Thomas N Buckley

List of Publications by Year
in descending order

84 papers	6,662 citations	76326 40 h-index	66911 78 g-index
91 all docs	91 docs citations	91 times ranked	6947 citing authors

#	Article	IF	Citations
1	Plant responses to rising vapor pressure deficit. New Phytologist, 2020, 226, 1550-1566.	7.3	814
2	The control of stomata by water balance. New Phytologist, 2005, 168, 275-292.	7.3	558
3	How do stomata respond to water status?. New Phytologist, 2019, 224, 21-36.	7.3	308
4	A hydromechanical and biochemical model of stomatal conductance. Plant, Cell and Environment, 2003, 26, 1767-1785.	5.7	277
5	How does biomass distribution change with size and differ among species? An analysis for 1200 plant species from five continents. New Phytologist, 2015, 208, 736-749.	7.3	239
6	Evidence for Involvement of Photosynthetic Processes in the Stomatal Response to CO2 Â. Plant Physiology, 2006, 140, 771-778.	4.8	208
7	Outside-Xylem Vulnerability, Not Xylem Embolism, Controls Leaf Hydraulic Decline during Dehydration. Plant Physiology, 2017, 173, 1197-1210.	4.8	195
8	How Does Leaf Anatomy Influence Water Transport outside the Xylem?. Plant Physiology, 2015, 168, 1616-1635.	4.8	177
9	Leaf day respiration: low <scp>CO</scp>₂ flux but high significance for metabolism and carbon balance. New Phytologist, 2017, 216, 986-1001.	7.3	159
10	Modelling stomatal conductance in response to environmental factors. Plant, Cell and Environment, 2013, 36, 1691-1699.	5.7	158
11	Patchy stomatal conductance: emergent collective behaviour of stomata. Trends in Plant Science, 2000, 5, 258-262.	8.8	155
12	Modeling Stomatal Conductance. Plant Physiology, 2017, 174, 572-582.	4.8	154
13	The anatomical and compositional basis of leaf mass per area. Ecology Letters, 2017, 20, 412-425.	6.4	139
14	Most stomatal closure in woody species under moderate drought can be explained by stomatal responses to leaf turgor. Plant, Cell and Environment, 2016, 39, 2014-2026.	5.7	133
15	The contributions of apoplastic, symplastic and gas phase pathways for water transport outside the bundle sheath in leaves. Plant, Cell and Environment, 2015, 38, 7-22.	5.7	126
16	Guard Cell Volume and Pressure Measured Concurrently by Confocal Microscopy and the Cell Pressure Probe. Plant Physiology, 2001, 125, 1577-1584.	4.8	113
17	Tamm Review: Reforestation for resilience in dry western U.S. forests. Forest Ecology and Management, 2019, 432, 209-224.	3.2	109
18	The Sites of Evaporation within Leaves. Plant Physiology, 2017, 173, 1763-1782.	4.8	105

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19	Leaf vein xylem conduit diameter influences susceptibility to embolism and hydraulic decline. New Phytologist, 2017, 213, 1076-1092.	7.3	102
20	The Role of Bundle Sheath Extensions and Life Form in Stomatal Responses to Leaf Water Status Â Â. Plant Physiology, 2011, 156, 962-973.	4.8	96
21	Optimal plant water economy. Plant, Cell and Environment, 2017, 40, 881-896.	5.7	93
22	What does optimization theory actually predict about crown profiles of photosynthetic capacity when models incorporate greater realism?. Plant, Cell and Environment, 2013, 36, 1547-1563.	5.7	89
23	Qualitative effects of patchy stomatal conductance distribution features on gas-exchange calculations. Plant, Cell and Environment, 1997, 20, 867-880.	5.7	86
24	The Developmental Basis of Stomatal Density and Flux Â. Plant Physiology, 2016, 171, 2358-2363.	4.8	86
25	The stomatal response to evaporative demand persists at night in Ricinus communis plants with high nocturnal conductance. Plant, Cell and Environment, 2007, 30, 711-721.	5.7	77
26	Diminishing CO2-driven gains in water-use efficiency of global forests. Nature Climate Change, 2020, 10, 466-471.	18.8	76
27	What is NPP? Inconsistent accounting of respiratory fluxes in the definition of net primary production. Functional Ecology, 2005, 19, 378-382.	3.6	71
28	Rate of photosynthetic induction in fluctuating light varies widely among genotypes of wheat. Journal of Experimental Botany, 2019, 70, 2787-2796.	4.8	69
29	A spatially explicit model of patchy stomatal responses to humidity. Plant, Cell and Environment, 1997, 20, 1087-1097.	5.7	67
30	Stomatal optimisation in relation to atmospheric <scp>CO</scp>₂. New Phytologist, 2014, 201, 372-377.	7.3	67
31	Steps toward an improvement in process-based models of water use by fruit trees: A case study in olive. Agricultural Water Management, 2012, 114, 37-49.	5.6	62
32	ABA Accumulation in Dehydrating Leaves Is Associated with Decline in Cell Volume, Not Turgor Pressure. Plant Physiology, 2018, 176, 489-495.	4.8	61
33	Simple models for stomatal conductance derived from a process model: crossâ€validation against sap flux data. Plant, Cell and Environment, 2012, 35, 1647-1662.	5.7	60
34	How should leaf area, sapwood area and stomatal conductance vary with tree height to maximize growth?. Tree Physiology, 2006, 26, 145-157.	3.1	59
35	Embracing 3D Complexity in Leaf Carbonâ€"Water Exchange. Trends in Plant Science, 2019, 24, 15-24.	8.8	55
36	An analytical model of nonâ€photorespiratory CO₂ release in the light and dark in leaves of C₃ species based on stoichiometric flux balance. Plant, Cell and Environment, 2011, 34, 89-112.	5.7	52

