Claus Beier

List of Publications by Year
in descending order

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125 papers	9,396 citations	36271 51 h-index	40954 93 g-index
126 all docs	126 docs citations	126 times ranked	9988 citing authors

#	Article	IF	Citations
1	Consequences of More Extreme Precipitation Regimes for Terrestrial Ecosystems. BioScience, 2008, 58, 811-821.	2.2	959
2	Precipitation manipulation experiments â€“ challenges and recommendations for the future. Ecology Letters, 2012, 15, 899-911.	3.0	411
3	Simple additive effects are rare: a quantitative review of plant biomass and soil process responses to combined manipulations of <scp><scp>CO₂</scp></scp> and temperature. Global Change Biology, 2012, 18, 2681-2693.	4.2	365
4	A meta-analysis of 1,119 manipulative experiments on terrestrial carbon-cycling responses to global change. Nature Ecology and Evolution, 2019, 3, 1309-1320.	3.4	304
5	Do global change experiments overestimate impacts on terrestrial ecosystems?. Trends in Ecology and Evolution, 2011, 26, 236-241.	4.2	300
6	Modeled interactive effects of precipitation, temperature, and [CO₂] on ecosystem carbon and water dynamics in different climatic zones. Global Change Biology, 2008, 14, 1986-1999.	4.2	277
7	The Response of Soil Processes to Climate Change: Results from Manipulation Studies of Shrublands Across an Environmental Gradient. Ecosystems, 2004, 7, 625.	1.6	253
8	Novel Approaches to Study Climate Change Effects on Terrestrial Ecosystems in the Field: Drought and Passive Nighttime Warming. Ecosystems, 2004, 7, 583.	1.6	232
9	Reduced N cycling in response to elevated CO2, warming, and drought in a Danish heathland: Synthesizing results of the CLIMAITE project after two years of treatments. Global Change Biology, 2011, 17, 1884-1899.	4.2	213
10	Nonintrusive Field Experiments Show Different Plant Responses to Warming and Drought Among Sites, Seasons, and Species in a North?South European Gradient. Ecosystems, 2004, 7, 598.	1.6	211
11	Response of plant species richness and primary productivity in shrublands along a northâ€“south gradient in Europe to seven years of experimental warming and drought: reductions in primary productivity in the heat and drought year of 2003. Global Change Biology, 2007, 13, 2563-2581.	4.2	211
12	Factors controlling regional differences in forest soil emission of nitrogen oxides (NO and) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 302 Td	1.3	205
13	Challenges in quantifying biosphereâ€“atmosphere exchange of nitrogen species. Environmental Pollution, 2007, 150, 125-139.	3.7	203
14	Early stage litter decomposition across biomes. Science of the Total Environment, 2018, 628-629, 1369-1394.	3.9	177
15	Coordinated approaches to quantify longâ€term ecosystem dynamics in response to global change. Global Change Biology, 2011, 17, 843-854.	4.2	165
16	Effects of experimental drought on microbial processes in two temperate heathlands at contrasting water conditions. Applied Soil Ecology, 2003, 24, 165-176.	2.1	160
17	Next generation of elevated [CO₂] experiments with crops: a critical investment for feeding the future world. Plant, Cell and Environment, 2008, 31, 1317-1324.	2.8	154
18	Microbial community changes in heathland soil communities along a geographical gradient: interaction with climate change manipulations. Soil Biology and Biochemistry, 2005, 37, 1805-1813.	4.2	136

