D Scott Mackay

List of Publications by Year
in descending order

83 papers	4,601 citations	101543 36 h-index	102487 66 g-index
86 all docs	86 docs citations	86 times ranked	5824 citing authors

#	Article	IF	Citations
1	Improving the representation of hydrologic processes in Earth System Models. Water Resources Research, 2015, 51, 5929-5956.	4.2	366
2	Evaluating theories of droughtâ€induced vegetation mortality using a multimodelâ€“experiment framework. New Phytologist, 2013, 200, 304-321.	7.3	340
3	Multi-scale predictions of massive conifer mortality due to chronic temperature rise. Nature Climate Change, 2016, 6, 295-300.	18.8	296
4	Hillslope Hydrology in Global Change Research and Earth System Modeling. Water Resources Research, 2019, 55, 1737-1772.	4.2	281
5	Predicting stomatal responses to the environment from the optimization of photosynthetic gain and hydraulic cost. Plant, Cell and Environment, 2017, 40, 816-830.	5.7	276
6	Pragmatic hydraulic theory predicts stomatal responses to climatic water deficits. New Phytologist, 2016, 212, 577-589.	7.3	168
7	Mechanisms of woody-plant mortality under rising drought, CO2 and vapour pressure deficit. Nature Reviews Earth & Environment, 2022, 3, 294-308.	29.7	163
8	Impacts of input parameter spatial aggregation on an agricultural nonpoint source pollution model. Journal of Hydrology, 2000, 236, 35-53.	5.4	158
9	Tree species effects on stand transpiration in northern Wisconsin. Water Resources Research, 2002, 38, 8-1-8-11.	4.2	132
10	Coâ€occurring woody species have diverse hydraulic strategies and mortality rates during an extreme drought. Plant, Cell and Environment, 2018, 41, 576-588.	5.7	118
11	Heterogeneity of light use efficiency in a northern Wisconsin forest: implications for modeling net primary production with remote sensing. Remote Sensing of Environment, 2004, 93, 168-178.	11.0	105
12	Contrasting carbon dioxide fluxes between a drying shrub wetland in Northern Wisconsin, USA, and nearby forests. Biogeosciences, 2009, 6, 1115-1126.	3.3	101
13	Interdependence of chronic hydraulic dysfunction and canopy processes can improve integrated models of tree response to drought. Water Resources Research, 2015, 51, 6156-6176.	4.2	99
14	Interannual consistency in canopy stomatal conductance control of leaf water potential across seven tree species. Tree Physiology, 2007, 27, 11-24.	3.1	96
15	CO₂ fluxes at northern fens and bogs have opposite responses to interâ€annual fluctuations in water table. Geophysical Research Letters, 2010, 37, .	4.0	79
16	Effects of spatial detail of soil information on watershed modeling. Journal of Hydrology, 2001, 248, 54-77.	5.4	78
17	Plant hydraulics improves and topography mediates prediction of aspen mortality in southwestern <scp>USA</scp>. New Phytologist, 2017, 213, 113-127.	7.3	77
18	Effects of aggregated classifications of forest composition on estimates of evapotranspiration in a northern Wisconsin forest. Global Change Biology, 2002, 8, 1253-1265.	9.5	75

