Christiane Roscher

List of Publications by Year in descending order

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#	Article	IF	CITATIONS
1	TRY plant trait database – enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	9.5	1,038
2	Biodiversity increases the resistance of ecosystem productivity to climate extremes. Nature, 2015, 526, 574-577.	27.8	1,032
3	Bottom-up effects of plant diversity on multitrophic interactions in a biodiversity experiment. Nature, 2010, 468, 553-556.	27.8	786
4	The role of biodiversity for element cycling and trophic interactions: an experimental approach in a grassland community. Basic and Applied Ecology, 2004, 5, 107-121.	2.7	508
5	Plant species richness and functional composition drive overyielding in a sixâ€year grassland experiment. Ecology, 2009, 90, 3290-3302.	3.2	317
6	Biodiversity effects on ecosystem functioning in a 15-year grassland experiment: Patterns, mechanisms, and open questions. Basic and Applied Ecology, 2017, 23, 1-73.	2.7	307
7	Multiple facets of biodiversity drive the diversity–stability relationship. Nature Ecology and Evolution, 2018, 2, 1579-1587.	7.8	296
8	Using Plant Functional Traits to Explain Diversity–Productivity Relationships. PLoS ONE, 2012, 7, e36760.	2.5	263
9	Plant diversity positively affects shortâ€ŧerm soil carbon storage in experimental grasslands. Global Change Biology, 2008, 14, 2937-2949.	9.5	260
10	Overyielding in experimental grassland communities - irrespective of species pool or spatial scale. Ecology Letters, 2005, 8, 419-429.	6.4	259
11	Predicting ecosystem stability from community composition and biodiversity. Ecology Letters, 2013, 16, 617-625.	6.4	251
12	The Future of Complementarity: Disentangling Causes from Consequences. Trends in Ecology and Evolution, 2019, 34, 167-180.	8.7	246
13	More diverse plant communities have higher functioning over time due to turnover in complementary dominant species. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 17034-17039.	7.1	227
14	Biotic and Abiotic Properties Mediating Plant Diversity Effects on Soil Microbial Communities in an Experimental Grassland. PLoS ONE, 2014, 9, e96182.	2.5	188
15	Plant Diversity Surpasses Plant Functional Groups and Plant Productivity as Driver of Soil Biota in the Long Term. PLoS ONE, 2011, 6, e16055.	2.5	172
16	Niche pre-emption increases with species richness in experimental plant communities. Journal of Ecology, 2007, 95, 65-78.	4.0	169
17	Longâ€ŧerm study of root biomass in a biodiversity experiment reveals shifts in diversity effects over time. Oikos, 2014, 123, 1528-1536.	2.7	165
18	Positive biodiversity–productivity relationship due to increased plant density. Journal of Ecology, 2009, 97, 696-704.	4.0	141

