Lawrence B Flanagan

List of Publications by Year
in descending order

115 papers	12,354 citations	19657 61 h-index	28297 105 g-index
117 all docs	117 docs citations	117 times ranked	11030 citing authors

#	Article	IF	Citations
1	CARBON ISOTOPE RATIOS IN BELOWGROUND CARBON CYCLE PROCESSES. , 2000, 10, 412-422.		654
2	Evaluation of remote sensing based terrestrial productivity from MODIS using regional tower eddy flux network observations. IEEE Transactions on Geoscience and Remote Sensing, 2006, 44, 1908-1925.	6.3	562
3	Climate change and the evolution of C4 photosynthesis. Trends in Ecology and Evolution, 1991, 6, 95-99.	8.7	494
4	Seasonal and interannual variation in carbon dioxide exchange and carbon balance in a northern temperate grassland. Global Change Biology, 2002, 8, 599-615.	9.5	474
5	A multi-site analysis of random error in tower-based measurements of carbon and energy fluxes. Agricultural and Forest Meteorology, 2006, 136, 1-18.	4.8	398
6	Vegetation effects on the isotope composition of oxygen in atmospheric CO2. Nature, 1993, 363, 439-443.	27.8	374
7	Comparison of Modeled and Observed Environmental Influences on the Stable Oxygen and Hydrogen Isotope Composition of Leaf Water in Phaseolus vulgaris L.. Plant Physiology, 1991, 96, 588-596.	4.8	369
8	A new model of gross primary productivity for North American ecosystems based solely on the enhanced vegetation index and land surface temperature from MODIS. Remote Sensing of Environment, 2008, 112, 1633-1646.	11.0	364
9	Interacting effects of temperature, soil moisture and plant biomass production on ecosystem respiration in a northern temperate grassland. Agricultural and Forest Meteorology, 2005, 130, 237-253.	4.8	307
10	Seasonal and interannual variation in evapotranspiration, energy balance and surface conductance in a northern temperate grassland. Agricultural and Forest Meteorology, 2002, 112, 31-49.	4.8	271
11	On the use of MODIS EVI to assess gross primary productivity of North American ecosystems. Journal of Geophysical Research, 2006, 111, .	3.3	267
12	Joint control of terrestrial gross primary productivity by plant phenology and physiology. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 2788-2793.	7.1	265
13	A modelâ€data intercomparison of CO₂ exchange across North America: Results from the North American Carbon Program site synthesis. Journal of Geophysical Research, 2010, 115, .	3.3	247
14	Comparison of ecosystem water-use efficiency among Douglas-fir forest, aspen forest and grassland using eddy covariance and carbon isotope techniques. Global Change Biology, 2006, 12, 294-310.	9.5	228
15	How climate and vegetation type influence evapotranspiration and water use efficiency in Canadian forest, peatland and grassland ecosystems. Agricultural and Forest Meteorology, 2012, 153, 14-30.	4.8	224
16	Carbon isotope composition of boreal plants: functional grouping of life forms. Oecologia, 1997, 110, 301-311.	2.0	212
17	Differential uptake of summer precipitation among co-occurring trees and shrubs in a pinyon-juniper woodland. Plant, Cell and Environment, 1992, 15, 831-836.	5.7	211
18	Separating Soil Respiration into Plant and Soil Components Using Analyses of the Natural Abundance of Carbonâ€13. Soil Science Society of America Journal, 1999, 63, 1207-1213.	2.2	194

