Michael G Ryan

List of Publications by Year
in descending order

139 papers	22,761 citations	11651 70 h-index	11939 134 g-index
145 all docs	145 docs citations	145 times ranked	17091 citing authors

#	Article	IF	Citations
1	Temperature and soil organic matter decomposition rates - synthesis of current knowledge and a way forward. Global Change Biology, 2011, 17, 3392-3404.	9.5	1,143
2	Hydraulic Limits to Tree Height and Tree Growth. BioScience, 1997, 47, 235-242.	4.9	974
3	Reconciling Carbon-cycle Concepts, Terminology, and Methods. Ecosystems, 2006, 9, 1041-1050.	3.4	904
4	Evidence that decomposition rates of organic carbon in mineral soil do not vary with temperature. Nature, 2000, 404, 858-861.	27.8	867
5	Carbon allocation in forest ecosystems. Global Change Biology, 2007, 13, 2089-2109.	9.5	849
6	A multi-species synthesis of physiological mechanisms in drought-induced tree mortality. Nature Ecology and Evolution, 2017, 1, 1285-1291.	7.8	739
7	Effects of Climate Change on Plant Respiration. , 1991, 1, 157-167.		736
8	Tree and forest functioning in response to global warming. New Phytologist, 2001, 149, 369-399.	7.3	647
9	The likely impact of elevated [CO 2], nitrogen deposition, increased temperature and management on carbon sequestration in temperate and boreal forest ecosystems: a literature review. New Phytologist, 2007, 173, 463-480.	7.3	579
10	Interpreting, measuring, and modeling soil respiration. Biogeochemistry, 2005, 73, 3-27.	3.5	572
11	The Boreal Ecosystemâ€“Atmosphere Study (BOREAS): An Overview and Early Results from the 1994 Field Year. Bulletin of the American Meteorological Society, 1995, 76, 1549-1577.	3.3	547
12	The hydraulic limitation hypothesis revisited. Plant, Cell and Environment, 2006, 29, 367-381.	5.7	543
13	Continued warming could transform Greater Yellowstone fire regimes by mid-21st century. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13165-13170.	7.1	536
14	Stomatal conductance and photosynthesis vary linearly with plant hydraulic conductance in ponderosa pine. Plant, Cell and Environment, 2001, 24, 113-121.	5.7	471
15	Seasonal and annual respiration of a ponderosa pine ecosystem. Global Change Biology, 1999, 5, 169-182.	9.5	428
16	Evidence that hydraulic conductance limits photosynthesis in old Pinus ponderosa trees. Tree Physiology, 1999, 19, 165-172.	3.1	361
17	Belowâ€ground process responses to elevated CO 2 and temperature: a discussion of observations, measurement methods, and models. New Phytologist, 2004, 162, 311-322.	7.3	358
18	A synthesis of current knowledge on forests and carbon storage in the United States. , 2011, 21, 1902-1924.		354

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19	Global variability in leaf respiration in relation to climate, plant functional types and leaf traits. New Phytologist, 2015, 206, 614-636.	7.3	350
20	Evaluating theories of droughtâ€induced vegetation mortality using a multimodelâ€“experiment framework. New Phytologist, 2013, 200, 304-321.	7.3	340
21	Annual carbon cost of autotrophic respiration in boreal forest ecosystems in relation to species and climate. Journal of Geophysical Research, 1997, 102, 28871-28883.	3.3	331
22	AN EXPERIMENTAL TEST OF THE CAUSES OF FOREST GROWTH DECLINE WITH STAND AGE. Ecological Monographs, 2004, 74, 393-414.	5.4	310
23	The Brazil Eucalyptus Potential Productivity Project: Influence of water, nutrients and stand uniformity on wood production. Forest Ecology and Management, 2010, 259, 1684-1694.	3.2	308
24	A general biogeochemical model describing the responses of the C and N cycles in terrestrial ecosystems to changes in CO2, climate, and N deposition. Tree Physiology, 1991, 9, 101-126.	3.1	299
25	The relationship between tree height and leaf area: sapwood area ratio. Oecologia, 2002, 132, 12-20.	2.0	283
26	Eucalyptus production and the supply, use and efficiency of use of water, light and nitrogen across a geographic gradient in Brazil. Forest Ecology and Management, 2004, 193, 17-31.	3.2	246
27	Thinking about efficiency of resource use in forests. Forest Ecology and Management, 2004, 193, 5-16.	3.2	234
28	Woody tissue maintenance respiration of four conifers in contrasting climates. Oecologia, 1995, 101, 133-140.	2.0	228
29	Maintenance Respiration and Stand Development in a Subalpine Lodgepole Pine Forest. Ecology, 1992, 73, 2100-2108.	3.2	225
30	An investigation of hydraulic limitation and compensation in large, old Douglas-fir trees. Tree Physiology, 2002, 22, 763-774.	3.1	225
31	Age-related Decline in Forest Ecosystem Growth: An Individual-Tree, Stand-Structure Hypothesis. Ecosystems, 2002, 5, 58-67.	3.4	214
32	Total Belowground Carbon Allocation in a Fast-growing Eucalyptus Plantation Estimated Using a Carbon Balance Approach. Ecosystems, 2002, 5, 487-499.	3.4	207
33	Carbon Storage on Landscapes with Stand-replacing Fires. BioScience, 2006, 56, 598.	4.9	206
34	Foliar maintenance respiration of subalpine and boreal trees and shrubs in relation to nitrogen content. Plant, Cell and Environment, 1995, 18, 765-772.	5.7	198
35	A simple method for estimating gross carbon budgets for vegetation in forest ecosystems. Tree Physiology, 1991, 9, 255-266.	3.1	197
36	Transpiration and whole-tree conductance in ponderosa pine trees of different heights. Oecologia, 2000, 124, 553-560.	2.0	188

