James M Waddington

List of Publications by Year
in descending order

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118 papers	6,187 citations	57631 44 h-index	79541 73 g-index
126 all docs	126 docs citations	126 times ranked	4226 citing authors

#	Article	IF	Citations
1	Ecohydrological controls on lichen and moss CO₂ exchange in rock barrens turtle nesting habitat. Ecohydrology, 2021, 14, .	1.1	2
2	Environmental drivers of Sphagnum growth in peatlands across the Holarctic region. Journal of Ecology, 2021, 109, 417-431.	1.9	32
3	Mapping smouldering fire potential in boreal peatlands and assessing interactions with the wildlandâ€“human interface in Alberta, Canada. International Journal of Wildland Fire, 2021, 30, 552-563.	1.0	6
4	The influence of system heterogeneity on peat-surface temperature dynamics. Environmental Research Letters, 2021, 16, 024002.	2.2	3
5	Peat depth as a control onSphagnummoisture stress during seasonal drought. Hydrological Processes, 2021, 35, e14117.	1.1	9
6	Regulation of peatland evaporation following wildfire; the complex control of soil tension under dynamic evaporation demand. Hydrological Processes, 2021, 35, e14132.	1.1	5
7	Scientists' warning on extreme wildfire risks to water supply. Hydrological Processes, 2021, 35, e14086.	1.1	51
8	Multi-scale Assessment of Rock Barrens Turtle Nesting Habitat: Effects of Moisture and Temperature on Hatch Success. Ichthyology and Herpetology, 2021, 109, .	0.3	2
9	Threshold peat burn severity breaks evaporationâ€limiting feedback. Ecohydrology, 2020, 13, e2168.	1.1	16
10	Ecosystem scale evapotranspiration and CO₂ exchange in burned and unburned peatlands: Implications for the ecohydrological resilience of carbon stocks to wildfire. Ecohydrology, 2020, 13, e2189.	1.1	14
11	Initial Effects of Wildfire on Freshwater Turtle Nesting Habitat. Journal of Wildlife Management, 2020, 84, 1373-1383.	0.7	10
12	Spatial Heterogeneity of Surface Topography in Peatlands: Assessing Overwintering Habitat Availability for the Eastern Massasauga Rattlesnake. Wetlands, 2020, 40, 2337-2349.	0.7	4
13	Increasing contribution of peatlands to boreal evapotranspiration in a warming climate. Nature Climate Change, 2020, 10, 555-560.	8.1	106
14	Temporal variability of overwintering conditions for a species-at-risk snake: Implications for climate change and habitat management. Global Ecology and Conservation, 2020, 22, e00923.	1.0	4
15	Seismic Lines in Treed Boreal Peatlands as Analogs for Wildfire Fuel Modification Treatments. Fire, 2020, 3, 21.	1.2	11
16	Primary Drivers of Reptile Overwintering Habitat Suitability: Integrating Wetland Ecohydrology and Spatial Complexity. BioScience, 2020, 70, 597-609.	2.2	6
17	Hydrophobicity of peat soils: Characterization of organic compound changes associated with heat-induced water repellency. Science of the Total Environment, 2020, 714, 136444.	3.9	28
18	Shallow peat is most vulnerable to high peat burn severity during wildfire. Environmental Research Letters, 2020, 15, 104032.	2.2	21