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37	The Causes of Leaf Hydraulic Vulnerability and Its Influence on Gas Exchange in <i>Arabidopsis thaliana</i>. Plant Physiology, 2018, 178, 1584-1601.	4.8	50
38	DESPOT, a process-based tree growth model that allocates carbon to maximize carbon gain. Tree Physiology, 2006, 26, 129-144.	3.1	48
39	Stomatal Water Relations and the Control of Hydraulic Supply and Demand. Progress in Botany Fortschritte Der Botanik, 2002, , 309-325.	0.3	46
40	Dynamics of stomatal water relations during the humidity response: implications of two hypothetical mechanisms. Plant, Cell and Environment, 2002, 25, 407-419.	5.7	42
41	Capacity of Old Trees to Respond to Environmental Change. Journal of Integrative Plant Biology, 2008, 50, 1355-1364.	8.5	42
42	The role of mesophyll conductance in the economics of nitrogen and water use in photosynthesis. Photosynthesis Research, 2014, 119, 77-88.	2.9	42
43	Trait Multi-Functionality in Plant Stress Response. Integrative and Comparative Biology, 2020, 60, 98-112.	2.0	41
44	Carbon-water balance and patchy stomatal conductance. Oecologia, 1999, 118, 132-143.	2.0	40
45	Dynamics of stomatal water relations following leaf excision. Plant, Cell and Environment, 2006, 29, 981-992.	5.7	40
46	Tracking the origins of the Kok effect, 70 years after its discovery. New Phytologist, 2017, 214, 506-510.	7.3	40
47	Differences in water use between mature and post-fire regrowth stands of subalpine Eucalyptus delegatensis R. Baker. Forest Ecology and Management, 2012, 270, 1-10.	3.2	39
48	Stomatal responses to humidity: has the â€˜black boxâ€™ finally been opened?. Plant, Cell and Environment, 2016, 39, 482-484.	5.7	39
49	Effects of humidity on light-induced stomatal opening: evidence for hydraulic coupling among stomata. Journal of Experimental Botany, 1999, 50, 1207-1213.	4.8	37
50	Nocturnal water loss in mature subalpine <i>Eucalyptus delegatensis</i> tall open forests and adjacent <i>E. pauciflora</i> woodlands. Ecology and Evolution, 2011, 1, 435-450.	1.9	37
51	Is stomatal conductance optimized over both time and space in plant crowns? A field test in grapevine (V itis vinifera). Plant, Cell and Environment, 2014, 37, 2707-2721.	5.7	37
52	Stomatal responses to nonâ€local changes in PFD: evidence for longâ€distance hydraulic interactions. Plant, Cell and Environment, 2000, 23, 301-309.	5.7	35
53	Partitioning changes in photosynthetic rate into contributions from different variables. Plant, Cell and Environment, 2015, 38, 1200-1211.	5.7	33
54	Reporting estimates of maximum potential electron transport rate. New Phytologist, 2015, 205, 14-17.	7.3	33