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37	Tree age, disturbance history, and carbon stocks and fluxes in subalpine Rocky Mountain forests. Global Change Biology, 2008, 14, 2882-2897.	9.5	164
38	Primary production and carbon allocation in relation to nutrient supply in a tropical experimental forest. Global Change Biology, 2003, 9, 1438-1450.	9.5	163
39	Non-structural carbohydrates in woody plants compared among laboratories. Tree Physiology, 2015, 35, tpv073.	3.1	163
40	Explaining growth of individual trees: Light interception and efficiency of light use by Eucalyptus at four sites in Brazil. Forest Ecology and Management, 2010, 259, 1704-1713.	3.2	156
41	Factors controlling Eucalyptus productivity: How water availability and stand structure alter production and carbon allocation. Forest Ecology and Management, 2010, 259, 1695-1703.	3.2	156
42	Tree Species and Soil Textural Controls on Carbon and Nitrogen Mineralization Rates. Soil Science Society of America Journal, 2001, 65, 1272-1279.	2.2	142
43	Belowground carbon cycling in a humid tropical forest decreases with fertilization. Oecologia, 2004, 139, 545-550.	2.0	137
44	Tree responses to drought. Tree Physiology, 2011, 31, 237-239.	3.1	137
45	Seasonal respiration of foliage, fine roots, and woody tissues in relation to growth, tissue N, and photosynthesis. Global Change Biology, 2002, 8, 182-193.	9.5	135
46	Production, Respiration, and Overall Carbon Balance in an Old-growth Pseudotsuga-Tsuga Forest Ecosystem. Ecosystems, 2004, 7, 498.	3.4	134
47	Evaluating different soil and plant hydraulic constraints on tree function using a model and sap flow data from ponderosa pine. Plant, Cell and Environment, 2001, 24, 679-690.	5.7	133
48	Canopy and hydraulic conductance in young, mature and old Douglas-fir trees. Tree Physiology, 2002, 22, 205-211.	3.1	132
49	First direct landscapeâ€scale measurement of tropical rain forest Leaf Area Index, a key driver of global primary productivity. Ecology Letters, 2008, 11, 163-172.	6.4	130
50	Production and carbon allocation in a clonal Eucalyptus plantation with water and nutrient manipulations. Forest Ecology and Management, 2008, 255, 920-930.	3.2	129
51	Belowground and aboveground biomass in young postfire lodgepole pine forests of contrasting tree density. Canadian Journal of Forest Research, 2003, 33, 351-363.	1.7	119
52	Height is more important than light in determining leaf morphology in a tropical forest. Ecology, 2010, 91, 1730-1739.	3.2	113
53	Feature: Improving our knowledge of droughtâ€induced forest mortality through experiments, observations, and modeling. New Phytologist, 2013, 200, 289-293.	7.3	113
54	Aboveground sink strength in forests controls the allocation of carbon below ground and its [CO2]-induced enhancement. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 19362-19367.	7.1	109

