Greg A Barron-Gafford

List of Publications by Year
in descending order

98 papers	6,158 citations	81900 39 h-index	71685 76 g-index
101 all docs	101 docs citations	101 times ranked	8053 citing authors

#	Article	IF	Citations
1	Temperature sensitivity of drought-induced tree mortality portends increased regional die-off under global-change-type drought. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7063-7066.	7.1	857
2	A multi-species synthesis of physiological mechanisms in drought-induced tree mortality. Nature Ecology and Evolution, 2017, 1, 1285-1291.	7.8	739
3	Agrivoltaics provide mutual benefits across the foodâ€“energyâ€“water nexus in drylands. Nature Sustainability, 2019, 2, 848-855.	23.7	341
4	Quantifying ecological memory in plant and ecosystem processes. Ecology Letters, 2015, 18, 221-235.	6.4	324
5	Nonstructural leaf carbohydrate dynamics of <scp>P</scp>inus edulis during droughtâ€induced tree mortality reveal role for carbon metabolism in mortality mechanism. New Phytologist, 2013, 197, 1142-1151.	7.3	221
6	Remote sensing of dryland ecosystem structure and function: Progress, challenges, and opportunities. Remote Sensing of Environment, 2019, 233, 111401.	11.0	193
7	Partitioning evapotranspiration across gradients of woody plant cover: Assessment of a stable isotope technique. Geophysical Research Letters, 2010, 37, .	4.0	179
8	Carbon dioxide exchange in a semidesert grassland through droughtâ€induced vegetation change. Journal of Geophysical Research, 2010, 115, .	3.3	156
9	The carbon balance pivot point of southwestern U.S. semiarid ecosystems: Insights from the 21st century drought. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 2612-2624.	3.0	142
10	The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures. Scientific Reports, 2016, 6, 35070.	3.3	119
11	Linking growth strategies to long-term population dynamics in a guild of desert annuals. Journal of Ecology, 2007, 95, 321-331.	4.0	99
12	Differential daytime and nightâ€time stomatal behavior in plants from North American deserts. New Phytologist, 2012, 194, 464-476.	7.3	99
13	The relative controls of temperature, soil moisture, and plant functional group on soil CO₂efflux at diel, seasonal, and annual scales. Journal of Geophysical Research, 2011, 116, .	3.3	94
14	Comparing ecosystem and soil respiration: Review and key challenges of tower-based and soil measurements. Agricultural and Forest Meteorology, 2018, 249, 434-443.	4.8	89
15	Effects of an increase in summer precipitation on leaf, soil, and ecosystem fluxes of CO2 and H2O in a sotol grassland in Big Bend National Park, Texas. Oecologia, 2007, 151, 704-718.	2.0	80
16	Effect of elevated CO2 concentration and vapour pressure deficit on isoprene emission from leaves of Populus deltoides during drought. Functional Plant Biology, 2004, 31, 1137.	2.1	79
17	When vegetation change alters ecosystem water availability. Global Change Biology, 2014, 20, 2198-2210.	9.5	78
18	PHOTOSYNTHETIC RESOURCE-USE EFFICIENCY AND DEMOGRAPHIC VARIABILITY IN DESERT WINTER ANNUAL PLANTS. Ecology, 2008, 89, 1554-1563.	3.2	77