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55	Crops, Nitrogen, Water: Are Legumes Friend, Foe, or Misunderstood Ally?. Trends in Plant Science, 2018, 23, 539-550.	8.8	33
56	A new analytical model for whole-leaf potential electron transport rate. Plant, Cell and Environment, 2004, 27, 1487-1502.	5.7	32
57	The role of stomatal acclimation in modelling tree adaptation to high CO2. Journal of Experimental Botany, 2008, 59, 1951-1961.	4.8	31
58	CO2, nitrogen deposition and a discontinuous climate response drive water use efficiency in global forests. Nature Communications, 2021, 12, 5194.	12.8	30
59	The Kok effect in <i><scp>V</scp>icia faba</i> cannot be explained solely by changes in chloroplastic <scp>CO</scp>₂ concentration. New Phytologist, 2017, 216, 1064-1071.	7.3	28
60	A Dynamic Hydro-Mechanical and Biochemical Model of Stomatal Conductance for C₄ Photosynthesis. Plant Physiology, 2017, 175, 104-119.	4.8	23
61	Contrasting responses of crop legumes and cereals to nitrogen availability. New Phytologist, 2018, 217, 1475-1483.	7.3	23
62	The humidity inside leaves and why you should care: implications of unsaturation of leaf intercellular airspaces. American Journal of Botany, 2019, 106, 618-621.	1.7	23
63	Why are leaves hydraulically vulnerable?. Journal of Experimental Botany, 2016, 67, 4917-4919.	4.8	22
64	A reporting format for leaf-level gas exchange data and metadata. Ecological Informatics, 2021, 61, 101232.	5.2	22
65	Leaf water stable isotopes and water transport outside the xylem. Plant, Cell and Environment, 2017, 40, 914-920.	5.7	20
66	The Anatomical Determinants of Leaf Hydraulic Function. , 2015, , 255-271.		19
67	Improvement of a simplified processâ€based model for estimating transpiration under waterâ€limited conditions. Hydrological Processes, 2019, 33, 1670-1685.	2.6	18
68	Coordinated decline of leaf hydraulic and stomatal conductances under drought is not linked to leaf xylem embolism for different grapevine cultivars. Journal of Experimental Botany, 2020, 71, 7286-7300.	4.8	18
69	Rainfall drives variation in rates of change in intrinsic water use efficiency of tropical forests. Nature Communications, 2019, 10, 3661.	12.8	17
70	The response of mesophyll conductance to short- and long-term environmental conditions in chickpea genotypes. AoB PLANTS, 2019, 11, ply073.	2.3	14
71	Importance of the legacy effect for assessing spatiotemporal correspondence between interannual tree-ring width and remote sensing products in the Sierra Nevada. Remote Sensing of Environment, 2021, 265, 112635.	11.0	14
72	Siteâ€specific responses to shortâ€term environmental variation are reflected in leaf and phloemâ€sap carbon isotopic abundance of field grown <i>Eucalyptus globulus</i>. Physiologia Plantarum, 2012, 146, 448-459.	5.2	12

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73	A multiplexed gas exchange system for increased throughput of photosynthetic capacity measurements. Plant Methods, 2018, 14, 80.	4.3	11
74	Optimal carbon partitioning helps reconcile the apparent divergence between optimal and observed canopy profiles of photosynthetic capacity. New Phytologist, 2021, 230, 2246-2260.	7.3	11
75	Effects of humidity on light-induced stomatal opening: evidence for hydraulic coupling among stomata. Journal of Experimental Botany, 1999, 50, 1207-1213.	4.8	11
76	Detecting short-term stress and recovery events in a vineyard using tower-based remote sensing of photochemical reflectance index (PRI). Irrigation Science, 2022, 40, 683-696.	2.8	10
77	The threeâ€dimensional construction of leaves is coordinated with water use efficiency in conifers. New Phytologist, 2022, 233, 851-861.	7.3	9
78	Wide variation in the suboptimal distribution of photosynthetic capacity in relation to light across genotypes of wheat. AoB PLANTS, 2020, 12, plaa039.	2.3	8
79	Timeâ€Dependent Bias in Instantaneous Ceptometry Caused by Row Orientation. The Plant Phenome Journal, 2018, 1, 1-10.	2.0	7
80	Anatomical and physiological regulation of post-fire carbon and water exchange in canopies of two resprouting Eucalyptus species. Oecologia, 2014, 176, 333-343.	2.0	5
81	Testing the association of relative growth rate and adaptation to climate across natural ecotypes of <i>Arabidopsis</i>. New Phytologist, 2022, 236, 413-432.	7.3	5
82	A double-ratio method to measure fast, slow and reverse sap flows. Tree Physiology, 2021, 41, 2438-2453.	3.1	3
83	PARbars: Cheap, Easy to Build Ceptometers for Continuous Measurement of Light Interception in Plant Canopies. Journal of Visualized Experiments, 2019, , .	0.3	2
84	Leaf Water Transport: A Core System in the Evolution and Physiology of Photosynthesis. Advances in Photosynthesis and Respiration, 2018, , 81-96.	1.0	1