

## 2019 NADP Reference Listing

Includes 248 publications that used NADP data, made comparisons to NADP data, or resulted from NRSP-3 activities in 2019. A publically available listing of all citations using NADP data is accessible at: <https://nadp.slh.wisc.edu/pubs/nadp-bibliography/>.

1. Aas, W., Augustin, M., Van, B., Ribu, C., Greg, F., Hilde, F., ... & Myhre, C. L., 2019. Global and regional trends of atmospheric sulfur. *Scientific Reports (Nature Publisher Group)* 9: 953 | <https://doi.org/10.1038/s41598-018-37304-0>.
2. Ackerman, D., 2019. Anthropogenic impacts on high-latitude ecosystems: Shrubs will grow. Will nitrogen flow?. Doctoral Dissertation, Biological Sciences, University of Minnesota.
3. Ackerman, D., Millet, D. B., & Chen, X., 2019. Global estimates of inorganic nitrogen deposition across four decades. *Global Biogeochemical Cycles* 33(1): 100-107.
4. Alnsour, N. I. H. A., 2019. Bi-Directional Exchange of Ammonia from Soils in Row Crop Agro-ecosystems. Doctoral Dissertation, North Carolina State University
5. Arango, C., Ponette-González, A., Neziri, I., & Bailey, J., 2019. Western spruce budworm effects on throughfall N, P, and C fluxes and soil nutrient status in the Pacific Northwest. *Canadian Journal of Forest Research* 49(10): 1207-1218.
6. Ator, S. W., García, A. M., Schwarz, G. E., Blomquist, J. D., & Sekellick, A. J., 2019. Toward explaining nitrogen and phosphorus trends in Chesapeake Bay tributaries, 1992–2012. *JAWRA Journal of the American Water Resources Association* 55(5): 1149-1168.
7. Baker, K. R., Koplitz, S. N., Foley, K. M., Avey, L., & Hawkins, A., 2019. Characterizing grassland fire activity in the Flint Hills region and air quality using satellite and routine surface monitor data. *Science of the Total Environment* 659: 1555-1566.
8. Baldigo, B. P., George, S. D., Lawrence, G. B., & Paul, E. A., 2019. Acidification impacts and goals for gauging recovery of brook trout populations and fish communities in streams of the western Adirondack Mountains, New York, USA. *Transactions of the American Fisheries Society* 148(2): 373-392.

9. Ballard, T. C., Sinha, E., & Michalak, A. M., 2019. Long-term changes in precipitation and temperature have already impacted nitrogen loading. *Environmental Science & Technology* 53(9): 5080-5090.
10. Bandara, S., Froese, D. G., St. Louis, V. L., Cooke, C. A., & Calmels, F., 2019. Postdepositional Mercury Mobility in a Permafrost Peatland from Central Yukon, Canada. *ACS Earth and Space Chemistry* 3(5): 770-778.
11. Battaglia, M. A., Jr., 2019. Factors Affecting Thermodynamic Modeling of Aerosol pH. Doctoral Dissertation, Chemical, Biochemical, and Environmental Engineering, University of Maryland, Baltimore County.
12. Battye, W. H., Bray, C. D., Aneja, V. P., Tong, D., Lee, P., & Tang, Y., 2019. Evaluating Ammonia (NH<sub>3</sub>) Predictions in the NOAA NAQFC for Eastern North Carolina Using Ground Level and Satellite Measurements. *Journal of Geophysical Research: Atmospheres* 124(14): 8242-8259.
13. Beachley, G. M., C. M. Rogers, T. F. Lavery, J. T. Walker, and M. A. Puchalski. "Long-Term Trends." *EM The Magazine for Environmental Managers (A&WMA)*, July 2019
14. Belyazid, S., Phelan, J., Nihlgård, B., Sverdrup, H., Driscoll, C., Fernandez, I., ... & Cleavitt, N., 2019. Assessing the Effects of Climate Change and Air Pollution on Soil Properties and Plant Diversity in Northeastern US Hardwood Forests: Model Setup and Evaluation. *Water, Air, & Soil Pollution* 230(5): 106.
15. Birdsey, R. A., Dugan, A. J., Healey, S. P., Dante-Wood, K., Zhang, F., Mo, G., ... & McCarter, J., 2019. Assessment of the influence of disturbance, management activities, and environmental factors on carbon stocks of US national forests. Gen. Tech. Rep. RMRS-GTR-402. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. 116 pages plus appendices, 402.
16. Bond, R., 2019. Stormwater Control Measures to Reduce Urban Stormwater and Nutrient Inputs to Boathouse Creek, North Carolina. Master's Thesis, Department of Geological Sciences. East Carolina University.
17. Botero-Acosta, A., Chu, M. L., & Huang, C., 2019. Impacts of environmental stressors on nonpoint source pollution in intensively managed hydrologic systems. *Journal of Hydrology* 579: 124056.
18. Bourne, D., 2019. Problems due to Nitrogen Cycle Imbalance in Windsor-Essex. Engineering Technical Communications, GENG 8000 - Section 1, Engineering Department, University of Windsor.

19. Bowen, J. D., Langley, W., & Adeyeye, B., 2019. Jordan Lake Responses to Reduced Nutrient Loading: Results from a New Three-Dimensional Mechanistic Water Quality Model. A report for the Jordan Lake Nutrient Management Study, North Carolina Policy Collaboratory, <https://unrba.org/sites/default/files/Reservoir-Model-UNC-Charlotte.pdf>
20. Brahmstedt, E. S., Zhou, H., Eggleston, E. M., Holsen, T. M., & Twiss, M. R., 2019. Assessment of Mercury Mobilization Potential in Upper St. Lawrence River Riparian Wetlands Under New Water Level Regulation Management. *Journal of Great Lakes Research* 45(4): 735-741.
21. Bukoski, I. "Summer Runoff Generation in Foothill Catchments of the Colorado Front Range." Master's Thesis, University of Colorado at Boulder, 2019.
22. Bunbury, J., Fisher, R. G., & Blumenstein, T., 2019. Anthropogenic and climate change impacts on lake-water chemistry over the past 20 years, Upper Midwest, United States. *Physical Geography*: 1-18, <https://doi.org/10.1080/02723646.2019.1674556>.
23. Burnham, M. B., Adams, M. B., & Peterjohn, W. T., 2019. Assessing tree ring  $\delta^{15}\text{N}$  of four temperate deciduous species as an indicator of N availability using independent long-term records at the Fernow Experimental Forest, WV. *Oecologia* 191(4): 971-981.
24. Byrnes, D. K., 2019. Typologies of Nitrogen Surplus Across Continental US: Shifting Hotspots and Dominant Controls. Master's Thesis, Civil Engineering, University of Waterloo.
25. Bytnerowicz A., J. J. Carroll, B.K. Takemoto, P. R. Miller, M. E. Fenn, and R. C. Musselman, 2019. Chapter 6 Distribution And Transport Of Air Pollutants To Vulnerable California Ecosystems. *Integrated Assessment of Ecosystem Health*, edited by K. Scow, G. Fogg,
26. Bytnerowicz, A., Fenn, M. E., Cisneros, R., Schweizer, D., Burley, J., & Schilling, S. L., 2019. Nitrogenous air pollutants and ozone exposure in the central Sierra Nevada and White Mountains of California—Distribution and evaluation of ecological risks. *Science of the Total Environment* 654: 604-615.
27. Campbell, P. C., Bash, J. O., Nolte, C. G., Spero, T. L., Cooter, E. J., Hinson, K., & Linker, L. C., 2019. Projections of Atmospheric Nitrogen Deposition to the Chesapeake Bay Watershed. *Journal of Geophysical Research: Biogeosciences* 124(11): 3307-3326.

