Brendan Choat

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/6752667/publications.pdf

Version: 2024-02-01

117 papers	14,684 citations	26610 56 h-index	20343 116 g-index
123 all docs	123 docs citations	123 times ranked	10923 citing authors

#	Article	IF	Citations
1	Global convergence in the vulnerability of forests to drought. Nature, 2012, 491, 752-755.	13.7	1,944
2	TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	4.2	1,038
3	Triggers of tree mortality under drought. Nature, 2018, 558, 531-539.	13.7	957
4	Meta-analysis reveals that hydraulic traits explain cross-species patterns of drought-induced tree mortality across the globe. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5024-5029.	3.3	554
5	Structure and function of bordered pits: new discoveries and impacts on wholeâ€plant hydraulic function. New Phytologist, 2008, 177, 608-626.	3.5	486
6	Weak tradeoff between xylem safety and xylemâ€specific hydraulic efficiency across the world's woody plant species. New Phytologist, 2016, 209, 123-136.	3.5	466
7	Hanging by a thread? Forests and drought. Science, 2020, 368, 261-266.	6.0	431
8	Testing hypotheses that link wood anatomy to cavitation resistance and hydraulic conductivity in the genus Acer. New Phytologist, 2011, 190, 709-723.	3.5	393
9	The correlations and sequence of plant stomatal, hydraulic, and wilting responses to drought. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 13098-13103.	3.3	362
10	The Dynamics of Embolism Repair in Xylem: In Vivo Visualizations Using High-Resolution Computed Tomography Â Â Â. Plant Physiology, 2010, 154, 1088-1095.	2.3	335
11	Methods for measuring plant vulnerability to cavitation: a critical review. Journal of Experimental Botany, 2013, 64, 4779-4791.	2.4	319
12	Morphological variation of intervessel pit membranes and implications to xylem function in angiosperms. American Journal of Botany, 2009, 96, 409-419.	0.8	258
13	Trees tolerate an extreme heatwave via sustained transpirational cooling and increased leaf thermal tolerance. Global Change Biology, 2018, 24, 2390-2402.	4.2	242
14	Linking hydraulic traits to tropical forest function in a size-structured and trait-driven model (TFSÂv.1-Hydro). Geoscientific Model Development, 2016, 9, 4227-4255.	1.3	211
15	The role of freezing in setting the latitudinal limits of mangrove forests. New Phytologist, 2007, 173, 576-583.	3.5	208
16	Pit Membrane Porosity and Water Stress-Induced Cavitation in Four Co-Existing Dry Rainforest Tree Species. Plant Physiology, 2003, 131, 41-48.	2.3	207
17	Diversity of hydraulic traits in nine Cordia species growing in tropical forests with contrasting precipitation. New Phytologist, 2007, 175, 686-698.	3.5	184
18	In Vivo Visualizations of Drought-Induced Embolism Spread in Vitis vinifera Â Â Â. Plant Physiology, 2013, 161, 1820-1829.	2.3	179

