

# Trevor F Keenan

## List of Publications by Citations

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122  
papers

8,818  
citations

51  
h-index

93  
g-index

143  
ext. papers

11,465  
ext. citations

12.2  
avg, IF

6.47  
L-index

#	Paper	IF	Citations
122	Climate change, phenology, and phenological control of vegetation feedbacks to the climate system. <i>Agricultural and Forest Meteorology</i> , <b>2013</b> , 169, 156-173	5.8	1121
121	Increase in forest water-use efficiency as atmospheric carbon dioxide concentrations rise. <i>Nature</i> , <b>2013</b> , 499, 324-7	50.4	719
120	Net carbon uptake has increased through warming-induced changes in temperate forest phenology. <i>Nature Climate Change</i> , <b>2014</b> , 4, 598-604	21.4	442
119	Seasonal dynamics and age of stemwood nonstructural carbohydrates in temperate forest trees. <i>New Phytologist</i> , <b>2013</b> , 197, 850-861	9.8	247
118	Warm spring reduced carbon cycle impact of the 2012 US summer drought. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2016</b> , 113, 5880-5	11.5	232
117	A worldwide analysis of within-canopy variations in leaf structural, chemical and physiological traits across plant functional types. <i>New Phytologist</i> , <b>2015</b> , 205, 973-993	9.8	228
116	Recent pause in the growth rate of atmospheric CO due to enhanced terrestrial carbon uptake. <i>Nature Communications</i> , <b>2016</b> , 7, 13428	17.4	195
115	Terrestrial biosphere model performance for inter-annual variability of land-atmosphere CO <sub>2</sub> exchange. <i>Global Change Biology</i> , <b>2012</b> , 18, 1971-1987	11.4	191
114	Tracking vegetation phenology across diverse North American biomes using PhenoCam imagery. <i>Scientific Data</i> , <b>2018</b> , 5, 180028	8.2	187
113	The timing of autumn senescence is affected by the timing of spring phenology: implications for predictive models. <i>Global Change Biology</i> , <b>2015</b> , 21, 2634-2641	11.4	172
112	Ecological impacts of a widespread frost event following early spring leaf-out. <i>Global Change Biology</i> , <b>2012</b> , 18, 2365-2377	11.4	168
111	Predicting the future of forests in the Mediterranean under climate change, with niche- and process-based models: CO <sub>2</sub> matters!. <i>Global Change Biology</i> , <b>2011</b> , 17, 565-579	11.4	155
110	Drought impacts on terrestrial primary production underestimated by satellite monitoring. <i>Nature Geoscience</i> , <b>2019</b> , 12, 264-270	18.3	154
109	Tracking forest phenology and seasonal physiology using digital repeat photography: a critical assessment <b>2014</b> , 24, 1478-89		153
108	Reduced streamflow in water-stressed climates consistent with CO <sub>2</sub> effects on vegetation. <i>Nature Climate Change</i> , <b>2016</b> , 6, 75-78	21.4	146
107	Towards a universal model for carbon dioxide uptake by plants. <i>Nature Plants</i> , <b>2017</b> , 3, 734-741	11.5	139
106	Predictability of the terrestrial carbon cycle. <i>Global Change Biology</i> , <b>2015</b> , 21, 1737-51	11.4	136

