

# Charles D Koven

## List of Publications by Year in descending order

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Version: 2024-02-01

131  
papers

19,977  
citations

22153

59  
h-index

12946

131  
g-index

187  
all docs

187  
docs citations

187  
times ranked

19328  
citing authors

#	ARTICLE	IF	CITATIONS
1	Historical and future perspectives of global soil carbon response to climate and land-use changes. <i>Tellus, Series B: Chemical and Physical Meteorology</i> , 2022, 62, 700.	1.6	103
2	Warming increased bark beetle-induced tree mortality by 30% during an extreme drought in California. <i>Global Change Biology</i> , 2022, 28, 509-523.	9.5	36
3	Are Land-Use Change Emissions in Southeast Asia Decreasing or Increasing?. <i>Global Biogeochemical Cycles</i> , 2022, 36, .	4.9	7
4	Implementing a New Rubber Plant Functional Type in the Community Land Model (CLM5) Improves Accuracy of Carbon and Water Flux Estimation. <i>Land</i> , 2022, 11, 183.	2.9	3
5	Demographic composition, not demographic diversity, predicts biomass and turnover across temperate and tropical forests. <i>Global Change Biology</i> , 2022, 28, 2895-2909.	9.5	8
6	Modeling the Joint Effects of Vegetation Characteristics and Soil Properties on Ecosystem Dynamics in a Panama Tropical Forest. <i>Journal of Advances in Modeling Earth Systems</i> , 2022, 14, .	3.8	8
7	Guidelines for Publicly Archiving Terrestrial Model Data to Enhance Usability, Intercomparison, and Synthesis. <i>Data Science Journal</i> , 2022, 21, 3.	1.3	3
8	Soil moisture thresholds explain a shift from light-limited to water-limited sap velocity in the Central Amazon during the 2015-16 El Niño drought. <i>Environmental Research Letters</i> , 2022, 17, 064023.	5.2	5
9	Multi-century dynamics of the climate and carbon cycle under both high and net negative emissions scenarios. <i>Earth System Dynamics</i> , 2022, 13, 885-909.	7.1	17
10	Spatial heterogeneity and environmental predictors of permafrost region soil organic carbon stocks. <i>Science Advances</i> , 2021, 7, .	10.3	130
11	Leaf Trait Plasticity Alters Competitive Ability and Functioning of Simulated Tropical Trees in Response to Elevated Carbon Dioxide. <i>Global Biogeochemical Cycles</i> , 2021, 35, e2020GB006807.	4.9	6
12	Disentangling the Effects of Vapor Pressure Deficit and Soil Water Availability on Canopy Conductance in a Seasonal Tropical Forest During the 2015 El Niño Drought. <i>Journal of Geophysical Research D: Atmospheres</i> , 2021, 126, e2021JD035004.	3.3	17
13	Climate-Driven Limits to Future Carbon Storage in California's Wildland Ecosystems. <i>AGU Advances</i> , 2021, 2, e2021AV000384.	5.4	21
14	Hydraulically vulnerable trees survive on deep water access during droughts in a tropical forest. <i>New Phytologist</i> , 2021, 231, 1798-1813.	7.3	51
15	Assessing climate change impacts on live fuel moisture and wildfire risk using a hydrodynamic vegetation model. <i>Biogeosciences</i> , 2021, 18, 4005-4020.	3.3	19
16	Capturing functional strategies and compositional dynamics in vegetation demographic models. <i>Biogeosciences</i> , 2021, 18, 4473-4490.	3.3	5
17	The potential for structural errors in emergent constraints. <i>Earth System Dynamics</i> , 2021, 12, 899-918.	7.1	19
18	Carbon loss from northern circumpolar permafrost soils amplified by rhizosphere priming. <i>Nature Geoscience</i> , 2020, 13, 560-565.	12.9	72