28. Campbell, P. C., Bash, J. O., & Spero, T. L., 2019. Updates to the Noah land surface model in WRF-CMAQ to improve simulated meteorology, air quality, and deposition. *Journal of Advances in Modeling Earth Systems* 11(1): 231-256.
29. Cao, F., Jaunat, J., Sturchio, N., Cancès, B., Morvan, X., Devos, A., ... & Ollivier, P., 2019. Worldwide occurrence and origin of perchlorate ion in waters: A review. *Science of the Total Environment* 661: 737-749.
30. Caplan, J. S., Giménez, D., Hirmas, D. R., Brunzell, N. A., Blair, J. M., & Knapp, A. K., 2019. Decadal-scale shifts in soil hydraulic properties as induced by altered precipitation. *Science Advances* 5(9): eaau6635.
31. Cassell, B. A., Scheller, R. M., Lucash, M. S., Hurteau, M. D., & Loudermilk, E. L., 2019. Widespread severe wildfires under climate change lead to increased forest homogeneity in dry mixed-conifer forests. *Ecosphere* 10(11): e02934.
32. Chamberlin, C. A., Bianchi, T. S., Brown, A. L., Cohen, M. J., Dong, X., Flint, M. K., ... & Quintero, C. J., 2019. Mass balance implies Holocene development of a low-relief karst patterned landscape. *Chemical Geology* 527: 118782.
33. Chen, Y., Shen, H., & Russell, A. G., 2019. Current and Future Responses of Aerosol pH and Composition in the US to Declining SO<sub>2</sub> Emissions and Increasing NH<sub>3</sub> Emissions. *Environmental Science & Technology* 53(16): 9646-9655.
34. Clark, A. T., Knops, J. M., & Tilman, D., 2019. Contingent factors explain average divergence in functional composition over 88 years of old field succession. *Journal of Ecology* 107(2): 545-558.
35. Clark, C. M., Simkin, S. M., Allen, E. B., Bowman, W. D., Belnap, J., Brooks, M. L., ... & Pardo, L. H., 2019. Potential vulnerability of 348 herbaceous species to atmospheric deposition of nitrogen and sulfur in the United States. *Nature Plants* 5(7): 697-705.
36. Cleavitt, N. L., Clyne, A. B., & Fahey, T. J., 2019. Epiphytic macrolichen patterns along an elevation gradient in the White Mountain National Forest, New Hampshire<sup>1</sup>. *The Journal of the Torrey Botanical Society* 146(1): 8-17.
37. Costa, D., Liu, J., Roste, J., & Elliott, J., 2019. Temporal dynamics of snowmelt nutrient release from snow–plant residue mixtures: An experimental analysis and mathematical model development. *Journal of Environmental Quality* 48(4): 869-879.

38. Cowden, P., & Aherne, J., 2019. Assessment of atmospheric metal deposition by moss biomonitors in a region under the influence of a long standing active aluminium smelter. *Atmospheric Environment* 201: 84-91.
39. Crawford, J. T., Hinckley, E. L. S., Litaor, M. I., Brahney, J., & Neff, J. C., 2019. Evidence for accelerated weathering and sulfate export in high alpine environments. *Environmental Research Letters* 14(12): 124092.
40. Crim, P. M., McDonald, L. M., & Cumming, J. R., 2019. Soil and tree nutrient status of high elevation mixed red spruce (*Picea rubens* Sarg.) and broadleaf deciduous forests. *Soil Systems* 3(4): 80.
41. Dadashazar, H., Ma, L., & Sorooshian, A., 2019. Sources of pollution and interrelationships between aerosol and precipitation chemistry at a central California site. *Science of the Total Environment* 651: 1776-1787.
42. Damiran, D., DelCurto, T., Findholt, S. L., Johnson, B. K., & Vavra, M., 2019. The Effects of Previous Grazing on the Subsequent Nutrient Supply of Ungulates Grazing Late-summer Mixed-Conifer Rangelands. *Sustainable Agriculture Research* 8(526-2020-553): 13-27.
43. De Jager, N. R., Swanson, W., Hernández, D. L., Reich, J., Erickson, R., & Strauss, E. A., 2019. Effects of flood inundation, invasion by *Phalaris arundinacea*, and nitrogen enrichment on extracellular enzyme activity in an Upper Mississippi River floodplain forest. *Wetlands Ecology and Management* 27(2-3): 443-454.
44. Demars, S., & Benoit, G., 2019. Leaching of ANC and Chromium from Concrete: Effect of Aging Simulated by Sample Carbonation. *Water, Air, & Soil Pollution* 230(7): 159.
45. Desormeaux, A., Annable, M. D., Dobberfuhl, D., & Jawitz, J. W., 2019. In situ measurement of nitrate flux and attenuation using a soil passive flux meter. *Journal of Environmental Quality* 48(3): 709-716.
46. Detenbeck, N. E., You, M., & Torre, D., 2019. Recent Changes in Nitrogen Sources and Load Components to Estuaries of the Contiguous United States. *Estuaries and Coasts* 42(8): 2096-2113.
47. Dietrich, Y. Z., 2019. Improvement and Application of a New Ammonia Emission Inventory for Poultry and Swine Production in NC. Doctoral Dissertation, Biological and Agricultural Engineering, North Carolina State University.

48. Dong, H., 2019. Early warning of global change effects on catchment nutrient exports. Master's Thesis, The University of Western Ontario
49. Dong, Z., Driscoll, C. T., Johnson, S. L., Campbell, J. L., Pourmokhtarian, A., Stoner, A. M., & Hayhoe, K., 2019. Projections of water, carbon, and nitrogen dynamics under future climate change in an old-growth Douglas-fir forest in the western Cascade Range using a biogeochemical model. *Science of the Total Environment* 656: 608-624.
50. Driscoll, C. T., & Wang, Z., 2019. Ecosystem Effects of Acidic Deposition. *Encyclopedia of Water: Science, Technology, and Society*, 1-12. Edited by Patricia A. Maurice. John Wiley & Sons, Inc. DOI: 10.1002/9781119300762.wsts0043
51. Dunavent, R., 2019. Perchlorate Production in the Environment: Atmospheric and Soil Contributions. Master's Thesis, Environmental Sciences, University of Nevada – Reno.
52. Dyer, J. M., & Hutchinson, T. F., 2019. Topography and soils-based mapping reveals fine-scale compositional shifts over two centuries within a central Appalachian landscape. *Forest Ecology and Management* 433: 33-42.
53. Dynarski, K. A., Morford, S. L., Mitchell, S. A., & Houlton, B. Z., 2019. Bedrock nitrogen weathering stimulates biological nitrogen fixation. *Ecology* 100(8): e02741.
54. Edwards, A. E., Swall, J. L., & Jagoe, C. H., 2019. Mercury Concentrations in Bat Guano from Caves and Bat Houses in Florida and Georgia. *Virginia Journal of Science* 70(3): 4.
55. Espeset, A., Ryan, S., & Forister, M., 2019. TN 37996 USA. Butterfly colors and global change: anthropogenic influence on a sexually selected wing trait in the cabbage white butterfly. 177 pages. Doctoral Dissertation, University of Nevada Reno.
56. Evers, D.C. and E. Sunderland. 2019. Technical Information Report on Mercury Monitoring in Biota: Proposed components towards a strategic long-term plan for monitoring mercury in fish and wildlife globally. UN Environment Programme, Chemicals and Health Branch, Geneva, Switzerland. 40 pp.
57. Fedkin, N. M., Li, C., Dickerson, R. R., Canty, T., & Krotkov, N. A., 2019. Linking improvements in sulfur dioxide emissions to decreasing sulfate wet deposition by combining satellite and surface observations with trajectory analysis. *Atmospheric Environment* 199: 210-223.