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19	Multiple plant diversity components drive consumer communities across ecosystems. Nature Communications, 2019, 10, 1460.	12.8	139
20	Plant diversity drives soil microbial biomass carbon in grasslands irrespective of global environmental change factors. Global Change Biology, 2015, 21, 4076-4085.	9.5	134
21	Does biodiversity increase spatial stability in plant community biomass?. Ecology Letters, 2008, 11, 338-347.	6.4	120
22	Aboveground overyielding in grassland mixtures is associated with reduced biomass partitioning to belowground organs. Ecology, 2009, 90, 1520-1530.	3.2	117
23	Flooding disturbances increase resource availability and productivity but reduce stability in diverse plant communities. Nature Communications, 2015, 6, 6092.	12.8	116
24	Soil and Plant Nitrogen Pools as Related to Plant Diversity in an Experimental Grassland. Soil Science Society of America Journal, 2007, 71, 720-729.	2.2	114
25	Plant traits alone are poor predictors of ecosystem properties and long-term ecosystem functioning. Nature Ecology and Evolution, 2020, 4, 1602-1611.	7.8	114
26	Metabolomics Unravel Contrasting Effects of Biodiversity on the Performance of Individual Plant Species. PLoS ONE, 2010, 5, e12569.	2.5	114
27	Identifying population―and communityâ€level mechanisms of diversity–stability relationships in experimental grasslands. Journal of Ecology, 2011, 99, 1460-1469.	4.0	105
28	Plant species diversity affects infiltration capacity in an experimental grassland through changes in soil properties. Plant and Soil, 2015, 397, 1-16.	3.7	105
29	Leaf nutrients, not specific leaf area, are consistent indicators of elevated nutrient inputs. Nature Ecology and Evolution, 2019, 3, 400-406.	7.8	97
30	Diversity Promotes Temporal Stability across Levels of Ecosystem Organization in Experimental Grasslands. PLoS ONE, 2010, 5, e13382.	2.5	95
31	Diversity-dependent temporal divergence of ecosystem functioning in experimental ecosystems. Nature Ecology and Evolution, 2017, 1, 1639-1642.	7.8	95
32	A multitrophic perspective on biodiversity–ecosystem functioning research. Advances in Ecological Research, 2019, 61, 1-54.	2.7	95
33	The Jena Experiment: six years of data from a grassland biodiversity experiment. Ecology, 2010, 91, 930-931.	3.2	94
34	Functional diversity of leaf nitrogen concentrations drives grassland carbon fluxes. Ecology Letters, 2014, 17, 435-444.	6.4	94
35	The results of biodiversity–ecosystem functioning experiments are realistic. Nature Ecology and Evolution, 2020, 4, 1485-1494	7.8	93
36	Effects of plant diversity on invertebrate herbivory in experimental grassland. Oecologia, 2006, 147, 489-500.	2.0	92

3

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37	A comparison of the strength of biodiversity effects across multiple functions. Oecologia, 2013, 173, 223-237.	2.0	91
38	A trait-based experimental approach to understand the mechanisms underlying biodiversity–ecosystem functioning relationships. Basic and Applied Ecology, 2014, 15, 229-240.	2.7	91
39	How Do Earthworms, Soil Texture and Plant Composition Affect Infiltration along an Experimental Plant Diversity Gradient in Grassland?. PLoS ONE, 2014, 9, e98987.	2.5	91
40	Plant diversity effects on aboveground and belowground N pools in temperate grassland ecosystems: Development in the first 5 years after establishment. Global Biogeochemical Cycles, 2011, 25, n/a-n/a.	4.9	90
41	Complementary nitrogen use among potentially dominant species in a biodiversity experiment varies between two years. Journal of Ecology, 2008, 96, 477-488.	4.0	89
42	Differential effects of functional traits on aboveground biomass in semiâ€natural grasslands. Oikos, 2009, 118, 1659-1668.	2.7	89
43	Effects of biodiversity strengthen over time as ecosystem functioning declines at low and increases at high biodiversity. Ecosphere, 2016, 7, e01619.	2.2	87
44	Functional trait effects on ecosystem stability: assembling the jigsaw puzzle. Trends in Ecology and Evolution, 2021, 36, 822-836.	8.7	81
45	Differential effects of plant diversity on functional trait variation of grass species. Annals of Botany, 2011, 107, 157-169.	2.9	80
46	Predicting invertebrate herbivory from plant traits: evidence from 51 grassland species in experimental monocultures. Ecology, 2012, 93, 2674-2682.	3.2	80
47	Functionally and phylogenetically diverse plant communities key to soil biota. Ecology, 2013, 94, 1878-1885.	3.2	80
48	Plants are less negatively affected by flooding when growing in speciesâ€rich plant communities. New Phytologist, 2017, 213, 645-656.	7.3	79
49	General destabilizing effects of eutrophication on grassland productivity at multiple spatial scales. Nature Communications, 2020, 11, 5375.	12.8	75
50	Plant–Soil Feedbacks and Temporal Dynamics of Plant Diversity–Productivity Relationships. Trends in Ecology and Evolution, 2021, 36, 651-661.	8.7	74
51	Species richness and identity affect the use of aboveground space in experimental grasslands. Perspectives in Plant Ecology, Evolution and Systematics, 2008, 10, 73-87.	2.7	73
52	Detecting the role of individual species for overyielding in experimental grassland communities composed of potentially dominant species. Oecologia, 2007, 154, 535-549.	2.0	72
53	Biology, chance, or history? The predictable reassembly of temperate grassland communities. Ecology, 2010, 91, 408-421.	3.2	72
54	Biodiversity Effects on Plant Stoichiometry. PLoS ONE, 2013, 8, e58179.	2.5	71

