Supplemental materials: False spring damage on temperate tree seedlings is amplified with winter warming

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Supplemental Tables and Figures

13 Methods

- Discuss here how the experiment was designed and how we needed three greenhouses to perfectly test our question about growing season length and end of season growth.
- Data analysis and model equations
 - 1. False spring treatment is written as 'tx' in the equation below and chilling was split into two binary predictors: 'chill1', which is denoted as '0' for 4 weeks of chilling or '1' for 6 weeks of chilling and 'chill2' which is '1' for 8 weeks of chilling:

$$y_{i} = \alpha_{species[i]} + \beta_{tx_{species[i]}} X_{tx} + \beta_{chill1_{species[i]}} X_{chill1} + \beta_{chill2_{species[i]}} X_{chill2} + \beta_{txchill1_{species[i]}} X_{txchill1} + \beta_{txchill2_{species[i]}} X_{txchill2} + \epsilon_{i}$$

$$(1)$$

$$\epsilon_i \sim N(0, \sigma_y)$$

2. The α and each of the five β coefficients are modeled at the species level, as follows:

$$\alpha_{species} \sim N(\mu_{\alpha}, \sigma_{\alpha})$$

$$\beta_{tx_{species}} \sim N(\mu_{tx}, \sigma_{tx})$$

$$\beta_{chill1_{species}} \sim N(\mu_{chill1}, \sigma_{chill1})$$

$$\beta_{chill2_{species}} \sim N(\mu_{chill2}, \sigma_{chill2})$$

$$\beta_{txchill1_{species}} \sim N(\mu_{txchill1}, \sigma_{txchill1})$$

$$\beta_{txchill2_{species}} \sim N(\mu_{txchill2}, \sigma_{txchill2})$$

- 3. where *i* represents each unique observation, *species* is the species, α represents the intercept, β terms represent slope estimates, and *y* is the phenology or growth measurement.
 - 4. For the shoot apical meristem model, we used a Bernouilli distribution, which is modeled as:

$$y_{i} \sim Binomial(1, p)$$

$$logit(p) = \alpha_{species[i]} + \beta_{tx_{species[i]}} X_{tx} + \beta_{chill1_{species[i]}} X_{chill1} + \beta_{chill2_{species[i]}} X_{chill2}$$

$$+ \beta_{txchill1_{species[i]}} X_{txchill1} + \beta_{txchill2_{species[i]}} X_{txchill2} + \epsilon_{i}$$
,

5. The α and each of the five β coefficients are modeled the same as the other models:

$$\alpha_{species} \sim N(\mu_{\alpha}, \sigma_{\alpha})$$

$$\beta_{tx_{species}} \sim N(\mu_{tx}, \sigma_{tx})$$

$$\beta_{chill1_{species}} \sim N(\mu_{chill1}, \sigma_{chill1})$$

$$\beta_{chill2_{species}} \sim N(\mu_{chill2}, \sigma_{chill2})$$

$$\beta_{txchill1_{species}} \sim N(\mu_{txchill1}, \sigma_{txchill1})$$

$$\beta_{txchill2_{species}} \sim N(\mu_{txchill2}, \sigma_{txchill2})$$

Supplemental tables and figures

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Table S1: Summary of simple linear regression model of day of budburst across chilling treatments.

term	mean	std.err
Intercept	28.58	1.22
Chilling 6 Wks	-2.79	1.74
Chilling 8 Wks	-7.63	1.76

Table S2: Summary of simple linear regression model of duration of vegetative across chilling treatments.

term	mean	std.err
Intercept	18.35	0.54
Chilling 6 Wks	-2.07	0.77
Chilling 8 Wks	-2.72	0.78

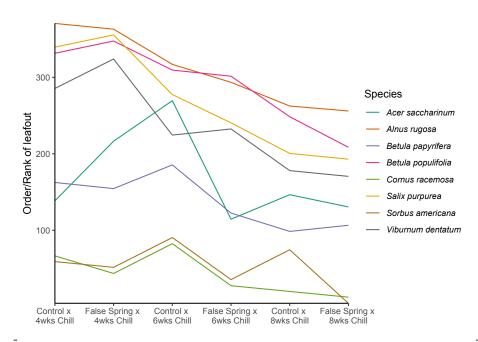


Figure S1: Understanding rank order of leafout across all species using (a) mean trends and (b) raw estimates.

Table S3: Summary of model with the effects of false spring treatment and chilling duration across species on duration of vegetative risk.

across species on duration of vegetative	C 110IX.						
	mean	2%	10%	25%	75%	90%	98%
Intercept	16.02	12.46	13.60	15.08	16.90	18.52	20.23
Tx	2.97	1.13	1.68	2.45	3.49	4.26	4.87
Chill 6 Wks	-0.53	-3.83	-2.73	-1.38	0.32	1.72	2.99
Chill 8 Wks	-2.67	-5.54	-4.56	-3.35	-1.94	-0.85	0.03
Tx:Chill 6 Wks	-0.91	-3.59	-2.78	-1.65	-0.17	0.92	1.85
Tx:Chill 8 Wks	0.62	-1.97	-1.14	-0.08	1.34	2.38	3.25
Acer saccharinum, Intercept	-3.06	-7.74	-5.82	-4.12	-1.93	-0.40	0.75
Alnus incana rugosa,Intercept	4.39	0.17	1.66	3.33	5.44	7.19	8.51
Betula papyrifera,Intercept	0.96	-3.52	-1.86	-0.06	2.02	3.69	4.85
Betula populifolia,Intercept	0.20	-4.12	-2.47	-0.86	1.27	2.93	4.19
Cornus racemosa, Intercept	0.48	-3.87	-2.35	-0.54	1.57	3.10	4.26
Salix purpurea, Intercept	-5.49	-10.38	-8.46	-6.57	-4.33	-2.69	-1.40
Sorbus americana, Intercept	-1.14	-5.56	-3.88	-2.20	-0.07	1.60	2.79
Viburnum dendatum,Intercept	3.57	-0.78	0.80	2.51	4.67	6.29	7.69
Acer saccharinum,Tx	-0.36	-2.80	-1.82	-0.72	0.05	0.63	1.27
Alnus incana rugosa,Tx	0.37	-1.36	-0.73	-0.06	0.76	1.91	2.86
Betula papyrifera,Tx	0.45	-1.17	-0.54	-0.03	0.84	2.03	3.08
Betula populifolia,Tx	-0.43	-3.09	-1.97	-0.80	0.04	0.55	1.12
$Cornus\ racemosa, Tx$	0.00	-1.93	-1.15	-0.29	0.32	1.13	1.91
Salix purpurea,Tx	-0.14	-2.48	-1.59	-0.55	0.25	1.21	2.14
Sorbus americana,Tx	-0.21	-2.43	-1.57	-0.54	0.15	0.84	1.57
Viburnum dendatum,Tx	0.35	-1.38	-0.75	-0.10	0.74	1.93	2.86
Acer saccharinum, Chill 6 Wks	-0.13	-4.23	-2.82	-1.21	0.92	2.61	4.04
Alnus incana rugosa, Chill 6 Wks	-0.66	-4.71	-3.50	-1.71	0.41	2.10	3.53
Betula papyrifera, Chill 6 Wks	1.50	-2.35	-1.14	0.40	2.54	4.30	5.65
Betula populifolia, Chill 6 Wks	-0.59	-4.77	-3.43	-1.62	0.50	2.10	3.22
Cornus racemosa, Chill 6 Wks	0.46	-3.46	-2.14	-0.56	1.48	3.11	4.43
Salix purpurea, Chill 6 Wks	4.60	0.55	1.62	3.26	5.84	7.88	9.27
Sorbus americana, Chill 6 Wks	-2.20	-6.59	-5.11	-3.27	-1.02	0.45	1.44
Viburnum dendatum, Chill 6 Wks	-3.19	-7.67	-6.24	-4.28	-2.01	-0.48	0.62
Acer saccharinum, Chill 8 Wks	0.94	-2.40	-1.30	-0.02	1.85	3.42	4.57
Alnus incana rugosa, Chill 8 Wks	-1.32	-5.07	-3.77	-2.23	-0.38	1.04	2.09
Betula papyrifera, Chill 8 Wks	0.21	-3.49	-2.22	-0.68	1.12	2.52	3.77
Betula populifolia, Chill 8 Wks	-1.36	-5.28	-3.90	-2.25	-0.39	0.82	1.82
Cornus racemosa, Chill 8 Wks	0.61	-2.76	-1.58	-0.30	1.48	2.94	4.23
Salix purpurea, Chill 8 Wks	3.91	0.30	1.23	2.72	5.00	6.79	8.30
Sorbus americana, Chill 8 Wks	-0.51	-4.16	-2.86	-1.41	0.41	1.76	2.89
Viburnum dendatum, Chill 8 Wks	-2.54	-6.43	-5.09	-3.50	-1.50	-0.18	0.69
Acer saccharinum,Tx:Chill 6 Wks	-0.46	-4.34	-2.80	-0.98	0.16	1.15	2.08
Alnus incana rugosa, Tx: Chill 6 Wks	0.35	-2.54	-1.42	-0.27	0.89	2.66	4.38
Betula papyrifera, Tx: Chill 6 Wks	0.33	-2.71	-1.36	-0.22	0.85	2.44	3.77
Betula populifolia, Tx: Chill 6 Wks	-0.54	-4.45	-2.83	-1.05	0.11	1.06	2.03
Cornus racemosa, Tx: Chill 6 Wks	0.23	-2.65	-1.45	-0.26	0.69	2.25	3.58
Salix purpurea,Tx:Chill 6 Wks	1.07	-1.87	-0.80	0.02	1.84	4.03	5.96
Sorbus americana, Tx: Chill 6 Wks	-0.44	-3.99	-2.60	-0.97	0.16	1.13	2.24
Viburnum dendatum, Tx: Chill 6 Wks	-0.58	-4.61	-2.97	-1.16	0.10	1.13 1.07	2.24 2.17
Acer saccharinum, Tx: Chill 8 Wks	-0.05	-2.85	-1.67	-0.45	0.10	1.47	2.77
Alnus incana rugosa, Tx: Chill 8 Wks	0.12	-2.75	-1.46	-0.49	0.53	1.87	$\frac{2.19}{3.40}$
Timus meana rayosa, IX. Omn o WKS	0.14	-2.10	-1.40	-0.50	0.04	1.01	9.40

Table S3: Summary of model with the effects of false spring treatment and chilling duration across species on duration of vegetative risk.