58. Fernández-Martínez, M., Sardans, J., Chevallier, F., Ciais, P., Obersteiner, M., Vicca, S., ... & Piao, S. L., 2019. Global trends in carbon sinks and their relationships with CO<sub>2</sub> and temperature. *Nature Climate Change* 9(1): 73-79.
59. Finke, P., Opolot, E., Balesdent, J., Berhe, A. A., Boeckx, P., Cornu, S., ... & Doetterl, S., 2019. Can SOC modelling be improved by accounting for pedogenesis?. *Geoderma* 338: 513-524.
60. Firor, C. E., 2019. Geostatistical and hydrochemical trends in the Upper Passaic River Basin: Impact of road deicing application. Master's Thesis, Earth and Environmental Studies, Montclair State University.
61. Florida, Southwest, et al., 2019. Blue Water Audit – Year 1 Methods Summary. Report, Florida Springs Institute.
62. Foley, T. A., & Betterton, E. A., 2019. Nitrogen dry deposition to Lake Superior and Lake Michigan. *Journal of Great Lakes Research* 45(2): 224-239.
63. Fowler, R., 2019. Assessing the Mechanisms and Implications of Altered Carbon Cycling in Arctic and Boreal Lakes. Doctoral Dissertation, Ecology and Environmental Science, University of Maine.
64. Frank, J. M., Massman, W. J., Ewers, B. E., & Williams, D. G., 2019. Bayesian analyses of 17 winters of water vapor fluxes show bark beetles reduce sublimation. *Water Resources Research* 55(2): 1598-1623.
65. Geiser, L. H., Nelson, P. R., Jovan, S. E., Root, H. T., & Clark, C. M., 2019. Assessing ecological risks from atmospheric deposition of nitrogen and sulfur to US forests using epiphytic macrolichens. *Diversity* 11(6): 87, doi:10.3390/d11060087.
66. Gerstle, C. T., Drenner, R. W., & Chumchal, M. M., 2019. Spatial patterns of mercury contamination and associated risk to piscivorous wading birds of the south central United States. *Environmental Toxicology and Chemistry* 38(1): 160-166.
67. Gilliam, F. S., 2019. Response of herbaceous layer species to canopy and soil variables in a central Appalachian hardwood forest ecosystem. *Plant Ecology* 220(12): 1131-1138.
68. Gilliam, F. S., Burns, D. A., Driscoll, C. T., Frey, S. D., Lovett, G. M., & Watmough, S. A., 2019. Decreased atmospheric nitrogen deposition in eastern North America: Predicted responses of forest ecosystems. *Environmental Pollution* 244: 560-574.

69. Gonzales, K., & Yanai, R., 2019. Nitrogen–phosphorous interactions in young northern hardwoods indicate P limitation: foliar concentrations and resorption in a factorial N by P addition experiment. *Oecologia* 189(3): 829-840.
70. Goulden, M. L., & Bales, R. C., 2019. California forest die-off linked to multi-year deep soil drying in 2012–2015 drought. *Nature Geoscience* 12(8): 632-637.
71. Grant, R. F., Mekonnen, Z. A., & Riley, W. J., 2019. Modeling climate change impacts on an Arctic polygonal tundra: 1. Rates of permafrost thaw depend on changes in vegetation and drainage. *Journal of Geophysical Research: Biogeosciences* 124(5): 1308-1322.
72. Gray, W. J., 2019. Improved Estimates of Tributary Nitrogen Load to Casco Bay, Maine. Graduate School, The University of Maine.
73. Grieb, T. M., Fisher, N. S., Karimi, R., & Levin, L., 2019. An assessment of temporal trends in mercury concentrations in fish. *Ecotoxicology*: 1-11, <https://doi.org/10.1007/s10646-019-02112-3>.
74. Griffis, T. J., Hu, C., Baker, J. M., Wood, J. D., Millet, D. B., Erickson, M., ... & Chen, Z., 2019. Tall tower ammonia observations and emission estimates in the US Midwest. *Journal of Geophysical Research: Biogeosciences* 124(11): 3432-3447.
75. Griffiths, N. A., Jackson, C. R., Blake, J. I., Jeffers, J., Rau, B. M., Starr, G., & Vaché, K., 2019. Environmental Effects of Short-Rotation Loblolly Pine Production for Bioenergy and Evaluation of Current Forestry Best Management Practices. Department of Energy Report.
76. Groshans, G. R., Mikhailova, E. A., Post, C. J., Schlautman, M. A., Cope, M. P., & Zhang, L., 2019. Ecosystem Services Assessment and Valuation of Atmospheric Magnesium Deposition. *Geosciences* 9(8): 331.
77. Gustin, M. S., Dunham-Cheatham, S. M., & Zhang, L., 2019. Comparison of 4 methods for measurement of reactive, gaseous oxidized, and particulate bound mercury. *Environmental Science & Technology* 53(24): 14489-14495.
78. Hao, J., 2019. Comparison of two bidirectional atmosphere-surface exchange models for elemental mercury. Master's Thesis, Department of Civil and Environmental Engineering, University of Windsor.
79. Harlow, J., & Hagedorn, B., 2019. SWB modeling of groundwater recharge on Catalina Island, California, during a period of severe drought. *Water* 11(1): 58, [doi:10.3390/w11010058](https://doi.org/10.3390/w11010058).



80. Helmueller, G., Magnuson, J. J., & Dugan, H. A., 2019. Spatial and Temporal Patterns of Chloride Contamination in a Shallow, Urban Marsh. *Wetlands*: 1-12. <https://doi.org/10.1007/s13157-019-01199-y>
81. Herndon, E., Yarger, B., Frederick, H., & Singer, D., 2019. Iron and manganese biogeochemistry in forested coal mine spoil. *Soil Systems* 3(1): 3-13; doi:10.3390/soilsystems3010013
82. Hiltbrunner, E., Körner, C., Meier, R., Braun, S., & Kahmen, A., 2019. Data do not support large-scale oligotrophication of terrestrial ecosystems. *Nature Ecology & Evolution* 3(9): 1285-1286.
83. Hoffman, A. S., Albeke, S. E., McMurray, J. A., Evans, R. D., & Williams, D. G., 2019. Nitrogen deposition sources and patterns in the Greater Yellowstone Ecosystem determined from ion exchange resin collectors, lichens, and isotopes. *Science of the Total Environment* 683: 709-718.
84. Hoffman, N. L., 2019. Lithogenic mixing model approach identifies saprolite as the source of inorganic colloids in a granitoid catchment. Master's Thesis, University of Colorado at Boulder.
85. Hofmeister, K. L., Nave, L. E., Drevnick, P., Veverica, T., Knudstrup, R., Heckman, K. A., ... & Walter, M. T., 2019. Seasonal dynamics and exports of elements from a first-order stream to a large inland lake in Michigan. *Hydrological Processes* 33(10): 1476-1491.
86. Horvart, M. and J. Kotnik. 2019. Technical information report on mercury monitoring in soil. UN Environment, Chemicals and Health Branch, Geneva, Switzerland. 54pp.
87. Houck, K., & Board, C. W. C., 2019. Projecting Rainfall Intensity Duration Frequency Curves Under Climate Change. Report for the Colorado Water Conservation Board, Denver, CO.
88. Hrdina, A., Moravek, A., Schwartz-Narbonne, H., & Murphy, J., 2019. Summertime Soil-Atmosphere Ammonia Exchange in the Colorado Rocky Mountain Front Range Pine Forest. *Soil Systems* 3(1): 15.
89. Ilampooranan, I., 2019. Modeling Nutrient Legacies and Time Lags in Agricultural Landscapes: A Midwestern Case Study. Doctoral Dissertation, Civil and Environmental Engineering (Water), University of Waterloo.