4

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55	Plant diversity generates enhanced soil microbial access to recently photosynthesized carbon in the rhizosphere. Soil Biology and Biochemistry, 2016, 94, 122-132.	8.8	69
56	Plant species richness and functional groups have different effects on soil water content in a decadeâ€long grassland experiment. Journal of Ecology, 2019, 107, 127-141.	4.0	69
57	A functional trait-based approach to understand community assembly and diversity–productivity relationships over 7 years in experimental grasslands. Perspectives in Plant Ecology, Evolution and Systematics, 2013, 15, 139-149.	2.7	63
58	Invertebrate herbivory increases along an experimental gradient of grassland plant diversity. Oecologia, 2014, 174, 183-193.	2.0	63
59	Foliar and soil <i>δ</i> ¹⁵ N values reveal increased nitrogen partitioning among species in diverse grassland communities. Plant, Cell and Environment, 2011, 34, 895-908.	5.7	59
60	Nitrogen uptake by grassland communities: contribution of N2 fixation, facilitation, complementarity, and species dominance. Plant and Soil, 2012, 358, 301-322.	3.7	59
61	Nitrogen and Phosphorus Budgets in Experimental Grasslands of Variable Diversity. Journal of Environmental Quality, 2007, 36, 396-407.	2.0	58
62	Plasticity of functional traits of forb species in response to biodiversity. Perspectives in Plant Ecology, Evolution and Systematics, 2015, 17, 66-77.	2.7	58
63	Soil net nitrogen mineralisation across global grasslands. Nature Communications, 2019, 10, 4981.	12.8	57
64	Resources, recruitment limitation and invader species identity determine pattern of spontaneous invasion in experimental grasslands. Journal of Ecology, 2009, 97, 32-47.	4.0	56
65	An improved model to predict the effects of changing biodiversity levels on ecosystem function. Journal of Ecology, 2013, 101, 344-355.	4.0	56
66	Legume species differ in the responses of their functional traits to plant diversity. Oecologia, 2011, 165, 437-452.	2.0	54
67	No Evidence of Complementary Water Use along a Plant Species Richness Gradient in Temperate Experimental Grasslands. PLoS ONE, 2015, 10, e0116367.	2.5	54
68	Belowâ€ground resource partitioning alone cannot explain the biodiversity–ecosystem function relationship: A field test using multiple tracers. Journal of Ecology, 2018, 106, 2002-2018.	4.0	53
69	N2 fixation and performance of 12 legume species in a 6-year grassland biodiversity experiment. Plant and Soil, 2011, 341, 333-348.	3.7	51
70	Phenotypic plasticity to light and nutrient availability alters functional trait ranking across eight perennial grassland species. AoB PLANTS, 2015, 7, .	2.3	51
71	Dynamic niche partitioning in root water uptake facilitates efficient water use in more diverse grassland plant communities. Functional Ecology, 2018, 32, 214-227.	3.6	51
72	Establishment of grassland species in monocultures: different strategies lead to success. Oecologia, 2007, 152, 435-447.	2.0	50