	mean	2%	10%	25%	75%	90%	98%
Betula papyrifera,Tx:Chill 8 Wks	0.31	-1.95	-1.01	-0.16	0.72	2.14	3.56
Betula populifolia,Tx:Chill 8 Wks	-0.06	-2.98	-1.62	-0.43	0.33	1.43	2.66
Cornus racemosa,Tx:Chill 8 Wks	0.40	-1.62	-0.83	-0.10	0.75	2.28	3.86
Salix purpurea, Tx: Chill 8 Wks	-0.09	-3.49	-2.09	-0.58	0.43	1.75	2.95
Sorbus americana, Tx: Chill 8 Wks	-0.48	-4.01	-2.61	-0.90	0.08	0.80	1.61
Viburnum dendatum,Tx:Chill 8 Wks	-0.25	-3.57	-2.24	-0.67	0.26	1.25	2.36

Table S4: Summary of model with the effects of false spring treatment and chilling duration across species on growing season length.

across species on growing season ie.	mean	2%	10%	25%	75%	90%	98%
Intercept	283.95	249.62	263.13	276.95	291.73	302.64	310.98
Tx	-0.32	-14.91	-9.61	-3.88	3.30	8.70	13.24
Chill 6 Wks	2.48	-8.70	-5.40	-0.78	5.64	10.60	14.02
Chill 8 Wks	-9.66	-21.36	-17.91	-12.97	-6.36	-1.56	2.78
Tx:Chill 6 Wks	-14.87	-30.38	-25.87	-19.39	-10.39	-4.08	0.58
Tx:Chill 8 Wks	-8.57	-26.11	-20.52	-13.22	-3.93	2.97	8.55
Acer saccharinum, Intercept	-10.08	-38.20	-29.41	-18.27	-2.60	11.77	24.62
Alnus incana rugosa,Intercept	34.87	6.79	15.33	26.40	42.61	56.76	71.28
Betula papyrifera,Intercept	8.84	-18.52	-10.75	0.69	16.27	30.38	43.52
Betula populifolia,Intercept	33.10	6.24	13.92	24.78	40.58	54.73	67.96
Cornus racemosa, Intercept	-22.76	-50.18	-42.58	-30.94	-15.15	-1.52	10.97
Salix purpurea, Intercept	38.58	10.89	19.10	30.08	45.87	60.65	73.96
Sorbus americana, Intercept	-38.34	-66.08	-58.11	-46.41	-30.66	-17.21	-5.41
Viburnum dendatum,Intercept	10.47	-17.45	-8.43	2.20	17.88	32.32	45.39
$Acer\ saccharinum, Tx$	0.48	-13.31	-8.48	-2.65	3.50	9.98	15.99
Alnus incana rugosa,Tx	3.43	-10.16	-5.56	-0.26	6.82	14.28	20.26
Betula papyrifera,Tx	2.81	-10.46	-5.48	-0.60	5.92	13.47	19.93
Betula populifolia,Tx	3.94	-9.87	-4.75	-0.05	7.44	15.08	20.93
Cornus racemosa, Tx	-4.95	-22.59	-16.02	-8.55	-0.62	3.61	8.59
Salix purpurea, Tx	5.07	-8.45	-3.61	0.57	8.73	16.44	22.97
Sorbus americana, Tx	-9.46	-30.44	-22.95	-14.30	-3.43	0.68	3.58
$Viburnum\ dendatum, Tx$	4.80	-7.73	-3.57	0.42	8.43	16.24	22.77
Acer saccharinum, Chill 6 Wks	1.16	-8.90	-5.20	-0.93	2.94	9.46	14.87
Alnus incana rugosa, Chill 6 Wks	-3.09	-20.08	-13.31	-5.34	0.10	2.94	6.95
Betula papyrifera, Chill 6 Wks	0.24	-10.97	-6.27	-1.58	1.99	7.16	12.24
Betula populifolia, Chill 6 Wks	-0.95	-15.17	-8.97	-2.88	1.09	5.84	10.95
Cornus racemosa, Chill 6 Wks	2.10	-7.28	-3.91	-0.36	4.11	11.14	17.59
Salix purpurea, Chill 6 Wks	-2.49	-18.32	-12.13	-4.73	0.26	3.66	8.14
Sorbus americana, Chill 6 Wks	2.48	-8.47	-4.22	-0.38	4.85	12.27	18.17
Viburnum dendatum, Chill 6 Wks	-0.86	-14.00	-8.25	-2.71	1.06	5.52	10.41
Acer saccharinum, Chill 8 Wks	2.26	-7.25	-3.68	-0.34	4.17	12.18	18.81
Alnus incana rugosa, Chill 8 Wks	-1.09	-16.13	-9.56	-3.06	1.06	5.89	11.52
Betula papyrifera, Chill 8 Wks	-0.91	-14.89	-8.74	-2.59	1.12	5.12	10.29
Betula populifolia, Chill 8 Wks	-0.95	-15.15	-9.10	-2.78	1.07	5.71	10.63
Cornus racemosa, Chill 8 Wks	-0.85	-15.44	-9.03	-2.70	1.25	5.75	10.64
Salix purpurea, Chill 8 Wks	-2.05	-18.54	-11.57	-4.14	0.54	4.45	9.19
Sorbus americana, Chill 8 Wks	1.65	-10.95	-5.72	-0.87	3.86	11.56	18.34
Viburnum dendatum, Chill 8 Wks	1.14	-10.13	-5.30	-0.98	2.88	9.66	15.57
Acer saccharinum, Tx: Chill 6 Wks	-1.83	-20.16	-11.95	-3.63	0.73	5.03	9.99
Alnus incana rugosa,Tx:Chill 6 Wks	0.00	-15.03	-8.42	-2.10	2.09	8.55	15.36
Betula papyrifera,Tx:Chill 6 Wks	-0.27	-14.41	-8.15	-2.15	1.62	7.46	13.60
Betula populifolia, Tx: Chill 6 Wks	0.93	-12.03	-6.77	-1.41	2.96	10.16	17.80
Cornus racemosa, Tx: Chill 6 Wks	0.11	-14.72	-8.28	-2.04	2.17	8.70	15.64
Salix purpurea, Tx: Chill 6 Wks	-0.04	-15.83	-8.51	-2.13	2.11	8.46	15.94
Sorbus americana, Tx: Chill 6 Wks	0.64	-15.11	-7.97	-2.03	3.01	10.74	17.88
Viburnum dendatum, Tx: Chill 6 Wks	0.83	-12.37	-6.44	-1.32	2.63	10.09	17.67
Acer saccharinum, Tx: Chill 8 Wks	2.41	-12.37	-6.29	-0.88	5.15	14.84	22.85
Alnus incana rugosa,Tx:Chill 8 Wks	1.07	-16.64	-9.14	-1.88	3.93	12.31	20.49
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Table S4: Summary of model with the effects of false spring treatment and chilling duration across species on growing season length.

	mean	2%	10%	25%	75%	90%	98%
Betula papyrifera, Tx: Chill 8 Wks	2.65	-11.25	-5.91	-0.76	5.52	15.06	22.65
Betula populifolia,Tx:Chill 8 Wks	0.32	-16.97	-10.49	-2.47	3.00	11.13	18.57
Cornus racemosa, Tx: Chill 8 Wks	-0.64	-18.64	-11.44	-3.57	2.09	9.71	17.07
Salix purpurea, Tx: Chill 8 Wks	0.80	-17.89	-9.83	-2.16	3.62	12.46	21.20
Sorbus americana, Tx: Chill 8 Wks	-6.00	-33.31	-23.19	-10.33	-0.07	3.65	8.57
Viburnum dendatum,Tx:Chill 8 Wks	2.04	-14.08	-7.10	-1.10	4.83	14.10	22.46

Table S5: Summary of model with the effects of false spring treatment and chilling duration across species on leaf chlorophyll content.

