

Annette Cowie

List of Publications by Year in descending order

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Version: 2024-02-01

135
papers

13,028
citations

41258

49
h-index

24179

110
g-index

142
all docs

142
docs citations

142
times ranked

12715
citing authors

#	ARTICLE	IF	CITATIONS
1	Effects of biochar from slow pyrolysis of papermill waste on agronomic performance and soil fertility. <i>Plant and Soil</i> , 2010, 327, 235-246.	1.8	1,376
2	Biophysical and economic limits to negative CO2 emissions. <i>Nature Climate Change</i> , 2016, 6, 42-50.	8.1	973
3	An investigation into the reactions of biochar in soil. <i>Soil Research</i> , 2010, 48, 501.	0.6	840
4	Characterisation and evaluation of biochars for their application as a soil amendment. <i>Soil Research</i> , 2010, 48, 516.	0.6	763
5	Energy- and greenhouse gas-based LCA of biofuel and bioenergy systems: Key issues, ranges and recommendations. <i>Resources, Conservation and Recycling</i> , 2009, 53, 434-447.	5.3	752
6	Influence of Biochars on Nitrous Oxide Emission and Nitrogen Leaching from Two Contrasting Soils. <i>Journal of Environmental Quality</i> , 2010, 39, 1224-1235.	1.0	630
7	Biochar Carbon Stability in a Clayey Soil As a Function of Feedstock and Pyrolysis Temperature. <i>Environmental Science & Technology</i> , 2012, 46, 11770-11778.	4.6	456
8	Mixed-species plantations of Eucalyptus with nitrogen-fixing trees: A review. <i>Forest Ecology and Management</i> , 2006, 233, 211-230.	1.4	417
9	Land in balance: The scientific conceptual framework for Land Degradation Neutrality. <i>Environmental Science and Policy</i> , 2018, 79, 25-35.	2.4	403
10	How biochar works, and when it doesn't: A review of mechanisms controlling soil and plant responses to biochar. <i>GCB Bioenergy</i> , 2021, 13, 1731-1764.	2.5	286
11	Biochar in climate change mitigation. <i>Nature Geoscience</i> , 2021, 14, 883-892.	5.4	263
12	Key issues and options in accounting for carbon sequestration and temporary storage in life cycle assessment and carbon footprinting. <i>International Journal of Life Cycle Assessment</i> , 2013, 18, 230-240.	2.2	257
13	Long-term influence of biochar on native organic carbon mineralisation in a low-carbon clayey soil. <i>Scientific Reports</i> , 2014, 4, 3687.	1.6	244
14	Net-zero emissions targets are vague: three ways to fix. <i>Nature</i> , 2021, 591, 365-368.	13.7	240
15	Biochar built soil carbon over a decade by stabilizing rhizodeposits. <i>Nature Climate Change</i> , 2017, 7, 371-376.	8.1	232
16	Which practices can deliver food security, climate change mitigation and adaptation, and combat land degradation and desertification?. <i>Global Change Biology</i> , 2020, 26, 1532-1575.	4.2	164
17	Biochar lowers ammonia emission and improves nitrogen retention in poultry litter composting. <i>Waste Management</i> , 2017, 61, 129-137.	3.7	155
18	Towards an integrated global framework to assess the impacts of land use and management change on soil carbon: current capability and future vision. <i>Global Change Biology</i> , 2012, 18, 2089-2101.	4.2	150

