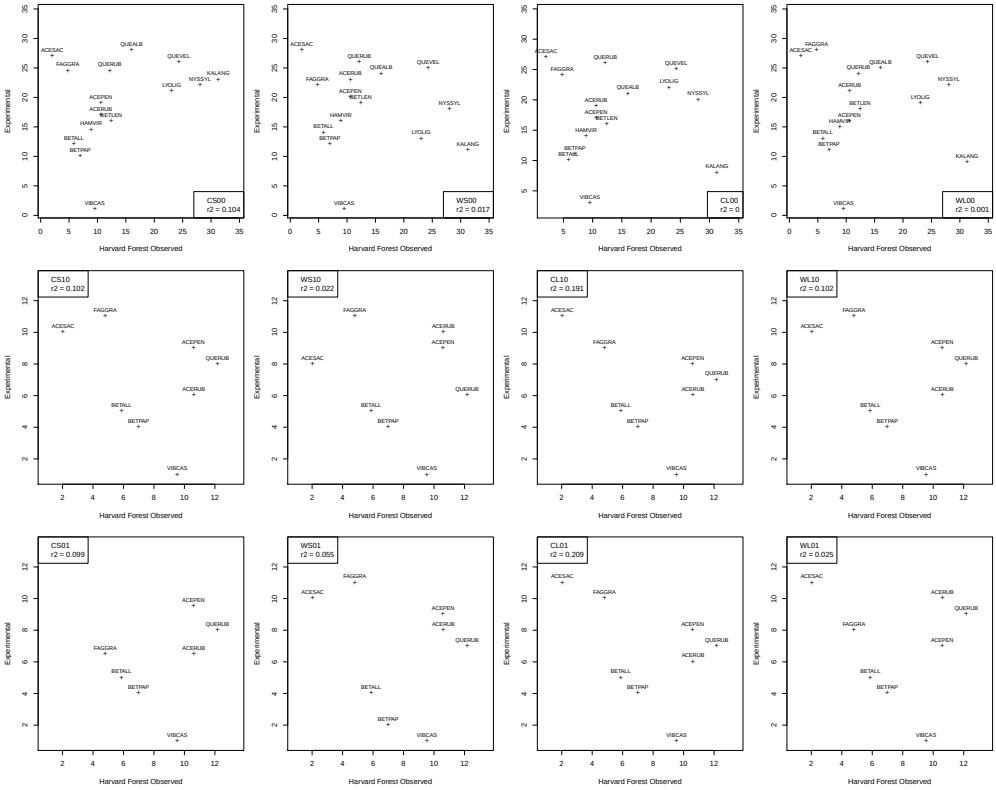

Figure S11: Leafout day of year in experimental treatments vs. O'Keefe observations