

# Gordan B Bonan

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

|                    |                          |                |                 |
|--------------------|--------------------------|----------------|-----------------|
| 118<br>papers      | 27,578<br>citations      | 54<br>h-index  | 125<br>g-index  |
| 125<br>ext. papers | 31,398<br>ext. citations | 8.7<br>avg, IF | 7.26<br>L-index |

| #   | Paper  | IF   | Citations |
|-----|--|------|-----------|
| 118 | Impacts of a revised surface roughness parameterization in the Community Land Model 5.1. <i>Geoscientific Model Development</i> , <b>2022</b> , 15, 2365-2393  | 6.3  | 0         |
| 117 | The signature of internal variability in the terrestrial carbon cycle. <i>Environmental Research Letters</i> , <b>2021</b> , 16, 034022  | 6.2  | 2         |
| 116 | Moving beyond the incorrect but useful paradigm: reevaluating big-leaf and multilayer plant canopies to model biosphere-atmosphere fluxes in a review. <i>Agricultural and Forest Meteorology</i> , <b>2021</b> , 306, 108435                | 5.8  | 17        |
| 115 | Increasing the spatial and temporal impact of ecological research: A roadmap for integrating a novel terrestrial process into an Earth system model. <i>Global Change Biology</i> , <b>2021</b> ,  | 11.4 | 3         |
| 114 | Influence of Vertical Heterogeneities in the Canopy Microenvironment on Interannual Variability of Carbon Uptake in Temperate Deciduous Forests. <i>Journal of Geophysical Research G: Biogeosciences</i> , <b>2020</b> , 125, e2020JG005658 | 3.7  | 5         |
| 113 | Model Structure and Climate Data Uncertainty in Historical Simulations of the Terrestrial Carbon Cycle (1850-2014). <i>Global Biogeochemical Cycles</i> , <b>2019</b> , 33, 1310-1326  | 5.9  | 31        |
| 112 | Simulating surface energy fluxes using the variable-resolution Community Earth System Model (VR-CESM). <i>Theoretical and Applied Climatology</i> , <b>2019</b> , 138, 115-133   | 3    | 4         |
| 111 | Beyond Static Benchmarking: Using Experimental Manipulations to Evaluate Land Model Assumptions. <i>Global Biogeochemical Cycles</i> , <b>2019</b> , 33, 1289-1309   | 5.9  | 35        |
| 110 | Separating the Impact of Individual Land Surface Properties on the Terrestrial Surface Energy Budget in both the Coupled and Uncoupled Land-Atmosphere System. <i>Journal of Climate</i> , <b>2019</b> , 32, 5725-5744                       | 4.4  | 30        |
| 109 | The Community Land Model Version 5: Description of New Features, Benchmarking, and Impact of Forcing Uncertainty. <i>Journal of Advances in Modeling Earth Systems</i> , <b>2019</b> , 11, 4245-4287   | 7.1  | 288       |
| 108 | Climate Change and Terrestrial Ecosystem Modeling <b>2019</b> ,  |      | 32        |
| 107 | Terrestrial Biosphere Models <b>2019</b> , 1-24  |      | 2         |
| 106 | Quantitative Description of Ecosystems <b>2019</b> , 25-39   |      |           |
| 105 | Fundamentals of Energy and Mass Transfer <b>2019</b> , 40-52   |      |           |
| 104 | Mathematical Formulation of Biological Flux Rates <b>2019</b> , 53-63  |      |           |
| 103 | Soil Temperature <b>2019</b> , 64-79   |      | 0         |
| 102 | Turbulent Fluxes and Scalar Profiles in the Surface Layer <b>2019</b> , 80-100   |      | 1         |

