Plant Thermoregulation: Energetics, Trait-Environment Interactions, and Carbon Economics

DOI: 10.1016/j.tree.2015.09.006
Trends in Ecology and Evolution, 2015, 30, 714-724.

#	Paper	IF	Citations
135	A Biogeoscience Approach to Ecosystems. 9-46		5
134	Characterizing the drivers of seedling leaf gas exchange responses to warming and altered precipitation: indirect and direct effects. **2016**, 8,		6
133	The energetic and carbon economic origins of leaf thermoregulation. **2016**, 2, 16129		97
132	Glacial Amazonia at the canopy-scale: Using a biophysical model to understand forest robustness. **2017**, 171, 38-47		4
131	Biophysical homoeostasis of leaf temperature: A neglected process for vegetation and land-surface modelling. **2017**, 26, 998-1007		32
130	Photosynthetic responses to altitude: an explanation based on optimality principles. *New Phytologist*, **2017**, 213, 976-982	9.8	45
129	Trait variation and integration across scales: is the leaf economic spectrum present at local scales?. **2017**, 40, 685-697		110
128	The enigma of terrestrial primary productivity: measurements, models, scales and the diversity□productivity relationship. **2017**, 40, 239-252		40
127	Precipitation, not air temperature, drives functional responses of trees in semi-arid ecosystems. *Journal of Ecology*, **2017**, 105, 163-175	6	64
126	Plant□nsect Interactions in a Changing World. **2017**, 81, 289-332		21
125	When leaves go over the thermal edge. **2018**, 41, 1247-1250		12
124	Differences in leaf thermoregulation and water use strategies between three co-occurring Atlantic forest tree species. **2018**, 41, 1618-1631		42
123	Evaluating the kinetic basis of plant growth from organs to ecosystems. *New Phytologist*, **2018**, 219, 37-48	9.8	13
122	Plasticity of photosynthetic heat tolerance in plants adapted to thermally contrasting biomes. **2018** , 41, 1251-1262		47
121	Drivers of terrestrial plant production across broad geographical gradients. **2018**, 27, 166-174		42
120	Reconstructing Paleoclimate and Paleoecology Using Fossil Leaves. **2018**, 289-317		16
119	Distributions of ectomycorrhizal and foliar endophytic fungal communities associated with Pinus ponderosa along a spatially constrained elevation gradient. **2018**, 105, 687-699		18

118	Assessing the interplay between canopy energy balance and photosynthesis with cellulose Δ: large-scale patterns and independent ground-truthing. **2018**, 187, 995-1007		10
117	A model for leaf temperature decoupling from air temperature. **2018**, 262, 354-360		22
116	Promises and challenges in insectβplant interactions. **2018**, 166, 319-343		42
115	Advances in Monitoring and Modelling Climate at Ecologically Relevant Scales. **2018**, 101-161		78
114	The Arabidopsis THADA homologue modulates TOR activity and cold acclimation. **2019**, 21 Suppl 1, 77-83		17
113	Thermal imaging as a noninvasive technique for analyzing circadian rhythms in plants. *New Phytologist*, **2019**, 224, 1685-1696	9.8	8
112	Trait-based plant ecology a flawed tool in climate studies? The leaf traits of wild olive that pattern with climate are not those routinely measured. **2019**, 14, e0219908		4
111	Thermal imaging in plant and ecosystem ecology: applications and challenges. **2019**, 10, e02768		35
110	Responses of Aspen Leaves to Heatflecks: Both Damaging and Non-Damaging Rapid Temperature Excursions Reduce Photosynthesis. **2019**, 8,		14
109	Mesophyll thickness and sclerophylly among Calotropis procera morphotypes reveal water-saved adaptation to environments. **2019**, 11, 795-810		9
108	When a cuvette is not a canopy: A caution about measuring leaf temperature during gas exchange measurements. **2019**, 279, 107737		6
107	Sensitivity of a leaf gas-exchange model for estimating paleoatmospheric CO₂ concentration. **2019**, 15, 795-809		9
106	No Evidence for a Large Atmospheric CO2 Spike Across the Cretaceous-Paleogene Boundary. **2019**, 46, 3462-3472		13
105	In a globally warming world, insects act locally to manipulate their own microclimate. **2019**, 116, 5220-5222		4
104	Moss regulates soil evaporation leading to decoupling of soil and near-surface air temperatures. **2019**, 19, 2903-2912		0
103	Preface. **2019**, xiii-xiv		
102	Terrestrial Biosphere Models. **2019**, 1-24		2
101	Quantitative Description of Ecosystems. **2019**, 25-39		

