Mats B Nilsson

List of Publications by Citations

113 papers	3,358 citations	35 h-index	53 g-index
125 ext. papers	4,185 ext. citations	7.4 avg, IF	5.12 L-index

#	Paper	IF	Citations
113	Contemporary carbon accumulation in a boreal oligotrophic minerogenic mire – a significant sink after accounting for all C-fluxes. *Global Change Biology*, **2008**, 14, 2317-2332	11.4	262
112	Differentiated availability of geochemical mercury pools controls methylmercury levels in estuarine sediment and biota. *Nature Communications*, **2014**, 5, 4624	17.4	110
111	Potential aerobic methane oxidation in a Sphagnum-dominated peatland—controlling factors and relation to methane emission. *Soil Biology and Biochemistry*, **1995**, 27, 829-837	7.5	106
110	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	13.2	100
109	Climatic modifiers of the response to nitrogen deposition in peat-forming Sphagnum mosses: a meta-analysis. *New Phytologist*, **2011**, 191, 496-507	9.8	95
108	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	3.8	92
107	Growth, production and interspecific competition in Sphagnum: effects of temperature, nitrogen and sulphur treatments on a boreal mire. *New Phytologist*, **2004**, 163, 349-359	9.8	86
106	Variability in exchange of CO2 across 12 northern peatland and tundra sites. *Global Change Biology*, **2009**, 16, no-no	11.4	85
105	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	6.2	81
104	FLUXNET-CH4 Synthesis Activity: Objectives, Observations, and Future Directions. *Bulletin of the American Meteorological Society*, **2019**, 100, 2607-2632	6.1	77
103	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	4.3	76
102	Microbial carbon mineralisation in an acid surface peat: effects of environmental factors in laboratory incubations. *Soil Biology and Biochemistry*, **1999**, 31, 1867-1877	7.5	74
101	Environmental controls on the CO2 exchange in north European mires. *Tellus, Series B: Chemical and Physical Meteorology*, **2007**, 59, 812-825	3.3	70
100	Linking variability in soil solution dissolved organic carbon to climate, soil type, and vegetation type. *Global Biogeochemical Cycles*, **2014**, 28, 497-509	5.9	69
99	Terrestrial discharges mediate trophic shifts and enhance methylmercury accumulation in estuarine biota. *Science Advances*, **2017**, 3, e1601239	14.3	65
98	Detecting long-term metabolic shifts using isotopomers: CO2-driven suppression of photorespiration in C3 plants over the 20th century. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 15585-90	11.5	64
97	Towards a trait-based ecology of wetland vegetation. *Journal of Ecology*, **2017**, 105, 1623-1635	6	62

96	Estimating northern peatland CO2 exchange from MODIS time series data. *Remote Sensing of Environment*, **2010**, 114, 1178-1189	13.2	60
95	Methane emission from Swedish mires: National and regional budgets and dependence on mire vegetation. *Journal of Geophysical Research*, **2001**, 106, 20847-20860		60
94	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,		58
93	Energy exchange and water budget partitioning in a boreal minerogenic mire. *Journal of Geophysical Research G: Biogeosciences*, **2013**, 118, 1-13	3.7	57
92	Abundance and composition of plant biomass as potential controls for mire net ecosytem CO2exchange. *Botany*, **2012**, 90, 63-74	1.3	55
91	The Full Annual Carbon Balance of Boreal Forests Is Highly Sensitive to Precipitation. *Environmental Science and Technology Letters*, **2014**, 1, 315-319	11	53
90	Standardisation of eddy-covariance flux measurements of methane and nitrous oxide. *International Agrophysics*, **2018**, 32, 517-549	2	51
89	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	5.9	47
88	Rain events decrease boreal peatland net CO2 uptake through reduced light availability. *Global Change Biology*, **2015**, 21, 2309-20	11.4	46
87	Monthly gridded data product of northern wetland methane emissions based on upscaling eddy covariance observations. *Earth System Science Data*, **2019**, 11, 1263-1289	10.5	45
86	Increasing contribution of peatlands to boreal evapotranspiration in a warming climate. *Nature Climate Change*, **2020**, 10, 555-560	21.4	44
85	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	11.4	44
84	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	6	43
83	Standardisation of chamber technique for CO2, N2O and CH4 fluxes measurements from terrestrial ecosystems. *International Agrophysics*, **2018**, 32, 569-587	2	42
82	Towards long-term standardised carbon and greenhouse gas observations for monitoring Europe terrestrial ecosystems: a review. *International Agrophysics*, **2018**, 32, 439-455	2	39
81	Twelve-year interannual and seasonal variability of stream carbon export from a boreal peatland catchment. *Journal of Geophysical Research G: Biogeosciences*, **2016**, 121, 1851-1866	3.7	39
80	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	3.9	38
79	Glasshouse vs field experiments: do they yield ecologically similar results for assessing N impacts on peat mosses?. *New Phytologist*, **2012**, 195, 408-418	9.8	35