across species on lear emorophyn conto	J11U•						
	mean	2%	10%	25%	75%	90%	98%
Intercept	30.96	24.38	26.36	29.21	32.74	35.50	37.89
Tx	-0.35	-2.16	-1.61	-0.88	0.15	0.92	1.48
Chill 6 Wks	-0.06	-2.07	-1.42	-0.62	0.49	1.30	1.92
Chill 8 Wks	0.43	-1.97	-1.03	-0.12	1.04	1.86	2.58
Tx:Chill 6 Wks	-1.04	-3.76	-2.90	-1.81	-0.26	0.84	1.68
Tx:Chill 8 Wks	-2.11	-4.74	-3.88	-2.81	-1.40	-0.36	0.31
$Acer\ saccharinum, Intercept$	-5.84	-12.65	-10.48	-7.66	-4.06	-1.25	1.08
Alnus incana rugosa,Intercept	5.66	-1.33	0.96	3.81	7.48	10.35	12.40
Betula papyrifera,Intercept	-2.33	-9.20	-6.98	-4.13	-0.48	2.29	4.50
Betula populifolia,Intercept	0.68	-6.50	-3.99	-1.12	2.48	5.33	7.54
Cornus racemosa,Intercept	0.96	-5.84	-3.68	-0.88	2.81	5.61	7.89
Salix purpurea, Intercept	12.24	5.25	7.55	10.37	14.05	16.89	19.14
Sorbus americana, Intercept	-7.21	-14.06	-11.90	-9.05	-5.38	-2.60	-0.50
Viburnum dendatum,Intercept	-4.83	-11.98	-9.46	-6.66	-2.98	-0.20	2.01
Acer saccharinum,Tx	0.04	-1.77	-0.90	-0.22	0.30	1.03	1.81
Alnus incana rugosa,Tx	-0.02	-1.91	-1.10	-0.30	0.26	1.13	1.91
Betula papyrifera,Tx	-0.19	-2.44	-1.40	-0.44	0.13	0.69	1.34
Betula populifolia,Tx	-0.10	-1.99	-1.22	-0.36	0.18	0.88	1.54
$Cornus\ racemosa, { m Tx}$	0.07	-1.68	-0.91	-0.21	0.34	1.18	2.03
Salix purpurea,Tx	-0.45	-3.06	-2.09	-0.85	0.03	0.58	1.28
Sorbus americana,Tx	0.31	-1.33	-0.65	-0.07	0.63	1.70	2.48
Viburnum dendatum,Tx	0.30	-1.22	-0.58	-0.06	0.59	1.62	2.55
Acer saccharinum, Chill 6 Wks	0.35	-1.81	-0.97	-0.11	0.80	1.98	3.05
Alnus incana rugosa, Chill 6 Wks	-0.60	-3.81	-2.54	-1.09	0.02	0.68	1.35
Betula papyrifera, Chill 6 Wks	0.61	-1.21	-0.56	-0.01	1.09	2.48	3.62
Betula populifolia, Chill 6 Wks	0.31	-1.76	-0.97	-0.17	0.70	2.02	3.23
Cornus racemosa, Chill 6 Wks	-0.38	-3.37	-2.16	-0.81	0.12	0.95	1.75
Salix purpurea, Chill 6 Wks	-0.73	-3.84	-2.76	-1.33	-0.01	0.67	1.52
Sorbus americana, Chill 6 Wks	0.11	-2.52	-1.41	-0.33	0.58	1.65	2.77
Viburnum dendatum, Chill 6 Wks	0.33	-1.91	-0.98	-0.14	0.79	1.94	2.95
Acer saccharinum, Chill 8 Wks	0.04	-2.46	-1.51	-0.43	0.47	1.61	2.85
Alnus incana rugosa, Chill 8 Wks	0.33	-2.20	-1.18	-0.21	0.85	2.15	3.31
Betula papyrifera, Chill 8 Wks	0.18	-2.29	-1.36	-0.31	0.65	1.86	3.04
Betula populifolia, Chill 8 Wks	0.10	-2.41	-1.42	-0.38	0.56	1.74	2.94
Cornus racemosa, Chill 8 Wks	1.12	-0.75	-0.27	0.15	1.82	3.46	4.88
Salix purpurea, Chill 8 Wks	-0.31	-3.49	-2.24	-0.88	0.29	1.35	2.23
Sorbus americana, Chill 8 Wks	-0.67	-3.89	-2.68	-1.24	0.01	0.73	1.60
Viburnum dendatum, Chill 8 Wks	-0.71	-3.86	-2.78	-1.29	0.00	0.60	1.34
Acer saccharinum, Tx: Chill 6 Wks	0.15	-2.87	-1.64	-0.38	0.70	2.05	3.36
Alnus incana rugosa,Tx:Chill 6 Wks	0.20	-2.75	-1.60	-0.42	0.72	2.38	3.96
Betula papyrifera,Tx:Chill 6 Wks	0.08	-3.05	-1.80	-0.44	0.61	1.97	3.09
Betula populifolia,Tx:Chill 6 Wks	-0.78	-4.76	-3.31	-1.38	0.02	0.77	1.55
Cornus racemosa, Tx: Chill 6 Wks	0.27	-2.46	-1.46	-0.29	0.78	2.32	3.82
Salix purpurea, Tx: Chill 6 Wks	-1.15	-5.53	-3.86	-2.00	-0.07	0.73	1.76
Sorbus americana, Tx: Chill 6 Wks	0.96	-1.46	-0.68	0.02	1.65	3.49	5.08
Viburnum dendatum, Tx: Chill 6 Wks	0.37	-2.58	-1.32	-0.20	0.93	2.40	3.58
Acer saccharinum, Tx: Chill 8 Wks	0.06	-2.13	-1.13	-0.25	0.35	1.38	2.47
Alnus incana rugosa, Tx: Chill 8 Wks	0.06	-2.25	-1.22	-0.29	0.36	1.48	2.59
			-· 	JJ	5.55		

Table S5: Summary of model with the effects of false spring treatment and chilling duration across species on leaf chlorophyll content.

	mean	2%	10%	25%	75%	90%	98%
Betula papyrifera,Tx:Chill 8 Wks	0.04	-2.22	-1.20	-0.26	0.32	1.31	2.41
Betula populifolia,Tx:Chill 8 Wks	-0.06	-2.28	-1.37	-0.35	0.23	1.11	1.82
Cornus racemosa,Tx:Chill 8 Wks	-0.01	-2.46	-1.27	-0.32	0.29	1.30	2.40
Salix purpurea, Tx: Chill 8 Wks	-0.24	-3.31	-2.01	-0.62	0.20	1.13	2.13
Sorbus americana, Tx: Chill 8 Wks	0.05	-2.33	-1.30	-0.27	0.39	1.44	2.54
Viburnum dendatum,Tx:Chill 8 Wks	0.11	-2.08	-1.12	-0.22	0.42	1.51	2.74

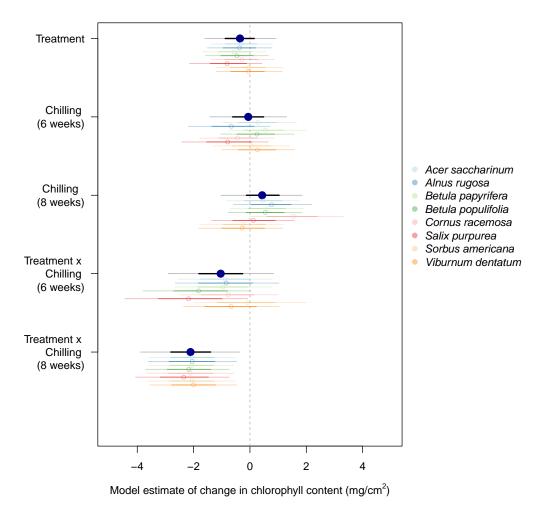


Figure S2: Effects of false spring treatment, six weeks of chilling and eight weeks of chilling on chlorophyll content.

Table S6: Summary of model with the effects of false spring treatment and chilling duration across species on leaf toughness.

ross species on lear toughness.	mean	2%	10%	25%	75%	90%	98%
Intercept	0.43	$\frac{270}{0.27}$	0.33	0.39	$\frac{7576}{0.47}$	0.53	0.59
Intercept Tx	-0.05	-0.10	-0.08	-0.06	-0.04	-0.02	-0.00
Chill 6 Wks	-0.05	-0.10 -0.11	-0.08	-0.00	-0.04	-0.02	-0.00
Chill 8 Wks	-0.05	-0.11 -0.11	-0.09	-0.07	-0.03	-0.03	-0.02
Tx:Chill 6 Wks	0.03	-0.11	-0.09	0.01	0.04	0.02	0.08
Tx:Chill 8 Wks	0.02 0.02	-0.04 -0.04		0.01	0.04 0.04	0.06	
	0.02 0.37	0.22	-0.02 0.27	0.01 0.34	0.04 0.41	0.00 0.47	$0.08 \\ 0.53$
Intercept Acer saccharinum,Intercept	-0.06	-0.22	-0.16	-0.10	-0.02	0.47 0.04	0.55 0.10
, <u>-</u>		-0.22 -0.21					
Alnus incana rugosa, Intercept	-0.05	-0.21 -0.28	-0.15	-0.09	-0.01	0.05	0.11
Betula papyrifera, Intercept	-0.11 -0.10		-0.22	-0.15	-0.07	-0.01	0.05
Betula populifolia,Intercept		-0.27	-0.20	-0.14	-0.06	0.01	0.06
Cornus racemosa,Intercept	-0.05	-0.21	-0.15	-0.09	-0.01	0.05	0.11
Salix purpurea,Intercept	0.15	-0.01	0.05	0.11	0.19	0.26	0.32
Sorbus americana,Intercept	-0.01	-0.17	-0.12	-0.05	0.03	0.10	0.16
Viburnum dendatum,Intercept	0.25	0.08	0.14	0.21	0.29	0.35	0.41
Acer saccharinum,Tx	-0.00	-0.06	-0.04	-0.01	0.01	0.03	0.05
Alnus incana rugosa,Tx	0.01	-0.03	-0.02	-0.00	0.02	0.05	0.08
Betula papyrifera,Tx	0.01	-0.05	-0.03	-0.00	0.02	0.04	0.06
Betula populifolia,Tx	0.01	-0.05	-0.03	-0.01	0.02	0.04	0.06
Cornus racemosa,Tx	0.02	-0.02	-0.01	0.00	0.04	0.07	0.09
Salix purpurea,Tx	-0.01	-0.08	-0.06	-0.03	-0.00	0.02	0.03
Sorbus americana,Tx	-0.01	-0.08	-0.05	-0.02	0.00	0.02	0.04
Viburnum dendatum,Tx	-0.02	-0.09	-0.07	-0.03	-0.00	0.01	0.03
Acer saccharinum, Chill 6 Wks	0.01	-0.03	-0.01	-0.00	0.02	0.05	0.08
Alnus incana rugosa, Chill 6 Wks	-0.01	-0.06	-0.04	-0.01	0.00	0.02	0.04
Betula papyrifera, Chill 6 Wks	-0.00	-0.05	-0.03	-0.01	0.01	0.03	0.05
Betula populifolia, Chill 6 Wks	-0.00	-0.05	-0.03	-0.01	0.01	0.03	0.05
Cornus racemosa, Chill 6 Wks	-0.01	-0.07	-0.04	-0.02	0.00	0.02	0.04
Salix purpurea, Chill 6 Wks	0.01	-0.04	-0.02	-0.00	0.01	0.04	0.07
Sorbus americana, Chill 6 Wks	-0.01	-0.07	-0.05	-0.02	0.00	0.02	0.03
Viburnum dendatum, Chill 6 Wks	0.01	-0.04	-0.02	-0.00	0.02	0.05	0.07
Acer saccharinum, Chill 8 Wks	0.02	-0.03	-0.01	0.00	0.04	0.07	0.10
Alnus incana rugosa, Chill 8 Wks	-0.02	-0.09	-0.06	-0.03	0.00	0.02	0.04
Betula papyrifera, Chill 8 Wks	-0.02	-0.09	-0.06	-0.03	-0.00	0.02	0.04
Betula populifolia, Chill 8 Wks	-0.01	-0.08	-0.06	-0.03	0.00	0.02	0.05
Cornus racemosa, Chill 8 Wks	-0.00	-0.07	-0.04	-0.02	0.01	0.04	0.06
Salix purpurea, Chill 8 Wks	0.02	-0.04	-0.02	0.00	0.04	0.07	0.10
Sorbus americana, Chill 8 Wks	-0.02	-0.10	-0.08	-0.04	-0.00	0.01	0.03
Viburnum dendatum, Chill 8 Wks	0.03	-0.03	-0.01	0.01	0.05	0.08	0.11
Acer saccharinum,Tx:Chill 6 Wks	0.01	-0.05	-0.03	-0.00	0.01	0.05	0.08
Alnus incana rugosa,Tx:Chill 6 Wks	-0.01	-0.08	-0.04	-0.01	0.00	0.02	0.05
Betula papyrifera,Tx:Chill 6 Wks	-0.00	-0.08	-0.04	-0.01	0.01	0.03	0.05
Betula populifolia,Tx:Chill 6 Wks	0.01	-0.04	-0.02	-0.00	0.02	0.05	0.08
Cornus racemosa,Tx:Chill 6 Wks	0.00	-0.05	-0.03	-0.01	0.01	0.04	0.08
Salix purpurea, Tx: Chill 6 Wks	0.00	-0.06	-0.03	-0.01	0.01	0.04	0.07
Sorbus americana,Tx:Chill 6 Wks	-0.01	-0.10	-0.06	-0.02	0.00	0.02	0.03
Viburnum dendatum,Tx:Chill 6 Wks	0.00	-0.06	-0.04	-0.01	0.01	0.04	0.07
Acer saccharinum,Tx:Chill 8 Wks	0.01	-0.04	-0.02	-0.00	0.02	0.05	0.09

