Phenology:
Tables and Figures

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4 February 2021

1 General Survival and sucess

At the start of the experiment, 2496 samples went into chilling, 2458 went into forcing and survived the experiment. Of the samples that did died, it was largely due to human error, some species were very brittle, while others popped out of their flasks or were returned to the wrong flask, but these samples were only 1.52In total, 9.5% of samples did not bud burst at all. Of all the samples, 18.42% did not have terminal bud burst, most of these were vac mem, followed by rubpar and acegla.

Table 1: Proporation of samples with budburst per species

	Proportion Budburst
acegla	0.83
alninc	1.00
alnvir	0.92
amealn	0.99
betpap	1.00
corsto	0.99
loninv	0.87
menfer	0.80
popbal	0.98
poptre	0.90
rhoalb	1.00
riblac	0.82
rubpar	0.94
samrac	0.95
shecan	1.00
sorsco	0.99
spibet	0.94
spipyr	0.92
symalb	0.84
vacmem	0.90
vibedu	1.00

2 Results:

- All three cues cause an advance in budburst, but vary in their response when considered together

- Forcing is the dominant driver of budburst, closely followed by chilling for both terminal and lateral budburst.
- Forcing has a stronger effect on lateral budburst (-18.52) than terminal budburst (-16.87), but the effect of chilling is slightly weaker at -13.17 for lateral buds and -14.75 for terminal buds
- Our nothern site is slightly more advanced
- The interaction between high forcing and high chilling shows a delaying effect, the impacts terminal budburst (6.53) more than lateral budburst (4.78)
- There is a greater effect of photoperiod at the more Northern site for terminal budburst (-1.40) than lateral (-0.45)

Table 2: Model estimates for budburst of terminal buds

	Mean	Sd	2.5%	50%	97.5%	Rhat
Forcing	-16.87	1.19	-19.20	-16.88	-14.54	1.00
Photoperiod	-1.96	1.07	-4.00	-1.96	0.14	1.00
Chilling	-14.75	1.67	-17.93	-14.76	-11.35	1.00
Site	-3.26	1.90	-7.05	-3.25	0.53	1.00
Forcing x Photoperiod	0.97	1.03	-1.04	0.96	2.95	1.00
Forcing x Chilling	6.53	1.06	4.45	6.54	8.59	1.00
Photoperiod x Chilling	-0.25	1.07	-2.33	-0.25	1.88	1.00
Forcing x Site	2.79	1.10	0.63	2.80	4.95	1.00
Photoperiod x Site	-1.40	1.16	-3.71	-1.40	0.88	1.00
Site x Chilling	-0.08	1.31	-2.72	-0.06	2.42	1.00

Table 3: Model estimates for budburst of lateral buds

	Mean	Sd	2.5%	50%	97.5%	Rhat
Forcing	-18.52	1.69	-21.91	-18.50	-15.30	1.00
Photoperiod	-2.12	1.21	-4.46	-2.12	0.25	1.00
Chilling	-13.17	1.76	-16.55	-13.19	-9.67	1.00
Site	-3.52	1.94	-7.31	-3.55	0.39	1.00
Forcing x Photoperiod	1.85	1.10	-0.34	1.85	4.06	1.00
Forcing x Chilling	4.78	1.24	2.30	4.78	7.19	1.00
Photoperiod x Chilling	-0.83	1.17	-3.16	-0.83	1.47	1.00
Forcing x Site	3.66	1.48	0.75	3.64	6.62	1.00
Photoperiod x Site	-0.45	1.18	-2.76	-0.47	1.87	1.00
Site x Chilling	-0.44	1.79	-3.96	-0.39	2.96	1.00

2.1 Summary of figures for terminal buds

- Tree species were generally more sensitive to forcing and chilling, as were shrubs like loninv and samrac
- Samrac and rhoalb were relativley more sensitive to photoperiod than other shrubs, and poptre more than other trees
- Tree species show later budburst in response to forcing than shrubs **??**

- But we do not see the same gradient in species with chilling or photoperiod
- The mean day to lateral budburst shows the same relative trends

