Stephen C Hart

List of Publications by Year
in descending order

143 papers	15,878 citations	28274 55 h-index	17105 122 g-index
146 all docs	146 docs citations	146 times ranked	14630 citing authors

#	Article	IF	Citations
1	Biogeochemical Hot Spots and Hot Moments at the Interface of Terrestrial and Aquatic Ecosystems. Ecosystems, 2003, 6, 301-312.	3.4	1,874
2	Global-Scale Similarities in Nitrogen Release Patterns During Long-Term Decomposition. Science, 2007, 315, 361-364.	12.6	1,027
3	A framework for community and ecosystem genetics: from genes to ecosystems. Nature Reviews Genetics, 2006, 7, 510-523.	16.3	911
4	Competition for nitrogen between plants and soil microorganisms. Trends in Ecology and Evolution, 1997, 12, 139-143.	8.7	727
5	Dynamics of Gross Nitrogen Transformations in an Old-Growth Forest: The Carbon Connection. Ecology, 1994, 75, 880-891.	3.2	622
6	High rates of nitrification and nitrate turnover in undisturbed coniferous forests. Nature, 1997, 385, 61-64.	27.8	596
7	Multiple elements of soil biodiversity drive ecosystem functions across biomes. Nature Ecology and Evolution, 2020, 4, 210-220.	7.8	543
8	Post-fire vegetative dynamics as drivers of microbial community structure and function in forest soils. Forest Ecology and Management, 2005, 220, 166-184.	3.2	439
9	Simple threeâ€pool model accurately describes patterns of longâ€term litter decomposition in diverse climates. Global Change Biology, 2008, 14, 2636-2660.	9.5	401
10	Diffusion Technique for Preparing Salt Solutions, Kjeldahl Digests, and Persulfate Digests for Nitrogenâ€15 Analysis. Soil Science Society of America Journal, 1996, 60, 1846-1855.	2.2	385
11	Internal Cycling of Nitrate in Soils of a Mature Coniferous Forest. Ecology, 1992, 73, 1148-1156.	3.2	377
12	Genetically based trait in a dominant tree affects ecosystem processes. Ecology Letters, 2004, 7, 127-134.	6.4	327
13	PLANTâ€"SOILâ€"MICROORGANISM INTERACTIONS: HERITABLE RELATIONSHIP BETWEEN PLANT GENOTYPE AND ASSOCIATED SOIL MICROORGANISMS. Ecology, 2008, 89, 773-781.	3.2	310
14	Plants actively control nitrogen cycling: uncorking the microbial bottleneck. New Phytologist, 2006, 169, 27-34.	7.3	288
15	Longâ€term patterns of mass loss during the decomposition of leaf and fine root litter: an intersite comparison. Global Change Biology, 2009, 15, 1320-1338.	9.5	252
16	13C and 15N natural abundance of the soil microbial biomass. Soil Biology and Biochemistry, 2006, 38, 3257-3266.	8.8	226
17	Hydraulic lift: a potentially important ecosystem process. Trends in Ecology and Evolution, 1998, 13, 232-235.	8.7	214
18	Community-level physiological profiles of bacteria and fungi: plate type and incubation temperature influences on contrasting soils. FEMS Microbiology Ecology, 2003, 44, 319-328.	2.7	196

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19	Meta-analysis reveals ammonia-oxidizing bacteria respond more strongly to nitrogen addition than ammonia-oxidizing archaea. Soil Biology and Biochemistry, 2016, 99, 158-166.	8.8	194
20	INSECT HERBIVORY INCREASES LITTER QUALITY AND DECOMPOSITION: AN EXTENSION OF THE ACCELERATION HYPOTHESIS. Ecology, 2003, 84, 2867-2876.	3.2	176
21	PHYSIOLOGICAL RESPONSE TO GROUNDWATER DEPTH VARIES AMONG SPECIES AND WITH RIVER FLOW REGULATION. , 2001, 11, 1046-1059.		163
22	From Genes to Ecosystems: The Genetic Basis of Condensed Tannins and Their Role in Nutrient Regulation in a Populus Model System. Ecosystems, 2008, 11, 1005-1020.	3.4	163
23	Changes in belowground biodiversity during ecosystem development. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 6891-6896.	7.1	151
24	The interaction of plant genotype and herbivory decelerate leaf litter decomposition and alter nutrient dynamics. Oikos, 2005, 110, 133-145.	2.7	149