#	Article	IF	Citations
19	Hydraulic architecture of deciduous and evergreen dry rainforest tree species from north-eastern Australia. Trees - Structure and Function, 2005, 19, 305-311.	0.9	177
20	Measurement of vulnerability to water stress-induced cavitation in grapevine: a comparison of four techniques applied to a long-vesseled species. Plant, Cell and Environment, 2010, 33, no-no.	2.8	175
21	Mechanisms of woody-plant mortality under rising drought, CO2 and vapour pressure deficit. Nature Reviews Earth & Environment, 2022, 3, 294-308.	12.2	163
22	Direct X-Ray Microtomography Observation Confirms the Induction of Embolism upon Xylem Cutting under Tension. Plant Physiology, 2015, 167, 40-43.	2.3	156
23	Changes in pit membrane porosity due to deflection and stretching: the role of vestured pits. Journal of Experimental Botany, 2004, 55, 1569-1575.	2.4	143
24	Noninvasive Measurement of Vulnerability to Drought-Induced Embolism by X-Ray Microtomography. Plant Physiology, 2016, 170, 273-282.	2.3	133
25	Evidence for Hydraulic Vulnerability Segmentation and Lack of Xylem Refilling under Tension. Plant Physiology, 2016, 172, 1657-1668.	2.3	132
26	Synchrotron Xâ€ray microtomography of xylem embolism in Sequoia sempervirens saplings during cycles of drought and recovery. New Phytologist, 2015, 205, 1095-1105.	3.5	127
27	The spatial pattern of air seeding thresholds in mature sugar maple trees. Plant, Cell and Environment, 2005, 28, 1082-1089.	2.8	126
28	fitplc - an R package to fit hydraulic vulnerability curves. The Journal of Plant Hydraulics, 0, 4, e002.	1.0	125
29	The Relationships between Xylem Safety and Hydraulic Efficiency in the Cupressaceae: The Evolution of Pit Membrane Form and Function Â Â. Plant Physiology, 2010, 153, 1919-1931.	2.3	123
30	Automated analysis of threeâ€dimensional xylem networks using highâ€resolution computed tomography. New Phytologist, 2011, 191, 1168-1179.	3.5	122
31	Tree hydraulic traits are coordinated and strongly linked to climateâ€ofâ€origin across a rainfall gradient. Plant, Cell and Environment, 2018, 41, 646-660.	2.8	120
32	Casting light on xylem vulnerability in an herbaceous species reveals a lack of segmentation. New Phytologist, 2017, 214, 561-569.	3.5	119
33	Rapid hydraulic recovery in <scp>E</scp>ucalyptus pauciflora after drought: linkages between stem hydraulics and leaf gas exchange. Plant, Cell and Environment, 2014, 37, 617-626.	2.8	112
34	Measurements of stem xylem hydraulic conductivity in the laboratory and field. Methods in Ecology and Evolution, 2012, 3, 685-694.	2.2	110
35	Woody plants optimise stomatal behaviour relative to hydraulic risk. Ecology Letters, 2018, 21, 968-977.	3.0	109
36	Vascular Function in Grape Berries across Development and Its Relevance to Apparent Hydraulic Isolation. Plant Physiology, 2009, 151, 1677-1687.	2.3	108

#	Article	IF	Citations
37	Elevated [<scp><scp>CO</scp></scp>₂] does not ameliorate the negative effects of elevated temperature on droughtâ€induced mortality in <scp>E</scp>ucalyptus radiata seedlings. Plant, Cell and Environment, 2014, 37, 1598-1613.	2.8	108
38	Linking physiological processes with mangrove forest structure: phosphorus deficiency limits canopy development, hydraulic conductivity and photosynthetic carbon gain in dwarf Rhizophora mangle. Plant, Cell and Environment, 2006, 29, 793-802.	2.8	102
39	Drought response strategies and hydraulic traits contribute to mechanistic understanding of plant dry-down to hydraulic failure. Tree Physiology, 2019, 39, 910-924.	1.4	96
40	Carbon dynamics of eucalypt seedlings exposed to progressive drought in elevated [CO2] and elevated temperature. Tree Physiology, 2013, 33, 779-792.	1.4	91
41	Stomatal and non-stomatal limitations of photosynthesis for four tree species under drought: A comparison of model formulations. Agricultural and Forest Meteorology, 2017, 247, 454-466.	1.9	91
42	Direct measurements of intervessel pit membrane hydraulic resistance in two angiosperm tree species. American Journal of Botany, 2006, 93, 993-1000.	0.8	86
43	An empirical method that separates irreversible stem radial growth from bark water content changes in trees: theory and case studies. Plant, Cell and Environment, 2017, 40, 290-303.	2.8	86
44	Toward an index of desiccation time to tree mortality under drought. Plant, Cell and Environment, 2016, 39, 2342-2345.	2.8	83
45	Identifying areas at risk of droughtâ€induced tree mortality across Southâ€Eastern Australia. Global Change Biology, 2020, 26, 5716-5733.	4.2	79
46	Leaf economics and plant hydraulics drive leaf : wood area ratios. New Phytologist, 2019, 224, 1544-1556.	3.5	77
47	Plant water potential improves prediction of empirical stomatal models. PLoS ONE, 2017, 12, e0185481.	1.1	77
48	Xylem traits mediate a tradeâ€off between resistance to freezeâ€“thawâ€induced embolism and photosynthetic capacity in overwintering evergreens. New Phytologist, 2011, 191, 996-1005.	3.5	74
49	Are needles of Pinus pinaster more vulnerable to xylem embolism than branches? New insights from Xâ€ray computed tomography. Plant, Cell and Environment, 2016, 39, 860-870.	2.8	74
50	AusTraits, a curated plant trait database for the Australian flora. Scientific Data, 2021, 8, 254.	2.4	73
51	Predicting thresholds of drought-induced mortality in woody plant species. Tree Physiology, 2013, 33, 669-671.	1.4	71
52	Hydraulic failure and tree size linked with canopy dieâ€back in eucalypt forest during extreme drought. New Phytologist, 2021, 230, 1354-1365.	3.5	70
53	Stem and leaf hydraulic properties are finely coordinated in three tropical rain forest tree species. Plant, Cell and Environment, 2015, 38, 2652-2661.	2.8	69
54	Coordination between leaf, stem, and root hydraulics and gas exchange in three aridâ€zone angiosperms during severe drought and recovery. Plant, Cell and Environment, 2018, 41, 2869-2881.	2.8	69