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| 101 | Surface Energy Fluxes <b>2019</b> , 101-114  |      | 0   |
| 100 | Soil Moisture <b>2019</b> , 115-133  |      |     |
| 99  | Hydrologic Scaling and Spatial Heterogeneity <b>2019</b> , 134-151   |      |     |
| 98  | Leaf Temperature and Energy Fluxes <b>2019</b> , 152-166   |      |     |
| 97  | Leaf Photosynthesis <b>2019</b> , 167-188  |      | 0   |
| 96  | Stomatal Conductance <b>2019</b> , 189-212   |      | 1   |
| 95  | Plant Hydraulics <b>2019</b> , 213-227   |      | 2   |
| 94  | Radiative Transfer <b>2019</b> , 228-259   |      | 0   |
| 93  | Plant Canopies <b>2019</b> , 260-279   |      |     |
| 92  | Scalar Canopy Profiles <b>2019</b> , 280-300   |      |     |
| 91  | Biogeochemical Models <b>2019</b> , 301-321  |      |     |
| 90  | Soil Biogeochemistry <b>2019</b> , 322-343   |      |     |
| 89  | Vegetation Demography <b>2019</b> , 344-364  |      |     |
| 88  | Canopy Chemistry <b>2019</b> , 365-380   |      |     |
| 87  | High predictability of terrestrial carbon fluxes from an initialized decadal prediction system. <i>Environmental Research Letters</i> , <b>2019</b> , 14, 124074   | 6.2  | 13  |
| 86  | Climate, ecosystems, and planetary futures: The challenge to predict life in Earth system models. <i>Science</i> , <b>2018</b> , 359,  | 33.3 | 238 |
| 85  | The role of surface roughness, albedo, and Bowen ratio on ecosystem energy balance in the Eastern United States. <i>Agricultural and Forest Meteorology</i> , <b>2018</b> , 249, 367-376                                       | 5.8  | 60  |
| 84  | A Comparison of the Diel Cycle of Modeled and Measured Latent Heat Flux During the Warm Season in a Colorado Subalpine Forest. <i>Journal of Advances in Modeling Earth Systems</i> , <b>2018</b> , 10, 617-651 <sup>7.1</sup> |      | 15  |

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|----|---|------|-----|
| 83 | Carbon cycle confidence and uncertainty: Exploring variation among soil biogeochemical models. <i>Global Change Biology</i> , <b>2018</b> , 24, 1563-1579   | 11.4 | 79  |
| 82 | Modeling canopy-induced turbulence in the Earth system: a unified parameterization of turbulent exchange within plant canopies and the roughness sublayer (CLM-ml v0). <i>Geoscientific Model Development</i> , <b>2018</b> , 11, 1467-1496 | 6.3  | 65  |
| 81 | Triose phosphate limitation in photosynthesis models reduces leaf photosynthesis and global terrestrial carbon storage. <i>Environmental Research Letters</i> , <b>2018</b> , 13, 074025  | 6.2  | 47  |
| 80 | Comparing optimal and empirical stomatal conductance models for application in Earth system models. <i>Global Change Biology</i> , <b>2018</b> , 24, 5708-5723  | 11.4 | 44  |
| 79 | Cover Crops May Cause Winter Warming in Snow-Covered Regions. <i>Geophysical Research Letters</i> , <b>2018</b> , 45, 9889-9897   | 4.9  | 14  |
| 78 | Changes in Wood Biomass and Crop Yields in Response to Projected CO <sub>2</sub> , O <sub>3</sub> , Nitrogen Deposition, and Climate. <i>Journal of Geophysical Research G: Biogeosciences</i> , <b>2018</b> , 123, 3262-3282               | 3.7  | 12  |
| 77 | Biophysical consequences of photosynthetic temperature acclimation for climate. <i>Journal of Advances in Modeling Earth Systems</i> , <b>2017</b> , 9, 536-547   | 7.1  | 14  |
| 76 | A roadmap for improving the representation of photosynthesis in Earth system models. <i>New Phytologist</i> , <b>2017</b> , 213, 22-42  | 9.8  | 245 |
| 75 | Stomatal Function across Temporal and Spatial Scales: Deep-Time Trends, Land-Atmosphere Coupling and Global Models. <i>Plant Physiology</i> , <b>2017</b> , 174, 583-602  | 6.6  | 78  |
| 74 | Reducing uncertainty in projections of terrestrial carbon uptake. <i>Environmental Research Letters</i> , <b>2017</b> , 12, 044020  | 6.2  | 44  |
| 73 | Managing uncertainty in soil carbon feedbacks to climate change. <i>Nature Climate Change</i> , <b>2016</b> , 6, 751-758  | 5.4  | 291 |
| 72 | Evaluating the Climate Effects of Reforestation in New England Using a Weather Research and Forecasting (WRF) Model Multiphysics Ensemble. <i>Journal of Climate</i> , <b>2016</b> , 29, 5141-5156  | 4.4  | 19  |
| 71 | On the development of a coupled regional climate-vegetation model RCM-CLM-INDV and its validation in Tropical Africa. <i>Climate Dynamics</i> , <b>2016</b> , 46, 515-539   | 4.2  | 42  |
| 70 | Optimizing Available Network Resources to Address Questions in Environmental Biogeochemistry. <i>BioScience</i> , <b>2016</b> , 66, 317-326   | 5.7  | 16  |
| 69 | Ecological Climatology: Concepts and Applications <b>2016</b> ,   |      | 130 |
| 68 | Forests, Climate, and Public Policy: A 500-Year Interdisciplinary Odyssey. <i>Annual Review of Ecology, Evolution, and Systematics</i> , <b>2016</b> , 47, 97-121   | 13.5 | 30  |
| 67 | Temperature acclimation of photosynthesis and respiration: A key uncertainty in the carbon cycle-climate feedback. <i>Geophysical Research Letters</i> , <b>2015</b> , 42, 8624-8631  | 4.9  | 119 |
| 66 | Representing life in the Earth system with soil microbial functional traits in the MIMICS model. <i>Geoscientific Model Development</i> , <b>2015</b> , 8, 1789-1808  | 6.3  | 114 |

