Uwe G Hacke

List of Publications by Year
in descending order

81 papers	14,414 citations	41344 49 h-index	66911 78 g-index
84 all docs	84 docs citations	84 times ranked	8936 citing authors

#	Article	IF	Citations
1	Global convergence in the vulnerability of forests to drought. Nature, 2012, 491, 752-755.	27.8	1,944
2	Trends in wood density and structure are linked to prevention of xylem implosion by negative pressure. Oecologia, 2001, 126, 457-461.	2.0	1,257
3	A multi-species synthesis of physiological mechanisms in drought-induced tree mortality. Nature Ecology and Evolution, 2017, 1, 1285-1291.	7.8	739
4	Water deficits and hydraulic limits to leaf water supply. Plant, Cell and Environment, 2002, 25, 251-263.	5.7	707
5	Functional and ecological xylem anatomy. Perspectives in Plant Ecology, Evolution and Systematics, 2001, 4, 97-115.	2.7	624
6	Scaling of angiosperm xylem structure with safety and efficiency. Tree Physiology, 2006, 26, 689-701.	3.1	575
7	Size and function in conifer tracheids and angiosperm vessels. American Journal of Botany, 2006, 93, 1490-1500.	1.7	524
8	Inter-vessel pitting and cavitation in woody Rosaceae and other vesselled plants: a basis for a safety versus efficiency trade-off in xylem transport. Plant, Cell and Environment, 2005, 28, 800-812.	5.7	505
9	Weak tradeoff between xylem safety and xylemâ€specific hydraulic efficiency across the world's woody plant species. New Phytologist, 2016, 209, 123-136.	7.3	466
10	The relationship between xylem conduit diameter and cavitation caused by freezing. American Journal of Botany, 1999, 86, 1367-1372.	1.7	398
11	Drought's legacy: multiyear hydraulic deterioration underlies widespread aspen forest dieâ€off and portends increased future risk. Global Change Biology, 2013, 19, 1188-1196.	9.5	307
12	Plant xylem hydraulics: What we understand, current research, and future challenges. Journal of Integrative Plant Biology, 2017, 59, 356-389.	8.5	301
13	Cavitation Fatigue. Embolism and Refilling Cycles Can Weaken the Cavitation Resistance of Xylem. Plant Physiology, 2001, 125, 779-786.	4.8	293
14	Drought experience and cavitation resistance in six shrubs from the Great Basin, Utah. Basic and Applied Ecology, 2000, 1, 31-41.	2.7	276
15	Influence of soil porosity on water use in Pinus taeda. Oecologia, 2000, 124, 495-505.	2.0	270
16	Desert shrub water relations with respect to soil characteristics and plant functional type. Functional Ecology, 2002, 16, 367-378.	3.6	262
17	Comparative analysis of end wall resistivity in xylem conduits. Plant, Cell and Environment, 2005, 28, 456-465.	5.7	227
18	Mechanical reinforcement of tracheids compromises the hydraulic efficiency of conifer xylem. Plant, Cell and Environment, 2006, 29, 1618-1628.	5.7	218

