Mats B Nilsson

List of Publications by Year
in descending order

113 papers	5,143 citations	70961 41 h-index	114278 63 g-index
126 all docs	126 docs citations	126 times ranked	6244 citing authors

#	Article	IF	Citations
1	Contemporary carbon accumulation in a boreal oligotrophic minerogenic mire â€“ a significant sink after accounting for all Câ€fluxes. Global Change Biology, 2008, 14, 2317-2332.	4.2	299
2	Differentiated availability of geochemical mercury pools controls methylmercury levels in estuarine sediment and biota. Nature Communications, 2014, 5, 4624.	5.8	148
3	A nationwide forest attribute map of Sweden predicted using airborne laser scanning data and field data from the National Forest Inventory. Remote Sensing of Environment, 2017, 194, 447-454.	4.6	148
4	Variability in exchange of CO₂ across 12 northern peatland and tundra sites. Global Change Biology, 2010, 16, 2436-2448.	4.2	144
5	Potential aerobic methane oxidation in a Sphagnum-dominated peatlandâ€"Controlling factors and relation to methane emission. Soil Biology and Biochemistry, 1995, 27, 829-837.	4.2	119
6	Climatic modifiers of the response to nitrogen deposition in peatâ€forming <i>Sphagnum</i> mosses: a metaâ€analysis. New Phytologist, 2011, 191, 496-507.	3.5	117
7	Global maps of soil temperature. Global Change Biology, 2022, 28, 3110-3144.	4.2	113
8	Towards a traitâ€based ecology of wetland vegetation. Journal of Ecology, 2017, 105, 1623-1635.	1.9	109
9	Increasing contribution of peatlands to boreal evapotranspiration in a warming climate. Nature Climate Change, 2020, 10, 555-560.	8.1	106
10	Diurnal variation in methane emission in relation to the water table, soil temperature, climate and vegetation cover in a Swedish acid mire. Biogeochemistry, 1995, 28, 93-114.	1.7	101
11	A 12-year record reveals pre-growing season temperature and water table level threshold effects on the net carbon dioxide exchange in a boreal fen. Environmental Research Letters, 2014, 9, 055006.	2.2	100
12	Growth, production and interspecific competition in Sphagnum : effects of temperature, nitrogen and sulphur treatments on a boreal mire. New Phytologist, 2004, 163, 349-359.	3.5	99
13	Energy exchange and water budget partitioning in a boreal minerogenic mire. Journal of Geophysical Research G: Biogeosciences, 2013, 118, 1-13.	1.3	94
14	Linking variability in soil solution dissolved organic carbon to climate, soil type, and vegetation type. Global Biogeochemical Cycles, 2014, 28, 497-509.	1.9	91
15	Seasonal variation in rates of methane production from peat of various botanical origins: effects of temperature and substrate quality. FEMS Microbiology Ecology, 2000, 33, 181-189.	1.3	88
16	Terrestrial discharges mediate trophic shifts and enhance methylmercury accumulation in estuarine biota. Science Advances, 2017, 3, e1601239.	4.7	88
17	Statistical upscaling of ecosystem CO₂ fluxes across the terrestrial tundra and boreal domain: Regional patterns and uncertainties. Global Change Biology, 2021, 27, 4040-4059.	4.2	83
18	Microbial carbon mineralisation in an acid surface peat: effects of environmental factors in laboratory incubations. Soil Biology and Biochemistry, 1999, 31, 1867-1877.	4.2	82