90. Jeong, H., Pittelkow, C. M., & Bhattarai, R., 2019. Simulated responses of tile-drained agricultural systems to recent changes in ambient atmospheric gradients. *Agricultural Systems* 168: 48-55.
91. Jiang, X., & Wang, F., 2019. Mercury emissions in China: a general review. *Waste Disposal & Sustainable Energy* 1: 127–132, <https://doi.org/10.1007/s42768-019-00012-0>
92. Jiskra, M., Maruszczak, N., Leung, K. H., Hawkins, L., Prestbo, E., & Sonke, J. E., 2019. Automated stable isotope sampling of gaseous elemental mercury (ISO-GEM): Insights into GEM emissions from building surfaces. *Environmental Science & Technology* 53(8): 4346-4354.
93. Jo, I., Fei, S., Oswald, C. M., Domke, G. M., & Phillips, R. P., 2019. Shifts in dominant tree mycorrhizal associations in response to anthropogenic impacts. *Science Advances* 5(4): eaav6358.
94. Johansen, A. M., Duncan, C., Reddy, A., Swain, N., Sorey, M., Nieber, A., ... & Lofgren, R., 2019. Precipitation chemistry and deposition at a high-elevation site in the Pacific Northwest United States (1989–2015). *Atmospheric Environment* 212: 221-230.
95. Josephson, D. C., Lawrence, G. B., George, S. D., Siemion, J., Baldigo, B. P., & Kraft, C., 2019. Response of water chemistry and young-of-year brook trout to channel and watershed liming in streams showing lagging recovery from acidic deposition. *Water, Air, & Soil Pollution* 230(7): 144. <https://doi.org/10.1007/s11270-019-4186-x>
96. Kang, D., Foley, K. M., Mathur, R., Roselle, S. J., Pickering, K. E., & Allen, D. J., 2019. Simulating lightning NO production in CMAQv5.2: performance evaluations. *Geoscientific Model Development* 12(10): 4409–4424, <https://doi.org/10.5194/gmd-12-4409-2019>
97. Keiser, D. A., & Shapiro, J. S., 2019. Consequences of the Clean Water Act and the demand for water quality. *The Quarterly Journal of Economics* 134(1): 349-396.
98. Kelly, J. T., Koplitz, S. N., Baker, K. R., Holder, A. L., Pye, H. O., Murphy, B. N., ... & Eyth, A. M., 2019. Assessing PM2.5 model performance for the conterminous US with comparison to model performance statistics from 2007-2015. *Atmospheric Environment* 214: 116872.
99. Kincaid, D. W., Lara, N. A., Tiegs, S. D., & Hamilton, S. K., 2019. Decomposition in flocculent sediments of shallow freshwaters and its sensitivity to warming. *Freshwater Science* 38(4): 899-916.

100. King, K., Cheruvilil, K. S., & Pollard, A., 2019. Drivers and spatial structure of abiotic and biotic properties of lakes, wetlands, and streams at the national scale. *Ecological Applications* 29(7): e01957.
101. Knoepp, J. D., Markewitz, D., Callahan Jr, M. A., Adams, M. B., Laseter, S. H., West, L., ... & Richter, D. D., 2019. Long-term forest soils research: lessons learned from the US experience. In *Developments in Soil Science* (Vol. 36, pp. 473-504). Elsevier.
102. Koirala, M, 2019. Impact of land use on water quality of Mill Creek Watershed in the Mahoning Valley, Ohio. Master's Thesis, Environmental Science, Youngstown State University, 2019.
103. Koyama, L. A., & Kielland, K., 2019. Black spruce assimilates nitrate in boreal winter. *Tree Physiology* 39(4): 536-543.
104. Kurbondski, A. J., Kaiser, D. E., Rosen, C. J., & Sutradhar, A. K., 2019. Does Irrigated Corn Require Multiple Applications of Sulfur?. *Soil Science Society of America Journal* 83(4): 1124-1136.
105. Kurz, A. Y., Blum, J. D., Washburn, S. J., & Baskaran, M., 2019. Changes in the mercury isotopic composition of sediments from a remote alpine lake in Wyoming, USA. *Science of the Total Environment* 669: 973-982.
106. Lamborg, C., Mincer, T., Buchanan, W., Collins, C., Swarr, G., Ganguli, P., ... & Valiela, I., 2019. Mercury speciation and retention in a salt marsh undergoing long-term fertilization. *Estuarine, Coastal and Shelf Science* 218: 188-196.
107. Landing, W. M., & Holmes, C. D., 2019. Overview of the Atmospheric Mercury Cycle. In *Mercury and the Everglades. A Synthesis and Model for Complex Ecosystem Restoration* (pp. 47-59). Springer.
108. Liu, L., Zhang, X., Wong, A. Y., Xu, W., Liu, X., Li, Y., ... & Wu, X., 2019. Estimating global surface ammonia concentrations inferred from satellite retrievals. *Atmospheric Chemistry & Physics* 19(18): 12051–12066, <https://doi.org/10.5194/acp-19-12051-2019>
109. Lopez, David Humberto, 2019. Aerosol and Precipitation Chemistry Relationships in Arizona During the Monsoon Season. Master's Thesis, University of Arizona.
110. Lu, C., Zhang, J., Cao, P., & Hatfield, J. L., 2019. Are we getting better in using nitrogen?: Variations in nitrogen use efficiency of two cereal crops across the United States. *Earth's Future* 7(8): 939-952.

111. Macpherson, G. L., & Sullivan, P. L., 2019. Dust, impure calcite, and phytoliths: Modeled alternative sources of chemical weathering solutes in shallow groundwater. *Chemical Geology* 527: 118871.
112. Macpherson, G. L., & Sullivan, P. L., 2019. Watershed-scale chemical weathering in a merokarst terrain, northeastern Kansas, USA. *Chemical Geology* 527: 118988.
113. Majewski, M. S., 2019. Pesticides in the atmosphere: distribution, trends, and governing factors (Vol. 1). CRC Press.
114. Mathur, R., Zhang, Y., Hogrefe, C., & Xing, J., 2019. Long-Term Trends in Sulfur and Reactive Nitrogen Deposition Across. Chapter 7 in *Air Pollution Modeling and its Application XXVI*, edited by Clemens Mensink, Wanmin Gong, and Amir Hakami. Page 41.
115. Maxwell, J. T., Harley, G. L., Mandra, T. E., Yi, K., Kannenberg, S. A., Au, T. F., ... & Novick, K. A., 2019. Higher CO<sub>2</sub> Concentrations and Lower Acidic Deposition Have Not Changed Drought Response in Tree Growth But Do Influence iWUE in Hardwood Trees in the Midwestern United States. *Journal of Geophysical Research: Biogeosciences* 124(12): 3798-3813.
116. McClintock, M. A., McDowell, W. H., González, G., Schulz, M., & Pett-Ridge, J. C., 2019. African dust deposition in Puerto Rico: Analysis of a 20-year rainfall chemistry record and comparison with models. *Atmospheric Environment* 216: 116907.
117. McDonnell, T. C., Aherne, J., Sullivan, T. J., Barton, C., Cotton, C., & Jackson, B., 2019. Variation in Forest Soil-Nutrient Availability: Dynamic Model Estimates of Past and Future Conditions at Two Sites in the Daniel Boone National Forest, Kentucky, USA. United States Department of Agriculture – National Forest Service Report 20190628. <https://esenvironmental.com/wp-content/uploads/2019/10/Daniel-Boone-National-Forest-VSD-Report20190628.pdf>.
118. Meyer-Jacob, C., Michelutti, N., Paterson, A. M., Cumming, B. F., Keller, W. B., & Smol, J. P., 2019. The browning and re-browning of lakes: Divergent lake-water organic carbon trends linked to acid deposition and climate change. *Scientific Reports* 9(1): 1-10.
119. Mikhailova, E. A., Post, G. C., Cope, M. P., Post, C. J., Schlautman, M. A., & Zhang, L., 2019. Quantifying and Mapping Atmospheric Potassium Deposition for Soil Ecosystem Services Assessment in the United States. *Frontiers in Environmental Science* 7: 74.

