

Supplementary material

Vegetation change along a Mediterranean to arid zone bioclimatic gradient reveals scale-dependent ecotone patterning

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Table S1. Comparison of TREND-Guerin and TREND-AusPlots transect surveys

Design	TREND-Guerin plots	TREND-AusPlots
Total plots	85	42
Plot configuration	17 groups of 5 plots	Single plots
Plot size	900 m ² (30 × 30 m)	1 ha (100 × 100 m)
Total area sampled	7.65 ha	42 ha
Transect length	550 km 4.8° latitude	700 km 6.2° latitude
Environmental gradient	684 mm MAP (307–991 mm) 4°C MAT (13.4–17.4°C)	818 mm MAP (980–162 mm) 7.2°C MAT (13.4–20.6°C)
Time of sampling	1 Sep–9 Nov 2011 (all sites)	13–22 Aug 2012 (SATFLB0001-15, SATKAN0001-2) 6–17 Aug 2013 (SATFLB0016-25, SATSTP0001-8) 28 Oct–6 Nov 2014 (SATEYB0001-2, SATFLB0027-28, SATKAN0003-4)
Observers	GRG	EJL, SCR & IF

Table S2. TREND site codes and location information including agro-climatic zone and Interim Bioregionalisation of Australia (IBRA) subregion

Guerin codes align to those published in (Guerin et al. 2014). IBRA Subregions are: EYB, Eyre Yorke Block (EYB02, Saint Vincent subregion); FLB, Flinders Lofty Block (FLB01, Mount Lofty Ranges; FLB02, Broughton; FLB04, Southern Flinders; FLB05, Northern Flinders; FLB06, Central Flinders subregions); KAN, Kanmantoo (KAN02, Fleurieu subregion); STP, Stony Plains (STP03, Murnpeowie subregion). Descriptions of agro-climatic zones in Table 2

Location	Code	Guerin Code	AusPlots Code	Agro-climatic zone	IBRA Subregion	Latitude	Longitude
Mount Lyndhurst 2	LYN2		SATSTP0008	G	STP03	-29.3874	138.8819
Mount Lyndhurst 1	LYN1		SATSTP0005	G	STP03	-29.4562	138.8493
Murnpeowie 3	MUR3		SATSTP0006	G	STP03	-29.5301	138.8172
Murnpeowie 4	MUR4		SATSTP0007	G	STP03	-29.5356	138.8176
Murnpeowie 1	MUR1		SATSTP0003	G	STP03	-29.7548	138.8497
Murnpeowie 2	MUR2		SATSTP0004	E6	STP03	-29.791	138.8324
Radium Ridge	ARK5		SATFLB0018	E6	FLB05	-30.2186	139.3247
Arkaroola 4	ARK4		SATFLB0019	E6	FLB05	-30.2191	139.2334
Arkaroola 3	ARK3		SATFLB0020	E6	FLB05	-30.2552	139.2278
Arkaroola 2	ARK2		SATFLB0017	E6	FLB05	-30.3314	139.3742
Arkaroola 1	ARK1		SATFLB0016	E6	FLB05	-30.343	139.3402
Vulkathunha-Gammon Ranges Ridgetop 2	VGR2		SATFLB0022	E6	FLB05	-30.4056	139.2266
Vulkathunha-Gammon Ranges Ridgetop 1	VGR1		SATFLB0021	E6	FLB05	-30.4117	139.2205
Vulkathunha-Gammon Ranges Plains 1	VGR4		SATSTP0001	E6	STP03	-30.5612	139.4368
Nepabunna	VGR3		SATFLB0023	E6	FLB05	-30.5990	139.0741
Vulkathunha-Gammon Ranges Plains 2	VGR5		SATSTP0002	G	STP03	-30.6559	139.5479
Warraweena Plain	WAR2		SATFLB0024	E6	FLB05	-30.7604	138.5801
Warraweena Mount Hack	WAR1	WAR	SATFLB0006	E6	FLB05	-30.7752	138.7981
Warraweena Range	WAR3		SATFLB0025	E6	FLB05	-30.7846	138.6335
Brachina Upper	BRAU	BRA2	SATFLB0005	E6	FLB06	-31.315	138.5669
Brachina Lower	BRAL	BRA1	SATFLB0004	E6	FLB06	-31.3273	138.5679
Wilpena Pound	WILP	WIL	SATFLB0007	E6	FLB06	-31.5435	138.5952
Dutchman's Stern Upper	DUTU	DUT2	SATFLB0009	E6	FLB04	-32.3101	137.9688
Dutchman's Stern Lower	DUTL	DUT1	SATFLB0008	E6	FLB04	-32.3204	137.9549
Mount Remarkable Upper	REMU	REM2	SATFLB0011	E6	FLB04	-32.7480	138.1368
Mount Remarkable Lower	REML	REM1	SATFLB0010	E6	FLB04	-32.8281	138.0333
Clement's Gap	CLEM		SATEYB0002	E2	EYB02	-33.4886	138.0807
Pedler's Block	PEDB		SATFLB0028	E2	FLB02	-33.5526	138.3938
Spring Gully	SPRG	SPR	SATFLB0013	E2	FLB02	-33.9137	138.6043
Tothill Range	TOTR	TOT	SATFLB0014	E2	FLB02	-34.0047	138.9599
Pengilly Scrub	PENG		SATEYB0001	E2	EYB02	-34.5038	138.7038
Kaiserstuhl	KAIS	KAI	SATFLB0003	E2	FLB01	-34.5765	139.0067
Sandy Creek	SAND	SAN	SATFLB0001	E2	FLB01	-34.6085	138.8619
Hale	HALE	HAL	SATFLB0002	E2	FLB01	-34.6827	138.9090
Black Hill	BLCK	BLA	SATFLB0012	E2	FLB01	-34.8804	138.7088
Montacute	MONT	MON	SATFLB0026	E2	FLB01	-34.8873	138.7876
Mount Beevor	BEEV		SATKAN0004	E1	KAN02	-34.9267	139.0387

