Philip A Fay

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

127 papers	8,666 citations	41 h-index	92 g-index
135 ext. papers	10,142 ext. citations	8.4 avg, IF	5.37 L-index

#	Paper	IF	Citations
127	Rainfall variability, carbon cycling, and plant species diversity in a mesic grassland. *Science*, **2002**, 298, 2202-5	33.3	824
126	Convergence across biomes to a common rain-use efficiency. *Nature*, **2004**, 429, 651-4	50.4	786
125	Consequences of More Extreme Precipitation Regimes for Terrestrial Ecosystems. *BioScience*, **2008**, 58, 811-821	5.7	776
124	Assessing the Response of Terrestrial Ecosystems to Potential Changes in Precipitation. *BioScience*, **2003**, 53, 941	5.7	591
123	Integrative modelling reveals mechanisms linking productivity and plant species richness. *Nature*, **2016**, 529, 390-3	50.4	389
122	Productivity is a poor predictor of plant species richness. *Science*, **2011**, 333, 1750-3	33.3	386
121	Productivity responses to altered rainfall patterns in a C4-dominated grassland. *Oecologia*, **2003**, 137, 245-51	2.9	333
120	Increased rainfall variability and reduced rainfall amount decreases soil CO2 flux in a grassland ecosystem. *Global Change Biology*, **2005**, 11, 322-334	11.4	301
119	Eutrophication weakens stabilizing effects of diversity in natural grasslands. *Nature*, **2014**, 508, 521-5	50.4	283
118	Grassland productivity limited by multiple nutrients. *Nature Plants*, **2015**, 1, 15080	11.5	254
117	Addition of multiple limiting resources reduces grassland diversity. *Nature*, **2016**, 537, 93-96	50.4	225
116	Altering Rainfall Timing and Quantity in a Mesic Grassland Ecosystem: Design and Performance of Rainfall Manipulation Shelters. *Ecosystems*, **2000**, 3, 308-319	3.9	198
115	Changes in grassland ecosystem function due to extreme rainfall events: implications for responses to climate change. *Global Change Biology*, **2008**, 14, 1600-1608	11.4	190
114	Optimizing stomatal conductance for maximum carbon gain under water stress: a meta-analysis across plant functional types and climates. *Functional Ecology*, **2011**, 25, 456-467	5.6	159
113	Leaf isoprene emission rate as a function of atmospheric CO2 concentration. *Global Change Biology*, **2009**, 15, 1189-1200	11.4	121
112	Relative effects of precipitation variability and warming on tallgrass prairie ecosystem function. *Biogeosciences*, **2011**, 8, 3053-3068	4.6	107
111	Altered Rainfall Patterns, Gas Exchange, and Growth in Grasses and Forbs. *International Journal of Plant Sciences*, **2002**, 163, 549-557	2.6	97

