

Figure S1 Comparison of two methods for estimating average fire frequency, for one example species (*Acacia longifolia*): (1) Poisson model, and (2) survival analysis following methods by Simpson *et al.* (2021). Method 1 uses each occurrence point as a replicate while Method 2 uses multiple inter-fire intervals within an occurrence point as replicates. The histogram of number of fires in Method 1 represents actual raw data from MODIS while the histogram of inter-fire intervals (Method 2) represents randomly simulated data from a Weibull distribution of shape and scale derived from fitting the model. Data were simulated because actual data often contained censored time intervals due to the short length of the MODIS period. The sampling period of MODIS was 22.17 years. Picture of *Acacia longifolia* is credited to Jonathan M (CC BY-NC) on iNaturalist.

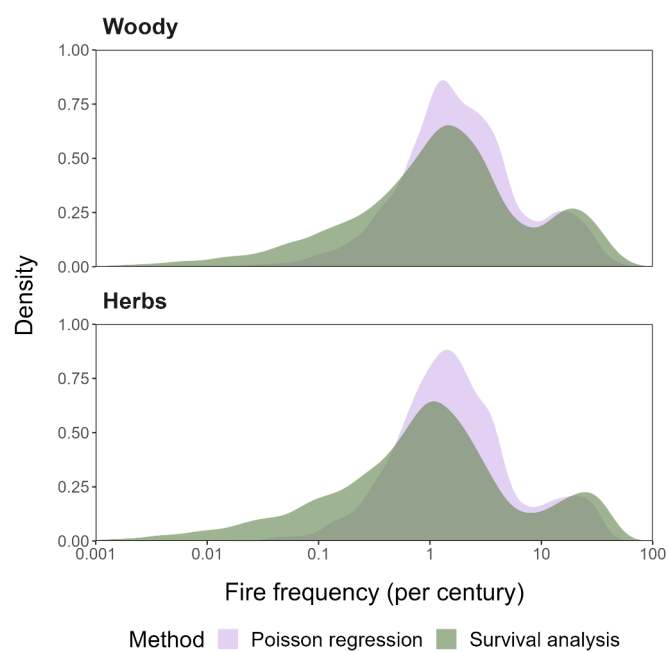


Figure S2 Comparison of mean fire frequencies (per century) of each species using Poisson generalised linear model and survival analysis (Simpson *et al.*, 2021) methods (see main text for details), for woody and herbaceous plants.

Commented [SY1]: Need to group by woody/herb in one panel for one method vs other method

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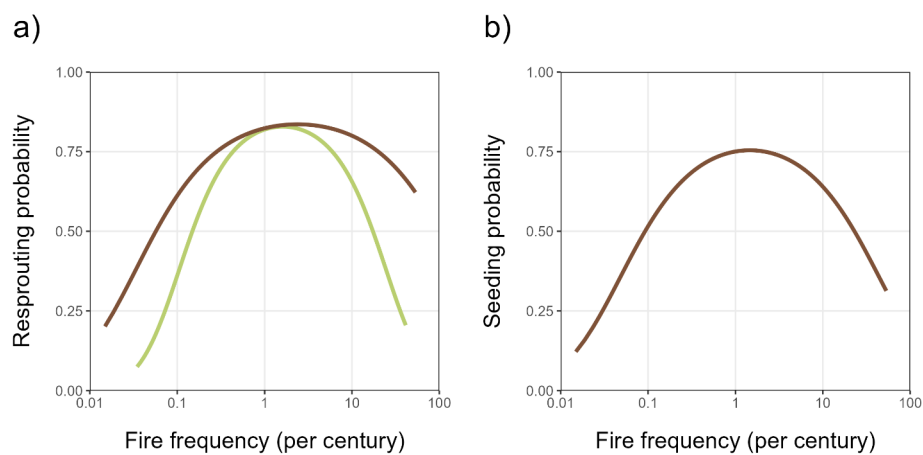


Figure S3 Observed changes in the frequency of two fire-adapted traits with disturbance regime, as indicated by fire frequency. Lines show changes in the proportion of species with either (a) resprouting or (b) post-fire seeding ability against fire frequency (per century), as modelled by phylogenetic logistic regression, for woody (brown) and herbaceous (green) species. Herbaceous species were omitted from (b) due to insufficient data. Fire frequency is log-transformed and represents the mean fire frequencies across a species' range from 2000 to 2022 (see main text for details).