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19	Effect of changes in water content on photosynthesis, transpiration and discrimination against 13CO2 and C18O16O in Pleurozium and Sphagnum. Oecologia, 1996, 108, 38-46.	2.0	188
20	The uncertain climate footprint of wetlands under human pressure. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 4594-4599.	7.1	171
21	Quantifying Rhizosphere Respiration in a Corn Crop under Field Conditions. Soil Science Society of America Journal, 1997, 61, 466-474.	2.2	161
22	Productivity of North American grasslands is increased under future climate scenarios despite rising aridity. Nature Climate Change, 2016, 6, 710-714.	18.8	153
23	Variability in exchange of CO₂ across 12 northern peatland and tundra sites. Global Change Biology, 2010, 16, 2436-2448.	9.5	144
24	Integration of CO2 flux and remotely-sensed data for primary production and ecosystem respiration analyses in the Northern Great Plains: potential for quantitative spatial extrapolation. Global Ecology and Biogeography, 2005, 14, 271-292.	5.8	139
25	Interannual variation of evapotranspiration from forest and grassland ecosystems in western canada in relation to drought. Agricultural and Forest Meteorology, 2010, 150, 1476-1484.	4.8	139
26	Carbon isotope discrimination during photosynthesis and the isotope ratio of respired CO2in boreal forest ecosystems. Global Biogeochemical Cycles, 1996, 10, 629-640.	4.9	137
27	Climate control of terrestrial carbon exchange across biomes and continents. Environmental Research Letters, 2010, 5, 034007.	5.2	137
28	Stimulation of both photosynthesis and respiration in response to warmer and drier conditions in a boreal peatland ecosystem. Global Change Biology, 2011, 17, 2271-2287.	9.5	137
29	The stable carbon and nitrogen isotopic composition of vegetation in tropical forests of the Amazon Basin, Brazil. Biogeochemistry, 2006, 79, 251-274.	3.5	134
30	On the temporal upscaling of evapotranspiration from instantaneous remote sensing measurements to 8-day mean daily-sums. Agricultural and Forest Meteorology, 2012, 152, 212-222.	4.8	121
31	Comparing simple respiration models for eddy flux and dynamic chamber data. Agricultural and Forest Meteorology, 2006, 141, 219-234.	4.8	120
32	Measuring and modelling environmental influences on photosynthetic gas exchange in Sphagnum and Pleurozium. Plant, Cell and Environment, 1998, 21, 555-564.	5.7	114
33	Midday values of gross CO2 flux and light use efficiency during satellite overpasses can be used to directly estimate eight-day mean flux. Agricultural and Forest Meteorology, 2005, 131, 1-12.	4.8	114
34	Environmental control of net ecosystem CO2 exchange in a treed, moderately rich fen in northern Alberta. Agricultural and Forest Meteorology, 2006, 140, 97-114.	4.8	111
35	Photosynthetic light use efficiency of three biomes across an eastâ€“west continental-scale transect in Canada. Agricultural and Forest Meteorology, 2006, 140, 269-286.	4.8	107
36	Increasing contribution of peatlands to boreal evapotranspiration in a warming climate. Nature Climate Change, 2020, 10, 555-560.	18.8	106

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37	Responses of boreal conifers to climate fluctuations: indications from tree-ring widths and carbon isotope analyses. Canadian Journal of Forest Research, 1998, 28, 524-533.	1.7	102
38	Vertical gradients in photosynthetic gas exchange characteristics and refixation of respired CO2 within boreal forest canopies. Tree Physiology, 1997, 17, 1-12.	3.1	99
39	Ecosystem-atmosphere CO2 exchange: interpreting signals of change using stable isotope ratios. Trends in Ecology and Evolution, 1998, 13, 10-14.	8.7	98
40	Summer carbon dioxide and water vapor fluxes across a range of northern peatlands. Journal of Geophysical Research, 2006, 111, .	3.3	96
41	Warmer and drier conditions stimulate respiration more than photosynthesis in a boreal peatland ecosystem: Analysis of automatic chambers and eddy covariance measurements. Plant, Cell and Environment, 2010, 33, 394-407.	5.7	93
42	Late-summer carbon fluxes from Canadian forests and peatlands along an eastÂ–west continental transect. Canadian Journal of Forest Research, 2006, 36, 783-800.	1.7	91
43	Molecular and carbon isotopic composition of leaf wax in vegetation and aerosols in a northern prairie ecosystem. Oecologia, 2003, 135, 67-77.	2.0	87
44	Maize Residue Decomposition Measurement Using Soil Surface Carbon Dioxide Fluxes and Natural Abundance of Carbonâ€13. Soil Science Society of America Journal, 1999, 63, 1385-1396.	2.2	86
45	Discrimination against C18O16O during photosynthesis and the oxygen isotope ratio of respired CO2in boreal forest ecosystems. Global Biogeochemical Cycles, 1997, 11, 83-98.	4.9	85
46	Photosynthesis, chlorophyll fluorescence and spectral reflectance in Sphagnum moss at varying water contents. Oecologia, 2007, 153, 19-28.	2.0	84
47	Stable oxygen and hydrogen isotope composition of leaf water in C3 and C4 plant species under field conditions. Oecologia, 1991, 88, 394-400.	2.0	83
48	Seasonal and successional changes in light quality and quantity in the understory of boreal forest ecosystems. Canadian Journal of Botany, 1986, 64, 2792-2799.	1.1	82
49	Leaf Î´13 C in Pinus resinosa trees and understory plants: variation associated with light and CO 2 gradients. Oecologia, 1997, 109, 499-506.	2.0	82
50	Photosynthetic Gas Exchange and Discrimination against 13CO2 and C18O16O in Tobacco Plants Modified by an Antisense Construct to Have Low Chloroplastic Carbonic Anhydrase. Plant Physiology, 1996, 112, 319-326.	4.8	81
51	Genetic variation in growth, carbon isotope discrimination, and foliar N concentration in Picea mariana: analyses from a half-diallel mating design using field-grown trees. Canadian Journal of Forest Research, 1999, 29, 1727-1735.	1.7	81
52	Variation in the carbon and oxygen isotope composition of plant biomass and its relationship to waterâ€use efficiency at the leafâ€and ecosystemâ€scales in a northern <scp>G</scp>reat <scp>P</scp>lains grassland. Plant, Cell and Environment, 2014, 37, 425-438.	5.7	81
53	Environmental regulation of carbon dioxide exchange at the forest floor in a boreal black spruce ecosystem. Agricultural and Forest Meteorology, 2001, 108, 165-181.	4.8	79
54	CO₂ fluxes at northern fens and bogs have opposite responses to interâ€annual fluctuations in water table. Geophysical Research Letters, 2010, 37, .	4.0	79