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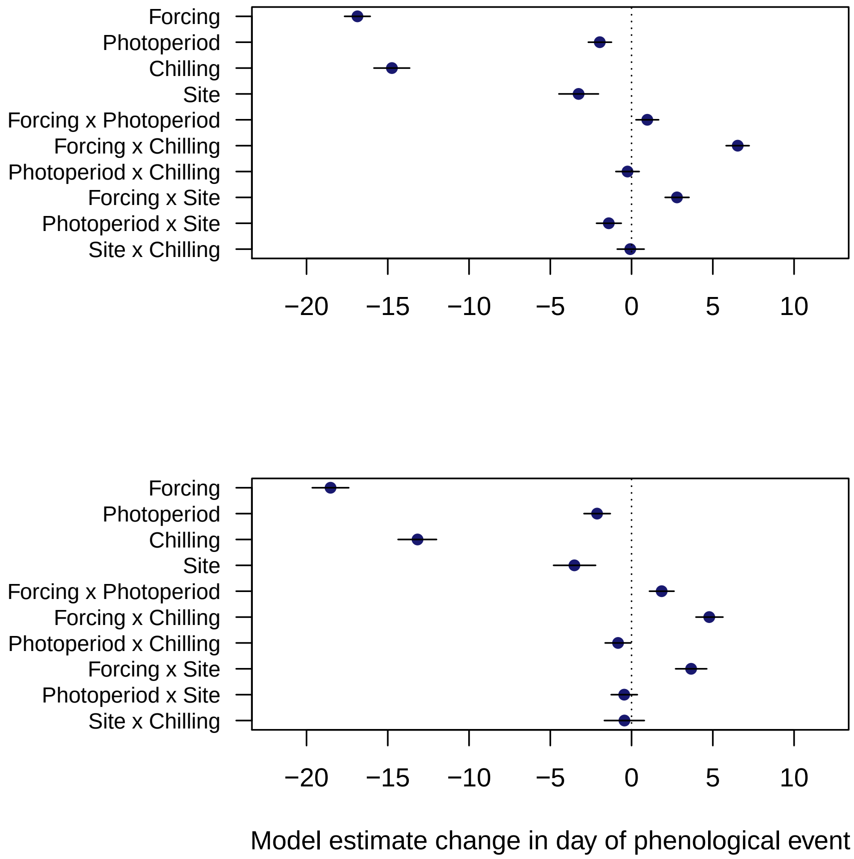

Figure 1: Model estimates for a. terminal budburst and 50 percent of lateral buds

