Nathan G Mcdowell

List of Publications by Year
in descending order

116 papers	26,607 citations	22132 59 h-index	20943 115 g-index
116 all docs	116 docs citations	116 times ranked	16934 citing authors

#	Article	IF	Citations
1	Reduced ecosystem resilience quantifies fineâ€scale heterogeneity in tropical forest mortality responses to drought. Global Change Biology, 2022, 28, 2081-2094.	4.2	12
2	Climate Change Risks to Global Forest Health: Emergence of Unexpected Events of Elevated Tree Mortality Worldwide. Annual Review of Plant Biology, 2022, 73, 673-702.	8.6	117
3	Mechanisms of woody-plant mortality under rising drought, CO2 and vapour pressure deficit. Nature Reviews Earth & Environment, 2022, 3, 294-308.	12.2	163
4	Severe declines in hydraulic capacity and associated carbon starvation drive mortality in seawater exposed Sitka-spruce (Picea sitchensis) trees. Environmental Research Communications, 2022, 4, 035005.	0.9	4
5	Tree mortality in a warming world: causes, patterns, and implications. Environmental Research Letters, 2022, 17, 030201.	2.2	14
6	The uncertain role of rising atmospheric CO2 on global plant transpiration. Earth-Science Reviews, 2022, 230, 104055.	4.0	16
7	Soil moisture thresholds explain a shift from light-limited to water-limited sap velocity in the Central Amazon during the 2015â€"16 El NiÃ±o drought. Environmental Research Letters, 2022, 17, 064023.	2.2	5
8	The influence of increasing atmospheric <scp>CO₂</scp>, temperature, and vapor pressure deficit on seawaterâ€induced tree mortality. New Phytologist, 2022, 235, 1767-1779.	3.5	12
9	Processes and mechanisms of coastal woodyâ€plant mortality. Global Change Biology, 2022, 28, 5881-5900.	4.2	22
10	Emerging signals of declining forest resilience under climate change. Nature, 2022, 608, 534-539.	13.7	132
11	Mortality predispositions of conifers across western USA. New Phytologist, 2021, 229, 831-844.	3.5	11
12	Responses of functional traits to seven-year nitrogen addition in two tree species: coordination of hydraulics, gas exchange and carbon reserves. Tree Physiology, 2021, 41, 190-205.	1.4	17
13	Interannual variability of ecosystem iso/anisohydry is regulated by environmental dryness. New Phytologist, 2021, 229, 2562-2575.	3.5	23
14	Declining carbohydrate content of Sitka-spruce treesdying from seawater exposure. Plant Physiology, 2021, 185, 1682-1696.	2.3	10
15	Coastal Forest Seawater Exposure Increases Stem Methane Concentration. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2020JG005915.	1.3	8
16	Plant wax and carbon isotope response to heat and drought in the conifer Juniperus monosperma. Organic Geochemistry, 2021, 153, 104197.	0.9	9
17	Representation of Plant Hydraulics in the Noahâ€MP Land Surface Model: Model Development and Multiscale Evaluation. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002214.	1.3	50
18	Changes in carbon and nitrogen metabolism during seawater-induced mortality of Picea sitchensis trees. Tree Physiology, 2021, 41, 2326-2340.	1.4	8