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19	High resolution mapping of soil organic carbon stocks using remote sensing variables in the semi-arid rangelands of eastern Australia. <i>Science of the Total Environment</i> , 2018, 630, 367-378.	3.9	139
20	On the success and failure of mixed-species tree plantations: lessons learned from a model system of <i>Eucalyptus globulus</i> and <i>Acacia mearnsii</i> . <i>Forest Ecology and Management</i> , 2005, 209, 147-155.	1.4	124
21	Biochar increases nitrogen retention and lowers greenhouse gas emissions when added to composting poultry litter. <i>Waste Management</i> , 2017, 61, 138-149.	3.7	119
22	Agricultural management practices impacted carbon and nutrient concentrations in soil aggregates, with minimal influence on aggregate stability and total carbon and nutrient stocks in contrasting soils. <i>Soil and Tillage Research</i> , 2018, 178, 209-223.	2.6	118
23	Estimating soil organic carbon stocks using different modelling techniques in the semi-arid rangelands of eastern Australia. <i>Ecological Indicators</i> , 2018, 88, 425-438.	2.6	114
24	Towards sustainable land management in the drylands: Scientific connections in monitoring and assessing dryland degradation, climate change and biodiversity. <i>Land Degradation and Development</i> , 2011, 22, 248-260.	1.8	105
25	Developing general allometric relationships for regional estimates of carbon sequestration – an example using <i>Eucalyptus pilularis</i> from seven contrasting sites. <i>Forest Ecology and Management</i> , 2005, 204, 115-129.	1.4	98
26	Enhanced biological N ₂ fixation and yield of faba bean (<i>Vicia faba</i> L.) in an acid soil following biochar addition: dissection of causal mechanisms. <i>Plant and Soil</i> , 2015, 395, 7-20.	1.8	97
27	Carbon allocation in a mixed-species plantation of <i>Eucalyptus globulus</i> and <i>Acacia mearnsii</i> . <i>Forest Ecology and Management</i> , 2006, 233, 275-284.	1.4	96
28	Management swing potential for bioenergy crops. <i>GCB Bioenergy</i> , 2013, 5, 623-638.	2.5	94
29	Oil mallee biochar improves soil structural properties – A study with x-ray micro-CT. <i>Agriculture, Ecosystems and Environment</i> , 2014, 191, 142-149.	2.5	94
30	Carbon and nutrient mineralisation dynamics in aggregate-size classes from different tillage systems after input of canola and wheat residues. <i>Soil Biology and Biochemistry</i> , 2018, 116, 22-38.	4.2	88
31	Land Degradation Neutrality: Concept development, practical applications and assessment. <i>Journal of Environmental Management</i> , 2017, 195, 16-24.	3.8	85
32	Impact of agricultural management practices on the nutrient supply potential of soil organic matter under long-term farming systems. <i>Soil and Tillage Research</i> , 2018, 175, 71-81.	2.6	80
33	Nutrient cycling in a mixed-species plantation of <i>Eucalyptus globulus</i> and <i>Acacia mearnsii</i> . <i>Canadian Journal of Forest Research</i> , 2005, 35, 2942-2950.	0.8	77
34	The decomposition of wood products in landfills in Sydney, Australia. <i>Waste Management</i> , 2008, 28, 2344-2354.	3.7	77
35	Plant-biochar interactions drive the negative priming of soil organic carbon in an annual ryegrass field system. <i>Soil Biology and Biochemistry</i> , 2015, 90, 111-121.	4.2	75
36	Biochar use for climate-change mitigation in rice cropping systems. <i>Journal of Cleaner Production</i> , 2016, 116, 61-70.	4.6	73