#	Article	IF	Citations
55	Drought responses of two gymnosperm species with contrasting stomatal regulation strategies under elevated [CO₂] and temperature. Tree Physiology, 2015, 35, 756-770.	1.4	66
56	Desiccation time during drought is highly predictable across species of Eucalyptus from contrasting climates. New Phytologist, 2019, 224, 632-643.	3.5	65
57	Linking Forest Flammability and Plant Vulnerability to Drought. Forests, 2020, 11, 779.	0.9	64
58	Intervascular pit membranes with a torus in the wood of Ulmus (Ulmaceae) and related genera. New Phytologist, 2004, 163, 51-59.	3.5	61
59	Visualization of xylem embolism by Xâ€ray microtomography: a direct test against hydraulic measurements. New Phytologist, 2017, 214, 890-898.	3.5	61
60	Xylem vessel relays contribute to radial connectivity in grapevine stems (Vitis vinifera and V.) Tj ETQq0 0 0 rgBT /Overlock 10 T	0.8	60
61	Plasticity in Vulnerability to Cavitation of Pinus canariensis Occurs Only at the Driest End of an Aridity Gradient. Frontiers in Plant Science, 2016, 7, 769.	1.7	60
62	Species climate range influences hydraulic and stomatal traits in Eucalyptus species. Annals of Botany, 2017, 120, 123-133.	1.4	60
63	More than iso/anisohydry: Hydroscapes integrate plant water use and drought tolerance traits in 10 eucalypt species from contrasting climates. Functional Ecology, 2019, 33, 1035-1049.	1.7	60
64	Increasing leaf hydraulic conductance with transpiration rate minimizes the water potential drawdown from stem to leaf. Journal of Experimental Botany, 2015, 66, 1303-1315.	2.4	58
65	Is embolism resistance in plant xylem associated with quantity and characteristics of lignin?. Trees - Structure and Function, 2018, 32, 349-358.	0.9	58
66	Xylem resistance to embolism: presenting a simple diagnostic test for the open vessel artefact. New Phytologist, 2017, 215, 489-499.	3.5	56
67	Leaf gas exchange performance and the lethal water potential of five European species during drought. Tree Physiology, 2016, 36, tpv117.	1.4	55
68	Embracing 3D Complexity in Leaf Carbonâ€“Water Exchange. Trends in Plant Science, 2019, 24, 15-24.	4.3	55
69	Cavitation Resistance in Seedless Vascular Plants: The Structure and Function of Interconduit Pit Membranes Â Â. Plant Physiology, 2014, 165, 895-904.	2.3	53
70	An inconvenient truth about xylem resistance to embolism in the model species for refilling Laurus nobilis L.. Annals of Forest Science, 2018, 75, 1.	0.8	53
71	Centrifuge technique consistently overestimates vulnerability to water stressâ€induced cavitation in grapevines as confirmed with highâ€resolution computed tomography. New Phytologist, 2012, 196, 661-665.	3.5	50
72	Living on the edge: A continentalâ€scale assessment of forest vulnerability to drought. Global Change Biology, 2021, 27, 3620-3641.	4.2	50