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19	Disentangling the Effects of Vapor Pressure Deficit and Soil Water Availability on Canopy Conductance in a Seasonal Tropical Forest During the 2015 El NiÃ±o Drought. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2021JD035004.	1.2	17
20	Hydraulic architecture explains species moisture dependency but not mortality rates across a tropical rainfall gradient. Biotropica, 2021, 53, 1213-1225.	0.8	6
21	Seawater exposure causes hydraulic damage in dying Sitka-spruce trees. Plant Physiology, 2021, 187, 873-885.	2.3	10
22	Hydraulicallyâ€vulnerable trees survive on deepâ€water access during droughts in a tropical forest. New Phytologist, 2021, 231, 1798-1813.	3.5	51
23	High Temperature Acclimation of Leaf Gas Exchange, Photochemistry, and Metabolomic Profiles in <i>Populus trichocarpa</i>. ACS Earth and Space Chemistry, 2021, 5, 1813-1828.	1.2	7
24	Canopy Position Influences the Degree of Light Suppression of Leaf Respiration in Abundant Tree Genera in the Amazon Forest. Frontiers in Forests and Global Change, 2021, 4, .	1.0	3
25	Foliar respiration is related to photosynthetic, growth and carbohydrate response to experimental drought and elevated temperature. Plant, Cell and Environment, 2021, 44, 3853-3865.	2.8	12
26	Detecting forest response to droughts with global observations of vegetation water content. Global Change Biology, 2021, 27, 6005-6024.	4.2	73
27	Stability of tropical forest tree carbonâ€water relations in a rainfall exclusion treatment through shifts in effective water uptake depth. Global Change Biology, 2021, 27, 6454-6466.	4.2	17
28	Hotter droughts alter resource allocation to chemical defenses in piÃ±on pine. Oecologia, 2021, 197, 921-938.	0.9	14
29	Tradeâ€offs of forest management scenarios on forest carbon exchange and threatened and endangered species habitat. Ecosphere, 2021, 12, e03779.	1.0	4
30	The response of stomatal conductance to seasonal drought in tropical forests. Global Change Biology, 2020, 26, 823-839.	4.2	60
31	Conifers depend on established roots during drought: results from a coupled model of carbon allocation and hydraulics. New Phytologist, 2020, 225, 679-692.	3.5	63
32	Effects of nitrogen enrichment on tree carbon allocation: A global synthesis. Global Ecology and Biogeography, 2020, 29, 573-589.	2.7	66
33	Tree growth, transpiration, and water-use efficiency between shoreline and upland red maple (Acer) Tj ETQq1 1 0.784314 rgBT /Overl	1.9	7
34	Plant responses to rising vapor pressure deficit. New Phytologist, 2020, 226, 1550-1566.	3.5	814
35	Representing the function and sensitivity of coastal interfaces in Earth system models. Nature Communications, 2020, 11, 2458.	5.8	153
36	Pervasive shifts in forest dynamics in a changing world. Science, 2020, 368, .	6.0	576

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37	Stimulation of isoprene emissions and electron transport rates as key mechanisms of thermal tolerance in the tropical species <i>Vismia guianensis</i>. Global Change Biology, 2020, 26, 5928-5941.	4.2	20
38	Benchmarking and parameter sensitivity of physiological and vegetation dynamics using the Functionally Assembled Terrestrial Ecosystem Simulator (FATES) at Barro Colorado Island, Panama. Biogeosciences, 2020, 17, 3017-3044.	1.3	82
39	Differential effects of drought on nonstructural carbohydrate storage in seedlings and mature trees of four species in a subtropical forest. Forest Ecology and Management, 2020, 469, 118159.	1.4	27
40	Species-Specific Shifts in Diurnal Sap Velocity Dynamics and Hysteretic Behavior of Ecophysiological Variables During the 2015â€“2016 El NiÃ±o Event in the Amazon Forest. Frontiers in Plant Science, 2019, 10, 830.	1.7	17
41	Hydraulics in the 21st century. New Phytologist, 2019, 224, 537-542.	3.5	44
42	Metabolic shifts associated with drought-induced senescence in Brachypodium. Plant Science, 2019, 289, 110278.	1.7	18
43	Identification of key parameters controlling demographically structured vegetation dynamics in a land surface model: CLM4.5(FATES). Geoscientific Model Development, 2019, 12, 4133-4164.	1.3	32
44	Precipitation mediates sap flux sensitivity to evaporative demand in the neotropics. Oecologia, 2019, 191, 519-530.	0.9	14
45	Lack of acclimation of leaf area:sapwood area ratios in piÃ±on pine and juniper in response to precipitation reduction and warming. Tree Physiology, 2019, 39, 135-142.	1.4	11
46	Constrained tree growth and gas exchange of seawaterâ€exposed forests in the Pacific Northwest, USA. Journal of Ecology, 2019, 107, 2541-2552.	1.9	21
47	Predictability of tropical vegetation greenness using sea surface temperatures*. Environmental Research Communications, 2019, 1, 031003.	0.9	2
48	Mechanisms of a coniferous woodland persistence under drought and heat. Environmental Research Letters, 2019, 14, 045014.	2.2	72
49	Increasing impacts of extreme droughts on vegetation productivity under climate change. Nature Climate Change, 2019, 9, 948-953.	8.1	260
50	Prolonged warming and drought modify belowground interactions for water among coexisting plants. Tree Physiology, 2019, 39, 55-63.	1.4	23
51	Homoeostatic maintenance of nonstructural carbohydrates during the 2015â€“2016 El NiÃ±o drought across a tropical forest precipitation gradient. Plant, Cell and Environment, 2019, 42, 1705-1714.	2.8	29
52	Drivers and mechanisms of tree mortality in moist tropical forests. New Phytologist, 2018, 219, 851-869.	3.5	341
53	Incorporating variability in simulations of seasonally forced phenology using integral projection models. Ecology and Evolution, 2018, 8, 162-175.	0.8	12
54	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

