

A Bibliometric Analysis of Research on Acid Rain

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Table S1. Information about the 50 most cited papers sorted by LCS.

Identifier	Title	Author	Journal	Year	Country	LCS	GCS
3942	Long-term effects of acid rain: Response and recovery of a forest ecosystem	Likens GE, Driscoll CT, Buso DC	Science	1996	USA	335	694
1105	Modeling the effects of acid deposition: Assessment of a lumped parameter model of soil-water and streamwater chemistry	Cosby BJ, Hornberger GM, Galloway JN, et al	Water Resources Research	1985	Norway	333	597
5361	Acidic deposition in the northeastern United States: Sources and inputs, ecosystem effects, and management strategies	Driscoll CT, Lawrence GB, Bulger AJ, et al	Bioscience	2001	USA	311	634
4974	Regional trends in aquatic recovery from acidification in North America and Europe	Stoddard JL, Jeffries DS, Lukewille A, et al	Nature	1999	USA	267	576
1527	A three-dimensional Eulerian acid deposition model: Physical concepts and formulation	Chang JS, Brost RA, Isaksen ISA, et al	Journal of Geophysical Research-Atmospheres	1987	Norway	217	610
3480	Use of calcium/aluminum ratios as indicators of stress in forest ecosystems	Cronan CS, Grigal DF	Journal of Environmental Quality	1995	USA	208	535
1106	Modeling the effects of acid deposition: Estimation of long-term water-quality responses	Cosby BJ, Wright RF, Hornberger GM, et al	Water Resources Research	1985	USA	155	262

	in a small forested catchment						
6667	Acid rain in china	Larssen T, Lydersen E, Tang DG, et al	Environmental Science & Technology	2006	Norway	149	255
4568	The biogeochemistry of calcium at Hubbard Brook	Likens GE, Driscoll CT, Buso DC, et al	Biogeochemistry	1998	Norway	148	344
7087	Dissolved organic carbon trends resulting from changes in atmospheric deposition chemistry	Monteith DT, Stoddard JL, Evans CD, et al	Nature	2007	UK	143	879
620	Acid rain on acid soil: A new perspective	Krug EC, Frink CR	Science	1983	USA	142	361
1979	The second generation regional acid deposition model chemical mechanism for regional air quality modeling	Stockwell WR, Middleton P, Chang JS, et al	Journal of Geophysical Research-Atmospheres	1990	USA	136	675
1579	Effects of acid rain on freshwater ecosystems	Schindler DW	Science	1988	Canada	133	425
193	Chemical changes due to acid precipitation in a loess-derived soil in central Europe	Ulrich B, Mayer R, Khanna PK	Soil Science	1980	Germany	123	335
5058	Acid rain and acidification in China: the importance of base cation deposition	Larssen T, Carmichael GR	Environmental Pollution	2000	Norway	118	187
5585	Modelling the effects of acid deposition: refinements, adjustments and inclusion of nitrogen dynamics in the MAGIC model	Cosby BJ, Ferrier RC, Jenkins A, et al	Hydrology and Earth System Sciences	2001	USA	115	180

5999	Chemical response of lakes in the Adirondack region of New York to declines in acidic deposition	Driscoll CT, Driscoll KM, Roy KM, et al	Environmental Science & Technology	2003	USA	114	223
55	Acid precipitation in northeastern United States	Cogbill CV, Likens GE	Water Resources Research	1974	USA	109	271
4960	Acid rain impacts on calcium nutrition and forest health: Alteration of membrane-associated calcium leads to membrane destabilization and foliar injury in red spruce	DeHayes, DH, Schaberg, PG, Hawley, G J, et al	Bioscience	1999	USA	108	179
5575	Recovery from acidification in European surface waters	Evans CD, Cullen JM , Alewell C, et al	Hydrology and Earth System Sciences	2001	UK	100	191
815	Acidic deposition and internal proton sources in acidification of soils and waters	Vanbreemen N, Driscoll CT, Mulder J	Nature	1984	Netherlands	98	313
147	Aluminum leaching response to acid precipitation: Effects on high-elevation watersheds in the northeast	Cronan CS, Schofield CL	Science	1979	USA	96	407
150	Acid rain	Likens GE, Wright RF, Galloway JN, et al	Scientific American	1979	USA	96	275
6154	Acid rain in Europe and the United States: an update	Menz FC, Seip HM	Environmental Science & Policy	2004	USA	95	165
1533	Testing a comprehensive acid deposition model	Venkatram A, Karamchandani PK, Misra	Atmospheric	1988	Canada	94	139