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19	Pushing precipitation to the extremes in distributed experiments: recommendations for simulating wet and dry years. Global Change Biology, 2017, 23, 1774-1782.	4.2	132
20	Spatial variability of throughfall fluxes in a spruce forest. Environmental Pollution, 1993, 81, 257-267.	3.7	124
21	Carbon and nitrogen cycles in European ecosystems respond differently to global warmingâˆ†. Science of the Total Environment, 2008, 407, 692-697.	3.9	117
22	Modelled effects of precipitation on ecosystem carbon and water dynamics in different climatic zones. Global Change Biology, 2008, 14, 2365-2379.	4.2	112
23	Increased sensitivity to climate change in disturbed ecosystems. Nature Communications, 2015, 6, 6682.	5.8	111
24	Few multiyear precipitationâ€“reduction experiments find aÂshift in the productivityâ€“precipitation relationship. Global Change Biology, 2016, 22, 2570-2581.	4.2	105
25	Atmospheric deposition to the edge of a spruce forest in Denmark. Environmental Pollution, 1989, 60, 257-271.	3.7	97
26	Contrasting effects of repeated summer drought on soil carbon efflux in hydric and mesic heathland soils. Global Change Biology, 2008, 14, 2388-2404.	4.2	97
27	Soil respiration is stimulated by elevated CO₂ and reduced by summer drought: three years of measurements in a multifactor ecosystem manipulation experiment in a temperate heathland (CLIMAITE). Global Change Biology, 2012, 18, 1216-1230.	4.2	97
28	Climate Change Affects Carbon Allocation to the Soil in Shrublands. Ecosystems, 2004, 7, 650.	1.6	96
29	Global Change Experiments: Challenges and Opportunities. BioScience, 2015, 65, 922-931.	2.2	93
30	A correlative evaluation of nitrogen cycling in the forest ecosystems of the EC projects NITREX and EXMAN. Forest Ecology and Management, 1995, 71, 143-151.	1.4	84
31	Thresholds and interactive effects of soil moisture on the temperature response of soil respiration. European Journal of Soil Biology, 2011, 47, 247-255.	1.4	82
32	Significance of cold-season respiration and photosynthesis in a subarctic heath ecosystem in Northern Sweden. Global Change Biology, 2007, 13, 1498-1508.	4.2	80
33	Soil Solution Chemistry and Element Fluxes in Three European Heathlands and Their Responses to Warming and Drought. Ecosystems, 2004, 7, 638.	1.6	79
34	Experiments to confront the environmental extremes of climate change. Frontiers in Ecology and the Environment, 2015, 13, 219-225.	1.9	79
35	Experimental design of multifactor climate change experiments with elevated CO₂, warming and drought: the CLIMAITE project. Functional Ecology, 2008, 22, 185-195.	1.7	75
36	Interactive effects of elevated CO2, warming, and drought on photosynthesis of Deschampsia flexuosa in a temperate heath ecosystem. Journal of Experimental Botany, 2011, 62, 4253-4266.	2.4	75

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37	Can current moisture responses predict soil CO₂ efflux under altered precipitation regimes? A synthesis of manipulation experiments. Biogeosciences, 2014, 11, 2991-3013.	1.3	74
38	Beyond realism in climate change experiments: gradient approaches identify thresholds and tipping points. Ecology Letters, 2014, 17, 125.	3.0	71
39	Effects of an Experimental Increase of Temperature and Drought on the Photosynthetic Performance of Two Ericaceous Shrub Species Along a North?South European Gradient. Ecosystems, 2004, 7, 613.	1.6	69
40	Effects of elevated CO₂, warming and drought episodes on plant carbon uptake in a temperate heath ecosystem are controlled by soil water status. Plant, Cell and Environment, 2011, 34, 1207-1222.	2.8	68
41	The handbook for standardized field and laboratory measurements in terrestrial climate change experiments and observational studies (ClimEx). Methods in Ecology and Evolution, 2020, 11, 22-37.	2.2	68
42	The rapid cold hardening response of Collembola is influenced by thermal variability of the habitat. Functional Ecology, 2009, 23, 340-347.	1.7	63
43	Multiâ€factor climate change effects on insect herbivore performance. Ecology and Evolution, 2013, 3, 1449-1460.	0.8	62
44	Nitrogen Uptake During Fall, Winter and Spring Differs Among Plant Functional Groups in a Subarctic Heath Ecosystem. Ecosystems, 2012, 15, 927-939.	1.6	59
45	Carbon and nitrogen balances for six shrublands across Europe. Global Biogeochemical Cycles, 2009, 23, .	1.9	57
46	Responses of the reflectance indices PRI and NDVI to experimental warming and drought in European shrublands along a northâ€“south climatic gradient. Remote Sensing of Environment, 2010, 114, 626-636.	4.6	57
47	Effect of drought experiments using roof installations on acidification/nitrification of soils. Forest Ecology and Management, 1998, 101, 95-109.	1.4	56
48	Impacts of Elevated Carbon Dioxide and Temperature on a Boreal Forest Ecosystem (CLIMEX Project). Ecosystems, 1998, 1, 345-351.	1.6	55
49	A Qualitative Ecosystem Assessment for Different Shrublands in Western Europe under Impact of Climate Change. Ecosystems, 2004, 7, 662-671.	1.6	55
50	Climate change and ecosystem function â€“ fullâ€scale manipulations of CO 2 and temperature. New Phytologist, 2004, 162, 243-245.	3.5	53
51	Atmospheric deposition and soil acidification in five coniferous forest ecosystems: a comparison of the control plots of the EXMAN sites. Forest Ecology and Management, 1998, 101, 125-142.	1.4	52
52	Changes in the onset of spring growth in shrubland species in response to experimental warming along a northâ€“south gradient in Europe. Global Ecology and Biogeography, 2009, 18, 473-484.	2.7	52
53	Impact of drought and increasing temperatures on soil CO2 emissions in a Mediterranean shrubland (gariga). Plant and Soil, 2010, 327, 153-166.	1.8	51
54	Globally consistent influences of seasonal precipitation limit grassland biomass response to elevated CO2. Nature Plants, 2019, 5, 167-173.	4.7	51

