Michael Bahn

List of Publications by Year
in descending order

147 papers	15,488 citations	26567 56 h-index	19136 118 g-index
193 all docs	193 docs citations	193 times ranked	18264 citing authors

#	Article	IF	Citations
1	TRY â€“ a global database of plant traits. Global Change Biology, 2011, 17, 2905-2935.	4.2	2,002
2	Climate extremes and the carbon cycle. Nature, 2013, 500, 287-295.	13.7	1,357
3	TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	4.2	1,038
4	Effects of climate extremes on the terrestrial carbon cycle: concepts, processes and potential future impacts. Global Change Biology, 2015, 21, 2861-2880.	4.2	683
5	Linking stable oxygen and carbon isotopes with stomatal conductance and photosynthetic capacity: a conceptual model. Oecologia, 2000, 125, 350-357.	0.9	517
6	Plant functional trait change across a warming tundra biome. Nature, 2018, 562, 57-62.	13.7	451
7	Which is a better predictor of plant traits: temperature or precipitation?. Journal of Vegetation Science, 2014, 25, 1167-1180.	1.1	323
8	Multiple facets of biodiversity drive the diversityâ€“stability relationship. Nature Ecology and Evolution, 2018, 2, 1579-1587.	3.4	296
9	Carbon allocation and carbon isotope fluxes in the plant-soil-atmosphere continuum: a review. Biogeosciences, 2011, 8, 3457-3489.	1.3	289
10	Soil Respiration in European Grasslands in Relation to Climate and Assimilate Supply. Ecosystems, 2008, 11, 1352-1367.	1.6	276
11	Relative contributions of plant traits and soil microbial properties to mountain grassland ecosystem services. Journal of Ecology, 2013, 101, 47-57.	1.9	265
12	Experimental drought reduces the transfer of recently fixed plant carbon to soil microbes and alters the bacterial community composition in a mountain meadow. New Phytologist, 2014, 201, 916-927.	3.5	261
13	Does photosynthesis affect grassland soilâ€respired CO₂ and its carbon isotope composition on a diurnal timescale?. New Phytologist, 2009, 182, 451-460.	3.5	260
14	Linking plant and ecosystem functional biogeography. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 13697-13702.	3.3	255
15	Towards a Comparable Quantification of Resilience. Trends in Ecology and Evolution, 2018, 33, 251-259.	4.2	253
16	Pulse-labelling trees to study carbon allocation dynamics: a review of methods, current knowledge and future prospects. Tree Physiology, 2012, 32, 776-798.	1.4	223
17	Elevation alters ecosystem properties across temperate treelines globally. Nature, 2017, 542, 91-95.	13.7	200
18	Summer drought alters carbon allocation to roots and root respiration in mountain grassland. New Phytologist, 2015, 205, 1117-1127.	3.5	199