#	Article	IF	Citations
73	Seasonal patterns of leaf gas exchange and water relations in dry rain forest trees of contrasting leaf phenology. Tree Physiology, 2006, 26, 657-664.	1.4	49
74	New insights into bordered pit structure and cavitation resistance in angiosperms and conifers. New Phytologist, 2009, 182, 557-560.	3.5	49
75	Coordination of stem and leaf traits define different strategies to regulate water loss and tolerance ranges to aridity. New Phytologist, 2021, 230, 497-509.	3.5	49
76	Dynamics of freezeâ€“thaw embolism in Smilax rotundifolia (Smilacaceae). American Journal of Botany, 2007, 94, 640-649.	0.8	48
77	Is xylem of angiosperm leaves less resistant to embolism than branches? Insights from microCT, hydraulics, and anatomy. Journal of Experimental Botany, 2018, 69, 5611-5623.	2.4	46
78	Water, nitrogen and phosphorus use efficiencies of four tree species in response to variable water and nutrient supply. Plant and Soil, 2016, 406, 187-199.	1.8	43
79	Non-invasive imaging shows no evidence of embolism repair after drought in tree species of two genera. Tree Physiology, 2019, 39, 113-121.	1.4	41
80	Leaf water potential measurements using the pressure chamber: Synthetic testing of assumptions towards best practices for precision and accuracy. Plant, Cell and Environment, 2022, 45, 2037-2061.	2.8	40
81	Visual and hydraulic techniques produce similar estimates of cavitation resistance in woody species. New Phytologist, 2020, 228, 884-897.	3.5	37
82	Xylem Embolism Spreads by Single-Conduit Events in Three Dry Forest Angiosperm Stems. Plant Physiology, 2020, 184, 212-222.	2.3	33
83	Using High Resolution Computed Tomography to Visualize the Three Dimensional Structure and Function of Plant Vasculature. Journal of Visualized Experiments, 2013, , .	0.2	32
84	Hydraulic prediction of droughtâ€induced plant dieback and topâ€kill depends on leaf habit and growth form. Ecology Letters, 2021, 24, 2350-2363.	3.0	31
85	The effects of Pierce's disease on leaf and petiole hydraulic conductance in Vitis vinifera cv. Chardonnay. Physiologia Plantarum, 2009, 136, 384-394.	2.6	28
86	Pit membranes in tracheary elements of Rosaceae and related families: new records of tori and pseudotori. American Journal of Botany, 2007, 94, 503-514.	0.8	27
87	Lack of vulnerability segmentation in four angiosperm tree species: evidence from direct X-ray microtomography observation. Annals of Forest Science, 2020, 77, 1.	0.8	26
88	Xylem embolism measured retrospectively is linked to canopy dieback in natural populations of Eucalyptus piperita following drought. Tree Physiology, 2018, 38, 1193-1199.	1.4	25
89	Incorporating non-stomatal limitation improves the performance of leaf and canopy models at high vapour pressure deficit. Tree Physiology, 2019, 39, 1961-1974.	1.4	24
90	Drought resistance of cotton (Gossypium hirsutum) is promoted by early stomatal closure and leaf shedding. Functional Plant Biology, 2020, 47, 91.	1.1	23