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73	Does plant diversity influence phosphorus cycling in experimental grasslands?. Geoderma, 2011, 167-168, 178-187.	5.1	50
74	Plant Community Diversity Influences Allocation to Direct Chemical Defence in Plantago lanceolata. PLoS ONE, 2011, 6, e28055.	2.5	49
75	Functional trait dissimilarity drives both species complementarity and competitive disparity. Functional Ecology, 2017, 31, 2320-2329.	3.6	48
76	Resistance to rust fungi in Lolium perenne depends on within-species variation and performance of the host species in grasslands of different plant diversity. Oecologia, 2007, 153, 173-183.	2.0	45
77	Phylogenetically diverse grasslands are associated with pairwise interspecific processes that increase biomass. Ecology, 2011, 92, 1385-1392.	3.2	43
78	Plant diversity alters the representation of motifs in food webs. Nature Communications, 2019, 10, 1226.	12.8	41
79	Limited evidence for spatial resource partitioning across temperate grassland biodiversity experiments. Ecology, 2020, 101, e02905.	3.2	40
80	Contrasting Effects of Intraspecific Trait Variation on Trait-Based Niches and Performance of Legumes in Plant Mixtures. PLoS ONE, 2015, 10, e0119786.	2.5	40
81	Community assembly and biomass production in regularly and never weeded experimental grasslands. Acta Oecologica, 2009, 35, 206-217.	1.1	39
82	Predicting invertebrate herbivory from plant traits: Polycultures show strong nonadditive effects. Ecology, 2013, 94, 1499-1509.	3.2	39
83	Complementarity among four highly productive grassland species depends on resource availability. Oecologia, 2016, 181, 571-582.	2.0	39
84	Fertilized graminoids intensify negative drought effects on grassland productivity. Global Change Biology, 2021, 27, 2441-2457.	9.5	39
85	Experimental plant communities develop phylogenetically overdispersed abundance distributions during assembly. Ecology, 2013, 94, 465-477.	3.2	38
86	Selection for monoculture and mixture genotypes in a biodiversity experiment. Basic and Applied Ecology, 2011, 12, 360-371.	2.7	35
87	Interspecific competition alters leaf stoichiometry in 20 grassland species. Oikos, 2018, 127, 903-914.	2.7	33
88	Plant diversity and functional groups affect Si and Ca pools in aboveground biomass of grassland systems. Oecologia, 2016, 182, 277-286.	2.0	32
89	Light and nitrogen competition limit <i>Lolium perenne</i> in experimental grasslands of increasing plant diversity. Plant Biology, 2011, 13, 134-144.	3.8	31
90	Plant resource-use characteristics as predictors for species contribution to community biomass in experimental grasslands. Perspectives in Plant Ecology, Evolution and Systematics, 2011, 13, 1-13.	2.7	30

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91	Trait means, trait plasticity and trait differences to other species jointly explain species performances in grasslands of varying diversity. Oikos, 2018, 127, 865-865.	2.7	30
92	Adaptive survival mechanisms and growth limitations of smallâ€stature herb species across a plant diversity gradient. Plant Biology, 2008, 10, 573-587.	3.8	29
93	Light and Nutrient Dependent Responses in Secondary Metabolites of Plantago lanceolata Offspring Are Due to Phenotypic Plasticity in Experimental Grasslands. PLoS ONE, 2015, 10, e0136073.	2.5	29
94	Changes in the Abundance of Grassland Species in Monocultures versus Mixtures and Their Relation to Biodiversity Effects. PLoS ONE, 2013, 8, e75599.	2.5	29
95	Soil properties as key predictors of global grassland production: Have we overlooked micronutrients?. Ecology Letters, 2021, 24, 2713-2725.	6.4	28
96	Effects of trait plasticity on aboveground biomass production depend on species identity in experimental grasslands. Basic and Applied Ecology, 2008, 9, 475-484.	2.7	27
97	Microbial processing of plant remains is coâ€limited by multiple nutrients in global grasslands. Global Change Biology, 2020, 26, 4572-4582.	9.5	27
98	Consistent increase in herbivory along two experimental plant diversity gradients over multiple years. Ecosphere, 2017, 8, e01876.	2.2	26
99	What happens to the sown species if a biodiversity experiment is not weeded?. Basic and Applied Ecology, 2013, 14, 187-198.	2.7	25
100	Plant functional diversity increases grassland productivityâ€related water vapor fluxes: an Ecotron and modeling approach. Ecology, 2016, 97, 2044-2054.	3.2	25
101	Mechanisms behind plant diversity effects on inorganic and organic N leaching from temperate grassland. Biogeochemistry, 2016, 131, 339-353.	3.5	25
102	Nutrient enrichment increases invertebrate herbivory and pathogen damage in grasslands. Journal of Ecology, 2022, 110, 327-339.	4.0	25
103	Genetic Identity Affects Performance of Species in Grasslands of Different Plant Diversity: An Experiment with Lolium perenne Cultivars. Annals of Botany, 2008, 102, 113-125.	2.9	23
104	Adjustment to the light environment in small-statured forbs as a strategy for complementary resource use in mixtures of grassland species. Annals of Botany, 2011, 107, 965-979.	2.9	23
105	Predicting species abundances in a grassland biodiversity experiment: Tradeâ€offs between model complexity and generality. Journal of Ecology, 2020, 108, 774-787.	4.0	23
106	Biotic interactions, community assembly, and eco-evolutionary dynamics as drivers of long-term biodiversity–ecosystem functioning relationships. Research Ideas and Outcomes, 0, 5, .	1.0	23
107	Different Assembly Processes Drive Shifts in Species and Functional Composition in Experimental Grasslands Varying in Sown Diversity and Community History. PLoS ONE, 2014, 9, e101928.	2.5	21
108	A new experimental approach to test why biodiversity effects strengthen as ecosystems age. Advances in Ecological Research, 2019, , 221-264.	2.7	21