105	Using model-data fusion to interpret past trends, and quantify uncertainties in future projections, of terrestrial ecosystem carbon cycling. <i>Global Change Biology</i> , <b>2012</b> , 18, 2555-2569	11.4	135
104	Age, allocation and availability of nonstructural carbon in mature red maple trees. <i>New Phytologist</i> , <b>2013</b> , 200, 1145-55	9.8	129
103	Air temperature optima of vegetation productivity across global biomes. <i>Nature Ecology and Evolution</i> , <b>2019</b> , 3, 772-779	12.3	128
102	Nitrogen and phosphorus constrain the CO <sub>2</sub> fertilization of global plant biomass. <i>Nature Climate Change</i> , <b>2019</b> , 9, 684-689	21.4	125
101	On the uncertainty of phenological responses to climate change, and implications for a terrestrial biosphere model. <i>Biogeosciences</i> , <b>2012</b> , 9, 2063-2083	4.6	115
100	Soil water stress and coupled photosynthesis-conductance models: Bridging the gap between conflicting reports on the relative roles of stomatal, mesophyll conductance and biochemical limitations to photosynthesis. <i>Agricultural and Forest Meteorology</i> , <b>2010</b> , 150, 443-453	5.8	110
99	Quantifying soil moisture impacts on light use efficiency across biomes. <i>New Phytologist</i> , <b>2018</b> , 218, 1430-1449	9.4	103
98	Productivity of North American grasslands is increased under future climate scenarios despite rising aridity. <i>Nature Climate Change</i> , <b>2016</b> , 6, 710-714	21.4	99
97	Reassessing global change research priorities in mediterranean terrestrial ecosystems: how far have we come and where do we go from here?. <i>Global Ecology and Biogeography</i> , <b>2015</b> , 24, 25-43	6.1	95
96	Integrating the evidence for a terrestrial carbon sink caused by increasing atmospheric CO <sub>2</sub> . <i>New Phytologist</i> , <b>2021</b> , 229, 2413-2445	9.8	94
95	The model-data fusion pitfall: assuming certainty in an uncertain world. <i>Oecologia</i> , <b>2011</b> , 167, 587-97	2.9	91
94	Global leaf trait estimates biased due to plasticity in the shade. <i>Nature Plants</i> , <b>2016</b> , 3, 16201	11.5	83
93	Drought timing influences the legacy of tree growth recovery. <i>Global Change Biology</i> , <b>2018</b> , 24, 3546-3559	11.4	83
92	The Terrestrial Carbon Sink. <i>Annual Review of Environment and Resources</i> , <b>2018</b> , 43, 219-243	17.2	83
91	The impact of alternative trait-scaling hypotheses for the maximum photosynthetic carboxylation rate (V <sub>c</sub> ) on global gross primary production. <i>New Phytologist</i> , <b>2017</b> , 215, 1370-1386	9.8	82
90	Global photosynthetic capacity is optimized to the environment. <i>Ecology Letters</i> , <b>2019</b> , 22, 506-517	10	80
89	Greening of the land surface in the world's cold regions consistent with recent warming. <i>Nature Climate Change</i> , <b>2018</b> , 8, 825-828	21.4	78
88	A trade-off between plant and soil carbon storage under elevated CO <sub>2</sub> . <i>Nature</i> , <b>2021</b> , 591, 599-603	50.4	78

87	FLUXNET-CH <sub>4</sub> Synthesis Activity: Objectives, Observations, and Future Directions. <i>Bulletin of the American Meteorological Society</i> , <b>2019</b> , 100, 2607-2632	6.1	77
86	Improved understanding of drought controls on seasonal variation in Mediterranean forest canopy CO <sub>2</sub> and water fluxes through combined in situ measurements and ecosystem modelling. <i>Biogeosciences</i> , <b>2009</b> , 6, 1423-1444	4.6	75
85	Process based inventory of isoprenoid emissions from European forests: model comparisons, current knowledge and uncertainties. <i>Atmospheric Chemistry and Physics</i> , <b>2009</b> , 9, 4053-4076	6.8	73
84	The importance of mesophyll conductance in regulating forest ecosystem productivity during drought periods. <i>Global Change Biology</i> , <b>2010</b> , 16, 1019-1034	11.4	69
83	A tale of two springs: using recent climate anomalies to characterize the sensitivity of temperate forest phenology to climate change. <i>Environmental Research Letters</i> , <b>2014</b> , 9, 054006	6.2	67
82	Photosynthetic responses to stress in Mediterranean evergreens: Mechanisms and models. <i>Environmental and Experimental Botany</i> , <b>2014</b> , 103, 24-41	5.9	63
81	Evaluation of continental carbon cycle simulations with North American flux tower observations. <i>Ecological Monographs</i> , <b>2013</b> , 83, 531-556	9	63
80	Rate my data: quantifying the value of ecological data for the development of models of the terrestrial carbon cycle <b>2013</b> , 23, 273-86		63
79	Widespread inhibition of daytime ecosystem respiration. <i>Nature Ecology and Evolution</i> , <b>2019</b> , 3, 407-415	12.3	60
78	Multifaceted characteristics of dryland aridity changes in a warming world. <i>Nature Reviews Earth &amp; Environment</i> , <b>2021</b> , 2, 232-250	30.2	57
77	Cork oak physiological responses to manipulated water availability in a Mediterranean woodland. <i>Agricultural and Forest Meteorology</i> , <b>2014</b> , 184, 230-242	5.8	56
76	Reviews and syntheses: Australian vegetation phenology: new insights from satellite remote sensing and digital repeat photography. <i>Biogeosciences</i> , <b>2016</b> , 13, 5085-5102	4.6	55
75	A unifying conceptual model for the environmental responses of isoprene emissions from plants. <i>Annals of Botany</i> , <b>2013</b> , 112, 1223-38	4.1	54
74	The role of data assimilation in predictive ecology. <i>Ecosphere</i> , <b>2014</b> , 5, art65	3.1	52
73	Satellite based estimates underestimate the effect of CO <sub>2</sub> fertilization on net primary productivity. <i>Nature Climate Change</i> , <b>2016</b> , 6, 892-893	21.4	52
72	A fully integrated isoprenoid emissions model coupling emissions to photosynthetic characteristics. <i>Plant, Cell and Environment</i> , <b>2014</b> , 37, 1965-80	8.4	51
71	Improved estimates of global terrestrial photosynthesis using information on leaf chlorophyll content. <i>Global Change Biology</i> , <b>2019</b> , 25, 2499-2514	11.4	50
70	Observed and modelled historical trends in the water-use efficiency of plants and ecosystems. <i>Global Change Biology</i> , <b>2019</b> , 25, 2242-2257	11.4	49