120. Mikhailova, E. A., Post, C. J., Schlautman, M. A., Groshans, G. R., Cope, M. P., & Zhang, L., 2019. A systems-based approach to ecosystem services valuation of various atmospheric calcium deposition flows. *Resources* 8(2): 66.
121. Moore, T. R., Knorr, K. H., Thompson, L., Roy, C., & Bubier, J. L., 2019. The effect of long-term fertilization on peat in an ombrotrophic bog. *Geoderma* 343: 176-186.
122. Moravek, A., Murphy, J. G., Hrdina, A., Lin, J. C., Pennell, C., Franchin, A., ... & Martin, R., 2019. Wintertime spatial distribution of ammonia and its emission sources in the Great Salt Lake region. *Atmospheric Chemistry & Physics* 19(24): 15691.
123. Mushinski, R. M., Phillips, R. P., Payne, Z. C., Abney, R. B., Jo, I., Fei, S., ... & Raff, J. D., 2019. Microbial mechanisms and ecosystem flux estimation for aerobic NO<sub>y</sub> emissions from deciduous forest soils. *Proceedings of the National Academy of Sciences* 116(6): 2138-2145.
124. Nair, A. A., Yu, F., & Luo, G., 2019. Spatiotemporal Variations of Atmospheric Ammonia Concentrations Over the United States: Comprehensive Model-Observation Comparison. *Journal of Geophysical Research: Atmospheres* 124(12): 6571-6582.
125. Navrátil, T., Nováková, T., Roll, M., Shanley, J. B., Kopáček, J., Rohovec, J., ... & Cudlín, P., 2019. Decreasing litterfall mercury deposition in central European coniferous forests and effects of bark beetle infestation. *Science of the Total Environment* 682: 213-225.
126. Newman, C. P., 2019. Variation in groundwater recharge and surface-water quality due to climatic extremes in semi-arid mountainous watersheds. *Hydrogeology Journal* 27(5): 1627-1643.
127. Newman, C. P., Poulson, S. R., & McCrea, K. W., 2019. Contaminant generation and transport from mine pit lake to perennial stream system: Multidisciplinary investigations at the Big Ledge Mine, Nevada, USA. *Geochemistry*: 125552.
128. Nguyen, L. S. P., & Sheu, G. R., 2019. Four-year Measurements of Wet Mercury Deposition at a Tropical Mountain Site in Central Taiwan. *Aerosol and Air Quality Research* 19(9): 2043-2055.
129. Nguyen, L. S. P., Sheu, G. R., Lin, D. W., & Lin, N. H., 2019. Temporal changes in atmospheric mercury concentrations at a background mountain site downwind of the East Asia continent in 2006–2016. *Science of the Total Environment* 686: 1049-1056.

130. Nguyen, L. S. P., Zhang, L., Lin, D. W., Lin, N. H., & Sheu, G. R., 2019. Eight-year dry deposition of atmospheric mercury to a tropical high mountain background site downwind of the East Asian continent. *Environmental Pollution* 255: 113128.
131. Nopmongcol, U., Beardsley, R., Kumar, N., Knipping, E., & Yarwood, G., 2019. Changes in United States deposition of nitrogen and sulfur compounds over five decades from 1970 to 2020. *Atmospheric Environment* 209: 144-151.
132. Novak, M., Pacherova, P., Elliott, E. M., Jackova, I., Stepanova, M., Curik, J., ... & Valkova, I., 2019.  $\delta^{15}\text{N}$  systematics in two minerotrophic peatlands in the eastern US: Insights into nitrogen cycling under moderate pollution. *Global Ecology and Conservation* 17: e00571.
133. O'Driscoll, M., Bean, E., Mahoney, R. N., & Humphrey, C. P., 2019. Coastal Tourism and Its Influence on Wastewater Nitrogen Loading: A Barrier Island Case Study. *Environmental Management* 64(4): 436-455.
134. Ogurcak, D. E., & Price, R. M., 2019. Groundwater geochemistry fluctuations along a fresh-saltwater gradient on the carbonate islands of the lower Florida Keys. *Chemical Geology* 527: 118925.
135. Oleksy, I., 2019. Algal blooms in the alpine: Investigating the coupled effects of warming and nutrient deposition on mountain lakes. Doctoral Dissertation, Ecology, Colorado State University.
136. Olson, C. I., Beaubien, G. B., Sims, J. L., & Otter, R. R., 2019. Mercury Accumulation in Millipedes (*Narceus* spp.) Living Adjacent to a Southern Appalachian Mountain Stream (USA). *Bulletin of Environmental Contamination and Toxicology* 103(4): 528-532.
137. Olson, J. R., 2019. Predicting combined effects of land use and climate change on river and stream salinity. *Philosophical Transactions of the Royal Society B* 374(1764): 20180005.
138. Orem, W. H., D. P. Krabbenhoft, B. A. Poulin, and G. R. Aiken. "Sulfur Contamination in the Everglades, a Major Control on Mercury Methylation." In *Mercury and the Everglades. A Synthesis and Model for Complex Ecosystem Restoration*, pp. 13-48. Springer, Cham, 2019.
139. Overbo, A., Heger, S., Kyser, S., Asleson, B., & Gulliver, J., 2019. Chloride Contributions from Water Softeners and Other Domestic, Commercial, Industrial, and Agricultural Sources to Minnesota Waters. University of Minnesota Reports,

140. Pardo, L. H., Coombs, J. A., Robin-Abbott, M. J., Pontius, J. H., & D'Amato, A. W., 2019. Tree species at risk from nitrogen deposition in the northeastern United States: A geospatial analysis of effects of multiple stressors using exceedance of critical loads. *Forest Ecology and Management* 454: 117528.
141. Parr, T. B., Inamdar, S. P., & Miller, M. J., 2019. Overlapping anthropogenic effects on hydrologic and seasonal trends in DOC in a surface water dependent water utility. *Water Research* 148: 407-415.
142. Patel, K. F., Jakubowski, M. D., Fernandez, I. J., Nelson, S. J., & Gawley, W., 2019. Soil Nitrogen and Mercury Dynamics Seven Decades After a Fire Disturbance: a Case Study at Acadia National Park. *Water, Air, & Soil Pollution* 230(2): 29.
143. Pavlovskii, I., Hayashi, M., & Cey, E. E., 2019. Estimation of depression-focused groundwater recharge using chloride mass balance: problems and solutions across scales. *Hydrogeology Journal* 27(6): 2263-2278.
144. Pearson, C., Howard, D., Moore, C., & Obrist, D., 2019. Mercury and trace metal wet deposition across five stations in Alaska: controlling factors, spatial patterns, and source regions. *Atmospheric Chemistry & Physics* 19: 6913-29.
145. Perakis, S. S., & Pett-Ridge, J. C., 2019. Nitrogen-fixing red alder trees tap rock-derived nutrients. *Proceedings of the National Academy of Sciences* 116(11): 5009-5014.
146. Perez-Fodich, A., & Derry, L. A., 2019. Organic acids and high soil CO<sub>2</sub> drive intense chemical weathering of Hawaiian basalts: Insights from reactive transport models. *Geochimica et Cosmochimica Acta* 249: 173-198.
147. Perin, V., 2019. Ammonia volatilization from broadcast urea: measurements using a micrometeorological approach and modeling with the Denitrification-Decomposition (DNDC) model. Master's Thesis, Department of Agronomy, Kansas State University.
148. Perkins, L. B., Ahlering, M., & Larson, D. L., 2019. Looking to the Future: Key points for sustainable management of Northern Great Plains grasslands. *Restoration Ecology* 27(6): 1212-1219.
149. Pierret, M. C., Viville, D., Dambrine, E., Cotel, S., & Probst, A., 2019. Twenty-five year record of chemicals in open field precipitation and throughfall from a medium-altitude forest catchment (Strengbach-NE France): An obvious response to atmospheric pollution trends. *Atmospheric Environment* 202: 296-314.

