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Drought resistance increases from the individual to the ecosystem level in highly diverse Neotropical rainforest: a meta-analysis of leaf, tree and ecosystem responses to drought

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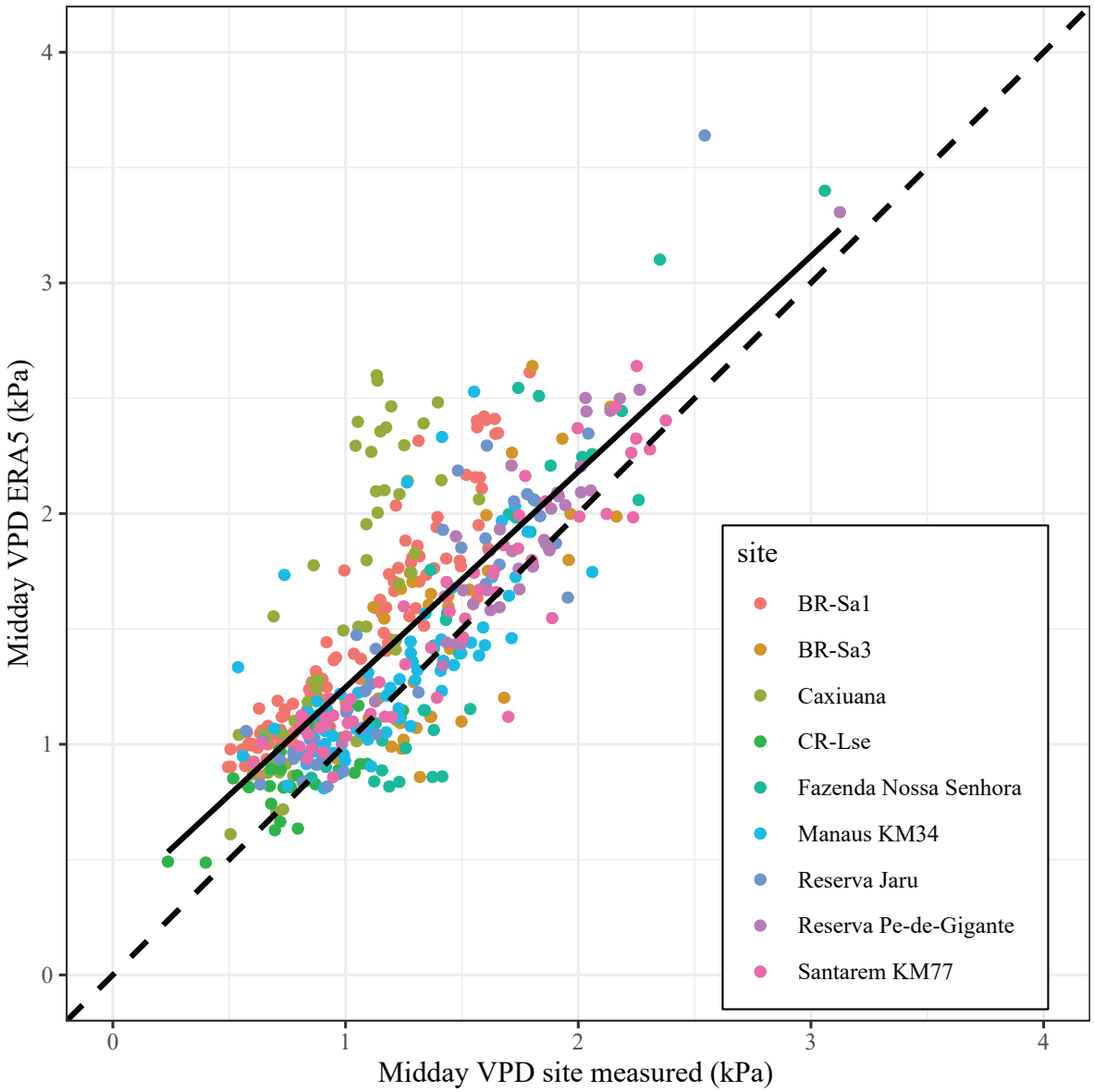

Figure S1: Monthly averaged midday vapor pressure deficit from ECMWF ERA5 compared to measured monthly averaged vapor pressure deficit at 9 flux tower sites. Data from the sites BR-Sa1 and BR-Sa2 was derived from the FLUXNET2015 dataset (https://fluxnet.fluxdata.org/data/fluxnet2015-dataset/). Data from the remaining sites was derived from the LBA Model Intercomparison Project (https://daac.ornl.gov/LBA/guides/CD32_LBA_MIP_Drivers.html).