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37	Carbon myopia: The urgent need for integrated social, economic and environmental action in the livestock sector. <i>Global Change Biology</i> , 2021, 27, 5726-5761.	4.2	73
38	Assessing nitrogen fixation in mixed- and single-species plantations of <i>Eucalyptus globulus</i> and <i>Acacia mearnsii</i> . <i>Tree Physiology</i> , 2007, 27, 1319-1328.	1.4	69
39	Bioenergy and land use change—state of the art. <i>Wiley Interdisciplinary Reviews: Energy and Environment</i> , 2013, 2, 282-303.	1.9	68
40	Does Soil Carbon Loss in Biomass Production Systems Negate the Greenhouse Benefits of Bioenergy?. <i>Mitigation and Adaptation Strategies for Global Change</i> , 2006, 11, 979-1002.	1.0	65
41	Potential synergies between existing multilateral environmental agreements in the implementation of land use, land-use change and forestry activities. <i>Environmental Science and Policy</i> , 2007, 10, 335-352.	2.4	65
42	Pyrolysing poultry litter reduces N ₂ O and CO ₂ fluxes. <i>Science of the Total Environment</i> , 2013, 465, 279-287.	3.9	57
43	The Use of Life Cycle Assessment in the Support of Robust (Climate) Policy Making: Comment on “Using Attributional Life Cycle Assessment to Estimate Climate Change Mitigation”. <i>Journal of Industrial Ecology</i> , 2014, 18, 461-463.	2.8	57
44	Quantifying the climate effects of bioenergy – Choice of reference system. <i>Renewable and Sustainable Energy Reviews</i> , 2018, 81, 2271-2280.	8.2	54
45	Attributional life cycle assessment: is a land-use baseline necessary?. <i>International Journal of Life Cycle Assessment</i> , 2015, 20, 1364-1375.	2.2	53
46	Co-benefits and trade-offs of climate change mitigation actions and the Sustainable Development Goals. <i>Sustainable Production and Consumption</i> , 2021, 26, 805-813.	5.7	53
47	The initial lignin:nitrogen ratio of litter from above and below ground sources strongly and negatively influenced decay rates of slowly decomposing litter carbon pools. <i>Soil Biology and Biochemistry</i> , 2014, 77, 268-275.	4.2	52
48	The relationships between land uses, soil management practices, and soil carbon fractions in South Eastern Australia. <i>Agriculture, Ecosystems and Environment</i> , 2014, 197, 41-52.	2.5	52
49	Climate and soil properties limit the positive effects of land use reversion on carbon storage in Eastern Australia. <i>Scientific Reports</i> , 2015, 5, 17866.	1.6	52
50	Status and prospects for renewable energy using wood pellets from the southeastern United States. <i>GCB Bioenergy</i> , 2017, 9, 1296-1305.	2.5	52
51	Impact of carbon farming practices on soil carbon in northern New South Wales. <i>Soil Research</i> , 2013, 51, 707.	0.6	51
52	Sources of uncertainty for wheat yield projections under future climate are site-specific. <i>Nature Food</i> , 2020, 1, 720-728.	6.2	51
53	Applying a science-based systems perspective to dispel misconceptions about climate effects of forest bioenergy. <i>GCB Bioenergy</i> , 2021, 13, 1210-1231.	2.5	49
54	How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2021, 379, 20200452.	1.6	49

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55	Biochar as a Geoengineering Climate Solution: Hazard Identification and Risk Management. <i>Critical Reviews in Environmental Science and Technology</i> , 2012, 42, 225-250.	6.6	47
56	Climate-change and health effects of using rice husk for biochar-compost: Comparing three pyrolysis systems. <i>Journal of Cleaner Production</i> , 2017, 162, 260-272.	4.6	47
57	Carbon and nitrogen stocks in a native pasture and an adjacent 16-year-old <i>Pinus radiata</i> D. Don. plantation in Australia. <i>Agriculture, Ecosystems and Environment</i> , 2008, 124, 205-218.	2.5	46
58	Temperature sensitivity and priming of organic matter with different stabilities in a Vertisol with aged biochar. <i>Soil Biology and Biochemistry</i> , 2017, 115, 346-356.	4.2	44
59	Biochar addition in rice farming systems: Economic and energy benefits. <i>Energy</i> , 2017, 140, 415-425.	4.5	43
60	Quantifying the climate change effects of bioenergy systems: Comparison of 15 impact assessment methods. <i>GCB Bioenergy</i> , 2019, 11, 727-743.	2.5	43
61	Bioenergy for climate change mitigation: Scale and sustainability. <i>GCB Bioenergy</i> , 2021, 13, 1346-1371.	2.5	43
62	Effects of Different Biochars on <i>Pinus elliottii</i> Growth, N Use Efficiency, Soil N ₂ O and CH ₄ Emissions and C Storage in a Subtropical Area of China. <i>Pedosphere</i> , 2017, 27, 248-261.	2.1	42
63	Modelling and mapping soil organic carbon stocks under future climate change in south-eastern Australia. <i>Geoderma</i> , 2022, 405, 115442.	2.3	40
64	Nitrous oxide and methane emissions from soil are reduced following afforestation of pasture lands in three contrasting climatic zones. <i>Soil Research</i> , 2009, 47, 443.	0.6	38
65	Tillage history and crop residue input enhanced native carbon mineralisation and nutrient supply in contrasting soils under long-term farming systems. <i>Soil and Tillage Research</i> , 2019, 193, 71-84.	2.6	38
66	Land use for bioenergy: Synergies and trade-offs between sustainable development goals. <i>Renewable and Sustainable Energy Reviews</i> , 2022, 161, 112409.	8.2	38
67	Meta-analysis quantifying the potential of dietary additives and rumen modifiers for methane mitigation in ruminant production systems. <i>Animal Nutrition</i> , 2021, 7, 1219-1230.	2.1	36
68	Effects of Changing the Supply of Nitrogen and Phosphorus on Growth and Interactions between <i>Eucalyptus globulus</i> and <i>Acacia mearnsii</i> in a Pot trial. <i>Plant and Soil</i> , 2006, 280, 267-277.	1.8	35
69	The climate effect of increased forest bioenergy use in Sweden: evaluation at different spatial and temporal scales. <i>Wiley Interdisciplinary Reviews: Energy and Environment</i> , 2016, 5, 351-369.	1.9	35
70	Balancing nutrient stoichiometry facilitates the fate of wheat residue's carbon in physically defined soil organic matter fractions. <i>Geoderma</i> , 2019, 354, 113883.	2.3	35
71	Offsetting methane emissions "An alternative to emission equivalence metrics. <i>International Journal of Greenhouse Gas Control</i> , 2013, 12, 419-429.	2.3	34
72	Options for including all lands in a future greenhouse gas accounting framework. <i>Environmental Science and Policy</i> , 2007, 10, 306-321.	2.4	33