110	Local loss and spatial homogenization of plant diversity reduce ecosystem multifunctionality. *Nature Ecology and Evolution*, **2018**, 2, 50-56	12.3	97
109	Plant speciesPorigin predicts dominance and response to nutrient enrichment and herbivores in global grasslands. *Nature Communications*, **2015**, 6, 7710	17.4	94
108	Few multiyear precipitation-reduction experiments find a shift in the productivity-precipitation relationship. *Global Change Biology*, **2016**, 22, 2570-81	11.4	84
107	Climate Impacts on Agriculture: Implications for Forage and Rangeland Production. *Agronomy Journal*, **2011**, 103, 371-381	2.2	82
106	Abundance of introduced species at home predicts abundance away in herbaceous communities. *Ecology Letters*, **2011**, 14, 274-81	10	78
105	Increased photosynthesis and water potentials in Silphium integrifolium galled by cynipid wasps. *Oecologia*, **1993**, 93, 114-120	2.9	77
104	Germination, survival, and growth of grass and forb seedlings: Effects of soil moisture variability. *Acta Oecologica*, **2009**, 35, 679-684	1.7	64
103	Plant Tolerance of Gall-Insect Attack and Gall-Insect Performance. *Ecology*, **1996**, 77, 521-534	4.6	64
102	Integrating transcriptional, metabolomic, and physiological responses to drought stress and recovery in switchgrass (Panicum virgatum L.). *BMC Genomics*, **2014**, 15, 527	4.5	63
101	Superstatistics of hydro-climatic fluctuations and interannual ecosystem productivity. *Geophysical Research Letters*, **2006**, 33,	4.9	63
100	Can current moisture responses predict soil CO₂ efflux under altered precipitation regimes? A synthesis of manipulation experiments. *Biogeosciences*, **2014**, 11, 2991-3013	4.6	60
99	Rain use efficiency across a precipitation gradient on the Tibetan Plateau. *Geophysical Research Letters*, **2010**, 37, n/a-n/a	4.9	60
98	Climatic, ecophysiological, and phenological controls on plant ecohydrological strategies in seasonally dry ecosystems. *Ecohydrology*, **2015**, 8, 660-681	2.5	59
97	MILITARY TRAINING EFFECTS ON TERRESTRIAL AND AQUATIC COMMUNITIES ON A GRASSLAND MILITARY INSTALLATION **2003**, 13, 432-442		59
96	Predicting invasion in grassland ecosystems: is exotic dominance the real embarrassment of richness?. *Global Change Biology*, **2013**, 19, 3677-87	11.4	55
95	Genotypic variation in traits linked to climate and aboveground productivity in a widespread C grass: evidence for a functional trait syndrome. *New Phytologist*, **2013**, 199, 966-980	9.8	55
94	Leaf nutrients, not specific leaf area, are consistent indicators of elevated nutrient inputs. *Nature Ecology and Evolution*, **2019**, 3, 400-406	12.3	49
93	Ecophysiological responses of two dominant grasses to altered temperature and precipitation regimes. *Acta Oecologica*, **2009**, 35, 400-408	1.7	48

92	Perennial Biomass Grasses and the Mason□Dixon Line: Comparative Productivity across Latitudes in the Southern Great Plains. *Bioenergy Research*, **2013**, 6, 276-291	3.1	47
91	Soil type and moisture regime control microbial C and N mineralization in grassland soils more than atmospheric CO2-induced changes in litter quality. *Soil Biology and Biochemistry*, **2013**, 58, 172-180	7.5	47
90	Atmospheric CO2 and soil extracellular enzyme activity: a meta-analysis and CO2 gradient experiment. *Ecosphere*, **2011**, 2, art96	3.1	43
89	Soil-mediated effects of subambient to increased carbon dioxide on grassland productivity. *Nature Climate Change*, **2012**, 2, 742-746	21.4	42
88	Photosynthetic traits in C3 and C4 grassland species in mesocosm and field environments. *Environmental and Experimental Botany*, **2007**, 60, 412-420	5.9	42
87	Genomic mechanisms of climate adaptation in polyploid bioenergy switchgrass. *Nature*, **2021**, 590, 438-444	50.4	42
86	Ecological genomics: making the leap from model systems in the lab to native populations in the field. *Frontiers in Ecology and the Environment*, **2007**, 5, 19-24	5.5	39
85	Within-plant distribution of a galling adelgid (Homoptera: Adelgidae): the consequences of conflicting survivorship, growth, and reproduction. *Ecological Entomology*, **1990**, 15, 245-254	2.1	38
84	QTL □environment interactions underlie adaptive divergence in switchgrass across a large latitudinal gradient. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 12933-12941	11.5	36
83	Constraints on growth and allocation patterns of Silphium integrifolium (Asteraceae) caused by a cynipid gall wasp. *Oecologia*, **1991**, 88, 243-250	2.9	35
82	Effects of precipitation changes on aboveground net primary production and soil respiration in a switchgrass field. *Agriculture, Ecosystems and Environment*, **2017**, 248, 29-37	5.7	34
81	Primary Productivity and Water Balance of Grassland Vegetation on Three Soils in a Continuous CO2 Gradient: Initial Results from the Lysimeter CO2 Gradient Experiment. *Ecosystems*, **2009**, 12, 699-714	3.9	34
80	Soil net nitrogen mineralisation across global grasslands. *Nature Communications*, **2019**, 10, 4981	17.4	33
79	Out of the shadows: multiple nutrient limitations drive relationships among biomass, light and plant diversity. *Functional Ecology*, **2017**, 31, 1839-1846	5.6	30
78	CO2-caused change in plant species composition rivals the shift in vegetation between mid-grass and tallgrass prairies. *Global Change Biology*, **2012**, 18, 700-710	11.4	29
77	Feedback from plant species change amplifies CO2 enhancement of grassland productivity. *Global Change Biology*, **2012**, 18, 2813-23	11.4	28
76	Application of a conceptual framework to interpret variability in rangeland responses to atmospheric CO2 enrichment. *Journal of Agricultural Science*, **2011**, 149, 1-14	1	28
75	Anthropogenic-based regional-scale factors most consistently explain plot-level exotic diversity in grasslands. *Global Ecology and Biogeography*, **2014**, 23, 802-810	6.1	27