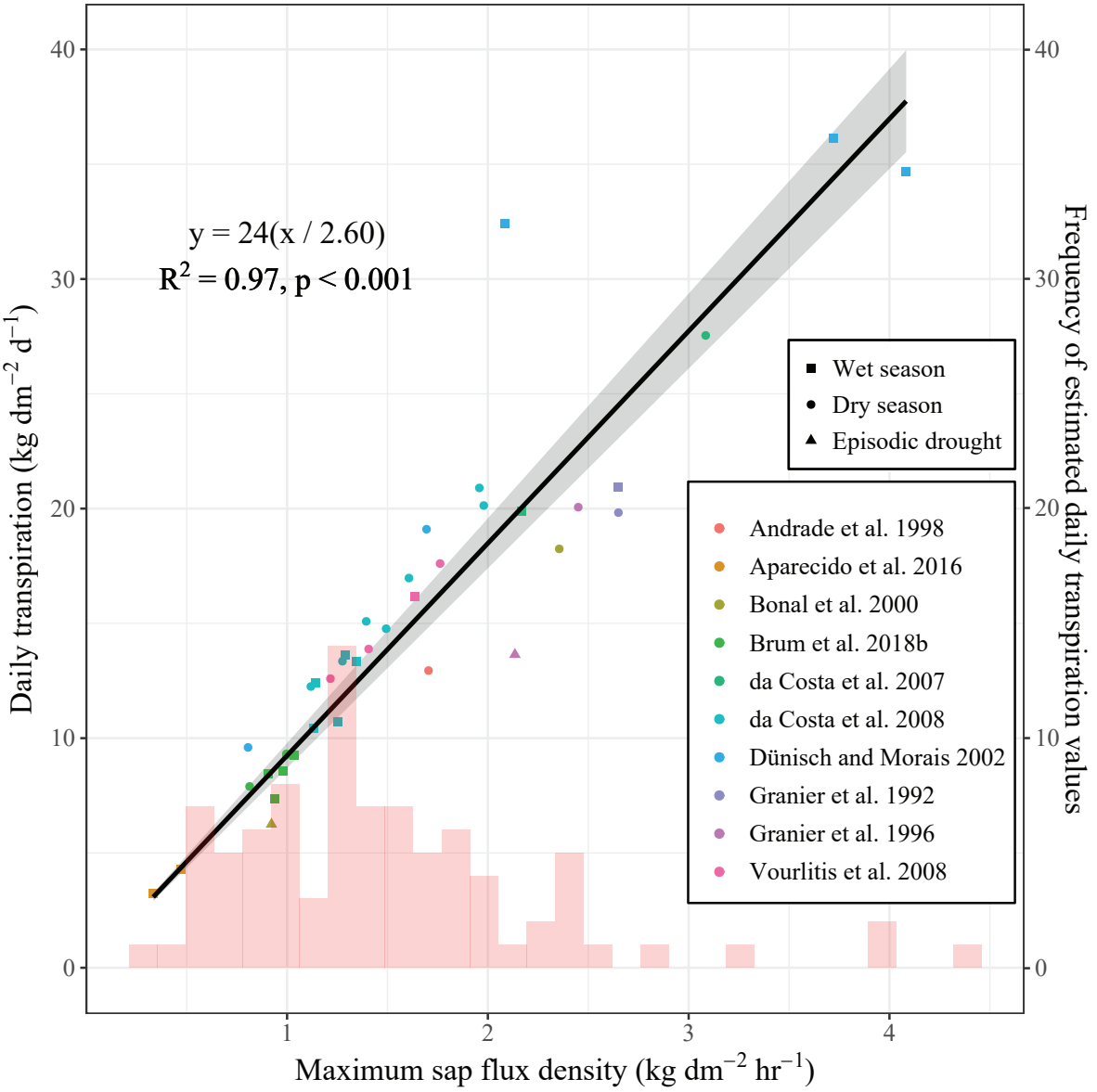

Figure S2: Relationship between sapwood-area specific tree daily transpiration and sapwood-area specific maximum daily sap flux density. The shading depicts the 95% confidence interval. Data from 10 studies included in the database that reported both daily transpiration and maximum daily sap flux density were averaged by month and used to fit a linear regression model. Maximum daily sap flux density was divided by a fitted parameter (2.60) to derive average daily sap flux density and then multiplied by 24 hours to calculate sapwood-area specific daily transpiration. There was no statistically significant difference in the slope of the linear regression line between the wet season, dry season or episodic drought (ANCOVA, $p = 0.09$). The red bars depict the frequency of monthly measurements for which daily transpiration was estimated from the maximum daily sap flux density.

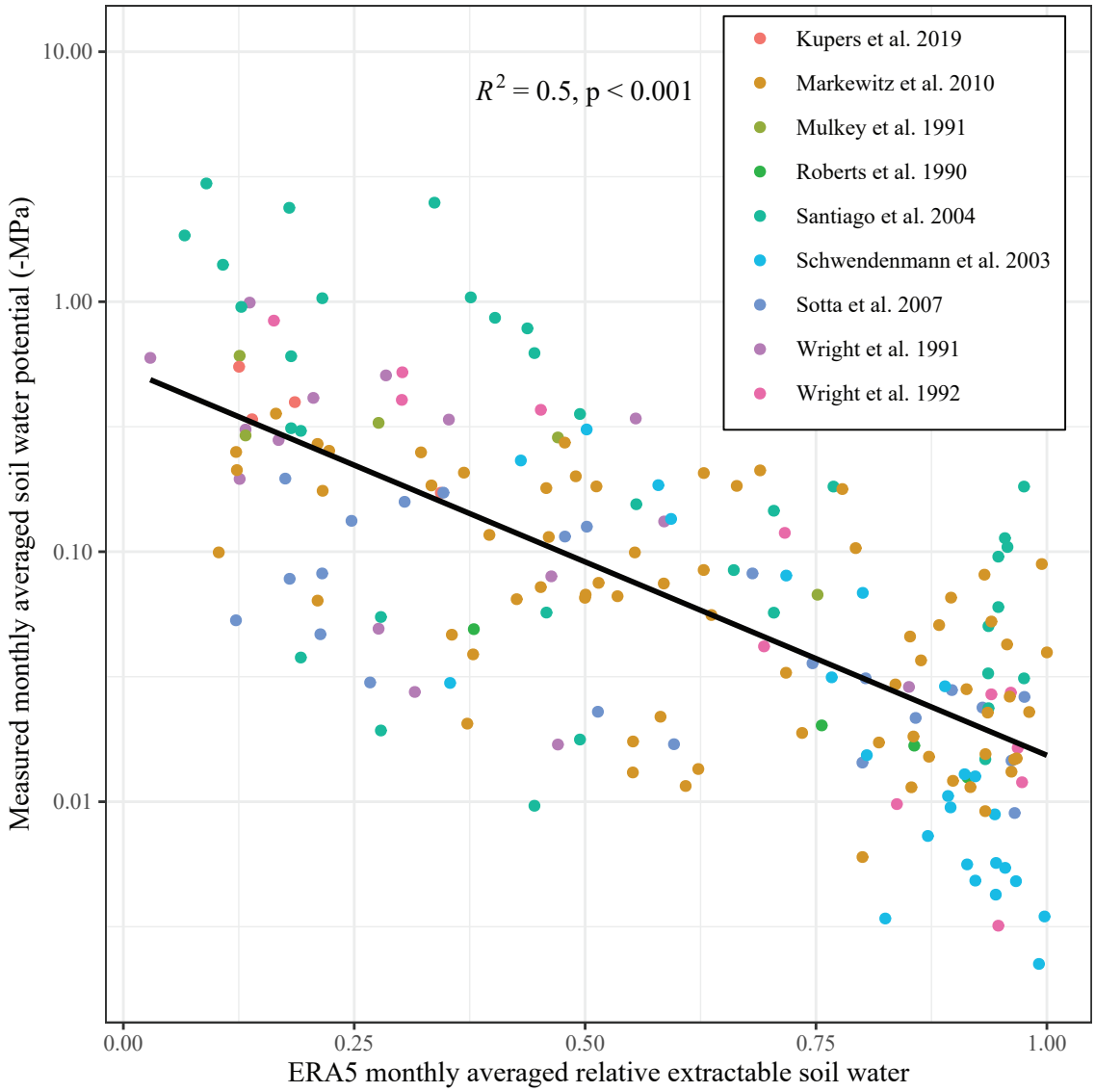

Figure S3: Relationship between relative extractable soil water derived from the monthly averaged ERA5 soil moisture product (ECMWF, 2019) and site measured monthly averaged soil water potential.