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19	Estimation of Permafrost SOC Stock and Turnover Time Using a Land Surface Model With Vertical Heterogeneity of Permafrost Soils. <i>Global Biogeochemical Cycles</i> , 2020, 34, e2020GB006585.	4.9	13
20	Opportunities and challenges in using remaining carbon budgets to guide climate policy. <i>Nature Geoscience</i> , 2020, 13, 769-779.	12.9	68
21	Increased rainfall stimulates permafrost thaw across a variety of Interior Alaskan boreal ecosystems. <i>Npj Climate and Atmospheric Science</i> , 2020, 3, .	6.8	59
22	A spatial emergent constraint on the sensitivity of soil carbon turnover to global warming. <i>Nature Communications</i> , 2020, 11, 5544.	12.8	50
23	Benchmarking and parameter sensitivity of physiological and vegetation dynamics using the Functionally Assembled Terrestrial Ecosystem Simulator (FATES) at Barro Colorado Island, Panama. <i>Biogeosciences</i> , 2020, 17, 3017-3044.	3.3	82
24	Is there warming in the pipeline? A multi-model analysis of the Zero Emissions Commitment from CO <sub>2</sub> . <i>Biogeosciences</i> , 2020, 17, 2987-3016.	3.3	87
25	Perspectives on the Future of Land Surface Models and the Challenges of Representing Complex Terrestrial Systems. <i>Journal of Advances in Modeling Earth Systems</i> , 2020, 12, e2018MS001453.	3.8	199
26	Forest responses to simulated elevated CO <sub>2</sub> under alternate hypotheses of size- and age-dependent mortality. <i>Global Change Biology</i> , 2020, 26, 5734-5753.	9.5	18
27	Soil moisture and hydrology projections of the permafrost region – a model intercomparison. <i>Cryosphere</i> , 2020, 14, 445-459.	3.9	85
28	Earlier leaf-out warms air in the north. <i>Nature Climate Change</i> , 2020, 10, 370-375.	18.8	45
29	The Central Amazon Biomass Sink Under Current and Future Atmospheric CO <sub>2</sub> : Predictions From BigLeaf and Demographic Vegetation Models. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2020, 125, e2019JG005500.	3.0	23
30	CMIP5 Models Predict Rapid and Deep Soil Warming Over the 21st Century. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2020, 125, e2019JG005266.	3.0	56
31	Carbon release through abrupt permafrost thaw. <i>Nature Geoscience</i> , 2020, 13, 138-143.	12.9	434
32	Recent California tree mortality portends future increase in drought-driven forest die-off. <i>Environmental Research Letters</i> , 2020, 15, 124040.	5.2	20
33	Carbon concentration and carbon climate feedbacks in CMIP6 models and their comparison to CMIP5 models. <i>Biogeosciences</i> , 2020, 17, 4173-4222.	3.3	255
34	Assessing impacts of selective logging on water, energy, and carbon budgets and ecosystem dynamics in Amazon forests using the Functionally Assembled Terrestrial Ecosystem Simulator. <i>Biogeosciences</i> , 2020, 17, 4999-5023.	3.3	11
35	Parametric Controls on Vegetation Responses to Biogeochemical Forcing in the CLM5. <i>Journal of Advances in Modeling Earth Systems</i> , 2019, 11, 2879-2895.	3.8	69
36	Beyond Static Benchmarking: Using Experimental Manipulations to Evaluate Land Model Assumptions. <i>Global Biogeochemical Cycles</i> , 2019, 33, 1289-1309.	4.9	59