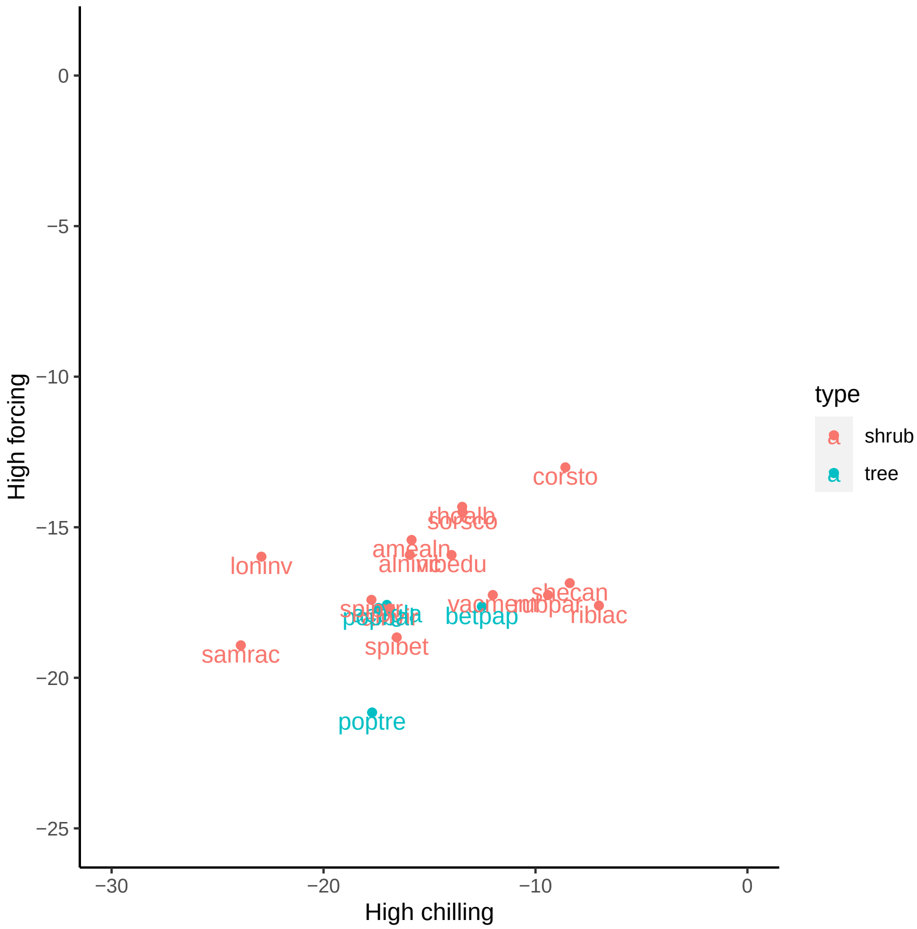

Figure 2: Species responses to high chilling and high forcing treatments.