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19	Detecting long-term metabolic shifts using isotopomers: CO ₂ -driven suppression of photorespiration in C ₃ plants over the 20th century. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15585-15590.	3.3	79
20	FLUXNET-CH₄: a global, multi-ecosystem dataset and analysis of methane seasonality from freshwater wetlands. Earth System Science Data, 2021, 13, 3607-3689.	3.7	79
21	Standardisation of chamber technique for CO2, N2O and CH4 fluxes measurements from terrestrial ecosystems. International Agrophysics, 2018, 32, 569-587.	0.7	76
22	Environmental controls on the CO₂ exchange in north European mires. Tellus, Series B: Chemical and Physical Meteorology, 2022, 59, 812.	0.8	75
23	Methane emission from Swedish mires: National and regional budgets and dependence on mire vegetation. Journal of Geophysical Research, 2001, 106, 20847-20860.	3.3	73
24	Estimating northern peatland CO2 exchange from MODIS time series data. Remote Sensing of Environment, 2010, 114, 1178-1189.	4.6	69
25	Monthly gridded data product of northern wetland methane emissions based on upscaling eddy covariance observations. Earth System Science Data, 2019, 11, 1263-1289.	3.7	69
26	Variations in net ecosystem exchange of carbon dioxide in a boreal mire: Modeling mechanisms linked to water table position. Journal of Geophysical Research, 2007, 112, .	3.3	68
27	Standardisation of eddy-covariance flux measurements of methane and nitrous oxide. International Agrophysics, 2018, 32, 517-549.	0.7	66
28	The Full Annual Carbon Balance of Boreal Forests Is Highly Sensitive to Precipitation. Environmental Science and Technology Letters, 2014, 1, 315-319.	3.9	65
29	Abundance and composition of plant biomass as potential controls for mire net ecosytem CO₂exchange. Botany, 2012, 90, 63-74.	0.5	64
30	Identifying dominant environmental predictors of freshwater wetland methane fluxes across diurnal to seasonal time scales. Global Change Biology, 2021, 27, 3582-3604.	4.2	59
31	Rain events decrease boreal peatland net <scp>CO</scp>₂ uptake through reduced light availability. Global Change Biology, 2015, 21, 2309-2320.	4.2	57
32	Methane and Carbon Dioxide Concentrations in Bogs and Fens--with Special Reference to the Effects of the Botanical Composition of the Peat. Journal of Ecology, 1993, 81, 615.	1.9	56
33	Towards long-term standardised carbon and greenhouse gas observations for monitoring Europeâ€™s terrestrial ecosystems: a review. International Agrophysics, 2018, 32, 439-455.	0.7	55
34	The Sphagnome Project: enabling ecological and evolutionary insights through a genusâ€level sequencing project. New Phytologist, 2018, 217, 16-25.	3.5	54
35	Production and oxidation of methane in a boreal mire after a decade of increased temperature and nitrogen and sulfur deposition. Global Change Biology, 2010, 16, 2130-2144.	4.2	53
36	TwelveÂyear interannual and seasonal variability of stream carbon export from a boreal peatland catchment. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 1851-1866.	1.3	53