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37	Species-Specific Shifts in Diurnal Sap Velocity Dynamics and Hysteretic Behavior of Ecophysiological Variables During the 2015–2016 El Niño Event in the Amazon Forest. <i>Frontiers in Plant Science</i> , 2019, 10, 830.	3.6	17
38	The Community Land Model Version 5: Description of New Features, Benchmarking, and Impact of Forcing Uncertainty. <i>Journal of Advances in Modeling Earth Systems</i> , 2019, 11, 4245-4287.	3.8	692
39	Heterogeneous spring phenology shifts affected by climate: supportive evidence from two remotely sensed vegetation indices. <i>Environmental Research Communications</i> , 2019, 1, 091004.	2.3	12
40	Permafrost collapse is accelerating carbon release. <i>Nature</i> , 2019, 569, 32-34.	27.8	237
41	Size Distributions of Arctic Waterbodies Reveal Consistent Relations in Their Statistical Moments in Space and Time. <i>Frontiers in Earth Science</i> , 2019, 7, .	1.8	25
42	The Zero Emissions Commitment Model Intercomparison Project (ZECMIP) contribution to C4MIP: quantifying committed climate changes following zero carbon emissions. <i>Geoscientific Model Development</i> , 2019, 12, 4375-4385.	3.6	56
43	Arctic Soil Governs Whether Climate Change Drives Global Losses or Gains in Soil Carbon. <i>Geophysical Research Letters</i> , 2019, 46, 14486-14495.	4.0	44
44	Vulnerability of Amazon forests to storm-driven tree mortality. <i>Environmental Research Letters</i> , 2018, 13, 054021.	5.2	49
45	Drivers and mechanisms of tree mortality in moist tropical forests. <i>New Phytologist</i> , 2018, 219, 851-869.	7.3	341
46	Observed and Simulated Sensitivities of Spring Greenup to Preseason Climate in Northern Temperate and Boreal Regions. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2018, 123, 60-78.	3.0	18
47	Forest response to rising CO <sub>2</sub> drives zonally asymmetric rainfall change over tropical land. <i>Nature Climate Change</i> , 2018, 8, 434-440.	18.8	80
48	Plant Regrowth as a Driver of Recent Enhancement of Terrestrial CO <sub>2</sub> Uptake. <i>Geophysical Research Letters</i> , 2018, 45, 4820-4830.	4.0	32
49	Dependence of the evolution of carbon dynamics in the northern permafrost region on the trajectory of climate change. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 3882-3887.	7.1	296
50	Land use change and El Niño-Southern Oscillation drive decadal carbon balance shifts in Southeast Asia. <i>Nature Communications</i> , 2018, 9, 1154.	12.8	28
51	Matrix approach to land carbon cycle modeling: A case study with the Community Land Model. <i>Global Change Biology</i> , 2018, 24, 1394-1404.	9.5	64
52	Vegetation demographics in Earth System Models: A review of progress and priorities. <i>Global Change Biology</i> , 2018, 24, 35-54.	9.5	478
53	Carbon cycle confidence and uncertainty: Exploring variation among soil biogeochemical models. <i>Global Change Biology</i> , 2018, 24, 1563-1579.	9.5	122
54	Reconciling global-model estimates and country reporting of anthropogenic forest CO <sub>2</sub> sinks. <i>Nature Climate Change</i> , 2018, 8, 914-920.	18.8	101