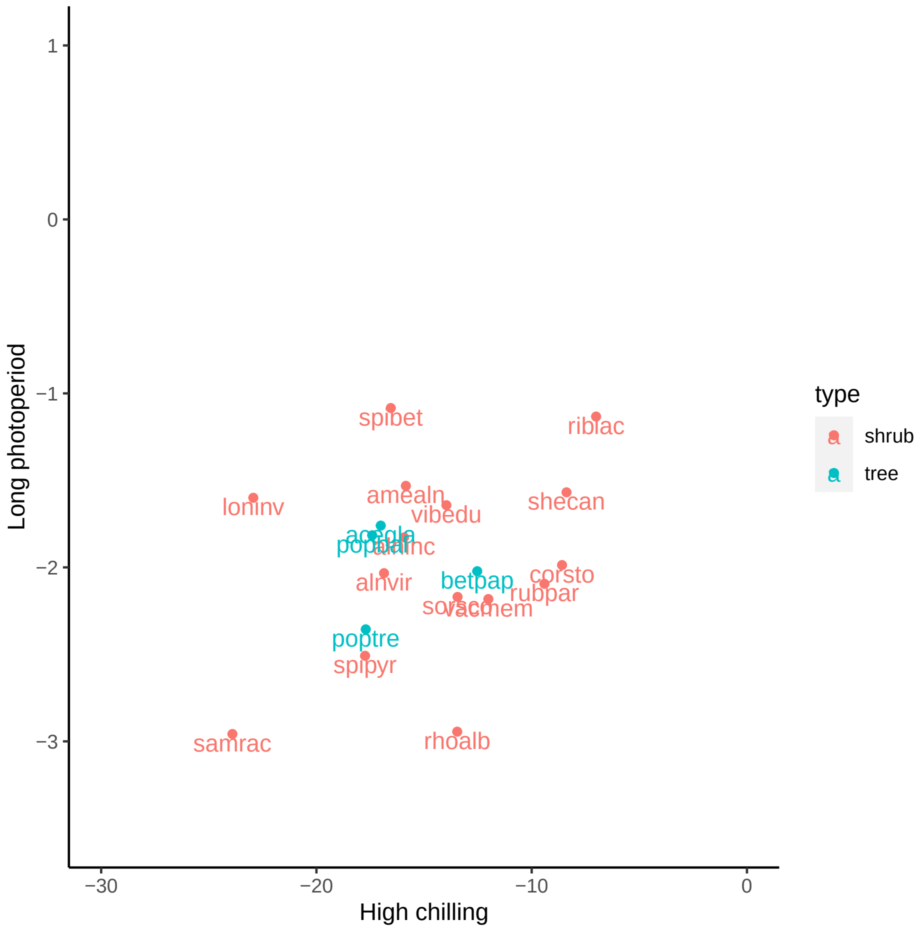

Figure 3: Species responses to high chilling and long photoperiod treatments

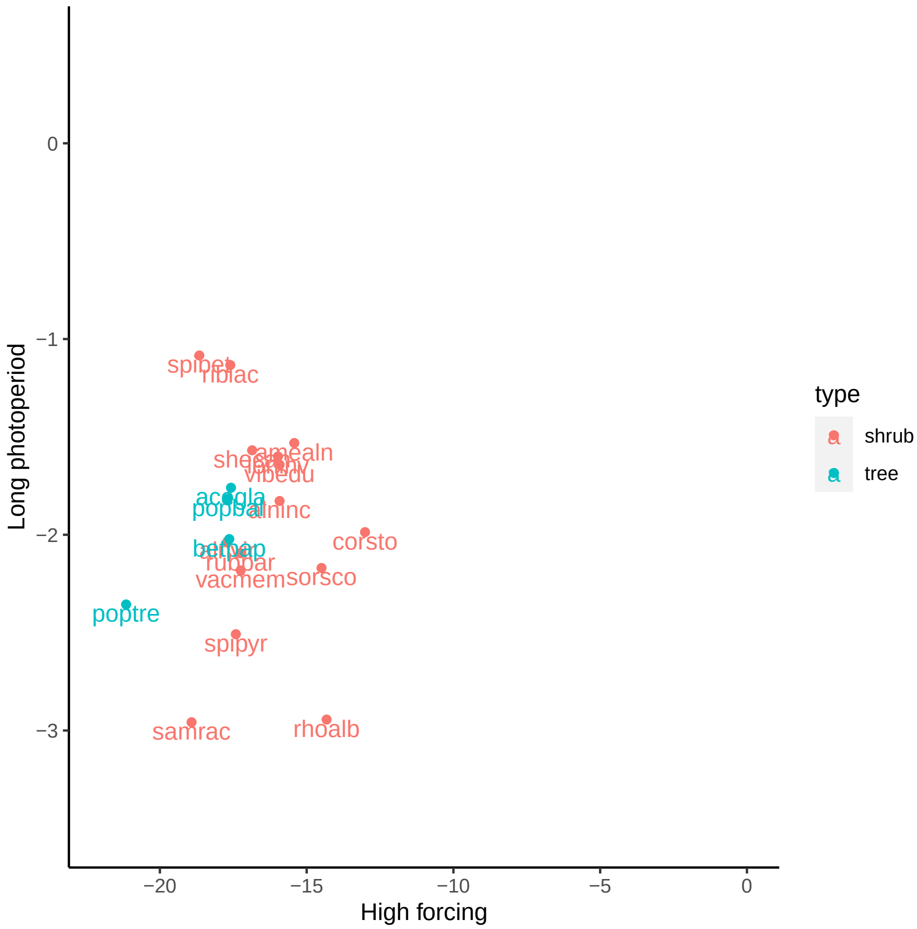