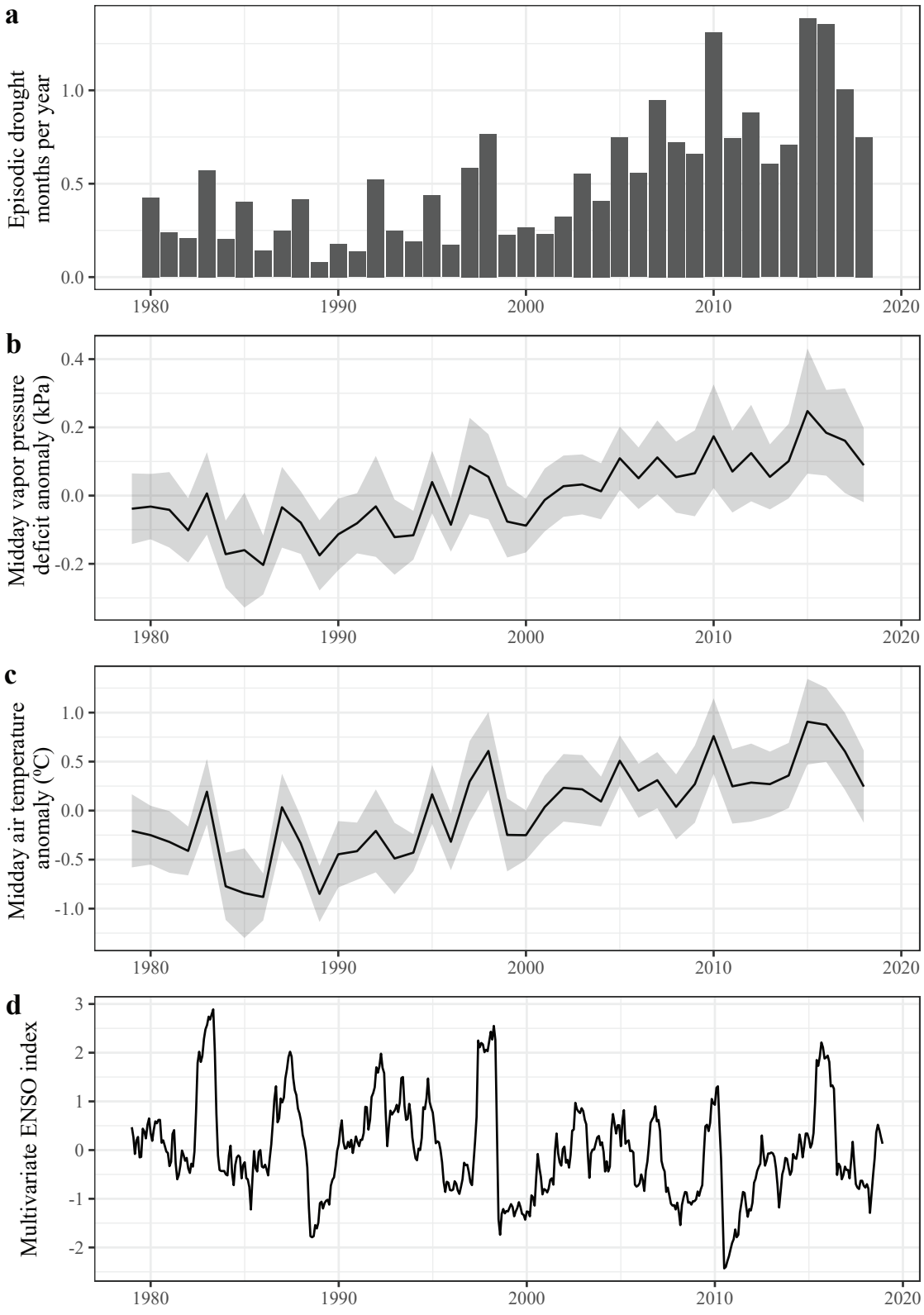

Figure S4: Trends in ERA5 derived episodic drought months (a), midday vapor pressure deficit (b) and air temperature (c) across the study area from 1979 to 2018. The climate data was retrieved for 548 lowland (< 1000 m a.s.l.) locations belonging to the *tropical and subtropical moist broadleaf forest* biome placed in a regular 1° grid covering the study area (10° S ~ 10° N). Positive values of the multivariate ENSO index (d) indicate El Niño conditions that are related to warm and dry years.