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55	Non-uniform seasonal warming regulates vegetation greening and atmospheric CO <sub>2</sub> amplification over northern lands. <i>Environmental Research Letters</i> , 2018, 13, 124008.	5.2	11
56	Plant Physiological Responses to Rising CO <sub>2</sub> Modify Simulated Daily Runoff Intensity With Implications for Global-scale Flood Risk Assessment. <i>Geophysical Research Letters</i> , 2018, 45, 12,457.	4.0	23
57	The International Land Model Benchmarking (ILAMB) System: Design, Theory, and Implementation. <i>Journal of Advances in Modeling Earth Systems</i> , 2018, 10, 2731-2754.	3.8	175
58	Divergent patterns of experimental and model-derived permafrost ecosystem carbon dynamics in response to Arctic warming. <i>Environmental Research Letters</i> , 2018, 13, 105002.	5.2	31
59	Detecting the permafrost carbon feedback: talik formation and increased cold-season respiration as precursors to sink-to-source transitions. <i>Cryosphere</i> , 2018, 12, 123-144.	3.9	46
60	Variation in hydroclimate sustains tropical forest biomass and promotes functional diversity. <i>New Phytologist</i> , 2018, 219, 932-946.	7.3	41
61	Terrestrial ecosystem model performance in simulating productivity and its vulnerability to climate change in the northern permafrost region. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2017, 122, 430-446.	3.0	47
62	A global trait-based approach to estimate leaf nitrogen functional allocation from observations. <i>Ecological Applications</i> , 2017, 27, 1421-1434.	3.8	59
63	Higher climatological temperature sensitivity of soil carbon in cold than warm climates. <i>Nature Climate Change</i> , 2017, 7, 817-822.	18.8	195
64	Global wetland contribution to 2000-2012 atmospheric methane growth rate dynamics. <i>Environmental Research Letters</i> , 2017, 12, 094013.	5.2	129
65	A Direct Estimate of the Seasonal Cycle of Evapotranspiration over the Amazon Basin. <i>Journal of Hydrometeorology</i> , 2017, 18, 2173-2185.	1.9	48
66	Land-use and land-cover change carbon emissions between 1901 and 2012 constrained by biomass observations. <i>Biogeosciences</i> , 2017, 14, 5053-5067.	3.3	58
67	Evaluating the Community Land Model (CLM4.5) at a coniferous forest site in northwestern United States using flux and carbon-isotope measurements. <i>Biogeosciences</i> , 2017, 14, 4315-4340.	3.3	54
68	Process-level model evaluation: a snow and heat transfer metric. <i>Cryosphere</i> , 2017, 11, 989-996.	3.9	34
69	20th Century changes in carbon isotopes and water-use efficiency: tree-ring-based evaluation of the CLM4.5 and LPX-Bern models. <i>Biogeosciences</i> , 2017, 14, 2641-2673.	3.3	81
70	PeRL: a Circum-Arctic Permafrost Region Pond and Lake database. <i>Earth System Science Data</i> , 2017, 9, 317-348.	9.9	62
71	C4MIP - The Coupled Climate-Carbon Cycle Model Intercomparison Project: experimental protocol for CMIP6. <i>Geoscientific Model Development</i> , 2016, 9, 2853-2880.	3.6	186
72	Role of CO <sub>2</sub> , climate and land use in regulating the seasonal amplitude increase of carbon fluxes in terrestrial ecosystems: a multimodel analysis. <i>Biogeosciences</i> , 2016, 13, 5121-5137.	3.3	26

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73	An observational constraint on stomatal function in forests: evaluating coupled carbon and water vapor exchange with carbon isotopes in the Community Land Model (CLM4.5). <i>Biogeosciences</i> , 2016, 13, 5183-5204.	3.3	57
74	Evaluation of air-soil temperature relationships simulated by land surface models during winter across the permafrost region. <i>Cryosphere</i> , 2016, 10, 1721-1737.	3.9	38
75	The carbon cycle in Mexico: past, present and future of C stocks and fluxes. <i>Biogeosciences</i> , 2016, 13, 223-238.	3.3	24
76	Diagnostic and model dependent uncertainty of simulated Tibetan permafrost area. <i>Cryosphere</i> , 2016, 10, 287-306.	3.9	29
77	A multi-scale comparison of modeled and observed seasonal methane emissions in northern wetlands. <i>Biogeosciences</i> , 2016, 13, 5043-5056.	3.3	24
78	Multiple soil nutrient competition between plants, microbes, and mineral surfaces: model development, parameterization, and example applications in several tropical forests. <i>Biogeosciences</i> , 2016, 13, 341-363.	3.3	125
79	Simulated high-latitude soil thermal dynamics during the past 4 decades. <i>Cryosphere</i> , 2016, 10, 179-192.	3.9	17
80	Representing leaf and root physiological traits in CLM improves global carbon and nitrogen cycling predictions. <i>Journal of Advances in Modeling Earth Systems</i> , 2016, 8, 598-613.	3.8	93
81	The terrestrial carbon budget of South and Southeast Asia. <i>Environmental Research Letters</i> , 2016, 11, 105006.	5.2	39
82	Greening of the Earth and its drivers. <i>Nature Climate Change</i> , 2016, 6, 791-795.	18.8	1,675
83	Plant responses to increasing CO <sub>2</sub> reduce estimates of climate impacts on drought severity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 10019-10024.	7.1	399
84	Variability in the sensitivity among model simulations of permafrost and carbon dynamics in the permafrost region between 1960 and 2009. <i>Global Biogeochemical Cycles</i> , 2016, 30, 1015-1037.	4.9	116
85	Detecting regional patterns of changing CO <sub>2</sub> flux in Alaska. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 7733-7738.	7.1	33
86	Toward more realistic projections of soil carbon dynamics by Earth system models. <i>Global Biogeochemical Cycles</i> , 2016, 30, 40-56.	4.9	343
87	Multi-scale predictions of massive conifer mortality due to chronic temperature rise. <i>Nature Climate Change</i> , 2016, 6, 295-300.	18.8	296
88	Expanding Use of Plant Trait Observation in Earth System Models. <i>Eos</i> , 2016, 97, .	0.1	4
89	Toward improved model structures for analyzing priming: potential pitfalls of using bulk turnover time. <i>Global Change Biology</i> , 2015, 21, 4298-4302.	9.5	23
90	Observed allocations of productivity and biomass, and turnover times in tropical forests are not accurately represented in CMIP5 Earth system models. <i>Environmental Research Letters</i> , 2015, 10, 064017.	5.2	51