Table S6: Summary of model with the effects of false spring treatment and chilling duration across species on leaf toughness.

	mean	2%	10%	25%	75%	90%	98%
Alnus incana rugosa,Tx:Chill 8 Wks	-0.00	-0.06	-0.04	-0.01	0.01	0.03	0.06
Betula papyrifera,Tx:Chill 8 Wks	-0.00	-0.07	-0.04	-0.01	0.00	0.03	0.05
Betula populifolia,Tx:Chill 8 Wks	-0.00	-0.07	-0.04	-0.01	0.01	0.03	0.05
Cornus racemosa,Tx:Chill 8 Wks	0.00	-0.06	-0.03	-0.01	0.01	0.04	0.06
Salix purpurea, Tx: Chill 8 Wks	-0.00	-0.07	-0.04	-0.01	0.01	0.03	0.06
Sorbus americana, Tx: Chill 8 Wks	-0.00	-0.06	-0.04	-0.01	0.01	0.03	0.06

Table S7: Summary of model with the effects of false spring treatment and chilling duration across species on leaf thickness.

Intercept	across species on lear thickness.	mean	2%	10%	25%	75%	90%	98%
Chill 6 Wks -8.90 -17.68 -15.08 -11.29 -6.46 -2.75 -0.23 Chill 6 Wks -8.38 -27.21 -20.39 -12.84 -3.67 13.68 9.06 Tx.Chill 6 Wks -1.81 -14.56 -10.56 -5.25 1.68 6.78 10.78 Tx.Chill 8 Wks -1.50 -10.93 -7.19 -2.04 5.03 9.99 13.30 Intercept 13.97 -57.43 -49.47 -38.00 -25.14 -15.13 -7.96 Acer saccharium, Intercept 32.87 -6.91 15.56 26.19 39.61 49.87 -58.60 Betula popynifonia, Intercept -8.65 -33.93 -25.99 -15.17 -17.2 28.17 15.86 Salix purpurea, Intercept -8.65 -33.93 -25.99 -15.17 -17.2 18.17 15.86 Salix purpurea, Intercept -5.66 -30.61 -22.12 -11.83 1.62 11.95 19.40 Acer saccharium, Intercept -5.66	Intercept							
Chill 6 Wks 7.21 9.50 -3.49 3.16 11.24 17.94 23.06 Chill 8 Wks -8.38 -27.21 -20.39 -12.84 -3.67 3.68 10.78 Tx:Chill 6 Wks -1.81 -14.56 -10.56 -5.26 -1.68 16.78 10.78 Tx:Chill 8 Wks 1.50 -10.93 -7.19 -2.04 5.03 9.99 13.00 Acer saccharinum, Intercept 31.97 -57.43 -49.47 -38.60 26.19 31.71 15.960 Alms incana rugosa, Intercept 10.53 -15.48 -6.66 3.71 17.31 27.75 35.83 Betula poputifolia, Intercept -8.65 -33.93 -25.99 1-1.72 8.17 15.86 Saliz purpurea, Intercept -16.74 -9.31 -0.19 10.08 23.41 34.04 41.29 Sorbus americana, Intercept -16.74 -3.71 -1.18 1.62 11.9 1.08 23.41 34.04 41.29 Alms incana rugosa, Interce								
Chill 8 Wks								
Tx:Chill 6 Wks -1.81 -14.56 -10.53 -7.79 -2.04 5.03 9.99 13.30 Intercept 136.92 115.60 122.45 13.152 142.58 151.41 15.96 Alms incana rugosa,Intercept 31.97 -57.43 49.47 -38.60 -25.14 -15.13 -7.93 Betula popyrifera,Intercept 32.87 6.91 15.56 26.19 30.61 49.87 58.26 Betula popyrifera,Intercept 16.74 -9.31 -6.66 3.71 17.13 27.75 58.83 Cornus racemosa,Intercept 16.74 -9.31 -0.19 10.08 23.41 34.04 41.29 Sorbus americana,Intercept -8.65 33.93 -25.99 15.17 -1.72 81.75 15.86 Salix purpurea,Intercept -9.77 -56.70 47.34 -36.39 -23.20 -12.81 41.94 41.22 Sorbus americana,Intercept -5.16 -30.61 -22.12 -11.83 16.68 11.89 13.44								
Tx:Chill 8 Wks								
Intercept								
Acer saccharinum,Intercept								
Almus incana rugosa,Intercept 17.84 -7.75 0.82 11.24 24.62 34.74 42.97 Betula papyrifera,Intercept 10.53 -15.66 6.61 3.71 17.32 27.75 35.83 Cornus racemosa,Intercept -8.65 -33.93 -25.99 -15.17 -1.72 8.17 15.86 Salix purpurea,Intercept -8.65 -33.93 -25.99 -15.17 -1.72 8.17 15.86 Sorbus americana,Intercept -29.77 -56.70 -40.73 -30.39 -23.02 12.81 -53.6 Viburnum dendatum,Intercept -5.16 -30.61 -22.12 -11.83 1.62 11.95 19.40 Acer saccharinum,Tx -0.88 -7.11 -4.07 -0.74 2.30 7.03 11.52 Almus incana rugosa,Tx -0.29 -15.66 -10.07 -3.77 0.06 1.94 3.94 Sorbus americana,Tx -0.29 -10.53 -6.32 -11.81 6.87 11.80 Salix purpurea, Tx -0.								
Betula papyrifera, Intercept 32.87 6.91 15.56 26.19 39.61 49.87 58.26 Betula populifolia, Intercept -8.65 -33.93 -25.99 -15.17 17.31 27.75 35.83 Salix purpurea, Intercept 16.74 -9.31 -0.19 10.08 23.41 34.04 41.29 Sorbus americana, Intercept -29.77 -56.70 -47.34 -36.39 -23.02 -12.81 -5.32 Viburnum dendatum, Intercept -5.16 -30.61 -22.21 -11.83 1.62 11.95 19.40 Acer saccharinum, Tx 0.88 -7.11 -4.07 -0.74 2.30 7.03 11.52 Alnus incana rugosa, Tx -0.29 -15.60 -10.07 -3.77 0.06 1.94 3.94 Betula popyrifera, Tx -0.08 -9.56 -5.28 -1.47 1.72 5.04 9.39 Gornus racemosa, Tx -0.99 -10.53 -6.32 -1.88 0.86 4.35 7.42 Sorbus americana, Tx	·							
Betula populifolia, Intercept 10.53 1-5.48 -6.66 3.71 17.31 27.75 35.83 Cornus racemosa, Intercept -8.65 -33.93 -25.99 -15.17 -1.72 8.17 15.66 Saliz purpura, Intercept -29.77 -56.70 -47.34 -36.39 -23.02 -12.81 -5.32 Viburnum dendatum, Intercept -5.16 -30.61 -22.12 -11.83 1.62 11.95 19.40 Acer saccharinum, Tx -0.88 -7.11 -4.07 -0.74 2.30 -7.03 11.52 Almus incana rugosa, Tx -2.29 -15.60 -10.07 -3.77 0.06 1.94 3.94 Betula papyrifera, Tx -0.08 -9.56 -5.28 -1.47 1.27 5.04 9.39 Cornus racemosa, Tx -0.08 -9.56 -5.52 -1.47 1.27 5.04 9.33 Salix purpurea, Tx -0.59 -10.53 -6.32 -1.88 0.86 4.35 7.42 Sorbus americana, Tx								
Cornus racemosa, Intercept	1 10 0							
Salix purpurea, Intercept 16.74 -9.31 -0.19 10.08 23.41 34.04 41.29 Sorbus americana, Intercept -29.77 -56.70 -47.34 -36.39 -23.02 -12.81 -5.32 Viburnum dendatum, Intercept -5.16 -30.61 -22.12 -11.83 1.62 11.95 19.40 Acer saccharinum, Tx 0.08 -7.11 -4.07 -0.74 2.30 7.03 11.52 Almus incana rugosa, Tx -2.29 -15.60 -10.07 -3.77 0.06 1.94 3.94 Betula papyrifera, Tx 0.08 -9.56 -5.28 1.47 1.27 5.04 9.39 Cornus racemosa, Tx -0.09 -10.53 -6.32 -1.88 0.86 4.35 7.42 Sorbus americana, Tx -0.59 -10.53 -6.32 -1.88 0.86 4.35 7.42 Sorbus americana, Chill 6 Wks -8.97 -31.35 -23.41 -1.21 1.41 5.24 8.93 Acer saccharinum, Chill 6 Wks								
Sorbus americana, Intercept -29.77 -56.70 -47.34 -36.39 -23.02 -12.81 -5.32 Viburnum dendatum, Intercept -5.16 -30.61 -22.12 -11.83 1.62 11.95 19.40 Acer saccharinum, Tx 0.88 -7.11 -4.07 -0.74 2.30 7.03 11.52 Alnus incana rugosa, Tx -2.29 -15.60 -10.07 -3.77 0.06 1.94 3.94 Betula papyrifera, Tx 0.77 -7.33 -3.99 -0.85 2.11 6.87 11.80 Betula populifolia, Tx -0.08 -9.56 -5.28 -1.47 1.27 5.04 9.39 Cornus racemosa, Tx -0.24 -9.94 -5.76 -1.52 -1.19 4.76 8.35 Salix purpurea, Tx -0.59 -10.53 -6.32 -1.88 0.86 4.35 7.42 Sorbus americana, Tx 1.02 -7.19 -4.10 -0.69 2.53 7.48 11.78 Viburnum dendatum, Tx -0.12 -8.94 -4.91 -1.21 1.40 -3.20 3.73 9.01 Alnus incana rugosa, Chill 6 Wks -3.16 -23.21 -16.74 -8.17 1.84 9.89 16.49 Betula papyrifera, Chill 6 Wks 1.27 -18.39 -11.65 -3.65 6.26 14.48 21.76 Betula papyrigera, Chill 6 Wks 1.27 -18.39 -11.65 -3.65 6.26 14.48 21.76 Betula populifolia, Chill 6 Wks 1.29 -34.05 -26.76 -17.63 -6.61 0.61 6.97 Sorbus americana, Chill 6 Wks 1.615 -2.21 2.08 9.80 21.75 31.67 39.11 Salix purpurea, Chill 6 Wks 1.615 -2.21 2.08 9.80 21.75 31.67 39.11 Salix purpurea, Chill 6 Wks 1.65 -8.06 -2.47 4.73 16.11 25.45 32.65 32								
Viburnum dendatum, Intercept -5.16 -30.61 -22.12 -11.83 1.62 11.95 19.40 Acer saccharinum, Tx 0.88 -7.11 -4.07 -0.74 2.30 7.03 11.52 Alnus incana rugosa, Tx -2.29 -15.60 -10.07 -3.77 0.06 1.94 3.94 Betula pappyrifera, Tx 0.77 -7.33 -3.99 -0.85 2.11 6.87 11.80 Betula pappyrifera, Tx -0.08 -9.56 -5.28 -1.47 1.27 5.04 9.39 Cornus racemosa, Tx -0.24 -9.94 -5.76 -1.52 1.19 4.76 8.35 Salix purpurea, Tx -0.59 -10.53 -6.32 -1.88 0.86 4.35 7.42 Sorbus americana, Tx -0.12 -8.94 -4.91 -1.21 1.40 5.24 8.93 Acer saccharinum, Chill 6 Wks -8.97 -31.35 -23.41 -14.20 -3.20 3.73 9.01 Alnus incana rugosa, Chill 6 Wks -3.16 -23.21 -16.74 -8.17 1.84 9.89 16.49 Betula pappyrifera, Chill 6 Wks -1.18 -21.11 -14.59 -6.33 3.91 11.89 18.35 Cornus racemosa, Chill 6 Wks -1.18 -21.11 -14.59 -6.33 3.91 11.89 18.35 Cornus racemosa, Chill 6 Wks -1.18 -2.21 2.08 9.80 21.75 31.67 39.11 Salix purpurea, Chill 6 Wks -1.29 -34.05 -26.76 -1.763 -6.61 0.61 6.97 Sorbus americana, Chill 6 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.53 -21.85 -15.15 -6.64 3.57 11.59 17.73 Acer saccharinum, Chill 8 Wks -1.54 -1.54 -1.54 -1.55 -1.325 -5.02 1.43 Cornus racemosa, Chill 8 Wks -1.54								
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	Acer saccharinum,Tx:Chill 8 Wks							