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55	Stocks, Chemistry, and Sensitivity to Climate Change of Dead Organic Matter Along the Canadian Boreal Forest Transect Case Study. Climatic Change, 2006, 74, 223-251.	3.6	78
56	Genetic variation in carbon isotope discrimination and its relationship to growth under field conditions in full-sib families of Piceamariana. Canadian Journal of Forest Research, 1995, 25, 39-47.	1.7	77
57	Assessing eddy-covariance flux tower location bias across the Fluxnet-Canada Research Network based on remote sensing and footprint modelling. Agricultural and Forest Meteorology, 2011, 151, 87-100.	4.8	75
58	Characterizing spatial representativeness of flux tower eddy-covariance measurements across the Canadian Carbon Program Network using remote sensing and footprint analysis. Remote Sensing of Environment, 2012, 124, 742-755.	11.0	75
59	Characterizing the performance of ecosystem models across time scales: A spectral analysis of the North American Carbon Program site-level synthesis. Journal of Geophysical Research, 2011, 116, .	3.3	72
60	Carbon isotope discrimination in forest and pasture ecosystems of the Amazon Basin, Brazil. Global Biogeochemical Cycles, 2002, 16, 56-1-56-10.	4.9	69
61	Comparison of net ecosystem CO2 exchange in two peatlands in western Canada with contrasting dominant vegetation, Sphagnum and Carex. Agricultural and Forest Meteorology, 2006, 140, 115-135.	4.8	65
62	Diurnal and seasonal variation in methane emissions in a northern Canadian peatland measured by eddy covariance. Global Change Biology, 2010, 16, 2420-2435.	9.5	64
63	Interacting controls on productivity in a northern Great Plains grassland and implications for response to ENSO events. Global Change Biology, 2011, 17, 3293-3311.	9.5	63
64	Response of plant biomass and soil respiration to experimental warming and precipitation manipulation in a Northern Great Plains grassland. Agricultural and Forest Meteorology, 2013, 173, 40-52.	4.8	63
65	Effects of Mild Water Stress and Diurnal Changes in Temperature and Humidity on the Stable Oxygen and Hydrogen Isotopic Composition of Leaf Water in Cornus stolonifera L.. Plant Physiology, 1991, 97, 298-305.	4.8	62
66	The Fluxnet-Canada Research Network: Influence of climate and disturbance on carbon cycling in forests and peatlands. Agricultural and Forest Meteorology, 2006, 140, 1-5.	4.8	62
67	Contrasting responses of growing season ecosystem CO₂exchange to variation in temperature and water table depth in two peatlands in northern Alberta, Canada. Journal of Geophysical Research, 2011, 116, .	3.3	60
68	Stable Isotopes and Carbon Cycle Processes in Forests and Grasslands. Plant Biology, 2002, 4, 181-189.	3.8	59
69	Characterization and Summary of the 1999â€“2005 Canadian Prairie Drought. Atmosphere - Ocean, 2011, 49, 421-452.	1.6	59
70	Environmental and Biological Influences on the Stable Oxygen and Hydrogen Isotopic Composition of Leaf Water. , 1993, , 71-90.		55
71	Decomposition, Î´¹³C, and the â€œlignin paradoxâ€• Canadian Journal of Soil Science, 2006, 86, 235-245.	1.2	53
72	SpecNet revisited: bridging flux and remote sensing communities. Canadian Journal of Remote Sensing, 2010, 36, S376-S390.	2.4	53