#	Article	IF	Citations
91	On research priorities to advance understanding of the safetyâ€“efficiency tradeoff in xylem. New Phytologist, 2016, 211, 1156-1158.	3.5	21
92	CO2 availability influences hydraulic function of C3 and C4 grass leaves. Journal of Experimental Botany, 2018, 69, 2731-2741.	2.4	21
93	A unique web resource for physiology, ecology and the environmental sciences: PrometheusWiki. Functional Plant Biology, 2010, 37, 687.	1.1	20
94	One Stomatal Model to Rule Them All? Toward Improved Representation of Carbon and Water Exchange in Global Models. Journal of Advances in Modeling Earth Systems, 2022, 14, .	1.3	20
95	Non-invasive imaging reveals convergence in root and stem vulnerability to cavitation across five tree species. Journal of Experimental Botany, 2020, 71, 6623-6637.	2.4	19
96	Mechanisms of xylem hydraulic recovery after drought in Eucalyptus saligna. Plant, Cell and Environment, 2022, 45, 1216-1228.	2.8	19
97	How drought and deciduousness shape xylem plasticity in three Costa Rican woody plant species. IAWA Journal, 2014, 35, 337-355.	2.7	17
98	Mitigating the open vessel artefact in centrifuge-based measurement of embolism resistance. Tree Physiology, 2019, 39, 143-155.	1.4	17
99	Stability of tropical forest tree carbonâ€“water relations in a rainfall exclusion treatment through shifts in effective water uptake depth. Global Change Biology, 2021, 27, 6454-6466.	4.2	17
100	Testing the limits of plant drought stress and subsequent recovery in four provenances of a widely distributed subtropical tree species. Plant, Cell and Environment, 2022, 45, 1187-1203.	2.8	13
101	Towards speciesâ€level forecasts of droughtâ€induced tree mortality risk. New Phytologist, 2022, 235, 94-110.	3.5	12
102	Drought-related leaf functional traits control spatial and temporal dynamics of live fuel moisture content. Agricultural and Forest Meteorology, 2022, 319, 108941.	1.9	11
103	Non-invasive measurement of leaf water content and pressureâ€“volume curves using terahertz radiation. Scientific Reports, 2020, 10, 21028.	1.6	9
104	High safety margins to droughtâ€induced hydraulic failure found in five pasture grasses. Plant, Cell and Environment, 2022, 45, 1631-1646.	2.8	9
105	Warming Reduces Net Carbon Gain and Productivity in Medicago sativa L. and Festuca arundinacea. Agronomy, 2020, 10, 1601.	1.3	8
106	Tapping into the physiological responses to mistletoe infection during heat and drought stress. Tree Physiology, 2022, 42, 523-536.	1.4	8
107	Drought tolerance traits do not vary across sites differing in water availability in Banksia serrata (Proteaceae). Functional Plant Biology, 2019, 46, 624.	1.1	7
108	Temperature alters the response of hydraulic architecture to CO2 in cotton plants (Gossypium) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 62	2.0	7

#	Article	IF	Citations
109	Variation in Xylem Hydraulic Structure and Function of Two Mangrove Species across a Latitudinal Gradient in Eastern Australia. Water (Switzerland), 2021, 13, 850.	1.2	7
110	Maximum-likelihood estimation of xylem vessel length distributions. Journal of Theoretical Biology, 2018, 455, 329-341.	0.8	6
111	Unlocking Drought-Induced Tree Mortality: Physiological Mechanisms to Modeling. Frontiers in Plant Science, 2022, 13, 835921.	1.7	6
112	In situ Turgor Stability in Grape Mesocarp Cells and Its Relation to Cell Dimensions and Microcapillary Tip Size and Geometry. Environmental Control in Biology, 2011, 49, 61-73.	0.3	5
113	Conduit position and connectivity affect the likelihood of xylem embolism during natural drought in evergreen woodland species. Annals of Botany, 2022, 130, 431-444.	1.4	5
114	Vulnerability to xylem cavitation of Hakea species (Proteaceae) from a range of biomes and life histories predicted by climatic niche. Annals of Botany, 2021, 127, 909-918.	1.4	4
115	The Role of Hydraulic Failure in a Massive Mangrove Die-Off Event. Frontiers in Plant Science, 2022, 13, 822136.	1.7	3
116	The carbon cost of the 2019â€“20 Australian fires varies with fire severity and forest type. Global Ecology and Biogeography, 2022, 31, 2131-2146.	2.7	3
117	PUTTING THE PUZZLE TOGETHER: INVESTIGATING HYDRAULIC FUNCTIONING AND WATER TRANSPORT AT HIGH SPATIAL RESOLUTION IN TALL TREES. Acta Horticulturae, 2013, , 245-251.	0.1	1