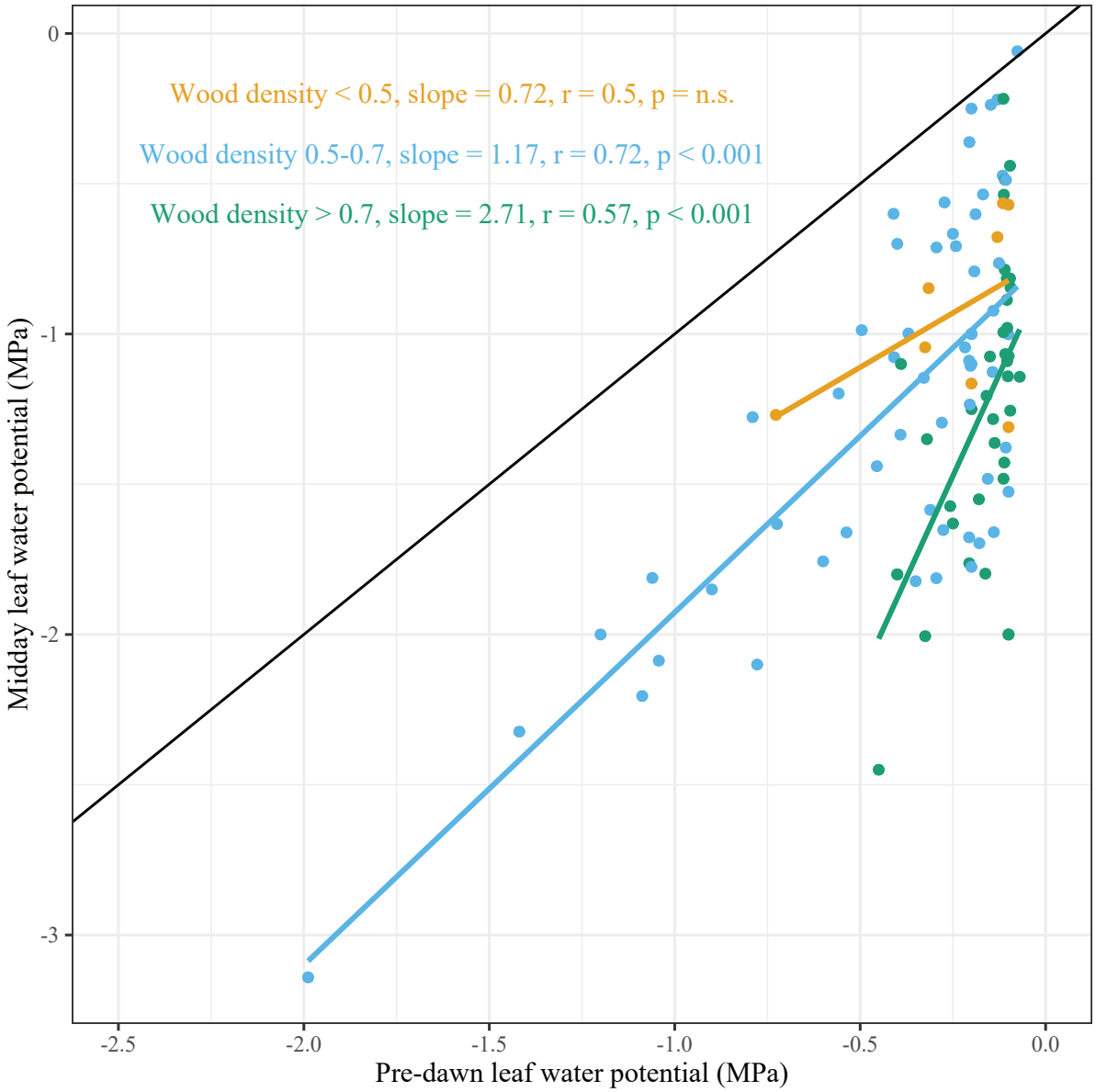

Figure S5: Relationships between pre-dawn leaf water potential and midday leaf water potential across neotropical tree species. The data was averaged by study, site and the date of measurement and grouped into three classes of varying wood density. Following Martinez-Vilalta et al. (2014) low wood density (< 0.5 g cm^{-3}) tree species in our meta-analysis show partly isohydric behaviour as the slope of the relationship between pre-dawn and midday leaf water potential is large than 0 but smaller than 1. Intermediate wood density species show strict anisohydric behaviour (slope ~ 1) and high wood density species (> 0.7 g cm^{-3}) show extreme anisohydric behaviour (slope > 1).

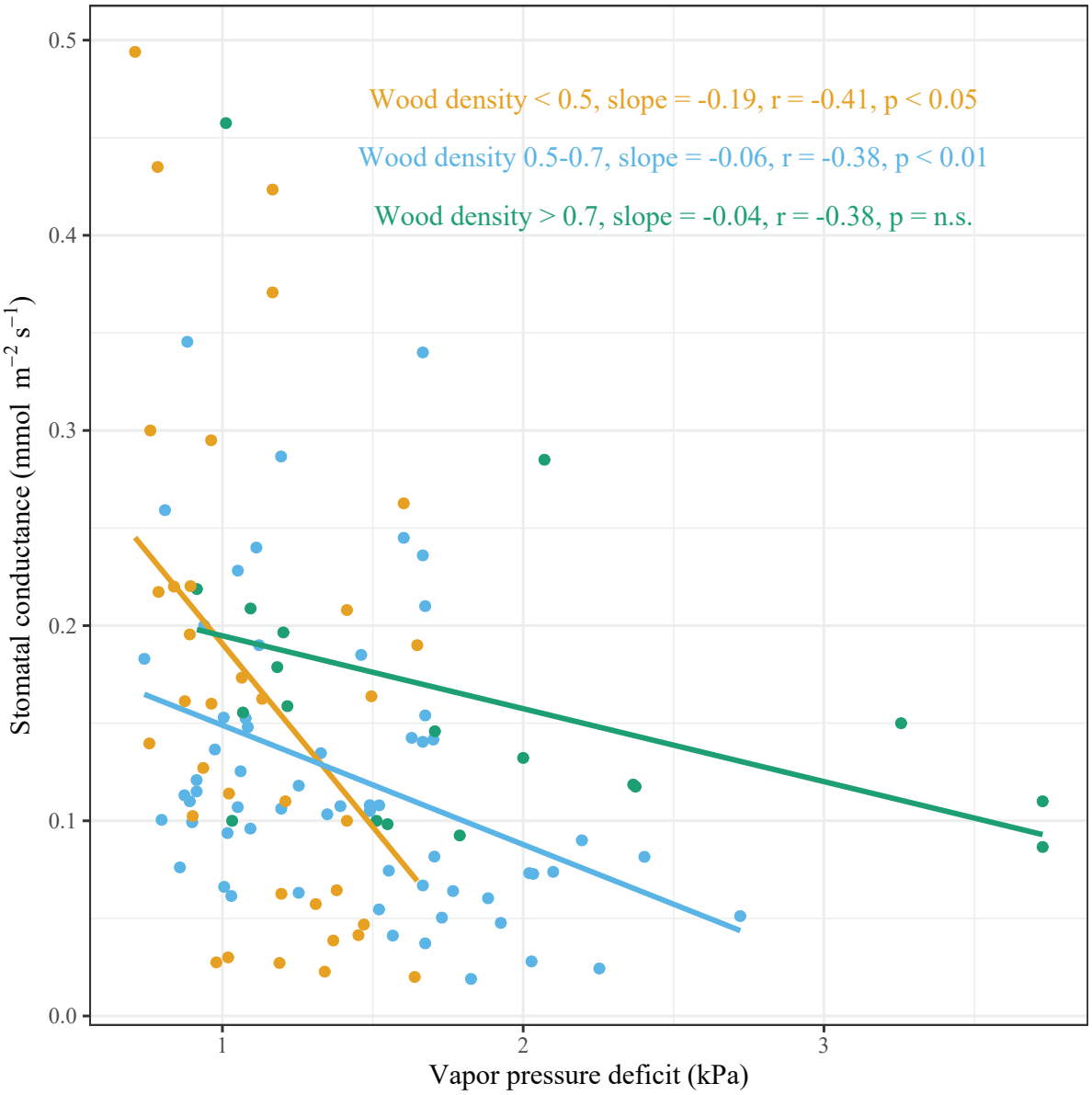

Figure S6: Relationships between stomatal conductance and monthly averaged midday atmospheric vapor pressure deficit retrieved from ERA5 across neotropical tree species. The data was averaged by study, site and the date of measurement and grouped into three classes of varying wood density. Stomatal conductance declines significantly with increasing atmospheric vapor pressure deficit in studies that measured species of low and intermediate wood density (< 0.7 g cm^{-3}) but not in studies that measured species of a high wood density (> 0.7 g cm^{-3}).