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|----|---|------|-----|
| 65 | Effects of model structural uncertainty on carbon cycle projections: biological nitrogen fixation as a case study. <i>Environmental Research Letters</i> , <b>2015</b> , 10, 044016   | 6.2  | 88  |
| 64 | Representing life in the Earth system with soil microbial functional traits in the MIMICS model <b>2015</b> , ,   |      | 18  |
| 63 | Preindustrial-Control and Twentieth-Century Carbon Cycle Experiments with the Earth System Model CESM1(BGC). <i>Journal of Climate</i> , <b>2014</b> , 27, 8981-9005  | 4.4  | 125 |
| 62 | The emerging anthropogenic signal in land-atmosphere carbon-cycle coupling. <i>Nature Climate Change</i> , <b>2014</b> , 4, 796-800   | 21.4 | 21  |
| 61 | Evaluating soil biogeochemistry parameterizations in Earth system models with observations. <i>Global Biogeochemical Cycles</i> , <b>2014</b> , 28, 211-222   | 5.9  | 57  |
| 60 | Modeling stomatal conductance in the earth system: linking leaf water-use efficiency and water transport along the soil-plant-atmosphere continuum. <i>Geoscientific Model Development</i> , <b>2014</b> , 7, 2193-2222       | 6.3  | 216 |
| 59 | Integrating microbial physiology and physio-chemical principles in soils with the Microbial-Mineral Carbon Stabilization (MIMICS) model. <i>Biogeosciences</i> , <b>2014</b> , 11, 3899-3917                                  | 4.6  | 184 |
| 58 | The Community Land Model underestimates land-use CO <sub>2</sub> emissions by neglecting soil disturbance from cultivation. <i>Geoscientific Model Development</i> , <b>2014</b> , 7, 613-620                                 | 6.3  | 44  |
| 57 | Connecting mathematical ecosystems, real-world ecosystems, and climate science. <i>New Phytologist</i> , <b>2014</b> , 202, 731-733   | 9.8  | 29  |
| 56 | Impacts of human alteration of the nitrogen cycle in the US on radiative forcing. <i>Biogeochemistry</i> , <b>2013</b> , 114, 25-40   | 3.8  | 41  |
| 55 | Carbon Concentration and Carbon Climate Feedbacks in CMIP5 Earth System Models. <i>Journal of Climate</i> , <b>2013</b> , 26, 5289-5314   | 4.4  | 493 |
| 54 | Evaluating litter decomposition in earth system models with long-term litterbag experiments: an example using the Community Land Model version 4 (CLM4). <i>Global Change Biology</i> , <b>2013</b> , 19, 957-74              | 11.4 | 128 |
| 53 | Insights into mechanisms governing forest carbon response to nitrogen deposition: a model-data comparison using observed responses to nitrogen addition. <i>Biogeosciences</i> , <b>2013</b> , 10, 3869-3887                  | 4.6  | 70  |
| 52 | The effect of vertically resolved soil biogeochemistry and alternate soil C and N models on C dynamics of CLM4. <i>Biogeosciences</i> , <b>2013</b> , 10, 7109-7131   | 4.6  | 282 |
| 51 | Reconciling leaf physiological traits and canopy flux data: Use of the TRY and FLUXNET databases in the Community Land Model version 4. <i>Journal of Geophysical Research</i> , <b>2012</b> , 117, n/a-n/a                   |      | 147 |
| 50 | Determining Robust Impacts of Land-Use-Induced Land Cover Changes on Surface Climate over North America and Eurasia: Results from the First Set of LUCID Experiments. <i>Journal of Climate</i> , <b>2012</b> , 25, 3261-3281 | 4.4  | 259 |
| 49 | The CCSM4 Land Simulation, 1850-2005: Assessment of Surface Climate and New Capabilities. <i>Journal of Climate</i> , <b>2012</b> , 25, 2240-2260   | 4.4  | 235 |
| 48 | Interactive Crop Management in the Community Earth System Model (CESM1): Seasonal Influences on Land-Atmosphere Fluxes. <i>Journal of Climate</i> , <b>2012</b> , 25, 4839-4859   | 4.4  | 112 |