Figure 4: Species responses to high forcing and long photoperiod treatments

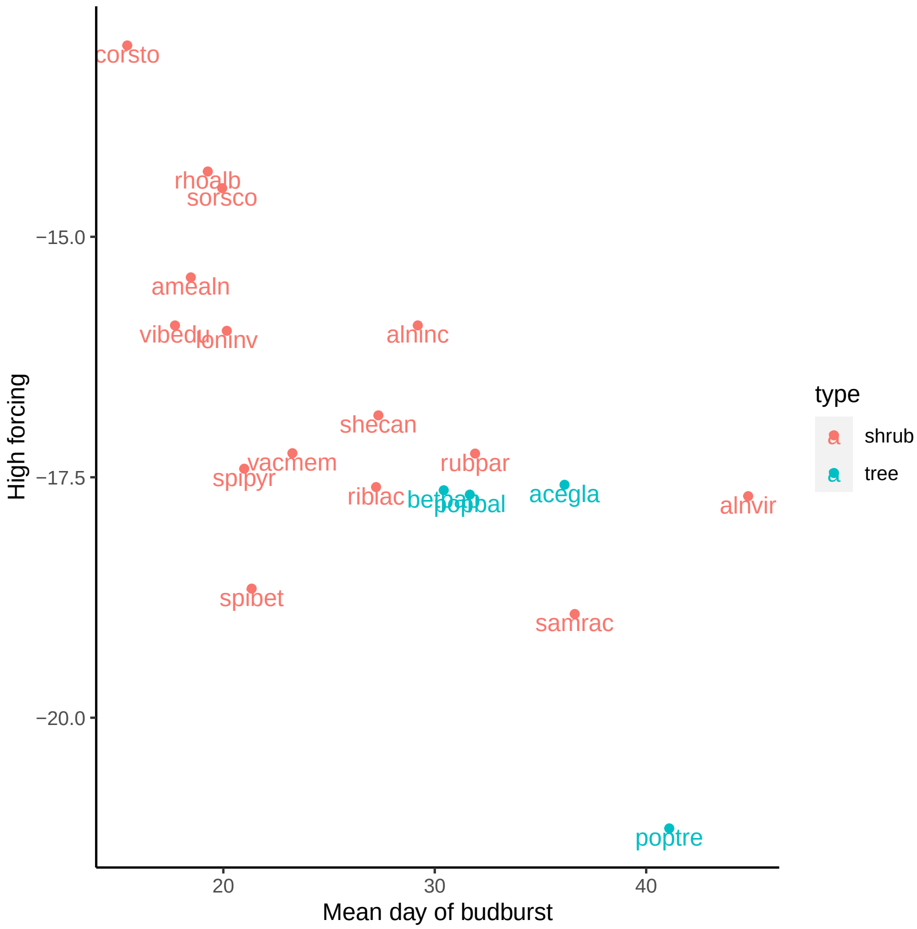

Figure 5: Mean day of terminal budburst in response to high forcing