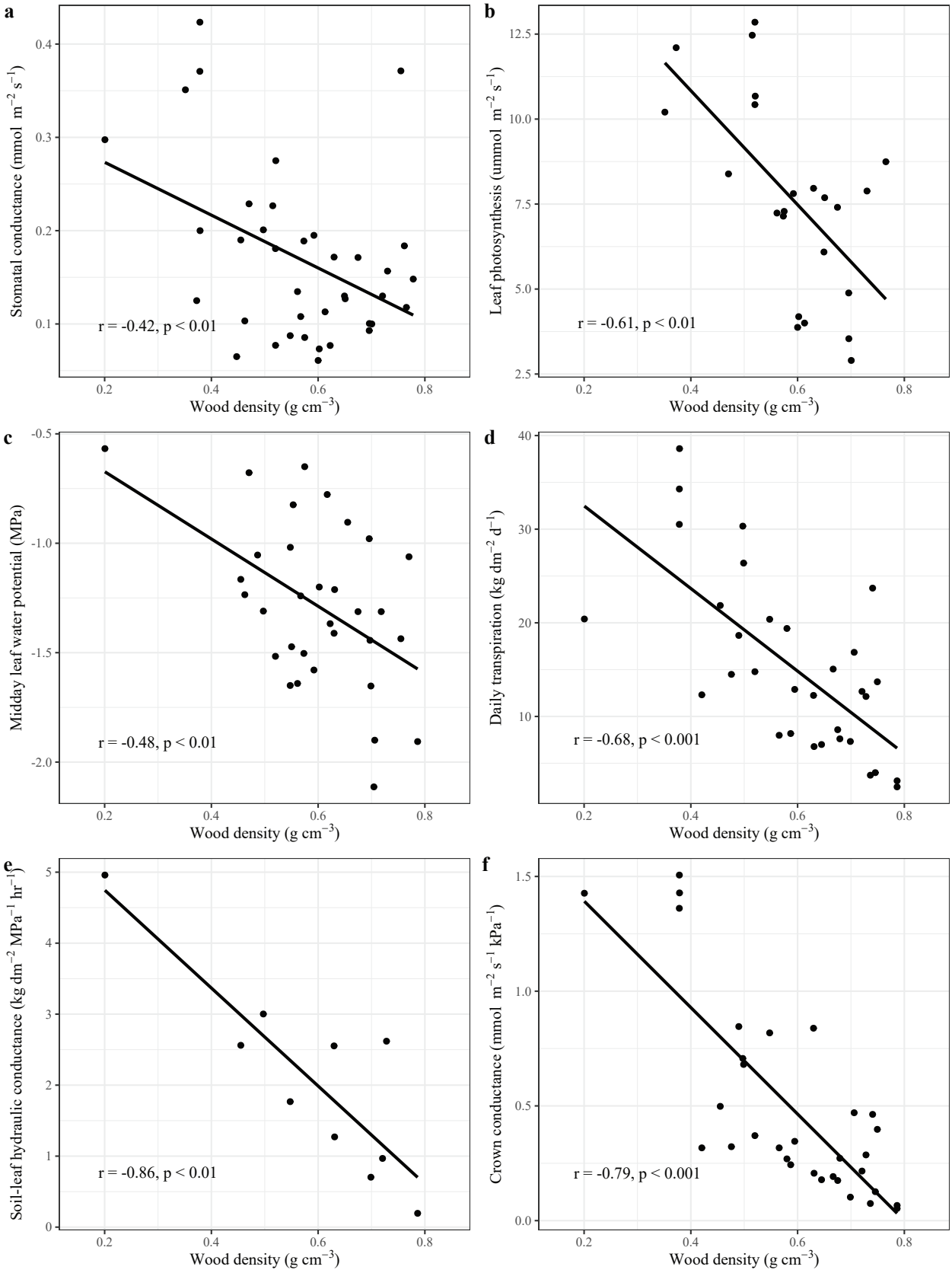

Figure S7: Relationships between study-averaged wood density and study-averaged measures of plant performance. Studies that measured low wood density tree species show high stomatal conductance (a), leaf photosynthesis (b), leaf water potential (c), daily transpiration (d), soil-leaf hydraulic conductance (e) and crown conductance (f) compared to studies that measured high wood density tree species.

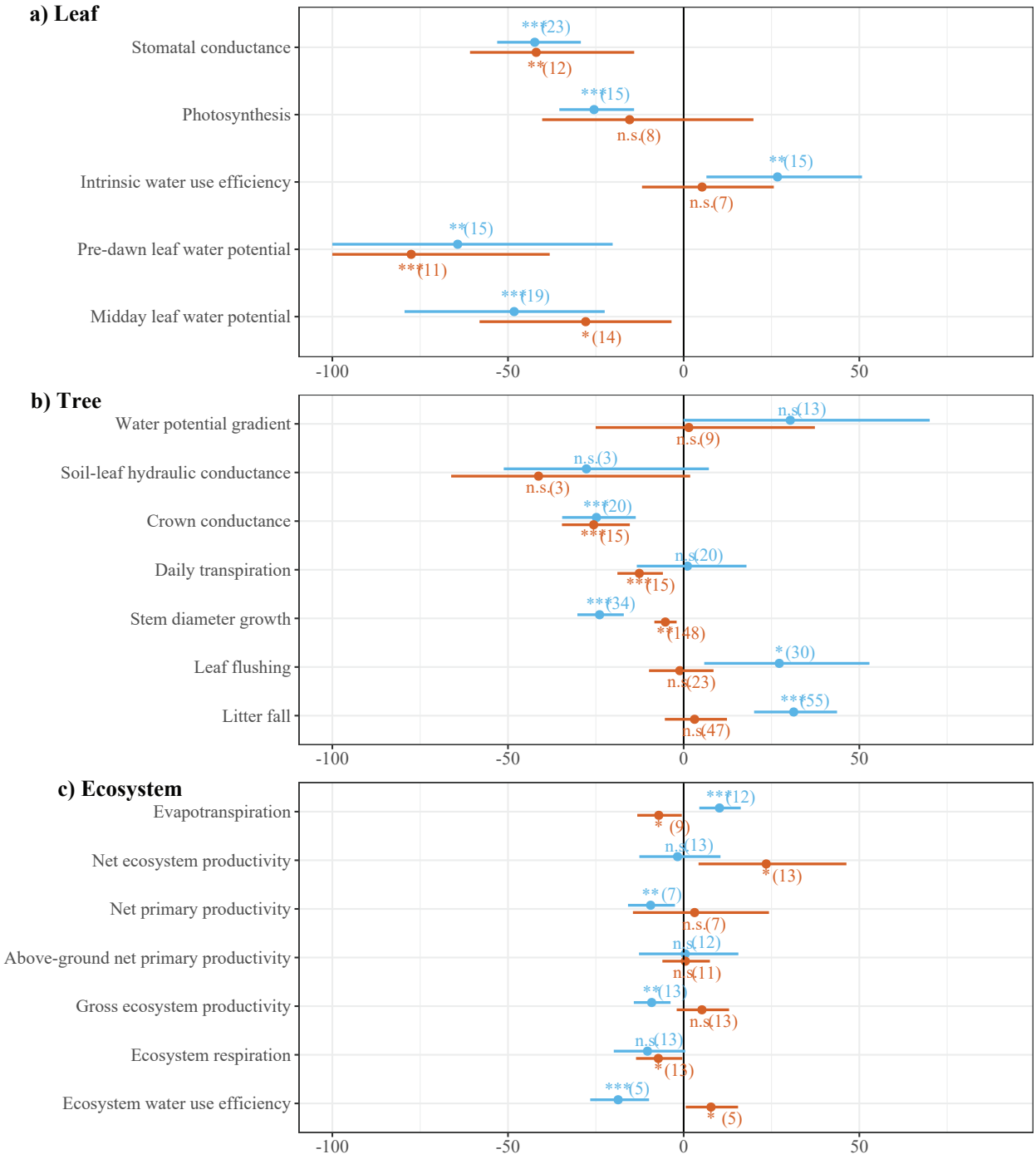

Figure S8: Wide drought definition (15%) meta-analysis results of leaf, tree and ecosystem scale responses to seasonal and episodic drought. The dots are the averages and the horizontal lines represent 95% confidence intervals of percentage change in leaf, tree and ecosystem scale performance. The confidence intervals for pre-dawn leaf water potential were cut off at -100% to prevent the x axis from inflating. Repeated measurements were used, therefore the variance of the response ratio is adjusted for by the correlation coefficient between the repeated measurements (Lajeunesse, 2011). The number of consulted studies or sites is provided in brackets. The significance symbols depict the p-value derived from a Random-effects model (*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$) testing whether the effect size differs significantly from 0.

