

Margaret M Barbour

List of Publications by Year in descending order

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Version: 2024-02-01

89
papers

6,818
citations

76294

40
h-index

62565

80
g-index

92
all docs

92
docs citations

92
times ranked

6964
citing authors

#	ARTICLE	IF	CITATIONS
1	Mesophyll diffusion conductance to CO ₂ : An unappreciated central player in photosynthesis. <i>Plant Science</i> , 2012, 193-194, 70-84.	1.7	563
2	Stable oxygen isotope composition of plant tissue: a review. <i>Functional Plant Biology</i> , 2007, 34, 83.	1.1	526
3	Why are non-photosynthetic tissues generally ¹³ C enriched compared with leaves in C ₃ plants? Review and synthesis of current hypotheses. <i>Functional Plant Biology</i> , 2009, 36, 199.	1.1	348
4	Relative humidity and ABA induced variation in carbon and oxygen isotope ratios of cotton leaves. <i>Plant, Cell and Environment</i> , 2000, 23, 473-485.	2.8	337
5	Sensitivity of plants to changing atmospheric CO ₂ concentration: from the geological past to the next century. <i>New Phytologist</i> , 2013, 197, 1077-1094.	3.5	336
6	Diffusional conductances to CO ₂ as a target for increasing photosynthesis and photosynthetic water-use efficiency. <i>Photosynthesis Research</i> , 2013, 117, 45-59.	1.6	305
7	Stable isotopes in leaf water of terrestrial plants. <i>Plant, Cell and Environment</i> , 2016, 39, 1087-1102.	2.8	256
8	Expressing leaf water and cellulose oxygen isotope ratios as enrichment above source water reveals evidence of a Péclet effect. <i>Oecologia</i> , 2004, 138, 426-435.	0.9	252
9	Seasonal variation in ¹³ C and ¹⁸ O of cellulose from growth rings of <i>Pinus radiata</i> . <i>Plant, Cell and Environment</i> , 2002, 25, 1483-1499.	2.8	239
10	New constraints on atmospheric CO ₂ concentration for the Phanerozoic. <i>Geophysical Research Letters</i> , 2014, 41, 4685-4694.	1.5	189
11	Leaf day respiration: low CO ₂ flux but high significance for metabolism and carbon balance. <i>New Phytologist</i> , 2017, 216, 986-1001.	3.5	159
12	Variation in the Oxygen Isotope Ratio of Phloem Sap Sucrose from Castor Bean. Evidence in Support of the Péclet Effect. <i>Plant Physiology</i> , 2000, 123, 671-680.	2.3	150
13	A new measurement technique reveals rapid post-illumination changes in the carbon isotope composition of leaf-respired CO ₂ . <i>Plant, Cell and Environment</i> , 2007, 30, 469-482.	2.8	148
14	Variability in mesophyll conductance between barley genotypes, and effects on transpiration efficiency and carbon isotope discrimination. <i>Plant, Cell and Environment</i> , 2010, 33, 1176-85.	2.8	125
15	A single substrate model to interpret intra-annual stable isotope signals in tree-ring cellulose. <i>Plant, Cell and Environment</i> , 2009, 32, 1071-1090.	2.8	100
16	Ecosystem service and biodiversity trade-offs in two woody successions. <i>Journal of Applied Ecology</i> , 2011, 48, 926-934.	1.9	96
17	Online CO ₂ and H ₂ O oxygen isotope fractionation allows estimation of mesophyll conductance in C ₄ plants, and reveals that mesophyll conductance decreases as leaves age in both C ₄ and C ₃ plants. <i>New Phytologist</i> , 2016, 210, 875-889.	3.5	95
18	Do pathways of water movement and leaf anatomical dimensions allow development of gradients in H ₂ O between veins and the sites of evaporation within leaves?. <i>Plant, Cell and Environment</i> , 2004, 27, 107-121.	2.8	86