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73	Impact of hydrological variations on modeling of peatland CO₂ fluxes: Results from the North American Carbon Program site synthesis. Journal of Geophysical Research, 2012, 117, .	3.3	50
74	Modelling environmental controls on ecosystem photosynthesis and the carbon isotope composition of ecosystemâ€respired CO₂ in a coastal Douglasâ€fir forest. Plant, Cell and Environment, 2008, 31, 435-453.	5.7	49
75	Effect of Changes in Leaf Water Oxygen Isotopic Composition on Discrimination Against C18O16O During Photosynthetic Gas Exchange. Functional Plant Biology, 1994, 21, 221.	2.1	49
76	Stomatal limitation of photosynthesis and reduced growth of the halophyte, Plantago maritima L., at high salinity. Plant, Cell and Environment, 1988, 11, 239-245.	5.7	47
77	Distributed Plant Hydraulic and Hydrological Modeling to Understand the Susceptibility of Riparian Woodland Trees to Droughtâ€induced Mortality. Water Resources Research, 2018, 54, 4901-4915.	4.2	43
78	ORCHIDEE-PEAT (revision 4596), a model for northern peatland CO₂, water, and energy fluxes on daily to annual scales. Geoscientific Model Development, 2018, 11, 497-519.	3.6	43
79	Photosynthetic gas exchange and the stable isotope composition of leaf water: comparison of a xylem-tapping mistletoe and its host. Plant, Cell and Environment, 1993, 16, 623-631.	5.7	42
80	Photosynthesis and carbon isotope discrimination in boreal forest ecosystems: A comparison of functional characteristics in plants from three mature forest types. Journal of Geophysical Research, 1997, 102, 28861-28869.	3.3	40
81	Modeling stomatal and nonstomatal effects of water deficits on CO₂ fixation in a semiarid grassland. Journal of Geophysical Research, 2007, 112, .	3.3	39
82	Measuring and modeling ecosystem photosynthesis and the carbon isotope composition of ecosystem-respired CO2 in three boreal coniferous forests. Agricultural and Forest Meteorology, 2012, 153, 165-176.	4.8	37
83	Spatial and temporal variation in the carbon and oxygen stable isotope ratio of respired CO2 in a boreal forest ecosystem. Tellus, Series B: Chemical and Physical Meteorology, 1999, 51, 367-384.	1.6	36
84	Effect of increased salinity on CO2 assimilation, O2 evolution and the ?13C values of leaves of Plantago maritima L. developed at low and high NaCl levels. Planta, 1989, 178, 377-384.	3.2	35
85	Influence of vegetation and soil CO2 exchange on the concentration and stable oxygen isotope ratio of atmospheric CO2 within a Pinus resinosa canopy. Oecologia, 1995, 101, 37-44.	2.0	34
86	Spatial and temporal variation in the carbon and oxygen stable isotope ratio of respired CO2 in a boreal forest ecosystem*. Tellus, Series B: Chemical and Physical Meteorology, 1999, 51, 367-384.	1.6	33
87	Flowering phenology, floral display and reproductive success in dioecious, Aralia nudicaulis L. (Araliaceae). Oecologia, 1985, 68, 23-28.	2.0	31
88	The biophysical climate mitigation potential of boreal peatlands during the growing season. Environmental Research Letters, 2020, 15, 104004.	5.2	31
89	Photosynthetic and stomatal responses of the halophyte,Plantago maritima L. to fluctuations in salinity. Plant, Cell and Environment, 1989, 12, 559-568.	5.7	30
90	Environmental controls on the carbon isotope composition of ecosystem-respired CO2 in contrasting forest ecosystems in Canada and the USA. Tree Physiology, 2007, 27, 1361-1374.	3.1	29

