

# Robert G Striegl

## List of Publications by Year in descending order

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93  
papers

16,219  
citations

38742

50  
h-index

38395

95  
g-index

112  
all docs

112  
docs citations

112  
times ranked

12693  
citing authors

#	ARTICLE	IF	CITATIONS
1	Plumbing the Global Carbon Cycle: Integrating Inland Waters into the Terrestrial Carbon Budget. <i>Ecosystems</i> , 2007, 10, 172-185.	3.4	2,836
2	Lakes and reservoirs as regulators of carbon cycling and climate. <i>Limnology and Oceanography</i> , 2009, 54, 2298-2314.	3.1	1,977
3	Global carbon dioxide emissions from inland waters. <i>Nature</i> , 2013, 503, 355-359.	27.8	1,670
4	The global abundance and size distribution of lakes, ponds, and impoundments. <i>Limnology and Oceanography</i> , 2006, 51, 2388-2397.	3.1	1,426
5	Seasonal and Annual Fluxes of Nutrients and Organic Matter from Large Rivers to the Arctic Ocean and Surrounding Seas. <i>Estuaries and Coasts</i> , 2012, 35, 369-382.	2.2	528
6	Increased groundwater to stream discharge from permafrost thawing in the Yukon River basin: Potential impacts on lateral export of carbon and nitrogen. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	436
7	Vulnerability of high-latitude soil organic carbon in North America to disturbance. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	337
8	A decrease in discharge-normalized DOC export by the Yukon River during summer through autumn. <i>Geophysical Research Letters</i> , 2005, 32, .	4.0	334
9	A Reservoir of Nitrate Beneath Desert Soils. <i>Science</i> , 2003, 302, 1021-1024.	12.6	317
10	Seasonal and spatial variability in dissolved organic matter quantity and composition from the Yukon River basin, Alaska. <i>Global Biogeochemical Cycles</i> , 2008, 22, .	4.9	268
11	Permafrost Stores a Globally Significant Amount of Mercury. <i>Geophysical Research Letters</i> , 2018, 45, 1463-1471.	4.0	245
12	Numerical Evaluation of Static-Chamber Measurements of Soil-Atmosphere Gas Exchange: Identification of Physical Processes. <i>Soil Science Society of America Journal</i> , 1996, 60, 740-747.	2.2	222
13	Consumption of atmospheric methane by desert soils. <i>Nature</i> , 1992, 357, 145-147.	27.8	214
14	Ancient low-molecular-weight organic acids in permafrost fuel rapid carbon dioxide production upon thaw. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 13946-13951.	7.1	201
15	Anthropogenic aerosols as a source of ancient dissolved organic matter in glaciers. <i>Nature Geoscience</i> , 2012, 5, 198-201.	12.9	199
16	Carbon dioxide and methane emissions from the Yukon River system. <i>Global Biogeochemical Cycles</i> , 2012, 26, .	4.9	199
17	Carbon export and cycling by the Yukon, Tanana, and Porcupine rivers, Alaska, 2001-2005. <i>Water Resources Research</i> , 2007, 43, .	4.2	197
18	Biodegradability of dissolved organic carbon in the Yukon River and its tributaries: Seasonality and importance of inorganic nitrogen. <i>Global Biogeochemical Cycles</i> , 2012, 26, .	4.9	191