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37	Effect of climatic variability from 1980 to 1997 on simulated methane emission from a boreal mixed mire in northern Sweden. Global Biogeochemical Cycles, 2001, 15, 977-991.	1.9	51
38	COSORE: A community database for continuous soil respiration and other soilâ€"atmosphere greenhouse gas flux data. Global Change Biology, 2020, 26, 7268-7283.	4.2	50
39	Bringing Color into the Picture: Using Digital Repeat Photography to Investigate Phenology Controls of the Carbon Dioxide Exchange in a Boreal Mire. Ecosystems, 2015, 18, 115-131.	1.6	49
40	Stable Carbon Isotopes Reveal Soilâ€"Stream DIC Linkages in Contrasting Headwater Catchments. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 149-167.	1.3	47
41	Glasshouse vs field experiments: do they yield ecologically similar results for assessing N impacts on peat mosses?. New Phytologist, 2012, 195, 408-418.	3.5	46
42	Northern landscapes in transition: Evidence, approach and ways forward using the Krycklan Catchment Study. Hydrological Processes, 2021, 35, e14170.	1.1	45
43	Mercury evasion from a boreal peatland shortens the timeline for recovery from legacy pollution. Scientific Reports, 2017, 7, 16022.	1.6	44
44	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.	1.3	43
45	Effects of Nutrient Loading and Mercury Chemical Speciation on the Formation and Degradation of Methylmercury in Estuarine Sediment. Environmental Science & Technology, 2016, 50, 6983-6990.	4.6	42
46	The effect of temperature and substrate quality on the carbon use efficiency of saprotrophic decomposition. Plant and Soil, 2017, 414, 113-125.	1.8	41
47	PEATâ€CLSM: A Specific Treatment of Peatland Hydrology in the NASA Catchment Land Surface Model. Journal of Advances in Modeling Earth Systems, 2019, 11, 2130-2162.	1.3	40
48	Aquatic export of young dissolved and gaseous carbon from a pristine boreal fen: Implications for peat carbon stock stability. Global Change Biology, 2017, 23, 5523-5536.	4.2	38
49	Partitioning of the net <scp>CO</scp>₂ exchange using an automated chamber system reveals plant phenology as key control of production and respiration fluxes in a boreal peatland. Global Change Biology, 2018, 24, 3436-3451.	4.2	38
50	Shifts in mercury methylation across a peatland chronosequence: From sulfate reduction to methanogenesis and syntrophy. Journal of Hazardous Materials, 2020, 387, 121967.	6.5	38
51	Apparent winter CO2 uptake by a boreal forest due to decoupling. Agricultural and Forest Meteorology, 2017, 232, 23-34.	1.9	36
52	Effects of drought and meteorological forcing on carbon and water fluxes in Nordic forests during the dry summer of 2018. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190516.	1.8	35
53	Altered energy partitioning across terrestrial ecosystems in the European drought year 2018. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190524.	1.8	35
54	Peatland vegetation composition and phenology drive the seasonal trajectory of maximum gross primary production. Scientific Reports, 2018, 8, 8012.	1.6	34

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55	Effect of the 2018 European drought on methane and carbon dioxide exchange of northern mire ecosystems. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190517.	1.8	34
56	Substantial hysteresis in emergent temperature sensitivity of global wetland CH4 emissions. Nature Communications, 2021, 12, 2266.	5.8	34
57	Gap-filling eddy covariance methane fluxes: Comparison of machine learning model predictions and uncertainties at FLUXNET-CH4 wetlands. Agricultural and Forest Meteorology, 2021, 308-309, 108528.	1.9	33
58	Simulation of six years of carbon fluxes for a sedgeâ€dominated oligotrophic minerogenic peatland in Northern Sweden using the McGill Wetland Model (MWM). Journal of Geophysical Research G: Biogeosciences, 2013, 118, 795-807.	1.3	31
59	The biophysical climate mitigation potential of boreal peatlands during the growing season. Environmental Research Letters, 2020, 15, 104004.	2.2	31
60	The carbon balance of a managed boreal landscape measured from a tall tower in northern Sweden. Agricultural and Forest Meteorology, 2019, 274, 29-41.	1.9	29
61	Functional diversity and trait composition of vascular plant and <i>Sphagnum</i> moss communities during peatland succession across land uplift regions. Journal of Ecology, 2021, 109, 1774-1789.	1.9	29
62	Soil frost enhances stream dissolved organic carbon concentrations during episodic spring snow melt from boreal mires. Global Change Biology, 2012, 18, 1895-1903.	4.2	28
63	The Net Landscape Carbon Balanceâ€”Integrating terrestrial and aquatic carbon fluxes in a managed boreal forest landscape in Sweden. Global Change Biology, 2020, 26, 2353-2367.	4.2	28
64	Tropical and Boreal Forest â€“ Atmosphere Interactions: A Review. Tellus, Series B: Chemical and Physical Meteorology, 2022, 74, 24.	0.8	27
65	The Influence of Sulphate Deposition on the Seasonal Variation of Peat Pore Water Methyl Hg in a Boreal Mire. PLoS ONE, 2012, 7, e45547.	1.1	26
66	Including hydrological self-regulating processes in peatland models: Effects on peatmoss drought projections. Science of the Total Environment, 2017, 580, 1389-1400.	3.9	26
67	Phylogenetic or environmental control on the elemental and organo-chemical composition of Sphagnum mosses?. Plant and Soil, 2017, 417, 69-85.	1.8	26
68	Refining the role of phenology in regulating gross ecosystem productivity across European peatlands. Global Change Biology, 2020, 26, 876-887.	4.2	25
69	Effects of decadal deposition of nitrogen and sulfur, and increased temperature, on methane emissions from a boreal peatland. Journal of Geophysical Research, 2010, 115, .	3.3	24
70	A dual-inlet, single detector relaxed eddy accumulation system for long-term measurement of mercury flux. Atmospheric Measurement Techniques, 2016, 9, 509-524.	1.2	24
71	Gross primary production controls the subsequent winter <scp>CO</scp>₂ exchange in a boreal peatland. Global Change Biology, 2016, 22, 4028-4037.	4.2	23
72	The ABCflux database: Arcticâ€“boreal CO₂ flux observations and ancillary information aggregated to monthly time steps across terrestrial ecosystems. Earth System Science Data, 2022, 14, 179-208.	3.7	22