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19	The oxygen isotope enrichment of leaf-exported assimilates “ does it always reflect lamina leaf water enrichment?. <i>New Phytologist</i> , 2013, 200, 144-157.	3.5	86
20	Climate and soils together regulate photosynthetic carbon isotope discrimination within C_3 plants worldwide. <i>Global Ecology and Biogeography</i> , 2018, 27, 1056-1067.	2.7	85
21	Transpiration rate relates to within- and across-species variations in effective path length in a leaf water model of oxygen isotope enrichment. <i>Plant, Cell and Environment</i> , 2013, 36, 1338-1351.	2.8	84
22	Oxygen isotope ratio of leaf and grain material correlates with stomatal conductance and grain yield in irrigated wheat. <i>Functional Plant Biology</i> , 2000, 27, 625.	1.1	83
23	Sap flow rates and sapwood density are critical factors in within- and between-tree variation in CO_2 efflux from stems of mature <i>Dacrydium cupressinum</i> trees. <i>New Phytologist</i> , 2005, 167, 815-828.	3.5	83
24	The stomatal response to evaporative demand persists at night in <i>Ricinus communis</i> plants with high nocturnal conductance. <i>Plant, Cell and Environment</i> , 2007, 30, 711-721.	2.8	77
25	The impact of soil microorganisms on the global budget of $\delta^{18}O$ in atmospheric CO_2 . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 22411-22415.	3.3	74
26	Correlations between oxygen isotope ratios of wood constituents of <i>Quercus</i> and <i>Pinus</i> samples from around the world. <i>Functional Plant Biology</i> , 2001, 28, 335.	1.1	69
27	Variation in the degree of coupling between $\delta^{13}C$ of phloem sap and ecosystem respiration in two mature <i>Nothofagus</i> forests. <i>New Phytologist</i> , 2005, 166, 497-512.	3.5	68
28	Nocturnal stomatal conductance and implications for modelling $\delta^{18}O$ of leaf-respired CO_2 in temperate tree species. <i>Functional Plant Biology</i> , 2005, 32, 1107.	1.1	67
29	Variation in mesophyll conductance among Australian wheat genotypes. <i>Functional Plant Biology</i> , 2014, 41, 568.	1.1	64
30	Increasing leaf hydraulic conductance with transpiration rate minimizes the water potential drawdown from stem to leaf. <i>Journal of Experimental Botany</i> , 2015, 66, 1303-1315.	2.4	58
31	Isotopic composition of transpiration and rates of change in leaf water isotopologue storage in response to environmental variables. <i>Plant, Cell and Environment</i> , 2013, 36, 2190-2206.	2.8	57
32	Photosynthesis and reflectance indices for rainforest species in ecosystems undergoing progression and retrogression along a soil fertility chronosequence in New Zealand. <i>Oecologia</i> , 2005, 144, 233-244.	0.9	56
33	Components of ecosystem evaporation in a temperate coniferous rainforest, with canopy transpiration scaled using sapwood density. <i>New Phytologist</i> , 2005, 165, 549-558.	3.5	55
34	Quantifying the contribution of soil organic matter turnover to forest soil respiration, using natural abundance $\delta^{13}C$. <i>Soil Biology and Biochemistry</i> , 2010, 42, 935-943.	4.2	55
35	Embracing 3D Complexity in Leaf Carbon-Water Exchange. <i>Trends in Plant Science</i> , 2019, 24, 15-24.	4.3	55
36	Short-term effects of CO_2 and O_2 on citrate metabolism in illuminated leaves. <i>Plant, Cell and Environment</i> , 2012, 35, 2208-2220.	2.8	53