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55	A new method for estimation of dry deposition of particles based on throughfall measurements in a forest edge. Atmospheric Environment Part A General Topics, 1992, 26, 1553-1559.	1.3	49
56	Plant nutrient mobilization in temperate heathland responds to elevated CO2, temperature and drought. Plant and Soil, 2010, 328, 381-396.	1.8	49
57	Ecosystem respiration depends strongly on photosynthesis in a temperate heath. Biogeochemistry, 2007, 85, 201-213.	1.7	48
58	Effects of climate variability and functional changes on the interannual variation of the carbon balance in a temperate deciduous forest. Biogeosciences, 2012, 9, 13-28.	1.3	48
59	High Resilience in Heathland Plants to Changes in Temperature, Drought, and CO2 in Combination: Results from the CLIMAITE Experiment. Ecosystems, 2012, 15, 269-283.	1.6	48
60	Soil microorganisms respond to five years of climate change manipulations and elevated atmospheric CO2 in a temperate heath ecosystem. Plant and Soil, 2014, 374, 211-222.	1.8	47
61	Challenges in elevated CO2 experiments on forests. Trends in Plant Science, 2010, 15, 5-10.	4.3	46
62	Synthesizing greenhouse gas fluxes across nine European peatlands and shrublands â€“ responses to climatic and environmental changes. Biogeosciences, 2012, 9, 3739-3755.	1.3	46
63	Fine Root Growth and Vertical Distribution in Response to Elevated CO2, Warming and Drought in a Mixed Heathlandâ€“Grassland. Ecosystems, 2018, 21, 15-30.	1.6	44
64	Experimental warming does not enhance soil respiration in a semiarid temperate forest-steppe ecosystem. Community Ecology, 2008, 9, 29-37.	0.5	43
65	Effects of elevated atmospheric CO2, prolonged summer drought and temperature increase on N2O and CH4 fluxes in a temperate heathland. Soil Biology and Biochemistry, 2011, 43, 1660-1670.	4.2	43
66	Root growth and N dynamics in response to multi-year experimental warming, summer drought and elevated CO2 in a mixed heathland-grass ecosystem. Functional Plant Biology, 2014, 41, 1.	1.1	40
67	Suppression of soil decomposers and promotion of long-lived, root herbivorous nematodes by climate change. European Journal of Soil Biology, 2012, 52, 1-7.	1.4	39
68	Water and element fluxes calculated in a sandy forest soil taking spatial variability into account. Forest Ecology and Management, 1998, 101, 269-280.	1.4	38
69	Interactions between above- and belowground organisms modified in climate change experiments. Nature Climate Change, 2012, 2, 805-808.	8.1	38
70	Net root growth and nutrient acquisition in response to predicted climate change in two contrasting heathland species. Plant and Soil, 2013, 369, 615-629.	1.8	38
71	Soil microarthropods are only weakly impacted after 13 years of repeated drought treatment in wet and dry heathland soils. Soil Biology and Biochemistry, 2013, 66, 110-118.	4.2	38
72	Synthesis on the carbon budget and cycling in a Danish, temperate deciduous forest. Agricultural and Forest Meteorology, 2013, 181, 94-107.	1.9	38