#	Article	IF	Citations
19	Analysis of circular bordered pit function II. Gymnosperm tracheids with torusâ€margo pit membranes. American Journal of Botany, 2004, 91, 386-400.	1.7	210
20	Analysis of circular bordered pit function I. Angiosperm vessels with homogenous pit membranes. American Journal of Botany, 2004, 91, 369-385.	1.7	201
21	An ecophysiological and developmental perspective on variation in vessel diameter. Plant, Cell and Environment, 2017, 40, 831-845.	5.7	199
22	Xylem dysfunction during winter and recovery of hydraulic conductivity in diffuse-porous and ring-porous trees. Oecologia, 1996, 105, 435-439.	2.0	180
23	Limits to xylem refilling under negative pressure in Laurus nobilis and Acer negundo. Plant, Cell and Environment, 2003, 26, 303-311.	5.7	176
24	Torus-Margo Pits Help Conifers Compete with Angiosperms. Science, 2005, 310, 1924-1924.	12.6	165
25	Interâ€tracheid pitting and the hydraulic efficiency of conifer wood: the role of tracheid allometry and cavitation protection. American Journal of Botany, 2006, 93, 1265-1273.	1.7	162
26	Adjustments in hydraulic architecture of Pinus palustris maintain similar stomatal conductance in xeric and mesic habitats. Plant, Cell and Environment, 2006, 29, 535-545.	5.7	150
27	Influence of nitrogen fertilization on xylem traits and aquaporin expression in stems of hybrid poplar. Tree Physiology, 2010, 30, 1016-1025.	3.1	145
28	Uptake of Water via Branches Helps Timberline Conifers Refill Embolized Xylem in Late Winter Â Â Â. Plant Physiology, 2014, 164, 1731-1740.	4.8	142
29	Xylem Hydraulics and the Soilâ€“Plantâ€“Atmosphere Continuum: Opportunities and Unresolved Issues. Agronomy Journal, 2003, 95, 1362-1370.	1.8	130
30	FROST DROUGHT IN CONIFERS AT THE ALPINE TIMBERLINE: XYLEM DYSFUNCTION AND ADAPTATIONS. Ecology, 2006, 87, 3175-3185.	3.2	130
31	Drought-Induced Xylem Dysfunction in Petioles, Branches, and Roots of Populus balsamifera L. and Alnus glutinosa (L.) Gaertn. Plant Physiology, 1996, 111, 413-417.	4.8	124
32	Embolism resistance of three boreal conifer species varies with pit structure. New Phytologist, 2009, 182, 675-686.	7.3	115
33	A global analysis of xylem vessel length in woody plants. American Journal of Botany, 2012, 99, 1583-1591.	1.7	109
34	Hydraulic Consequences of Vessel Evolution in Angiosperms. International Journal of Plant Sciences, 2007, 168, 1127-1139.	1.3	106
35	Exploring <i><scp>P</scp>icea glauca</i> aquaporins in the context of needle water uptake and xylem refilling. New Phytologist, 2014, 203, 388-400.	7.3	104
36	Transpirational demand affects aquaporin expression in poplar roots. Journal of Experimental Botany, 2013, 64, 2283-2293.	4.8	103

#	Article	IF	Citations
37	Phenotypic and developmental plasticity of xylem in hybrid poplar saplings subjected to experimental drought, nitrogen fertilization, and shading. Journal of Experimental Botany, 2012, 63, 6481-6491.	4.8	101
38	Gene expression patterns underlying changes in xylem structure and function in response to increased nitrogen availability in hybrid poplar. Plant, Cell and Environment, 2013, 36, 186-199.	5.7	98
39	Vulnerability of xylem to embolism in relation to leaf water potential and stomatal conductance inFagus sylvaticaf.purpureaandPopulus balsamifera. Journal of Experimental Botany, 1995, 46, 1177-1183.	4.8	97
40	The standard centrifuge method accurately measures vulnerability curves of longâ€vesselled olive stems. New Phytologist, 2015, 205, 116-127.	7.3	89
41	Evaluation of centrifugal methods for measuring xylem cavitation in conifers, diffuseâ€and ringâ€porous angiosperms. New Phytologist, 2008, 177, 558-568.	7.3	87
42	Water Transport in Vesselless Angiosperms: Conducting Efficiency and Cavitation Safety. International Journal of Plant Sciences, 2007, 168, 1113-1126.	1.3	79
43	Xylem function of aridâ€land shrubs from California, USA: an ecological and evolutionary analysis. Plant, Cell and Environment, 2009, 32, 1324-1333.	5.7	75
44	Frost hardiness vs. growth performance in trembling aspen: an experimental test of assisted migration. Journal of Applied Ecology, 2013, 50, 939-949.	4.0	73
45	The Cohesionâ€Tension Theory. New Phytologist, 2004, 163, 451-452.	7.3	68
46	Variation of xylem vessel diameters across a climate gradient: insight from a reciprocal transplant experiment with a widespread boreal tree. Functional Ecology, 2015, 29, 1392-1401.	3.6	65
47	Genetic variation of hydraulic and wood anatomical traits in hybrid poplar and trembling aspen. New Phytologist, 2011, 190, 150-160.	7.3	58
48	Linking irradianceâ€induced changes in pit membrane ultrastructure with xylem vulnerability to cavitation. Plant, Cell and Environment, 2011, 34, 501-513.	5.7	57
49	Hydraulic acclimation to shading in boreal conifers of varying shade tolerance. Plant, Cell and Environment, 2010, 33, 382-393.	5.7	52
50	Heterogeneous distribution of pectin epitopes and calcium in different pit types of four angiosperm species. New Phytologist, 2011, 192, 885-897.	7.3	50
51	Sixteen years of winter stress: an assessment of cold hardiness, growth performance and survival of hybrid poplar clones at a boreal planting site. Plant, Cell and Environment, 2013, 36, 419-428.	5.7	50
52	Large volume vessels are vulnerable to water-stress-induced embolism in stems of poplar. IAWA Journal, 2019, 40, 4-S4.	2.7	49
53	Influence of evaporative demand on aquaporin expression and root hydraulics of hybrid poplar. Plant, Cell and Environment, 2011, 34, 1318-1331.	5.7	46
54	Pit membrane structure is highly variable and accounts for a major resistance to water flow through tracheid pits in stems and roots of two boreal conifer species. New Phytologist, 2015, 208, 102-113.	7.3	45

