M Luke Mccormack

List of Publications by Year
in descending order

68 papers	8,399 citations	76326 40 h-index	91884 69 g-index
74 all docs	74 docs citations	74 times ranked	8463 citing authors

#	Article	IF	Citations
1	TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	9.5	1,038
2	Redefining fine roots improves understanding of belowâ€ground contributions to terrestrial biosphere processes. New Phytologist, 2015, 207, 505-518.	7.3	906
3	Evolutionary history resolves global organization of root functional traits. Nature, 2018, 555, 94-97.	27.8	463
4	The fungal collaboration gradient dominates the root economics space in plants. Science Advances, 2020, 6, .	10.3	377
5	Increases in the flux of carbon belowground stimulate nitrogen uptake and sustain the long-term enhancement of forest productivity under elevated CO2. Ecology Letters, 2011, 14, 349-357.	6.4	374
6	Predicting fine root lifespan from plant functional traits in temperate trees. New Phytologist, 2012, 195, 823-831.	7.3	350
7	Root traits as drivers of plant and ecosystem functioning: current understanding, pitfalls and future research needs. New Phytologist, 2021, 232, 1123-1158.	7.3	277
8	A global Fineâ€Root Ecology Database to address belowâ€ground challenges in plant ecology. New Phytologist, 2017, 215, 15-26.	7.3	250
9	Climate, soil and plant functional types as drivers of global fineâ€root trait variation. Journal of Ecology, 2017, 105, 1182-1196.	4.0	234
10	A starting guide to root ecology: strengthening ecological concepts and standardising root classification, sampling, processing and trait measurements. New Phytologist, 2021, 232, 973-1122.	7.3	216
11	Similar belowâ€ground carbon cycling dynamics but contrasting modes of nitrogen cycling between arbuscular mycorrhizal and ectomycorrhizal forests. New Phytologist, 2017, 213, 1440-1451.	7.3	212
12	Irreconcilable Differences: Fine-Root Life Spans and Soil Carbon Persistence. Science, 2008, 319, 456-458.	12.6	200
13	Leaf economics and hydraulic traits are decoupled in five speciesâ€rich tropicalâ€subtropical forests. Ecology Letters, 2015, 18, 899-906.	6.4	175
14	Global mycorrhizal plant distribution linked to terrestrial carbon stocks. Nature Communications, 2019, 10, 5077.	12.8	170
15	Building a better foundation: improving rootâ€trait measurements to understand and model plant and ecosystem processes. New Phytologist, 2017, 215, 27-37.	7.3	159
16	The decomposition of ectomycorrhizal fungal necromass. Soil Biology and Biochemistry, 2016, 93, 38-49.	8.8	156
17	An integrated framework of plant form and function: the belowground perspective. New Phytologist, 2021, 232, 42-59.	7.3	153
18	Impacts of environmental factors on fine root lifespan. Frontiers in Plant Science, 2014, 5, 205.	3.6	140

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19	Variability in root production, phenology, and turnover rate among 12 temperate tree species. Ecology, 2014, 95, 2224-2235.	3.2	136
20	Fine root dynamics in a loblolly pine forest are influenced by freeâ€airâ€CO₂â€enrichment: a sixâ€yearâ€minirhizotron study. Global Change Biology, 2008, 14, 588-602.	9.5	132
21	Arbuscular mycorrhizal fungal effects on plant competition and community structure. Journal of Ecology, 2015, 103, 1224-1232.	4.0	131
22	Physical and Functional Constraints on Viable Belowground Acquisition Strategies. Frontiers in Plant Science, 2019, 10, 1215.	3.6	115
23	Global patterns in fine root decomposition: climate, chemistry, mycorrhizal association and woodiness. Ecology Letters, 2019, 22, 946-953.	6.4	110
24	Improving the representation of roots in terrestrial models. Ecological Modelling, 2014, 291, 193-204.	2.5	101
25	Scots pine fine roots adjust along a 2000â€km latitudinal climatic gradient. New Phytologist, 2016, 212, 389-399.	7.3	98
26	Diverse belowground resource strategies underlie plant species coexistence and spatial distribution in three grasslands along a precipitation gradient. New Phytologist, 2017, 216, 1140-1150.	7.3	96
27	Root phenology in a changing climate. Journal of Experimental Botany, 2016, 67, 3617-3628.	4.8	95
28	Global root traits (GRooT) database. Global Ecology and Biogeography, 2021, 30, 25-37.	5.8	90
29	Foraging strategies in trees of different root morphology: the role of root lifespan. Tree Physiology, 2013, 33, 940-948.	3.1	84
30	The rhizosphere and hyphosphere differ in their impacts on carbon and nitrogen cycling in forests exposed to elevated <scp>CO</scp>₂. New Phytologist, 2015, 205, 1164-1174.	7.3	84
31	Mycorrhizal fungi and roots are complementary in foraging within nutrient patches. Ecology, 2016, 97, 2815-2823.	3.2	80
32	Frontiers in root ecology: recent advances and future challenges. Plant and Soil, 2018, 424, 1-9.	3.7	78
33	Patterns of structural and defense investments in fine roots of Scots pine (<i>Pinus sylvestris</i> L.) across a strong temperature and latitudinal gradient in Europe. Global Change Biology, 2017, 23, 1218-1231.	9.5	74
34	On the persistence of Cenococcum geophilum ectomycorrhizas and its implications for forest carbon and nutrient cycles. Soil Biology and Biochemistry, 2013, 65, 141-143.	8.8	66
35	Root traits explain plant species distributions along climatic gradients yet challenge the nature of ecological trade-offs. Nature Ecology and Evolution, 2021, 5, 1123-1134.	7.8	62
36	Fineâ€root functional trait responses to experimental warming: a global metaâ€analysis. New Phytologist, 2021, 230, 1856-1867.	7.3	59