Location	Code	Guerin Code	AusPlots Code	Agro-climatic zone	IBRA Subregion	Latitude	Longitude
Horsnell Gully	HORS	HOR	SATFLB0015	D5	FLB01	-34.9330	138.7275
Scott Creek	SCOT		SATFLB0027	E2	FLB01	-35.0827	138.6796
Kyeema	KYEE		SATKAN0002	E1	KAN02	-35.2717	138.6907
Mount Billy	MTBI		SATKAN0003	E1	KAN02	-35.4605	138.6046
Deep Creek	DEEP	DEE	SATKAN0001	E1	KAN02	-35.6078	138.2618

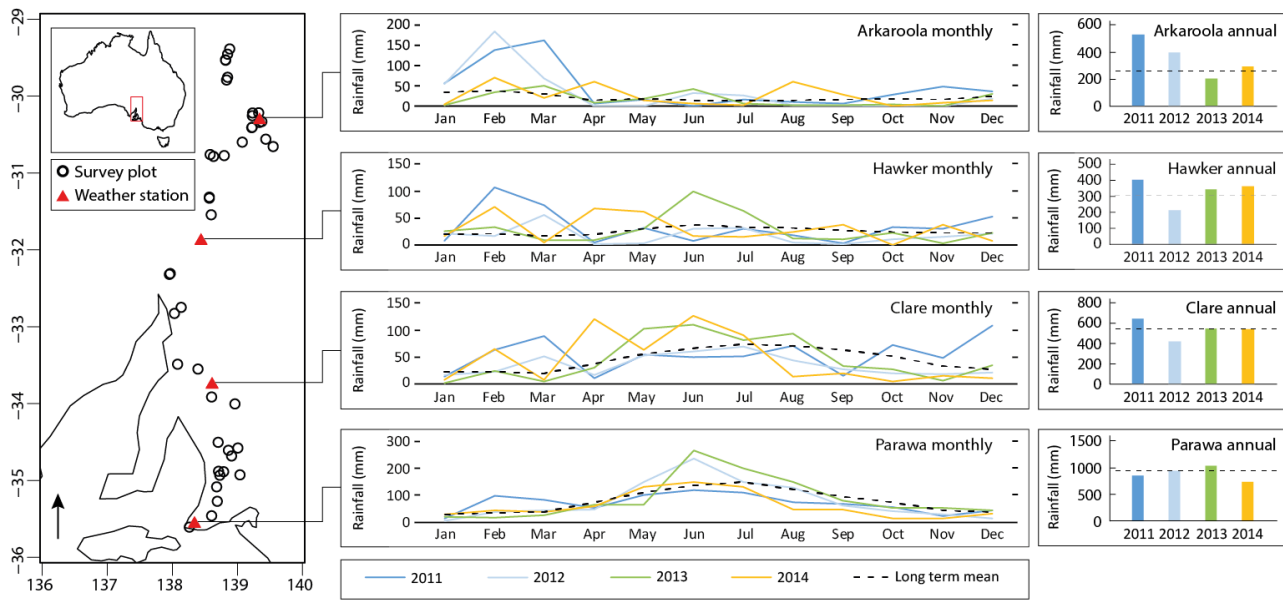


Figure S1: Monthly and annual rainfall data for Bureau of Meteorology weather stations distributed on the TREND for 2011–2014. Dashed line represents long term average of recordings for that station as provided by the Bureau of Meteorology.