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19	Seasonal and interâ€annual variability of the net ecosystem CO₂ exchange of a temperate mountain grassland: Effects of weather and management. Journal of Geophysical Research, 2008, 113, .	3.3	184
20	Root respiration in temperate mountain grasslands differing in land use. Global Change Biology, 2006, 12, 995-1006.	4.2	174
21	On the â€˜temperature sensitivityâ€™ of soil respiration: Can we use the immeasurable to predict the unknown?. Soil Biology and Biochemistry, 2010, 42, 1653-1656.	4.2	150
22	To replicate, or not to replicate â€“ that is the question: how to tackle nonlinear responses in ecological experiments. Ecology Letters, 2018, 21, 1629-1638.	3.0	146
23	Contribution of above- and below-ground plant traits to the structure and function of grassland soil microbial communities. Annals of Botany, 2014, 114, 1011-1021.	1.4	136
24	Quantifying nighttime ecosystem respiration of a meadow using eddy covariance, chambers and modelling. Agricultural and Forest Meteorology, 2005, 128, 141-162.	1.9	132
25	On the multiâ€temporal correlation between photosynthesis and soil CO₂ efflux: reconciling lags and observations. New Phytologist, 2011, 191, 1006-1017.	3.5	128
26	Biotic, Abiotic, and Management Controls on the Net Ecosystem CO2 Exchange of European Mountain Grassland Ecosystems. Ecosystems, 2008, 11, 1338-1351.	1.6	122
27	Looking deeper into the soil: biophysical controls and seasonal lags of soil CO₂ production and efflux. Ecological Applications, 2010, 20, 1569-1582.	1.8	120
28	Improved representation of plant functional types and physiology in the Joint UK Land Environment Simulator (JULES v4.2) using plant trait information. Geoscientific Model Development, 2016, 9, 2415-2440.	1.3	115
29	Elevated CO ₂ maintains grassland net carbon uptake under a future heat and drought extreme. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6224-6229.	3.3	112
30	Mean annual precipitation predicts primary production resistance and resilience to extreme drought. Science of the Total Environment, 2018, 636, 360-366.	3.9	109
31	Estimation of daytime ecosystem respiration to determine gross primary production of a mountain meadow. Agricultural and Forest Meteorology, 2005, 130, 13-25.	1.9	108
32	Ecological memory of recurrent drought modifies soil processes via changes in soil microbial community. Nature Communications, 2021, 12, 5308.	5.8	108
33	Few multiyear precipitationâ€“reduction experiments find aÂshift in the productivityâ€“precipitation relationship. Global Change Biology, 2016, 22, 2570-2581.	4.2	105
34	Plant carbon allocation in a changing world â€“ challenges and progress: introduction to a Virtual Issue on carbon allocation. New Phytologist, 2020, 227, 981-988.	3.5	105
35	A methodology to derive global maps of leaf traits using remote sensing and climate data. Remote Sensing of Environment, 2018, 218, 69-88.	4.6	104
36	Soil respiration at mean annual temperature predicts annual total across vegetation types and biomes. Biogeosciences, 2010, 7, 2147-2157.	1.3	99

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37	The three major axes of terrestrial ecosystem function. Nature, 2021, 598, 468-472.	13.7	99
38	Land use affects the net ecosystem CO₂ exchange and its components in mountain grasslands. Biogeosciences, 2010, 7, 2297-2309.	1.3	98
39	Interâ€specific variation of the biochemical limitation to photosynthesis and related leaf traits of 30 species from mountain grassland ecosystems under different land use. Plant, Cell and Environment, 1999, 22, 1281-1296.	2.8	94
40	Drought history affects grassland plant and microbial carbon turnover during and after a subsequent drought event. Journal of Ecology, 2016, 104, 1453-1465.	1.9	94
41	Spatial patterns and climate relationships of major plant traits in the New World differ between woody and herbaceous species. Journal of Biogeography, 2018, 45, 895-916.	1.4	92
42	Land use in mountain grasslands alters drought response and recovery of carbon allocation and plantâ€microbial interactions. Journal of Ecology, 2018, 106, 1230-1243.	1.9	90
43	Comparing ecosystem and soil respiration: Review and key challenges of tower-based and soil measurements. Agricultural and Forest Meteorology, 2018, 249, 434-443.	1.9	89
44	Climatic and soil factors explain the two-dimensional spectrum of global plant trait variation. Nature Ecology and Evolution, 2022, 6, 36-50.	3.4	89
45	Connecting the Green and Brown Worlds. Advances in Ecological Research, 2013, 49, 69-175.	1.4	84
46	Responses of belowground carbon allocation dynamics to extended shading in mountain grassland. New Phytologist, 2013, 198, 116-126.	3.5	84
47	Eddy covariance measurements of carbon dioxide, latent and sensible energy fluxes above a meadow on a mountain slope. Boundary-Layer Meteorology, 2007, 122, 397-416.	1.2	83
48	Species richness effects on grassland recovery from drought depend on community productivity in a multisite experiment. Ecology Letters, 2017, 20, 1405-1413.	3.0	82
49	Drought-Induced Accumulation of Root Exudates Supports Post-drought Recovery of Microbes in Mountain Grassland. Frontiers in Plant Science, 2018, 9, 1593.	1.7	80
50	Relationships between functional traits and inorganic nitrogen acquisition among eight contrasting European grass species. Annals of Botany, 2015, 115, 107-115.	1.4	78
51	Catalytic power of enzymes decreases with temperature: New insights for understanding soil C cycling and microbial ecology under warming. Global Change Biology, 2018, 24, 4238-4250.	4.2	75
52	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
53	Denitrifying pathways dominate nitrous oxide emissions from managed grassland during drought and rewetting. Science Advances, 2021, 7, .	4.7	71
54	Impact of land-use change on nitrogen mineralization in subalpine grasslands in the Southern Alps. Biology and Fertility of Soils, 2000, 31, 441-448.	2.3	67