Commented [SY3]: Is it worth trying to align the seed plant phylogeny with APCalign to facilitate matching?

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Table S1 Woodiness ('woodiness_detailed') values from the 'Wenk_2022' dataset in AusTraits, simplified into woody, herbaceous, semi-woody and ambiguous categories. AusTraits records are sometimes combinations of allowed categorical values, e.g., species that exhibit both growth forms.

Woody	Herbaceous	Semi-woody	Ambiguous
woody	herbaceous	semi_woody	woody_like_stem
semi_woody woody	herbaceous woody	semi_woody woody_base	woody_base
woody woody_base	herbaceous woody_base		
	herbaceous semi_woody		
	herbaceous semi_woody woody		

Table S2 Association of (a) resprouting and (b) post-fire seeding with mean fire frequency (per century), as fit by phylogenetic logistic regression. Both response variables were coded as TRUE or FALSE, with separate models run for each trait. Values show the odds ratio of the response for a change in each predictor¹. We also included growth form (woody or herbaceous) as a predictor for resprouting ability, but not for post-fire seeding due to lack of data. Mean fire frequency was log-transformed to reduce skewness. Number of observations and R² Tjur value are listed.

<i>Predictors</i>	Resprouting		
	<i>Odds Ratios</i>	<i>CI</i>	<i>P</i>
(a) Resprouting			
(Intercept)	5.39	4.28 – 6.81	<0.001
Mean fires [log10]	1.68	1.41 – 2.00	<0.001
(Mean fires [log10]) ²	0.22	0.18 – 0.27	<0.001
Woody or herb [woody]	0.95	0.74 – 1.21	0.658
Mean fires [log10] * Woody or herb [woody]	0.93	0.75 – 1.15	0.486
(Mean fires [log10]) ² * Woody or herb [woody]	2.50	1.96 – 3.19	<0.001
Observations	7465		
R ² Tjur	0.031		
(b) Post-fire seeding			
(Intercept)	3.01	2.14 – 4.23	<0.001
Mean fires [log10]	1.29	1.04 – 1.61	0.022
(Mean fires [log10]) ²	0.46	0.36 – 0.58	<0.001
Observations	2100		
R ² Tjur	0.039		

¹ The odds ratio is the ratio of the probability of responding to the probability of not responding for a unit change in the predictor. Values (<1 indicates a lower likelihood of responding compared to not responding with an increase in the predictor.

Commented [SY5]: Alter to match main tables

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Table S3 Associations of (a,b) mean leaf mass per area (LMA) (g m^{-2}) and (c,d) mean leaf nitrogen (N) content (mg g^{-1}) with resprouting and post-fire seeding (both coded as TRUE or FALSE), including woody or herbaceous growth form as an explanatory factor and any interactions. Values are fitted parameters from a phylogenetic linear model. Number of observations and R^2 values are listed below each model.

	<i>Estimates</i>	<i>CI</i>	<i>P</i>
(a) Mean LMA [log10]			
(Intercept)	2.03	-1.64 – 5.69	0.278
Resprouting	0.10	0.01 – 0.19	0.025
Woody or herb [linear]	0.09	-0.05 – 0.22	0.200
Resprouting * Woody or herb [linear]	-0.06	-0.15 – 0.04	0.229
Observations	2374		
R^2 / R^2 adjusted	0.009/0.008		
(Intercept)	2.25	-0.16 – 4.66	0.067
Seeding	-0.19	-0.26 – -0.11	<0.001
Woody or herb [linear]	-0.13	-0.27 – 0.01	0.059
Seeding * Woody or herb [linear]	0.31	0.22 – 0.40	<0.001
Observations	1291		
R^2 / R^2 adjusted	0.033/0.031		
(b) Mean Leaf N content [log10]			
(Intercept)	1.24	0.13 – 2.35	0.028
Resprouting	-0.02	-0.07 – 0.04	0.615
Woody or herb [linear]	-0.14	-0.21 – -0.07	<0.001
Resprouting * Woody or herb [linear]	0.01	-0.05 – 0.07	0.631
Observations	1373		
R^2 / R^2 adjusted	0.015/0.013		
(Intercept)	1.13	0.02 – 2.25	0.047
Seeding	-0.02	-0.17 – 0.12	0.760
Woody or herb [linear]	-0.01	-0.17 – 0.14	0.865
Seeding * Woody or herb [linear]	-0.01	-0.16 – 0.14	0.901
Observations	751		
R^2 / R^2 adjusted	0.005/0.001		