

Greg A Barron-Gafford

List of Publications by Year in descending order

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Version: 2024-02-01

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 | Biological invasions and climate change amplify each other's effects on dryland degradation. <i>Global Change Biology</i> , 2022, 28, 285-295. | 9.5 | 23 |
| 2 | A Microbial-Explicit Soil Organic Carbon Decomposition Model (MESDM): Development and Testing at a Semiarid Grassland Site. <i>Journal of Advances in Modeling Earth Systems</i> , 2022, 14, e2021MS002485. | 3.8 | 7 |
| 3 | Satellite solar-induced chlorophyll fluorescence and near-infrared reflectance capture complementary aspects of dryland vegetation productivity dynamics. <i>Remote Sensing of Environment</i> , 2022, 270, 112858. | 11.0 | 26 |
| 4 | Canopy Temperature Is Regulated by Ecosystem Structural Traits and Captures the Ecohydrologic Dynamics of a Semiarid Mixed Conifer Forest Site. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2022, 127, . | 3.0 | 10 |
| 5 | Water Availability Impacts on Evapotranspiration Partitioning. <i>Agricultural and Forest Meteorology</i> , 2021, 297, 108251. | 4.8 | 39 |
| 6 | Hydraulic redistribution buffers climate variability and regulates grass-tree interactions in a semiarid riparian savanna. <i>Ecohydrology</i> , 2021, 14, e2271. | 2.4 | 7 |
| 7 | Soil microbial composition and carbon mineralization are associated with vegetation type and temperature regime in mesocosms of a semiarid ecosystem. <i>FEMS Microbiology Letters</i> , 2021, 368, . | 1.8 | 3 |
| 8 | An improved practical approach for estimating catchment-scale response functions through wavelet analysis. <i>Hydrological Processes</i> , 2021, 35, e14082. | 2.6 | 1 |
| 9 | Intraspecific competition for host resources in a parasite. <i>Current Biology</i> , 2021, 31, 1344-1350.e3. | 3.9 | 7 |
| 10 | Bimodal cambial activity and false-ring formation in conifers under a monsoon climate. <i>Tree Physiology</i> , 2021, 41, 1893-1905. | 3.1 | 12 |
| 11 | Agrivoltaic Modules Co-Designed for Electrical and Crop Productivity. , 2021, , . | | 2 |
| 12 | Convergent Hydraulic Redistribution and Groundwater Access Supported Facilitative Dependency Between Trees and Grasses in a Semi-Arid Environment. <i>Water Resources Research</i> , 2021, 57, e2020WR028103. | 4.2 | 9 |
| 13 | Vegetation source water identification using isotopic and hydrometric observations from a subhumid mountain catchment. <i>Ecohydrology</i> , 2020, 13, e2167. | 2.4 | 9 |
| 14 | High productivity in hybrid-poplar plantations without isoprene emission to the atmosphere. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 1596-1605. | 7.1 | 31 |
| 15 | Ecosystem carbon and water cycling from a sky island montane forest. <i>Agricultural and Forest Meteorology</i> , 2020, 281, 107835. | 4.8 | 17 |
| 16 | An Aridamerican model for agriculture in a hotter, water scarce world. <i>Plants People Planet</i> , 2020, 2, 627-639. | 3.3 | 26 |
| 17 | Highly sampled measurements in a controlled atmosphere at the Biosphere 2 Landscape Evolution Observatory. <i>Scientific Data</i> , 2020, 7, 306. | 5.3 | 1 |
| 18 | Montane forest productivity across a semiarid climatic gradient. <i>Global Change Biology</i> , 2020, 26, 6945-6958. | 9.5 | 22 |