150. Piña, A. J., Schumacher, R. S., Denning, A. S., Faulkner, W. B., Baron, J. S., Ham, J., ... & Collett, J. L., 2019. Reducing Wet Ammonium Deposition in Rocky Mountain National Park: the Development and Evaluation of A Pilot Early Warning System for Agricultural Operations in Eastern Colorado. *Environmental Management* 64(5): 626-639.
151. Pleim, J. E., Ran, L., Appel, W., Shephard, M. W., & Cady-Pereira, K., 2019. New bidirectional ammonia flux model in an air quality model coupled with an agricultural model. *Journal of Advances in Modeling Earth Systems* 11(9): 2934-2957.
152. Pollman, C. D., 2019. Major Drivers of Mercury Methylation and Cycling in the Everglades: A Synthesis. In *Mercury and the Everglades. A Synthesis and Model for Complex Ecosystem Restoration* (pp. 131-152). Springer, Cham.
153. Prestie, K., Phillips, I. D., Chivers, D. P., & Jardine, T. D., 2019. Effects of ontogeny and invasive crayfish on feeding ecology and mercury concentrations of predatory fishes. *Canadian Journal of Fisheries and Aquatic Sciences* 76(11): 1929-1939.
154. Puchalski, M. A., Walker, J. T., Beachley, G. M., Zondlo, M. A., Benedict, K. B., Grant, R. H., ... & Morris, K. Monitoring Spatial and Temporal Trends of Reduced Nitrogen. *EM The Magazine for Environmental Managers (A&WMA)*, July 2019.
155. Radke, A. G., Godsey, S. E., Lohse, K. A., McCorkle, E. P., Perdrial, J., Seyfried, M. S., & Holbrook, W. S., 2019. Spatiotemporal heterogeneity of water flowpaths controls dissolved organic carbon sourcing in a snow-dominated, Headwater Catchment. *Frontiers in Ecology and Evolution* 7: 46.
156. Ramseyer, C. A., Miller, P. W., & Mote, T. L., 2019. Future precipitation variability during the early rainfall season in the El Yunque National Forest. *Science of the Total Environment* 661: 326-336.
157. Ran, L., Yuan, Y., Cooter, E., Benson, V., Yang, D., Pleim, J., ... & Williams, J., 2019. An integrated agriculture, atmosphere, and hydrology modeling system for ecosystem assessments. *Journal of Advances in Modeling Earth Systems* 11(12): 4645-4668.
158. Razzaghmanesh, M., & Borst, M., 2019. Long-term effects of three types of permeable pavements on nutrient infiltrate concentrations. *Science of the Total Environment* 670: 893-901.
159. Reavie, E. D., & Cai, M., 2019. Consideration of species-specific diatom indicators of anthropogenic stress in the Great Lakes. *PloS one* 14(5): e0210927.



160. Redding, M. R., Lewis, R., & Shorten, P. R., 2019. Simultaneous measurements of ammonia volatilisation and deposition at a beef feedlot. *Animal Production Science* 59(1): 160-168.
161. Rhoades, C. C., Chow, A. T., Covino, T. P., Feghel, T. S., Pierson, D. N., & Rhea, A. E., 2019. The legacy of a severe wildfire on stream nitrogen and carbon in headwater catchments. *Ecosystems* 22(3): 643-657.
162. Richard, R., 2019. Harvest Intensity and Delineation of Outwash Soils in Wisconsin. Doctoral Dissertation, Forest Science, Michigan Technological University.
163. Rimmer, C. C., Lloyd, J. D., McFarland, K. P., Evers, D. C., & Lane, O. P., 2019. Patterns of blood mercury variation in two long-distance migratory thrushes on Mount Mansfield, Vermont. *Ecotoxicology*: 1-9. <https://doi.org/10.1007/s10646-019-02104-3>
164. Rindy, J. E., Ponette-González, A. G., Barrett, T. E., Sheesley, R. J., & Weathers, K. C., 2019. Urban trees are sinks for soot: elemental carbon accumulation by two widespread oak species. *Environmental Science & Technology* 53(17): 10092-10101.
165. Riscassi, A., Scanlon, T., & Galloway, J., 2019. Stream geochemical response to reductions in acid deposition in headwater streams: Chronic versus episodic acidification recovery. *Hydrological Processes* 33(4): 512-526.
166. Roberts, S., Kirk, J. L., Wiklund, J. A., Muir, D. C. G., Yang, F., Gleason, A., & Lawson, G., 2019. Mercury and metal (loid) deposition to remote Nova Scotia lakes from both local and distant sources. *Science of the Total Environment* 675: 192-202.
167. Rose, L. A., Yu, Z., Bain, D. J., & Elliott, E. M., 2019. High resolution, extreme isotopic variability of precipitation nitrate. *Atmospheric Environment* 207: 63-74.
168. Rungee, J., 2019. Estimating Plant-accessible Water Storage Through Evaluating Evapotranspiration in the Semi-arid Western United States Using Eddy-covariance, Remote Sensing, and Spatially Distributed Data. Doctoral Dissertation, University of California, Merced.
169. Rungee, J., Bales, R., & Goulden, M., 2019. Evapotranspiration response to multiyear dry periods in the semiarid western United States. *Hydrological Processes* 33(2): 182-194.

170. Rutkowski, E., 2019. Coastal urban atmospheric mercury cycling and emissions in Boston, MA. Senior Thesis, Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology.
171. Sabo, R. D., Clark, C. M., Bash, J., Sobota, D., Cooter, E., Dobrowolski, J. P., ... & Compton, J. E., 2019. Decadal Shift in Nitrogen Inputs and Fluxes Across the Contiguous United States: 2002–2012. *Journal of Geophysical Research: Biogeosciences* 124(10): 3104-3124.
172. Saylor, R. D., Baker, B. D., Lee, P., Tong, D., Pan, L., & Hicks, B. B., 2019. The particle dry deposition component of total deposition from air quality models: right, wrong or uncertain?. *Tellus B: Chemical and Physical Meteorology* 71(1): 1550324.
173. Schichtel, B. A., Gebhart, K. A., Morris, K. H., Cheatham, J. R., Vimont, J., Larson, R. S., & Beachley, G., 2019. Long-term trends of wet inorganic nitrogen deposition in Rocky Mountain National Park: Influence of missing data imputation methods and associated uncertainty. *Science of the Total Environment* 687: 817-826.
174. Schuyler, T. J., Bailey, S. C., & Guzman, M. I., 2019. Monitoring tropospheric gases with small unmanned aerial systems (sUAS) during the second CLOUDMAP flight campaign. *Atmosphere* 10(8): 434.
175. Schwede, D., A. Cole, R. Vet, and G. Lear. "Collaboration." networks 1: 2. *EM The Magazine for Environmental Managers (A&WMA)*, July 2019, <http://pubs.awma.org/flip/EM-June-2019/schwede.pdf>.
176. Shang, L., 2019. Climate Change And Land Use/covers Change Impacts On Watershed Hydrology, Nutrient Dynamics—A Case Study In the Mississippi River Watershed. Doctoral Dissertation, Graduate College, University of Vermont.
177. Shanley, J. B., Marvin-DiPasquale, M., Lane, O., Arendt, W., Hall, S., & McDowell, W. H., 2019. Resolving a paradox—high mercury deposition, but low bioaccumulation in northeastern Puerto Rico. *Ecotoxicology*: 1-14.
178. Sharma, B., 2019. Determination of Wet Deposition Ethanol Concentration in the Eastern US and South TX. Master's Thesis, Texas A&M – Corpus Christi.
179. Shaw, E. A., Boot, C. M., Moore, J. C., Wall, D. H., & Baron, J. S., 2019. Long-term nitrogen addition shifts the soil nematode community to bacterivore-dominated and reduces its ecological maturity in a subalpine forest. *Soil Biology and Biochemistry* 130: 177-184.