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|----|---|------|------|
| 47 | Ozone exposure causes a decoupling of conductance and photosynthesis: implications for the Ball-Berry stomatal conductance model. <i>Oecologia</i> , <b>2012</b> , 169, 651-9   | 2.9  | 52   |
| 46 | Simulating the Biogeochemical and Biogeophysical Impacts of Transient Land Cover Change and Wood Harvest in the Community Climate System Model (CCSM4) from 1850 to 2100. <i>Journal of Climate</i> , <b>2012</b> , 25, 3071-3095 | 4.4  | 228  |
| 45 | Improving canopy processes in the Community Land Model version 4 (CLM4) using global flux fields empirically inferred from FLUXNET data. <i>Journal of Geophysical Research</i> , <b>2011</b> , 116,                              |      | 440  |
| 44 | Parameterization improvements and functional and structural advances in Version 4 of the Community Land Model. <i>Journal of Advances in Modeling Earth Systems</i> , <b>2011</b> , 3,  | 7.1  | 581  |
| 43 | Parameterization improvements and functional and structural advances in Version 4 of the Community Land Model. <i>Journal of Advances in Modeling Earth Systems</i> , <b>2011</b> , 3, n/a-n/a                                    | 7.1  | 258  |
| 42 | An examination of urban heat island characteristics in a global climate model. <i>International Journal of Climatology</i> , <b>2011</b> , 31, 1848-1865  | 3.5  | 106  |
| 41 | Forests and Global Change. <i>Ecological Studies</i> , <b>2011</b> , 711-725  | 1.1  | 4    |
| 40 | Recent decline in the global land evapotranspiration trend due to limited moisture supply. <i>Nature</i> , <b>2010</b> , 467, 951-4   | 50.4 | 1382 |
| 39 | Changes in Arctic vegetation amplify high-latitude warming through the greenhouse effect. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2010</b> , 107, 1295-300                    | 11.5 | 192  |
| 38 | Quantifying carbon-nitrogen feedbacks in the Community Land Model (CLM4). <i>Geophysical Research Letters</i> , <b>2010</b> , 37, n/a-n/a   | 4.9  | 145  |
| 37 | Terrestrial gross carbon dioxide uptake: global distribution and covariation with climate. <i>Science</i> , <b>2010</b> , 329, 834-8  | 33.3 | 1638 |
| 36 | Effects of white roofs on urban temperature in a global climate model. <i>Geophysical Research Letters</i> , <b>2010</b> , 37, n/a-n/a  | 4.9  | 145  |
| 35 | Parameterization of Urban Characteristics for Global Climate Modeling. <i>Annals of the American Association of Geographers</i> , <b>2010</b> , 100, 848-865  |      | 99   |
| 34 | Anthropogenic land cover changes in a GCM with surface albedo changes based on MODIS data. <i>International Journal of Climatology</i> , <b>2010</b> , 30, 2105-2117  | 3.5  | 40   |
| 33 | Systematic assessment of terrestrial biogeochemistry in coupled climate-carbon models. <i>Global Change Biology</i> , <b>2009</b> , 15, 2462-2484   | 11.4 | 299  |
| 32 | Uncertainties in climate responses to past land cover change: First results from the LUCID intercomparison study. <i>Geophysical Research Letters</i> , <b>2009</b> , 36,   | 4.9  | 365  |
| 31 | Use of FLUXNET in the Community Land Model development. <i>Journal of Geophysical Research</i> , <b>2008</b> , 113, n/a-n/a   |      | 196  |
| 30 | Improvements to the Community Land Model and their impact on the hydrological cycle. <i>Journal of Geophysical Research</i> , <b>2008</b> , 113, n/a-n/a  |      | 568  |