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91	The Rainfall Sensitivity of Tropical Net Primary Production in CMIP5 Twentieth- and Twenty-First-Century Simulations*. <i>Journal of Climate</i> , 2015, 28, 9313-9331.	3.2	1
92	Assessment of model estimates of land-atmosphere CO <sub>2</sub> exchange across Northern Eurasia. <i>Biogeosciences</i> , 2015, 12, 4385-4405.	3.3	25
93	Taking off the training wheels: the properties of a dynamic vegetation model without climate envelopes, CLM4.5(ED). <i>Geoscientific Model Development</i> , 2015, 8, 3593-3619.	3.6	192
94	Controls on terrestrial carbon feedbacks by productivity versus turnover in the CMIP5 Earth System Models. <i>Biogeosciences</i> , 2015, 12, 5211-5228.	3.3	81
95	Permafrost carbon climate feedback is sensitive to deep soil carbon decomposability but not deep soil nitrogen dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 3752-3757.	7.1	233
96	Climate change and the permafrost carbon feedback. <i>Nature</i> , 2015, 520, 171-179.	27.8	2,369
97	Reconciling Precipitation with Runoff: Observed Hydrological Change in the Midlatitudes. <i>Journal of Hydrometeorology</i> , 2015, 16, 2403-2420.	1.9	7
98	A simplified, data-constrained approach to estimate the permafrost carbon climate feedback. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20140423.	3.4	149
99	Global Carbon Budget 2015. <i>Earth System Science Data</i> , 2015, 7, 349-396.	9.9	616
100	Global carbon budget 2014. <i>Earth System Science Data</i> , 2015, 7, 47-85.	9.9	463
101	Estimated stocks of circumpolar permafrost carbon with quantified uncertainty ranges and identified data gaps. <i>Biogeosciences</i> , 2014, 11, 6573-6593.	3.3	1,079
102	Carbon cycle uncertainty in the Alaskan Arctic. <i>Biogeosciences</i> , 2014, 11, 4271-4288.	3.3	92
103	Global carbon budget 2013. <i>Earth System Science Data</i> , 2014, 6, 235-263.	9.9	311
104	Expert assessment of vulnerability of permafrost carbon to climate change. <i>Climatic Change</i> , 2013, 119, 359-374.	3.6	257
105	Characterisation of the Permafrost Carbon Pool. <i>Permafrost and Periglacial Processes</i> , 2013, 24, 146-155.	3.4	46
106	Estimating the Permafrost-Carbon Climate Response in the CMIP5 Climate Models Using a Simplified Approach. <i>Journal of Climate</i> , 2013, 26, 4897-4909.	3.2	67
107	Boreal carbon loss due to poleward shift in low-carbon ecosystems. <i>Nature Geoscience</i> , 2013, 6, 452-456.	12.9	55
108	Analysis of Permafrost Thermal Dynamics and Response to Climate Change in the CMIP5 Earth System Models. <i>Journal of Climate</i> , 2013, 26, 1877-1900.	3.2	326