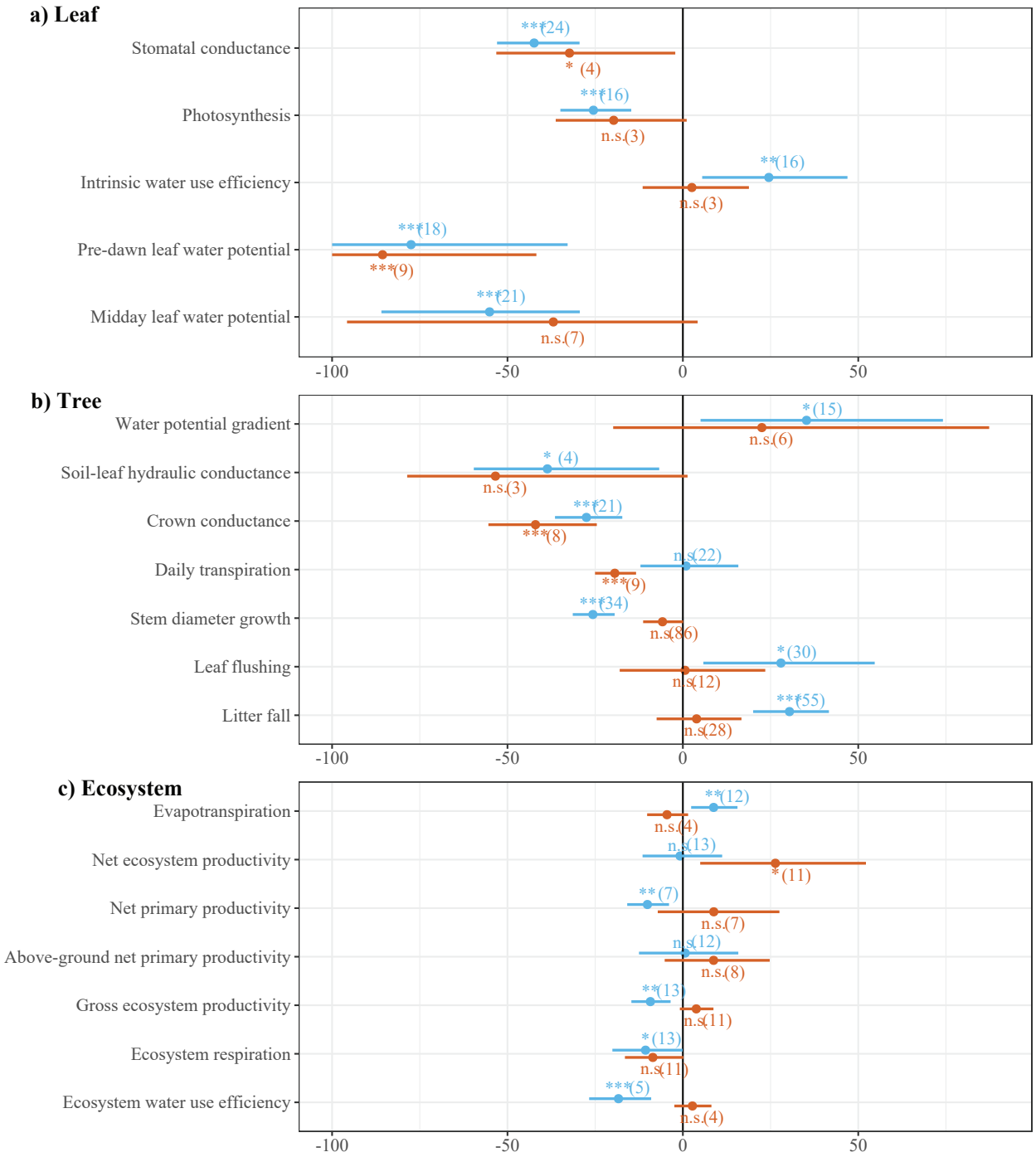

Figure S9: Narrow drought definition (5%) meta-analysis results of leaf, tree and ecosystem scale responses to seasonal and episodic drought. The dots are the averages and the horizontal lines represent 95% confidence intervals of percentage change in leaf, tree and ecosystem scale performance. The confidence intervals for pre-dawn leaf water potential were cut off at -100% to prevent the x axis from inflating. Repeated measurements were used, therefore the variance of the response ratio is adjusted for by the correlation coefficient between the repeated measurements (Lajeunesse, 2011). The number of consulted studies or sites is provided in brackets. The significance symbols depict the p-value derived from a Random-effects model (*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$) testing whether the effect size differs significantly from 0.

Table S1: Database summary statistics. The number of unique sources and sites are provided for each measure included in the meta-analysis. Additionally, the number of wet season, dry season and episodic drought months for which data was available is given. * The total is the unique number of sources, sites and months included in the database and not the sum of the above.

Measure	**Sources** (#)	**Sites** (#)	**Wet season** (# of months)	**Dry season** (# months)	**Episodic drought** (# of months)
Leaf-area specific stomatal conductance	38	14	135	233	67
Leaf-area specific transpiration	38	14	135	233	67
Leaf-area specific photosynthesis	24	12	80	139	60
Intrinsic water use efficiency	22	12	79	123	60
Water use efficiency	22	12	79	123	60
Pre-dawn leaf water potential	28	14	149	258	68
Midday leaf water potential	31	16	169	287	73
Water potential gradient	23	14	120	208	41
Canopy conductance	35	19	415	441	108
Soil-leaf hydraulic conductance	10	6	33	77	16
Total daily transpiration	36	19	423	441	124
Stem diameter growth	24	34	1029	840	115
Leaf flushing	20	22	649	683	58
Litterfall	42	47	1246	1119	139
Evapotranspiration	11	10	216	256	28
Net ecosystem productivity	5	12	267	314	53
Net primary productivity	1	7	96	96	24
Above-ground net primary productivity	5	14	382	270	27
Gross primary productivity	5	12	268	314	53
Ecosystem respiration	5	12	268	315	53
Ecosystem water use efficiency	4	5	159	192	28
Total*	**145**	**232**	**2917**	**2968**	**497**

Table S2: Leaf, tree and ecosystem scale responses for each study and site. References to the sources are included in the supplementary database.