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109	Effects of plant species diversity on nematode community composition and diversity in a long-term biodiversity experiment. Oecologia, 2021, 197, 297-311.	2.0	21
110	Phenotypic plasticity masks rangeâ€wide genetic differentiation for vegetative but not reproductive traits in a shortâ€lived plant. Ecology Letters, 2021, 24, 2378-2393.	6.4	21
111	Nonâ€random recruitment of invader species in experimental grasslands. Oikos, 2009, 118, 1524-1540.	2.7	20
112	How do leaf trait values change spatially and temporally with light availability in a grassland diversity experiment? . Oikos, 2018, 127, 935-948.	2.7	20
113	How to estimate complementarity and selection effects from an incomplete sample of species. Methods in Ecology and Evolution, 2019, 10, 2141-2152.	5.2	20
114	Resource Availability Alters Biodiversity Effects in Experimental Grass-Forb Mixtures. PLoS ONE, 2016, 11, e0158110.	2.5	18
115	Spatial plant resource acquisition traits explain plant community effects on soil microbial properties. Pedobiologia, 2017, 65, 50-57.	1.2	17
116	Plant diversity enhances production and downward transport of biodegradable dissolved organic matter. Journal of Ecology, 2021, 109, 1284-1297.	4.0	17
117	Plant diversity and community history shift colonization success from early- to mid-successional species. Journal of Plant Ecology, 2015, 8, 231-241.	2.3	15
118	Connecting experimental biodiversity research to real-world grasslands. Perspectives in Plant Ecology, Evolution and Systematics, 2018, 33, 78-88.	2.7	15
119	Functional composition rather than species richness determines root characteristics of experimental grasslands grown at different light and nutrient availability. Plant and Soil, 2016, 404, 399-412.	3.7	14
120	Positive diversity effects on productivity in mixtures of arable weed species as related to density–size relationships. Journal of Plant Ecology, 2016, 9, 792-804.	2.3	14
121	Interspecific trait differences rather than intraspecific trait variation increase the extent and filling of community trait space with increasing plant diversity in experimental grasslands. Perspectives in Plant Ecology, Evolution and Systematics, 2018, 33, 42-50.	2.7	14
122	Functional groups differ in trait means, but not in trait plasticity to species richness in local grassland communities. Ecology, 2018, 99, 2295-2307.	3.2	14
123	Lost in trait space: species-poor communities are inflexible in properties that drive ecosystem functioning. Advances in Ecological Research, 2019, , 91-131.	2.7	14
124	Density-Independent Mortality and Increasing Plant Diversity Are Associated with Differentiation of Taraxacum officinale into r- and K-Strategists. PLoS ONE, 2012, 7, e28121.	2.5	13
125	Origin context of trait data matters for predictions of community performance in a grassland biodiversity experiment. Ecology, 2018, 99, 1214-1226.	3.2	13
126	Growth ring analysis of multiple dicotyledonous herb species—A novel community-wide approach. Basic and Applied Ecology, 2017, 21, 23-33.	2.7	11