69	Photosynthetic responses to altitude: an explanation based on optimality principles. <i>New Phytologist</i> , <b>2017</b> , 213, 976-982	9.8	45
68	Interannual variability of ecosystem carbon exchange: From observation to prediction. <i>Global Ecology and Biogeography</i> , <b>2017</b> , 26, 1225-1237	6.1	42
67	Short-term favorable weather conditions are an important control of interannual variability in carbon and water fluxes. <i>Journal of Geophysical Research G: Biogeosciences</i> , <b>2016</b> , 121, 2186-2198	3.7	42
66	Soil moisture–atmosphere feedbacks mitigate declining water availability in drylands. <i>Nature Climate Change</i> , <b>2021</b> , 11, 38-44	21.4	41
65	Carbon uptake and water use in woodlands and forests in southern Australia during an extreme heat wave event in the “Angry Summer” of 2012/2013. <i>Biogeosciences</i> , <b>2016</b> , 13, 5947-5964	4.6	39
64	Acclimation of leaf respiration consistent with optimal photosynthetic capacity. <i>Global Change Biology</i> , <b>2020</b> , 26, 2573	11.4	37
63	Drought Influences the Accuracy of Simulated Ecosystem Fluxes: A Model-Data Meta-analysis for Mediterranean Oak Woodlands. <i>Ecosystems</i> , <b>2013</b> , 16, 749-764	3.9	37
62	Forest ecosystem changes from annual methane source to sink depending on late summer water balance. <i>Geophysical Research Letters</i> , <b>2014</b> , 41, 673-679	4.9	36
61	Seasonality of monoterpene emission potentials in <i>Quercus ilex</i> and <i>Pinus pinea</i> : Implications for regional VOC emissions modeling. <i>Journal of Geophysical Research</i> , <b>2009</b> , 114,		36
60	Linking plant functional trait plasticity and the large increase in forest water use efficiency. <i>Journal of Geophysical Research G: Biogeosciences</i> , <b>2017</b> , 122, 2393-2408	3.7	35
59	Assessing the resilience of Mediterranean holm oaks to disturbances using selective thinning. <i>Acta Oecologica</i> , <b>2009</b> , 35, 849-854	1.7	35
58	Probing the past 30-year phenology trend of US deciduous forests. <i>Biogeosciences</i> , <b>2015</b> , 12, 4693-4709	4.6	34
57	Field-experiment constraints on the enhancement of the terrestrial carbon sink by CO <sub>2</sub> fertilization. <i>Nature Geoscience</i> , <b>2019</b> , 12, 809-814	18.3	33
56	Terrestrial Carbon Cycle Variability. <i>F1000Research</i> , <b>2016</b> , 5,	3.6	33
55	P-model v1.0: an optimality-based light use efficiency model for simulating ecosystem gross primary production. <i>Geoscientific Model Development</i> , <b>2020</b> , 13, 1545-1581	6.3	32
54	Thinning Can Reduce Losses in Carbon Use Efficiency and Carbon Stocks in Managed Forests Under Warmer Climate. <i>Journal of Advances in Modeling Earth Systems</i> , <b>2018</b> , 10, 2427-2452	7.1	31
53	Merging a mechanistic enzymatic model of soil heterotrophic respiration into an ecosystem model in two AmeriFlux sites of northeastern USA. <i>Agricultural and Forest Meteorology</i> , <b>2018</b> , 252, 155-166	5.8	27
52	Process-based simulation of seasonality and drought stress in monoterpene emission models. <i>Biogeosciences</i> , <b>2010</b> , 7, 257-274	4.6	27