78	Stable Carbon Isotopes Reveal Soil-Stream DIC Linkages in Contrasting Headwater Catchments. *Journal of Geophysical Research G: Biogeosciences*, **2018**, 123, 149-167	3.7	33
77	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	6.3	32
76	Effects of Nutrient Loading and Mercury Chemical Speciation on the Formation and Degradation of Methylmercury in Estuarine Sediment. *Environmental Science & Technology*, **2016**, 50, 6983-90	10.3	29
75	Mercury evasion from a boreal peatland shortens the timeline for recovery from legacy pollution. *Scientific Reports*, **2017**, 7, 16022	4.9	29
74	The effect of temperature and substrate quality on the carbon use efficiency of saprotrophic decomposition. *Plant and Soil*, **2017**, 414, 113-125	4.2	28
73	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	11.4	25
72	Soil frost enhances stream dissolved organic carbon concentrations during episodic spring snow melt from boreal mires. *Global Change Biology*, **2012**, 18, 1895-1903	11.4	25
71	Statistical upscaling of ecosystem CO fluxes across the terrestrial tundra and boreal domain: Regional patterns and uncertainties. *Global Change Biology*, **2021**, 27, 4040-4059	11.4	25
70	The Sphagnome Project: enabling ecological and evolutionary insights through a genus-level sequencing project. *New Phytologist*, **2018**, 217, 16-25	9.8	24
69	Apparent winter CO2 uptake by a boreal forest due to decoupling. *Agricultural and Forest Meteorology*, **2017**, 232, 23-34	5.8	24
68	Simulation of six years of carbon fluxes for a sedge-dominated oligotrophic minerogenic peatland in Northern Sweden using the McGill Wetland Model (MWM). *Journal of Geophysical Research G: Biogeosciences*, **2013**, 118, 795-807	3.7	24
67	FLUXNET-CH₄: a global, multi-ecosystem dataset and analysis of methane seasonality from freshwater wetlands. *Earth System Science Data*, **2021**, 13, 3607-3689	10.5	23
66	Partitioning of the net CO 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	11.4	22
65	COSORE: A community database for continuous soil respiration and other soil-atmosphere greenhouse gas flux data. *Global Change Biology*, **2020**, 26, 7268-7283	11.4	22
64	Peatland vegetation composition and phenology drive the seasonal trajectory of maximum gross primary production. *Scientific Reports*, **2018**, 8, 8012	4.9	22
63	Phylogenetic or environmental control on the elemental and organo-chemical composition of Sphagnum mosses?. *Plant and Soil*, **2017**, 417, 69-85	4.2	20
62	The influence of sulphate deposition on the seasonal variation of peat pore water methyl Hg in a boreal mire. *PLoS ONE*, **2012**, 7, e45547	3.7	19
61	Effects of decadal deposition of nitrogen and sulfur, and increased temperature, on methane emissions from a boreal peatland. *Journal of Geophysical Research*, **2010**, 115,		19