180. Sheu, G. R., Gay, D. A., Schmeltz, D., Olson, M., Chang, S. C., Lin, D. W., & Nguyen, L. S. P., 2019. A New Monitoring Effort for Asia: The Asia Pacific Mercury Monitoring Network (APMMN). *Atmosphere* 10(9): 481.
181. Sheu, G. R., Nguyen, L. S. P., Truong, M. T., & Lin, D. W., 2019. Characteristics of atmospheric mercury at a suburban site in northern Taiwan and influence of trans-boundary haze events. *Atmospheric Environment* 214: 116827.
182. Shotyk, W., & Cuss, C. W., 2019. Atmospheric Hg accumulation rates determined using Sphagnum moss from ombrotrophic (rain-fed) bogs in the Athabasca Bituminous Sands region of northern Alberta, Canada. *Ecological Indicators* 107: 105626.
183. Sickman, J. O., James, A. E., Fenn, M. E., Bytnerowicz, A., Lucero, D. M., & Homyak, P. M., 2019. Quantifying atmospheric N deposition in dryland ecosystems: A test of the Integrated Total Nitrogen Input (ITNI) method. *Science of the Total Environment* 646: 1253-1264.
184. Silvern, R. F., 2019. Using Orbital and Suborbital Observations to Constrain US Air Quality Trends. Doctoral Dissertation, Graduate School of Arts & Sciences, Harvard University.
185. Silvern, R. F., D. J. Jacob, L. J. Mickley, M. P. Sulprizio, K. R. Travis, E. A. Marais, R. C. Cohen et al. "Using satellite observations of tropospheric NO<sub>2</sub> columns to infer long-term trends in US NO<sub>x</sub> emissions: the importance of accounting for the free tropospheric NO<sub>2</sub> background." *Atmospheric Chemistry and Physics* 19(13): 8863-8878.
186. Simpson, A. C., Zabowski, D., Rochefort, R. M., & Edmonds, R. L., 2019. Increased microbial uptake and plant nitrogen availability in response to simulated nitrogen deposition in alpine meadows. *Geoderma* 336: 68-80.
187. Sinha, E., Michalak, A. M., Calvin, K. V., & Lawrence, P. J., 2019. Societal decisions about climate mitigation will have dramatic impacts on eutrophication in the 21st century. *Nature Communications* 10: 939, <https://doi.org/10.1038/s41467-019-08884-w>.
188. Site, A. F. L., & Fredriksen, R. L., 2019. Precipitation and dry deposition chemistry concentrations and fluxes, Andrews Experimental Forest, 1969 to present. [agris.fao.org](http://agris.fao.org).
189. Sosa-Echeverría, R., Alarcón-Jiménez, A. L., Torres-Barrera, M. D. C., Jaimes-Palomera, M., Retama-Hernández, A., Sánchez-Álvarez, P., ... & Bravo-Álvarez, H.,

2019. Spatial and temporal variation of acid rain in the Mexico City Metropolitan Zone. *Atmósfera* 32(1): 55-69.
190. Stager, J. C., Wiltse, B., Cumming, B. F., Holsen, T. M., Stetler, J., Laxson, C., ... & Charles, D. F., 2019. A novel ecological state at Bear Pond (Adirondack Mountains, NY, USA) following acidification and partial recovery. *Lake and Reservoir Management* 35(2): 208-223.
191. St. Louis, V. L., Graydon, J. A., Lehnherr, I., Amos, H. M., Sunderland, E. M., St. Pierre, K. A., ... & Humphreys, E. R., 2019. Atmospheric concentrations and wet/dry loadings of mercury at the remote Experimental Lakes Area, northwestern Ontario, Canada. *Environmental Science & Technology* 53(14): 8017-8026.
192. Stratton, J. J., Ham, J., Collett Jr, J. L., Benedict, K., & Borch, T., 2019. Assessing the efficacy of nitrogen isotopes to distinguish Colorado Front Range ammonia sources affecting Rocky Mountain National Park. *Atmospheric Environment* 215: 116881.
193. Streets, D. G., Horowitz, H. M., Lu, Z., Levin, L., Thackray, C. P., & Sunderland, E. M., 2019. Global and regional trends in mercury emissions and concentrations, 2010–2015. *Atmospheric Environment* 201: 417-427.
194. Sullivan, P. L., Stops, M. W., Macpherson, G. L., Li, L., Hirmas, D. R., & Dodds, W. K., 2019. How landscape heterogeneity governs stream water concentration-discharge behavior in carbonate terrains (Konza Prairie, USA). *Chemical Geology* 527: 118989.
195. Sullivan, P. L., Godd eris, Y., Shi, Y., Gu, X., Schott, J., Hasenmueller, E. A., ... & Brantley, S. L., 2019. Exploring the effect of aspect to inform future earthcasts of climate-driven changes in weathering of shale. *Journal of Geophysical Research: Earth Surface* 124(4): 974-993.
196. Sullivan, T. J., 2019. *Aquatic effects of acidic deposition*. CRC Press. ISBN 1-56670-416-2.
197. Swinton, M. W., & Nierzwicki-Bauer, S. A., 2019. Mercury increase in Lake Champlain fish: links to fishery dynamics and extreme climatic events. *Ecotoxicology*: 1-12. <https://doi.org/10.1007/s10646-019-02148-5>
198. Symstad, A. J., Smith, A. T., Newton, W. E., & Knapp, A. K., 2019. Experimentally derived nitrogen critical loads for northern Great Plains vegetation. *Ecological Applications* 29(5): e01915.

199. Tagne, G. V., 2019. Effects of agriculture land-use on subsurface recharge contaminant transport in shallow karstic aquifers in the Cumberland Escarpment, upper-Ohio River Basin. Doctoral Dissertation, Graduate School, Ball State University.
200. Tamayo, M. A. M., & Marquez, P. S., 2019. An Online Equipment Management System Utilizing Prescriptive Analytics. *International Journal of Simulation-- Systems, Science & Technology* 20: 1473-8031 DOI 10.5013/IJSSST.a.20.S2.10 10.1 ISSN: 1473-804x online
201. Tenorio, F. A., 2019. Benchmarking on-farm maize nitrogen balance in the western US Corn Belt. Doctoral Dissertation, Graduate College, University of Nebraska.
202. Tevlin, A. G., & Murphy, J. G., 2019. Atmospheric Ammonia: Measurements, Modeling, and Chemistry–Climate Interactions. *Advances In Atmospheric Chemistry-Volume 2: Organic Oxidation And Multiphase Chemistry*, 2, 1.
203. Thomason, Krista A., 2019. Trends Analysis and a Yearly Comparison of Point Sources of Atmospheric Mercury Using HYSPLIT Back Trajectories Focused in Athens, Ohio. Master's Thesis, Ohio University.
204. Tierney, J. A., Hedin, L. O., & Wurzbarger, N., 2019. Nitrogen fixation does not balance fire-induced nitrogen losses in longleaf pine savannas. *Ecology* 100(7): e02735.
205. Treadaway, V. A., 2019. Behavior and Transport of Organic Acids in the Troposphere Using Observational Data and Models. Doctoral Dissertation, Oceanography, University of Rhode Island.
206. Turner, M. G., Whitby, T. G., & Romme, W. H., 2019. Feast not famine: Nitrogen pools recover rapidly in 25-yr-old postfire lodgepole pine. *Ecology* 100(3): e02626.
207. Upchurch, S., Scott, T. M., Alfieri, M. C., Fratesi, B., & Dobecki, T. L., 2019. Hydrogeochemistry of Florida Karst Waters. In *The Karst Systems of Florida* (pp. 145-206). Springer, Cham.
208. Vallero, Daniel A, 2019. Coal Waste Streams. In *Waste*, pp. 153-169. Academic Press, 2019.
209. Vallero, D. A., 2019. Waste and Biogeochemical Cycling. In *Waste*, pp. 91-125. Academic Press.