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109	CLM4-BeTR, a generic biogeochemical transport and reaction module for CLM4: model development, evaluation, and application. <i>Geoscientific Model Development</i> , 2013, 6, 127-140.	3.6	50
110	Empirical estimates to reduce modeling uncertainties of soil organic carbon in permafrost regions: a review of recent progress and remaining challenges. <i>Environmental Research Letters</i> , 2013, 8, 035020.	5.2	68
111	Effects of Soil Moisture on the Responses of Soil Temperatures to Climate Change in Cold Regions*. <i>Journal of Climate</i> , 2013, 26, 3139-3158.	3.2	68
112	The effect of vertically resolved soil biogeochemistry and alternate soil C and N models on C dynamics of CLM4. <i>Biogeosciences</i> , 2013, 10, 7109-7131.	3.3	359
113	A new data set for estimating organic carbon storage to 3 m depth in soils of the northern circumpolar permafrost region. <i>Earth System Science Data</i> , 2013, 5, 393-402.	9.9	148
114	Field information links permafrost carbon to physical vulnerabilities of thawing. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	265
115	How the insulating properties of snow affect soil carbon distribution in the continental pan-Arctic area. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	97
116	Large inert carbon pool in the terrestrial biosphere during the Last Glacial Maximum. <i>Nature Geoscience</i> , 2012, 5, 74-79.	12.9	145
117	An assessment of the carbon balance of Arctic tundra: comparisons among observations, process models, and atmospheric inversions. <i>Biogeosciences</i> , 2012, 9, 3185-3204.	3.3	258
118	Modelling sub-grid wetland in the ORCHIDEE global land surface model: evaluation against river discharges and remotely sensed data. <i>Geoscientific Model Development</i> , 2012, 5, 941-962.	3.6	58
119	A framework for benchmarking land models. <i>Biogeosciences</i> , 2012, 9, 3857-3874.	3.3	267
120	Controls on winter ecosystem respiration in temperate and boreal ecosystems. <i>Biogeosciences</i> , 2011, 8, 2009-2025.	3.3	42
121	Climate-CH <sub>4</sub> feedback from wetlands and its interaction with the climate-CO <sub>2</sub> feedback. <i>Biogeosciences</i> , 2011, 8, 2137-2157.	3.3	90
122	Permafrost carbon-climate feedbacks accelerate global warming. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 14769-14774.	7.1	742
123	Spring temperature change and its implication in the change of vegetation growth in North America from 1982 to 2006. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 1240-1245.	7.1	432
124	Biogenic carbon and anthropogenic pollutants combine to form a cooling haze over the southeastern United States. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 8835-8840.	7.1	286
125	On the formation of high-latitude soil carbon stocks: Effects of cryoturbation and insulation by organic matter in a land surface model. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	132
126	Identifying global dust source areas using high-resolution land surface form. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	48



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127	The changing carbon cycle at Mauna Loa Observatory. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 4249-4254.	7.1	101
128	Seasonal circulation and Mauna Loa CO <sub>2</sub> variability. Journal of Geophysical Research, 2006, 111, .	3.3	19
129	Inferring dust composition from wavelength-dependent absorption in Aerosol Robotic Network (AERONET) data. Journal of Geophysical Research, 2006, 111, .	3.3	71
130	Valley formation and methane precipitation rates on Titan. Journal of Geophysical Research, 2006, 111, .	3.3	104
131	Short communication: a new dataset for estimating organic carbon storage to 3 m depth in soils of the northern circumpolar permafrost region. , 0, , .		6