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73	Review of deposition monitoring methods. Tellus, Series B: Chemical and Physical Meteorology, 1994, 46, 79-93.	0.8	37
74	Experimental manipulation of water and nutrient input to a Norway spruce plantation at Klosterhede, Denmark. Plant and Soil, 1995, 168-169, 613-622.	1.8	33
75	Field-scale â€˜clean rainâ€™ treatments to two Norway spruce stands within the EXMAN projectâ€”effects on soil solution chemistry, foliar nutrition and tree growth. Forest Ecology and Management, 1998, 101, 111-123.	1.4	33
76	Glycine uptake in heath plants and soil microbes responds to elevated temperature, CO2 and drought. Acta Oecologica, 2009, 35, 786-796.	0.5	33
77	Nitrate leaching in coniferous forest ecosystems: The European Field-Scale Manipulation Experiments NITREX (Nitrogen Saturation Experiments) and EXMAN (Experimental Manipulation of Forest) Tj ETQq1 1 0.784314 rgBT /Overlock 10	1.9	32
78	Biological response of five forest ecosystems in the EXMAN project to input changes of water, nutrients and atmospheric loads. Forest Ecology and Management, 1994, 68, 15-29.	1.4	31
79	Field experiments underestimate aboveground biomass response to drought. Nature Ecology and Evolution, 2022, 6, 540-545.	3.4	30
80	Long-term field comparison of ceramic and poly(tetrafluoroethene) porous cup soil water samplers. Environmental Science & Technology, 1992, 26, 2005-2011.	4.6	29
81	Experimental manipulations of water and nutrient input to a Norway spruce plantation at Klosterhede, Denmark. Plant and Soil, 1995, 168-169, 601-611.	1.8	29
82	Can field populations of the enchytraeid, Cognettia sphagnetorum, adapt to increased drought stress?. Soil Biology and Biochemistry, 2008, 40, 1765-1771.	4.2	28
83	Increased frequency of drought reduces species richness of enchytraeid communities in both wet and dry heathland soils. Soil Biology and Biochemistry, 2012, 53, 43-49.	4.2	28
84	Belowground heathland responses after 2Âyears of combined warming, elevated CO2 and summer drought. Biogeochemistry, 2010, 101, 27-42.	1.7	26
85	Long-term and realistic global change manipulations had low impact on diversity of soil biota in temperate heathland. Scientific Reports, 2017, 7, 41388.	1.6	25
86	The response of dissolved organic carbon (DOC) and the ecosystem carbon balance to experimental drought in a temperate shrubland. European Journal of Soil Science, 2010, 61, 697-709.	1.8	24
87	Shrubland primary production and soil respiration diverge along European climate gradient. Scientific Reports, 2017, 7, 43952.	1.6	23
88	Fast attrition of springtail communities by experimental drought and richnessâ€“decomposition relationships across Europe. Global Change Biology, 2019, 25, 2727-2738.	4.2	23
89	A comparison of sites in the EXMAN project, with respect to atmospheric deposition and the chemical composition of the soil solution and foliage. Forest Ecology and Management, 1994, 68, 3-14.	1.4	21
90	Experimental manipulations of water and nutrient input to a Norway spruce plantation at Klosterhede, Denmark. Plant and Soil, 1995, 168-169, 623-632.	1.8	21

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91	Effects of nitrogen deposition and climate change on nitrogen runoff at Norwegian boreal forest catchments: the MERLIN model applied to Risdalsheia (RAIN and CLIMEX projects). Hydrology and Earth System Sciences, 1998, 2, 399-414.	1.9	21
92	Experimental manipulations of old pine forest ecosystems to predict the potential tree growth effects of increased CO2 and temperature in a future climate. Forest Ecology and Management, 2002, 158, 179-188.	1.4	21
93	Terrestrial Ecosystem Recovery â€“ Modelling the Effects of Reduced Acidic Inputs and Increased Inputs of Sea-salts Induced by Global Change. Ambio, 2003, 32, 275-282.	2.8	21
94	Organic matter flow in the food web at a temperate heath under multifactorial climate change. Rapid Communications in Mass Spectrometry, 2011, 25, 1485-1496.	0.7	21
95	Comparison of N and C dynamics in two Norway spruce stands using a process oriented simulation model. Environmental Pollution, 1998, 102, 395-401.	3.7	19
96	Effects of who-ecosystem manipulations on ecosystem internal processes. Trends in Ecology and Evolution, 1994, 9, 218-223.	4.2	18
97	The counteracting effects of elevated atmospheric CO2 concentrations and drought episodes: Studies of enchytraeid communities in a dry heathland. Soil Biology and Biochemistry, 2010, 42, 1958-1966.	4.2	17
98	Accumulation of soil carbon under elevated CO₂ unaffected by warming and drought. Global Change Biology, 2019, 25, 2970-2977.	4.2	17
99	Separation of Gaseous and Particupate Dry Deposition of Sulfur at a Forest Edge in Denmark. Journal of Environmental Quality, 1991, 20, 460-466.	1.0	16
100	Modelling the decadal trend of ecosystem carbon fluxes demonstrates the important role of functional changes in a temperate deciduous forest. Ecological Modelling, 2013, 260, 50-61.	1.2	15
101	A replicated climate change field experiment reveals rapid evolutionary response in an ecologically important soil invertebrate. Global Change Biology, 2016, 22, 2370-2379.	4.2	15
102	Review of deposition monitoring methods. Tellus, Series B: Chemical and Physical Meteorology, 2022, 46, 79.	0.8	14
103	Magic applied to roof experiments (Risdalsheia, N; Gï¿½rdsjï¿½n, S; Klosterhede, DK) to evaluate the rate of reversibility of acidification following experimentally reduced acid deposition. Water, Air, and Soil Pollution, 1995, 85, 1745-1751.	1.1	14
104	Preface "Nitrogen & Global Change". Biogeosciences, 2012, 9, 1691-1693.	1.3	14
105	Understanding ecosystems of the future will require more than realistic climate change experiments â€“ A response to Korell et al.. Global Change Biology, 2020, 26, e6-e7.	4.2	12
106	Responses of enchytraeids to increased temperature, drought and atmospheric CO2: Results of an eight-year field experiment in dry heathland. European Journal of Soil Biology, 2015, 70, 15-22.	1.4	11
107	Effects of Climate and Ecosystem Disturbances on Biogeochemical Cycling in a Semi-Natural Terrestrial Ecosystem. Water, Air and Soil Pollution, 2004, 4, 191-206.	0.8	10
108	Complexity in Climate Change Manipulation Experiments. BioScience, 2013, 63, 763-767.	2.2	10