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55	Drought legacies and ecosystem responses to subsequent drought. Global Change Biology, 2022, 28, 5086-5103.	4.2	67
56	Greenhouse gas fluxes over managed grasslands in Central Europe. Global Change Biology, 2018, 24, 1843-1872.	4.2	63
57	Ecosystem fluxes during drought and recovery in an experimental forest. Science, 2021, 374, 1514-1518.	6.0	60
58	A multi-component, multi-species model of vegetationâ€“atmosphere CO2 and energy exchange for mountain grasslands. Agricultural and Forest Meteorology, 2001, 106, 261-287.	1.9	57
59	Robustness of trait connections across environmental gradients and growth forms. Global Ecology and Biogeography, 2019, 28, 1806-1826.	2.7	56
60	Land Use Alters the Drought Responses of Productivity and CO2 Fluxes in Mountain Grassland. Ecosystems, 2018, 21, 689-703.	1.6	55
61	Asymmetric responses of primary productivity to altered precipitation simulated by ecosystem models across three long-term grassland sites. Biogeosciences, 2018, 15, 3421-3437.	1.3	55
62	Winter ecology of a subalpine grassland: Effects of snow removal on soil respiration, microbial structure and function. Science of the Total Environment, 2017, 590-591, 316-324.	3.9	54
63	Global plant trait relationships extend to the climatic extremes of the tundra biome. Nature Communications, 2020, 11, 1351.	5.8	52
64	Effects of drought on nitrogen turnover and abundances of ammonia-oxidizers in mountain grassland. Biogeosciences, 2014, 11, 6003-6015.	1.3	51
65	Climateâ€“biosphere interactions in a more extreme world. New Phytologist, 2014, 202, 356-359.	3.5	51
66	Microbial carbon and nitrogen cycling responses to drought and temperature in differently managed mountain grasslands. Soil Biology and Biochemistry, 2019, 135, 144-153.	4.2	51
67	Climate change alters temporal dynamics of alpine soil microbial functioning and biogeochemical cycling via earlier snowmelt. ISME Journal, 2021, 15, 2264-2275.	4.4	51
68	Rainfall manipulation experiments as simulated by terrestrial biosphere models: Where do we stand?. Global Change Biology, 2020, 26, 3336-3355.	4.2	50
69	Traditional plant functional groups explain variation in economic but not sizeâ€related traits across the tundra biome. Global Ecology and Biogeography, 2019, 28, 78-95.	2.7	49
70	The added value of including key microbial traits to determine nitrogenâ€related ecosystem services in managed grasslands. Journal of Applied Ecology, 2018, 55, 49-58.	1.9	47
71	On the choice of the driving temperature for eddy-covariance carbon dioxide flux partitioning. Biogeosciences, 2012, 9, 5243-5259.	1.3	45
72	A nitrogen sensitive model of leaf carbon dioxide and water vapour gas exchange: application to 13 key species from differently managed mountain grassland ecosystems. Ecological Modelling, 1998, 113, 179-199.	1.2	43