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19	Aquatic carbon cycling in the conterminous United States and implications for terrestrial carbon accounting. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 58-63.	7.1	175
20	Hydrologic influence on methane and carbon dioxide dynamics at two north-central Minnesota lakes. Limnology and Oceanography, 1998, 43, 1519-1529.	3.1	173
21	Carbon dioxide partial pressure and <sup>13</sup> C content of north temperate and boreal lakes at spring ice melt. Limnology and Oceanography, 2001, 46, 941-945.	3.1	160
22	Particulate organic carbon and nitrogen export from major Arctic rivers. Global Biogeochemical Cycles, 2016, 30, 629-643.	4.9	157
23	Biodegradability of dissolved organic carbon in permafrost soils and aquatic systems: a meta-analysis. Biogeosciences, 2015, 12, 6915-6930.	3.3	153
24	Potential methane emission from north-temperate lakes following ice melt. Limnology and Oceanography, 1996, 41, 985-991.	3.1	152
25	Emissions of carbon dioxide and methane from a headwater stream network of interior Alaska. Journal of Geophysical Research G: Biogeosciences, 2013, 118, 482-494.	3.0	141
26	Reorganization of vegetation, hydrology and soil carbon after permafrost degradation across heterogeneous boreal landscapes. Environmental Research Letters, 2013, 8, 035017.	5.2	137
27	Multi-decadal increases in dissolved organic carbon and alkalinity flux from the Mackenzie drainage basin to the Arctic Ocean. Environmental Research Letters, 2016, 11, 054015.	5.2	130
28	The regional abundance and size distribution of lakes and reservoirs in the United States and implications for estimates of global lake extent. Limnology and Oceanography, 2012, 57, 597-606.	3.1	123
29	A land-to-ocean perspective on the magnitude, source and implication of DIC flux from major Arctic rivers to the Arctic Ocean. Global Biogeochemical Cycles, 2012, 26, .	4.9	121
30	Inorganic carbon loading as a primary driver of dissolved carbon dioxide concentrations in the lakes and reservoirs of the contiguous United States. Global Biogeochemical Cycles, 2013, 27, 285-295.	4.9	117
31	CO <sub>2</sub> and CH <sub>4</sub> emissions from streams in a lake-rich landscape: Patterns, controls, and regional significance. Global Biogeochemical Cycles, 2014, 28, 197-210.	4.9	115
32	Effects of a clear-cut harvest on soil respiration in a jack pine - lichen woodland. Canadian Journal of Forest Research, 1998, 28, 534-539.	1.7	114
33	Mercury Export from the Yukon River Basin and Potential Response to a Changing Climate. Environmental Science & Technology, 2011, 45, 9262-9267.	10.0	110
34	Carbon budget for a groundwater-fed lake: Calcification supports summer photosynthesis. Limnology and Oceanography, 1994, 39, 1319-1332.	3.1	104
35	Role of ground ice dynamics and ecological feedbacks in recent ice wedge degradation and stabilization. Journal of Geophysical Research F: Earth Surface, 2015, 120, 2280-2297.	2.8	102
36	Effects of permafrost melting on CO <sub>2</sub> and CH <sub>4</sub> exchange of a poorly drained black spruce lowland. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	97

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37	Carbonate buffering and metabolic controls on carbon dioxide in rivers. <i>Global Biogeochemical Cycles</i> , 2017, 31, 663-677.	4.9	92
38	Carbon gas exchange at a southern Rocky Mountain wetland, 1996-1998. <i>Global Biogeochemical Cycles</i> , 2001, 15, 321-335.	4.9	91
39	Dissolved organic carbon and nitrogen release from boreal Holocene permafrost and seasonally frozen soils of Alaska. <i>Environmental Research Letters</i> , 2018, 13, 065011.	5.2	84
40	Organic Carbon Burial in Lakes and Reservoirs of the Conterminous United States. <i>Environmental Science &amp; Technology</i> , 2015, 49, 7614-7622.	10.0	78
41	Inland waters and their role in the carbon cycle of Alaska. <i>Ecological Applications</i> , 2017, 27, 1403-1420.	3.8	78
42	Potential impacts of mercury released from thawing permafrost. <i>Nature Communications</i> , 2020, 11, 4650.	12.8	77
43	Hydrologic controls on the transport and cycling of carbon and nitrogen in a boreal catchment underlain by continuous permafrost. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2013, 118, 698-712.	3.0	74
44	Influences of glacier melt and permafrost thaw on the age of dissolved organic carbon in the Yukon River basin. <i>Global Biogeochemical Cycles</i> , 2014, 28, 525-537.	4.9	70
45	Estimating lake-atmosphere CO <sub>2</sub> exchange. <i>Limnology and Oceanography</i> , 1999, 44, 988-1001.	3.1	69
46	Ebullitive methane emissions from oxygenated wetland streams. <i>Global Change Biology</i> , 2014, 20, 3408-3422.	9.5	69
47	Basin scale controls on CO <sub>2</sub> and CH <sub>4</sub> emissions from the Upper Mississippi River. <i>Geophysical Research Letters</i> , 2016, 43, 1973-1979.	4.0	67
48	Negligible cycling of terrestrial carbon in many lakes of the arid circumpolar landscape. <i>Nature Geoscience</i> , 2019, 12, 180-185.	12.9	60
49	Carbon export by rivers draining the conterminous United States. <i>Inland Waters</i> , 2012, 2, 177-184.	2.2	57
50	Rapid runoff via shallow throughflow and deeper preferential flow in a boreal catchment underlain by frozen silt (Alaska, USA). <i>Hydrogeology Journal</i> , 2013, 21, 93-106.	2.1	57
51	A positive relationship between groundwater velocity and submersed macrophyte biomass in Sparkling Lake Wisconsin. <i>Limnology and Oceanography</i> , 1989, 34, 235-239.	3.1	50
52	CO <sub>2</sub> dynamics in the Amargosa Desert: Fluxes and isotopic speciation in a deep unsaturated zone. <i>Water Resources Research</i> , 2005, 41, .	4.2	45
53	Source limitation of carbon gas emissions in high-elevation mountain streams and lakes. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2015, 120, 952-964.	3.0	43
54	CO <sub>2</sub> time series patterns in contrasting headwater streams of North America. <i>Aquatic Sciences</i> , 2017, 79, 473-486.	1.5	43