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19	Coevolution of nonlinear trends in vegetation, soils, and topography with elevation and slope aspect: A case study in the sky islands of southern Arizona. Journal of Geophysical Research F: Earth Surface, 2013, 118, 741-758.	2.8	76
20	Organization of complexity in water limited ecohydrology. Ecohydrology, 2012, 5, 184-199.	2.4	73
21	The dependence of respiration on photosynthetic substrate supply and temperature: integrating leaf, soil and ecosystem measurements. Global Change Biology, 2006, 12, 1954-1968.	9.5	72
22	Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks. Earth Surface Processes and Landforms, 2018, 43, 1133-1154.	2.5	70
23	SEED DISPERSAL OF DESERT ANNUALS. Ecology, 2008, 89, 2218-2227.	3.2	68
24	Temperature response surfaces for mortality risk of tree species with future drought. Environmental Research Letters, 2017, 12, 115014.	5.2	67
25	Temperature and precipitation controls over leafâ€•and ecosystemâ€level <scp>CO₂</scp> flux along a woody plant encroachment gradient. Global Change Biology, 2012, 18, 1389-1400.	9.5	65
26	Effects of topography and woody plant canopy cover on nearâ€ground solar radiation: Relevant energy inputs for ecohydrology and hydropedology. Geophysical Research Letters, 2007, 34, .	4.0	61
27	Critical Zone Services: Expanding Context, Constraints, and Currency beyond Ecosystem Services. Vadose Zone Journal, 2015, 14, vzj2014.10.0142.	2.2	60
28	The effect of elevated atmospheric CO2 and drought on sources and sinks of isoprene in a temperate and tropical rainforest mesocosm. Global Change Biology, 2005, 11, 1234-1246.	9.5	55
29	Relationships Between Microbial Community Structure and Soil Processes Under Elevated Atmospheric Carbon Dioxide. Microbial Ecology, 2006, 51, 302-314.	2.8	52
30	Impacts of hydraulic redistribution on grassâ€“tree competition vs facilitation in a semiâ€arid savanna. New Phytologist, 2017, 215, 1451-1461.	7.3	51
31	Beyond greenness: Detecting temporal changes in photosynthetic capacity with hyperspectral reflectance data. PLoS ONE, 2017, 12, e0189539.	2.5	51
32	Climatic and landscape influences on soil moisture are primary determinants of soil carbon fluxes in seasonally snow-covered forest ecosystems. Biogeochemistry, 2015, 123, 447-465.	3.5	50
33	The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. Geomorphology, 2015, 244, 190-203.	2.6	47
34	Why Do Largeâ€Scale Land Surface Models Produce a Low Ratio of Transpiration to Evapotranspiration?. Journal of Geophysical Research D: Atmospheres, 2018, 123, 9109-9130.	3.3	47
35	Green leaf volatiles and oxygenated metabolite emission bursts from mesquite branches following lightâ€“dark transitions. Photosynthesis Research, 2012, 113, 321-333.	2.9	46
36	Understanding past, contemporary, and future dynamics of plants, populations, and communities using Sonoran Desert winter annuals. American Journal of Botany, 2013, 100, 1369-1380.	1.7	44

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37	Nocturnal soil CO₂ uptake and its relationship to subsurface soil and ecosystem carbon fluxes in a Chihuahuan Desert shrubland. Journal of Geophysical Research G: Biogeosciences, 2013, 118, 1593-1603.	3.0	44
38	The interacting effects of elevated atmospheric CO2 concentration, drought and leaf-to-air vapour pressure deficit on ecosystem isoprene fluxes. Oecologia, 2005, 146, 120-129.	2.0	43
39	Assessing five evolving microbial enzyme models against field measurements from a semiarid savannah-What are the mechanisms of soil respiration pulses?. Geophysical Research Letters, 2014, 41, 6428-6434.	4.0	42
40	Growth of Eastern Cottonwoods (Populus deltoides) in elevated [CO2] stimulates stand-level respiration and rhizodeposition of carbohydrates, accelerates soil nutrient depletion, yet stimulates above- and belowground biomass production. Global Change Biology, 2005, 11, 1220-1233.	9.5	41
41	Molecular targets of elevated [CO2] in leaves and stems of Populus deltoides: implications for future tree growth and carbon sequestration. Functional Plant Biology, 2006, 33, 121.	2.1	41
42	Quantifying the timescales over which exogenous and endogenous conditions affect soil respiration. New Phytologist, 2014, 202, 442-454.	7.3	40
43	Water Availability Impacts on Evapotranspiration Partitioning. Agricultural and Forest Meteorology, 2021, 297, 108251.	4.8	39
44	Antecedent Conditions Influence Soil Respiration Differences in Shrub and Grass Patches. Ecosystems, 2013, 16, 1230-1247.	3.4	37
45	The effect of elevated CO2 on diel leaf growth cycle, leaf carbohydrate content and canopy growth performance of Populus deltoides. Global Change Biology, 2005, 11, 1207-1219.	9.5	35
46	Endogenous circadian regulation of carbon dioxide exchange in terrestrial ecosystems. Global Change Biology, 2012, 18, 1956-1970.	9.5	35
47	A considerable fraction of soil-respired CO2 is not emitted directly to the atmosphere. Scientific Reports, 2018, 8, 13518.	3.3	34
48	Leafâ€•and standâ€level responses of a forested mesocosm to independent manipulations of temperature and vapor pressure deficit. New Phytologist, 2007, 174, 614-625.	7.3	31
49	High productivity in hybrid-poplar plantations without isoprene emission to the atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1596-1605.	7.1	31
50	Increased leaf area dominates carbon flux response to elevated CO2 in stands of Populus deltoides (Bartr.). Global Change Biology, 2005, 11, 716-731.	9.5	29
51	Shrub encroachment alters sensitivity of soil respiration to temperature and moisture. Journal of Geophysical Research, 2012, 117, .	3.3	28
52	Sensitivity of regional evapotranspiration partitioning to variation in woody plant cover: insights from experimental dryland tree mosaics. Global Ecology and Biogeography, 2015, 24, 1040-1048.	5.8	28
53	The effect of elevated CO2, soil and atmospheric water deficit and seasonal phenology on leaf and ecosystem isoprene emission. Functional Plant Biology, 2007, 34, 774.	2.1	27
54	An Aridamerican model for agriculture in a hotter, water scarce world. Plants People Planet, 2020, 2, 627-639.	3.3	26