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73	Redefinition and global estimation of basal ecosystem respiration rate. Global Biogeochemical Cycles, 2011, 25, n/a-n/a.	1.9	43
74	Composition and activity of nitrifier communities in soil are unresponsive to elevated temperature and CO2, but strongly affected by drought. ISME Journal, 2020, 14, 3038-3053.	4.4	43
75	Seasonal and spatial variation of woody tissue respiration in a Pinus cembra tree at the alpine timberline in the central Austrian Alps. Trees - Structure and Function, 2004, 18, 576.	0.9	42
76	Disentangling leaf area and environmental effects on the response of the net ecosystem CO₂ exchange to diffuse radiation. Geophysical Research Letters, 2008, 35, .	1.5	40
77	Free and protected soil organic carbon dynamics respond differently to abandonment of mountain grassland. Biogeosciences, 2012, 9, 853-865.	1.3	40
78	Importance of nondiffusive transport for soil CO₂ efflux in a temperate mountain grassland. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 502-512.	1.3	38
79	Predicting habitat affinities of plant species using commonly measured functional traits. Journal of Vegetation Science, 2017, 28, 1082-1095.	1.1	38
80	The imprint of plants on ecosystem functioning: A data-driven approach. International Journal of Applied Earth Observation and Geoinformation, 2015, 43, 119-131.	1.4	37
81	Plant community structure and nitrogen inputs modulate the climate signal on leaf traits. Global Ecology and Biogeography, 2017, 26, 1138-1152.	2.7	37
82	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.	2.2	36
83	Influence of plant traits, soil microbial properties, and abiotic parameters on nitrogen turnover of grassland ecosystems. Ecosphere, 2016, 7, e01448.	1.0	34
84	Patterns in CO2 gas exchange capacity of grassland ecosystems in the Alps. Agricultural and Forest Meteorology, 2008, 148, 51-68.	1.9	33
85	A systemic overreaction to years versus decades of warming in a subarctic grassland ecosystem. Nature Ecology and Evolution, 2020, 4, 101-108.	3.4	33
86	Warming and elevated CO₂ intensify drought and recovery responses of grassland carbon allocation to soil respiration. Global Change Biology, 2021, 27, 3230-3243.	4.2	33
87	ECOMONT: a combined approach of field measurements and process-based modelling for assessing effects of land-use changes in mountain landscapes. Ecological Modelling, 1998, 113, 167-178.	1.2	32
88	Circadian rhythms have significant effects on leaf-to-canopy scale gas exchange under field conditions. GigaScience, 2016, 5, 43.	3.3	31
89	Drought and recovery effects on belowground respiration dynamics and the partitioning of recent carbon in managed and abandoned grassland. Global Change Biology, 2020, 26, 4366-4378.	4.2	31
90	Microbial growth and carbon use efficiency show seasonal responses in a multifactorial climate change experiment. Communications Biology, 2020, 3, 584.	2.0	30