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55	EFFECTS OF TREE DENSITY AND STAND AGE ON CARBON ALLOCATION PATTERNS IN POSTFIRE LODGEPOLE PINE. , 2004, 14, 460-475.		108
56	A test of the hydraulic limitation hypothesis in fast-growing Eucalyptus saligna. Plant, Cell and Environment, 2003, 26, 1235-1245.	5.7	104
57	Respiration from the Organ Level to the Stand. , 1995, , 255-299.		103
58	Postfire changes in forest carbon storage over a 300â€year chronosequence of Pinus contortaâ€dominated forests. Ecological Monographs, 2013, 83, 49-66.	5.4	100
59	Woody-tissue respiration for Simarouba amara and Minquartia guianensis, two tropical wet forest trees with different growth habits. Oecologia, 1994, 100, 213-220.	2.0	99
60	Testing the utility of the 3-PG model for growth of with natural and manipulated supplies of water and nutrients. Forest Ecology and Management, 2004, 193, 219-234.	3.2	98
61	Patterns of growth dominance in forests of the Rocky Mountains, USA. Forest Ecology and Management, 2006, 236, 193-201.	3.2	95
62	A belowground perspective on the drought sensitivity of forests: Towards improved understanding and simulation. Forest Ecology and Management, 2016, 380, 309-320.	3.2	92
63	Foliar and ecosystem respiration in an oldâ€growth tropical rain forest. Plant, Cell and Environment, 2008, 31, 473-483.	5.7	91
64	Effects of irrigation on water use and water use efficiency in two fast growing Eucalyptus plantations. Forest Ecology and Management, 2010, 259, 1714-1721.	3.2	90
65	Tree-girdling to separate root and heterotrophic respiration in two Eucalyptus stands in Brazil. Oecologia, 2006, 148, 447-454.	2.0	83
66	Soil-surface carbon dioxide efflux and microbial biomass in relation to tree density 13â€ƒyears after a stand replacing fire in a lodgepole pine ecosystem. Global Change Biology, 2003, 9, 680-696.	9.5	82
67	Declining forest productivity in aging forest stands: a modeling analysis of alternative hypotheses. Tree Physiology, 1996, 16, 187-200.	3.1	77
68	Phloem transport in trees. Tree Physiology, 2014, 34, 1-4.	3.1	77
69	Wood CO2 efflux in a primary tropical rain forest. Global Change Biology, 2006, 12, 2442-2458.	9.5	76
70	Magnitudes and seasonal patterns of energy, water, and carbon exchanges at a boreal young jack pine forest in the BOREAS northern study area. Journal of Geophysical Research, 1997, 102, 28997-29007.	3.3	75
71	Seasonal patterns in soil surface CO2 flux under snow cover in 50 and 300Âyear old subalpine forests. Biogeochemistry, 2005, 73, 93-107.	3.5	74
72	Net primary production and nutrient cycling in replicated stands of Eucalyptus saligna and Albizia facaltaria. Forest Ecology and Management, 1998, 112, 79-85.	3.2	73

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73	Relationships Between Tree Height and Carbon Isotope Discrimination. Tree Physiology, 2011, , 255-286.	2.5	69
74	Forest ecosystem respiration estimated from eddy covariance and chamber measurements under high turbulence and substantial tree mortality from bark beetles. Global Change Biology, 2015, 21, 708-721.	9.5	66
75	Plant respiration: Controlled by photosynthesis or biomass?. Global Change Biology, 2020, 26, 1739-1753.	9.5	66
76	Physiographic, stand, and environmental effects on individual tree growth and growth efficiency in subalpine forests. Tree Physiology, 1986, 2, 47-59.	3.1	64
77	The effect of fertilization on sap flux and canopy conductance in a Eucalyptus saligna experimental forest. Global Change Biology, 2004, 10, 427-436.	9.5	62
78	Overview of the Manitou Experimental Forest Observatory: site description and selected science results from 2008 to 2013. Atmospheric Chemistry and Physics, 2014, 14, 6345-6367.	4.9	62
79	Modeling the effects of fire and climate change on carbon and nitrogen storage in lodgepole pine (Pinus contorta) stands. Global Change Biology, 2009, 15, 535-548.	9.5	61
80	Comparison of direct and indirect methods for assessing leaf area index across a tropical rain forest landscape. Agricultural and Forest Meteorology, 2013, 177, 110-116.	4.8	60
81	Firstâ€Rotation Changes in Soil Carbon and Nitrogen in a Eucalyptus Plantation in Hawaii. Soil Science Society of America Journal, 2004, 68, 1713-1719.	2.2	58
82	Water flux in boreal forest during two hydrologically contrasting years; species specific regulation of canopy conductance and transpiration. Annales Des Sciences ForestiÃ¨res, 1998, 55, 47-61.	1.2	56
83	Surface fuel loadings within mulching treatments in Colorado coniferous forests. Forest Ecology and Management, 2010, 260, 1557-1566.	3.2	54
84	A physiological basis for biosphere-atmosphere interactions in the boreal forest: an overview. Tree Physiology, 1997, 17, 491-499.	3.1	53
85	Sapwood volume for three subalpine conifers: predictive equations and ecological implications. Canadian Journal of Forest Research, 1989, 19, 1397-1401.	1.7	52
86	Leaf area compounds height-related hydraulic costs of water transport in Oregon White Oak trees. Functional Ecology, 2003, 17, 832-840.	3.6	48
87	Detrital carbon pools in temperate forests: magnitude and potential for landscape-scale assessment. Canadian Journal of Forest Research, 2009, 39, 802-813.	1.7	48
88	Long-Term Nitrogen Storage and Soil Nitrogen Availability in Post-Fire Lodgepole Pine Ecosystems. Ecosystems, 2009, 12, 792-806.	3.4	48
89	Detecting defects in conifers with ground penetrating radar: applications and challenges. Forest Pathology, 2009, 39, 309-322.	1.1	47
90	Changes in soil organic carbon contents and fractionations of forests along a climatic gradient in China. Forest Ecosystems, 2019, 6, .	3.1	46