60	Shifts in mercury methylation across a peatland chronosequence: From sulfate reduction to methanogenesis and syntrophy. *Journal of Hazardous Materials*, **2020**, 387, 121967	12.8	19
59	Including hydrological self-regulating processes in peatland models: Effects on peatmoss drought projections. *Science of the Total Environment*, **2017**, 580, 1389-1400	10.2	18
58	Altered energy partitioning across terrestrial ecosystems in the European drought year 2018. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2020**, 375, 20190524	5.8	18
57	A dual-inlet, single detector relaxed eddy accumulation system for long-term measurement of mercury flux. *Atmospheric Measurement Techniques*, **2016**, 9, 509-524	4	17
56	Gross primary production controls the subsequent winter CO exchange in a boreal peatland. *Global Change Biology*, **2016**, 22, 4028-4037	11.4	17
55	The carbon balance of a managed boreal landscape measured from a tall tower in northern Sweden. *Agricultural and Forest Meteorology*, **2019**, 274, 29-41	5.8	16
54	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	5.8	16
53	Long-term enhanced winter soil frost alters growing season CO fluxes through its impact on vegetation development in a boreal peatland. *Global Change Biology*, **2017**, 23, 3139-3153	11.4	15
52	Microbial mineralization of cellulose in frozen soils. *Nature Communications*, **2017**, 8, 1154	17.4	15
51	PEAT-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	7.1	15
50	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	1.5	15
49	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	5.8	15
48	Functional diversity and trait composition of vascular plant and Sphagnum moss communities during peatland succession across land uplift regions. *Journal of Ecology*, **2021**, 109, 1774-1789	6	15
47	The effects of temperature and nitrogen and sulfur additions on carbon accumulation in a nutrient-poor boreal mire: Decadal effects assessed using 210Pb peat chronologies. *Journal of Geophysical Research G: Biogeosciences*, **2014**, 119, 392-403	3.7	14
46	The Net Landscape Carbon Balance-Integrating terrestrial and aquatic carbon fluxes in a managed boreal forest landscape in Sweden. *Global Change Biology*, **2020**, 26, 2353	11.4	14
45	Enhanced winter soil frost reduces methane emission during the subsequent growing season in a boreal peatland. *Global Change Biology*, **2016**, 22, 750-62	11.4	13
44	Divergent apparent temperature sensitivity of terrestrial ecosystem respiration. *Journal of Plant Ecology*, **2014**, 7, 419-428	1.7	13
43	Simulation of CO2 and Attribution Analysis at Six European Peatland Sites Using the ECOSSE Model. *Water, Air, and Soil Pollution*, **2014**, 225, 1	2.6	12

42	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	6.3	11
41	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	3.7	11
40	Headwater Mires Constitute a Major Source of Nitrogen (N) to Surface Waters in the Boreal Landscape. *Ecosystems*, **2018**, 21, 31-44	3.9	11
39	The biophysical climate mitigation potential of boreal peatlands during the growing season. *Environmental Research Letters*, **2020**, 15, 104004	6.2	11
38	Identifying dominant environmental predictors of freshwater wetland methane fluxes across diurnal to seasonal time scales. *Global Change Biology*, **2021**, 27, 3582-3604	11.4	11
37	High-resolution peat volume change in a northern peatland: Spatial variability, main drivers, and impact on ecohydrology. *Ecohydrology*, **2019**, 12, e2114	2.5	10
36	Substantial hysteresis in emergent temperature sensitivity of global wetland CH emissions. *Nature Communications*, **2021**, 12, 2266	17.4	10
35	Holocene carbon and nitrogen accumulation rates in a boreal oligotrophic fen. *Holocene*, **2017**, 27, 811-821	2.6	9
34	Soil-meteorological measurements at ICOS monitoring stations in terrestrial ecosystems. *International Agrophysics*, **2018**, 32, 619-631	2	9
33	Refining the role of phenology in regulating gross ecosystem productivity across European peatlands. *Global Change Biology*, **2020**, 26, 876-887	11.4	9
32	Bimodal diel pattern in peatland ecosystem respiration rebuts uniform temperature response. *Nature Communications*, **2020**, 11, 4255	17.4	9
31	Global maps of soil temperature.. *Global Change Biology*, **2021**,	11.4	8
30	Microbial utilization of simple carbon substrates in boreal peat soils at low temperatures. *Soil Biology and Biochemistry*, **2019**, 135, 438-448	7.5	7
29	The birth and death of lakes on young landscapes. *Geophysical Research Letters*, **2013**, 40, 1340-1344	4.9	7
28	Northern landscapes in transition: Evidence, approach and ways forward using the Krycklan Catchment Study. *Hydrological Processes*, **2021**, 35, e14170	3.3	7
27	Formation and mobilization of methylmercury across natural and experimental sulfur deposition gradients. *Environmental Pollution*, **2020**, 263, 114398	9.3	6
26	Detection of Archaeal Diether Lipid by Gas Chromatography from Humus and Peat. *Scandinavian Journal of Forest Research*, **1999**, 14, 545-551	1.7	6
25	Upscaling Northern Peatland CO2 Fluxes Using Satellite Remote Sensing Data. *Remote Sensing*, **2021**, 13, 818	5	6