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|----|---|------|-----------|
| 19 | The Photochemical Reflectance Index (PRI) Captures the Ecohydrologic Sensitivity of a Semiarid Mixed Conifer Forest. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2020, 125, e2019JG005624. | 3.0 | 11 |
| 20 | Topography influences species-specific patterns of seasonal primary productivity in a semiarid montane forest. <i>Tree Physiology</i> , 2020, 40, 1343-1354. | 3.1 | 10 |
| 21 | Ubiquitous Fractal Scaling and Filtering Behavior of Hydrologic Fluxes and Storages from A Mountain Headwater Catchment. <i>Water (Switzerland)</i> , 2020, 12, 613. | 2.7 | 2 |
| 22 | Biotic soil-plant interaction processes explain most of hysteretic soil CO ₂ efflux response to temperature in cross-factorial mesocosm experiment. <i>Scientific Reports</i> , 2020, 10, 905. | 3.3 | 9 |
| 23 | Remote sensing of dryland ecosystem structure and function: Progress, challenges, and opportunities. <i>Remote Sensing of Environment</i> , 2019, 233, 111401. | 11.0 | 193 |
| 24 | Environmental and Vegetative Controls on Soil CO ₂ Efflux in Three Semiarid Ecosystems. <i>Soil Systems</i> , 2019, 3, 6. | 2.6 | 21 |
| 25 | Soil Fluid Biogeochemical Response to Climatic Events. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2019, 124, 2866-2882. | 3.0 | 8 |
| 26 | Agrivoltaics provide mutual benefits across the food-“energy”-water nexus in drylands. <i>Nature Sustainability</i> , 2019, 2, 848-855. | 23.7 | 341 |
| 27 | Ecosystem hydrologic and metabolic flashiness are shaped by plant community traits and precipitation. <i>Agricultural and Forest Meteorology</i> , 2019, 279, 107674. | 4.8 | 3 |
| 28 | Bayesian inference and predictive performance of soil respiration models in the presence of model discrepancy. <i>Geoscientific Model Development</i> , 2019, 12, 2009-2032. | 3.6 | 5 |
| 29 | Bloom and Bust: ecological consequences of precipitation variability in aridlands. <i>Plant Ecology</i> , 2019, 220, 135-139. | 1.6 | 13 |
| 30 | Hydrologic functioning of the deep critical zone and contributions to streamflow in a high-elevation catchment: Testing of multiple conceptual models. <i>Hydrological Processes</i> , 2019, 33, 476-494. | 2.6 | 22 |
| 31 | Comparing ecosystem and soil respiration: Review and key challenges of tower-based and soil measurements. <i>Agricultural and Forest Meteorology</i> , 2018, 249, 434-443. | 4.8 | 89 |
| 32 | Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks. <i>Earth Surface Processes and Landforms</i> , 2018, 43, 1133-1154. | 2.5 | 70 |
| 33 | A considerable fraction of soil-respired CO ₂ is not emitted directly to the atmosphere. <i>Scientific Reports</i> , 2018, 8, 13518. | 3.3 | 34 |
| 34 | Impact of Hydraulic Redistribution on Multispecies Vegetation Water Use in a Semiarid Savanna Ecosystem: An Experimental and Modeling Synthesis. <i>Water Resources Research</i> , 2018, 54, 4009-4027. | 4.2 | 24 |
| 35 | Why Do Large-scale Land Surface Models Produce a Low Ratio of Transpiration to Evapotranspiration?. <i>Journal of Geophysical Research D: Atmospheres</i> , 2018, 123, 9109-9130. | 3.3 | 47 |
| 36 | Relative model score: a scoring rule for evaluating ensemble simulations with application to microbial soil respiration modeling. <i>Stochastic Environmental Research and Risk Assessment</i> , 2018, 32, 2809-2819. | 4.0 | 6 |