Source	Site	Leaf scale responses								Tree scale responses							Ecosystem scale responses									
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Albert et al. 2018	Tapajos	x	x	x	x	x	x																			
Aleixo et al. 2019	Ducke													x	x											
Alencar 1990	Maus_K34													x												
Alencar et al. 1979	Ducke													x												
Alexandre 1991	Paracou	x	x					x																		
Allen & Pearcy 2000	BCI	x	x	x	x	x	x	x	x																	
Álvarez-Cansino et al. 2015	Gigante									x		x														
Andrade et al. 1998	PNM	x	x							x		x														
Aparecido et al. 2016	SoltisCenter									x		x														
Asner et al. 2004	Tapajoskm67							x																		
Barbosa & Fearnside et al. 1996	Mucajai														x											
Barlow et al. 2007	Jari														x											
Becker et al. 1988	BCI						x																			
Berenguer et al. 2018	Tapajos												x													
Bigelow 2001	LaSelva	x	x																							
Bonal et al. 2000	Paracou	x	x	x	x	x	x	x	x	x	x	x														
Boubli & Couto-Santos 2007	PicodeNebli													x												

Table S2: Continued

Source	Site	Leaf scale responses						Tree scale responses							Ecosystem scale responses										
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Brando et al. 2006	Tapajos						x						x	x					x			
Bretfeld et al. 2018	AguaSalud						x	x	x	x	x	x										
Brienen et al. 2015	Various sites												x									
Brum et al. 2018a	Tapajos							x														
Brum et al. 2018b	Agropalma									x		x										
Camargo and Marenco 2011	Ducke	x	x	x	x	x	x	x	x				x									
Carmago 2018	Maus_K34												x									
Chave et al. 2008	Nouragues														x							
Clark et al. 2010	LaSelva												x									
Clark et al. 2018	LaSelva												x									
Craven et al. 2011	Soberania	x	x	x	x	x																
da Costa et al. 2007	Caxcontrol									x		x										
da Costa et al. 2008	Caxcontrol									x		x				x						
da Costa et al. 2017	Caxcontrol									x		x										
da Rocha et al. 2004	Tapajoskm87															x						
da Silva et al. 2002	Maus_K34												x									
da Silva et al. 2018	Uruara														x							

Table S2: Continued

Source	Site	Leaf scale responses										Tree scale responses				Ecosystem scale responses									
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
da Silva Santos et al. 2015	CampusINPA									x		x										
de Jesus et al. 2010	Maus_K34	x	x	x	x	x																
de Moura Guerreiro et al. 2018	Tapajoskm67														x							
de Oliveira and de Carvalho 2008	UFRA						x	x	x													
de Oliveira and de Carvalho 2010	Igarapé-Açu	x	x	x	x	x																
De Weirdt et al. 2012	BCI														x							
De Weirdt et al. 2012	Paracou														x							
De Weirdt et al. 2012	Tapajoskm67														x							
del Aguila-Pasquel et al. 2014	ALP-01												x		x				x			
del Aguila-Pasquel et al. 2014	ALP-02												x		x				x			
Detto et al. 2018	BCI														x							
Dias 2009	Maus_K34	x	x	x	x	x		x														
Domingues et al. 2014	Tapajos	x	x	x	x	x	x	x	x													
dos Santos Magalhães 2010	Maus_K34	x	x	x	x	x																
Doughty and Goulden et al. 2008	Tapajoskm87													x								
Doughty et al. 2017	Caxcontrol												x	x	x		x	x	x	x	x	
Doughty et al. 2017	Caxterrapreta												x	x	x		x	x	x	x	x	

Table S2: Continued

Source	Site	Leaf scale responses						Tree scale responses							Ecosystem scale responses									
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency		
Doughty et al. 2017	Caxtower												x	x	x		x	x	x	x	x			
Doughty et al. 2017	Keniadeep												x	x	x		x	x	x	x	x			
Doughty et al. 2017	Tambopata5												x	x	x		x	x	x	x	x			
Doughty et al. 2017	Tambopata6												x	x	x		x	x	x	x	x			
Doughty et al. 2017	Tanguro5control												x	x	x		x	x	x	x	x			
Doughty et al. 2017	Tanguro6burn												x	x	x		x	x	x	x	x			
Dünisch and Morais 2002	EMBRAPA									x		x												
Dünisch et al. 2003	RioBranco												x											
Fetcher 1979	BCI	x		x			x		x															
Figueira et al. 2008	Tapajoskm87														x									
Filho 2018	Maus_K34	x		x			x		x															
Fisher et al. 2006	Caxcontrol	x		x			x		x	x		x												
Fisher et al. 2007	Caxcontrol									x		x												
FLUXNET_BR_Sa1	Tapajoskm67															x	x			x	x	x		
FLUXNET_BR_Sa3	Tapajoskm87															x	x			x	x	x		
FLUXNET_GF_Guy	Paracou															x	x			x	x	x		
Fontes et al. 2018	Maus_K34						x		x	x		x												

Table S2: Continued

Source	Site	Leaf scale responses								Tree scale responses								Ecosystem scale responses								
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Fortini et al. 2003	FCAP	x	x	x	x	x	x	x	x													
Gimenez et al. 2019	Maus_K34	x	x				x	x	x	x	x	x										
Gimenez et al. 2019	Tapajos									x		x										
Goulden et al. 2004	Tapajoskm87												x		x							
Granier et al. 1992	Paracou	x	x				x	x	x	x	x	x										
Granier et al. 1996	Paracou									x		x										
Grogan & Schulze 2012	Marajoara												x									
Haugaasen and Peres 2005	RioPurus													x	x							
Hayashi et al. 2012	CapitãoPoço														x							
Hofhansl et al. 2014	LaGamba_pra												x	x	x				x			
Hofhansl et al. 2014	LaGamba_pri												x	x	x				x			
Hofhansl et al. 2014	LaGamba_sra												x	x	x				x			
Hogan et al. 1995	PNM	x	x	x	x	x																
Hogan et al. 2019	Luquillo												x									
Huc et al. 1989	Paracou	x	x	x	x	x																
Huc et al. 1994	Paracou	x	x	x	x	x	x	x	x													
Kunert et al. 2010	Sardinilla									x		x		x	x							