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19	The biophysical climate mitigation potential of boreal peatlands during the growing season. Environmental Research Letters, 2020, 15, 104004.	2.2	31
20	Increased Peatland Nutrient Availability Following the Fort McMurray Horse River Wildfire. Diversity, 2019, 11, 142.	0.7	11
21	Controls on soil carbon dioxide and methane fluxes from a peat swamp vary by hydrogeomorphic setting. Ecohydrology, 2019, 12, e2162.	1.1	12
22	Validity of managing peatlands with fire. Nature Geoscience, 2019, 12, 884-885.	5.4	9
23	Hydraulic redistribution and hydrological controls on aspen transpiration and establishment in peatlands following wildfire. Hydrological Processes, 2019, 33, 2714-2728.	1.1	7
24	Postfire Soil Carbon Accumulation Does Not Recover Boreal Peatland Combustion Loss in Some Hydrogeological Settings. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 775-788.	1.3	23
25	Severe wildfire exposes remnant peat carbon stocks to increased post-fire drying. Scientific Reports, 2019, 9, 3727.	1.6	17
26	Assessing the peatland hummockâ€“hollow classification framework using high-resolution elevation models: implications for appropriate complexity ecosystem modeling. Biogeosciences, 2019, 16, 3491-3506.	1.3	18
27	Assessing Drivers of Cross-Scale Variability in Peat Smoldering Combustion Vulnerability in Forested Boreal Peatlands. Frontiers in Forests and Global Change, 2019, 2, .	1.0	15
28	Hydrological and thermal properties of moss and lichen species on rock barrens: Implications for turtle nesting habitat. Ecohydrology, 2019, 12, e2057.	1.1	12
29	Disturbance Impacts on Thermal Hot Spots and Hot Moments at the Peatlandâ€Atmosphere Interface. Geophysical Research Letters, 2018, 45, 185-193.	1.5	8
30	Did enhanced afforestation cause high severity peat burn in the Fort McMurray Horse River wildfire?. Environmental Research Letters, 2018, 13, 014018.	2.2	41
31	Delineating boreal plains bog margin ecotones across hydrogeological settings for wildfire risk management. Wetlands Ecology and Management, 2018, 26, 1037-1046.	0.7	15
32	Environmental and taxonomic controls of carbon and oxygen stable isotope composition in <i>Sphagnum</i> across broad climatic and geographic ranges. Biogeosciences, 2018, 15, 5189-5202.	1.3	25
33	Effect of hydrogeomorphic setting on calcareous fen hydrology. Hydrological Processes, 2018, 32, 1695-1708.	1.1	6
34	Multi-decadal Changes in Water Table Levels Alter Peatland Carbon Cycling. Ecosystems, 2017, 20, 1042-1057.	1.6	35
35	Low Evapotranspiration Enhances the Resilience of Peatland Carbon Stocks to Fire. Geophysical Research Letters, 2017, 44, 9341-9349.	1.5	21
36	Landscape controls on longâ€term runoff in subhumid heterogeneous Boreal Plains catchments. Hydrological Processes, 2017, 31, 2737-2751.	1.1	53