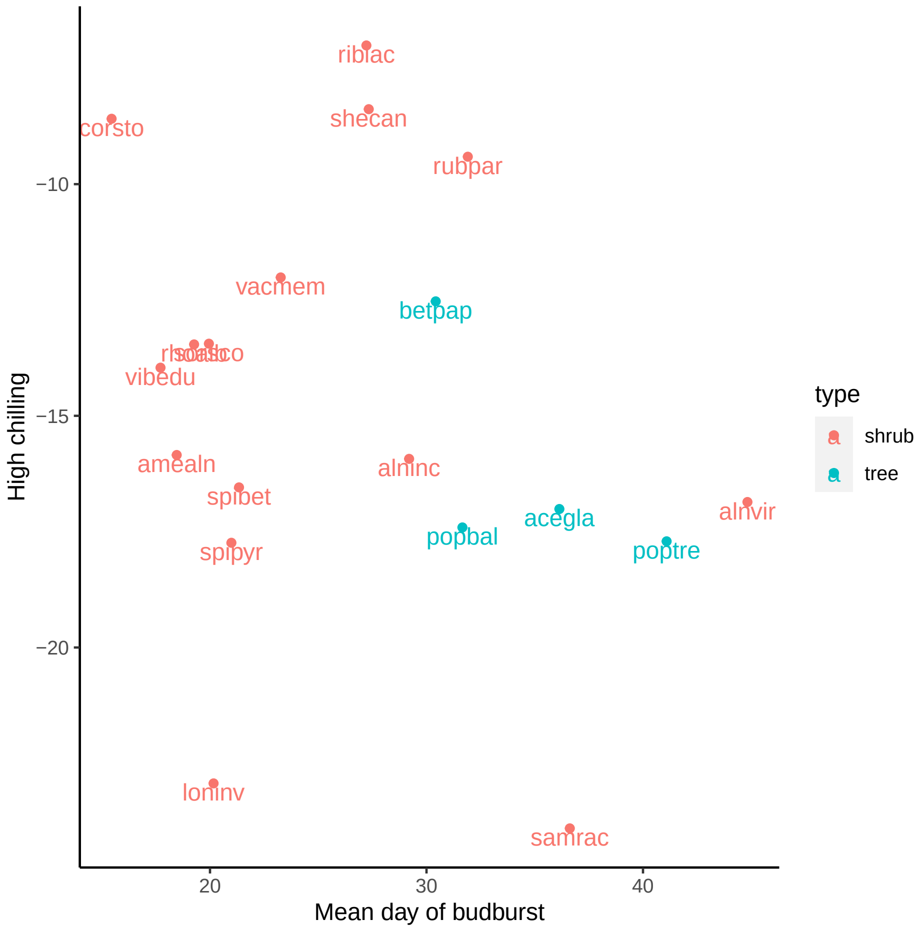

Figure 6: Mean day of terminal budburst in response to high chilling

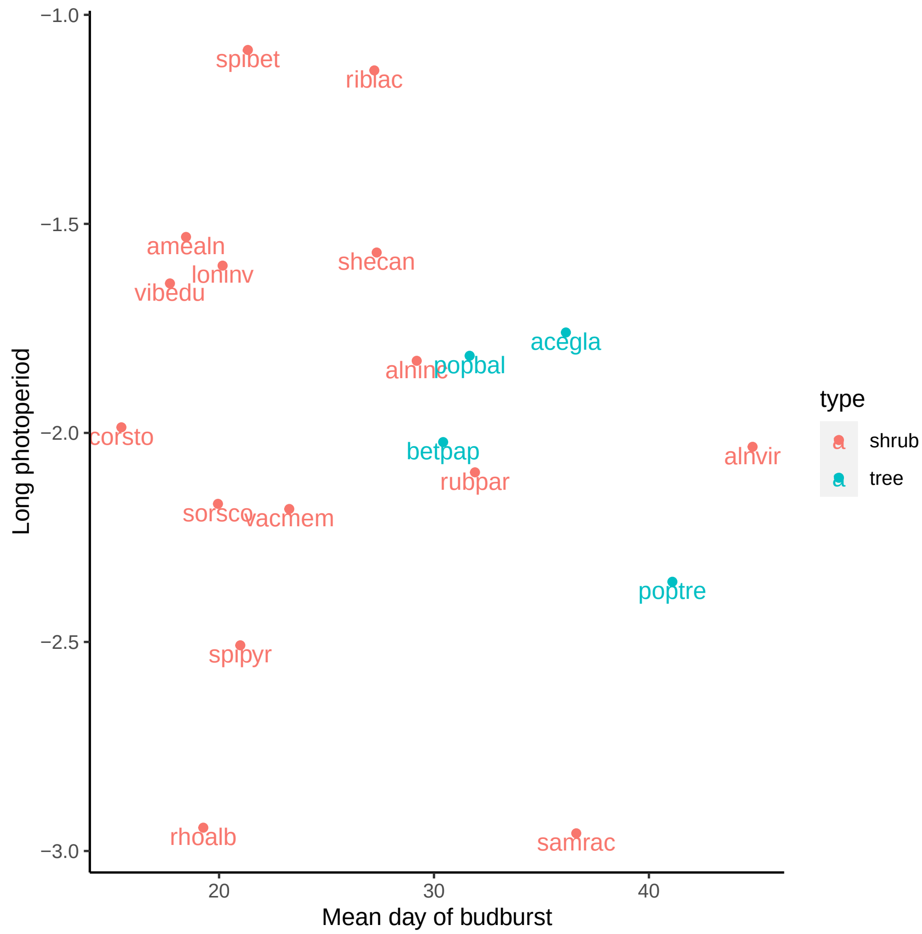

Figure 7: Mean day of terminal budburst in