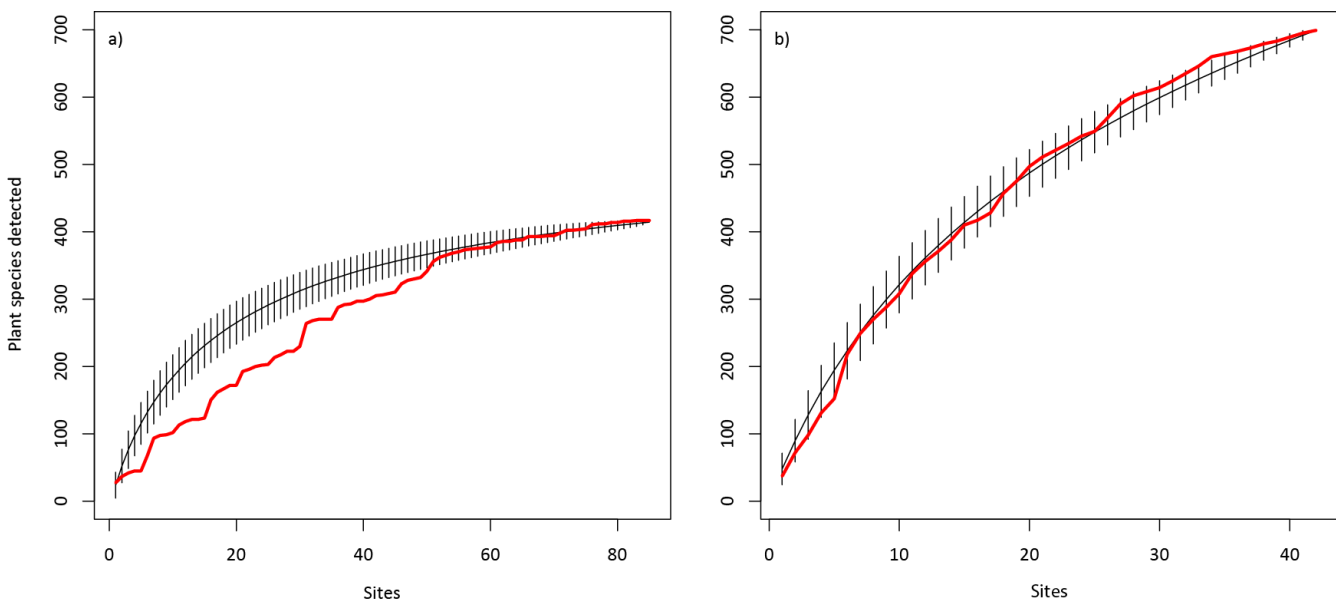


Figure S2. Species accumulation curves for the TREND-Guerin (a) and TREND-AusPlots (b) transects. Bold, red curves show species accumulation from north to south. Black curves show species accumulation from random site order with 95% confidence intervals.