51	On quantifying the apparent temperature sensitivity of plant phenology. <i>New Phytologist</i> , <b>2020</b> , 225, 1033-1040	9.8	27
50	Influence of ENSO and the NAO on terrestrial carbon uptake in the Texas-northern Mexico region. <i>Global Biogeochemical Cycles</i> , <b>2015</b> , 29, 1247-1265	5.9	26
49	Carbon budget of the Harvard Forest Long-Term Ecological Research site: pattern, process, and response to global change. <i>Ecological Monographs</i> , <b>2020</b> , 90, e01423	9	26
48	Model-based analysis of the impact of diffuse radiation on CO <sub>2</sub> exchange in a temperate deciduous forest. <i>Agricultural and Forest Meteorology</i> , <b>2018</b> , 249, 377-389	5.8	23
47	Mechanisms underlying leaf photosynthetic acclimation to warming and elevated CO <sub>2</sub> as inferred from least-cost optimality theory. <i>Global Change Biology</i> , <b>2020</b> , 26, 5202-5216	11.4	22
46	Carbon fluxes and interannual drivers in a temperate forest ecosystem assessed through comparison of top-down and bottom-up approaches. <i>Agricultural and Forest Meteorology</i> , <b>2018</b> , 256-257, 420-430	5.8	22
45	Overlooking the canopy: The importance of canopy structure in scaling isoprenoid emissions from the leaf to the landscape. <i>Ecological Modelling</i> , <b>2011</b> , 222, 737-747	3	20
44	The impact of the 2015/2016 El Niño on global photosynthesis using satellite remote sensing. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , <b>2018</b> , 373,	5.8	20
43	Geographical patterns of congruence and incongruence between correlative species distribution models and a process-based ecophysiological growth model. <i>Journal of Biogeography</i> , <b>2013</b> , 40, 1928-1938	4.1	19
42	Partitioning net carbon dioxide fluxes into photosynthesis and respiration using neural networks. <i>Global Change Biology</i> , <b>2020</b> , 26, 5235-5253	11.4	18
41	Climate controls over ecosystem metabolism: insights from a fifteen-year inductive artificial neural network synthesis for a subalpine forest. <i>Oecologia</i> , <b>2017</b> , 184, 25-41	2.9	17
40	Phenology: Spring greening in a warming world. <i>Nature</i> , <b>2015</b> , 526, 48-9	50.4	15
39	Limited effect of ozone reductions on the 20-year photosynthesis trend at Harvard forest. <i>Global Change Biology</i> , <b>2016</b> , 22, 3750-3759	11.4	15
38	An optimality-based model explains seasonal variation in C <sub>3</sub> plant photosynthetic capacity. <i>Global Change Biology</i> , <b>2020</b> , 26, 6493-6510	11.4	14
37	Vegetation plays an important role in mediating future water resources. <i>Environmental Research Letters</i> , <b>2016</b> , 11, 094022	6.2	14
36	Synthetic ozone deposition and stomatal uptake at flux tower sites. <i>Biogeosciences</i> , <b>2018</b> , 15, 5395-5413	4.6	14
35	Leaf age effects on the spectral predictability of leaf traits in Amazonian canopy trees. <i>Science of the Total Environment</i> , <b>2019</b> , 666, 1301-1315	10.2	12
34	Ecosystem fluxes of hydrogen in a mid-latitude forest driven by soil microorganisms and plants. <i>Global Change Biology</i> , <b>2017</b> , 23, 906-919	11.4	11