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73	Simulation of CO2 and Attribution Analysis at Six European Peatland Sites Using the ECOSSE Model. Water, Air, and Soil Pollution, 2014, 225, 1.	1.1	21
74	Bimodal diel pattern in peatland ecosystem respiration rebuts uniform temperature response. Nature Communications, 2020, 11, 4255.	5.8	21
75	Impact of Canopy Decoupling and Subcanopy Advection on the Annual Carbon Balance of a Boreal Scots Pine Forest as Derived From Eddy Covariance. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 303-325.	1.3	20
76	Headwater Mires Constitute a Major Source of Nitrogen (N) to Surface Waters in the Boreal Landscape. Ecosystems, 2018, 21, 31-44.	1.6	20
77	The effects of temperature and nitrogen and sulfur additions on carbon accumulation in a nutrientâ€poor boreal mire: Decadal effects assessed using ²¹⁰Pb peat chronologies. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 392-403.	1.3	19
78	Microbial mineralization of cellulose in frozen soils. Nature Communications, 2017, 8, 1154.	5.8	19
79	Upscaling Northern Peatland CO2 Fluxes Using Satellite Remote Sensing Data. Remote Sensing, 2021, 13, 818.	1.8	19
80	Forest floor fluxes drive differences in the carbon balance of contrasting boreal forest stands. Agricultural and Forest Meteorology, 2021, 306, 108454.	1.9	18
81	Simulating the Carbon Cycling of Northern Peatlands Using a Land Surface Scheme Coupled to a Wetland Carbon Model (CLASS3W-MWM). Atmosphere - Ocean, 2012, 50, 487-506.	0.6	17
82	Parameter interactions and sensitivity analysis for modelling carbon heat and water fluxes in a natural peatland, using CoupModel v5. Geoscientific Model Development, 2016, 9, 4313-4338.	1.3	17
83	Longâ€term enhanced winter soil frost alters growing season <scp>CO</scp>₂ fluxes through its impact on vegetation development in a boreal peatland. Global Change Biology, 2017, 23, 3139-3153.	4.2	17
84	Divergent apparent temperature sensitivity of terrestrial ecosystem respiration. Journal of Plant Ecology, 2014, 7, 419-428.	1.2	16
85	Satellite Determination of Peatland Water Table Temporal Dynamics by Localizing Representative Pixels of A SWIR-Based Moisture Index. Remote Sensing, 2020, 12, 2936.	1.8	16
86	Formation and mobilization of methylmercury across natural and experimental sulfur deposition gradients. Environmental Pollution, 2020, 263, 114398.	3.7	16
87	Holocene carbon and nitrogen accumulation rates in a boreal oligotrophic fen. Holocene, 2017, 27, 811-821.	0.9	15
88	Enhanced winter soil frost reduces methane emission during the subsequent growing season in a boreal peatland. Global Change Biology, 2016, 22, 750-762.	4.2	14
89	Highâ€resolution peat volume change in a northern peatland: Spatial variability, main drivers, and impact on ecohydrology. Ecohydrology, 2019, 12, e2114.	1.1	14
90	Microbial utilization of simple carbon substrates in boreal peat soils at low temperatures. Soil Biology and Biochemistry, 2019, 135, 438-448.	4.2	14