Table S7: Summary of model with the effects of false spring treatment and chilling duration across species on leaf thickness.

	mean	2%	10%	25%	75%	90%	98%
Alnus incana rugosa,Tx:Chill 8 Wks	-0.12	-12.38	-7.28	-1.83	1.51	6.96	13.25
Betula papyrifera,Tx:Chill 8 Wks	-0.47	-14.03	-8.09	-2.20	1.32	6.43	12.10
Betula populifolia,Tx:Chill 8 Wks	-0.49	-14.26	-8.03	-2.23	1.35	6.36	11.45
Cornus racemosa, Tx: Chill 8 Wks	0.86	-9.85	-5.64	-1.08	2.41	8.93	14.88
Salix purpurea, Tx: Chill 8 Wks	-1.35	-15.85	-10.16	-3.04	0.69	4.85	9.36
Sorbus americana, Tx: Chill 8 Wks	1.31	-10.34	-5.38	-0.88	3.13	10.00	16.75

Table S8: Summary of model with the effects of false spring treatment and chilling duration across species on total season growth.

Intercept	across species on total season growt.	mean	2%	10%	25%	75%	90%	98%
Tx 5.06 -5.39 -1.90 2.24 7.79 12.11 15.46 Chill 6 Wks 11.00 1.51 4.47 8.38 13.59 17.62 20.87 Tx-Chill 6 Wks -8.40 -23.96 -18.63 -12.47 -4.27 2.04 6.88 Ex-Chill 8 Wks -11.33 -23.91 20.44 -15.01 -7.63 -2.35 1.62 Acer saccharinum, Intercept 16.28 -19.47 -7.82 6.99 25.58 39.89 51.14 Betula populifolia, Intercept 17.33 52.49 -41.33 26.69 25.58 30.89 49.55 Corrus racemosa, Intercept 77.74 42.27 53.50 68.33 87.21 101.66 11.33 Soliz purpurea, Intercept 77.74 42.27 53.50 68.33 87.21 101.66 11.33 Soliz purpurea, Intercept 77.74 42.27 53.50 68.33 87.21 101.61 13.37 Soliz purpurea, Intercept 47.75	Intercept							
Chill 6 Wks 2.92 7.38 -3.78 0.23 5.58 9.54 12.62 Chill 8 Wks -8.40 -23.96 -18.63 -12.47 -4.27 2.04 6.88 Tx-Chill 8 Wks -13.33 -23.91 -10.44 -15.01 -7.63 -2.35 1.62 Acer saccharinum,Intercept 1.28 -33.73 -23.06 -8.28 10.95 25.58 25.03 36.28 Almus incana rugosa,Intercept 16.28 -19.47 -7.82 6.99 25.58 25.03 16.28 Betula populifolia,Intercept 16.28 -19.47 -7.82 6.99 25.58 38.99 51.14 Betula populifolia,Intercept -36.89 -73.12 -60.99 -46.21 -27.51 12.98 -2.26 Salix purpurea,Intercept -57.75 -37.33 82.01 67.20 48.15 34.18 -22.42 Viburnum dendatum,Intercept -57.75 -37.33 82.01 67.20 48.15 -34.18 -22.42 Jactula								
Calill 8 Wks								
Tx:Chill 6 Wks								
Tx:Chill 8 Wks								
Acer saccharinum,Intercept 1.28 33.73 23.06 -8.28 10.85 25.03 36.28 Almus incana rugosa,Intercept 1-16.28 -19.47 7.782 6.99 25.58 39.89 51.14 Betula populifolia,Intercept 14.94 -20.58 8.733 5.58 24.26 38.69 49.95 Cornus racemosa,Intercept 76.89 -73.12 -60.99 -46.21 27.51 -12.98 -2.26 Saliz purpura,Intercept 77.74 42.27 53.50 68.33 87.21 101.06 113.37 Sorbus americana,Intercept -57.75 -93.73 -82.01 -67.20 -48.15 -34.18 -22.42 Viburuum dendatum,Intercept -1.58 -36.76 -25.23 -10.72 7.79 22.17 22.72 Aeer saccharinum,TX -3.07 -18.11 -12.61 -56.16 0.88 3.49 7.64 Almus incana rugosa,TX -0.01 -13.89 -8.63 -2.48 2.58 8.52 13.53 B								
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Betula papyrifera, Intercept	· · · · · · · · · · · · · · · · · · ·							
Betula populifolia, Intercept								
Cornus racemosa,Intercept 36.89 -73.12 -60.99 -46.21 -27.51 -12.98 -2.26 Saliz purpurea,Intercept -57.75 -93.73 -82.01 -67.20 -48.15 -34.18 -22.42 Viburnum dendatum,Intercept -1.58 -36.76 -25.23 -10.72 -7.79 -22.17 -32.68 Acer saccharinum,Tx -3.07 -18.11 -12.61 -5.61 -0.08 3.49 -7.64 Alnus incana rugosa,Tx -3.07 -18.11 -12.61 -5.61 -0.08 3.49 -7.64 Alnus incana rugosa,Tx -0.37 -12.64 -7.68 -2.00 -2.81 8.52 13.53 Betula papyrifera,Tx -0.37 -12.64 -7.68 -2.00 -2.27 -2.18 -7.54 11.97 Cornus racemosa,Tx -0.05 -12.57 -7.50 -2.27 -2.18 -7.54 11.97 Cornus racemosa,Tx -5.43 -22.80 -16.75 -9.16 -0.78 -2.04 5.04 Sorbus americana,Tx -5.43 -22.80 -16.75 -9.16 -0.78 -2.04 5.04 Sorbus americana,Tx -1.17 -11.81 -6.70 -1.44 3.82 9.75 14.82 Viburnum dendatum,Tx -1.78 -9.55 -4.99 -0.77 -4.12 10.63 16.16 Acer saccharinum,Chill 6 Wks -0.36 -2.06 -13.74 -5.85 0.03 2.55 5.58 Betula papyrifera,Chill 6 Wks -0.36 -2.06 -13.74 -5.85 0.03 2.55 5.58 Betula papyrifera,Chill 6 Wks -0.29 -8.65 -4.71 -0.96 2.50 8.03 13.57 Cornus racemosa,Chill 6 Wks 0.29 -1.179 -7.01 -1.79 2.25 8.24 13.14 Sorbus americana,Chill 6 Wks 0.29 -1.18 -6.26 -1.47 -2.24 -7.99 13.69 13.60 -7.84 -7.66 -2.18 1.20 5.38 9.63 Acer saccharinum,Chill 8 Wks 0.29 -1.43 -5.86 -2.48 -2.0 -5.38 9.63 Acer saccharinum,Chill 8 Wks -1.90 -7.84 -8.26 -1.18 1.52 5.74 10.82 Alnus incana rugosa,Chill 8 Wks -1.90 -7.33 -3.92 -0.66 -2.22 -7.67 1.63 Acer saccharinum,Tx:Chill 6 Wks -1.57 -1.44 -3.59 -0.42 -3.66 -3.75 -0.60 2.60 -3.68 -7.38 Acer saccharinum,Tx:Chill 6 Wks -1.97 -7.28 -1.96 -1.33 -1.66 6.24 -1.78 -7.86 -1.24 -7.88 -1.25 -7.35 -7.35 -7.35 -7.35 -7.35 -7.35 -7.35 -7.35 -7.35 -7.35 -								
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Acer saccharinum, Chill 8 Wks 0.22 -8.74 -4.92 -1.18 1.52 5.74 10.82 Alnus incana rugosa, Chill 8 Wks -1.20 -14.35 -8.61 -2.64 0.66 4.05 7.73 Betula papyrifera, Chill 8 Wks 1.19 -7.86 -3.75 -0.60 2.60 8.08 12.93 Betula populifolia, Chill 8 Wks 0.67 -7.84 -4.27 -0.85 1.87 6.93 12.13 Cornus racemosa, Chill 8 Wks 0.13 -10.11 -5.92 -1.33 1.66 6.24 10.78 Salix purpurea, Chill 8 Wks -1.87 -15.77 -10.41 -3.59 0.42 3.68 7.34 Sorbus americana, Chill 8 Wks -0.52 -13.41 -7.28 -1.96 1.23 5.16 8.91 Viburnum dendatum, Chill 8 Wks 0.97 -7.33 -3.92 -0.66 2.22 7.67 12.63 Acer saccharinum, Tx: Chill 6 Wks -1.97 -22.39 -14.47 -5.51 1.56 8.69 15.28		-0.61	-12.34		-2.18	1.20	5.38	
Alnus incana rugosa, Chill 8 Wks-1.20-14.35-8.61-2.640.664.057.73Betula papyrifera, Chill 8 Wks1.19-7.86-3.75-0.602.608.0812.93Betula populifolia, Chill 8 Wks0.67-7.84-4.27-0.851.876.9312.13Cornus racemosa, Chill 8 Wks0.13-10.11-5.92-1.331.666.2410.78Salix purpurea, Chill 8 Wks-1.87-15.77-10.41-3.590.423.687.34Sorbus americana, Chill 8 Wks-0.52-13.41-7.28-1.961.235.168.91Viburnum dendatum, Chill 8 Wks0.97-7.33-3.92-0.662.227.6712.63Acer saccharinum, Tx: Chill 6 Wks-1.97-22.39-14.47-5.511.568.6915.28Alnus incana rugosa, Tx: Chill 6 Wks-6.55-31.17-22.08-11.38-0.504.229.53Betula papyrifera, Tx: Chill 6 Wks-7.28-31.70-23.07-12.32-0.913.177.48Betula populifolia, Tx: Chill 6 Wks2.09-14.47-7.83-1.565.5114.2821.42Cornus racemosa, Tx: Chill 6 Wks8.74-6.89-2.221.5214.1625.7635.10Salix purpurea, Tx: Chill 6 Wks0.72-18.38-11.73-3.544.8213.8921.05Sorbus americana, Tx: Chill 6 Wks1.80-15.69-9.78-2.045.7914.3522.80<		0.22	-8.74	-4.92	-1.18	1.52	5.74	
