Trevor F Keenan

List of Publications by Year
in descending order

122 papers	14,050 citations	23500 58 h-index	22102 113 g-index
143 all docs	143 docs citations	143 times ranked	13532 citing authors

#	Article	IF	Citations
1	Climate change, phenology, and phenological control of vegetation feedbacks to the climate system. Agricultural and Forest Meteorology, 2013, 169, 156-173.	1.9	1,526
2	Increase in forest water-use efficiency as atmospheric carbon dioxide concentrations rise. Nature, 2013, 499, 324-327.	13.7	966
3	Net carbon uptake has increased through warming-induced changes in temperate forest phenology. Nature Climate Change, 2014, 4, 598-604.	8.1	671
4	Warm spring reduced carbon cycle impact of the 2012 US summer drought. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5880-5885.	3.3	340
5	Seasonal dynamics and age of stemwood nonstructural carbohydrates in temperate forest trees. New Phytologist, 2013, 197, 850-861.	3.5	324
6	A worldwide analysis of withinâ€canopy variations in leaf structural, chemical and physiological traits across plant functional types. New Phytologist, 2015, 205, 973-993.	3.5	324
7	Air temperature optima of vegetation productivity across global biomes. Nature Ecology and Evolution, 2019, 3, 772-779.	3.4	316
8	Recent pause in the growth rate of atmospheric CO2 due to enhanced terrestrial carbon uptake. Nature Communications, 2016, 7, 13428.	5.8	305
9	Tracking vegetation phenology across diverse North American biomes using PhenoCam imagery. Scientific Data, 2018, 5, 180028.	2.4	304
10	Integrating the evidence for a terrestrial carbon sink caused by increasing atmospheric CO₂. New Phytologist, 2021, 229, 2413-2445.	3.5	286
11	Multifaceted characteristics of dryland aridity changes in a warming world. Nature Reviews Earth & Environment, 2021, 2, 232-250.	12.2	281
12	Nitrogen and phosphorus constrain the CO2 fertilization of global plant biomass. Nature Climate Change, 2019, 9, 684-689.	8.1	269
13	A trade-off between plant and soil carbon storage under elevated CO2. Nature, 2021, 591, 599-603.	13.7	268
14	Drought impacts on terrestrial primary production underestimated by satellite monitoring. Nature Geoscience, 2019, 12, 264-270.	5.4	259
15	The timing of autumn senescence is affected by the timing of spring phenology: implications for predictive models. Global Change Biology, 2015, 21, 2634-2641.	4.2	256
16	Towards a universal model for carbon dioxide uptake by plants. Nature Plants, 2017, 3, 734-741.	4.7	237
17	Terrestrial biosphere model performance for interâ€annual variability of landâ€atmosphere <scp><scp>CO₂</scp></scp> exchange. Global Change Biology, 2012, 18, 1971-1987.	4.2	232
18	Reduced streamflow in water-stressed climates consistent with CO2 effects on vegetation. Nature Climate Change, 2016, 6, 75-78.	8.1	230