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91	Soil-meteorological measurements at ICOS monitoring stations in terrestrial ecosystems. International Agrophysics, 2018, 32, 619-631.	0.7	14
92	Biogeochemical influences on net methylmercury formation proxies along a peatland chronosequence. Geochimica Et Cosmochimica Acta, 2021, 308, 188-203.	1.6	12
93	The birth and death of lakes on young landscapes. Geophysical Research Letters, 2013, 40, 1340-1344.	1.5	11
94	A Novel Approach for High-Frequency in-situ Quantification of Methane Oxidation in Peatlands. Soil Systems, 2019, 3, 4.	1.0	10
95	Opposing spatial trends in methylmercury and total mercury along a peatland chronosequence trophic gradient. Science of the Total Environment, 2020, 718, 137306.	3.9	9
96	Chronic Atmospheric Reactive Nitrogen Deposition Suppresses Biological Nitrogen Fixation in Peatlands. Environmental Science & Technology, 2021, 55, 1310-1318.	4.6	9
97	Detection ofArchaealDiether Lipid by Gas Chromatography from Humus and Peat. Scandinavian Journal of Forest Research, 1999, 14, 545-551.	0.5	7
98	Critical Observations of Gaseous Elemental Mercury Airâ€Sea Exchange. Global Biogeochemical Cycles, 2021, 35, e2020GB006742.	1.9	7
99	Drainage Ditch Cleaning Has No Impact on the Carbon and Greenhouse Gas Balances in a Recent Forest Clear-Cut in Boreal Sweden. Forests, 2022, 13, 842.	0.9	7
100	Parameterization of mires in a numerical weather prediction model. Water Resources Research, 2014, 50, 8982-8996.	1.7	6
101	Millennia-old organic carbon in a boreal paleosol: chemical properties and their link to mineralizable carbon fraction. Journal of Soils and Sediments, 2016, 16, 85-94.	1.5	6
102	Boreal tree species affect soil organic matter composition and saprotrophic mineralization rates. Plant and Soil, 2019, 441, 173-190.	1.8	5
103	<scp>CO₂</scp> fertilization of <i>Sphagnum</i> peat mosses is modulated by water table level and other environmental factors. Plant, Cell and Environment, 2021, 44, 1756-1768.	2.8	5
104	Autumn destabilization of deep porewater CO2 store in a northern peatland driven by turbulent diffusion. Nature Communications, 2021, 12, 6857.	5.8	5
105	Global CO2 fertilization of Sphagnum peat mosses via suppression of photorespiration during the twentieth century. Scientific Reports, 2021, 11, 24517.	1.6	5
106	Drone-Based Forest Variables Mapping of ICOS Tower Surroundings. , 2018, , .		4
107	Lateral expansion of northern peatlands calls into question a 1,055 GtC estimate of carbon storage. Nature Geoscience, 2021, 14, 468-469.	5.4	4
108	Geochemical and Dietary Drivers of Mercury Bioaccumulation in Estuarine Benthic Invertebrates. Environmental Science & Technology, 2022, 56, 10141-10148.	4.6	4

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109	A novel belowground in-situ gas labeling approach: CH4 oxidation in deep peat using passive diffusion chambers and 13C excess. Science of the Total Environment, 2022, 806, 150457.	3.9	3
110	Overstory dynamics regulate the spatial variability in forest-floor CO2 fluxes across a managed boreal forest landscape. Agricultural and Forest Meteorology, 2022, 318, 108916.	1.9	3
111	Peatland Vegetation Patterns in a Long Term Global Change Experiment Find no Reflection in Belowground Extracellular Enzyme Activities. Wetlands, 2020, 40, 2321-2335.	0.7	2
112	Reconciling the Carbon Balance of Northern Sweden Through Integration of Observations and Modelling. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2021JD035185.	1.2	2
113	Resource contrast in patterned peatlands increases along a climatic gradient. Ecology, 2010, 91, 100618132138042.	1.5	1