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55	Predicting Chronic Climate-Driven Disturbances and Their Mitigation. Trends in Ecology and Evolution, 2018, 33, 15-27.	4.2	77
56	Standardized protocols and procedures can precisely and accurately quantify non-structural carbohydrates. Tree Physiology, 2018, 38, 1764-1778.	1.4	171
57	Dry and hot: the hydraulic consequences of a climate changeâ€“type drought for Amazonian trees. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20180209.	1.8	49
58	Homeostatic levels of nonstructural carbohydrates after 13Âyr of drought and irrigation in <i>Pinus sylvestris</i>. New Phytologist, 2018, 219, 1314-1324.	3.5	65
59	Unsaturation of vapour pressure inside leaves of two conifer species. Scientific Reports, 2018, 8, 7667.	1.6	80
60	Reductions in tree performance during hotter droughts are mitigated by shifts in nitrogen cycling. Plant, Cell and Environment, 2018, 41, 2627-2637.	2.8	15
61	Climate-driven disturbances in the San Juan River sub-basin of the Colorado River. Hydrology and Earth System Sciences, 2018, 22, 709-725.	1.9	33
62	Deriving pattern from complexity in the processes underlying tropical forest drought impacts. New Phytologist, 2018, 219, 841-844.	3.5	11
63	Climate sensitive size-dependent survival in tropical trees. Nature Ecology and Evolution, 2018, 2, 1436-1442.	3.4	41
64	Traits drive global wood decomposition rates more than climate. Global Change Biology, 2018, 24, 5259-5269.	4.2	59
65	Variation in hydroclimate sustains tropical forest biomass and promotes functional diversity. New Phytologist, 2018, 219, 932-946.	3.5	41
66	Tree water dynamics in a drying and warming world. Plant, Cell and Environment, 2017, 40, 1861-1873.	2.8	96
67	Temperature response surfaces for mortality risk of tree species with future drought. Environmental Research Letters, 2017, 12, 115014.	2.2	67
68	Interacting Effects of Leaf Water Potential and Biomass on Vegetation Optical Depth. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3031-3046.	1.3	91
69	A metadata reporting framework (FRAMES) for synthesis of ecohydrological observations. Ecological Informatics, 2017, 42, 148-158.	2.3	18
70	Warming combined with more extreme precipitation regimes modifies the water sources used by trees. New Phytologist, 2017, 213, 584-596.	3.5	153
71	The role of nutrients in droughtâ€induced tree mortality and recovery. New Phytologist, 2017, 214, 513-520.	3.5	252
72	Precipitation, not air temperature, drives functional responses of trees in semiâ€arid ecosystems. Journal of Ecology, 2017, 105, 163-175.	1.9	86