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|----|---|-----|-----------|
| 37 | CO ₂ diffusion into pore spaces limits weathering rate of an experimental basalt landscape. <i>Geology</i> , 2017, 45, 203-206. | 4.4 | 13 |
| 38 | Prototype campaign assessment of disturbance-induced tree loss effects on surface properties for atmospheric modeling. <i>Ecosphere</i> , 2017, 8, e01698. | 2.2 | 5 |
| 39 | Improving the accuracy of the gradient method for determining soil carbon dioxide efflux. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2017, 122, 50-64. | 3.0 | 25 |
| 40 | Impacts of hydraulic redistribution on grass-tree competition vs facilitation in a semi-arid savanna. <i>New Phytologist</i> , 2017, 215, 1451-1461. | 7.3 | 51 |
| 41 | Temperature response surfaces for mortality risk of tree species with future drought. <i>Environmental Research Letters</i> , 2017, 12, 115014. | 5.2 | 67 |
| 42 | Photosynthetic phenological variation may promote coexistence among co-dominant tree species in a Madrean sky island mixed conifer forest. <i>Tree Physiology</i> , 2017, 37, 1229-1238. | 3.1 | 16 |
| 43 | Fire Severity and Regeneration Strategy Influence Shrub Patch Size and Structure Following Disturbance. <i>Forests</i> , 2017, 8, 221. | 2.1 | 22 |
| 44 | Beyond greenness: Detecting temporal changes in photosynthetic capacity with hyperspectral reflectance data. <i>PLoS ONE</i> , 2017, 12, e0189539. | 2.5 | 51 |
| 45 | A multi-species synthesis of physiological mechanisms in drought-induced tree mortality. <i>Nature Ecology and Evolution</i> , 2017, 1, 1285-1291. | 7.8 | 739 |
| 46 | Advancing Understanding of Hydrological and Biogeochemical Interactions in Evolving Landscapes through Controlled Experimentation at the Landscape Evolution Observatory. , 2017, , 83-118. | | 0 |
| 47 | The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures. <i>Scientific Reports</i> , 2016, 6, 35070. | 3.3 | 119 |
| 48 | The carbon balance pivot point of southwestern U.S. semiarid ecosystems: Insights from the 21st century drought. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2015, 120, 2612-2624. | 3.0 | 142 |
| 49 | Critical Zone Services: Expanding Context, Constraints, and Currency beyond Ecosystem Services. <i>Vadose Zone Journal</i> , 2015, 14, vj2014.10.0142. | 2.2 | 60 |
| 50 | Sensitivity of regional evapotranspiration partitioning to variation in woody plant cover: insights from experimental dryland tree mosaics. <i>Global Ecology and Biogeography</i> , 2015, 24, 1040-1048. | 5.8 | 28 |
| 51 | The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. <i>Geomorphology</i> , 2015, 244, 190-203. | 2.6 | 47 |
| 52 | Climatic and landscape influences on soil moisture are primary determinants of soil carbon fluxes in seasonally snow-covered forest ecosystems. <i>Biogeochemistry</i> , 2015, 123, 447-465. | 3.5 | 50 |
| 53 | Quantifying ecological memory in plant and ecosystem processes. <i>Ecology Letters</i> , 2015, 18, 221-235. | 6.4 | 324 |
| 54 | Quantifying the timescales over which exogenous and endogenous conditions affect soil respiration. <i>New Phytologist</i> , 2014, 202, 442-454. | 7.3 | 40 |