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73	The decay of wood in landfills in contrasting climates in Australia. <i>Waste Management</i> , 2015, 41, 101-110.	3.7	32
74	Greenhouse gas accounting for inventory, emissions trading and life cycle assessment in the land-based sector: a review. <i>Crop and Pasture Science</i> , 2012, 63, 284.	0.7	31
75	Greenhouse Gas Balance of Native Forests in New South Wales, Australia. <i>Forests</i> , 2012, 3, 653-683.	0.9	28
76	Consequential Life Cycle Assessment: What, How, and Why?. , 2017, , 277-284.		27
77	Quantifying the Greenhouse Gas Reduction Benefits of Utilising Straw Biochar and Enriched Biochar. <i>Energy Procedia</i> , 2016, 97, 254-261.	1.8	26
78	The decay of engineered wood products and paper excavated from landfills in Australia. <i>Waste Management</i> , 2018, 74, 312-322.	3.7	26
79	Better estimates of soil carbon from geographical data: a revised global approach. <i>Mitigation and Adaptation Strategies for Global Change</i> , 2019, 24, 355-372.	1.0	26
80	Assessing resilience to underpin implementation of Land Degradation Neutrality: A case study in the rangelands of western New South Wales, Australia. <i>Environmental Science and Policy</i> , 2019, 100, 37-46.	2.4	26
81	Restoring Degraded Lands. <i>Annual Review of Environment and Resources</i> , 2021, 46, 569-599.	5.6	26
82	Tillage and nitrogen fertilization enhanced belowground carbon allocation and plant nitrogen uptake in a semi-arid canola cropâ€‘soil system. <i>Scientific Reports</i> , 2017, 7, 10726.	1.6	25
83	Modelling soil organic carbon 2. Changes under a range of cropping and grazing farming systems in eastern Australia. <i>Geoderma</i> , 2016, 265, 164-175.	2.3	24
84	Carbon balances of bioenergy systems using biomass from forests managed with long rotations: bridging the gap between stand and landscape assessments. <i>GCB Bioenergy</i> , 2017, 9, 1238-1251.	2.5	24
85	Allocation of greenhouse gas production between wool and meat in the life cycle assessment of Australian sheep production. <i>International Journal of Life Cycle Assessment</i> , 2016, 21, 820-830.	2.2	23
86	The accumulation of rhizodeposits in organo-mineral fractions promoted biochar-induced negative priming of native soil organic carbon in Ferralsol. <i>Soil Biology and Biochemistry</i> , 2018, 118, 91-96.	4.2	23
87	Effects of waterlogging on chickpeas I. Influence of timing of waterlogging. <i>Plant and Soil</i> , 1996, 183, 97-103.	1.8	22
88	A comment to â€œLargeâ€‘scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutralâ€‘: Important insights beyond greenhouse gas accounting. <i>GCB Bioenergy</i> , 2012, 4, 617-619.	2.5	22
89	Climate change adaptation options in rainfed upland cropping systems in the wet tropics: A case study of smallholder farms in North-West Cambodia. <i>Journal of Environmental Management</i> , 2016, 182, 238-246.	3.8	22
90	Soil carbon market-based instrument pilot â€‘ the sequestration of soil organic carbon for the purpose of obtaining carbon credits. <i>Soil Research</i> , 2021, 59, 12.	0.6	21