25	Global ecological predictors of the soil priming effect. Nature Communications, 2019, 10, 3481.	12.8	148
26	Recovery of ponderosa pine ecosystem carbon and water fluxes from thinning and standâ€replacing fire. Global Change Biology, 2012, 18, 3171-3185.	9.5	146
27	¹⁵N enrichment as an integrator of the effects of C and N on microbial metabolism and ecosystem function. Ecology Letters, 2008, 11, 389-397.	6.4	142
28	Merging aquatic and terrestrial perspectives of nutrient biogeochemistry. Oecologia, 2003, 137, 485-501.	2.0	134
29	Influence of red alder on soil nitrogen transformations in two conifer forests of contrasting productivity. Soil Biology and Biochemistry, 1997, 29, 1111-1123.	8.8	131
30	Leaf Litter Mixtures Alter Microbial Community Development: Mechanisms for Non-Additive Effects in Litter Decomposition. PLoS ONE, 2013, 8, e62671.	2.5	127
31	NONADDITIVE EFFECTS OF MIXING COTTONWOOD GENOTYPES ON LITTER DECOMPOSITION AND NUTRIENT DYNAMICS. Ecology, 2005, 86, 2834-2840.	3.2	120
32	Flow and fate of soil nitrogen in an annual grassland and a young mixed-conifer forest. Soil Biology and Biochemistry, 1993, 25, 431-442.	8.8	111
33	Phosphorus and soil development: Does the Walker and Syers model apply to semiarid ecosystems?. Ecology, 2010, 91, 474-484.	3.2	111
34	Ecological and Genomic Attributes of Novel Bacterial Taxa That Thrive in Subsurface Soil Horizons. MBio, 2019, 10, .	4.1	108
35	Decomposition and nutrient dynamics of ponderosa pine needles in a Mediterranean-type climate. Canadian Journal of Forest Research, 1992, 22, 306-314.	1.7	107
36	Influences of thinning, prescribed burning, and wildfire on soil processes and properties in southwestern ponderosa pine forests: A retrospective study. Forest Ecology and Management, 2006, 234, 123-135.	3.2	106

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37	Fire Reduces Fungal Species Richness and In Situ Mycorrhizal Colonization: A Meta-Analysis. Fire Ecology, 2017, 13, 37-65.	3.0	94
38	Direct extraction of microbial biomass nitrogen from forest and grassland soils of california. Soil Biology and Biochemistry, 1989, 21, 773-778.	8.8	90
39	Subsurface plantâ€accessible water in mountain ecosystems with a Mediterranean climate. Wiley Interdisciplinary Reviews: Water, 2018, 5, e1277.	6.5	90
40	Potential impacts of climate change on nitrogen transformations and greenhouse gas fluxes in forests: a soil transfer study. Global Change Biology, 2006, 12, 1032-1046.	9.5	86
41	Forest floor-mineral soil interactions in the internal nitrogen cycle of an old-growth forest. Biogeochemistry, 1991, 12, 103.	3.5	83
42	Conservative leaf economic traits correlate with fast growth of genotypes of a foundation riparian species near the thermal maximum extent of its geographic range. Functional Ecology, 2013, 27, 428-438.	3.6	81
43	Tracing the source of soil organic matter eroded from temperate forest catchments using carbon and nitrogen isotopes. Chemical Geology, 2016, 445, 172-184.	3.3	81
44	Evaluation of three <i>in</i><i>situ</i> soil nitrogen availability assays. Canadian Journal of Forest Research, 1989, 19, 185-191.	1.7	78
45	Modeling soil metabolic processes using isotopologue pairs of position-specific 13C-labeled glucose and pyruvate. Soil Biology and Biochemistry, 2011, 43, 1848-1857.	8.8	77
46	Genetic variation in productivity of foundation riparian species at the edge of their distribution: implications for restoration and assisted migration in a warming climate. Global Change Biology, 2011, 17, 3724-3735.	9.5	75
47	Snowmelt timing alters shallow but not deep soil moisture in the Sierra Nevada. Water Resources Research, 2014, 50, 1448-1456.	4.2	74
48	Soil microbial community structure is unaltered by plant invasion, vegetation clipping, and nitrogen fertilization in experimental semi-arid grasslands. Frontiers in Microbiology, 2015, 6, 466.	3.5	73