#	Article	IF	Citations
55	Direct comparison of four methods to construct xylem vulnerability curves: Differences among techniques are linked to vessel network characteristics. Plant, Cell and Environment, 2019, 42, 2422-2436.	5.7	44
56	Efficiency Versus Safety Tradeoffs for Water Conduction in Angiosperm Vessels Versus Gymnosperm Tracheids. , 2005, , 333-353.		42
57	The Role of Water Channel Proteins in Facilitating Recovery of Leaf Hydraulic Conductance from Water Stress in Populus trichocarpa. PLoS ONE, 2014, 9, e111751.	2.5	42
58	Nobodyâ€™s perfect: can irregularities in pit structure influence vulnerability to cavitation?. Frontiers in Plant Science, 2013, 4, 453.	3.6	40
59	Droughtâ€induced xylem pit membrane damage in aspen and balsam poplar. Plant, Cell and Environment, 2016, 39, 2210-2220.	5.7	37
60	Cellular localization of aquaporin mRNA in hybrid poplar stems. American Journal of Botany, 2012, 99, 1249-1254.	1.7	34
61	Are phloem sieve tubes leaky conduits supported by numerous aquaporins?. American Journal of Botany, 2017, 104, 719-732.	1.7	31
62	The Hydraulic Architecture of Conifers. , 2015, , 39-75.		29
63	Survival, growth and cold hardiness tradeoffs in white spruce populations: Implications for assisted migration. Forest Ecology and Management, 2019, 433, 544-552.	3.2	28
64	Defoliation constrains xylem and phloem functionality. Tree Physiology, 2019, 39, 1099-1108.	3.1	27
65	Adaptive limitations of white spruce populations to drought imply vulnerability to climate change in its western range. Evolutionary Applications, 2019, 12, 1850-1860.	3.1	25
66	Leaf size serves as a proxy for xylem vulnerability to cavitation in plantation trees. Plant, Cell and Environment, 2016, 39, 272-281.	5.7	24
67	On research priorities to advance understanding of the safetyâ€"efficiency tradeoff in xylem. New Phytologist, 2016, 211, 1156-1158.	7.3	21
68	Adaptations of white spruce to climate: strong intraspecific differences in cold hardiness linked to survival. Ecology and Evolution, 2018, 8, 1758-1768.	1.9	21
69	Solid mechanics of the torusâ€"margo in conifer intertracheid bordered pits. New Phytologist, 2021, 229, 1431-1439.	7.3	20
70	What happens when stems are embolized in a centrifuge? Testing the cavitron theory. Physiologia Plantarum, 2010, 140, 311-320.	5.2	17
71	Contrasting Hydraulic Architectures of Scots Pine and Sessile Oak at Their Southernmost Distribution Limits. Frontiers in Plant Science, 2017, 8, 598.	3.6	17
72	Stomatal conductance scales with petiole xylem traits in Populus genotypes. Functional Plant Biology, 2016, 43, 553.	2.1	15

#	Article	IF	Citations
73	Variable plant hydraulic conductance. Tree Physiology, 2014, 34, 105-108.	3.1	13
74	Computational models evaluating the impact of sieve plates and radial water exchange on phloem pressure gradients. Plant, Cell and Environment, 2019, 42, 466-479.	5.7	12
75	The Hydraulic Architecture of Populus. , 2015, , 103-131.		11
76	Irradiance-induced changes in hydraulic architecture. Botany, 2014, 92, 437-442.	1.0	8
77	Xylem refilling â€" a question of sugar transporters and pH?. Plant, Cell and Environment, 2016, 39, 2347-2349.	5.7	8
78	Seasonal Vascular Tissue Formation in Four Boreal Tree Species With a Focus on Callose Deposition in the Phloem. Frontiers in Forests and Global Change, 2019, 2, .	2.3	7
79	Xylem Anomalies as Indicators of Maladaptation to Climate in Forest Trees: Implications for Assisted Migration. Frontiers in Plant Science, 2020, 11, 208.	3.6	6
80	Soil Water Uptake and Water Transport Through Root Systems. , 2002, , 663-681.		5
81	Seasonal patterns of callose deposition and xylem embolism in five boreal deciduous tree species. American Journal of Botany, 2021, 108, 1568-1575.	1.7	1