Carlos A Sierra

List of Publications by Year
in descending order

85 papers	6,798 citations	159585 30 h-index	64796 79 g-index
128 all docs	128 docs citations	128 times ranked	11003 citing authors

#	ARTICLE	IF	CITATIONS
1	TRY plant trait database â€" enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	9.5	1,038
2	Plant diversity increases soil microbial activity and soil carbon storage. Nature Communications, 2015, 6, 6707.	12.8	949
3	CO_2 balance of boreal, temperate, and tropical forests derived from a global database. Global Change Biology, 2007, 13, 2509-2537.	9.5	863
4	Beyond clay: towards an improved set of variables for predicting soil organic matter content. Biogeochemistry, 2018, 137, 297-306.	3.5	423
5	Relationships among net primary productivity, nutrients and climate in tropical rain forest: a panâ€tropical analysis. Ecology Letters, 2011, 14, 939-947.	6.4	379
6	Toward more realistic projections of soil carbon dynamics by Earth system models. Global Biogeochemical Cycles, 2016, 30, 40-56.	4.9	343
7	Drivers and mechanisms of tree mortality in moist tropical forests. New Phytologist, 2018, 219, 851-869.	7.3	341
8	Sensitivity of decomposition rates of soil organic matter with respect to simultaneous changes in temperature and moisture. Journal of Advances in Modeling Earth Systems, 2015, 7, 335-356.	3.8	252
9	Total carbon stocks in a tropical forest landscape of the Porce region, Colombia. Forest Ecology and Management, 2007, 243, 299-309.	3.2	156
10	Temperature sensitivity of organic matter decomposition in the Arrhenius equation: some theoretical considerations. Biogeochemistry, 2012, 108, 1-15.	3.5	139
11	Models of soil organic matter decomposition: the SoilR package, version 1.0. Geoscientific Model Development, 2012, 5, 1045-1060.	3.6	122
12	Projected loss of soil organic carbon in temperate agricultural soils in the 21st century: effects of climate change and carbon input trends. Scientific Reports, 2016, 6, 32525.	3.3	107
13	The muddle of ages, turnover, transit, and residence times in the carbon cycle. Global Change Biology, 2017, 23, 1763-1773.	9.5	97
14	Improving understanding of soil organic matter dynamics by triangulating theories, measurements, and models. Biogeochemistry, 2018, 140, 1-13.	3.5	83
15	A general mathematical framework for representing soil organic matter dynamics. Ecological Monographs, 2015, 85, 505-524.	5.4	78
16	Interactions among temperature, moisture, and oxygen concentrations in controlling decomposition rates in a boreal forest soil. Biogeosciences, 2017, 14, 703-710.	3.3	74
17	Beyond bulk: Density fractions explain heterogeneity in global soil carbon abundance and persistence. Global Change Biology, 2022, 28, 1178-1196.	9.5	67
18	The influence of changes in forest management over the past 200years on present soil organic carbon stocks. Forest Ecology and Management, 2013, 289, 243-254.	3.2	49

#	ARTICLE	IF	CITATIONS
19	An open-source database for the synthesis of soil radiocarbon data: International Soil Radiocarbon Database (ISRaD) version 1.0. Earth System Science Data, 2020, 12, 61-76.	9.9	48
20	Probability distribution of allometric coefficients and Bayesian estimation of aboveground tree biomass. Forest Ecology and Management, 2012, 277, 173-179.	3.2	46
21	Monitoring ecological change during rapid socio-economic and political transitions: Colombian ecosystems in the post-conflict era. Environmental Science and Policy, 2017, 76, 40-49.	4.9	45
22	Soil Organic Matter Persistence as a Stochastic Process: Age and Transit Time Distributions of Carbon in Soils. Global Biogeochemical Cycles, 2018, 32, 1574-1588.	4.9	43
23	Non-structural carbon dynamics and allocation relate to growth rate and leaf habit in California oaks. Tree Physiology, 2015, 35, tpv097.	3.1	41
24	The ecology of peace: preparing Colombia for new political and planetary climates. Frontiers in Ecology and the Environment, 2018, 16, 525-531.	4.0	41
25	Linear Autonomous Compartmental Models as Continuous-Time Markov Chains: Transit-Time and Age Distributions. Mathematical Geosciences, 2018, 50, 1-34.	2.4	40
26	Spatial and temporal variability of net ecosystem production in a tropical forest: testing the hypothesis of a significant carbon sink. Global Change Biology, 2007, 13, 838-853.	9.5	39
27	Modeling radiocarbon dynamics in soils: SoilR version 1.1. Geoscientific Model Development, 2014, 7, 1919-1931.	3.6	38
28	The climate change mitigation effect of bioenergy from sustainably managed forests in Central Europe. GCB Bioenergy, 2020, 12, 186-197.	5.6	38
29	Interannual variation of carbon fluxes from three contrasting evergreen forests: the role of forest dynamics and climate. Ecology, 2009, 90, 2711-2723.	3.2	37
30	Decomposition of heterogeneous organic matter and its long-term stabilization in soils. Ecological Monographs, 2011, 81, 619-634.	5.4	35
31	Transit-time and age distributions for nonlinear time-dependent compartmental systems. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 1150-1155.	7.1	35
32	Towards a global understanding of vegetation–climate dynamics at multiple timescales. Biogeosciences, 2020, 17, 945-962.	3.3	35
33	Radiocarbon Nomenclature, Theory, Models, and Interpretation: Measuring Age, Determining Cycling Rates, and Tracing Source Pools. , 2016, , 45-82.		31
34	Amplification and dampening of soil respiration by changes in temperature variability. Biogeosciences, 2011, 8, 951-961.	3.3	28
35	Carbon balance on federal forest lands of Western Oregon and Washington: The impact of the Northwest Forest Plan. Forest Ecology and Management, 2012, 286, 171-182.	3.2	28
36	Probability distributions of nonstructural carbon ages and transit times provide insights into carbon allocation dynamics of mature trees. New Phytologist, 2020, 226, 1299-1311.	7.3	27