33	Measures of light in studies on light-driven plant plasticity in artificial environments. <i>Frontiers in Plant Science</i> , <b>2012</b> , 3, 156	6.2	11
32	A reporting format for leaf-level gas exchange data and metadata. <i>Ecological Informatics</i> , <b>2021</b> , 61, 101232	4.2	11
31	Circadian control of global isoprene emissions. <i>Nature Geoscience</i> , <b>2012</b> , 5, 435-435	18.3	10
30	Substantial hysteresis in emergent temperature sensitivity of global wetland CH emissions. <i>Nature Communications</i> , <b>2021</b> , 12, 2266	17.4	10
29	Eco-evolutionary optimality as a means to improve vegetation and land-surface models. <i>New Phytologist</i> , <b>2021</b> , 231, 2125-2141	9.8	10
28	Exacerbated drought impacts on global ecosystems due to structural overshoot. <i>Nature Ecology and Evolution</i> , <b>2021</b> , 5, 1490-1498	12.3	10
27	The three major axes of terrestrial ecosystem function. <i>Nature</i> , <b>2021</b> , 598, 468-472	50.4	8
26	Forest Eco-Physiological Models: Water Use and Carbon Sequestration. <i>Managing Forest Ecosystems</i> , <b>2017</b> , 81-102	0.7	7
25	On the uncertainty of phenological responses to climate change and its implication for terrestrial biosphere models		7
24	Global evidence for the acclimation of ecosystem photosynthesis to light. <i>Nature Ecology and Evolution</i> , <b>2020</b> , 4, 1351-1357	12.3	7
23	Ecosystem aridity and atmospheric CO. <i>Science</i> , <b>2020</b> , 368, 251-252	33.3	7
22	Ten new insights in climate science 2020 13 horizon scan. <i>Global Sustainability</i> , <b>2021</b> , 4,	5.4	7
21	Comment on "Recent global decline of CO fertilization effects on vegetation photosynthesis". <i>Science</i> , <b>2021</b> , 373, eabg4420	33.3	7
20	Contrasting Regional Carbon Cycle Responses to Seasonal Climate Anomalies Across the East-West Divide of Temperate North America. <i>Global Biogeochemical Cycles</i> , <b>2020</b> , 34, e2020GB006598	5.9	6
19	Global variation in the fraction of leaf nitrogen allocated to photosynthesis. <i>Nature Communications</i> , <b>2021</b> , 12, 4866	17.4	5
18	A constraint on historic growth in global photosynthesis due to increasing CO. <i>Nature</i> , <b>2021</b> , 600, 253-258	50.4	5
17	Growth and opportunities in networked synthesis through AmeriFlux. <i>New Phytologist</i> , <b>2019</b> , 222, 1685-1687	16.87	4
16	Keenan et al. reply. <i>Nature</i> , <b>2014</b> , 507, E2-3	50.4	4

15	Rising CO and warming reduce global canopy demand for nitrogen.. <i>New Phytologist</i> , <b>2022</b> ,	9.8	4
14	Recent Warming Has Resulted in Smaller Gains in Net Carbon Uptake in Northern High Latitudes. <i>Journal of Climate</i> , <b>2019</b> , 32, 5849-5863	4.4	3
13	Hunting Data Rogues at Scale: Data Quality Control for Observational Data in Research Infrastructures <b>2017</b> ,		3
12	Probing the past 30 year phenology trend of US deciduous forests		3
11	A universal model for carbon dioxide uptake by plants		3
10	Incorporating Spatial Variations in Parameters for Improvements of an Evapotranspiration Model. <i>Journal of Geophysical Research G: Biogeosciences</i> , <b>2020</b> , 125, e2019JG005504	3.7	3
9	Reflections and projections on a decade of climate science. <i>Nature Climate Change</i> , <b>2021</b> , 11, 279-285	21.4	3
8	CO fertilization of terrestrial photosynthesis inferred from site to global scales.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2022</b> , 119, e2115627119	11.5	3
7	Midwest US Croplands Determine Model Divergence in North American Carbon Fluxes. <i>AGU Advances</i> , <b>2021</b> , 2, e2020AV000310	5.4	2
6	Once Upon a Time, in AmeriFlux. <i>Journal of Geophysical Research G: Biogeosciences</i> , <b>2021</b> , 126, e2020JG006148	9.6	2
5	P-model v1.0: An optimality-based light use efficiency model for simulating ecosystem gross primary production <b>2019</b> ,		1
4	Large divergence in tropical hydrological projections caused by model spread in vegetation responses to elevated CO 2. <i>Earth's Future</i> ,	7.9	1
3	Elevated CO moderates the impact of climate change on future bamboo distribution in Madagascar. <i>Science of the Total Environment</i> , <b>2021</b> , 810, 152235	10.2	0
2	Tropical extreme droughts drive long-term increase in atmospheric CO growth rate variability.. <i>Nature Communications</i> , <b>2022</b> , 13, 1193	17.4	0
1	The limits of forest carbon sequestration.. <i>Science</i> , <b>2022</b> , 376, 692-693	33.3	0