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19	Ecological impacts of a widespread frost event following early spring leafâ€out. Global Change Biology, 2012, 18, 2365-2377.	4.2	210
20	The Terrestrial Carbon Sink. Annual Review of Environment and Resources, 2018, 43, 219-243.	5.6	200
21	Predictability of the terrestrial carbon cycle. Global Change Biology, 2015, 21, 1737-1751.	4.2	190
22	Tracking forest phenology and seasonal physiology using digital repeat photography: a critical assessment. Ecological Applications, 2014, 24, 1478-1489.	1.8	189
23	Quantifying soil moisture impacts on light use efficiency across biomes. New Phytologist, 2018, 218, 1430-1449.	3.5	184
24	Predicting the future of forests in the Mediterranean under climate change, with niche- and process-based models: CO2 matters!. Global Change Biology, 2011, 17, 565-579.	4.2	182
25	Age, allocation and availability of nonstructural carbon in mature red maple trees. New Phytologist, 2013, 200, 1145-1155.	3.5	179
26	Drought timing influences the legacy of tree growth recovery. Global Change Biology, 2018, 24, 3546-3559.	4.2	165
27	Using modelâ€data fusion to interpret past trends, and quantify uncertainties in future projections, of terrestrial ecosystem carbon cycling. Global Change Biology, 2012, 18, 2555-2569.	4.2	161
28	Greening of the land surface in the worldâ€™s cold regions consistent with recent warming. Nature Climate Change, 2018, 8, 825-828.	8.1	159
29	On the uncertainty of phenological responses to climate change, and implications for a terrestrial biosphere model. Biogeosciences, 2012, 9, 2063-2083.	1.3	154
30	Productivity of North American grasslands is increased under future climate scenarios despite rising aridity. Nature Climate Change, 2016, 6, 710-714.	8.1	153
31	Global photosynthetic capacity is optimized to the environment. Ecology Letters, 2019, 22, 506-517.	3.0	153
32	Soil moistureâ€“atmosphere feedbacks mitigate declining water availability in drylands. Nature Climate Change, 2021, 11, 38-44.	8.1	138
33	Global leaf trait estimates biased due to plasticity in the shade. Nature Plants, 2017, 3, 16201.	4.7	135
34	Soil water stress and coupled photosynthesisâ€“conductance models: Bridging the gap between conflicting reports on the relative roles of stomatal, mesophyll conductance and biochemical limitations to photosynthesis. Agricultural and Forest Meteorology, 2010, 150, 443-453.	1.9	130
35	The impact of alternative traitâ€scaling hypotheses for the maximum photosynthetic carboxylation rate (<i>V</i>_{cmax}) on global gross primary production. New Phytologist, 2017, 215, 1370-1386.	3.5	126
36	Reassessing global change research priorities in mediterranean terrestrial ecosystems: how far have we come and where do we go from here?. Global Ecology and Biogeography, 2015, 24, 25-43.	2.7	111

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37	The modelâ€“data fusion pitfall: assuming certainty in an uncertain world. Oecologia, 2011, 167, 587-597.	0.9	99
38	The three major axes of terrestrial ecosystem function. Nature, 2021, 598, 468-472.	13.7	99
39	Widespread inhibition of daytime ecosystem respiration. Nature Ecology and Evolution, 2019, 3, 407-415.	3.4	98
40	Improved estimates of global terrestrial photosynthesis using information on leaf chlorophyll content. Global Change Biology, 2019, 25, 2499-2514.	4.2	95
41	The importance of mesophyll conductance in regulating forest ecosystem productivity during drought periods. Global Change Biology, 2010, 16, 1019-1034.	4.2	90
42	P-model v1.0: an optimality-based light use efficiency model for simulating ecosystem gross primary production. Geoscientific Model Development, 2020, 13, 1545-1581.	1.3	86
43	Exacerbated drought impacts on global ecosystems due to structural overshoot. Nature Ecology and Evolution, 2021, 5, 1490-1498.	3.4	86
44	Improved understanding of drought controls on seasonal variation in Mediterranean forest canopy CO₂ and water fluxes through combined in situ measurements and ecosystem modelling. Biogeosciences, 2009, 6, 1423-1444.	1.3	85
45	Process based inventory of isoprenoid emissions from European forests: model comparisons, current knowledge and uncertainties. Atmospheric Chemistry and Physics, 2009, 9, 4053-4076.	1.9	85
46	Observed and modelled historical trends in the waterâ€use efficiency of plants and ecosystems. Global Change Biology, 2019, 25, 2242-2257.	4.2	85
47	Photosynthetic responses to stress in Mediterranean evergreens: Mechanisms and models. Environmental and Experimental Botany, 2014, 103, 24-41.	2.0	84
48	A tale of two springs: using recent climate anomalies to characterize the sensitivity of temperate forest phenology to climate change. Environmental Research Letters, 2014, 9, 054006.	2.2	82
49	Evaluation of continental carbon cycle simulations with North American flux tower observations. Ecological Monographs, 2013, 83, 531-556.	2.4	75
50	Reviews and syntheses: Australian vegetation phenology: new insights from satellite remote sensing and digital repeat photography. Biogeosciences, 2016, 13, 5085-5102.	1.3	75
51	Rate my data: quantifying the value of ecological data for the development of models of the terrestrial carbon cycle. Ecological Applications, 2013, 23, 273-286.	1.8	74
52	Cork oak physiological responses to manipulated water availability in a Mediterranean woodland. Agricultural and Forest Meteorology, 2014, 184, 230-242.	1.9	72
53	Photosynthetic responses to altitude: an explanation based on optimality principles. New Phytologist, 2017, 213, 976-982.	3.5	71
54	Ecoâ€evolutionary optimality as a means to improve vegetation and landâ€surface models. New Phytologist, 2021, 231, 2125-2141.	3.5	71