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37	Decomposability of soil organic matter over time: the Soil Incubation Database (SIDb, version 1.0) and guidance for incubation procedures. Earth System Science Data, 2020, 12, 1511-1524.	9.9	26
38	measuRing: An R package to measure tree-ring widths from scanned images. Dendrochronologia, 2015, 34, 43-50.	2.2	25
39	Model structure and parameter identification of soil organic matter models. Soil Biology and Biochemistry, 2015, 90, 197-203.	8.8	25
40	Starch and lipid storage strategies in tropical trees relate to growth and mortality. New Phytologist, 2021, 230, 139-154.	7.3	25
41	Predicting decadal trends and transient responses of radiocarbon storage and fluxes in a temperate forest soil. Biogeosciences, 2012, 9, 3013-3028.	3.3	24
42	The climate benefit of carbon sequestration. Biogeosciences, 2021, 18, 1029-1048.	3.3	24
43	Causes of variation in mineral soil C content and turnover in differently managed beech dominated forests. Plant and Soil, 2013, 370, 625-639.	3.7	21
44	Representing and Understanding the Carbon Cycle Using the Theory of Compartmental Dynamical Systems. Journal of Advances in Modeling Earth Systems, 2018, 10, 1729-1734.	3.8	21
45	Total carbon accumulation in a tropical forest landscape. Carbon Balance and Management, 2012, 7, 12.	3.2	20
46	Unambiguous and Low-Cost Determination of Growth Rates and Ages of Tropical Trees and Palms. Radiocarbon, 2014, 56, 39-52.	1.8	19
47	Optimization of method to quantify soil organic matter dynamics and carbon sequestration potential in volcanic ash soils. Biogeochemistry, 2015, 123, 27-47.	3.5	18
48	How long do elements cycle in terrestrial ecosystems?. Biogeochemistry, 2018, 139, 69-83.	3.5	16
49	CHLSOC: the Chilean Soil Organic Carbon database, a multi-institutional collaborative effort. Earth System Science Data, 2020, 12, 457-468.	9.9	16
50	Soil organic matter turnover rates increase to match increased inputs in grazed grasslands. Biogeochemistry, 2021, 156, 145-160.	3.5	14
51	Accounting for fine root mass sample losses in the washing process: a case study from a tropical montane forest of Colombia. Journal of Tropical Ecology, 2003, 19, 599-601.	1.1	13
52	Dynamic, Intermediate Soil Carbon Pools May Drive Future Responsiveness to Environmental Change. Journal of Environmental Quality, 2018, 47, 607-616.	2.0	12
53	Sensitivity of soil respiration rate with respect to temperature, moisture and oxygen under freezing and thawing. Soil Biology and Biochemistry, 2022, 165, 108488.	8.8	12
54	Younger carbon dominates global soil carbon efflux. Global Change Biology, 2022, 28, 5587-5599.	9.5	12