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91	Competition for the biomass resource: Greenhouse impacts and implications for renewable energy incentive schemes. <i>Biomass and Bioenergy</i> , 2007, 31, 601-607.	2.9	20
92	Is sustainability certification for biochar the answer to environmental risks?. <i>Pesquisa Agropecuaria Brasileira</i> , 2012, 47, 637-648.	0.9	20
93	Biochar in Soil for Climate Change Mitigation and Adaptation. <i>Soil Biology</i> , 2011, , 345-368.	0.6	19
94	Approaches to greenhouse gas accounting methods for biomass carbon. <i>Biomass and Bioenergy</i> , 2014, 60, 18-31.	2.9	18
95	Promoting co-benefits of carbon farming in Oceania: Applying and adapting approaches and metrics from existing market-based schemes. <i>Ecosystem Services</i> , 2019, 39, 100982.	2.3	18
96	Biochar research activities and their relation to development and environmental quality. A meta-analysis. <i>Agronomy for Sustainable Development</i> , 2017, 37, 1.	2.2	17
97	Biophysical and socioeconomic factors influencing soil carbon stocks: a global assessment. <i>Mitigation and Adaptation Strategies for Global Change</i> , 2020, 25, 1129-1148.	1.0	17
98	The modelling approach determines the carbon footprint of biofuels: The role of LCA in informing decision makers in government and industry. <i>Cleaner Environmental Systems</i> , 2021, 2, 100027.	2.2	17
99	Stock changes or fluxes? Resolving terminological confusion in the debate on land-use change and forestry. <i>Climate Policy</i> , 2006, 6, 161-179.	2.6	16
100	Mapping future soil carbon change and its uncertainty in croplands using simple surrogates of a complex farming system model. <i>Geoderma</i> , 2019, 337, 311-321.	2.3	16
101	Extreme fire weather is the major driver of severe bushfires in southeast Australia. <i>Science Bulletin</i> , 2022, 67, 655-664.	4.3	16
102	A global survey of stakeholder views and experiences for systems needed to effectively and efficiently govern sustainability of bioenergy. <i>Wiley Interdisciplinary Reviews: Energy and Environment</i> , 2016, 5, 89-118.	1.9	15
103	Bioenergy: Counting on Incentives. <i>Science</i> , 2010, 327, 1199-1200.	6.0	14
104	Giving Credit where Credit is Due. A Practical Method to Distinguish between Human and Natural Factors in Carbon Accounting. <i>Climatic Change</i> , 2004, 67, 417-436.	1.7	13
105	Effect of soil nitrate on the growth and nodulation of winter crop legumes. <i>Australian Journal of Experimental Agriculture</i> , 1990, 30, 651.	1.0	12
106	Soil carbon is only higher in the surface soil under minimum tillage in Vertosols and Chromosols of New South Wales North-West Slopes and Plains, Australia. <i>Soil Research</i> , 2013, 51, 680.	0.6	12
107	Climate change impacts on rainfed cropping production systems in the tropics and the case of smallholder farms in North-west Cambodia. <i>Environment, Development and Sustainability</i> , 2017, 19, 1631-1647.	2.7	12
108	The potential for sown tropical perennial grass pastures to improve soil organic carbon in the North-West Slopes and Plains of New South Wales. <i>Soil Research</i> , 2013, 51, 726.	0.6	12

