Katherine A Mcculloh

List of Publications by Year
in descending order

66 papers	7,849 citations	94269 37 h-index	106150 65 g-index
70 all docs	70 docs citations	70 times ranked	8127 citing authors

#	Article	IF	Citations
1	Trends in wood density and structure are linked to prevention of xylem implosion by negative pressure. Oecologia, 2001, 126, 457-461.	0.9	1,257
2	TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	4.2	1,038
3	Xylem hydraulic safety margins in woody plants: coordination of stomatal control of xylem tension with hydraulic capacitance. Functional Ecology, 2009, 23, 922-930.	1.7	485
4	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
5	Safety and efficiency conflicts in hydraulic architecture: scaling from tissues to trees. Plant, Cell and Environment, 2008, 31, 632-645.	2.8	383
6	Water transport in plants obeys Murray's law. Nature, 2003, 421, 939-942.	13.7	365
7	Cavitation Fatigue. Embolism and Refilling Cycles Can Weaken the Cavitation Resistance of Xylem. Plant Physiology, 2001, 125, 779-786.	2.3	293
8	Maximum height in a conifer is associated with conflicting requirements for xylem design. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 12069-12074.	3.3	204
9	Mapping â€˜hydroscapesâ€™ along the isoâ€•to anisohydric continuum of stomatal regulation of plant water status. Ecology Letters, 2016, 19, 1343-1352.	3.0	198
10	Hydraulic safety margins and embolism reversal in stems and leaves: Why are conifers and angiosperms so different?. Plant Science, 2012, 195, 48-53.	1.7	192
11	Traits, properties, and performance: how woody plants combine hydraulic and mechanical functions in a cell, tissue, or whole plant. New Phytologist, 2014, 204, 747-764.	3.5	154
12	Patterns in hydraulic architecture and their implications for transport efficiency. Tree Physiology, 2005, 25, 257-267.	1.4	151
13	Moving water well: comparing hydraulic efficiency in twigs and trunks of coniferous, ringâ€porous, and diffuseâ€porous saplings from temperate and tropical forests. New Phytologist, 2010, 186, 439-450.	3.5	143
14	The blind men and the elephant: the impact of context and scale in evaluating conflicts between plant hydraulic safety and efficiency. Oecologia, 2010, 164, 287-296.	0.9	137
15	A test of the hydraulic vulnerability segmentation hypothesis in angiosperm and conifer tree species. Tree Physiology, 2016, 36, 983-993.	1.4	137
16	The dynamic pipeline: hydraulic capacitance and xylem hydraulic safety in four tall conifer species. Plant, Cell and Environment, 2014, 37, 1171-1183.	2.8	135
17	Dynamics of leaf water relations components in coâ€occurring isoâ€•and anisohydric conifer species. Plant, Cell and Environment, 2014, 37, 2577-2586.	2.8	135
18	BAAD: a Biomass And Allometry Database for woody plants. Ecology, 2015, 96, 1445-1445.	1.5	122

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19	Coâ€occurring woody species have diverse hydraulic strategies and mortality rates during an extreme drought. Plant, Cell and Environment, 2018, 41, 576-588.	2.8	118
20	Impacts of tree height on leaf hydraulic architecture and stomatal control in Douglas-fir. Plant, Cell and Environment, 2007, 30, 559-569.	2.8	102
21	Xylem recovery from drought-induced embolism: where is the hydraulic point of no return?. Tree Physiology, 2013, 33, 331-334.	1.4	99
22	Leaf xylem embolism, detected acoustically and by cryoâ€SEM, corresponds to decreases in leaf hydraulic conductance in four evergreen species. Plant, Cell and Environment, 2009, 32, 828-836.	2.8	89
23	Comparative hydraulic architecture of tropical tree species representing a range of successional stages and wood density. Oecologia, 2011, 167, 27-37.	0.9	84
24	Stomatal kinetics and photosynthetic gas exchange along a continuum of isohydric to anisohydric regulation of plant water status. Plant, Cell and Environment, 2017, 40, 1618-1628.	2.8	79
25	Reliance on shallow soil water in a mixed-hardwood forest in central Pennsylvania. Tree Physiology, 2016, 36, 444-458.	1.4	74
26	Hydraulic architecture of two species differing in wood density: opposing strategies in coâ€occurring tropical pioneer trees. Plant, Cell and Environment, 2012, 35, 116-125.	2.8	72
27	Tipâ€toâ€base xylem conduit widening as an adaptation: causes, consequences, and empirical priorities. New Phytologist, 2021, 229, 1877-1893.	3.5	72
28	Climateâ€related trends in sapwood biophysical properties in two conifers: avoidance of hydraulic dysfunction through coordinated adjustments in xylem efficiency, safety and capacitance. Plant, Cell and Environment, 2011, 34, 643-654.	2.8	71
29	A dynamic yet vulnerable pipeline: Integration and coordination of hydraulic traits across whole plants. Plant, Cell and Environment, 2019, 42, 2789-2807.	2.8	68
30	Evidence for xylem embolism as a primary factor in dehydrationâ€induced declines in leaf hydraulic conductance. Plant, Cell and Environment, 2012, 35, 760-769.	2.8	61
31	An annual pattern of native embolism in upper branches of four tall conifer species. American Journal of Botany, 2011, 98, 1007-1015.	0.8	55
32	Deviation from symmetrically selfâ€similar branching in trees predicts altered hydraulics, mechanics, light interception and metabolic scaling. New Phytologist, 2014, 201, 217-229.	3.5	55
33	A comparison of daily water use estimates derived from constant-heat sap-flow probe values and gravimetric measurements in pot-grown saplings. Tree Physiology, 2007, 27, 1355-1360.	1.4	54
34	Leaf hydraulic parameters are more plastic in species that experience a wider range of leaf water potentials. Functional Ecology, 2018, 32, 894-903.	1.7	52
35	Vessel scaling in evergreen angiosperm leaves conforms with Murray's law and areaâ€filling assumptions: implications for plant size, leaf size and cold tolerance. New Phytologist, 2018, 218, 1360-1370.	3.5	50
36	Contrasting hydraulic strategies in two tropical lianas and their host trees. American Journal of Botany, 2013, 100, 374-383.	0.8	44