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37	Regional scale patterns of fine root lifespan and turnover under current and future climate. Global Change Biology, 2013, 19, 1697-1708.	9.5	57
38	Relation of fine root distribution to soil C in a Cunninghamia lanceolata plantation in subtropical China. Plant and Soil, 2014, 381, 225-234.	3.7	57
39	Association of ectomycorrhizal trees with high carbonâ€toâ€nitrogen ratio soils across temperate forests is driven by smaller nitrogen not larger carbon stocks. Journal of Ecology, 2018, 106, 524-535.	4.0	50
40	Fineâ€root traits are linked to species dynamics in a successional plant community. Ecology, 2019, 100, e02588.	3.2	48
41	Different responses of absorptive roots and arbuscular mycorrhizal fungi to fertilization provide diverse nutrient acquisition strategies in Chinese fir. Forest Ecology and Management, 2019, 433, 64-72.	3.2	45
42	Early season root production in relation to leaf production among six diverse temperate tree species. Plant and Soil, 2015, 389, 121-129.	3.7	42
43	Seasonal variation in chemistry, but not morphology, in roots of Quercus robur growing in different soil types. Tree Physiology, 2015, 35, 644-652.	3.1	41
44	Root responses to elevated <scp>CO</scp>₂, warming and irrigation in a semiâ€arid grassland: Integrating biomass, length and life span in a 5â€year field experiment. Journal of Ecology, 2018, 106, 2176-2189.	4.0	39
45	Sensitivity of four ecological models to adjustments in fine root turnover rate. Ecological Modelling, 2015, 297, 107-117.	2.5	38
46	Mycorrhizal fungi as drivers and modulators of terrestrial ecosystem processes. New Phytologist, 2017, 213, 996-999.	7.3	38
47	Communityâ€level economics spectrum of fineâ€roots driven by nutrient limitations in subalpine forests. Journal of Ecology, 2019, 107, 1238-1249.	4.0	30
48	Fine-root morphological trait variation in tropical forest ecosystems: an evidence synthesis. Plant Ecology, 2020, 221, 1-13.	1.6	27
49	Longâ€term dynamics of mycorrhizal root tips in a loblolly pine forest grown with freeâ€air <scp><scp>CO₂</scp></scp> enrichment and soil N fertilization for 6Âyears. Global Change Biology, 2014, 20, 1313-1326.	9.5	26
50	Fast-cycling unit of root turnover in perennial herbaceous plants in a cold temperate ecosystem. Scientific Reports, 2016, 6, 19698.	3.3	25
51	Climate and phylogenetic history structure morphological and architectural trait variation among fineâ€root orders. New Phytologist, 2020, 228, 1824-1834.	7.3	25
52	Fineâ€root and mycorrhizal traits help explain ecosystem processes and responses to global change. New Phytologist, 2014, 204, 455-458.	7.3	24
53	Soil Fungi Respond More Strongly than Fine Roots to Elevated CO2 in a Model Regenerating Longleaf Pine-Wiregrass Ecosystem. Ecosystems, 2010, 13, 901-916.	3.4	23
54	Vertical fine-root distributions in five subalpine forest types shifts with soil properties across environmental gradients. Plant and Soil, 2020, 456, 129-143.	3.7	23

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55	Trait covariance: the functional warp of plant diversity?. New Phytologist, 2017, 216, 976-980.	7.3	22
56	Intraspecific Fine-Root Trait-Environment Relationships across Interior Douglas-Fir Forests of Western Canada. Plants, 2019, 8, 199.	3.5	22
57	How are nitrogen availability, fineâ€root mass, and nitrogen uptake related empirically? Implications for models and theory. Global Change Biology, 2019, 25, 885-899.	9.5	22
58	Mechanical traits of fine roots as a function of topology and anatomy. Annals of Botany, 2018, 122, 1103-1116.	2.9	21
59	Plasticity of fine-root functional traits in the litter layer in response to nitrogen addition in a subtropical forest plantation. Plant and Soil, 2017, 415, 317-330.	3.7	16
60	Global metaâ€analysis reveals different patterns of root tip adjustments by angiosperm and gymnosperm trees in response to environmental gradients. Journal of Biogeography, 2019, 46, 123-133.	3.0	14
61	Filling gaps in our understanding of belowground plant traits across the world: an introduction to a Virtual Issue. New Phytologist, 2021, 231, 2097-2103.	7.3	14
62	Nitrogen ion form and spatio-temporal variation in root distribution mediate nitrogen effects on lifespan of ectomycorrhizal roots. Plant and Soil, 2017, 411, 261-273.	3.7	12
63	Production dynamics of Cenococcum geophilum ectomycorrhizas in response to long-term elevated CO2 and N fertilization. Fungal Ecology, 2017, 26, 11-19.	1.6	11
64	Functionally divergent growth, biomass allocation and root distribution of two xerophytic species in response to varying soil rock fragment content. Plant and Soil, 2021, 463, 265-277.	3.7	10
65	Higher biomass partitioning to absorptive roots improves needle nutrition but does not alleviate stomatal limitation of northern Scots pine. Global Change Biology, 2021, 27, 3859-3869.	9.5	7
66	Linking fineâ€root architecture, vertical distribution and growth rate in temperate mountain shrubs. Oikos, 2023, 2023, .	2.7	4
67	Moving forward with fineâ€root definitions and research. New Phytologist, 2016, 212, 313-313.	7.3	3
68	A novel approach to study composition of in situ produced root-derived dissolved organic matter. Soil Biology and Biochemistry, 2014, 76, 1-4.	8.8	2