49	Soils as agents of selection: feedbacks between plants and soils alter seedling survival and performance. Evolutionary Ecology, 2010, 24, 1045-1059.	1.2	72
50	Nitrogen limitation of the microbial biomass in an old-growth forest soil. Ecoscience, 1997, 4, 91-98.	1.4	71
51	INITIAL CARBON, NITROGEN, AND PHOSPHORUS FLUXES FOLLOWING PONDEROSA PINE RESTORATION TREATMENTS. , 2005, 15, 1581-1593.		71
52	Restoration and Canopyâ€Type Effects on Soil Respiration in a Ponderosa Pineâ€Bunchgrass Ecosystem. Soil Science Society of America Journal, 1998, 62, 1062-1072.	2.2	70
53	Influences of chloroform exposure time and soil water content on C and N release in forest soils. Soil Biology and Biochemistry, 2002, 34, 1549-1562.	8.8	69
54	Substrate age and tree islands influence carbon and nitrogen dynamics across a retrogressive semiarid chronosequence. Global Biogeochemical Cycles, 2008, 22, .	4.9	65

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55	Transferring soils from highâ€•to lowâ€elevation forests increases nitrogen cycling rates: climate change implications. Global Change Biology, 1999, 5, 23-32.	9.5	63
56	Fire, thinning, and the carbon economy: Effects of fire and fire surrogate treatments on estimated carbon storage and sequestration rate. Forest Ecology and Management, 2008, 255, 3081-3097.	3.2	63
57	Soil-mediated local adaptation alters seedling survival and performance. Plant and Soil, 2012, 352, 243-251.	3.7	61
58	Quantifying Uncertainties in Sequential Chemical Extraction of Soil Phosphorus Using XANES Spectroscopy. Environmental Science & Technology, 2020, 54, 2257-2267.	10.0	61
59	Highâ€severity wildfire leads to multiâ€decadal impacts on soil biogeochemistry in mixedâ€conifer forests. Ecological Applications, 2020, 30, e02072.	3.8	59
60	Does dissolved organic carbon regulate biological methane oxidation in semiarid soils?. Global Change Biology, 2013, 19, 2149-2157.	9.5	57
61	Evaluation of mechanisms controlling the priming of soil carbon along a substrate age gradient. Soil Biology and Biochemistry, 2013, 58, 293-301.	8.8	56
62	Forest gene diversity is correlated with the composition and function of soil microbial communities. Population Ecology, 2011, 53, 35-46.	1.2	55
63	Probing carbon flux patterns through soil microbial metabolic networks using parallel position-specific tracer labeling. Soil Biology and Biochemistry, 2011, 43, 126-132.	8.8	54
64	Long-term interval burning alters fine root and mycorrhizal dynamics in a ponderosa pine forest. Journal of Applied Ecology, 2005, 42, 752-761.	4.0	51
65	The role of disturbance severity and canopy closure on standing crop of understory plant species in ponderosa pine stands in northern Arizona, USA. Forest Ecology and Management, 2009, 257, 1656-1662.	3.2	51
66	NITROGEN TRANSFORMATIONS IN FALLEN TREE BOLES AND MINERAL SOIL OF AN OLD-GROWTH FOREST. Ecology, 1999, 80, 1385-1394.	3.2	48
67	Red alder (Alnus rubra) alters community-level soil microbial function in conifer forests of the Pacific Northwest, USA. Soil Biology and Biochemistry, 2005, 37, 1860-1868.	8.8	48
68	Geneticâ€based plant resistance and susceptibility traits to herbivory influence needle and root litter nutrient dynamics. Journal of Ecology, 2007, 95, 1181-1194.	4.0	48
69	Nitrogen and phosphorus status in a ponderosa pine forest after 20 years of interval burning. Ecoscience, 1997, 4, 526-533.	1.4	47
70	The influence of soil age on ecosystem structure and function across biomes. Nature Communications, 2020, 11, 4721.	12.8	47
71	Estimating forest-grassland dynamics using soil phytolith assemblages and d¹³C of soil organic matter. Ecoscience, 2001, 8, 478-488.	1.4	45