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91	Field experiments underestimate aboveground biomass response to drought. Nature Ecology and Evolution, 2022, 6, 540-545.	3.4	30
92	Potential and limitations of inferring ecosystem photosynthetic capacity from leaf functional traits. Ecology and Evolution, 2016, 6, 7352-7366.	0.8	29
93	Relationships between plantâ€“soil feedbacks and functional traits. Journal of Ecology, 2021, 109, 3411-3423.	1.9	29
94	Advancing the Understanding of Adaptive Capacity of Socialâ€Ecological Systems to Absorb Climate Extremes. Earth's Future, 2020, 8, e2019EF001221.	2.4	28
95	Title is missing!. Pirineos, 1996, 147-148, 145-172.	0.6	28
96	Soil properties as key predictors of global grassland production: Have we overlooked micronutrients?. Ecology Letters, 2021, 24, 2713-2725.	3.0	28
97	Canopy structure versus physiology effects on net photosynthesis of mountain grasslands differing in land use. Ecological Modelling, 2003, 170, 407-426.	1.2	27
98	Influences of changing land use and CO2 concentration on ecosystem and landscape level carbon and water balances in mountainous terrain of the Stubai Valley, Austria. Global and Planetary Change, 2009, 67, 29-43.	1.6	27
99	Vegetation effects on the water balance of mountain grasslands depend on climatic conditions. Ecohydrology, 2015, 8, 552-569.	1.1	25
100	Contrasting drivers of belowground nitrogen cycling in a montane grassland exposed to a multifactorial global change experiment with elevated CO₂, warming, and drought. Global Change Biology, 2022, 28, 2425-2441.	4.2	25
101	Landâ€use change in subalpine grassland soils: Effect on particulate organic carbon fractions and aggregation. Journal of Plant Nutrition and Soil Science, 2012, 175, 401-409.	1.1	24
102	Night and day â€“ Circadian regulation of night-time dark respiration and light-enhanced dark respiration in plant leaves and canopies. Environmental and Experimental Botany, 2017, 137, 14-25.	2.0	23
103	A model of whole plant gas exchange for herbaceous species from mountain grassland sites differing in land use. Ecological Modelling, 2000, 125, 173-201.	1.2	22
104	Experimental assessment of the contribution of plant root respiration to the emission of carbon dioxide from the soil. Eurasian Soil Science, 2010, 43, 1373-1381.	0.5	22
105	Does the leaf economic spectrum hold within plant functional types? A Bayesian multivariate trait metaâ€analysis. Ecological Applications, 2020, 30, e02064.	1.8	22
106	Effects of Land-Use Changes on Sources, Sinks and Fluxes of Carbon in European Mountain Grasslands. Ecosystems, 2008, 11, 1335-1337.	1.6	21
107	Drought soil legacy alters drivers of plant diversity-productivity relationships in oldfield systems. Science Advances, 2022, 8, eabn3368.	4.7	21
108	Respiratory fluxes in a Canary Islands pine forest. Tree Physiology, 2009, 29, 457-466.	1.4	20

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109	Soil Carbon and Nitrogen Turnover at and below the Elevational Treeline in Northern Fennoscandia. Arctic and Alpine Research, 1991, 23, 279.	1.3	19
110	Decomposing the land-use specific response of plant functional traits along environmental gradients. Science of the Total Environment, 2017, 599-600, 750-759.	3.9	19
111	Climatic and evolutionary contexts are required to infer plant life history strategies from functional traits at a global scale. Ecology Letters, 2021, 24, 970-983.	3.0	19
112	Management versus site effects on the abundance of nitrifiers and denitrifiers in European mountain grasslands. Science of the Total Environment, 2019, 648, 745-753.	3.9	18
113	A multisite analysis of temporal random errors in soil CO₂ efflux. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 737-751.	1.3	17
114	Designing an experiment with quantitative treatment factors to study the effects of climate change. Journal of Agronomy and Crop Science, 2017, 203, 584-592.	1.7	17
115	Determination of root and microbial contributions to the CO2 emission from soil by the substrate-induced respiration method. Eurasian Soil Science, 2010, 43, 321-327.	0.5	16
116	Prediction of annual soil respiration from its flux at mean annual temperature. Agricultural and Forest Meteorology, 2020, 287, 107961.	1.9	16
117	Land-use and abandonment alters methane and nitrous oxide fluxesÂinÂmountain grasslands. Science of the Total Environment, 2018, 628-629, 997-1008.	3.9	15
118	The Use of the Ratio between the Photosynthesis Parameters Pmland Vcmaxfor Scaling up Photosynthesis of C3Plants from Leaves to Canopies: A Critical Examination of Different Modelling Approaches. Journal of Theoretical Biology, 1999, 200, 163-181.	0.8	14
119	Trace gas fluxes from managed grassland soil subject to multifactorial climate change manipulation. Applied Soil Ecology, 2019, 137, 1-11.	2.1	14
120	Post-drought rewetting triggers substantial K release and shifts in leaf stoichiometry in managed and abandoned mountain grasslands. Plant and Soil, 2020, 448, 353-368.	1.8	14
121	Different functional characteristics can explain different dimensions of plant invasion success. Journal of Ecology, 2021, 109, 1524-1536.	1.9	14
122	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
123	Long-term warming reduced microbial biomass but increased recent plant-derived C in microbes of a subarctic grassland. Soil Biology and Biochemistry, 2022, 167, 108590.	4.2	12
124	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
125	Short-term carbon allocation dynamics in subalpine dwarf shrubs and their responses to experimental summer drought. Environmental and Experimental Botany, 2017, 141, 92-102.	2.0	10
126	Responses of grassland soil CO2 production and fluxes to drought are shifted in a warmer climate under elevated CO2. Soil Biology and Biochemistry, 2021, 163, 108436.	4.2	10