		PK	Environment				
6567	Regional scale evidence for improvements in surface water chemistry 1990-2001	Skjelkvale B, Stoddard JL, Jeffries DS, et al	Environmental Pollution	2005	Norway	90	250
1532	Acid rain in Southwestern China	Zhao DW, Xiong JL, Xu Y, et al	Atmospheric Environment	1988	China	87	135
219	Effect of simulated sulfuric acid rain on yield, growth and foliar injury of several crops	Lee JJ, Neely GE, Perrigan SC, et al	Environmental and Experimental Botany	1981	USA	85	110
3664	A new mechanism for calcium loss in forest-floor soils	Lawrence GB, David MB, Shortle WC, et al	Nature	1995	USA	85	154
229	'Acid rain', dissolved aluminum and chemical weathering at the Hubbard Brook Experimental Forest, New Hampshire	Johnson NM, Driscoll CT, Eaton JS, et al	Geochimica Et Cosmochimica Acta	1981	USA	82	354
2555	Calculating critical loads of acid deposition with profile: a steady-state soil chemistry model	Warfvinge P, Sverdrup H	Water Air and Soil Pollution	1992	Sweden	82	142
1446	Acid rain: China, United States, and a Remote Area	Galloway JN, Zhao DW, Xiong JL, et al	Science	1987	USA	80	136
4924	Soil calcium status and the response of stream chemistry to changing acidic deposition rates	Lawrence GB, David MB, Lovett GM, et al	Ecological Applications	1999	USA	73	100
5895	Effects of acidic deposition on forest and aquatic ecosystems in New York State	Driscoll CT, Driscoll KM, Mitchell MJ, et al	Environmental Pollution	2003	USA	72	127

6714	Response of sugar maple to calcium addition to northern hardwood forest	Juice SM, Fahey TJ, Siccama TG, et al	Ecology	2006	USA	72	156
6562	Long-term increases in surface water dissolved organic carbon: Observations, possible causes and environmental impacts	Evans CD, Monteith DT, Cooper DM	Environmental Pollution	2005	UK	71	529
6054	Long-term development of acid deposition (1880–2030) in sensitive freshwater regions in Europe	Schopp W, Posch M, Mylona S, et al	Hydrology and Earth System Sciences	2003	Austria	70	152
49	Acid rain	Likens GE, Bormann FH, Johnson NM	Environment	1972	USA	69	188
2608	Critical loads of acidity: Nordic surface waters	Henriksen A, Kamari J, Posch M, et al	Ambio	1992	Norway	69	132
3682	Acid deposition: Perspectives in time and space	Galloway JN	Water Air and Soil Pollution	1995	USA	69	214
540	Implications of the calcium-aluminum exchange system for the effect of acid precipitation on soils ¹	Reuss JO	Journal of Environmental Quality	1983	USA	67	140
1836	Simulation of the long-term soil response to acid deposition in various buffer ranges	Devries W, Posch M, Kamari J	Water Air and Soil Pollution	1989	Netherlands	66	109
2056	The STEM-II regional scale acid deposition and photochemical oxidant model—I. An overview	Carmichael GR, Peters LK, Saylor RD	Atmospheric Environment Part	1991	USA	66	142

of model development and applications			A-General Topics				
5969	Assessing the recovery of lakes in southeastern Canada from the effects of acidic deposition	Jeffries DS, Clair TA, Couture S, et al	Ambio	2003	Canada	66	101
130	Differential responses of plant foliage to simulated acid rain	Evans LS, Curry TM	American Journal of Botany	1979	USA	65	93
1740	Depletion of soil aluminium by acid deposition and implications for acid neutralization	Mulder J, Vanbreemen N, Eijck HC	Nature	1989	Netherlands	65	146
3135	Calculating critical loads for acidity with the simple mass balance method	Sverdrup H, Devries W	Water Air and Soil Pollution	1994	Sweden	65	127
2884	Seasonal and long-term temporal patterns in the chemistry of Adirondack lakes	Driscoll CT, Vandreason R	Water Air and Soil Pollution	1993	USA	64	153
6822	Alternative explanations for rising dissolved organic carbon export from organic soils	Evans CD, Chapman PJ, Clark JM, et al	Global Change Biology	2006	UK	64	311
1528	Changes in soil acidity in two forest areas with different acid deposition: 1920s to 1980s	Tamm CO, Hallbacken L	Ambio	1988	Sweden	63	135