74	Variation in gene expression of Andropogon gerardii in response to altered environmental conditions associated with climate change. *Journal of Ecology*, **2010**, 98, 374-383	6	27
73	Response to Comments on "Productivity Is a Poor Predictor of Plant Species Richness". *Science*, **2012**, 335, 1441-1441	33.3	27
72	Promises and Challenges of Eco-Physiological Genomics in the Field: Tests of Drought Responses in Switchgrass. *Plant Physiology*, **2016**, 172, 734-748	6.6	26
71	Impacts of climate change drivers on C4 grassland productivity: scaling driver effects through the plant community. *Journal of Experimental Botany*, **2014**, 65, 3415-24	7	25
70	Fungal Community Responses to Past and Future Atmospheric CO2 Differ by Soil Type. *Applied and Environmental Microbiology*, **2014**, 80, 7364-77	4.8	25
69	Climate modifies response of non-native and native species richness to nutrient enrichment. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2016**, 371,	5.8	25
68	Precipitation variability and primary productivity in water-limited ecosystems: how plants leverage precipitation to finance growth. *New Phytologist*, **2009**, 181, 5-8	9.8	23
67	General destabilizing effects of eutrophication on grassland productivity at multiple spatial scales. *Nature Communications*, **2020**, 11, 5375	17.4	23
66	The effect of subambient to elevated atmospheric CO2 concentration on vascular function in Helianthus annuus: implications for plant response to climate change. *New Phytologist*, **2013**, 199, 956-965	9.8	22
65	The functional resource of a gall-forming adelgid. *Oecologia*, **1996**, 105, 199-204	2.9	22
64	Using research networks to create the comprehensive datasets needed to assess nutrient availability as a key determinant of terrestrial carbon cycling. *Environmental Research Letters*, **2018**, 13, 125006	6.2	21
63	Comparing Biomass Yields of Low-Input High-Diversity Communities with Managed Monocultures Across the Central United States. *Bioenergy Research*, **2010**, 3, 353-361	3.1	20
62	Spatial heterogeneity in species composition constrains plant community responses to herbivory and fertilisation. *Ecology Letters*, **2018**, 21, 1364-1371	10	20
61	Climate change impacts on freshwater wetland hydrology and vegetation cover cycling along a regional aridity gradient. *Ecosphere*, **2016**, 7, e01504	3.1	19
60	Modeling the vegetation–atmosphere carbon dioxide and water vapor interactions along a controlled CO2 gradient. *Ecological Modelling*, **2011**, 222, 653-665	3	19
59	Effects of precipitation changes on switchgrass photosynthesis, growth, and biomass: A mesocosm experiment. *PLoS ONE*, **2018**, 13, e0192555	3.7	18
58	CO2 enrichment increases element concentrations in grass mixtures by changing species abundances. *Plant Ecology*, **2011**, 212, 945-957	1.7	18
57	Insect Diversity in Two Burned and Grazed Grasslands. *Environmental Entomology*, **2003**, 32, 1099-1104	2.1	18