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127	Shrub expansion modulates belowground impacts of changing snow conditions in alpine grasslands. Ecology Letters, 2022, 25, 52-64.	3.0	10
128	Negative priming of soil organic matter following long-term in situ warming of sub-arctic soils. Geoderma, 2022, 410, 115652.	2.3	10
129	Effects of land use and climate on carbon and nitrogen pool partitioning in European mountain grasslands. Science of the Total Environment, 2022, 822, 153380.	3.9	10
130	Drought-induced reduction in uptake of recently photosynthesized carbon by springtails and mites in alpine grassland. Soil Biology and Biochemistry, 2012, 55, 37-39.	4.2	9
131	Accounting for Complexity in Resilience Comparisons: A Reply to Yeung and Richardson, and Further Considerations. Trends in Ecology and Evolution, 2018, 33, 649-651.	4.2	9
132	Glacier forelands reveal fundamental plant and microbial controls on shortâ€term ecosystem nitrogen retention. Journal of Ecology, 2021, 109, 3710-3723.	1.9	9
133	Branch water uptake and redistribution in two conifers at the alpine treeline. Scientific Reports, 2021, 11, 22560.	1.6	9
134	Preface: Climate extremes and biogeochemical cycles in the terrestrial biosphere: impacts and feedbacks across scales. Biogeosciences, 2015, 12, 4827-4830.	1.3	8
135	Circadian Regulation Does Not Optimize Stomatal Behaviour. Plants, 2020, 9, 1091.	1.6	8
136	A hierarchical, multivariate metaâ€analysis approach to synthesising global change experiments. New Phytologist, 2021, 231, 2382-2394.	3.5	8
137	Synthesis: emerging issues and challenges for an integrated understanding of soil carbon fluxes. , 2010, , 257-271.		7
138	Circadian rhythms regulate the environmental responses of net CO2 exchange in bean and cotton canopies. Agricultural and Forest Meteorology, 2017, 239, 185-191.	1.9	6
139	Preface "Stable Isotopes and Biogeochemical Cycles in Terrestrial Ecosystems''. Biogeosciences, 2012, 9, 3979-3981.	1.3	5
140	Artificial Top Soil Drought Hardly Affects Water Use of Picea abies and Larix decidua Saplings at the Treeline in the Austrian Alps. Forests, 2019, 10, 777.	0.9	5
141	Disentangling climate from soil nutrient effects on plant biomass production using a multispecies phytometer. Ecosphere, 2021, 12, e03719.	1.0	5
142	The â€˜Gas-Snakeâ€™: Design and validation of a versatile membrane-based gas flux measurement system in a grassland soil respiration study. Agricultural and Forest Meteorology, 2012, 154-155, 166-173.	1.9	4
143	Long-Term Socio-ecological Research in Mountain Regions: Perspectives from the Tyrolean Alps. , 2013, , 505-525.		4
144	Amplifying effects of recurrent drought on the dynamics of tree growth and water use in a subalpine forest. Plant, Cell and Environment, 2022, 45, 2617-2635.	2.8	3

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145	Preface "Biotic interactions and biogeochemical processes in the soil environment". Biogeosciences, 2012, 9, 1823-1825.	1.3	2
146	Adaptive capacity of coupled social-ecological systems to absorb climate extremes. , 2020, , 257-278.		1
147	Looking deeper into the soil: biophysical controls and seasonal lags of soil CO₂production and efflux across multiple vegetation types. , 2010, 20, 100319061507001.		1