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109	Corrigendum to "Can current moisture responses predict soil CO₂ efflux under altered precipitation regimes? A synthesis of manipulation experiments". Biogeosciences, 2014, 11, 3307-3308.	1.3	10
110	Measurement of carbon dioxide fluxes in a free-air carbon dioxide enrichment experiment using the closed flux chamber technique. Atmospheric Environment, 2011, 45, 208-214.	1.9	9
111	Modelling the effects of nitrogen addition on soil nitrogen status and nitrogen uptake in a Norway spruce stand in Denmark. Environmental Pollution, 1998, 102, 409-414.	3.7	8
112	Improving the performance of infrared reflective night curtains for warming field plots. Agricultural and Forest Meteorology, 2013, 173, 53-62.	1.9	8
113	Temperate heath plant response to dry conditions depends on growth strategy and less on physiology. Acta Oecologica, 2012, 45, 79-87.	0.5	7
114	Organic matter decomposition in an acidic forest soil in Denmark as measured by the cotton strip assay. Scandinavian Journal of Forest Research, 1994, 9, 106-114.	0.5	6
115	The exman projectâ€"Biogeochemical fluxes in plantation forests on acid soils. Water, Air, and Soil Pollution, 1995, 85, 1653-1658.	1.1	6
116	Isotopic methods for nonâ€destructive assessment of carbon dynamics in shrublands under longâ€term climate change manipulation. Methods in Ecology and Evolution, 2018, 9, 866-880.	2.2	6
117	Modelling ?clean rain? treatments in acidified soils-EXMAN project results. Water, Air, and Soil Pollution, 1995, 85, 1807-1812.	1.1	5
118	Technical Note: Mesocosm approach to quantify dissolved inorganic carbon percolation fluxes. Biogeosciences, 2014, 11, 1077-1084.	1.3	5
119	On the problems of using linear models in ecological manipulation experiments: lessons learned from a climate experiment. Ecosphere, 2018, 9, e02322.	1.0	3
120	Traitâ€mediated responses to aridity and experimental drought by springtail communities across Europe. Functional Ecology, 2023, 37, 44-56.	1.7	3
121	Guest Editor's Introduction: Greenhouse gas exchange in European ecosystems and their interactions with nitrogen â€“ results from NitroEurope IP. European Journal of Soil Science, 2010, 61, 627-630.	1.8	2
122	Corrigendum to "Effects of climate variability and functional changes on the interannual variation of the carbon balance in a temperate deciduous forest" published in Biogeosciences, 9, 13â€“28, 2012. Biogeosciences, 2012, 9, 715-715.	1.3	1
123	Effects of Climate and Ecosystem Disturbances on Biogeochemical Cycling in a Semi-Natural Terrestrial Ecosystem. , 2004, , 191-206.		1
124	Modelling the effects of nitrogen addition on soil nitrogen status and nitrogen uptake in a Norway spruce stand in Denmark. , 1998, , 409-414.		0
125	Comparison of N and C dynamics in two Norway spruce stands using a process oriented simulation model. , 1998, , 395-401.		0