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37	Measurements of transpiration isotopologues and leaf water to assess enrichment models in cotton. <i>New Phytologist</i> , 2015, 206, 637-646.	3.5	53
38	Turnover time of the non-structural carbohydrate pool influences $\delta^{18}\text{O}$ of leaf cellulose. <i>Plant, Cell and Environment</i> , 2014, 37, 2500-2507.	2.8	48
39	Examining the large-scale convergence of photosynthesis-weighted tree leaf temperatures through stable oxygen isotope analysis of multiple data sets. <i>New Phytologist</i> , 2011, 192, 912-924.	3.5	45
40	Cell and chloroplast anatomical features are poorly estimated from 2D cross-sections. <i>New Phytologist</i> , 2020, 225, 2567-2578.	3.5	44
41	Segmentation of lettuce in coloured 3D point clouds for fresh weight estimation. <i>Computers and Electronics in Agriculture</i> , 2018, 154, 373-381.	3.7	43
42	A demonstration of the theoretical prediction that sap velocity is related to wood density in the conifer <i>Dacrydium cupressinum</i> . <i>New Phytologist</i> , 2003, 158, 477-488.	3.5	41
43	Leaf vein fraction influences the Péclet effect and $\delta^{18}\text{O}$ enrichment in leaf water. <i>Plant, Cell and Environment</i> , 2016, 39, 2414-2427.	2.8	41
44	Tracking the origins of the Kok effect, 70 years after its discovery. <i>New Phytologist</i> , 2017, 214, 506-510.	3.5	40
45	Effects of leaf age and tree size on stomatal and mesophyll limitations to photosynthesis in mountain beech (<i>Nothofagus solandrii</i> var. <i>cliffortioides</i>). <i>Tree Physiology</i> , 2011, 31, 985-996.	1.4	37
46	Observed relationships between leaf H_2O Peclet effective length and leaf hydraulic conductance reflect assumptions in Craig-Gordon model calculations. <i>Tree Physiology</i> , 2015, 35, 16-26.	1.4	37
47	A new measurement technique reveals temporal variation in $\delta^{18}\text{O}$ of leaf-respired CO_2 . <i>Plant, Cell and Environment</i> , 2007, 30, 456-468.	2.8	36
48	Rapid changes in $\delta^{13}\text{C}$ of ecosystem-respired CO_2 after sunset are consistent with transient $\delta^{13}\text{C}$ enrichment of leaf respired CO_2 . <i>New Phytologist</i> , 2011, 190, 990-1002.	3.5	36
49	Leaf hydraulic conductance and mesophyll conductance are not closely related within a single species. <i>Plant, Cell and Environment</i> , 2017, 40, 203-215.	2.8	35
50	Spatial variation in photosynthetic CO_2 carbon and oxygen isotope discrimination along leaves of the monocot <i>triticale</i> (<i>Triticum aestivum</i> – <i>Secale cereale</i>) relates to mesophyll conductance and the Péclet effect. <i>Plant, Cell and Environment</i> , 2011, 34, 1548-1562.	2.8	34
51	Soil phosphorous and endogenous rhythms exert a larger impact than CO_2 or temperature on nocturnal stomatal conductance in <i>Eucalyptus tereticornis</i> . <i>Tree Physiology</i> , 2013, 33, 1206-1215.	1.4	33
52	Declining foliar and litter $\delta^{15}\text{N}$ diverge from soil, epiphyte and input $\delta^{15}\text{N}$ along a 120-year temperate rainforest chronosequence. <i>New Phytologist</i> , 2011, 190, 941-952.	3.5	31
53	The response of mesophyll conductance to nitrogen and water availability differs between wheat genotypes. <i>Plant Science</i> , 2016, 251, 119-127.	1.7	31
54	The temperature response of mesophyll conductance, and its component conductances, varies between species and genotypes. <i>Photosynthesis Research</i> , 2019, 141, 65-82.	1.6	27

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55	Genetic control of mesophyll conductance in common wheat. <i>New Phytologist</i> , 2016, 209, 461-465.	3.5	26
56	Stable carbon isotopes reveal dynamics of respiratory metabolism. <i>New Phytologist</i> , 2009, 181, 243-245.	3.5	25
57	The $\delta^{18}\text{O}$ ecohydrology of a grassland ecosystem – predictions and observations. <i>Hydrology and Earth System Sciences</i> , 2019, 23, 2581-2600.	1.9	25
58	The role of leaf water potential in the temperature response of mesophyll conductance. <i>New Phytologist</i> , 2020, 225, 1193-1205.	3.5	25
59	Modelling non-steady-state isotope enrichment of leaf water in a gas-exchange cuvette environment. <i>Plant, Cell and Environment</i> , 2015, 38, 2618-2628.	2.8	24
60	Temperature sensitivity of soil and root respiration in contrasting soils. <i>Plant and Soil</i> , 2014, 382, 253-267.	1.8	23
61	Mesophyll conductance exerts a significant limitation on photosynthesis during light induction. <i>New Phytologist</i> , 2022, 233, 360-372.	3.5	23
62	Factors Affecting the Oxygen Isotope Ratio of Plant Organic Material. , 2005, , 9-28.		22
63	Do tree-ring stable isotope compositions faithfully record tree carbon/water dynamics?. <i>Tree Physiology</i> , 2014, 34, 792-795.	1.4	22
64	$\delta^{13}\text{C}$ of leaf-respired CO_2 reflects intrinsic water-use efficiency in barley. <i>Plant, Cell and Environment</i> , 2011, 34, 792-799.	2.8	21
65	Understanding regulation of leaf internal carbon and water transport using online stable isotope techniques. <i>New Phytologist</i> , 2017, 213, 83-88.	3.5	21
66	A unique web resource for physiology, ecology and the environmental sciences: PrometheusWiki. <i>Functional Plant Biology</i> , 2010, 37, 687.	1.1	20
67	Leaf water stable isotopes and water transport outside the xylem. <i>Plant, Cell and Environment</i> , 2017, 40, 914-920.	2.8	20
68	Rising temperature may negate the stimulatory effect of rising CO_2 on growth and physiology of Wollemi pine (<i>Wollemia nobilis</i>). <i>Functional Plant Biology</i> , 2015, 42, 836.	1.1	18
69	No evidence of homeostatic regulation of leaf temperature in <i>Eucalyptus parramattensis</i> trees: integration of CO_2 flux and oxygen isotope methodologies. <i>New Phytologist</i> , 2020, 228, 1511-1523.	3.5	18
70	Sucrose application, soil microbial respiration and evolved carbon dioxide isotope enrichment under contrasting land uses. <i>Plant and Soil</i> , 2005, 268, 233-242.	1.8	17
71	Understanding the Stable Isotope Composition of Biosphere-Atmosphere CO_2 Exchange. <i>Eos</i> , 2008, 89, 94.	0.1	16
72	Enhanced decomposition and nitrogen mineralization sustain rapid growth of <i>Eucalyptus regnans</i> after wildfire. <i>Journal of Ecology</i> , 2017, 105, 229-236.	1.9	16