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37	Peat depth as a control on moss water availability under evaporative stress. Hydrological Processes, 2017, 31, 4107-4121.	1.1	14
38	Utikuma Region Study Area (URSA) â€“ Part 1: Hydrogeological and ecohydrological studies (HEAD). Forestry Chronicle, 2016, 92, 57-61.	0.5	21
39	Moss and peat hydraulic properties are optimized to maximize peatland water use efficiency. Ecohydrology, 2016, 9, 1039-1051.	1.1	24
40	Groundwater connectivity controls peat burn severity in the boreal plains. Ecohydrology, 2016, 9, 574-584.	1.1	53
41	Mitigating wildfire carbon loss in managed northern peatlands through restoration. Scientific Reports, 2016, 6, 28498.	1.6	59
42	Burn severity alters peatland moss water availability: implications for postâ€fire recovery. Ecohydrology, 2016, 9, 341-353.	1.1	29
43	Estimating the heat transfer to an organic soil surface during crown fire. International Journal of Wildland Fire, 2015, 24, 120.	1.0	33
44	Moderate drop in water table increases peatland vulnerability to post-fire regime shift. Scientific Reports, 2015, 5, 8063.	1.6	122
45	Hydrological controls on deep burning in a northern forested peatland. Hydrological Processes, 2015, 29, 4114-4124.	1.1	67
46	Modelling Sphagnum moisture stress in response to projected 21stâ€century climate change. Hydrological Processes, 2015, 29, 3966-3982.	1.1	13
47	Seasonal variation in albedo and radiation exchange between a burned and unburned forested peatland: implications for peatland evaporation. Hydrological Processes, 2015, 29, 3227-3235.	1.1	22
48	Assessment of an integrated peat-harvesting and reclamation method: peatland-atmosphere carbon fluxes and vegetation recovery. Wetlands Ecology and Management, 2015, 23, 491-504.	0.7	6
49	Hydrological feedbacks in northern peatlands. Ecohydrology, 2015, 8, 113-127.	1.1	335
50	The effect of peat structure on the spatial distribution of biogenic gases within bogs. Hydrological Processes, 2014, 28, 5483-5494.	1.1	29
51	Towards quantifying the negative feedback regulation of peatland evaporation to drought. Hydrological Processes, 2014, 28, 3728-3740.	1.1	41
52	Water balance of a burned and unburned forested boreal peatland. Hydrological Processes, 2014, 28, 5954-5964.	1.1	34
53	Controls on methane released through ebullition in peatlands affected by permafrost degradation. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 418-431.	1.3	46
54	Peat deformation and biogenic gas bubbles control seasonal variations in peat hydraulic conductivity. Hydrological Processes, 2013, 27, 3208-3216.	1.1	10

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55	Wildfire effects on vadose zone hydrology in forested boreal peatland microforms. Journal of Hydrology, 2013, 486, 48-56.	2.3	32
56	The response of soil organic carbon of a rich fen peatland in interior Alaska to projected climate change. Global Change Biology, 2013, 19, 604-620.	4.2	43
57	Effect of water table drawdown on peatland nutrient dynamics: implications for climate change. Biogeochemistry, 2013, 112, 661-676.	1.7	78
58	Effect of drainage and wildfire on peat hydrophysical properties. Hydrological Processes, 2013, 27, 1866-1874.	1.1	56
59	The ecohydrology of forested peatlands: Simulating the effects of tree shading on moss evaporation and species composition. Journal of Geophysical Research G: Biogeosciences, 2013, 118, 422-435.	1.3	53
60	Peat properties and water retention in boreal forested peatlands subject to wildfire. Water Resources Research, 2013, 49, 3651-3658.	1.7	55
61	Shifting environmental controls on CH₄ fluxes in a sub-boreal peatland. Biogeosciences, 2013, 10, 7971-7981.	1.3	23
62	Landscape and weather controls on fine-scale calcareous fen hydrodynamics. Hydrology Research, 2012, 43, 780-797.	1.1	4
63	Do peatland microforms move through time? Examining the developmental history of a patterned peatland using groundâ€penetrating radar. Journal of Geophysical Research, 2012, 117, .	3.3	16
64	Impact of wildfire on the thermal behavior of northern peatlands: Observations and model simulations. Journal of Geophysical Research, 2012, 117, .	3.3	31
65	Oxidative stress, inflammation, and muscle soreness in an 894-km relay trail run. European Journal of Applied Physiology, 2012, 112, 1839-1848.	1.2	30
66	Groundwater residence time distributions in peatlands: Implications for peat decomposition and accumulation. Water Resources Research, 2011, 47, .	1.7	34
67	Interactive effects of vegetation, soil moisture and bulk density on depth of burning of thick organic soils. International Journal of Wildland Fire, 2011, 20, 418.	1.0	148
68	Sphagnum moss moisture retention following the reâ€vegetation of degraded peatlands. Ecohydrology, 2011, 4, 359-366.	1.1	22
69	Extreme variability of water table dynamics in temperate calcareous fens: Implications for biodiversity. Hydrological Processes, 2011, 25, 3790-3802.	1.1	10
70	Toward restoring the net carbon sink function of degraded peatlands: Shortâ€term response in CO₂ exchange to ecosystemâ€scale restoration. Journal of Geophysical Research, 2010, 115, .	3.3	87
71	Differential peat deformation, compressibility, and water storage between peatland microforms: Implications for ecosystem function and development. Water Resources Research, 2010, 46, .	1.7	51
72	Seasonal ice and hydrologic controls on dissolved organic carbon and nitrogen concentrations in a borealâ€rich fen. Journal of Geophysical Research, 2010, 115, .	3.3	43