100	Fundamentals of Energy and Mass Transfer. **2019**, 40-52	
99	Mathematical Formulation of Biological Flux Rates. **2019**, 53-63	
98	Soil Temperature. **2019**, 64-79	0
97	Turbulent Fluxes and Scalar Profiles in the Surface Layer. **2019**, 80-100	1
96	Surface Energy Fluxes. **2019**, 101-114	0
95	Soil Moisture. **2019**, 115-133	
94	Hydrologic Scaling and Spatial Heterogeneity. **2019**, 134-151	
93	Leaf Temperature and Energy Fluxes. **2019**, 152-166	
92	Leaf Photosynthesis. **2019**, 167-188	0
91	Stomatal Conductance. **2019**, 189-212	1
90	Plant Hydraulics. **2019**, 213-227	2
89	Radiative Transfer. **2019**, 228-259	0
88	Plant Canopies. **2019**, 260-279	
87	Scalar Canopy Profiles. **2019**, 280-300	
86	Biogeochemical Models. **2019**, 301-321	
85	Soil Biogeochemistry. **2019**, 322-343	
84	Vegetation Demography. **2019**, 344-364	
83	Canopy Chemistry. **2019**, 365-380	

82	Appendices. **2019**, 381-390		
81	References. **2019**, 391-428		1
80	Index. **2019**, 429-438		
79	Biomimetic Groundwork for Thermal Exchange Structures Inspired by Plant Leaf Design. **2019**, 4,		7
78	Unimodal relationship between three-dimensional soil heterogeneity and plant species diversity in experimental mesocosms. **2019**, 436, 397-411		13
77	Advances in Microclimate Ecology Arising from Remote Sensing. *Trends in Ecology and Evolution*, **2019**, 34, 327-341	10.9	106
76	Homoeostatic maintenance of nonstructural carbohydrates during the 2015-2016 El Niño drought across a tropical forest precipitation gradient. **2019**, 42, 1705-1714		16
75	The response of stomatal conductance to seasonal drought in tropical forests. **2020**, 26, 823-839		26
74	Using Leaf Temperature to Improve Simulation of Heat and Drought Stresses in a Biophysical Model. **2019**, 9,		2
73	A framework for finding inspiration in nature: Biomimetic energy efficient building design. **2020**, 225, 110296		8
72	Elevated Temperatures Impose Transcriptional Constraints and Elicit Intraspecific Differences Between Coffee Genotypes. **2020**, 11, 1113		3
71	Low predictability of energy balance traits and leaf temperature metrics in desert, montane and alpine plant communities. **2020**, 34, 1882-1897		5
70	Is foliage clumping an outcome of resource limitations within forests?. **2020**, 295, 108185		5
69	The Leaf Economics Spectrum Constrains Phenotypic Plasticity Across a Light Gradient. **2020**, 11, 735		4
68	No evidence of homeostatic regulation of leaf temperature in Eucalyptus parramattensis trees: integration of CO flux and oxygen isotope methodologies. *New Phytologist*, **2020**, 228, 1511-1523	9.8	5
67	P-model v1.0: an optimality-based light use efficiency model for simulating ecosystem gross primary production. **2020**, 13, 1545-1581		32
66	Surface temperature as an indicator of plant species diversity and restoration in oak woodland. **2020**, 113, 106249		7
65	The Thermal Tolerances, Distributions, and Performances of Tropical Montane Tree Species. **2020**, 3,		14

64	Plant's-eye view of temperature governs elevational distributions. **2020**, 26, 4094-4103		5
63	Leaf temperature and its dependence on atmospheric CO2 and leaf size. **2021**, 56, 866-885		5
62	Adaptive trait syndromes along multiple economic spectra define cold and warm adapted ecotypes in a widely distributed foundation tree species. *Journal of Ecology*, **2021**, 109, 1298-1318	6	3
61	Outdoor infrared imaging for spatial and temporal thermography: A case study of necrotic versus healthy leaf areas on woody plants. **2021**, 169, 62-70		1
60	UAV thermal image detects genetic trait differences among populations and genotypes of Fremont cottonwood (Populus fremontii, Salicaceae). **2021**, 7, 245-258		2
59	Using leaf shape to determine leaf size could be a game-changer. A commentary on: 'Leaf size estimation based on leaf length, width and shape'. **2021**,		
58	Photosystem II heat tolerances characterize thermal generalists and the upper limit of carbon assimilation. **2021**, 44, 2321-2330		1
57	Macroecological context predicts species' responses to climate warming. **2021**, 27, 2088-2101		4
56	Global analysis reveals an environmentally driven latitudinal pattern in mushroom size across fungal species. **2021**, 24, 658-667		2
55	Evidence for efficient non-evaporative leaf-to-air heat dissipation in a pine forest under drought conditions.		0
54	Leaf heat tolerance of 147 tropical forest species varies with elevation and leaf functional traits, but not with phylogeny. **2021**, 44, 2414-2427		6
53	Only sun-lit leaves of the uppermost canopy exceed both air temperature and photosynthetic thermal optima in a wet tropical forest. **2021**, 301-302, 108347		11
52	Spatio-temporal differences in leaf physiology are associated with fire, not drought, in a clonally integrated shrub. **2021**, 13, plab037		
51	A way to increase crop science productivity. **2021**, 848, 012197		
50	Evidence for efficient nonevaporative leaf-to-air heat dissipation in a pine forest under drought conditions. *New Phytologist*, **2021**, 232, 2254-2266	9.8	1
49	Thermal safety margins of plant leaves across biomes under a heatwave. *Science of the Total Environment*, **2022**, 806, 150416	10.2	0
48	Climate Change and Terrestrial Ecosystem Modeling. **2019**,		32
47	Investigation of leaf shape and edge design for faster evaporation in biomimetic heat dissipation systems. **2018**,		3