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73	Soil properties and presence of plants affect the temperature sensitivity of carbon dioxide production by soils. <i>Plant and Soil</i> , 2010, 337, 375-387.	1.8	15
74	Can hydraulic design explain patterns of leaf water isotopic enrichment in C_3 plants?. <i>Plant, Cell and Environment</i> , 2021, 44, 432-444.	2.8	15
75	High water availability in drought tolerant crops is driven by root engineering of the soil micro-habitat. <i>Geoderma</i> , 2021, 383, 114738.	2.3	15
76	Stable oxygen isotope signatures of early season wood in New Zealand kauri (<i>Agathis australis</i>) tree rings: Prospects for palaeoclimate reconstruction. <i>Dendrochronologia</i> , 2016, 40, 50-63.	1.0	14
77	Studying root water uptake of wheat genotypes in different soils using water $\delta^{18}O$ stable isotopes. <i>Agriculture, Ecosystems and Environment</i> , 2018, 264, 119-129.	2.5	14
78	The response of mesophyll conductance to short- and long-term environmental conditions in chickpea genotypes. <i>AoB PLANTS</i> , 2019, 11, ply073.	1.2	14
79	Leaf water oxygen isotope measurement by direct equilibration. <i>New Phytologist</i> , 2016, 211, 1120-1128.	3.5	13
80	Understanding airspace in leaves: $3D$ anatomy and directional tortuosity. <i>Plant, Cell and Environment</i> , 2021, 44, 2455-2465.	2.8	13
81	Spatial and temporal scaling of intercellular CO_2 concentration in a temperate rain forest dominated by <i>Dacrydium cupressinum</i> in New Zealand. <i>Plant, Cell and Environment</i> , 2006, 29, 497-510.	2.8	11
82	Respiratory Effects on the Carbon Isotope Discrimination Near the Compensation Point. <i>Advances in Photosynthesis and Respiration</i> , 2017, , 143-160.	1.0	10
83	Identification of quantitative trait loci for dynamic and steady-state photosynthetic traits in a barley mapping population. <i>AoB PLANTS</i> , 2020, 12, plaa063.	1.2	10
84	Expanding collaborative autoethnography into the world of natural science for transdisciplinary teams. <i>One Earth</i> , 2022, 5, 157-167.	3.6	10
85	Open source 3D phenotyping of chickpea plant architecture across plant development. <i>Plant Methods</i> , 2021, 17, 95.	1.9	9
86	Seasonal Frost Tolerance of Trees in the New Zealand Treeline Ecotone. <i>Arctic, Antarctic, and Alpine Research</i> , 2012, 44, 332-342.	0.4	8
87	Environmental, Physiological and Biochemical Processes Determining the Oxygen Isotope Ratio of Tree-Ring Cellulose. <i>Tree Physiology</i> , 2022, , 311-329.	0.9	8
88	Reconstruction of source water using the $\delta^{18}O$ of tree ring phenylglucosazone: A potential tool in paleoclimate studies. <i>Dendrochronologia</i> , 2013, 31, 153-158.	1.0	7
89	The effects on isotopic composition of leaf water and transpiration of adding a gas-exchange cuvette. <i>Plant, Cell and Environment</i> , 2021, 44, 2844-2857.	2.8	4