Michael L Roderick

List of Publications by Year
in descending order

111 papers	14,980 citations	26630 56 h-index	24258 110 g-index
135 all docs	135 docs citations	135 times ranked	13732 citing authors

#	Article	IF	Citations
1	Little change in global drought over the past 60 years. Nature, 2012, 491, 435-438.	27.8	1,532
2	Global review and synthesis of trends in observed terrestrial near-surface wind speeds: Implications for evaporation. Journal of Hydrology, 2012, 416-417, 182-205.	5.4	906
3	Challenging Theophrastus: A common core list of plant traits for functional ecology. Journal of Vegetation Science, 1999, 10, 609-620.	2.2	834
4	The Cause of Decreased Pan Evaporation over the Past 50 Years. Science, 2002, 298, 1410-1411.	12.6	627
5	Moving beyond heterogeneity and process complexity: A new vision for watershed hydrology. Water Resources Research, 2007, 43, .	4.2	613
6	On the attribution of changing pan evaporation. Geophysical Research Letters, 2007, 34, .	4.0	520
7	On the direct effect of clouds and atmospheric particles on the productivity and structure of vegetation. Oecologia, 2001, 129, 21-30.	2.0	444
8	Impact of CO₂ fertilization on maximum foliage cover across the globe's warm, arid environments. Geophysical Research Letters, 2013, 40, 3031-3035.	4.0	442
9	On the importance of including vegetation dynamics in Budyko's hydrological model. Hydrology and Earth System Sciences, 2007, 11, 983-995.	4.9	434
10	Assessing the ability of potential evaporation formulations to capture the dynamics in evaporative demand within a changing climate. Journal of Hydrology, 2010, 386, 186-197.	5.4	384
11	A simple framework for relating variations in runoff to variations in climatic conditions and catchment properties. Water Resources Research, 2011, 47, .	4.2	354
12	Wind speed climatology and trends for Australia, 1975â€“2006: Capturing the stilling phenomenon and comparison with nearâ€surface reanalysis output. Geophysical Research Letters, 2008, 35, .	4.0	335
13	Roots, storms and soil pores: Incorporating key ecohydrological processes into Budykoâ€™s hydrological model. Journal of Hydrology, 2012, 436-437, 35-50.	5.4	327
14	Changes in Australian pan evaporation from 1970 to 2002. International Journal of Climatology, 2004, 24, 1077-1090.	3.5	296
15	Multifaceted characteristics of dryland aridity changes in a warming world. Nature Reviews Earth & Environment, 2021, 2, 232-250.	29.7	281
16	Climateâ€related trends in Australian vegetation cover as inferred from satellite observations, 1981â€“2006. Global Change Biology, 2009, 15, 1025-1039.	9.5	273
17	Hydrologic implications of vegetation response to elevated CO2 in climate projections. Nature Climate Change, 2019, 9, 44-48.	18.8	253
18	Robust Future Changes in Meteorological Drought in <scp>CMIP6</scp> Projections Despite Uncertainty in Precipitation. Geophysical Research Letters, 2020, 47, e2020GL087820.	4.0	239