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37	Coordination and tradeâ€offs between leaf and stem hydraulic traits and stomatal regulation along a spectrum of isohydry to anisohydry. Plant, Cell and Environment, 2019, 42, 2245-2258.	2.8	41
38	Application of the Hagenâ€"Poiseuille Equation to Fluid Feeding through Short Tubes. Annals of the Entomological Society of America, 1999, 92, 153-158.	1.3	40
39	Expression of functional traits during seedling establishment in two populations of Pinus ponderosa from contrasting climates. Tree Physiology, 2015, 35, 535-548.	1.4	40
40	Water relations of <i>Calycanthus</i> flowers: Hydraulic conductance, capacitance, and embolism resistance. Plant, Cell and Environment, 2018, 41, 2250-2262.	2.8	39
41	Murray's law, the â€˜Yarrumâ€™ optimum, and the hydraulic architecture of compound leaves. New Phytologist, 2009, 184, 234-244.	3.5	37
42	Do ray cells provide a pathway for radial water movement in the stems of conifer trees?. American Journal of Botany, 2013, 100, 322-331.	0.8	31
43	The evaluation of Murray's law in <i>Psilotum nudum</i> (Psilotaceae), an analogue of ancestral vascular plants. American Journal of Botany, 2005, 92, 985-989.	0.8	24
44	Quantifying ecological thresholds from response surfaces. Ecological Modelling, 2011, 222, 427-436.	1.2	24
45	Trehalose increases tomato drought tolerance, induces defenses, and increases resistance to bacterial wilt disease. PLoS ONE, 2022, 17, e0266254.	1.1	24
46	Thermotolerance and heat stress responses of Douglas-fir and ponderosa pine seedling populations from contrasting climates. Tree Physiology, 2016, 37, 301-315.	1.4	23
47	On research priorities to advance understanding of the safetyâ€"efficiency tradeoff in xylem. New Phytologist, 2016, 211, 1156-1158.	3.5	21
48	A comparison of hydraulic architecture in three similarly sized woody species differing in their maximum potential height. Tree Physiology, 2015, 35, 723-731.	1.4	20
49	Plant water uptake along a diversity gradient provides evidence for complementarity in hydrological niches. Oikos, 2019, 128, 1748-1760.	1.2	18
50	Is it getting hot in here? Adjustment of hydraulic parameters in six boreal and temperate tree species after 5Âyears of warming. Global Change Biology, 2016, 22, 4124-4133.	4.2	17
51	Further evidence that some plants can lose and regain hydraulic function daily. Tree Physiology, 2015, 35, 691-693.	1.4	15
52	Limited physiological acclimation to recurrent heatwaves in two boreal tree species. Tree Physiology, 2020, 40, 1680-1696.	1.4	14
53	Anatomical differences in the structural elements of fluid passage of Scots pine sapwood with contrasting treatability. Wood Science and Technology, 2014, 48, 435-447.	1.4	12
54	Limited variation found among Norway spruce half-sib families in physiological response to drought and resistance to embolism. Tree Physiology, 2016, 36, tpv141.	1.4	11

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55	Bridging the Flux Gap: Sap Flow Measurements Reveal Speciesâ€Specific Patterns of Water Use in a Tallgrass Prairie. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2019JG005446.	1.3	11
56	Physiological responses of germinant Pinus palustris and P. taeda seedlings to water stress and the significance of the grass-stage. Forest Ecology and Management, 2020, 458, 117647.	1.4	10
57	Mistletoes and their eucalypt hosts differ in the response of leaf functional traits to climatic moisture supply. Oecologia, 2021, 195, 759-771.	0.9	10
58	Mesophyll photosynthetic sensitivity to leaf water potential in <i>Eucalyptus</i>: a new dimension of plant adaptation to native moisture supply. New Phytologist, 2021, 230, 1844-1855.	3.5	9
59	Hydroscapes, hydroscape plasticityÂand relationships to functional traits and mesophyll photosynthetic sensitivity to leaf water potential in <i>Eucalyptus</i> species. Plant, Cell and Environment, 2022, 45, 2573-2588.	2.8	8
60	Forest Canopy Hydraulics. Advances in Photosynthesis and Respiration, 2016, , 187-217.	1.0	7
61	Linking leaf hydraulic properties, photosynthetic rates, and leaf lifespan in xerophytic species: a test of global hypotheses. American Journal of Botany, 2018, 105, 1858-1868.	0.8	7
62	A new protocol for psychrometric pressureâ€“volume curves of fern gametophytes. Applications in Plant Sciences, 2019, 7, e01248.	0.8	1
63	Do invasive jumping worms impact sugar maple (Acer saccharum) water-use dynamics in a Central Hardwoods forest?. Biological Invasions, 2021, 23, 129-141.	1.2	1
64	Water transport in plants obeys Murray's law. , 0, .		1
65	Short-distance gene flow and morphological divergence in<i>Eschscholzia parishii</i>(Papaveraceae): implications for speciation in desert winter annuals. Botanical Journal of the Linnean Society, 2022, 200, 255-269.	0.8	1
66	Response to commentary by G. Petit and T. Anfodillo. Oecologia, 2011, 165, 275-275.	0.9	0