72	ECOLOGICAL RESTORATION ALTERS NITROGEN TRANSFORMATIONS IN A PONDEROSA PINEâ€"BUNCHGRASS ECOSYSTEM. , 1998, 8, 1052-1060.		44

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73	Modeling Ecological Restoration Effects on Ponderosa Pine Forest Structure. Restoration Ecology, 2001, 9, 421-431.	2.9	44
74	Soil carbon and nitrogen erosion in forested catchments: implications for erosion-induced terrestrial carbon sequestration. Biogeosciences, 2015, 12, 4861-4874.	3.3	43
75	Variation in belowâ€ground carbon fluxes along a <i>Populus </i>hybridization gradient. New Phytologist, 2007, 176, 415-425.	7.3	41
76	Restoration and Canopy Type Influence Soil Microflora in a Ponderosa Pine Forest. Soil Science Society of America Journal, 2005, 69, 1627-1638.	2.2	40
77	Wildfire reduces carbon dioxide efflux and increases methane uptake in ponderosa pine forest soils of the southwestern USA. Biogeochemistry, 2011, 104, 251-265.	3.5	40
78	Relationships between C and N availability, substrate age, and natural abundance 13C and 15N signatures of soil microbial biomass in a semiarid climate. Soil Biology and Biochemistry, 2009, 41, 1605-1611.	8.8	38
79	REGULATION OF NITRIC OXIDE EMISSIONS FROM FOREST AND RANGELAND SOILS OF WESTERN NORTH AMERICA. Ecology, 2002, 83, 2278-2292.	3.2	37
80	New evidence that high potential nitrification rates occur in soils during dry seasons: Are microbial communities metabolically active during dry seasons?. Soil Biology and Biochemistry, 2012, 53, 28-31.	8.8	37
81	Metabolic capabilities mute positive response to direct and indirect impacts of warming throughout the soil profile. Nature Communications, 2021, 12, 2089.	12.8	36
82	Nutrient covariance between forest foliage and fine roots. Forest Ecology and Management, 2006, 236, 136-141.	3.2	34
83	Soil-mixing effects on inorganic nitrogen production and consumption in forest and shrubland soils. Plant and Soil, 2006, 289, 5-15.	3.7	32
84	Aeolian dust deposition and the perturbation of phosphorus transformations during long-term ecosystem development in a cool, semi-arid environment. Geochimica Et Cosmochimica Acta, 2019, 246, 498-514.	3.9	32
85	Continental-scale patterns of extracellular enzyme activity in the subsoil: an overlooked reservoir of microbial activity. Environmental Research Letters, 2020, 15, 1040a1.	5.2	32
86	Introduced ungulate herbivore alters soil processes after fire. Biological Invasions, 2010, 12, 313-324.	2.4	29
87	Climatic vulnerabilities and ecological preferences of soil invertebrates across biomes. Molecular Ecology, 2020, 29, 752-761.	3.9	29
88	Soil carbon and nitrogen pools and processes in an old-growth conifer forest 13 years after trenching. Canadian Journal of Forest Research, 1998, 28, 1261-1265.	1.7	28
89	Water and Nutrient Outflow Following the Ecological Restoration of a Ponderosa Pineâ€Bunchgrass Ecosystem. Restoration Ecology, 1999, 7, 252-261.	2.9	28
90	Soil microbial community resilience with tree thinning in a 40-year-old experimental ponderosa pine forest. Applied Soil Ecology, 2015, 93, 1-10.	4.3	28

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91	Cannabis and the Environment: What Science Tells Us and What We Still Need to Know. Environmental Science and Technology Letters, 2021, 8, 98-107.	8.7	28
92	Ecological and genomic responses of soil microbiomes to high-severity wildfire: linking community assembly to functional potential. ISME Journal, 2022, 16, 1853-1863.	9.8	28
93	Season mediates herbivore effects on litter and soil microbial abundance and activity in a semi-arid woodland. Plant and Soil, 2007, 295, 217-227.	3.7	27
94	Pinyon pine (Pinus edulis) mortality and response to water addition across a three million year substrate age gradient in northern Arizona, USA. Plant and Soil, 2012, 357, 89-102.	3.7	26