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55	Satellite solar-induced chlorophyll fluorescence and near-infrared reflectance capture complementary aspects of dryland vegetation productivity dynamics. Remote Sensing of Environment, 2022, 270, 112858.	11.0	26
56	Improving the accuracy of the gradient method for determining soil carbon dioxide efflux. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 50-64.	3.0	25
57	Gross primary production variability associated with meteorology, physiology, leaf area, and water supply in contrasting woodland and grassland semiarid riparian ecosystems. Journal of Geophysical Research, 2009, 114, .	3.3	24
58	Impact of Hydraulic Redistribution on Multispecies Vegetation Water Use in a Semiarid Savanna Ecosystem: An Experimental and Modeling Synthesis. Water Resources Research, 2018, 54, 4009-4027.	4.2	24
59	Biological invasions and climate change amplify each otherâ€™s effects on dryland degradation. Global Change Biology, 2022, 28, 285-295.	9.5	23
60	Fire Severity and Regeneration Strategy Influence Shrub Patch Size and Structure Following Disturbance. Forests, 2017, 8, 221.	2.1	22
61	Hydrologic functioning of the deep critical zone and contributions to streamflow in a highâ€elevation catchment: Testing of multiple conceptual models. Hydrological Processes, 2019, 33, 476-494.	2.6	22
62	Montane forest productivity across a semiarid climatic gradient. Global Change Biology, 2020, 26, 6945-6958.	9.5	22
63	Landscape and environmental controls over leaf and ecosystem carbon dioxide fluxes under woody plant expansion. Journal of Ecology, 2013, 101, 1471-1483.	4.0	21
64	Environmental and Vegetative Controls on Soil CO2 Efflux in Three Semiarid Ecosystems. Soil Systems, 2019, 3, 6.	2.6	21
65	Consequences of Cool-Season Drought-Induced Plant Mortality to Chihuahuan Desert Grassland Ecosystem and Soil Respiration Dynamics. Ecosystems, 2013, 16, 1178-1191.	3.4	19
66	Ecosystem carbon and water cycling from a sky island montane forest. Agricultural and Forest Meteorology, 2020, 281, 107835.	4.8	17
67	Photosynthetic phenological variation may promote coexistence among co-dominant tree species in a Madrean sky island mixed conifer forest. Tree Physiology, 2017, 37, 1229-1238.	3.1	16
68	Herbivory of wild Manduca sexta causes fast down-regulation of photosynthetic efficiency in Datura wrightii: an early signaling cascade visualized by chlorophyll fluorescence. Photosynthesis Research, 2012, 113, 249-260.	2.9	13
69	CO₂diffusion into pore spaces limits weathering rate of an experimental basalt landscape. Geology, 2017, 45, 203-206.	4.4	13
70	Bloom and Bust: ecological consequences of precipitation variability in aridlands. Plant Ecology, 2019, 220, 135-139.	1.6	13
71	Photosynthetic temperature responses of co-occurring desert winter annuals with contrasting resource-use efficiencies and different temporal patterns of resource utilization may allow for species coexistence. Journal of Arid Environments, 2013, 91, 95-103.	2.4	12
72	Bimodal cambial activity and false-ring formation in conifers under a monsoon climate. Tree Physiology, 2021, 41, 1893-1905.	3.1	12