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19	On the assessment of aridity with changes in atmospheric <scp>CO</scp>₂. Water Resources Research, 2015, 51, 5450-5463.	4.2	194
20	ATMOSPHERIC SCIENCE: Pinatubo, Diffuse Light, and the Carbon Cycle. Science, 2003, 299, 1997-1998.	12.6	193
21	A general framework for understanding the response of the water cycle to global warming over land and ocean. Hydrology and Earth System Sciences, 2014, 18, 1575-1589.	4.9	192
22	Assessing the differences in sensitivities of runoff to changes in climatic conditions across a large basin. Journal of Hydrology, 2011, 406, 234-244.	5.4	169
23	Soil carbon stocks and bulk density: spatial or cumulative mass coordinates as a basis of expression?. Global Change Biology, 2003, 9, 1507-1514.	9.5	163
24	Changes in Australian pan evaporation from 1970 to 2002. International Journal of Climatology, 2004, 24, 1077-1090.	3.5	156
25	Pan Evaporation Trends and the Terrestrial Water Balance. II. Energy Balance and Interpretation. Geography Compass, 2009, 3, 761-780.	2.7	155
26	The use of time-integrated NOAA NDVI data and rainfall to assess landscape degradation in the arid shrubland of Western Australia. Remote Sensing of Environment, 2003, 85, 145-158.	11.0	147
27	Less bluster ahead? Ecohydrological implications of global trends of terrestrial nearâ€surface wind speeds. Ecohydrology, 2012, 5, 381-388.	2.4	145
28	Linking wood density with tree growth and environment: a theoretical analysis based on the motion of water. New Phytologist, 2001, 149, 473-485.	7.3	139
29	Can dynamic vegetation information improve the accuracy of Budykoâ€™s hydrological model?. Journal of Hydrology, 2010, 390, 23-34.	5.4	135
30	Changes in New Zealand pan evaporation since the 1970s. International Journal of Climatology, 2005, 25, 2031-2039.	3.5	133
31	Plantâ€“water relations and the fibre saturation point. New Phytologist, 2005, 168, 25-37.	7.3	130
32	Have Australian rainfall and cloudiness increased due to the remote effects of Asian anthropogenic aerosols?. Journal of Geophysical Research, 2007, 112, .	3.3	127
33	An optimality-based model of the coupled soil moisture and root dynamics. Hydrology and Earth System Sciences, 2008, 12, 913-932.	4.9	127
34	An optimalityâ€based model of the dynamic feedbacks between natural vegetation and the water balance. Water Resources Research, 2009, 45, .	4.2	127
35	Pan Evaporation Trends and the Terrestrial Water Balance. I. Principles and Observations. Geography Compass, 2009, 3, 746-760.	2.7	122
36	State of the Climate in 2011. Bulletin of the American Meteorological Society, 2012, 93, S1-S282.	3.3	121

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37	Revisiting the parameterization of potential evaporation as a driver of longâ€term water balance trends. Geophysical Research Letters, 2008, 35, .	4.0	118
38	Lags in hydrologic recovery following an extreme drought: Assessing the roles of climate and catchment characteristics. Water Resources Research, 2017, 53, 4821-4837.	4.2	112
39	A simple pan-evaporation model for analysis of climate simulations: Evaluation over Australia. Geophysical Research Letters, 2006, 33, .	4.0	109
40	A theoretical approach to linking the composition and morphology with the function of leaves. Functional Ecology, 1999, 13, 683-695.	3.6	99
41	The contribution of reduction in evaporative cooling to higher surface air temperatures during drought. Geophysical Research Letters, 2014, 41, 7891-7897.	4.0	98
42	Observational evidence from two mountainous regions that nearâ€surface wind speeds are declining more rapidly at higher elevations than lower elevations: 1960â€“2006. Geophysical Research Letters, 2010, 37, .	4.0	96
43	A framework for understanding the relationship between environment and vegetation based on the surface area to volume ratio of leaves. Functional Ecology, 2000, 14, 423-437.	3.6	94
44	Hydroclimatic projections for the Murrayâ€Darling Basin based on an ensemble derived from Intergovernmental Panel on Climate Change AR4 climate models. Water Resources Research, 2011, 47, .	4.2	91
45	Identifying areas at risk of droughtâ€induced tree mortality across Southâ€Eastern Australia. Global Change Biology, 2020, 26, 5716-5733.	9.5	79
46	Rainfall statistics, stationarity, and climate change. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 2305-2310.	7.1	77
47	Estimating the diffuse component from daily and monthly measurements of global radiation. Agricultural and Forest Meteorology, 1999, 95, 169-185.	4.8	75
48	Changes in the variability of global land precipitation. Geophysical Research Letters, 2012, 39, .	4.0	75
49	On the relationship between the composition, morphology and function of leaves. Functional Ecology, 1999, 13, 696-710.	3.6	74
50	Estimating woody and herbaceous vegetation cover from time series satellite observations. Global Ecology and Biogeography, 1999, 8, 501-508.	5.8	73
51	AusTraits, a curated plant trait database for the Australian flora. Scientific Data, 2021, 8, 254.	5.3	73
52	What is NPP? Inconsistent accounting of respiratory fluxes in the definition of net primary production. Functional Ecology, 2005, 19, 378-382.	3.6	71
53	Deriving consistent long-term vegetation information from AVHRR reflectance data using a cover-triangle-based framework. Remote Sensing of Environment, 2008, 112, 2938-2949.	11.0	71
54	Longâ€term CO₂ fertilization increases vegetation productivity and has little effect on hydrological partitioning in tropical rainforests. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 2125-2140.	3.0	71