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73	Advances in Canadian Peatland Hydrology, 2003-2007. Canadian Water Resources Journal, 2009, 34, 139-148.	0.5	21
74	Evidence that piezometers vent gas from peat soils and implications for poreâ€water pressure and hydraulic conductivity measurements. Hydrological Processes, 2009, 23, 1249-1254.	1.1	9
75	Effect of atmospheric pressure and temperature on entrapped gas content in peat. Hydrological Processes, 2009, 23, 2970-2980.	1.1	34
76	Moisture controls on CO₂ exchange in a Sphagnumâ€dominated peatland: results from an extreme drought field experiment. Ecohydrology, 2009, 2, 454-461.	1.1	44
77	Effects of Experimental Water Table and Temperature Manipulations on Ecosystem CO2 Fluxes in an Alaskan Rich Fen. Ecosystems, 2009, 12, 1329-1342.	1.6	157
78	Reducing the Carbon Footprint of Canadian Peat Extraction and Restoration. Ambio, 2009, 38, 194-200.	2.8	25
79	Moisture dynamics and hydrophysical properties of a transplanted acrotelm on a cutover peatland. Hydrological Processes, 2008, 22, 1776-1787.	1.1	17
80	Dissolved organic carbon export from a cutover and restored peatland. Hydrological Processes, 2008, 22, 2215-2224.	1.1	43
81	Effect of water table drawdown on peatland dissolved organic carbon export and dynamics. Hydrological Processes, 2008, 22, 3373-3385.	1.1	129
82	Sphagnum under pressure: towards an ecohydrological approach to examining Sphagnum productivity. Ecohydrology, 2008, 1, 299-308.	1.1	58
83	Spatiotemporal variability in peatland subsurface methane dynamics. Journal of Geophysical Research, 2008, 113, .	3.3	40
84	Shortâ€term response of methane fluxes and methanogen activity to water table and soil warming manipulations in an Alaskan peatland. Journal of Geophysical Research, 2008, 113, .	3.3	176
85	Net ecosystem CO2 exchange of a cutover peatland rehabilitated with a transplanted acrotelm. Ecoscience, 2008, 15, 258-267.	0.6	17
86	Response of peatland carbon dioxide and methane fluxes to a water table drawdown experiment. Global Biogeochemical Cycles, 2007, 21, .	1.9	149
87	Methane emissions from a peatland following restoration. Journal of Geophysical Research, 2007, 112, .	3.3	98
88	Response of vegetation and net ecosystem carbon dioxide exchange at different peatland microforms following water table drawdown. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	145
89	Effect of temperature and atmospheric pressure on methane (CH4) ebullition from near-surface peats. Geophysical Research Letters, 2006, 33, n/a-n/a.	1.5	82
90	Sedge Succession and Peatland Methane Dynamics: A Potential Feedback to Climate Change. Ecosystems, 2006, 9, 278-287.	1.6	84