56	Gall Wasp (Hymenoptera: Cynipidae) Mortality in a Spring Tallgrass Prairie Fire. *Environmental Entomology*, **1993**, 22, 1333-1337	2.1	18
55	Nutrient addition increases grassland sensitivity to droughts. *Ecology*, **2020**, 101, e02981	4.6	17
54	Traits of an invasive grass conferring an early growth advantage over native grasses. *Journal of Plant Ecology*, **2016**, 9, 672-681	1.7	17
53	Stomatal and photosynthetic responses to shade in sorghum, soybean and eastern gamagrass. *Physiologia Plantarum*, **1995**, 94, 613-620	4.6	16
52	Comment on "Worldwide evidence of a unimodal relationship between productivity and plant species richness". *Science*, **2016**, 351, 457	33.3	15
51	Soil carbon responses to past and future CO2 in three Texas prairie soils. *Soil Biology and Biochemistry*, **2015**, 83, 66-75	7.5	15
50	Nutrients and environment influence arbuscular mycorrhizal colonization both independently and interactively in Schizachyrium scoparium. *Plant and Soil*, **2018**, 425, 493-506	4.2	14
49	Branching responses in Silphium integrifolium (Asteraceae) following mechanical or gall damage to apical meristems and neighbor removal. *American Journal of Botany*, **2005**, 92, 954-9	2.7	13
48	Increasing effects of chronic nutrient enrichment on plant diversity loss and ecosystem productivity over time. *Ecology*, **2021**, 102, e03218	4.6	13
47	Climate and local environment structure asynchrony and the stability of primary production in grasslands. *Global Ecology and Biogeography*, **2020**, 29, 1177-1188	6.1	11
46	Responses of switchgrass soil respiration and its components to precipitation gradient in a mesocosm study. *Plant and Soil*, **2017**, 420, 105-117	4.2	11
45	Dominant plant taxa predict plant productivity responses to CO2 enrichment across precipitation and soil gradients. *AoB PLANTS*, **2015**, 7,	2.9	11
44	Accelerated development in Johnsongrass seedlings (Sorghum halepense) suppresses the growth of native grasses through size-asymmetric competition. *PLoS ONE*, **2017**, 12, e0176042	3.7	11
43	Spectral Heterogeneity Predicts Local-Scale Gamma and Beta Diversity of Mesic Grasslands. *Remote Sensing*, **2019**, 11, 458	5	10
42	QTL and Drought Effects on Leaf Physiology in Lowland Panicum virgatum. *Bioenergy Research*, **2016**, 9, 1241-1259	3.1	9
41	Stomatal and photosynthetic responses to shade in sorghum, soybean and eastern gamagrass. *Physiologia Plantarum*, **1995**, 94, 613-620	4.6	9
40	Photosynthetic and Stomatal Responses to Variable Light in a Cool-Season and a Warm-Season Prairie Forb. *International Journal of Plant Sciences*, **1996**, 157, 303-308	2.6	9
39	Photosynthetic and Stomatal Responses of Avena sativa (Poaceae) to a Variable Light Environment. *American Journal of Botany*, **1993**, 80, 1369	2.7	9

38	Global impacts of fertilization and herbivore removal on soil net nitrogen mineralization are modulated by local climate and soil properties. *Global Change Biology*, **2020**, 26, 7173-7185	11.4	9
37	Bloom and Bust: ecological consequences of precipitation variability in aridlands. *Plant Ecology*, **2019**, 220, 135-139	1.7	8
36	Plant community change mediates the response of foliar [15)N to CO 2 enrichment in mesic grasslands. *Oecologia*, **2015**, 178, 591-601	2.9	8
35	Corrigendum to "Can current moisture responses predict soil CO₂ efflux under altered precipitation regimes? A synthesis of manipulation experiments". *Biogeosciences*, **2014**, 11, 3307-3308	4.6	8
34	Effects of Fire, Browsers and Gallers on New Jersey Tea (Ceanothus herbaceous) Growth and Reproduction. *American Midland Naturalist*, **1999**, 141, 51-58	0.7	8
33	Geographic variation in the genetic basis of resistance to leaf rust between locally adapted ecotypes of the biofuel crop switchgrass (Panicum virgatum). *New Phytologist*, **2020**, 227, 1696-1708	9.8	7
32	Productivity of well-watered Panicum virgatum does not increase with CO2 enrichment. *Journal of Plant Ecology*, **2012**, 5, 366-375	1.7	7
31	Initial response of evapotranspiration from tallgrass prairie vegetation to CO2 at subambient to elevated concentrations. *Functional Ecology*, **2007**, 22, 071029083929003-???	5.6	7
30	CO enrichment and soil type additively regulate grassland productivity. *New Phytologist*, **2019**, 222, 183-192	9.8	7
29	Photosynthetic and stomatal responses of Avena sativa (poaceae) to a variable light environment. *American Journal of Botany*, **1993**, 80, 1369-1373	2.7	6
28	Bacterial community response to a preindustrial-to-future CO gradient is limited and soil specific in Texas Prairie grassland. *Global Change Biology*, **2018**, 24, 5815-5827	11.4	6
27	Spectrally derived values of community leaf dry matter content link shifts in grassland composition with change in biomass production. *Remote Sensing in Ecology and Conservation*, **2020**, 6, 344-353	5.3	5
26	Biotic Regulation of CO2 Uptake Climate Responses: Links to Vegetation Properties. *Ecosystems*, **2016**, 19, 1376-1385	3.9	5
25	Inter-Annual Precipitation Variability Decreases Switchgrass Productivity from Arid to Mesic Environments. *Bioenergy Research*, **2018**, 11, 614-622	3.1	5
24	Climate Variability in Tallgrass Prairie at Multiple Timescales: Konza Prairie Biological Station **2003**,		5
23	Negative effects of nitrogen override positive effects of phosphorus on grassland legumes worldwide. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	5
22	Responses to Short-Term Reductions in Light in Soybean Leaves: Effects of Leaf Position and Drought Stress. *International Journal of Plant Sciences*, **1998**, 159, 805-811	2.6	4
21	Temporal stability of grassland metacommunities is regulated more by community functional traits than species diversity. *Ecosphere*, **2020**, 11, e03178	3.1	4