95	Natural abundance Î´15N and Î´13C of DNA extracted from soil. Soil Biology and Biochemistry, 2007, 39, 3101-3107.	8.8	24
96	Restoration of a ponderosa pine forest increases soil CO₂ efflux more than either water or nitrogen additions. Journal of Applied Ecology, 2008, 45, 913-920.	4.0	24
97	Carbon control on terrestrial ecosystem function across contrasting site productivities: the carbon connection revisited. Ecology, 2019, 100, e02695.	3.2	22
98	Evidence for indirect effects of plant diversity and composition on net nitrification. Plant and Soil, 2010, 330, 435-445.	3.7	21
99	Tree genetics strongly affect forest productivity, but intraspecific diversityâ€“productivity relationships do not. Functional Ecology, 2017, 31, 520-529.	3.6	21
100	UV-B radiation and soil microbial communities. Nature, 2003, 423, 137-138.	27.8	20
101	Soil nitrogen availability varies with plant genetics across diverse river drainages. Plant and Soil, 2010, 331, 391-400.	3.7	20
102	Local biotic adaptation of trees and shrubs to plant neighbors. Oikos, 2017, 126, 583-593.	2.7	20
103	Short-Term Belowground Responses to Thinning and Burning Treatments in Southwestern Ponderosa Pine Forests of the USA. Forests, 2016, 7, 45.	2.1	19
104	Strontium source and depth of uptake shifts with substrate age in semiarid ecosystems. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 1069-1077.	3.0	18
105	Invasive plants decrease microbial capacity to nitrify and denitrify compared to native California grassland communities. Biological Invasions, 2017, 19, 2941-2957.	2.4	18
106	Organic matter amendments improve soil fertility in almond orchards of contrasting soil texture. Nutrient Cycling in Agroecosystems, 2021, 120, 343-361.	2.2	18
107	Beetle Mania: An Attraction to Fire. BioScience, 1998, 48, 3-5.	4.9	17
108	Stand-replacing wildfires alter the community structure of wood-inhabiting fungi in southwestern ponderosa pine forests of the USA. Fungal Ecology, 2013, 6, 192-204.	1.6	17

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109	Montane Meadows: A Soil Carbon Sink or Source?. Ecosystems, 2021, 24, 1125-1141.	3.4	17
110	Stand-replacing wildfires increase nitrification for decades in southwestern ponderosa pine forests. Oecologia, 2014, 175, 395-407.	2.0	16
111	Depth dependence of climatic controls on soil microbial community activity and composition. ISME Communications, 2021, 1, .	4.2	16
112	Nitrogen source influences natural abundance 15N of Escherichia coli. FEMS Microbiology Letters, 2008, 282, 246-250.	1.8	15
113	What is the relationship between soil methane oxidation and other C compounds?. Global Change Biology, 2014, 20, 2381-2382.	9.5	15
114	Shifting soil resource limitations and ecosystem retrogression across a three million year semi-arid substrate age gradient. Biogeochemistry, 2015, 124, 177-186.	3.5	15
115	The significance of atmospheric nutrient inputs and canopy interception of precipitation during ecosystem development in piÃ±onâ€"juniper woodlands of the southwestern USA. Journal of Arid Environments, 2013, 98, 79-87.	2.4	14
116	Stabilization Mechanisms and Decomposition Potential of Eroded Soil Organic Matter Pools in Temperate Forests of the Sierra Nevada, California. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 2-17.	3.0	14
117	Simple methods to remove microbes from leaf surfaces. Journal of Basic Microbiology, 2020, 60, 730-734.	3.3	14
118	Impacts of fire and fire surrogate treatments on ecosystem nitrogen storage patterns: similarities and differences between forests of eastern and western North America. Canadian Journal of Forest Research, 2008, 38, 3056-3070.	1.7	13
119	Genetic components to belowground carbon fluxes in a riparian forest ecosystem: a common garden approach. New Phytologist, 2012, 195, 631-639.	7.3	13