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91	Multiple processes contribute to methane emission in a riparian cottonwood forest ecosystem. New Phytologist, 2021, 229, 1970-1982.	7.3	29
92	Do ²H and ¹⁸O in leaf water reflect environmental drivers differently?. New Phytologist, 2022, 235, 41-51.	7.3	29
93	Water use in a riparian cottonwood ecosystem: Eddy covariance measurements and scaling along a river corridor. Agricultural and Forest Meteorology, 2017, 232, 332-348.	4.8	28
94	Variation in water potential, hydraulic characteristics and water source use in montane Douglas-fir and lodgepole pine trees in southwestern Alberta and consequences for seasonal changes in photosynthetic capacity. Tree Physiology, 2012, 32, 146-160.	3.1	26
95	Climate impact on net ecosystem productivity of a semi-arid natural grassland: modeling and measurement. Agricultural and Forest Meteorology, 2004, 126, 99-116.	4.8	25
96	Phenology and its role in carbon dioxide exchange processes in northern peatlands. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 1370-1384.	3.0	24
97	Application of the photosynthetic light-use efficiency model in a northern Great Plains grassland. Remote Sensing of Environment, 2015, 168, 239-251.	11.0	23
98	Using stable isotopes to quantify water sources for trees and shrubs in a riparian cottonwood ecosystem in flood and drought years. Hydrological Processes, 2019, 33, 3070-3083.	2.6	23
99	Controls on ecosystem water-use and water-use efficiency: Insights from a comparison between grassland and riparian forest in the northern Great Plains. Agricultural and Forest Meteorology, 2019, 271, 22-32.	4.8	20
100	Convergence of potential net ecosystem production among contrasting C₃ grasslands. Ecology Letters, 2013, 16, 502-512.	6.4	19
101	Modelling CO2 and energy exchanges in a northern semiarid grassland using the carbon- and nitrogen-coupled Canadian Land Surface Scheme (C-CLASS). Ecological Modelling, 2005, 181, 591-614.	2.5	18
102	Anisotropic reflectance effects on spectral indices for estimating ecophysiological parameters using a portable goniometer system. Canadian Journal of Remote Sensing, 2010, 36, S355-S364.	2.4	15
103	Unusually low carbon isotope ratios in plants from hanging gardens in southern Utah. Oecologia, 1997, 111, 481-489.	2.0	13
104	Phenology of Plant Production in the Northwestern Great Plains: Relationships with Carbon Isotope Discrimination, Net Ecosystem Productivity and Ecosystem Respiration. , 2009, , 169-185.		10
105	Lateral subsurface flow modulates forest mortality risk to future climate and elevated CO₂. Environmental Research Letters, 2021, 16, 084015.	5.2	10
106	Assessing methane emissions for northern peatlands in ORCHIDEE-PEAT revision 7020. Geoscientific Model Development, 2022, 15, 2813-2838.	3.6	8
107	Pattern of ¹⁴C assimilate distribution in a clonal herb, Aralia nudicaulis. Canadian Journal of Botany, 1985, 63, 2111-2114.	1.1	6
108	Seasonal controls on ecosystem-scale CO2 and energy exchange in a Sonoran Desert characterized by the saguaro cactus (Carnegiea gigantea). Oecologia, 2018, 187, 977-994.	2.0	6

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109	The stable carbon and nitrogen isotopic composition of vegetation in tropical forests of the Amazon Basin, Brazil. , 2006, , 251-274.		6
110	Ecosystem CO2 Exchange and Variation in the Î´18O of Atmospheric CO2. , 2005, , 171-181.		5
111	Riparian Cottonwood Trees and Adjacent River Sediments Have Different Microbial Communities and Produce Methane With Contrasting Carbon Isotope Compositions. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	4
112	Productivity of riparian Populus forests: Satellite assessment along a prairie river with an environmental flow regime. Ecosphere, 2022, 13, .	2.2	4
113	Coupled eco-hydrology and biogeochemistry algorithms enable the simulation of water table depth effects on boreal peatland net CO₂ exchange. Biogeosciences, 2017, 14, 5507-5531.	3.3	3
114	Interacting Controls on Ecosystem Photosynthesis and Respiration in Contrasting Peatland Ecosystems. Advances in Photosynthesis and Respiration, 2014, , 253-267.	1.0	3
115	Interspecific differences in photosynthetic gas exchange characteristics and acclimation to soil moisture stress among shrubs of a semiarid grassland. Ecoscience, 2009, 16, 125-137.	1.4	2