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|----|--|-----|-----------|
| 55 | When vegetation change alters ecosystem water availability. <i>Global Change Biology</i> , 2014, 20, 2198-2210. | 9.5 | 78 |
| 56 | Metabolic acceleration quantifies biological systems' ability to up-regulate metabolism in response to episodic resource availability. <i>Journal of Arid Environments</i> , 2014, 104, 9-16. | 2.4 | 5 |
| 57 | Assessing five evolving microbial enzyme models against field measurements from a semiarid savannah-What are the mechanisms of soil respiration pulses?. <i>Geophysical Research Letters</i> , 2014, 41, 6428-6434. | 4.0 | 42 |
| 58 | Influence of snow cover duration on soil evaporation and respiration efflux in mixed-conifer ecosystems. <i>Ecohydrology</i> , 2014, 7, 869-880. | 2.4 | 3 |
| 59 | Antecedent Conditions Influence Soil Respiration Differences in Shrub and Grass Patches. <i>Ecosystems</i> , 2013, 16, 1230-1247. | 3.4 | 37 |
| 60 | Understanding past, contemporary, and future dynamics of plants, populations, and communities using Sonoran Desert winter annuals. <i>American Journal of Botany</i> , 2013, 100, 1369-1380. | 1.7 | 44 |
| 61 | Nonstructural leaf carbohydrate dynamics of <i>Pinus edulis</i> during drought-induced tree mortality reveal role for carbon metabolism in mortality mechanism. <i>New Phytologist</i> , 2013, 197, 1142-1151. | 7.3 | 221 |
| 62 | 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. <i>Journal of Arid Environments</i> , 2013, 91, 95-103. | 2.4 | 12 |
| 63 | Consequences of Cool-Season Drought-Induced Plant Mortality to Chihuahuan Desert Grassland Ecosystem and Soil Respiration Dynamics. <i>Ecosystems</i> , 2013, 16, 1178-1191. | 3.4 | 19 |
| 64 | Nocturnal soil CO ₂ uptake and its relationship to subsurface soil and ecosystem carbon fluxes in a Chihuahuan Desert shrubland. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2013, 118, 1593-1603. | 3.0 | 44 |
| 65 | Landscape and environmental controls over leaf and ecosystem carbon dioxide fluxes under woody plant expansion. <i>Journal of Ecology</i> , 2013, 101, 1471-1483. | 4.0 | 21 |
| 66 | Coevolution of nonlinear trends in vegetation, soils, and topography with elevation and slope aspect: A case study in the sky islands of southern Arizona. <i>Journal of Geophysical Research F: Earth Surface</i> , 2013, 118, 741-758. | 2.8 | 76 |
| 67 | Herbivory of wild <i>Manduca sexta</i> causes fast down-regulation of photosynthetic efficiency in <i>Datura wrightii</i> : an early signaling cascade visualized by chlorophyll fluorescence. <i>Photosynthesis Research</i> , 2012, 113, 249-260. | 2.9 | 13 |
| 68 | Green leaf volatiles and oxygenated metabolite emission bursts from mesquite branches following light-dark transitions. <i>Photosynthesis Research</i> , 2012, 113, 321-333. | 2.9 | 46 |
| 69 | Differential daytime and nighttime stomatal behavior in plants from North American deserts. <i>New Phytologist</i> , 2012, 194, 464-476. | 7.3 | 99 |
| 70 | Temperature and precipitation controls over leaf and ecosystem-level CO ₂ flux along a woody plant encroachment gradient. <i>Global Change Biology</i> , 2012, 18, 1389-1400. | 9.5 | 65 |
| 71 | Shrub encroachment alters sensitivity of soil respiration to temperature and moisture. <i>Journal of Geophysical Research</i> , 2012, 117, . | 3.3 | 28 |
| 72 | Organization of complexity in water limited ecohydrology. <i>Ecohydrology</i> , 2012, 5, 184-199. | 2.4 | 73 |