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73	The Photochemical Reflectance Index (PRI) Captures the Ecohydrologic Sensitivity of a Semiarid Mixed Conifer Forest. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2019JG005624.	3.0	11
74	Reply to Leuzinger et al.: Drought-induced tree mortality temperature sensitivity requires pressing forward with best available science. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, E107-E107.	7.1	10
75	Cool-season whole-plant gas exchange of exotic and native semiarid bunchgrasses. Plant Ecology, 2012, 213, 1229-1239.	1.6	10
76	Topography influences species-specific patterns of seasonal primary productivity in a semiarid montane forest. Tree Physiology, 2020, 40, 1343-1354.	3.1	10
77	Canopy Temperature Is Regulated by Ecosystem Structural Traits and Captures the Ecohydrologic Dynamics of a Semiarid Mixed Conifer Forest Site. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	10
78	Reply to Sala: Temperature sensitivity in drought-induced tree mortality hastens the need to further resolve a physiological model of death. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, .	7.1	9
79	Controlled Experiments of Hillslope Coevolution at the Biosphere 2 Landscape Evolution Observatory: Toward Prediction of Coupled Hydrological, Biogeochemical, and Ecological Change. , 0, , .		9
80	Vegetation source water identification using isotopic and hydrometric observations from a subhumid mountain catchment. Ecohydrology, 2020, 13, e2167.	2.4	9
81	Biotic soil-plant interaction processes explain most of hysteretic soil CO2 efflux response to temperature in cross-factorial mesocosm experiment. Scientific Reports, 2020, 10, 905.	3.3	9
82	Convergent Hydraulic Redistribution and Groundwater Access Supported Facilitative Dependency Between Trees and Grasses in a Semiâ€Arid Environment. Water Resources Research, 2021, 57, e2020WR028103.	4.2	9
83	Soil Fluid Biogeochemical Response to Climatic Events. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 2866-2882.	3.0	8
84	Hydraulic redistribution buffers climate variability and regulates grassâ€tree interactions in a semiarid riparian savanna. Ecohydrology, 2021, 14, e2271.	2.4	7
85	Intraspecific competition for host resources in a parasite. Current Biology, 2021, 31, 1344-1350.e3.	3.9	7
86	A Microbialâ€Explicit Soil Organic Carbon Decomposition Model (MESDM): Development and Testing at a Semiarid Grassland Site. Journal of Advances in Modeling Earth Systems, 2022, 14, e2021MS002485.	3.8	7
87	Relative model score: a scoring rule for evaluating ensemble simulations with application to microbial soil respiration modeling. Stochastic Environmental Research and Risk Assessment, 2018, 32, 2809-2819.	4.0	6
88	Metabolic acceleration quantifies biological systems' ability to up-regulate metabolism in response to episodic resource availability. Journal of Arid Environments, 2014, 104, 9-16.	2.4	5
89	Prototype campaign assessment of disturbanceâ€induced tree loss effects on surface properties for atmospheric modeling. Ecosphere, 2017, 8, e01698.	2.2	5
90	Bayesian inference and predictive performance of soil respiration models in the presence of model discrepancy. Geoscientific Model Development, 2019, 12, 2009-2032.	3.6	5

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91	Influence of snow cover duration on soil evaporation and respiration efflux in mixedâ€conifer ecosystems. Ecohydrology, 2014, 7, 869-880.	2.4	3
92	Ecosystem hydrologic and metabolic flashiness are shaped by plant community traits and precipitation. Agricultural and Forest Meteorology, 2019, 279, 107674.	4.8	3
93	Soil microbial composition and carbon mineralization are associated with vegetation type and temperature regime in mesocosms of a semiarid ecosystem. FEMS Microbiology Letters, 2021, 368, .	1.8	3
94	Ubiquitous Fractal Scaling and Filtering Behavior of Hydrologic Fluxes and Storages from A Mountain Headwater Catchment. Water (Switzerland), 2020, 12, 613.	2.7	2
95	Agrivoltaic Modules Co-Designed for Electrical and Crop Productivity. , 2021, , .		2
96	Highly sampled measurements in a controlled atmosphere at the Biosphere 2 Landscape Evolution Observatory. Scientific Data, 2020, 7, 306.	5.3	1
97	An improved practical approach for estimating catchmentâ€scale response functions through wavelet analysis. Hydrological Processes, 2021, 35, e14082.	2.6	1
98	Advancing Understanding of Hydrological and Biogeochemical Interactions in Evolving Landscapes through Controlled Experimentation at the Landscape Evolution Observatory. , 2017, , 83-118.		0