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55	Spatial heterogeneity of within-stream methane concentrations. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2017, 122, 1036-1048.	3.0	41
56	Methane flux in subalpine wetland and unsaturated soils in the southern Rocky Mountains. <i>Global Biogeochemical Cycles</i> , 1999, 13, 101-113.	4.9	39
57	Hydrologic connectivity determines dissolved organic matter biogeochemistry in northern high-latitude lakes. <i>Limnology and Oceanography</i> , 2020, 65, 1764-1780.	3.1	37
58	Methane consumption and carbon dioxide emission in tallgrass prairie: Effects of biomass burning and conversion to agriculture. <i>Global Biogeochemical Cycles</i> , 1993, 7, 735-748.	4.9	35
59	Uranium isotopes and dissolved organic carbon in loess permafrost: Modeling the age of ancient ice. <i>Geochimica Et Cosmochimica Acta</i> , 2015, 152, 143-165.	3.9	35
60	Thermokarst Effects on Carbon Dioxide and Methane Fluxes in Streams on the Peel Plateau (NWT), Tj ETQq0 0 0 rgBT/Overlock 10 Tf 50	3.0	33
61	Mercury in water and biomass of microbial communities in hot springs of Yellowstone National Park, USA. <i>Applied Geochemistry</i> , 2006, 21, 1868-1879.	3.0	31
62	Spatial and temporal patterns of dissolved organic matter quantity and quality in the Mississippi River Basin, 1997-2013. <i>Hydrological Processes</i> , 2017, 31, 902-915.	2.6	31
63	Transport of elemental mercury in the unsaturated zone from a waste disposal site in an arid region. <i>Applied Geochemistry</i> , 2008, 23, 572-583.	3.0	30
64	SUSPENDED SEDIMENT AND METALS REMOVAL FROM URBAN RUNOFF BY A SMALL LAKE. <i>Journal of the American Water Resources Association</i> , 1987, 23, 985-996.	2.4	27
65	Soil respiration and photosynthetic uptake of carbon dioxide by ground-cover plants in four ages of jack pine forest. <i>Canadian Journal of Forest Research</i> , 2001, 31, 1540-1550.	1.7	27
66	Ice Wedge Degradation and Stabilization Impact Water Budgets and Nutrient Cycling in Arctic Trough Ponds. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2018, 123, 2604-2616.	3.0	26
67	Limited nitrate retention capacity in the Upper Mississippi River. <i>Environmental Research Letters</i> , 2018, 13, 074030.	5.2	26
68	Variation in Soil Carbon Dioxide Efflux at Two Spatial Scales in a Topographically Complex Boreal Forest. <i>Arctic, Antarctic, and Alpine Research</i> , 2012, 44, 457-468.	1.1	22
69	Biological and land use controls on the isotopic composition of aquatic carbon in the Upper Mississippi River Basin. <i>Global Biogeochemical Cycles</i> , 2017, 31, 1271-1288.	4.9	22
70	Assessing historical and projected carbon balance of Alaska: A synthesis of results and policy/management implications. <i>Ecological Applications</i> , 2018, 28, 1396-1412.	3.8	22
71	Constraining dissolved organic matter sources and temporal variability in a model sub-Arctic lake. <i>Biogeochemistry</i> , 2019, 146, 271-292.	3.5	22
72	Constraining the Inferred Paleohydrologic Evolution of a Deep Unsaturated Zone in the Amargosa Desert. <i>Vadose Zone Journal</i> , 2004, 3, 502-512.	2.2	21