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91	Effect of entrapped gas on peatland surface level fluctuations. Hydrological Processes, 2006, 20, 3611-3622.	1.1	50
92	Dynamics of biogenic gas bubbles in peat and their effects on peatland biogeochemistry. Global Biogeochemical Cycles, 2005, 19, .	1.9	119
93	Dynamics of biogenic gas bubbles in peat: Potential effects on water storage and peat deformation. Water Resources Research, 2005, 41, .	1.7	70
94	Statistical characterization of the spatial variability of soil moisture in a cutover peatland. Hydrological Processes, 2004, 18, 41-52.	1.1	73
95	Pressure variations in peat as a result of gas bubble dynamics. Hydrological Processes, 2004, 18, 2599-2605.	1.1	50
96	Effect of water table drawdown on northern peatland methane dynamics: Implications for climate change. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	1.9	141
97	Ebullition of methane-containing gas bubbles from near-surfaceSphagnumpeat. Geophysical Research Letters, 2004, 31, n/a-n/a.	1.5	120
98	Moisture controls on Sphagnum growth and CO₂ exchange on a cutover bog. Journal of Applied Ecology, 2003, 40, 354-367.	1.9	147
99	Peat oxidation in an abandoned cutover peatland. Canadian Journal of Soil Science, 2002, 82, 279-286.	0.5	37
100	Cutover peatlands: A persistent source of atmospheric CO2. Global Biogeochemical Cycles, 2002, 16, 1-7.	1.9	189
101	Atmospheric CO₂sequestration in restored mined peatlands. Ecoscience, 2001, 8, 359-368.	0.6	58
102	Effect of drought on hydrology and sulphate dynamics in a temperate swamp. Hydrological Processes, 2001, 15, 3133-3150.	1.1	32
103	Ecosystem scale evapotranspiration and net CO2 exchange from a restored peatland. Hydrological Processes, 2001, 15, 2839-2845.	1.1	62
104	Portable irrigation system for studying hillslope and wetland runoff generation processes. Hydrological Processes, 2001, 15, 281-287.	1.1	5
105	Advances in Canadian wetland hydrology an biogeochemistry. Hydrological Processes, 2000, 14, 1579-1589.	1.1	64
106	Modelling groundwater-surface water mixing in a headwater wetland: implications for hydrograph separation. Hydrological Processes, 2000, 14, 2697-2710.	1.1	14
107	Carbon balance of a boreal patterned peatland. Global Change Biology, 2000, 6, 87-97.	4.2	184
108	Scaling net ecosystem CO2 exchange from the community to landscape-level at a subarctic fen. Global Change Biology, 2000, 6, 459-473.	4.2	47

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109	EFFECT OF PEATLAND DRAINAGE, HARVESTING, AND RESTORATION ON ATMOSPHERIC WATER AND CARBON EXCHANGE. Physical Geography, 2000, 21, 433-451.	0.6	109
110	Interannual variability of net ecosystem CO2exchange at a subarctic fen. Global Biogeochemical Cycles, 2000, 14, 1109-1121.	1.9	112
111	Advances in Canadian wetland hydrology an biogeochemistry. , 2000, 14, 1579.		1
112	Relationship between ecosystem productivity and photosynthetically active radiation for northern peatlands. Global Biogeochemical Cycles, 1998, 12, 115-126.	1.9	165
113	FLOW REVERSALS IN PEATLANDS INFLUENCED BY LOCAL GROUNDWATER SYSTEMS. Hydrological Processes, 1997, 11, 103-110.	1.1	91
114	Atmosphere-wetland carbon exchanges: Scale dependency of CO2and CH4exchange on the developmental topography of a peatland. Global Biogeochemical Cycles, 1996, 10, 233-245.	1.9	211
115	Water table control of CH4emission enhancement by vascular plants in boreal peatlands. Journal of Geophysical Research, 1996, 101, 22775-22785.	3.3	165
116	Analysis of storm run-off sources using oxygen-18 in a headwater swamp. Hydrological Processes, 1993, 7, 305-316.	1.1	39
117	Methane Dynamics in Peat: Importance of Shallow Peats and a Novel Reduced-Complexity Approach for Modeling Ebullition. Geophysical Monograph Series, 0, , 173-185.	0.1	35
118	Ten Best Practices to Strengthen Stewardship and Sharing of Water Science Data in Canada. Hydrological Processes, 0, , e14385.	1.1	3