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91	Temperature and tree growth. Tree Physiology, 2010, 30, 667-668.	3.1	45
92	Water use, water limitation, and water use efficiency in a Eucalyptus plantation. Bosque, 2004, 25, 35.	0.3	42
93	Effects of simulated drought on the carbon balance of Everglades shortâ€hydroperiod marsh. Global Change Biology, 2013, 19, 2511-2523.	9.5	42
94	Tropical rainforest carbon sink declines during El NiÃ±o as a result of reduced photosynthesis and increased respiration rates. New Phytologist, 2017, 216, 136-149.	7.3	42
95	Managing for water-use efficient wood production in Eucalyptus globulus plantations. Forest Ecology and Management, 2014, 331, 272-280.	3.2	41
96	Carbohydrate regulation of photosynthesis and respiration from branch girdling in four species of wet tropical rain forest trees. Tree Physiology, 2015, 35, 608-620.	3.1	40
97	LiDAR based prediction of forest biomass using hierarchical models with spatially varying coefficients. Remote Sensing of Environment, 2015, 169, 113-127.	11.0	40
98	Carbon pools and fluxes in small temperate forest landscapes: Variability and implications for sampling design. Forest Ecology and Management, 2010, 259, 1245-1254.	3.2	36
99	Short- and medium-term effects of fuel reduction mulch treatments on soil nitrogen availability in Colorado conifer forests. Forest Ecology and Management, 2012, 276, 231-238.	3.2	36
100	Forest structure estimation and pattern exploration from discrete-return lidar in subalpine forests of the central Rockies. Canadian Journal of Forest Research, 2008, 38, 2081-2096.	1.7	35
101	The Response of Belowground Carbon Allocation in Forests to Global Change. , 2005, , 119-154.		35
102	Performance of a canopy light interception model for conifer shoots, trees and stands. Tree Physiology, 1991, 9, 227-243.	3.1	33
103	Wood CO2 efflux and foliar respiration for Eucalyptus in Hawaii and Brazil. Tree Physiology, 2009, 29, 1213-1222.	3.1	33
104	Converging patterns of vertical variability in leaf morphology and nitrogen across seven Eucalyptus plantations in Brazil and Hawaii, USA. Trees - Structure and Function, 2014, 28, 1-15.	1.9	32
105	Effects of branch height on leaf gas exchange, branch hydraulic conductance and branch sap flux in open-grown ponderosa pine. Tree Physiology, 2002, 22, 575-581.	3.1	31
106	Gas exchange and hydraulic properties in the crowns of two tree species in a Panamanian moist forest. Trees - Structure and Function, 2001, 15, 123-130.	1.9	30
107	Introduction to the invited issue on carbon allocation of trees and forests. Tree Physiology, 2012, 32, 639-643.	3.1	30
108	Three decades of research at Flakaliden advancing whole-tree physiology, forest ecosystem and global change research. Tree Physiology, 2013, 33, 1123-1131.	3.1	27