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55	Satellite based estimates underestimate the effect of CO2 fertilization on net primary productivity. Nature Climate Change, 2016, 6, 892-893.	8.1	69
56	Interannual variability of ecosystem carbon exchange: From observation to prediction. Global Ecology and Biogeography, 2017, 26, 1225-1237.	2.7	68
57	Carbon budget of the Harvard Forest Longâ€Term Ecological Research site: pattern, process, and response to global change. Ecological Monographs, 2020, 90, e01423.	2.4	67
58	A unifying conceptual model for the environmental responses of isoprene emissions from plants. Annals of Botany, 2013, 112, 1223-1238.	1.4	66
59	The role of data assimilation in predictive ecology. Ecosphere, 2014, 5, 1-16.	1.0	65
60	A fully integrated isoprenoid emissions model coupling emissions to photosynthetic characteristics. Plant, Cell and Environment, 2014, 37, 1965-1980.	2.8	64
61	Acclimation of leaf respiration consistent with optimal photosynthetic capacity. Global Change Biology, 2020, 26, 2573-2583.	4.2	64
62	Shortâ€term favorable weather conditions are an important control of interannual variability in carbon and water fluxes. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 2186-2198.	1.3	60
63	Global variation in the fraction of leaf nitrogen allocated to photosynthesis. Nature Communications, 2021, 12, 4866.	5.8	60
64	Field-experiment constraints on the enhancement of the terrestrial carbon sink by CO2 fertilization. Nature Geoscience, 2019, 12, 809-814.	5.4	58
65	Thinning Can Reduce Losses in Carbon Use Efficiency and Carbon Stocks in Managed Forests Under Warmer Climate. Journal of Advances in Modeling Earth Systems, 2018, 10, 2427-2452.	1.3	56
66	Mechanisms underlying leaf photosynthetic acclimation to warming and elevated CO₂ as inferred from leastâ€cost optimality theory. Global Change Biology, 2020, 26, 5202-5216.	4.2	55
67	Linking plant functional trait plasticity and the large increase in forest water use efficiency. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 2393-2408.	1.3	54
68	On quantifying the apparent temperature sensitivity of plant phenology. New Phytologist, 2020, 225, 1033-1040.	3.5	52
69	CO ₂ fertilization of terrestrial photosynthesis inferred from site to global scales. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2115627119.	3.3	51
70	ï»¿ RETRACTED ARTICLE: A constraint on historic growth in global photosynthesis due to increasing CO2. Nature, 2021, 600, 253-258.	13.7	50
71	Carbon uptake and water use in woodlands and forests in southern Australia during an extreme heat wave event in the â€œAngry Summerâ€•of 2012/2013. Biogeosciences, 2016, 13, 5947-5964.	1.3	48
72	Assessing the resilience of Mediterranean holm oaks to disturbances using selective thinning. Acta Oecologica, 2009, 35, 849-854.	0.5	45