#	Article	IF	Citations
19	Forest ecosystem processes at the watershed scale: dynamic coupling of distributed hydrology and canopy growth. Hydrological Processes, 1997, 11, 1197-1217.	2.6	73
20	Effects of distribution-based parameter aggregation on a spatially distributed agricultural nonpoint source pollution model. Journal of Hydrology, 2004, 295, 211-224.	5.4	72
21	Mechanisms of a coniferous woodland persistence under drought and heat. Environmental Research Letters, 2019, 14, 045014.	5.2	72
22	Conifers depend on established roots during drought: results from a coupled model of carbon allocation and hydraulics. New Phytologist, 2020, 225, 679-692.	7.3	63
23	Environmental drivers of spatial variation in wholeâ€tree transpiration in an aspenâ€dominated uplandâ€toâ€wetland forest gradient. Water Resources Research, 2008, 44, .	4.2	58
24	Environmental drivers of evapotranspiration in a shrub wetland and an upland forest in northern Wisconsin. Water Resources Research, 2007, 43, .	4.2	54
25	Ecosystem processes at the watershed scale: Sensitivity to potential climate change. Limnology and Oceanography, 1996, 41, 928-938.	3.1	53
26	Patchiness of River?Groundwater Interactions within Two Floodplain Landscapes and Diversity of Aquatic Invertebrate Communities. Ecosystems, 2003, 6, 707-722.	3.4	51
27	Meteorologically Conditioned Time-Series Predictions of West Nile Virus Vector Mosquitoes. Vector-Borne and Zoonotic Diseases, 2008, 8, 505-522.	1.5	51
28	A general model of watershed extraction and representation using globally optimal flow paths and up-slope contributing areas. International Journal of Geographical Information Science, 2000, 14, 337-358.	4.8	50
29	Physiological tradeoffs in the parameterization of a model of canopy transpiration. Advances in Water Resources, 2003, 26, 179-194.	3.8	50
30	Intercomparison of sugar maple (Acer saccharum Marsh.) stand transpiration responses to environmental conditions from the Western Great Lakes Region of the United States. Agricultural and Forest Meteorology, 2008, 148, 231-246.	4.8	48
31	Extraction and representation of nested catchment areas from digital elevation models in lake-dominated topography. Water Resources Research, 1998, 34, 897-901.	4.2	47
32	The effects of aggregated land cover data on estimating NPP in northern Wisconsin. Remote Sensing of Environment, 2005, 97, 1-14.	11.0	44
33	Distributed Plant Hydraulic and Hydrological Modeling to Understand the Susceptibility of Riparian Woodland Trees to Droughtâ€Induced Mortality. Water Resources Research, 2018, 54, 4901-4915.	4.2	43
34	Identification of Environmental Covariates of West Nile Virus Vector Mosquito Population Abundance. Vector-Borne and Zoonotic Diseases, 2010, 10, 515-526.	1.5	42
35	Use of temporal patterns in vapor pressure deficit to explain spatial autocorrelation dynamics in tree transpiration. Tree Physiology, 2008, 28, 647-658.	3.1	41
36	A reflection on the first 50 years of <i>Water Resources Research</i>. Water Resources Research, 2015, 51, 7829-7837.	4.2	40

#	Article	IF	Citations
37	On the representativeness of plot size and location for scaling transpiration from trees to a stand. Journal of Geophysical Research, 2010, 115, .	3.3	36
38	Dependence of Aspen Stands on a Subsurface Water Subsidy: Implications for Climate Change Impacts. Water Resources Research, 2019, 55, 1833-1848.	4.2	36
39	Modeling the seasonal dynamics of leaf area index based on environmental constraints to canopy development. Agricultural and Forest Meteorology, 2015, 200, 46-56.	4.8	34
40	A multiple criteria decision support system for testing integrated environmental models. Fuzzy Sets and Systems, 2000, 113, 53-67.	2.7	31
41	Spatial variability of aboveground net primary production for a forested landscape in northern Wisconsin. Canadian Journal of Forest Research, 2003, 33, 2007-2018.	1.7	30
42	Bayesian analysis for uncertainty estimation of a canopy transpiration model. Water Resources Research, 2007, 43, .	4.2	30
43	Multi-objective parameter estimation for simulating canopy transpiration in forested watersheds. Journal of Hydrology, 2003, 277, 230-247.	5.4	28
44	Fifty years of<i>Water Resources Research</i>: Legacy and perspectives for the science of hydrology. Water Resources Research, 2015, 51, 6797-6803.	4.2	28
45	Flexible automated parameterization of hydrologic models using fuzzy logic. Water Resources Research, 2003, 39, SWC 1-1-SWC 1-13.	4.2	25
46	Quantitative comparison of canopy conductance models using a Bayesian approach. Water Resources Research, 2008, 44, .	4.2	24
47	Bayesian analysis of canopy transpiration models: A test of posterior parameter means against measurements. Journal of Hydrology, 2012, 432-433, 75-83.	5.4	24
48	Tree transpiration varies spatially in response to atmospheric but not edaphic conditions. Functional Ecology, 2010, 24, 273-282.	3.6	23
49	Semantic integration of environmental models for application to global information systems and decision-making. SIGMOD Record, 1999, 28, 13-19.	1.2	22
50	Evaluation of hydrologic equilibrium in a mountainous watershed: incorporating forest canopy spatial adjustment to soil biogeochemical processes. Advances in Water Resources, 2001, 24, 1211-1227.	3.8	21
51	Contribution of competition for light to withinâ€species variability in stomatal conductance. Water Resources Research, 2010, 46, .	4.2	18
52	Competition for light between individual trees lowers reference canopy stomatal conductance: Results from a model. Journal of Geophysical Research, 2010, 115, .	3.3	18
53	A framework for genomics-informed ecophysiological modeling in plants. Journal of Experimental Botany, 2019, 70, 2561-2574.	4.8	18
54	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.	9.5	17