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109	Effects of waterlogging on chickpeas II. Possible causes of decreased tolerance of waterlogging at flowering. <i>Plant and Soil</i> , 1996, 183, 105-115.	1.8	11
110	Determining the critical period for weed control in high-yielding cotton using common sunflower as a mimic weed. <i>Weed Technology</i> , 2019, 33, 800-807.	0.4	11
111	A regional interpretation of rules and good practice for greenhouse accounting: northern Australian savanna systems. <i>Australian Journal of Botany</i> , 2005, 53, 589.	0.3	11
112	Pyrolysis of invasive woody vegetation for energy and biochar has climate change mitigation potential. <i>Science of the Total Environment</i> , 2021, 770, 145278.	3.9	10
113	Residue incorporation mitigates tillage-induced loss of soil carbon in laboratory microcosms. <i>Soil Use and Management</i> , 2014, 30, 328-336.	2.6	9
114	Quantifying the climate effects of forest-based bioenergy. , 2019, , 399-418.		9
115	Climate change mitigation for Australian wheat production. <i>Science of the Total Environment</i> , 2020, 725, 138260.	3.9	9
116	Digital mapping of soil carbon sequestration potential with enhanced vegetation cover over New South Wales, Australia. <i>Soil Use and Management</i> , 2022, 38, 229-247.	2.6	8
117	On the validity of natural regeneration in determination of land-use baseline. <i>International Journal of Life Cycle Assessment</i> , 2016, 21, 448-450.	2.2	7
118	Improving understanding of carbon storage in wood in landfills: Evidence from reactor studies. <i>Waste Management</i> , 2019, 85, 341-350.	3.7	7
119	Stock changes or fluxes? Resolving terminological confusion in the debate on land-use change and forestry. <i>Climate Policy</i> , 2006, 6, 161-179.	2.6	7
120	Life cycle inventories for the Australian grains sector. <i>Crop and Pasture Science</i> , 2019, 70, 575.	0.7	6
121	Soil carbon and inferred net primary production in high- and low-intensity grazing systems on the New England Tableland, eastern Australia. <i>Soil Research</i> , 2016, 54, 824.	0.6	5
122	The value of using mimic weeds in competition experiments in irrigated cotton. <i>Weed Technology</i> , 2019, 33, 601-609.	0.4	5
123	Determining the critical period for grass control in high-yielding cotton using Japanese millet as a mimic weed. <i>Weed Technology</i> , 2020, 34, 292-300.	0.4	5
124	Bioenergy Systems, Soil Health and Climate Change. <i>Soil Biology</i> , 2011, , 369-397.	0.6	4
125	Carbon dynamics of paper, engineered wood products and bamboo in landfills: evidence from reactor studies. <i>Carbon Balance and Management</i> , 2018, 13, 27.	1.4	3
126	Determining the critical period for broadleaf weed control in high-yielding cotton using mungbean as a mimic weed. <i>Weed Technology</i> , 2020, 34, 689-698.	0.4	3

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127	Effect of soil nitrate on the growth and nodulation of lupins (<i>Lupinus angustifolius</i> and <i>L. albus</i>). <i>Australian Journal of Experimental Agriculture</i> , 1990, 30, 655.	1.0	3
128	Tillage and Crop Stubble Management and Soil Health in a Changing Climate. <i>Soil Biology</i> , 2011, , 181-206.	0.6	2
129	Soil health and climate change: a critical nexus. <i>Burleigh Dodds Series in Agricultural Science</i> , 2018, , 39-68.	0.1	2
130	What should we eat? Realistic solutions for reducing our food footprint. <i>Sustainable Production and Consumption</i> , 2022, 32, 541-549.	5.7	2
131	Selection of balancing ions for nutritional studies in nutrient culture experiments. <i>Plant and Soil</i> , 1990, 124, 87-90.	1.8	1
132	Policy institutions and forest carbon. <i>Nature Climate Change</i> , 2016, 6, 805-805.	8.1	1
133	Developing a multispecies weed competition model for high-yielding cotton. <i>Weed Technology</i> , 2021, 35, 202-209.	0.4	1
134	Land sector impacts of early climate action. <i>Nature Sustainability</i> , 0, , .	11.5	1
135	Consequential Life Cycle Assessment: What, Why and How?. , 2022, , .		0