24	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	3.4	5
23	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	5.8	5
22	Satellite Determination of Peatland Water Table Temporal Dynamics by Localizing Representative Pixels of A SWIR-Based Moisture Index. *Remote Sensing*, **2020**, 12, 2936	5	4
21	Parameterization of mires in a numerical weather prediction model. *Water Resources Research*, **2014**, 50, 8982-8996	5.4	4
20	Chronic Atmospheric Reactive Nitrogen Deposition Suppresses Biological Nitrogen Fixation in Peatlands. *Environmental Science & Technology*, **2021**, 55, 1310-1318	10.3	4
19	Forest floor fluxes drive differences in the carbon balance of contrasting boreal forest stands. *Agricultural and Forest Meteorology*, **2021**, 306, 108454	5.8	4
18	A Novel Approach for High-Frequency in-situ Quantification of Methane Oxidation in Peatlands. *Soil Systems*, **2019**, 3, 4	3.5	3
17	The ABCflux database: Arctic‐boreal CO₂ flux observations and ancillary information aggregated to monthly time steps across terrestrial ecosystems. *Earth System Science Data*, **2022**, 14, 179-208	10.5	3
16	FLUXNET-CH4: A global, multi-ecosystem dataset and analysis of methane seasonality from freshwater wetlands		3
15	Boreal tree species affect soil organic matter composition and saprotrophic mineralization rates. *Plant and Soil*, **2019**, 441, 173-190	4.2	2
14	Opposing spatial trends in methylmercury and total mercury along a peatland chronosequence trophic gradient. *Science of the Total Environment*, **2020**, 718, 137306	10.2	2
13	Biogeochemical influences on net methylmercury formation proxies along a peatland chronosequence. *Geochimica Et Cosmochimica Acta*, **2021**, 308, 188-203	5.5	2
12	Global CO fertilization of Sphagnum peat mosses via suppression of photorespiration during the twentieth century.. *Scientific Reports*, **2021**, 11, 24517	4.9	2
11	Resource contrast in patterned peatlands increases along a climatic gradient **2010**, 91, 2344		1
10	Peatland Vegetation Patterns in a Long Term Global Change Experiment Find no Reflection in Belowground Extracellular Enzyme Activities. *Wetlands*, **2020**, 40, 2321-2335	1.7	1
9	Lateral expansion of northern peatlands calls into question a 1,055 GtC estimate of carbon storage. *Nature Geoscience*, **2021**, 14, 468-469	18.3	1
8	CO fertilization of Sphagnum peat mosses is modulated by water table level and other environmental factors. *Plant, Cell and Environment*, **2021**, 44, 1756-1768	8.4	1
7	Tropical and Boreal Forest – Atmosphere Interactions: A Review. *Tellus, Series B: Chemical and Physical Meteorology*, **2022**, 74, 24-163	3.3	1

6	Reconciling the Carbon Balance of Northern Sweden Through Integration of Observations and Modelling. *Journal of Geophysical Research D: Atmospheres*, **2021**, 126, e2021JD035185	4.4	0
5	Critical Observations of Gaseous Elemental Mercury Air-Sea Exchange. *Global Biogeochemical Cycles* , **2021**, 35, e2020GB006742	5.9	0
4	Overstory dynamics regulate the spatial variability in forest-floor CO2 fluxes across a managed boreal forest landscape. *Agricultural and Forest Meteorology*, **2022**, 318, 108916	5.8	0
3	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	2.8	0
2	Autumn destabilization of deep porewater CO store in a northern peatland driven by turbulent diffusion. *Nature Communications*, **2021**, 12, 6857	17.4	
1	A novel belowground in-situ gas labeling approach: CH oxidation in deep peat using passive diffusion chambers and C excess. *Science of the Total Environment*, **2022**, 806, 150457	10.2	