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109	Reviews and syntheses: Field data to benchmark the carbon cycle models for tropical forests. Biogeosciences, 2017, 14, 4663-4690.	3.3	27
110	Mulching fuels treatments promote understory plant communities in three Colorado, USA, coniferous forest types. Forest Ecology and Management, 2017, 385, 214-224.	3.2	26
111	Seasonal patterns in energy partitioning of two freshwater marsh ecosystems in the Florida Everglades. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 1487-1505.	3.0	23
112	Tree physiology and bark beetles. New Phytologist, 2015, 205, 955-957.	7.3	21
113	reply: Soil warming and organic carbon content. Nature, 2000, 408, 790-790.	27.8	20
114	Canopy processes research. Tree Physiology, 2002, 22, 1035-1043.	3.1	20
115	El NiÃ±o Southern Oscillation (ENSO) Enhances CO2 Exchange Rates in Freshwater Marsh Ecosystems in the Florida Everglades. PLoS ONE, 2014, 9, e115058.	2.5	20
116	Carbon Dynamics in Central US Rockies Lodgepole Pine Type after Mountain Pine Beetle Outbreaks. Forest Science, 2015, 61, 665-679.	1.0	19
117	Variation in foliar respiration and wood CO2 efflux rates among species and canopy layers in a wet tropical forest. Tree Physiology, 2015, 35, 148-159.	3.1	19
118	Estimating Soil Respiration in a Subalpine Landscape Using Point, Terrain, Climate, and Greenness Data. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 3231-3249.	3.0	15
119	Fruiting and sink competition. Tree Physiology, 2018, 38, 1261-1266.	3.1	14
120	Why don't our stands grow even faster? Control of production and carbon cycling in eucalypt plantations. Southern Forests, 2008, 70, 99-104.	0.7	13
121	Climate and genotype influences on carbon fluxes and partitioning in Eucalyptus plantations. Forest Ecology and Management, 2020, 475, 118445.	3.2	13
122	Total belowground carbon flux in subalpine forests is related to leaf area index, soil nitrogen, and tree height. Ecosphere, 2016, 7, e01418.	2.2	12
123	Foliar respiration is related to photosynthetic, growth and carbohydrate response to experimental drought and elevated temperature. Plant, Cell and Environment, 2021, 44, 3853-3865.	5.7	12
124	Tree mortality: Large trees losing out to drought. Nature Plants, 2015, 1, .	9.3	10
125	Ecosystem resistance in the face of climate change: a case study from the freshwater marshes of the Florida Everglades. Ecosphere, 2015, 6, 1-23.	2.2	10
126	Baseline of Carbon Stocks in Pinus radiata and Eucalyptus spp. Plantations of Chile. Forests, 2020, 11, 1063.	2.1	8

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127	Cross-site patterns in the response of Eucalyptus plantations to irrigation, climate and intra-annual weather variation. Forest Ecology and Management, 2020, 475, 118444.	3.2	8
128	Assessing the cross-site and within-site response of potential production to atmospheric demand for water in Eucalyptus plantations. Forest Ecology and Management, 2020, 464, 118068.	3.2	7
129	Short and long-term carbon balance of bioenergy electricity production fueled by forest treatments. Carbon Balance and Management, 2014, 9, 6.	3.2	6
130	Clues for our missing respiration model. New Phytologist, 2019, 222, 1167-1170.	7.3	6
131	Physical structure and biological composition of canopies in tropical secondary and old-growth forests. PLoS ONE, 2021, 16, e0256571.	2.5	5
132	Forest Processes. Advances in Global Change Research, 2014, , 25-54.	1.6	3
133	Adjusting estimates in two-way tables by incorporating outside information. Canadian Journal of Forest Research, 1988, 18, 1280-1285.	1.7	2
134	Quantifying Soil Respiration at Landscape Scales. , 2008, , 143-162.		2
135	Zero-calorie sugar delivery to roots. Nature Plants, 2017, 3, 922-923.	9.3	2
136	Introduction to BOREAS special issue. Tree Physiology, 2000, 20, 709-711.	3.1	1
137	Landscape-Scale Carbon Sampling Strategy â€“ Lessons Learned. , 2008, , 227-238.		1
138	Peer review report 2 On â€œTrenching reduces soil heterotrophic activity in a loblolly pine (Pinus Taeda) forest exposed to elevated atmospheric [CO2] and N-fertilizationâ€• Agricultural and Forest Meteorology, 2015, 201, 490.	4.8	0
139	Emergence of Cross-Scale Structural and Functional Processes in Ecosystem Science. , 2021, , 140-201.		0