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127	Terrestrial laser scanning reveals temporal changes in biodiversity mechanisms driving grassland productivity. Advances in Ecological Research, 2019, 61, 133-161.	2.7	11
128	Diverse plant mixtures sustain a greater arbuscular mycorrhizal fungi spore viability than monocultures after 12 years. Journal of Plant Ecology, 2020, 13, 478-488.	2.3	11
129	Biodiversity facets affect community surface temperature via 3D canopy structure in grassland communities. Journal of Ecology, 2021, 109, 1969-1985.	4.0	11
130	Nitrogen but not phosphorus addition affects symbiotic N2 fixation by legumes in natural and semi-natural grasslands located on four continents. Plant and Soil, 2022, 478, 689-707.	3.7	11
131	Interactions between functionally diverse fungal mutualists inconsistently affect plant performance and competition. Oikos, 2019, 128, 1136-1146.	2.7	10
132	Convergent high diversity in naturally colonized experimental grasslands is not related to increased productivity. Perspectives in Plant Ecology, Evolution and Systematics, 2016, 20, 32-45.	2.7	9
133	Nematode communities, plant nutrient economy and lifeâ€cycle characteristics jointly determine plant monoculture performance over 12 years. Oikos, 2020, 129, 466-479.	2.7	9
134	Not even wrong: Comment by Wagg etÂal Ecology, 2019, 100, e02805.	3.2	8
135	Functional composition has stronger impact than species richness on carbon gain and allocation in experimental grasslands. PLoS ONE, 2019, 14, e0204715.	2.5	8
136	Inferring competitive outcomes, ranks and intransitivity from empirical data: A comparison of different methods. Methods in Ecology and Evolution, 2020, 11, 117-128.	5.2	8
137	Vascular plant diversity structures bryophyte colonization in experimental grassland. Journal of Vegetation Science, 2017, 28, 903-914.	2.2	7
138	Increasing plant diversity of experimental grasslands alters the age and growth of <i>Plantago lanceolata</i> from younger and faster to older and slower. Oikos, 2019, 128, 1182-1193.	2.7	6
139	Plant functional trait identity and diversity effects on soil meso- and macrofauna in an experimental grassland. Advances in Ecological Research, 2019, , 163-184.	2.7	4
140	Plant diversity effects on plant longevity and their relationships to population stability in experimental grasslands. Journal of Ecology, 2021, 109, 2566-2579.	4.0	4
141	Abiotic factors are more important than land management and biotic interactions in shaping vascular plant and soil fungal communities. Global Ecology and Conservation, 2022, 33, e01960.	2.1	4
142	Top canopy nitrogen allocation linked to increased grassland carbon uptake in stands of varying species richness. Scientific Reports, 2017, 7, 8392.	3.3	3
143	Linking local species coexistence to ecosystem functioning: a conceptual framework from ecological first principles in grassland ecosystems. Advances in Ecological Research, 2019, 61, 265-296.	2.7	3
144	Trait variation in response to resource availability and plant diversity modulates functional dissimilarity among species in experimental grasslands. Journal of Plant Ecology, 2016, , rtw110.	2.3	2

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145	Incorporation of mineral nitrogen into the soil food web as affected by plant community composition. Ecology and Evolution, 2021, 11, 4295-4309.	1.9	2
146	Plant history and soil history jointly influence the selection environment for plant species in a longâ€ŧerm grassland biodiversity experiment. Ecology and Evolution, 2021, 11, 8156-8169.	1.9	2
147	Intraspecific trait variation in three common grass species reveals fine-scale species adjustment to local environmental conditions. Journal of Plant Ecology, 2017, , .	2.3	1
148	Scaleâ€dependent impact of land management on above―and belowground biodiversity. Ecology and Evolution, 2020, 10, 10139-10149.	1.9	1