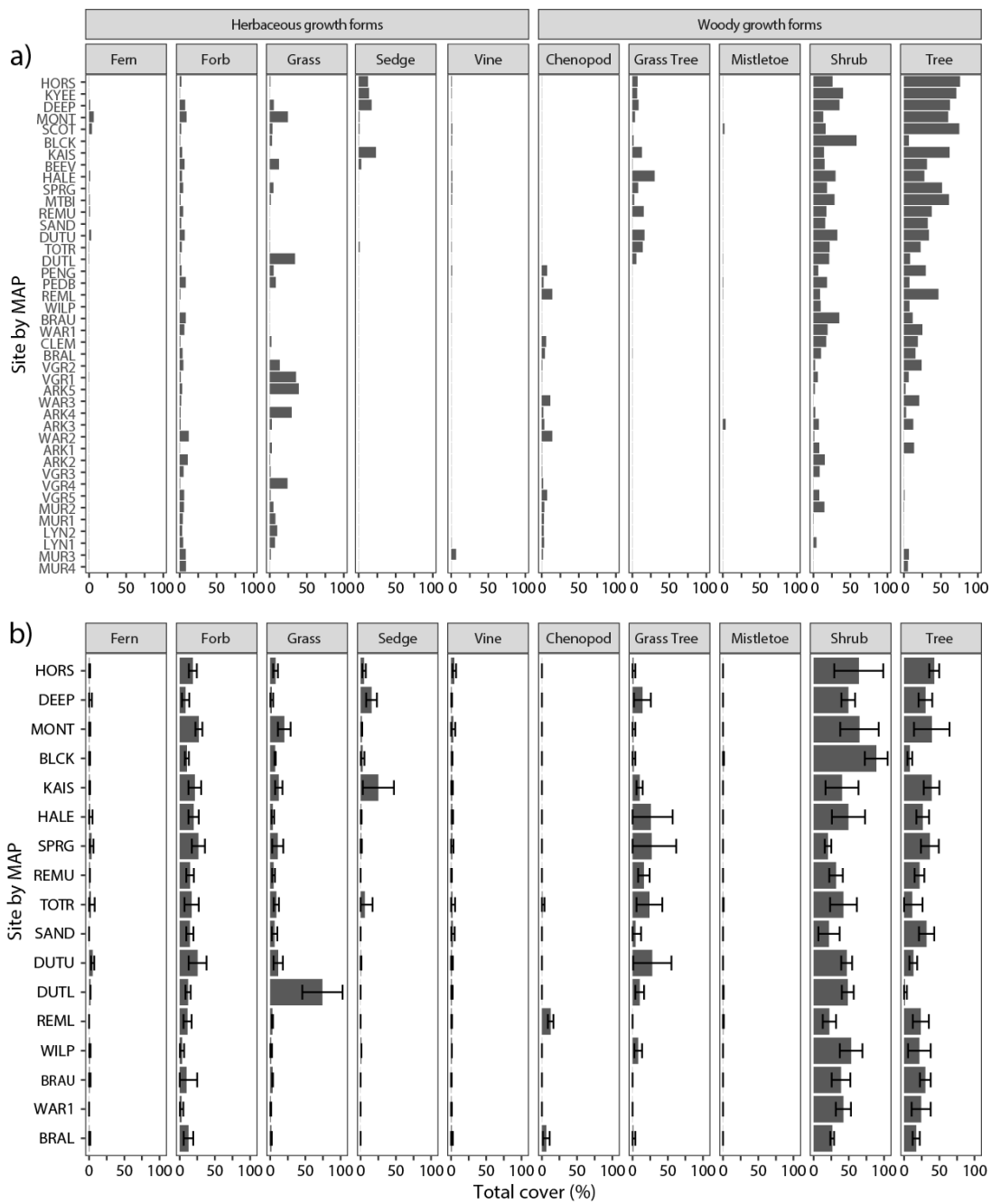


Figure S3. Total cover values by growth form for (a) TREND-AusPlots and (b) TREND-Guerin plots. Error bars for (b) represent 95% confidence intervals across five sites.