Betula papyrifera, Chill 8 Wks 1.19 -7.86 -3.75 -0.60 2.60 8.08 12.93 Betula populifolia, Chill 8 Wks 0.67 -7.84 -4.27 -0.85 1.87 6.93 12.13 Cornus racemosa, Chill 8 Wks 0.13 -10.11 -5.92 -1.33 1.66 6.24 10.78 Salix purpurea, Chill 8 Wks -1.87 -15.77 -10.41 -3.59 0.42 3.68 7.34 Sorbus americana, Chill 8 Wks -0.52 -13.41 -7.28 -1.96 1.23 5.16 8.91 Viburnum dendatum, Chill 8 Wks 0.97 -7.33 -3.92 -0.66 2.22 7.67 12.63 Acer saccharinum, Tx: Chill 6 Wks -1.97 -22.39 -14.47 -5.51 1.56 8.69 15.28 Alnus incana rugosa, Tx: Chill 6 Wks -6.55 -31.17 -22.08 -11.38 -0.50 4.22 9.53 Betula papyrifera, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 <td>Alnus incana rugosa, Chill 8 Wks</td> <td>-1.20</td> <td>-14.35</td> <td>-8.61</td> <td>-2.64</td> <td>0.66</td> <td>4.05</td> <td>7.73</td>	Alnus incana rugosa, Chill 8 Wks	-1.20	-14.35	-8.61	-2.64	0.66	4.05	7.73
Betula populifolia, Chill 8 Wks0.67-7.84-4.27-0.851.876.9312.13Cornus racemosa, Chill 8 Wks0.13-10.11-5.92-1.331.666.2410.78Salix purpurea, Chill 8 Wks-1.87-15.77-10.41-3.590.423.687.34Sorbus americana, Chill 8 Wks-0.52-13.41-7.28-1.961.235.168.91Viburnum dendatum, Chill 8 Wks0.97-7.33-3.92-0.662.227.6712.63Acer saccharinum, Tx: Chill 6 Wks-1.97-22.39-14.47-5.511.568.6915.28Alnus incana rugosa, Tx: Chill 6 Wks-6.55-31.17-22.08-11.38-0.504.229.53Betula papyrifera, Tx: Chill 6 Wks-7.28-31.70-23.07-12.32-0.913.177.48Betula populifolia, Tx: Chill 6 Wks2.09-14.47-7.83-1.565.5114.2821.42Cornus racemosa, Tx: Chill 6 Wks8.74-6.89-2.221.5214.1625.7635.10Salix purpurea, Tx: Chill 6 Wks0.72-18.38-11.73-3.544.8213.8921.05Sorbus americana, Tx: Chill 6 Wks1.80-15.69-9.78-2.045.7914.3522.80Viburnum dendatum, Tx: Chill 6 Wks2.85-12.75-7.76-1.046.5115.5923.44Acer saccharinum, Tx: Chill 8 Wks0.18-12.07-6.72-1.671.927.53 <td< td=""><td></td><td>1.19</td><td>-7.86</td><td>-3.75</td><td>-0.60</td><td></td><td>8.08</td><td>12.93</td></td<>		1.19	-7.86	-3.75	-0.60		8.08	12.93
Salix purpurea, Chill 8 Wks -1.87 -15.77 -10.41 -3.59 0.42 3.68 7.34 Sorbus americana, Chill 8 Wks -0.52 -13.41 -7.28 -1.96 1.23 5.16 8.91 Viburnum dendatum, Chill 8 Wks 0.97 -7.33 -3.92 -0.66 2.22 7.67 12.63 Acer saccharinum, Tx: Chill 6 Wks -1.97 -22.39 -14.47 -5.51 1.56 8.69 15.28 Alnus incana rugosa, Tx: Chill 6 Wks -6.55 -31.17 -22.08 -11.38 -0.50 4.22 9.53 Betula papyrifera, Tx: Chill 6 Wks -7.28 -31.70 -23.07 -12.32 -0.91 3.17 7.48 Betula populifolia, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa, Tx: Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78<		0.67	-7.84	-4.27	-0.85	1.87	6.93	12.13
Sorbus americana, Chill 8 Wks -0.52 -13.41 -7.28 -1.96 1.23 5.16 8.91 Viburnum dendatum, Chill 8 Wks 0.97 -7.33 -3.92 -0.66 2.22 7.67 12.63 Acer saccharinum, Tx: Chill 6 Wks -1.97 -22.39 -14.47 -5.51 1.56 8.69 15.28 Alnus incana rugosa, Tx: Chill 6 Wks -6.55 -31.17 -22.08 -11.38 -0.50 4.22 9.53 Betula papyrifera, Tx: Chill 6 Wks -7.28 -31.70 -23.07 -12.32 -0.91 3.17 7.48 Betula populifolia, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa, Tx: Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 <	Cornus racemosa, Chill 8 Wks	0.13	-10.11	-5.92	-1.33	1.66	6.24	10.78
Viburnum dendatum, Chill 8 Wks 0.97 -7.33 -3.92 -0.66 2.22 7.67 12.63 Acer saccharinum, Tx: Chill 6 Wks -1.97 -22.39 -14.47 -5.51 1.56 8.69 15.28 Alnus incana rugosa, Tx: Chill 6 Wks -6.55 -31.17 -22.08 -11.38 -0.50 4.22 9.53 Betula papyrifera, Tx: Chill 6 Wks -7.28 -31.70 -23.07 -12.32 -0.91 3.17 7.48 Betula populifolia, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa, Tx: Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59	Salix purpurea, Chill 8 Wks	-1.87	-15.77	-10.41	-3.59	0.42	3.68	7.34
Acer saccharinum, Tx: Chill 6 Wks -1.97 -22.39 -14.47 -5.51 1.56 8.69 15.28 Alnus incana rugosa, Tx: Chill 6 Wks -6.55 -31.17 -22.08 -11.38 -0.50 4.22 9.53 Betula papyrifera, Tx: Chill 6 Wks -7.28 -31.70 -23.07 -12.32 -0.91 3.17 7.48 Betula populifolia, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa, Tx: Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Sorbus americana, Chill 8 Wks	-0.52	-13.41	-7.28	-1.96	1.23	5.16	8.91
Alnus incana rugosa, Tx: Chill 6 Wks -6.55 -31.17 -22.08 -11.38 -0.50 4.22 9.53 Betula papyrifera, Tx: Chill 6 Wks -7.28 -31.70 -23.07 -12.32 -0.91 3.17 7.48 Betula populifolia, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa, Tx: Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Viburnum dendatum, Chill 8 Wks	0.97	-7.33	-3.92	-0.66	2.22	7.67	12.63
Betula papyrifera,Tx:Chill 6 Wks -7.28 -31.70 -23.07 -12.32 -0.91 3.17 7.48 Betula populifolia,Tx:Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa,Tx:Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea,Tx:Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana,Tx:Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum,Tx:Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum,Tx:Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Acer saccharinum,Tx:Chill 6 Wks	-1.97	-22.39	-14.47	-5.51	1.56	8.69	15.28
Betula populifolia, Tx: Chill 6 Wks 2.09 -14.47 -7.83 -1.56 5.51 14.28 21.42 Cornus racemosa, Tx: Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Alnus incana rugosa,Tx:Chill 6 Wks	-6.55	-31.17	-22.08	-11.38	-0.50	4.22	9.53
Cornus racemosa,Tx:Chill 6 Wks 8.74 -6.89 -2.22 1.52 14.16 25.76 35.10 Salix purpurea,Tx:Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana,Tx:Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum,Tx:Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum,Tx:Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Betula papyrifera,Tx:Chill 6 Wks	-7.28	-31.70	-23.07	-12.32	-0.91	3.17	7.48
Salix purpurea, Tx: Chill 6 Wks 0.72 -18.38 -11.73 -3.54 4.82 13.89 21.05 Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Betula populifolia,Tx:Chill 6 Wks	2.09	-14.47	-7.83	-1.56	5.51	14.28	21.42
Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60	Cornus racemosa,Tx:Chill 6 Wks	8.74	-6.89	-2.22	1.52	14.16	25.76	35.10
Sorbus americana, Tx: Chill 6 Wks 1.80 -15.69 -9.78 -2.04 5.79 14.35 22.80 Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60								
Viburnum dendatum, Tx: Chill 6 Wks 2.85 -12.75 -7.76 -1.04 6.51 15.59 23.44 Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60				-9.78				
Acer saccharinum, Tx: Chill 8 Wks 0.18 -12.07 -6.72 -1.67 1.92 7.53 13.60								
$Alnus\ incana\ rugosa, Tx: Chill\ 8\ Wks \\ -0.06 \\ -14.29 \\ -8.33 \\ -2.00 \\ 1.90 \\ 8.07 \\ 14.34$	Acer saccharinum,Tx:Chill 8 Wks	0.18	-12.07	-6.72	-1.67	1.92	7.53	13.60
	Alnus incana rugosa,Tx:Chill 8 Wks	-0.06	-14.29	-8.33	-2.00	1.90	8.07	14.34