#	Article	IF	Citations
55	Plant Hydraulic Stress Explained Tree Mortality and Tree Size Explained Beetle Attack in a Mixed Conifer Forest. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 3555-3568.	3.0	16
56	Automated Parameterization of Land Surface Process Models Using Fuzzy Logic. Transactions in GIS, 2003, 7, 139-153.	2.3	15
57	Rapid Chlorophyll <i>a</i> Fluorescence Light Response Curves Mechanistically Inform Photosynthesis Modeling. Plant Physiology, 2020, 183, 602-619.	4.8	13
58	Does vegetation structure regulate the spatial structure of soil respiration within a sagebrush steppe ecosystem?. Journal of Arid Environments, 2014, 103, 1-10.	2.4	12
59	Improving ecosystemâ€scale modeling of evapotranspiration using ecological mechanisms that account for compensatory responses following disturbance. Water Resources Research, 2017, 53, 7853-7868.	4.2	12
60	The influence of increasing atmospheric <scp>CO₂</scp>, temperature, and vapor pressure deficit on seawaterâ€induced tree mortality. New Phytologist, 2022, 235, 1767-1779.	7.3	12
61	Editorial: Toward 50 years of Water Resources Research. Water Resources Research, 2013, 49, 7841-7842.	4.2	11
62	Use of hydraulic traits for modeling genotypeâ€specific acclimation in cotton under drought. New Phytologist, 2020, 228, 898-909.	7.3	10
63	Lateral subsurface flow modulates forest mortality risk to future climate and elevated CO₂. Environmental Research Letters, 2021, 16, 084015.	5.2	10
64	Classification of higher order topographic objects on digital terrain data. Computers, Environment and Urban Systems, 1992, 16, 473-496.	7.1	9
65	Semantic modeling for the integration of geographic information and regional hydroecological simulation management. Computers, Environment and Urban Systems, 1995, 19, 321-339.	7.1	8
66	Spatial autocorrelation of West Nile virus vector mosquito abundance in a seasonally wet suburban environment. Journal of Geographical Systems, 2009, 11, 67-87.	3.1	8
67	How much complexity is needed to simulate watershed streamflow and water quality? A test combining time series and hydrological models. Hydrological Processes, 2014, 28, 5624-5636.	2.6	8
68	Phenotypic Trait Identification Using a Multimodel Bayesian Method: A Case Study Using Photosynthesis in Brassica rapa Genotypes. Frontiers in Plant Science, 2018, 9, 448.	3.6	7
69	Forecasting semiâ€arid biome shifts in the Anthropocene. New Phytologist, 2020, 226, 351-361.	7.3	5
70	Consequences of Stand Age and Speciesâ€™ Functional Trait Changes on Ecosystem Water Use of Forests. Tree Physiology, 2011, , 481-505.	2.5	5
71	Response of sagebrush carbon metabolism to experimental precipitation pulses. Journal of Arid Environments, 2016, 135, 181-194.	2.4	3
72	Assessing effects of model complexity and structure on predictions of hydrological responses using serial and parallel model design. Hydrological Processes, 2020, 34, 404-419.	2.6	3

#	Article	IF	Citations
73	Modelâ€“data fusion approach to quantify evapotranspiration and net ecosystem exchange across the sagebrush ecosystem at different temporal resolutions. Ecohydrology, 2018, 11, e1957.	2.4	2
74	Use of transcriptomic data to inform biophysical models via Bayesian networks. Ecological Modelling, 2020, 429, 109086.	2.5	2
75	Integrated Ecohydrologic Research and Hydroâ€Informatics. Journal of Contemporary Water Research and Education, 2009, 142, 16-24.	0.7	0
76	Appreciation of peer reviewers for 2014. Water Resources Research, 2015, 51, 5869-5887.	4.2	0
77	A vision for Water Resources Research. Water Resources Research, 2017, 53, 4530-4532.	4.2	0
78	Appreciation of peer reviewers for 2016. Water Resources Research, 2017, 53, 4542-4561.	4.2	0
79	Appreciation for <i>Water Resources Research</i> Reviewers. Water Resources Research, 2018, 54, 7114-7137.	4.2	0
80	Thank You to Our 2019 Reviewers. Water Resources Research, 2020, 56, e2020WR027684.	4.2	0
81	Thank You to Our 2020 Reviewers. Water Resources Research, 2021, 57, e2021WR029938.	4.2	0
82	Appreciation of peer reviewers for 2015. Water Resources Research, 2016, 52, 2380-2398.	4.2	0
83	Thank You to Our 2021 Reviewers. Water Resources Research, 2022, 58, .	4.2	0