120	Microbial Community Structure of Subalpine Snow in the Sierra Nevada, California. Arctic, Antarctic, and Alpine Research, 2016, 48, 685-701.	1.1	13
121	Ecosystem Carbon Remains Low for Three Decades Following Fire and Constrains Soil CO2 Responses to Precipitation in Southwestern Ponderosa Pine Forests. Ecosystems, 2012, 15, 725-740.	3.4	12
122	Deep in the Sierra Nevada critical zone: saprock represents a large terrestrial organic carbon stock. Environmental Research Letters, 2021, 16, 124059.	5.2	12
123	Deep-red holography using a junction laser and silver-halide holographic emulsion. Optics Letters, 1988, 13, 955.	3.3	9
124	Relative Importance of Environmental Stress and Herbivory in Reducing Litter Fall in a Semiarid Woodland. Ecosystems, 2005, 8, 62-72.	3.4	9
125	Pulse Emissions of Carbon Dioxide during Snowmelt at a High-Elevation Site in Northern Arizona, U.S.A.. Arctic, Antarctic, and Alpine Research, 2012, 44, 247-254.	1.1	9
126	Phosphorus Speciation in Atmospherically Deposited Particulate Matter and Implications for Terrestrial Ecosystem Productivity. Environmental Science & Technology, 2020, 54, 4984-4994.	10.0	8

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127	Pinhole hologram and its applications. Optics Letters, 1989, 14, 107.	3.3	6
128	NET PRIMARY PRODUCTIVITY OF A WESTERN MONTANE RIPARIAN FOREST: POTENTIAL INFLUENCE OF STREAM FLOW DIVERSION. MadroÃ±o, 2005, 52, 79-90.	0.4	6
129	Quantifying the legacy of snowmelt timing on soil greenhouse gas emissions in a seasonally dry montane forest. Global Change Biology, 2018, 24, 5933-5947.	9.5	6
130	The expanding role of deep roots during longâ€term terrestrial ecosystem development. Journal of Ecology, 2020, 108, 2256-2269.	4.0	6
131	Building flux capacity: Citizen scientists increase resolution of soil greenhouse gas fluxes. PLoS ONE, 2018, 13, e0198997.	2.5	5
132	Genetic variation in tree leaf chemistry predicts the abundance and activity of autotrophic soil microorganisms. Ecosphere, 2019, 10, e02795.	2.2	5
133	A positive relationship between the abundance of ammonia oxidizing archaea and natural abundance Î´15N of ecosystems. Soil Biology and Biochemistry, 2013, 65, 313-315.	8.8	4
134	Hydrological Control of Greenhouse Gas Fluxes in a Sierra Nevada Subalpine Meadow. Arctic, Antarctic, and Alpine Research, 2014, 46, 355-364.	1.1	4
135	Soil microbial communities associated with giant sequoia: How does the world's largest tree affect some of the world's smallest organisms?. Ecology and Evolution, 2020, 10, 6593-6609.	1.9	4
136	Impacts of climate and disturbance on nutrient fluxes and stoichiometry in mixed-conifer forests. Biogeochemistry, 2022, 158, 1-20.	3.5	4
137	No evidence of resource limitation to aboveground growth of blue grama (Bouteloua gracilis) on 1 ky-old semi-arid substrate. Biogeochemistry, 2016, 131, 243-251.	3.5	3
138	A multi-scale evaluation of pack stock effects on subalpine meadow plant communities in the Sierra Nevada. PLoS ONE, 2017, 12, e0178536.	2.5	3
139	Stream Water Chemistry in Mixed-Conifer Headwater Basins: Role of Water Sources, Seasonality, Watershed Characteristics, and Disturbances. Ecosystems, 2021, 24, 1853-1874.	3.4	3
140	Methane dynamics of high-elevation lakes in the Sierra Nevada California: the role of elevation, temperature, and inorganic nutrients. Inland Waters, 2021, 11, 267-277.	2.2	3
141	Proximate controls on semiarid soil greenhouse gas fluxes across 3Âmillion years of soil development. Biogeochemistry, 2015, 125, 375-391.	3.5	2
142	NITROGEN TRANSFORMATIONS IN FALLEN TREE BOLES AND MINERAL SOIL OF AN OLD-GROWTH FOREST. , 1999, 80, 1385.		1
143	Response to Comment on â€œCannabis and the Environment: What Science Tells Us and What We Still Need to Knowâ€. Environmental Science and Technology Letters, 2021, 8, 486-486.	8.7	0