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55	Maximizing the profitability of forestry projects under the Clean Development Mechanism using a forest management optimization model. Forest Ecology and Management, 2006, 226, 341-350.	3.2	11
56	Edaphic controls on ecosystem-level carbon allocation in two contrasting Amazon forests. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 1820-1830.	3.0	11
57	Towards better representations of carbon allocation in vegetation: a conceptual framework and mathematical tool. Theoretical Ecology, 2020, 13, 317-332.	1.0	10
58	Forecasting Atmospheric Radiocarbon Decline to Pre-Bomb Values. Radiocarbon, 2018, 60, 1055-1066.	1.8	9
59	Introduction of a natural resource balance indicator to assess soil organic carbon management: Agricultural Biomass Productivity Benefit. Journal of Environmental Management, 2018, 224, 202-214.	7.8	8
60	Belowground Carbon Dynamics in Tropical Perennial C4 Grass Agroecosystems. Frontiers in Environmental Science, 2018, 6, .	3.3	8
61	Carbon stocks in aboveground biomass for Colombian mangroves with associated uncertainties. Regional Studies in Marine Science, 2018, 18, 145-155.	0.7	7
62	Ages and transit times as important diagnostics of model performance for predicting carbon dynamics in terrestrialÂvegetation models. Biogeosciences, 2018, 15, 1607-1625.	3.3	7
63	The fate and transit time of carbon in a tropical forest. Journal of Ecology, 2021, 109, 2845-2855.	4.0	7
64	Dendrochronological Potential of Trees from Americaâ€™s Rainiest Region. , 2020, , 79-119.		7
65	Intra-annual isotope variations in tree rings reveal growth rhythms within the least rainy season of an ever-wet tropical forest. Trees - Structure and Function, 2022, 36, 1039-1052.	1.9	7
66	Matrix Approach to Land Carbon Cycle Modeling. Journal of Advances in Modeling Earth Systems, 2022, 14, .	3.8	7
67	Low vertical transfer rates of carbon inferred from radiocarbon analysis in an Amazon Podzol. Biogeosciences, 2013, 10, 3455-3464.	3.3	6
68	Mathematical Reconstruction of Land Carbon Models From Their Numerical Output: Computing Soil Radiocarbon From C Dynamics. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001776.	3.8	6
69	Seasonality of Tropical Photosynthesis: A Pantropical Map of Correlations With Precipitation and Radiation and Comparison to Model Outputs. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2020JG006123.	3.0	6
70	Application of input to state stability to reservoir models. Theoretical Ecology, 2017, 10, 451-475.	1.0	5
71	Carbon flow through energycane agroecosystems established postâ€intensive agriculture. GCB Bioenergy, 2020, 12, 806-817.	5.6	5
72	Stochastic and deterministic interpretation of pool models. Global Change Biology, 2021, 27, 2271-2272.	9.5	5

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73	A Regional Earth System Data Lab for Understanding Ecosystem Dynamics: An Example from Tropical South America. Frontiers in Earth Science, 2021, 9, .	1.8	5
74	Peace and the environment at the crossroads: Elections in a conflict-troubled biodiversity hotspot. Environmental Science and Policy, 2022, 135, 77-85.	4.9	5
75	Establishment phase, spatial pattern, age, and demography of Oenocarpus bataua var. bataua can be a legacy of past loggings in the Colombian Andes. Forest Ecology and Management, 2014, 328, 282-291.	3.2	4
76	Spatial and temporal variation of forest net primary productivity components on contrasting soils in northwestern Amazon. Ecosphere, 2020, 11, e03233.	2.2	4
77	Effects of processes at the population and community level on carbon dynamics of an ecosystem model. Nature Precedings, 2008, , .	0.1	3
78	Response to the letters by Kun et al. and Booth et al.. GCB Bioenergy, 2020, 12, 1038-1043.	5.6	3
79	Closed-loop and congestion control of the global carbon-climate system. Climatic Change, 2021, 165, 1.	3.6	3
80	Probability Distributions of Radiocarbon in Open Linear Compartmental Systems at Steadyâ€State. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	3
81	Reconstructing past fossil-fuel CO_2 concentrations using tree rings and radiocarbon in the urban area of MedellÃn, Colombia. Environmental Research Letters, 2022, 17, 055008.	5.2	3
82	Stabilization of carbon in mineral soils from mangroves of the SinÃº river delta, Colombia. Wetlands Ecology and Management, 2018, 26, 931-942.	1.5	2
83	Maximizing Soil Carbon Sequestration: Assessing Procedural Barriers to Carbon Management in Cultivated Tropical Perennial Grass Systems. , 2017, , .		1
84	Development of Global Change Research in Developing Countries: Ecosystems and Global Change in the Context of the Neotropics; MedellÃn, Colombia, 19â€"20 May 2010. Eos, 2010, 91, 373.	0.1	0
85	Spatial and temporal variability of net ecosystem production in a tropical forest: testing the hypothesis of a significant carbon sink. Global Change Biology, 2007, .	9.5	0