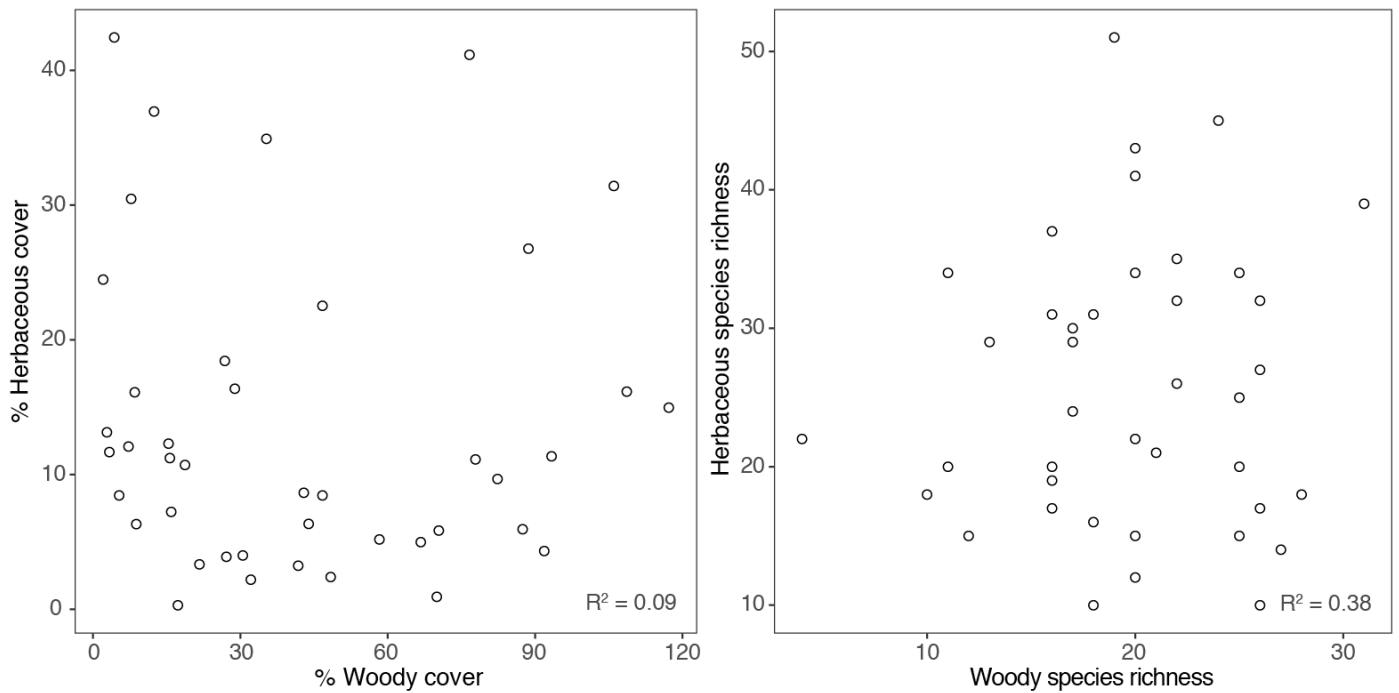


Figure S4. Total woody and herbaceous species cover; and woody and herbaceous species richness for TREND-AusPlots. R^2 values calculated using Poisson regression models.

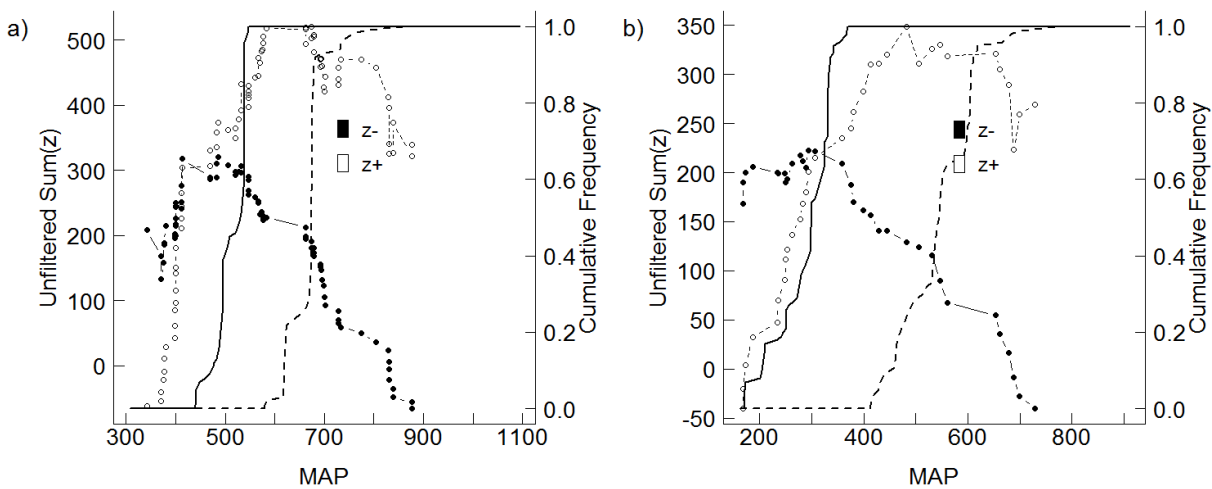


Figure S5. Plant community response from TITAN analysis of TREND-Guerin (a) and TREND-AusPlots (b) data sets, calculated for 100 bootstrap replicates. Unfilled circles signify change points calculated for species which increase with rainfall and filled circles signify change points calculated for species which decrease with rainfall.

Reference

Guerin GR, Biffin E, Jardine DI, Cross HB, Lowe AJ (2014) A spatially predictive baseline for monitoring multivariate species occurrences and phylogenetic shifts in mediterranean southern Australia. *Journal of Vegetation Science* **25**(2), 338–348.