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|----|---|-----|-----------|
| 73 | Cool-season whole-plant gas exchange of exotic and native semiarid bunchgrasses. <i>Plant Ecology</i> , 2012, 213, 1229-1239. | 1.6 | 10 |
| 74 | Endogenous circadian regulation of carbon dioxide exchange in terrestrial ecosystems. <i>Global Change Biology</i> , 2012, 18, 1956-1970. | 9.5 | 35 |
| 75 | The relative controls of temperature, soil moisture, and plant functional group on soil CO ₂ efflux at diel, seasonal, and annual scales. <i>Journal of Geophysical Research</i> , 2011, 116, . | 3.3 | 94 |
| 76 | Partitioning evapotranspiration across gradients of woody plant cover: Assessment of a stable isotope technique. <i>Geophysical Research Letters</i> , 2010, 37, . | 4.0 | 179 |
| 77 | Carbon dioxide exchange in a semidesert grassland through drought-induced vegetation change. <i>Journal of Geophysical Research</i> , 2010, 115, . | 3.3 | 156 |
| 78 | Temperature sensitivity of drought-induced tree mortality portends increased regional die-off under global-change-type drought. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 7063-7066. | 7.1 | 857 |
| 79 | Reply to Leuzinger et al.: Drought-induced tree mortality temperature sensitivity requires pressing forward with best available science. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, E107-E107. | 7.1 | 10 |
| 80 | Reply to Sala: Temperature sensitivity in drought-induced tree mortality hastens the need to further resolve a physiological model of death. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, . | 7.1 | 9 |
| 81 | Gross primary production variability associated with meteorology, physiology, leaf area, and water supply in contrasting woodland and grassland semiarid riparian ecosystems. <i>Journal of Geophysical Research</i> , 2009, 114, . | 3.3 | 24 |
| 82 | SEED DISPERSAL OF DESERT ANNUALS. <i>Ecology</i> , 2008, 89, 2218-2227. | 3.2 | 68 |
| 83 | PHOTOSYNTHETIC RESOURCE-USE EFFICIENCY AND DEMOGRAPHIC VARIABILITY IN DESERT WINTER ANNUAL PLANTS. <i>Ecology</i> , 2008, 89, 1554-1563. | 3.2 | 77 |
| 84 | The effect of elevated CO ₂ , soil and atmospheric water deficit and seasonal phenology on leaf and ecosystem isoprene emission. <i>Functional Plant Biology</i> , 2007, 34, 774. | 2.1 | 27 |
| 85 | Effects of topography and woody plant canopy cover on near-ground solar radiation: Relevant energy inputs for ecohydrology and hydrogeology. <i>Geophysical Research Letters</i> , 2007, 34, . | 4.0 | 61 |
| 86 | Linking growth strategies to long-term population dynamics in a guild of desert annuals. <i>Journal of Ecology</i> , 2007, 95, 321-331. | 4.0 | 99 |
| 87 | Leaf- and stand-level responses of a forested mesocosm to independent manipulations of temperature and vapor pressure deficit. <i>New Phytologist</i> , 2007, 174, 614-625. | 7.3 | 31 |
| 88 | Effects of an increase in summer precipitation on leaf, soil, and ecosystem fluxes of CO ₂ and H ₂ O in a sotol grassland in Big Bend National Park, Texas. <i>Oecologia</i> , 2007, 151, 704-718. | 2.0 | 80 |
| 89 | The dependence of respiration on photosynthetic substrate supply and temperature: integrating leaf, soil and ecosystem measurements. <i>Global Change Biology</i> , 2006, 12, 1954-1968. | 9.5 | 72 |
| 90 | Relationships Between Microbial Community Structure and Soil Processes Under Elevated Atmospheric Carbon Dioxide. <i>Microbial Ecology</i> , 2006, 51, 302-314. | 2.8 | 52 |

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|----|---|-----|-----------|
| 91 | Molecular targets of elevated [CO ₂] in leaves and stems of <i>Populus deltoides</i> : implications for future tree growth and carbon sequestration. <i>Functional Plant Biology</i> , 2006, 33, 121. | 2.1 | 41 |
| 92 | Increased leaf area dominates carbon flux response to elevated CO ₂ in stands of <i>Populus deltoides</i> (Bartr.). <i>Global Change Biology</i> , 2005, 11, 716-731. | 9.5 | 29 |
| 93 | Growth of Eastern Cottonwoods (<i>Populus deltoides</i>) in elevated [CO ₂] stimulates stand-level respiration and rhizodeposition of carbohydrates, accelerates soil nutrient depletion, yet stimulates above- and belowground biomass production. <i>Global Change Biology</i> , 2005, 11, 1220-1233. | 9.5 | 41 |
| 94 | The effect of elevated atmospheric CO ₂ and drought on sources and sinks of isoprene in a temperate and tropical rainforest mesocosm. <i>Global Change Biology</i> , 2005, 11, 1234-1246. | 9.5 | 55 |
| 95 | The effect of elevated CO ₂ on diel leaf growth cycle, leaf carbohydrate content and canopy growth performance of <i>Populus deltoides</i> . <i>Global Change Biology</i> , 2005, 11, 1207-1219. | 9.5 | 35 |
| 96 | The interacting effects of elevated atmospheric CO ₂ concentration, drought and leaf-to-air vapour pressure deficit on ecosystem isoprene fluxes. <i>Oecologia</i> , 2005, 146, 120-129. | 2.0 | 43 |
| 97 | Effect of elevated CO ₂ concentration and vapour pressure deficit on isoprene emission from leaves of <i>Populus deltoides</i> during drought. <i>Functional Plant Biology</i> , 2004, 31, 1137. | 2.1 | 79 |
| 98 | Controlled Experiments of Hillslope Coevolution at the Biosphere 2 Landscape Evolution Observatory: Toward Prediction of Coupled Hydrological, Biogeochemical, and Ecological Change. , 0, , , | | 9 |