20	Intercropping switchgrass with hybrid poplar increased carbon sequestration on a sand soil. *Biomass and Bioenergy*, **2020**, 138, 105558	5.3	3
19	Plant biomass, not plant economics traits, determines responses of soil CO2 efflux to precipitation in the C4 grass Panicum virgatum. *Journal of Ecology*, **2020**, 108, 2095-2106	6	3
18	Flowering in grassland predicted by CO and resource effects on species aboveground biomass. *Global Change Biology*, **2018**, 24, 1771-1781	11.4	3
17	Relative effects of precipitation variability and warming on grassland ecosystem function		3
16	Multiple constraints cause positive and negative feedbacks limiting grassland soil CO efflux under CO enrichment. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	3
15	Effects of nitrogen fertilization and bioenergy crop species on central tendency and spatial heterogeneity of soil glycosidase activities. *Scientific Reports*, **2020**, 10, 19681	4.9	3
14	Intraspecific variation in precipitation responses of a widespread C4grass depends on site water limitation. *Journal of Plant Ecology*, **2016**, rtw040	1.7	3
13	Biomass production and temporal stability are similar in switchgrass monoculture and diverse grassland. *Biomass and Bioenergy*, **2020**, 142, 105758	5.3	2
12	Soil carbon stocks in temperate grasslands differ strongly across sites but are insensitive to decade-long fertilization. *Global Change Biology*, **2021**,	11.4	2
11	Soil properties as key predictors of global grassland production: Have we overlooked micronutrients?. *Ecology Letters*, **2021**, 24, 2713-2725	10	2
10	Nutrient enrichment increases invertebrate herbivory and pathogen damage in grasslands. *Journal of Ecology*,	6	2
9	A long-term study of burning effects on a plant pathogen in tallgrass prairie. *Plant Pathology*, **2017**, 66, 1308-1317	2.8	1
8	CO2 and soil water potential as regulators of the growth and N fraction derived from fixation of a legume in tallgrass prairie communities. *Plant and Soil*, **2016**, 409, 361-370	4.2	1
7	A CO2 Concentration Gradient Facility for Testing CO2 Enrichment and Soil Effects on Grassland Ecosystem Function. *Journal of Visualized Experiments*, **2015**,	1.6	1
6	Effects of Compounded Precipitation Pattern Intensification and Drought Occur Belowground in a Mesic Grassland. *Ecosystems*,1	3.9	1
5	Geographic variation in the genetic basis of resistance to leaf rust between locally adapted ecotypes of the biofuel crop switchgrass (Panicum virgatum)		1
4	Intercropping with Switchgrass Improves Net Greenhouse Gas Balance in Hybrid Poplar Plantations on a Sand Soil. *Soil Science Society of America Journal*, **2017**, 81, 781	2.5	1
3	Soil extracellular oxidases mediated nitrogen fertilization effects on soil organic carbon sequestration in bioenergy croplands. *GCB Bioenergy*, **2021**, 13, 1303-1318	5.6	1

2	A generalist-specialist trade-off between switchgrass cytotypes impacts climate adaptation and geographic range.. *Proceedings of the National Academy of Sciences of the United States of America*, **2022**, 119, e2118879119	11.5	1
1	Nutrient identity modifies the destabilising effects of eutrophication in grasslands.. *Ecology Letters*, **2021**,	10	1