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55	Upscaling latent heat flux for thermal remote sensing studies: Comparison of alternative approaches and correction of bias. Journal of Hydrology, 2012, 468-469, 35-46.	5.4	64
56	A test of the optimality approach to modelling canopy properties and CO2uptake by natural vegetation. Plant, Cell and Environment, 2007, 30, 1586-1598.	5.7	60
57	Estimating mixtures of leaf functional types using continental-scale satellite and climatic data. Global Ecology and Biogeography, 2002, 11, 23-39.	5.8	58
58	Correcting for systematic error in satellite-derived latent heat flux due to assumptions in temporal scaling: Assessment from flux tower observations. Journal of Hydrology, 2011, 409, 140-148.	5.4	57
59	A critical overview of model estimates of net primary productivity for the Australian continent. Functional Plant Biology, 2004, 31, 1043.	2.1	54
60	Examining the evidence for decoupling between photosynthesis and transpiration during heat extremes. Biogeosciences, 2019, 16, 903-916.	3.3	54
61	A generalized complementary relationship between actual and potential evaporation defined by a reference surface temperature. Water Resources Research, 2016, 52, 385-406.	4.2	53
62	Assessing the Steadyâ€State Assumption in Water Balance Calculation Across Global Catchments. Water Resources Research, 2020, 56, e2020WR027392.	4.2	52
63	Winds of change. Nature Geoscience, 2010, 3, 747-748.	12.9	51
64	Radiation, surface temperature and evaporation over wet surfaces. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 1118-1129.	2.7	48
65	Comparing Palmer Drought Severity Index drought assessments using the traditional offline approach with direct climate model outputs. Hydrology and Earth System Sciences, 2020, 24, 2921-2930.	4.9	46
66	An analytical model for relating global terrestrial carbon assimilation with climate and surface conditions using a rate limitation framework. Geophysical Research Letters, 2015, 42, 9825-9835.	4.0	45
67	A simple hypothesis of how leaf and canopyâ€level transpiration and assimilation respond to elevated CO₂ reveals distinct response patterns between disturbed and undisturbed vegetation. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 168-184.	3.0	44
68	Simulated changes in aridity from the last glacial maximum to 4xCO ₂. Environmental Research Letters, 2017, 12, 114021.	5.2	44
69	Annual precipitation explains variability in dryland vegetation greenness globally but not locally. Global Change Biology, 2021, 27, 4367-4380.	9.5	44
70	Evaluation of the remote-sensing-based DIFFUSE model for estimating photosynthesis of vegetation. Remote Sensing of Environment, 2014, 155, 349-365.	11.0	43
71	A canopy-scale test of the optimal water-use hypothesis. Plant, Cell and Environment, 2007, 31, 071030013314002-???.	5.7	42
72	On the theory relating changes in areaâ€average and pan evaporation. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1230-1247.	2.7	42

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73	Calibrating long-term AVHRR-derived NDVI imagery. Remote Sensing of Environment, 1996, 58, 1-12.	11.0	38
74	The precision of the NDVI derived from AVHRR observations. Remote Sensing of Environment, 1996, 56, 57-65.	11.0	37
75	The energy balance of a US Class A evaporation pan. Agricultural and Forest Meteorology, 2013, 182-183, 314-331.	4.8	33
76	Streamflow stationarity in a changing world. Environmental Research Letters, 2021, 16, 064096.	5.2	32
77	The relationship between leaf composition and morphology at elevated CO2 concentrations. New Phytologist, 1999, 143, 63-72.	7.3	31
78	On the measurement of growth with applications to the modelling and analysis of plant growth. Functional Ecology, 2000, 14, 244-251.	3.6	30
79	Gross primary productivity and transpiration flux of the Australian vegetation from 1788 to 1988 AD: effects of CO2 and land use change. Global Change Biology, 2004, 10, 1884-1898.	9.5	30
80	CO2 and land-use effects on Australian vegetation over the last two centuries. Australian Journal of Botany, 2002, 50, 511.	0.6	28
81	Partitioning the variance between space and time. Geophysical Research Letters, 2010, 37, .	4.0	28
82	The impact of bushfires on water yield from southâ€east Australia's ash forests. Water Resources Research, 2013, 49, 4493-4505.	4.2	28
83	Self-thinning of plant populations from a dynamic viewpoint. Functional Ecology, 2004, 18, 197-203.	3.6	27
84	The aerodynamics of pan evaporation. Agricultural and Forest Meteorology, 2012, 152, 31-43.	4.8	26
85	Hypothesis. Air embolisms exsolving in the transpiration water - the effect of constrictions in the xylem pipes. Functional Plant Biology, 2007, 34, 95.	2.1	25
86	A simulation model to study land use strategies in swidden agriculture systems. Agricultural Systems, 2005, 85, 271-288.	6.1	24
87	Attribution of satellite-observed vegetation trends in a hyper-arid region of the Heihe River basin, Western China. Hydrology and Earth System Sciences, 2014, 18, 3499-3509.	4.9	23
88	Changing Australian vegetation from 1788 to 1988: effects of CO2 and land-use change. Australian Journal of Botany, 2006, 54, 325.	0.6	23
89	The ever-flickering light. Trends in Ecology and Evolution, 2006, 21, 3-5.	8.7	21
90	A mathematical model of pan evaporation under steady state conditions. Journal of Hydrology, 2016, 540, 641-658.	5.4	20