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73	Estimating Global Ecosystem Isohydry/Anisohydry Using Active and Passive Microwave Satellite Data. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3306-3321.	1.3	34
74	A multi-species synthesis of physiological mechanisms in drought-induced tree mortality. Nature Ecology and Evolution, 2017, 1, 1285-1291.	3.4	739
75	Linking hydraulic traits to tropical forest function in a size-structured and trait-driven model (TFSÂv.1-Hydro). Geoscientific Model Development, 2016, 9, 4227-4255.	1.3	211
76	Pragmatic hydraulic theory predicts stomatal responses to climatic water deficits. New Phytologist, 2016, 212, 577-589.	3.5	168
77	An allometryâ€based model of the survival strategies of hydraulic failure and carbon starvation. Ecohydrology, 2016, 9, 529-546.	1.1	33
78	Responses of two semiarid conifer tree species to reduced precipitation and warming reveal new perspectives for stomatal regulation. Plant, Cell and Environment, 2016, 39, 38-49.	2.8	111
79	A belowground perspective on the drought sensitivity of forests: Towards improved understanding and simulation. Forest Ecology and Management, 2016, 380, 309-320.	1.4	92
80	The energetic and carbon economic origins of leaf thermoregulation. Nature Plants, 2016, 2, 16129.	4.7	178
81	Rooting depth, water relations and nonâ€structural carbohydrate dynamics in three woody angiosperms differentially affected by an extreme summer drought. Plant, Cell and Environment, 2016, 39, 618-627.	2.8	126
82	Prolonged experimental drought reduces plant hydraulic conductance and transpiration and increases mortality in a piÃ±onâ€"juniper woodland. Ecology and Evolution, 2015, 5, 1618-1638.	0.8	63
83	Interdependence of chronic hydraulic dysfunction and canopy processes can improve integrated models of tree response to drought. Water Resources Research, 2015, 51, 6156-6176.	1.7	99
84	Larger trees suffer most during drought in forests worldwide. Nature Plants, 2015, 1, 15139.	4.7	622
85	Experimental drought and heat can delay phenological development and reduce foliar and shoot growth in semiarid trees. Global Change Biology, 2015, 21, 4210-4220.	4.2	96
86	Tree mortality from drought, insects, and their interactions in a changing climate. New Phytologist, 2015, 208, 674-683.	3.5	641
87	Darcy's law predicts widespread forest mortality under climate warming. Nature Climate Change, 2015, 5, 669-672.	8.1	553
88	Global satellite monitoring of climate-induced vegetation disturbances. Trends in Plant Science, 2015, 20, 114-123.	4.3	183
89	Sea Surface Temperature Warming Patterns and Future Vegetation Change. Journal of Climate, 2015, 28, 7943-7961.	1.2	10
90	Mechanisms of piÃ±on pine mortality after severe drought: a retrospective study of mature trees. Tree Physiology, 2015, 35, 806-816.	1.4	72