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73	Diffusion and consumption of methane in an unsaturated zone in north-central Illinois, U.S.A.. Journal of Hydrology, 1989, 111, 133-143.	5.4	20
74	Carbon dioxide retention and carbon exchange on unsaturated Quaternary sediments. Geochimica Et Cosmochimica Acta, 1990, 54, 2277-2283.	3.9	20
75	Switching predominance of organic versus inorganic carbon exports from an intermediate-size subarctic watershed. Geophysical Research Letters, 2015, 42, 386-394.	4.0	20
76	Satellite and airborne remote sensing of gross primary productivity in boreal Alaskan lakes. Environmental Research Letters, 2020, 15, 105001.	5.2	20
77	Anthropogenic landcover impacts fluvial dissolved organic matter composition in the Upper Mississippi River Basin. Biogeochemistry, 2023, 164, 117-141.	3.5	16
78	Carbon Dioxide and Methane Flux in a Dynamic Arctic Tundra Landscape: Decadal-scale Impacts of Ice Wedge Degradation and Stabilization. Geophysical Research Letters, 2020, 47, .	4.0	16
79	Complex Vulnerabilities of the Water and Aquatic Carbon Cycles to Permafrost Thaw. Frontiers in Climate, 2021, 3, .	2.8	14
80	The impact of climate and reservoirs on longitudinal riverine carbon fluxes from two major watersheds in the Central and Intermontane West. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 848-863.	3.0	13
81	Thermokarst amplifies fluvial inorganic carbon cycling and export across watershed scales on the Peel Plateau, Canada. Biogeosciences, 2020, 17, 5163-5182.	3.3	13
82	The Importance of Lake Emergent Aquatic Vegetation for Estimating Arctic-boreal Methane Emissions. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	11
83	Size, age, renewal, and discharge of groundwater carbon. Inland Waters, 2018, 8, 122-127.	2.2	10
84	Extreme rates and diel variability of planktonic respiration in a shallow sub-arctic lake. Aquatic Sciences, 2019, 81, 1.	1.5	10
85	Spatial patterns of enzymatic activity in large water bodies: Ship-borne measurements of beta-D-glucuronidase activity as a rapid indicator of microbial water quality. Science of the Total Environment, 2019, 651, 1742-1752.	8.0	10
86	Multimodel analysis of anisotropic diffusive tracer-gas transport in a deep arid unsaturated zone. Water Resources Research, 2015, 51, 6052-6073.	4.2	8
87	Spatiotemporal Dynamics of CO <sub>2</sub> Gas Exchange From Headwater Mountain Streams. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2021JG006509.	3.0	8
88	Field-scale Sulfur Hexafluoride Tracer Experiment to Understand Long Distance Gas Transport in the Deep Unsaturated Zone. Vadose Zone Journal, 2014, 13, 1-10.	2.2	6
89	Annual estimates of water and solute export from 42 tributaries to the Yukon River. Hydrological Processes, 2012, 26, 1949-1961.	2.6	5
90	Heterogeneous Patterns of Aged Organic Carbon Export Driven by Hydrologic Flow Paths, Soil Texture, Fire, and Thaw in Discontinuous Permafrost Headwaters. Global Biogeochemical Cycles, 2022, 36, .	4.9	5

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91	Spatial variability of CO <sub>2</sub> concentrations and biogeochemistry in the Lower Columbia River. <i>Inland Waters</i> , 2017, 7, 417-427.	2.2	3
92	Patterns and isotopic composition of greenhouse gases under ice in lakes of interior Alaska. <i>Environmental Research Letters</i> , 2020, 15, 105016.	5.2	3
93	Storm-scale and Seasonal Dynamics of Carbon Export From a Nested Subarctic Watershed Underlain by Permafrost. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2021, 126, e2021JG006268.	3.0	2