response to long photoperiod

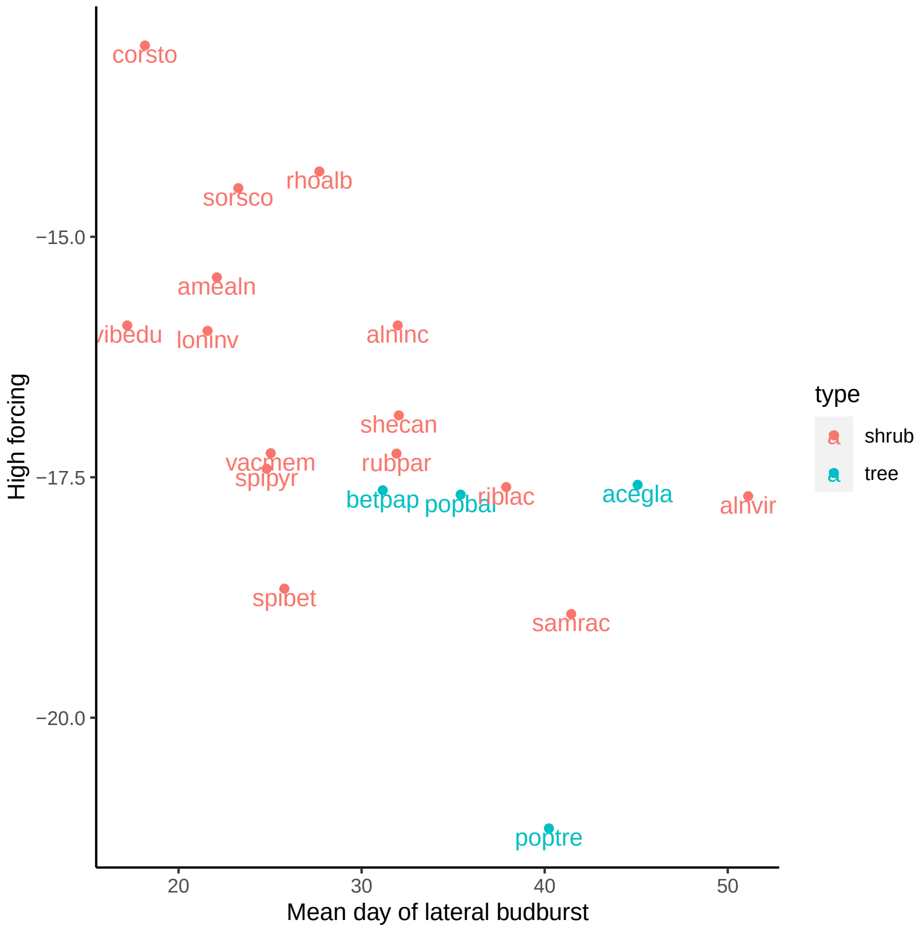

Figure 8: Mean day of lateral budburst in response to high forcing

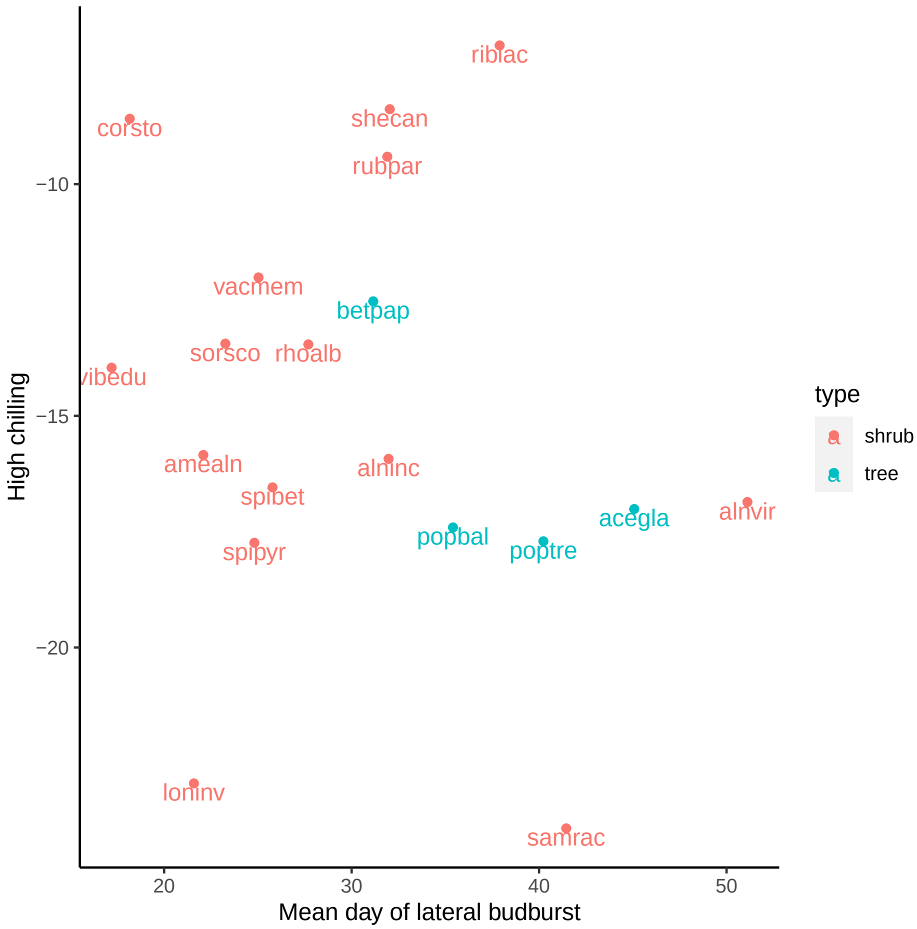