Table S8: Summary of model with the effects of false spring treatment and chilling duration across species on total season growth.

	mean	2%	10%	25%	75%	90%	98%
Betula papyrifera,Tx:Chill 8 Wks	1.58	-9.94	-4.97	-0.70	3.55	10.38	17.16
Betula populifolia,Tx:Chill 8 Wks	-0.10	-12.32	-6.99	-1.86	1.58	6.75	11.71
Cornus racemosa,Tx:Chill 8 Wks	1.52	-9.59	-5.34	-0.87	3.45	10.73	17.62
Salix purpurea, Tx: Chill 8 Wks	-1.93	-19.13	-12.65	-4.38	0.87	5.90	11.29
Sorbus americana, Tx: Chill 8 Wks	1.44	-10.84	-6.16	-0.98	3.64	10.95	17.83
Viburnum dendatum,Tx:Chill 8 Wks	-2.43	-20.46	-12.36	-4.36	0.29	3.57	7.60

Table S9: Summary of model with the effects of false spring treatment and chilling duration across species on shoot apical meristem damage.

scross species on shoot apicar mension			4.004	2507		000	0.001
T	mean	2%	10%	25%	75%	90%	98%
Intercept	-1.68	-4.65	-3.49	-2.25	-1.03	-0.13	0.68
Tx	2.07	-0.42	0.61	1.51	2.60	3.58	4.61
Chill 6 Wks	-0.53	-5.64	-3.63	-1.53	0.51	2.33	4.17
Chill 8 Wks	-0.18	-3.35	-2.07	-0.82	0.51	1.61	2.75
Tx:Chill 6 Wks	-0.21	-4.25	-2.41	-0.98	0.60	1.92	3.34
Tx:Chill 8 Wks	0.28	-2.60	-1.60	-0.51	0.99	2.40	3.99
Acer saccharinum,Intercept	-0.45	-3.53	-2.38	-1.18	0.27	1.44	2.54
Alnus incana rugosa,Intercept	0.44	-2.16	-1.28	-0.27	1.09	2.36	3.64
Betula papyrifera,Intercept	0.32	-2.31	-1.43	-0.37	0.96	2.23	3.43
Betula populifolia,Intercept	-2.15	-6.79	-4.94	-3.02	-1.08	0.04	1.05
Cornus racemosa,Intercept	0.94	-1.78	-0.86	0.15	1.62	2.98	4.28
Salix purpurea,Intercept	1.56	-0.95	-0.14	0.79	2.25	3.57	4.83
Sorbus americana,Intercept	-2.48	-8.23	-5.93	-3.42	-1.19	-0.05	0.81
Viburnum dendatum,Intercept	1.84	-0.89	-0.00	1.03	2.58	3.90	5.11
Acer saccharinum,Tx	-0.08	-2.98	-1.75	-0.54	0.40	1.52	2.86
Alnus incana rugosa,Tx	0.42	-2.10	-0.97	-0.09	0.87	2.27	3.77
Betula papyrifera,Tx	-0.21	-3.24	-1.89	-0.62	0.24	1.21	2.54
Betula populifolia,Tx	-1.23	-7.03	-4.50	-1.95	-0.05	0.53	1.26
Cornus racemosa,Tx	0.83	-1.70	-0.73	-0.01	1.35	3.52	6.42
Salix purpurea,Tx	-0.41	-3.57	-2.15	-0.86	0.09	0.93	2.06
Sorbus americana,Tx	-0.62	-5.42	-3.30	-1.24	0.12	1.30	2.71
Viburnum dendatum,Tx	1.43	-1.26	-0.56	0.07	2.12	5.51	9.44
Acer saccharinum, Chill 6 Wks	-3.92	-16.21	-10.63	-5.39	-1.57	0.23	1.52
Alnus incana rugosa, Chill 6 Wks	-0.17	-5.50	-3.35	-1.29	0.95	3.00	5.13
Betula papyrifera, Chill 6 Wks	-1.96	-8.74	-5.81	-3.14	-0.57	1.27	3.23
Betula populifolia, Chill 6 Wks	2.17	-3.16	-1.27	0.68	3.48	6.17	8.67
Cornus racemosa, Chill 6 Wks	0.86	-4.19	-2.22	-0.36	1.99	4.30	6.56
Salix purpurea, Chill 6 Wks	-0.46	-5.74	-3.59	-1.55	0.63	2.69	4.98
Sorbus americana, Chill 6 Wks	-2.90	-17.31	-10.27	-4.52	-0.34	1.95	3.78
Viburnum dendatum, Chill 6 Wks	5.87	-0.04	0.97	2.95	7.48	14.25	21.82
Acer saccharinum, Chill 8 Wks	-1.58	-7.47	-4.63	-2.37	-0.42	0.53	1.60
Alnus incana rugosa, Chill 8 Wks	-1.42	-6.46	-4.32	-2.22	-0.33	0.56	1.59
Betula papyrifera, Chill 8 Wks	-0.43	-4.14	-2.58	-1.12	0.28	1.57	2.83
Betula populifolia, Chill 8 Wks	0.56	-3.60	-2.12	-0.43	1.46	3.66	5.55
Cornus racemosa, Chill 8 Wks	-0.09	-3.92	-2.40	-0.79	0.67	2.07	3.20
Salix purpurea, Chill 8 Wks	0.06	-3.17	-1.99	-0.63	0.74	2.18	3.48
Sorbus americana, Chill 8 Wks	-0.37	-6.14	-3.60	-1.34	0.68	2.62	4.40
Viburnum dendatum, Chill 8 Wks	3.26	-0.28	0.20	1.59	4.35	7.91	11.92
Acer saccharinum, Tx: Chill 6 Wks	-0.65	-8.36	-4.47	-1.24	0.23	1.96	4.00
Alnus incana rugosa, Tx: Chill 6 Wks	0.12	-3.75	-2.05	-0.45	0.66	2.39	4.50
Betula papyrifera, Tx: Chill 6 Wks	0.12	-4.05	-2.06	-0.47	0.69	2.91	5.48
Betula populifolia,Tx:Chill 6 Wks	1.30	-2.09	-0.92	0.00	2.10	5.41	8.54
Cornus racemosa, Tx: Chill 6 Wks	-1.06	-2.0 <i>9</i> -7.96	-0. <i>32</i> -4.78	-1.80	0.03	0.94	2.28
Salix purpurea,Tx:Chill 6 Wks	0.22	-3.42	-4.76 -1.74	-0.38	0.03	2.70	4.64
Sorbus americana, Tx: Chill 6 Wks	-0.22	-9.27	-4.39	-0.99	$0.73 \\ 0.57$	$\frac{2.70}{2.71}$	5.35
Viburnum dendatum, Tx:Chill 6 Wks	0.37	-9.21 -7.38	-4.39 -3.87	-0.99	0.87	$\frac{2.71}{4.60}$	9.62
Acer saccharinum, Tx: Chill 8 Wks							
,	0.35	-3.25	-1.77	-0.32	0.82	3.00	5.96
Alnus incana rugosa,Tx:Chill 8 Wks	-0.09	-4.24	-2.25	-0.63	0.41	1.96	4.23

Table S9: Summary of model with the effects of false spring treatment and chilling duration across species on shoot apical meristem damage.

	mean	2%	10%	25%	75%	90%	98%
Betula papyrifera,Tx:Chill 8 Wks	0.07	-3.48	-1.82	-0.40	0.55	1.97	3.60
Betula populifolia,Tx:Chill 8 Wks	-1.34	-10.73	-5.87	-1.96	0.02	0.92	2.05
Cornus racemosa, Tx: Chill 8 Wks	0.81	-2.28	-1.16	-0.10	1.32	4.28	7.73
Salix purpurea, Tx: Chill 8 Wks	-0.38	-4.53	-2.76	-0.87	0.21	1.33	2.53
Sorbus americana, Tx: Chill 8 Wks	0.73	-3.06	-1.55	-0.19	1.28	4.38	7.63
Viburnum dendatum,Tx:Chill 8 Wks	-0.06	-6.79	-3.54	-0.95	0.61	3.57	8.46

Table S10: Summary of model with the effects of false spring treatment and chilling duration across species on total biomass.