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91	Allocation to carbon storage pools in Norway spruce saplings under drought and low CO2. Tree Physiology, 2015, 35, 243-252.	1.4	71
92	Non-structural carbohydrates in woody plants compared among laboratories. Tree Physiology, 2015, 35, tpv073.	1.4	163
93	On underestimation of global vulnerability to tree mortality and forest dieâ€off from hotter drought in the Anthropocene. Ecosphere, 2015, 6, 1-55.	1.0	1,739
94	Carbohydrate dynamics and mortality in a piÃ±onâ€juniper woodland under three future precipitation scenarios. Plant, Cell and Environment, 2015, 38, 729-739.	2.8	102
95	How do trees die? A test of the hydraulic failure and carbon starvation hypotheses. Plant, Cell and Environment, 2014, 37, 153-161.	2.8	642
96	Reduced transpiration response to precipitation pulses precedes mortality in a piÃ±onâ€“juniper woodland subject to prolonged drought. New Phytologist, 2013, 200, 375-387.	3.5	77
97	Evaluating theories of droughtâ€induced vegetation mortality using a multimodelâ€“experiment framework. New Phytologist, 2013, 200, 304-321.	3.5	340
98	Temperature as a potent driver of regional forest drought stress and tree mortality. Nature Climate Change, 2013, 3, 292-297.	8.1	1,487
99	Quantifying tree mortality in a mixed species woodland using multitemporal high spatial resolution satellite imagery. Remote Sensing of Environment, 2013, 129, 54-65.	4.6	56
100	The critical amplifying role of increasing atmospheric moisture demand on tree mortality and associated regional die-off. Frontiers in Plant Science, 2013, 4, 266.	1.7	163
101	Regulation and acclimation of leaf gas exchange in a piÃ±onâ€“juniper woodland exposed to three different precipitation regimes. Plant, Cell and Environment, 2013, 36, 1812-1825.	2.8	83
102	Drought predisposes piÃ±onâ€“juniper woodlands to insect attacks and mortality. New Phytologist, 2013, 198, 567-578.	3.5	256
103	Increased susceptibility to droughtâ€induced mortality in <i>Sequoia sempervirens</i> (Cupressaceae) trees under Cenozoic atmospheric carbon dioxide starvation. American Journal of Botany, 2013, 100, 582-591.	0.8	51
104	Methodology and performance of a rainfall manipulation experiment in a piÃ±onâ€“juniper woodland. Ecosphere, 2012, 3, 1-20.	1.0	50
105	Hydraulic limits preceding mortality in a piÃ±onâ€“juniper woodland under experimental drought. Plant, Cell and Environment, 2012, 35, 1601-1617.	2.8	170
106	Mechanisms Linking Drought, Hydraulics, Carbon Metabolism, and Vegetation Mortality Â. Plant Physiology, 2011, 155, 1051-1059.	2.3	938
107	The interdependence of mechanisms underlying climate-driven vegetation mortality. Trends in Ecology and Evolution, 2011, 26, 523-532.	4.2	839
108	Relationships Between Tree Height and Carbon Isotope Discrimination. Tree Physiology, 2011, , 255-286.	0.9	69

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109	The mechanisms of carbon starvation: how, when, or does it even occur at all?. New Phytologist, 2010, 186, 264-266.	3.5	226
110	Assessing uncertainties in a secondâ€generation dynamic vegetation model caused by ecological scale limitations. New Phytologist, 2010, 187, 666-681.	3.5	271
111	Growth, carbonâ€isotope discrimination, and droughtâ€associated mortality across a <i>Pinus ponderosa</i> elevational transect. Global Change Biology, 2010, 16, 399-415.	4.2	200
112	A global overview of drought and heat-induced tree mortality reveals emerging climate change risks for forests. Forest Ecology and Management, 2010, 259, 660-684.	1.4	5,535
113	Tree dieâ€off in response to global changeâ€type drought: mortality insights from a decade of plant water potential measurements. Frontiers in Ecology and the Environment, 2009, 7, 185-189.	1.9	436
114	Transpiration and stomatal conductance across a steep climate gradient in the southern Rocky Mountains. Ecohydrology, 2008, 1, 193-204.	1.1	71
115	Mechanisms of plant survival and mortality during drought: why do some plants survive while others succumb to drought?. New Phytologist, 2008, 178, 719-739.	3.5	3,232
116	Homeostatic Maintenance Of Ponderosa Pine Gas Exchange In Response To Stand Density Changes. , 2006, 16, 1164-1182.		175