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91	Using an optimality model to understand medium and long-term responses of vegetation water use to elevated atmospheric CO2concentrations. AoB PLANTS, 2015, 7, plv060.	2.3	19
92	On the Conservative Nature of the Leaf Mass-Area Relationship. Annals of Botany, 2002, 89, 537-542.	2.9	17
93	Introduction to special section on Water Resources in the Murrayâ€Darling Basin: Past, present, and future. Water Resources Research, 2011, 47, .	4.2	17
94	Inter-annual variability of the global terrestrial water cycle. Hydrology and Earth System Sciences, 2020, 24, 381-396.	4.9	17
95	A mechanical interpretation of pressure chamber measurementsâ€"what does the strength of the squeeze tell us?. Plant Physiology and Biochemistry, 2005, 43, 323-336.	5.8	16
96	The terrestrial water cycle in a warming world. Nature Climate Change, 2022, 12, 604-606.	18.8	15
97	An ecological framework linking scales across space and time based on self-thinning. Theoretical Population Biology, 2004, 66, 113-128.	1.1	12
98	Water Cycle Varies over Land and Sea. Science, 2012, 336, 1230-1231.	12.6	11
99	Hazy, cool and well fed?. Nature Climate Change, 2012, 2, 76-77.	18.8	10
100	Testing a maximum evaporation theory over saturated land: implications for potential evaporation estimation. Hydrology and Earth System Sciences, 2022, 26, 1745-1754.	4.9	10
101	The clearâ€sky downwelling longâ€wave radiation at the surface in current and future climates. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 4251-4268.	2.7	9
102	On the use of thermodynamic methods to describe water relations in plants and soil. Functional Plant Biology, 2001, 28, 729.	2.1	8
103	Using radiative signatures to diagnose the cause of warming during the 2013â€"2014 Californian drought. Journal of Hydrology, 2017, 553, 408-418.	5.4	7
104	A data resource for analysing dynamics in Australian ecohydrological conditions. Austral Ecology, 2010, 35, 593-594.	1.5	5
105	Using the Complementary Relationship Between Actual and Potential Evaporation to Diagnose the Onset of Heatwaves. Water Resources Research, 2021, 57, e2020WR029156.	4.2	5
106	Up-scaling short-term process-level understanding to longer timescales using a covariance-based approach. Hydrology and Earth System Sciences, 2014, 18, 31-45.	4.9	4
107	A second pathway for gas out of the pressure chamberâ€"what is being squeezed?. Plant Physiology and Biochemistry, 2005, 43, 315-321.	5.8	3
108	Application Of An Ecological Framework Linking Scales Based On Self-Thinning. , 2006, 16, 133-142.		3

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109	A framework to quantify the inter-annual variation in near-surface air temperature due to change in precipitation in snow-free regions. Environmental Research Letters, 2020, 15, 114028.	5.2	2
110	Diagnosing instantaneous forcing and feedbacks of downwelling longwave radiation at the surface: a simple methodology and its application to CMIP5 models. Journal of Climate, 2022, , 1-30.	3.2	1
111	Allocation within a generic scaling framework. Ecological Modelling, 2007, 201, 223-232.	2.5	0