Table S2: Continued

Source	Site	Leaf scale responses						Tree scale responses							Ecosystem scale responses									
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Kunert et al. 2017	Maus_K34									x		x												
Kupers et al. 2019	BCI																							
Leopoldo et al. 1994	Ducke															x								
Loescher et al. 2003	LaSelva																							
Lopes et al. 2016	ATTO													x										
Luizao et al. 1989	CUR-1														x									
Machado and Tyree 1994	BCI	x	x				x	x	x	x	x	x												
Malhado et al. 2009	Tapajoskm67													x	x									
Malhi et al. 2002	Maus_C14																x							
Maréchaux et al. 2018	Nouragues						x	x	x	x	x	x												
Marenco et al. 2014	Maus_K34	x	x	x	x	x																		
Markewitz et al. 2010	Tapajos																							
Martins et al. 2018	PlatôMiltônia														x									
Meinzer et al. 1993	PNM	x	x							x		x												
Meinzer et al. 1995	BCI	x	x				x	x	x	x	x	x												
Meinzer et al. 1997	PNM		x	x							x		x											

Table S2: Continued

Source	Site	Leaf scale responses						Tree scale responses									Ecosystem scale responses								
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Meinzer et al. 1999	BCI									x		x			x							
Meinzer et al. 2004	PNM									x		x										
Meinzer et al. 2008a and 2008b	PNM									x		x										
Mendes and Marenco 2010	PBDFF	x	x	x	x	x																
Moore et al. 2018	SoltisCenter									x		x										
Mulkey et al. 1991	BCI	x	x																			
Nebel et al. 2001	RioUcayali														x							
Nepstad & Mouthino 2013	TapajosTFE												x		x							
Nepstad et al. 2002	Tapajos			x			x															
Oberbauer et al. 1987	LaSelva	x	x				x	x	x													
Park et al. 2019	BCI													x								
Peixoto et al. 2018	Nova Xavanti														x							
Pereira et al. 2016	Balbi														x							
Phillips et al. 2001	BCI	x	x				x	x	x	x	x	x										
Puig et al. 1990	Paracou														x							
Raich and Valverde-Barrantes 2017	LaSelva														x							
Rice et al. 2004	Tapajoskm67												x		x							

Table S2: Continued

Source	Site	Leaf scale responses						Tree scale responses								Ecosystem scale responses									
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Rifai et al. 2018	JEN-11												x									
Rifai et al. 2018	Keniadeep												x									
Rifai et al. 2018	STO-7												x									
Rifai et al. 2018	Tambopata5												x									
Roberts et al. 1990	Ducke	x	x																			
Rojas 2013	AGP-01												x		x							
Rojas 2013	AGP-02												x		x							
Rojas 2013	ZAR-01												x		x							
Rojas 2013	ZAR-02												x		x							
Rojas 2013	ZAR-03												x		x							
Rojas 2013	ZAR-04														x							
Rollenbeck and Anhuf 2007	RioSurumoni									x		x										
Rowland et al. 2018	Caxcontrol														x							
Rundel and Becker 1987	BCI						x	x	x					x	x							
Sanches et al. 2008	Sinop														x							
Santiago et al. 2004	PNM						x	x	x													
Santiago et al. 2004	PNSL						x	x	x													

Table S2: Continued

Source	Site	Leaf scale responses								Tree scale responses								Ecosystem scale responses								
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Santiago et al. 2004	SantaRita																					
Santiago et al. 2004	Soberania																					
Santos et al. 2018	Maus_K34	x	x	x	x	x	x	x	x													
Sayer et al. 2010	Gigante														x							
Schöngart et al. 2002	IlhadaMarchantaria												x	x	x				x			
Schöngart et al. 2010	Mamiraua														x							
Schwendenmann et al. 2003	LaSelva																					
Selva et al. 2007	RioJurue														x							
Sendall et al. 2009	Sinop	x	x	x	x	x		x														
Shuttleworth et al. 1988	Ducke															x						
Silva 2013	Virua														x							
Sicore et al. 2019	AguaSalud									x		x	x									
Sizer et al. 2000	BDFFP														x							
Smith et al. 1998	CuruaU														x							
Smith et al. 2019	Tapajoskm67													x	x							
Smith-Martin et al. 2019	PMS	x	x	x	x	x	x	x	x													
Sommer et al. 2002	Igarapé-Açu															x						

Table S2: Continued

Source	Site	Leaf scale responses							Tree scale responses							Ecosystem scale responses									
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency
Sotta et al. 2007	Caxcontrol												x									
Stahl et al. 2010	Paracou																					
Stahl et al. 2013	Paracou	x	x	x	x	x	x					x										
Tobin et al. 1999	BCI						x	x	x													
Tsuchiya 2014	NovoAripua									x		x	x									
Vieira et al. 2004	Maus_K34												x									
Vieira et al. 2004	UFAC												x									
Vourlitis et al. 2008	Sinop	x	x					x		x		x				x						
Wagner et al. 2013	Paracou												x		x							
Wolfe et al. 2016	PNM	x	x					x						x	x							
Wright and Cornejo 1990	BCI							x														
Wright and van Schaik 1994	BCI													x								
Wright et al. 1991	BCI																					
Wright et al. 1992	BCI													x								
Wu et al. 2016	ATTO													x								
Wu et al. 2016	Caxtower																x			x	x	
Wu et al. 2016	Maus_K34													x	x	x	x			x	x	

Table S2: Continued

Source	Site	Leaf scale responses							Tree scale responses								Ecosystem scale responses								
		Leaf-area specific stomatal conductance	Leaf-area specific transpiration	Leaf-area specific photosynthesis	Intrinsic water use efficiency	Water use efficiency	Pre-dawn leaf water potential	Midday leaf water potential	Water potential gradient	Canopy conductance	Soil-leaf hydraulic conductance	Total daily transpiration	Stem diameter growth	Leaf flushing	Litterfall	Evapotranspiration	Net ecosystem productivity	Net primary productivity	Above-ground net primary productivity	Gross primary productivity	Ecosystem respiration	Ecosystem water use efficiency		
Wu et al. 2016	ReservaJaru															x	x			x	x	x		
Wu et al. 2016	Tapajoskm67													x										
Zotz and Winter 1993	BCI			x																				
Zotz and Winter 1994	BCI	x	x	x	x	x		x																
Zotz et al. 1995	PNM	x	x	x	x	x																		
Wu et al. 2016	ReservaJaru															x	x			x	x	x		
Wu et al. 2016	Tapajoskm67													x										
Zotz and Winter 1993	BCI			x																				
Zotz and Winter 1994	BCI	x	x	x	x	x		x																
Zotz et al. 1995	PNM	x	x	x	x	x																		

Table 3 Pearson correlation between ERA5 derived annual average midday air temperature, midday vapor pressure deficit and number of episodic drought months per year. On the left side, the correlation for all data is given and the trend over time, while on the right (in bold) the Pearson correlation of the linearly detrended anomalies of the data are provided. All correlations were highly significant ($p < 0.001$)

	Year	Midday air temperature	Midday vapor pressure deficit	Number of episodic drought months per year
Midday air temperature	0.74		**0.91**	**0.67**
Midday vapor pressure deficit	0.76	0.96		**0.80**
Number of episodic drought months per year	0.62	0.82	0.88	

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