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|----|--|------|------|
| 29 | Forests and climate change: forcings, feedbacks, and the climate benefits of forests. <i>Science</i> , <b>2008</b> , 320, 1444-9   | 33.3 | 3374 |
| 28 | An Urban Parameterization for a Global Climate Model. Part II: Sensitivity to Input Parameters and the Simulated Urban Heat Island in Offline Simulations. <i>Journal of Applied Meteorology and Climatology</i> , <b>2008</b> , 47, 1061-1076 | 2.7  | 83   |
| 27 | An Urban Parameterization for a Global Climate Model. Part I: Formulation and Evaluation for Two Cities. <i>Journal of Applied Meteorology and Climatology</i> , <b>2008</b> , 47, 1038-1060   | 2.7  | 193  |
| 26 | Protecting climate with forests. <i>Environmental Research Letters</i> , <b>2008</b> , 3, 044006   | 6.2  | 264  |
| 25 | Present-day springtime high-latitude surface albedo as a predictor of simulated climate sensitivity. <i>Geophysical Research Letters</i> , <b>2007</b> , 34,   | 4.9  | 18   |
| 24 | The Partitioning of Evapotranspiration into Transpiration, Soil Evaporation, and Canopy Evaporation in a GCM: Impacts on Land-Atmosphere Interaction. <i>Journal of Hydrometeorology</i> , <b>2007</b> , 8, 862-880                            | 3.7  | 344  |
| 23 | The Community Climate System Model Version 3 (CCSM3). <i>Journal of Climate</i> , <b>2006</b> , 19, 2122-2143  | 4.4  | 1917 |
| 22 | The Community Land Model and Its Climate Statistics as a Component of the Community Climate System Model. <i>Journal of Climate</i> , <b>2006</b> , 19, 2302-2324  | 4.4  | 296  |
| 21 | Global consequences of land use. <i>Science</i> , <b>2005</b> , 309, 570-4   | 33.3 | 7529 |
| 20 | The importance of land-cover change in simulating future climates. <i>Science</i> , <b>2005</b> , 310, 1674-8  | 33.3 | 762  |
| 19 | Effects of land use change on North American climate: impact of surface datasets and model biogeophysics. <i>Climate Dynamics</i> , <b>2004</b> , 23, 117-132  | 4.2  | 82   |
| 18 | Soil feedback drives the mid-Holocene North African monsoon northward in fully coupled CCSM2 simulations with a dynamic vegetation model. <i>Climate Dynamics</i> , <b>2004</b> , 23, 791-802  | 4.2  | 109  |
| 17 | A dynamic global vegetation model for use with climate models: concepts and description of simulated vegetation dynamics. <i>Global Change Biology</i> , <b>2003</b> , 9, 1543-1566  | 11.4 | 291  |
| 16 | Assessment of global climate model land surface albedo using MODIS data. <i>Geophysical Research Letters</i> , <b>2003</b> , 30,   | 4.9  | 79   |
| 15 | The Land Surface Climatology of the Community Land Model Coupled to the NCAR Community Climate Model*. <i>Journal of Climate</i> , <b>2002</b> , 15, 3123-3149   | 4.4  | 499  |
| 14 | Land-atmosphere CO <sub>2</sub> exchange simulated by a land surface process model coupled to an atmospheric general circulation model. <i>Journal of Geophysical Research</i> , <b>1995</b> , 100, 2817                                       |      | 199  |
| 13 | Ecosystems and Climate1-20   |      | 1    |
| 12 | Plant Canopies264-288  |      |      |

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| 11 | Insights into mechanisms governing forest carbon response to nitrogen deposition: a model-data comparison using observed responses to nitrogen addition               | 6  |
| 10 | The effect of vertically-resolved soil biogeochemistry and alternate soil C and N models on C dynamics of CLM4  | 15 |
| 9  | Integrating microbial physiology and physiochemical principles in soils with the Microbial-Mineral Carbon Stabilization (MIMICS) model                                | 15 |
| 8  | Modeling canopy-induced turbulence in the Earth system: a unified parameterization of turbulent exchange within plant canopies and the roughness sublayer (CLM-ml v0) | 4  |
| 7  | Modeling stomatal conductance in the Earth system: linking leaf water-use efficiency and water transport along the soil-plant-atmosphere continuum                    | 4  |
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