46	Handling the heat - photosynthetic thermal stress in tropical trees. *New Phytologist*, **2022**, 233, 236-250	9.8	1
45	Short-term warming does not affect intrinsic thermotolerance but induces strong sustaining photoprotection in tropical evergreen citrus genotypes. **2021**,		2
44	Long-Term Assessment of Reference Baselines for the Determination of the Crop Water Stress Index in Maize under Mediterranean Conditions. **2021**, 13, 3119		0
43	Species Distribution Based-Modelling Under Climate Change: The Case of Two Native Wild Olea europaea Subspecies in Morocco, O. e. subsp. europaea var. sylvestris and O. e. subsp. maroccana. **2022**, 21-43		1
42	Nitrogen improves plant cooling capacity under increased environmental temperature. **2022**, 472, 329		0
41	Dynamic biotic controls of leaf thermoregulation across the diel timescale. **2022**, 315, 108827		0
40	Soil development mediates precipitation control on plant productivity and diversity in alpine grasslands. **2022**, 412, 115721		0
39	Tradeoffs between leaf cooling and hydraulic safety in a dominant arid land riparian tree species.. **2022**,		0
38	Variations in accuracy of leaf functional trait prediction due to spectral mixing. **2022**, 136, 108687		1
37	Trait phenology and fire seasonality co-drive seasonal variation in fire effects on tree crowns.. *New Phytologist*, **2022**,	9.8	0
36	What evidence exists on the impact of anthropogenic radiofrequency electromagnetic fields on animals and plants in the environment? A systematic map protocol. **2021**, 10,		0
35	Thermal imagery of woodland tree canopies provides new insights into drought-induced tree mortality.. *Science of the Total Environment*, **2022**, 155395	10.2	
34	Image_1.pdf. **2020**,		
33	Table_1.xlsx. **2020**,		
32	Table_2.pdf. **2020**,		
31	Table_3.pdf. **2020**,		
30	Data_Sheet_1.docx. **2020**,		
29	Image_1.TIF. **2020**,		

28	Image_2.TIF. **2020**,		
27	DataSheet_1.docx. **2020**,		
26	Table_1.xlsx. **2020**,		
25	Table_2.xlsx. **2020**,		
24	Table_3.xlsx. **2020**,		
23	Table_4.xlsx. **2020**,		
22	Table_5.xlsx. **2020**,		
21	Table_6.xlsx. **2020**,		
20	Using near-ground leaf temperatures alters the projected climate change impacts on the historical range of a floristic biodiversity hotspot. *Diversity and Distributions*,	5	
19	In-situ energy budget of needle-leaves reveals shift from evaporative to air cooling under drought.		
18	Linking physiology to ecosystem function: how vulnerable are different functional groups to climate change?.		
17	Climate-driven thermal opportunities and risks for leaf miners in aspen canopies. *Ecological Monographs*,	9	1
16	Thermal remote sensing for plant ecology from leaf to globe. *Journal of Ecology*,	6	1
15	Gas exchange analyzers exhibit large measurement error driven by internal thermal gradients. *New Phytologist*,	9.8	
14	Assessing and modeling diurnal temperature buffering and evapotranspiration dynamics in forest restoration using ECOSTRESS thermal imaging. *Remote Sensing of Environment*, **2022**, 280, 113178	13.2	0
13	Climate constrains the leaf morphologies and photosynthetic strategies of Darwin daisies.		
12	Physiological traits and response strategies of four subtropical tree species exposed to drought. **2022**, 203, 105046		
11	Leaf water content contributes to global leaf trait relationships. **2022**, 13,		1

10	Thermal sensitivity across forest vertical profiles: patterns, mechanisms, and ecological implications.	0
9	A mathematical model for the energy stored in green roofs. **2022**,	0
8	TheLR531v1 □A deep learning multi-branch CNN architecture for day-night automatic segmentation of horticultural crops. **2023**, 204, 107557	0
7	Compound and simple leaf woody species of the Chilean matorral are equally affected by extreme drought.	0
6	Freezing resistance and xylem anatomy in low and high elevation populations of Senecio formosus Kunth in the tropical Andes.	0
5	Temperature changes in the root ecosystem affect plant functionality. **2022**, 100514	0
4	Leaf economics fundamentals explained by optimality principles. **2023**, 9,	0
3	Detailed in□situ leaf energy budget permits the assessment of leaf aerodynamic resistance as a key to enhance non-evaporative cooling under drought.	0
2	Heat dissipation from photosynthesis contributes to maize thermoregulation under suboptimal temperature conditions.	0
1	Thermal tolerance of tropical and temperate alpine plants suggests that □ountain passes are not higher in the tropics□	0