Therecept	across species on total biomass.	mean	2%	10%	25%	75%	90%	98%
TX -3.41 -9.89 -8.08 -5.27 -1.55 3.29 7.87 Chill 8 Wks 2.58 -4.64 -2.31 0.55 4.29 5.20 7.81 Tx-Chill 6 Wks 2.58 -4.64 -2.31 0.55 4.29 2.50 7.81 Tx-Chill 6 Wks -0.59 -9.92 -7.10 -3.37 2.06 6.10 9.03 Tx-Chill 8 Wks 1.37 -5.75 -2.83 1.13 6.42 10.47 13.14 Intercept 49.06 28.12 3.471 43.77 54.77 62.43 68.15 Acer saccharinum, Intercept 43.69 23.67 29.56 37.62 49.34 58.87 66.02 Betula papyrifera, Intercept -13.61 -33.58 27.43 -19.46 -2.18 2.82 11.50 2.58 66.02 Betula popyrifora, Intercept -36.61 16.89 22.39 30.53 42.05 51.62 59.11 Sorbus americana, Intercept -36.62	Intercept							
Chill 6 Wks 0.39 -6.74 -4.36 -1.55 2.29 5.20 7.88 Chill 8 Wks 0.59 -9.92 -7.10 -3.37 2.06 6.10 9.03 Tx-Chill 8 Wks 3.77 -5.75 -2.83 1.13 6.42 10.47 13.14 Intercept 49.06 28.12 34.71 43.77 54.77 62.33 68.15 Acer saccharimum, Intercept 3.91 -16.51 1.019 -2.04 9.957 18.72 26.20 Ahus incana rugosa, Intercept 43.69 23.67 29.56 37.62 49.34 58.87 66.20 Betula populifolia, Intercept 6.46 -13.58 -7.58 0.46 12.18 21.50 28.50 Corrus racemosa, Intercept 36.46 -18.89 22.29 30.53 42.25 11.53 18.62 59.11 Sorbus americana, Intercept -30.68 -50.72 -44.79 -36.60 -2.97 -15.60 -8.88 Viburnum dendatum,Intercept								
Chill 8 Wks 2.58 -4.64 -2.31 0.55 4.56 7.58 9.92 Tx:Chill 6 Wks 3.77 -5.75 -2.83 1.13 6.42 10.47 13.14 Intercept 49.06 28.12 34.71 43.77 54.77 62.43 68.15 Alms incana rugosa.Intercept 43.69 23.67 29.56 37.62 49.34 68.87 66.02 Betula papyrifera.Intercept 13.61 -33.58 -27.43 -19.46 -7.89 1.31 8.48 Betula popyrifera.Intercept 3.40 -23.25 -17.50 -9.36 2.25 11.53 18.08 Salix purpurea.Intercept 3.40 -23.25 -17.50 -9.36 6.22 15.31 18.08 Salix purpurea.Intercept -3.66 16.89 22.39 30.53 42.05 51.62 59.11 Sorbus americana.Intercept -4.67 -34.35 -28.81 -20.56 -8.91 -0.09 6.99 Almus incana rugosa.Tx 0.42								
Tx:Chill 6 Wks -0.59 -9.92 -7.10 -3.37 2.66 6.10 9.93 Tx:Chill 8 Wks 3.77 -5.75 -2.83 1.13 6.42 10.47 13.64 Intercept 49.06 28.21 23.471 43.775 54.77 62.43 68.15 Acer saccharinum,Intercept 43.69 23.67 29.56 37.62 49.34 58.87 66.20 Betula papyntifera,Intercept 13.61 -33.58 27.58 0.46 61.21 21.50 28.50 Cornus racemosa,Intercept 36.46 16.89 22.33 30.53 42.05 11.53 18.68 Salizy purpurea, Intercept 36.61 61.89 22.33 30.53 42.05 1.52 11.53 18.08 Salizy purpura, Intercept 30.68 50.72 44.79 -36.60 24.97 15.66 8.88 Viburnum dendatum,Intercept -14.67 -34.35 -20.61 -8.10 0.56 2.15 9.11 Acer saccharinum,Chill 6 Ws </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Tx:Chill 8 Wks								
Intercept								
Acer saccharinum, Intercept								
Retula papyrifera, Intercept 13.61 -33.58 -27.43 -19.46 -12.18 -13.51 -33.58 -27.43 -19.46 -12.18 -13.51 -13.61 -33.58 -27.43 -19.46 -12.18 -13.51 -13.61 -13.58 -17.58 -10.46 -12.18 -13.51 -13.61 -13.58 -17.58 -10.46 -12.18 -13.51 -13.61 -13.58 -17.58 -10.46 -12.18 -13.51 -13.61								
Betula papyrifera, Intercept	· · · · · · · · · · · · · · · · · · ·							
Betula populifolia,Intercept	<i>v</i> , <u>-</u>							
Cornus racemosa, Intercept	1 10 0 7							
Salix purpurea, Intercept 36.46 16.89 22.39 30.53 42.05 51.62 59.11 Sorbus americana, Intercept -30.68 -50.72 -44.79 -36.60 -24.97 -15.66 -8.88 Viburnum dendatum, Intercept -14.67 -34.35 -28.81 -20.56 -8.91 0.09 6.99 Acer saccharinum, Tx -0.29 -6.96 -3.85 -1.04 0.56 2.71 5.05 Alnus incana rugosa, Tx 0.08 -5.79 -3.25 -0.71 0.88 3.53 6.24 Betula populifolia, Tx 0.056 -7.56 -4.32 -1.35 0.38 2.23 4.50 Cornus racemosa, Tx -0.56 -7.56 -4.32 -1.35 0.38 2.23 4.50 Salix purpurea, Tx -0.44 -7.54 -4.49 -1.31 0.56 2.88 5.10 Sorbus americana, Tx -0.14 -6.77 -3.80 -0.96 0.73 3.32 5.86 Acer saccharinum, Chill 6 Wks -1.								
Sorbus americana, Intercept								
Viburnum dendatum, Intercept -14.67 -34.35 -28.81 -20.56 -8.91 0.09 6.99 Acer saccharinum, Tx -0.29 -6.96 -3.85 -1.04 0.56 2.71 5.05 Alnus incana rugosa, Tx 0.42 -5.60 -3.06 -0.63 1.31 4.62 7.89 Betula pappurifera, Tx 0.08 -5.79 -3.25 -0.71 0.88 3.53 6.24 Betula populifolia, Tx 0.53 -4.48 -2.32 -0.39 1.28 4.26 7.61 Cornus racemosa, Tx -0.56 -7.56 -4.32 -1.35 0.38 2.32 4.50 Salix purpurea, Tx -0.44 -6.77 -3.80 -0.96 0.73 3.20 5.86 Sorbus americana, Tx -0.14 -6.77 -3.80 -0.96 0.73 3.20 5.86 Viburnum dendatum, Tx -0.14 -4.754 -4.49 -1.18 2.63 7.53 12.00 Alnus incana rugosa, Chill 6 Wks 1.49 -4.32 -2.04 -0.18 2.63 7.53 12.00 Alnus incana rugosa, Chill 6 Wks -1.69 -12.66 -8.10 -3.19 0.21 2.61 5.31 Betula pappurifera, Chill 6 Wks -0.92 -10.34 -6.41 -2.09 0.51 3.07 5.56 Betula populifolia, Chill 6 Wks -0.92 -10.34 -6.41 -2.09 0.51 3.07 5.56 Betula populifolia, Chill 6 Wks -0.98 -8.41 -4.88 -1.39 0.88 3.90 7.16 Cornus racemosa, Chill 6 Wks -0.49 -9.07 -5.41 -1.55 0.75 3.71 6.46 Salix purpurea, Chill 6 Wks -0.30 -8.90 -5.43 -1.53 0.94 4.43 8.05 Sorbus americana, Chill 6 Wks 0.53 -6.88 -3.62 -0.69 1.65 5.56 8.91 Acer saccharinum, Chill 8 Wks 0.20 -8.38 -4.85 -1.16 1.54 5.38 8.77 Alnus incana rugosa, Chill 8 Wks 0.20 -8.38 -4.85 -1.16 1.54 5.38 8.77 Alnus incana rugosa, Chill 8 Wks 0.21 -5.47 -2.47 -0.15 2.95 7.54 11.45 Salix purpurea, Chill 8 Wks -0.77 -10.60 -6.71 -2.42 0.93 -7.05 10.73 Betula populifolia, Chill 8 Wks -1.81 -1.081 -7.20 -2.78 0.35 -7.95 1.75 Salix purpurea, Chill 8 Wks -1.81 -1.84 -7.95 -2.78 0.35 -7.95 1.75 Salix purpurea, Chill 8 Wks -1.81 -1.84 -7.95 -2.78 0.35 -7.95 1.75 Ac								
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Betula populifolia, Tx: Chill 6 Wks 0.98 -7.16 -4.01 -0.64 2.40 7.27 11.84 Cornus racemosa, Tx: Chill 6 Wks 0.56 -8.13 -4.51 -0.98 2.00 6.60 11.47 Salix purpurea, Tx: Chill 6 Wks 0.63 -8.71 -4.93 -1.04 2.18 7.06 11.90 Sorbus americana, Tx: Chill 6 Wks 0.64 -8.68 -4.76 -0.95 2.14 6.73 11.31 Viburnum dendatum, Tx: Chill 6 Wks 1.51 -6.58 -3.41 -0.42 3.08 8.77 13.43	Alnus incana rugosa, Tx: Chill 6 Wks	-1.82	-14.80	-9.63	-3.66	0.42	3.50	6.71
Betula populifolia, Tx: Chill 6 Wks 0.98 -7.16 -4.01 -0.64 2.40 7.27 11.84 Cornus racemosa, Tx: Chill 6 Wks 0.56 -8.13 -4.51 -0.98 2.00 6.60 11.47 Salix purpurea, Tx: Chill 6 Wks 0.63 -8.71 -4.93 -1.04 2.18 7.06 11.90 Sorbus americana, Tx: Chill 6 Wks 0.64 -8.68 -4.76 -0.95 2.14 6.73 11.31 Viburnum dendatum, Tx: Chill 6 Wks 1.51 -6.58 -3.41 -0.42 3.08 8.77 13.43								
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Viburnum dendatum,Tx:Chill 6 Wks 1.51 -6.58 -3.41 -0.42 3.08 8.77 13.43								
	Acer saccharinum,Tx:Chill 8 Wks	1.71	-4.94	-2.42	-0.21	3.14	8.66	13.63

Table S10: Summary of model with the effects of false spring treatment and chilling duration across species on total biomass.

	mean	2%	10%	25%	75%	90%	98%
Alnus incana rugosa,Tx:Chill 8 Wks	0.49	-8.70	-5.08	-1.10	2.01	6.60	11.66
Betula papyrifera,Tx:Chill 8 Wks	0.70	-7.60	-3.95	-0.74	1.99	6.43	10.94
Betula populifolia,Tx:Chill 8 Wks	-0.68	-11.41	-6.55	-1.86	0.74	4.00	6.87
Cornus racemosa, Tx: Chill 8 Wks	-0.68	-10.98	-6.69	-1.75	0.74	3.81	7.04
Salix purpurea, Tx: Chill 8 Wks	-0.53	-11.31	-6.52	-1.95	0.99	4.76	8.65
Sorbus americana, Tx: Chill 8 Wks	-0.61	-10.77	-6.46	-1.95	0.85	4.34	7.95

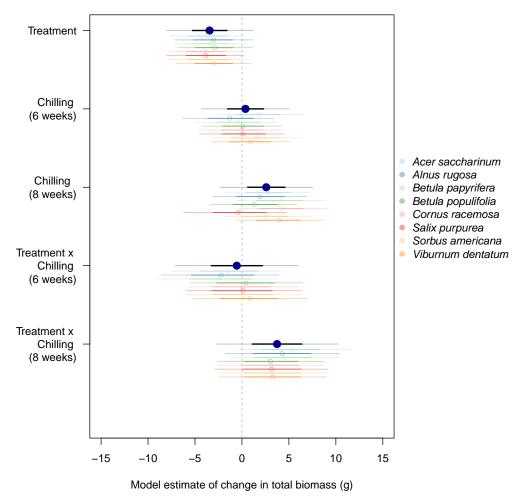


Figure S3: Effects of false spring treatment, six weeks of chilling and eight weeks of chilling on total aboveground and belowground biomass (g).