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73	Terrestrial Carbon Cycle Variability. F1000Research, 2016, 5, 2371.	0.8	45
74	Forest ecosystem changes from annual methane source to sink depending on late summer water balance. Geophysical Research Letters, 2014, 41, 673-679.	1.5	44
75	Drought Influences the Accuracy of Simulated Ecosystem Fluxes: A Model-Data Meta-analysis for Mediterranean Oak Woodlands. Ecosystems, 2013, 16, 749-764.	1.6	42
76	Partitioning net carbon dioxide fluxes into photosynthesis and respiration using neural networks. Global Change Biology, 2020, 26, 5235-5253.	4.2	42
77	Probing the past 30-year phenology trend of US deciduous forests. Biogeosciences, 2015, 12, 4693-4709.	1.3	40
78	Merging a mechanistic enzymatic model of soil heterotrophic respiration into an ecosystem model in two AmeriFlux sites of northeastern USA. Agricultural and Forest Meteorology, 2018, 252, 155-166.	1.9	39
79	Model-based analysis of the impact of diffuse radiation on CO2 exchange in a temperate deciduous forest. Agricultural and Forest Meteorology, 2018, 249, 377-389.	1.9	39
80	Seasonality of monoterpene emission potentials in <i>Quercus ilex</i> and <i>Pinus pinea</i>: Implications for regional VOC emissions modeling. Journal of Geophysical Research, 2009, 114, .	3.3	38
81	Substantial hysteresis in emergent temperature sensitivity of global wetland CH4 emissions. Nature Communications, 2021, 12, 2266.	5.8	34
82	Carbon fluxes and interannual drivers in a temperate forest ecosystem assessed through comparison of top-down and bottom-up approaches. Agricultural and Forest Meteorology, 2018, 256-257, 420-430.	1.9	31
83	Process-based simulation of seasonality and drought stress in monoterpene emission models. Biogeosciences, 2010, 7, 257-274.	1.3	29
84	Influence of ENSO and the NAO on terrestrial carbon uptake in the Texasâ€northern Mexico region. Global Biogeochemical Cycles, 2015, 29, 1247-1265.	1.9	29
85	An optimalityâ€based model explains seasonal variation in C3 plant photosynthetic capacity. Global Change Biology, 2020, 26, 6493-6510.	4.2	29
86	The impact of the 2015/2016 El NiÃ±o on global photosynthesis using satellite remote sensing. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170409.	1.8	28
87	The limits of forest carbon sequestration. Science, 2022, 376, 692-693.	6.0	27
88	Vegetation plays an important role in mediating future water resources. Environmental Research Letters, 2016, 11, 094022.	2.2	26
89	Rising CO₂ and warming reduce global canopy demand for nitrogen. New Phytologist, 2022, 235, 1692-1700.	3.5	23
90	Overlooking the canopy: The importance of canopy structure in scaling isoprenoid emissions from the leaf to the landscape. Ecological Modelling, 2011, 222, 737-747.	1.2	22