Figure 9: Mean day of lateral budburst in response to high chilling

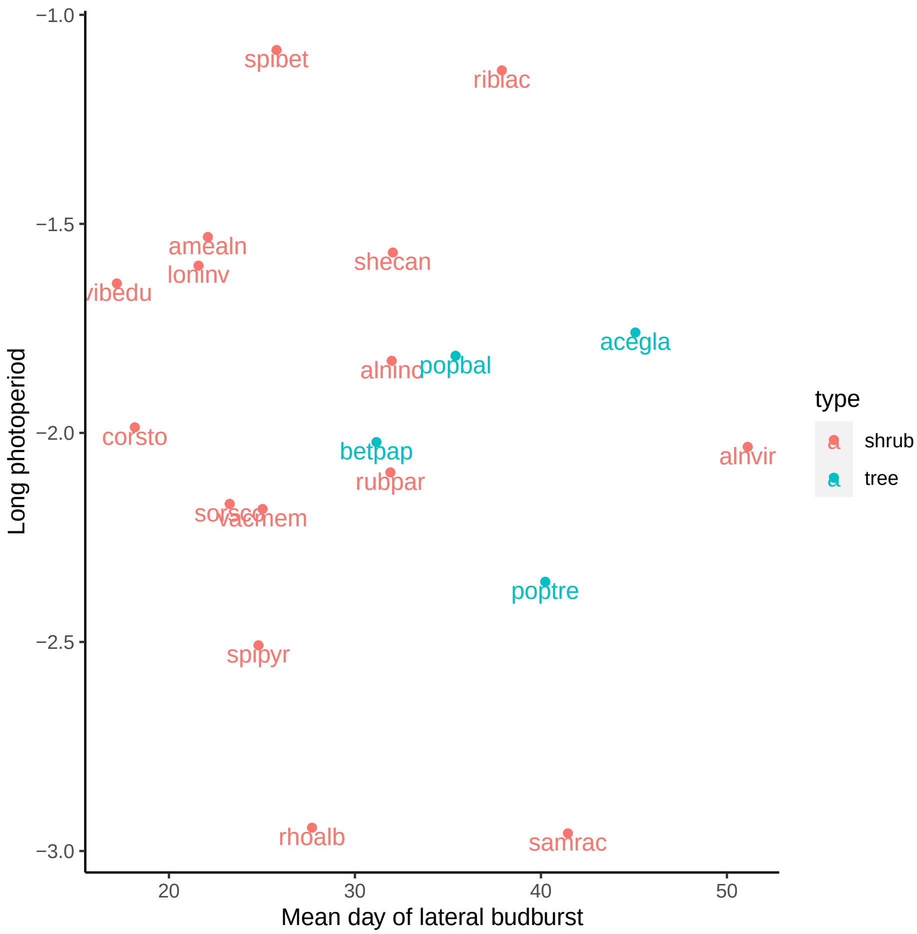

Figure 10: Mean day of lateral budburst in response to long photoperiod