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Supplementary Material

Impact of extreme heatwaves and life-history traits on seed germination responses in Cumberland Plain Woodland native plant species

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Table S1. Table of incubator temperature/s in which seeds germinated post-heatwave exposure with diurnal day/night temperatures or constant temperatures listed.

Family	Species	Incubator temperature/s
Asteraceae	<i>Calotis lappulacea</i>	15/5°C
	<i>Cassinia aculeata</i>	20°C
Chenopodiaceae	<i>Einadia nutans</i> subsp. <i>nutans</i>	15/5°C
Fabaceae	<i>Acacia decurrens</i>	30/15°C
	<i>Acacia falcata</i>	30/15°C
	<i>Hardenbergia violacea</i>	30/15°C
	<i>Indigofera australis</i>	30/15°C
Lamiaceae	<i>Plectranthus parviflorus</i>	20°C
Myrtaceae	<i>Eucalyptus crebra</i>	20°C
	<i>Eucalyptus tereticornis</i>	20°C
Poaceae	<i>Dichanthium sericeum</i>	20°C
	<i>Microlaena stipoides</i>	20°C
	<i>Themeda triandra</i>	20°C
Ranunculaceae	<i>Clematis glycinoides</i> var. <i>glycinoides</i>	20°C
Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>cuneata</i>	30/15°C

Table S2. Table of results of the GLMs of onset of germination, germination duration and germination proportion using heat treatment as the sole predictor. Models were fitted to each species individually. Significant P values are shown in bold.

Response	Species	χ^2	d.f.	P
Onset of germination	<i>Acacia decurrens</i>	15.505	6	0.017
	<i>Acacia falcata</i>	116.567	6	< 0.0001
	<i>Calotis lappulacea</i>	19.949	6	0.003
	<i>Cassinia aculeata</i>	16.859	6	0.01
	<i>Clematis glycinoides</i>	24.80	6	0.0004
	<i>Dichanthium sericeum</i>	27.271	6	0.0001
	<i>Dodonaea viscosa</i>	32.177	6	< 0.0001
	<i>Einadia nutans</i>	24.904	6	0.0004
	<i>Eucalyptus crebra</i>	45.136	6	< 0.0001
	<i>Eucalyptus tereticornis</i>	110.211	6	< 0.0001
	<i>Hardenbergia violacea</i>	22.168	6	0.001
	<i>Indigofera australis</i>	11.295	6	0.08
	<i>Microlaena stipoides</i>	37.794	6	< 0.0001
	<i>Plectranthus parviflorus</i>	-16.320	6	1
	<i>Themeda triandra</i>	4.545	6	0.6
Germination duration	<i>Acacia decurrens</i>	13.263	6	0.039
	<i>Acacia falcata</i>	48.685	6	< 0.0001
	<i>Calotis lappulacea</i>	14.604	6	0.024
	<i>Cassinia aculeata</i>	41.529	6	< 0.0001
	<i>Clematis glycinoides</i>	5.719	6	0.5
	<i>Dichanthium sericeum</i>	5.350	6	0.5
	<i>Dodonaea viscosa</i>	30.686	6	< 0.0001
	<i>Einadia nutans</i>	25.524	6	0.0003
	<i>Eucalyptus crebra</i>	8.020	6	0.2
	<i>Eucalyptus tereticornis</i>	37.791	6	< 0.0001
	<i>Hardenbergia violacea</i>	8.895	6	0.2
	<i>Indigofera australis</i>	4.162	6	0.7
	<i>Microlaena stipoides</i>	4.586	6	0.6
	<i>Plectranthus parviflorus</i>	10.469	6	0.1
	<i>Themeda triandra</i>	6.998	6	0.3
Germination proportion	<i>Acacia decurrens</i>	27.702	6	0.0001
	<i>Acacia falcata</i>	2.755	6	0.8
	<i>Calotis lappulacea</i>	24.977	6	0.0003
	<i>Cassinia aculeata</i>	22.880	6	0.0008
	<i>Clematis glycinoides</i>	34.054	6	< 0.0001
	<i>Dichanthium sericeum</i>	19.069	6	0.004
	<i>Dodonaea viscosa</i>	23.404	6	0.0007
	<i>Einadia nutans</i>	2.230	6	0.9
	<i>Eucalyptus crebra</i>	4.044	6	0.7
	<i>Eucalyptus tereticornis</i>	11.014	6	0.09
<i>Hardenbergia violacea</i>	41.429	6	< 0.0001	

<i>Indigofera australis</i>	18.462	6	0.005
<i>Microlaena stipoides</i>	32.209	6	< 0.0001
<i>Plectranthus parviflorus</i>	22.256	6	0.001
<i>Themeda triandra</i>	5.862	6	0.4

Table S3. Outputs from GLMMs of onset of germination, germination duration, and linear mixed model for proportion of germination, modelled using seed mass, seed dormancy, life-form, and fire response separately. Significant P values are shown in bold.

Response	Term	χ^2	d.f.	P
Onset of germination	heat treatment	11.781	6	0.07
	seed mass	7.067	1	0.008
	heat treatment	11.781	6	0.07
	dormancy	0.398	1	0.5
	heat treatment	11.781	6	0.07
	lifeform	5.917	4	0.2
	heat treatment	11.781	6	0.07
	fire response	0.010	1	0.9
Germination duration	heat treatment	142.852	6	< 0.0001
	seed mass	8.743	1	0.003
	heat treatment	142.854	6	< 0.0001
	dormancy	0.166	1	0.7
	heat treatment	142.853	6	< 0.0001
	lifeform	2.895	4	0.6
	heat treatment	142.854	6	< 0.0001
	fire response	0.236	1	0.6
Germination proportion	heat treatment	12.935	6	0.044
	seed mass	1.918	1	0.2
	heat treatment	12.935	6	0.044
	dormancy	3.787	1	0.052
	heat treatment	12.935	6	0.044
	lifeform	17.201	4	0.002
	heat treatment	12.935	6	0.044
	fire response	0.585	1	0.4