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91	Climate controls over ecosystem metabolism: insights from a fifteen-year inductive artificial neural network synthesis for a subalpine forest. Oecologia, 2017, 184, 25-41.	0.9	22
92	Synthetic ozone deposition and stomatal uptake at flux tower sites. Biogeosciences, 2018, 15, 5395-5413.	1.3	22
93	Leaf age effects on the spectral predictability of leaf traits in Amazonian canopy trees. Science of the Total Environment, 2019, 666, 1301-1315.	3.9	22
94	A reporting format for leaf-level gas exchange data and metadata. Ecological Informatics, 2021, 61, 101232.	2.3	22
95	Geographical patterns of congruence and incongruence between correlative species distribution models and a processâ€based ecophysiological growth model. Journal of Biogeography, 2013, 40, 1928-1938.	1.4	21
96	No evidence for a negative effect of growing season photosynthesis on leaf senescence timing. Global Change Biology, 2022, 28, 3083-3093.	4.2	20
97	Measures of Light in Studies on Light-Driven Plant Plasticity in Artificial Environments. Frontiers in Plant Science, 2012, 3, 156.	1.7	19
98	Global evidence for the acclimation of ecosystem photosynthesis to light. Nature Ecology and Evolution, 2020, 4, 1351-1357.	3.4	19
99	Spring greening in a warming world. Nature, 2015, 526, 48-49.	13.7	18
100	Limited effect of ozone reductions on the 20â€year photosynthesis trend at Harvard forest. Global Change Biology, 2016, 22, 3750-3759.	4.2	18
101	Reflections and projections on a decade of climate science. Nature Climate Change, 2021, 11, 279-285.	8.1	18
102	Comment on â€œRecent global decline of CO ₂ fertilization effects on vegetation photosynthesisâ€. Science, 2021, 373, eabg4420.	6.0	18
103	Tropical extreme droughts drive long-term increase in atmospheric CO2 growth rate variability. Nature Communications, 2022, 13, 1193.	5.8	18
104	Ten new insights in climate science 2020 â€“ a horizon scan. Global Sustainability, 2021, 4, .	1.6	17
105	Diagnostic Classification of Flash Drought Events Reveals Distinct Classes of Forcings and Impacts. Journal of Hydrometeorology, 2022, 23, 275-289.	0.7	15
106	Ecosystem fluxes of hydrogen in a midâ€latitude forest driven by soil microorganisms and plants. Global Change Biology, 2017, 23, 906-919.	4.2	14
107	Contrasting Regional Carbon Cycle Responses to Seasonal Climate Anomalies Across the Eastâ€West Divide of Temperate North America. Global Biogeochemical Cycles, 2020, 34, e2020GB006598.	1.9	12
108	Enhanced surface urban heat islands due to divergent urban-rural greening trends. Environmental Research Letters, 2021, 16, 124071.	2.2	12

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109	Circadian control of global isoprene emissions. Nature Geoscience, 2012, 5, 435-435.	5.4	10
110	Ecosystem aridity and atmospheric CO ₂. Science, 2020, 368, 251-252.	6.0	10
111	Forest Eco-Physiological Models: Water Use and Carbon Sequestration. Managing Forest Ecosystems, 2017, , 81-102.	0.4	8
112	Incorporating Spatial Variations in Parameters for Improvements of an Evapotranspiration Model. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2019JG005504.	1.3	7
113	Midwest US Croplands Determine Model Divergence in North American Carbon Fluxes. AGU Advances, 2021, 2, e2020AV000310.	2.3	7
114	Growth and opportunities in networked synthesis through AmeriFlux. New Phytologist, 2019, 222, 1685-1687.	3.5	6
115	Recent Warming Has Resulted in Smaller Gains in Net Carbon Uptake in Northern High Latitudes. Journal of Climate, 2019, 32, 5849-5863.	1.2	6
116	Dispersal and fire limit Arctic shrub expansion. Nature Communications, 2022, 13, .	5.8	6
117	Once Upon a Time, in AmeriFlux. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2020JG006148.	1.3	5
118	Elevated CO2 moderates the impact of climate change on future bamboo distribution in Madagascar. Science of the Total Environment, 2022, 810, 152235.	3.9	5
119	Large divergence in tropical hydrological projections caused by model spread in vegetation responses to elevated CO ₂. Earth's Future, 0, , .	2.4	5
120	Keenan et al. reply. Nature, 2014, 507, E2-E3.	13.7	4
121	Hunting Data Rogues at Scale: Data Quality Control for Observational Data in Research Infrastructures. , 2017, , .		4
122	Corrigendum to "Process-based simulation of seasonality and drought stress in monoterpene emission models" published in Biogeosciences, 7, 257â€“274, 2010. Biogeosciences, 2010, 7, 329-329.	1.3	0