210. Van Houtven, G., Phelan, J., Clark, C., Sabo, R. D., Buckley, J., Thomas, R. Q., ... & LeDuc, S. D., 2019. Nitrogen deposition and climate change effects on tree species composition and ecosystem services for a forest cohort. *Ecological Monographs* 89(2): e01345.
211. Vijayaraghavan, K., & Pollman, C. D., 2019. Atmospheric Deposition Flux of Mercury to the Everglades. In *Mercury and the Everglades. A Synthesis and Model for Complex Ecosystem Restoration* (pp. 61-73). Springer, Cham.
212. Waguespack, J., 2019. Characterization of a Shallow Urban Aquifer in Atlanta, Georgia. Master's Thesis, Georgia State University, [https://scholarworks.gsu.edu/geosciences\\_theses/129](https://scholarworks.gsu.edu/geosciences_theses/129)
213. Walker, J. T., and G. M. Beachley, 2019. Evolution of Monitoring and Modeling. *EM The Magazine for Environmental Managers (A&WMA)*, July 2019
214. Walker, J. T., Bell, M. D., Schwede, D., Cole, A., Beachley, G., Lear, G., & Wu, Z., 2019. Aspects of uncertainty in total reactive nitrogen deposition estimates for North American critical load applications. *Science of the Total Environment* 690: 1005-1018.
215. Walker, J.T.; Beachley, G.M.; Amos, H.M.; Baron, J.S.; Bash, J.; Baumgardner, R.; Bell, M.D.; Benedict, K.B.; Chen, X.; Clow, D.W.; Cole, A.; Coughlin, J.G.; Cruz, K.; Daly, R.W.; Decina, S.M.; Elliott, E.M.; Fenn, M.E.; Ganzeveld, L.; Gebhart, K.; Isil, S.S.; Kerschner, B.M.; Larson, R.S.; Lavery, T.; Lear, G.G.; Macy, T.; Mast, M.A.; Mishoe, K.; Morris, K.H.; Padgett, P.E.; Pouyat, R.V.; Puchalski, M.; Pye, H.O.T.; Rea, A.W.; Rhodes, M.F.; Rogers, C.M.; Saylor, R.; Scheffe, R.; Schichtel, B.A.; Schwede, D.B.; Sexstone, G.A.; Sive, B.C.; Templer, P.H.; Thompson, T.; Tong, D.; Wetherbee, G.A.; Whitlow, T.H.; Wu, Z.; Yu, Z.; Zhang, L. 2019. Science needs for continued development of total nitrogen deposition budgets in the United States. U.S. Environmental Protection Agency, Washington, DC, EPA 601/R-19/001.
216. Walker, J. T., Beachley, G., Amos, H. M., Baron, J. S., Bash, J., Baumgardner, R, M.D. Bell, K.B. Benedict, X. Chen, D.W. Clow, A. Cole, J.G. Coughlini, K. Cruz, R.W. Daly, S.M. Decina, E.M. Elliott, M.E. Fenn, L. Ganzeveld , K. Gebhart, S.S. Isil, B.M. Kerschner, R.S. Larson, T. Lavery , G.G. Lear, T. Macy, M.A. Mast, K.Mishoe, K.H. Morris, P.E. Padgett, R.V. Pouyat, M. Puchalski, H.O.T. Pye, A.W. Rea, M.F. Rhodes, C.M.Rogers, R. Saylor, R. Scheffe, B.A. Schichtel, D.B. Schwede, G.A. Sexstone, B.C. Sive, R. Sosa Echeverría, P.H. Templer, T. Thompson, D. Tong, G.A.Wetherbee, T.H.Whitlow, Z.Wu, Z. Yu, L. Zhang, 2019. Toward the improvement of total nitrogen deposition budgets in the United States. *Science of the Total Environment* 691: 1328-1352.

217. Wang, J. J., Bowden, R. D., Lajtha, K., Washko, S. E., Wurzbacher, S. J., & Simpson, M. J., 2019. Long-term nitrogen addition suppresses microbial degradation, enhances soil carbon storage, and alters the molecular composition of soil organic matter. *Biogeochemistry* 142(2): 299-313.
218. Wang, W. J., Ma, S., He, H. S., Liu, Z., Thompson III, F. R., Jin, W., ... & Zhang, W., 2019. Effects of rising atmospheric CO<sub>2</sub>, climate change, and nitrogen deposition on aboveground net primary production in a temperate forest. *Environmental Research Letters* 14(10): 104005.
219. Wang, F., Outridge, P. M., Feng, X., Meng, B., Heimbürger-Boavida, L. E., & Mason, R. P., 2019. How closely do mercury trends in fish and other aquatic wildlife track those in the atmosphere?—Implications for evaluating the effectiveness of the Minamata Convention. *Science of the Total Environment* 674: 58-70.
220. Wason, J. W., Beier, C. M., Battles, J. J., & Dovciak, M., 2019. Acidic deposition and climate warming as drivers of tree growth in high-elevation spruce-fir forests of the Northeastern US. *Frontiers in Forests and Global Change* 2: 63.
221. Watras, C. J., Grande, D., Latzka, A. W., & Tate, L. S., 2019. Mercury trends and cycling in northern Wisconsin related to atmospheric and hydrologic processes. *Canadian Journal of Fisheries and Aquatic Sciences* 76(5): 831-846.
222. Webster, J. R., Stewart, R. M., Knoepp, J. D., & Jackson, C. R., 2019. Effects of instream processes, discharge, and land cover on nitrogen export from southern Appalachian Mountain catchments. *Hydrological Processes* 33(2): 283-304.
223. Weiss, S. B., 2019. Dead flowers. *Nature Plants* 5(7): 654-655.
224. Wetherbee, G., Baldwin, A., Ranville, J., 2019, It is raining plastic: U.S. Geological Survey Open-File Report 2019–1048, 1 sheet, available at <https://doi.org/10.3133/ofr20191048>.
225. Wetherbee, G. A., Benedict, K. B., Murphy, S. F., & Elliott, E. M., 2019. Inorganic nitrogen wet deposition gradients in the Denver-Boulder metropolitan area and Colorado Front Range—Preliminary implications for Rocky Mountain National Park and interpolated deposition maps. *Science of the Total Environment* 691: 1027-1042.
226. Wigner, R., 2019. Potential Contributions of Atmospheric Deposition to Nitrates and Ammonia in Tennessee’s Highway Stormwater Runoff. Master’s Thesis, Tennessee Technological University.

227. Won, A. Y., Kim, M. K., & Zoh, K. D., 2019. Characteristics of total and methyl mercury in precipitation in Seoul, Korea. *Atmospheric Pollution Research* 10(2): 493-500.
228. Wood, W. W., 2019. Geogenic groundwater solutes: the myth. *Hydrogeology Journal* 27(8): 2729-2738.
229. Xie, Y., Wang, Y., Dong, W., Wright, J. S., Shen, L., & Zhao, Z., 2019. Evaluating the Response of Summertime Surface Sulfate to Hydroclimate Variations in the Continental United States: Role of Meteorological Inputs in the GEOS-Chem Model. *Journal of Geophysical Research: Atmospheres* 124(3): 1662-1679.
230. Xu, J. W., Martin, R. V., Henderson, B. H., Meng, J., Öztaner, Y. B., Hand, J. L., ... & Phillips, S. B., 2019. Simulation of airborne trace metals in fine particulate matter over North America. *Atmospheric Environment* 214: 116883.
231. Yang, W., Feng, G., Adeli, A., Kersebaum, K. C., Jenkins, J. N., & Li, P., 2019. Long-term effect of cover crop on rainwater balance components and use efficiency in the no-tilled and rainfed corn and soybean rotation system. *Agricultural Water Management* 219: 27-39.
232. Yang, Y., Meng, L., Yanai, R. D., Montesdeoca, M., Templer, P. H., Asbjornsen, H., ... & Driscoll, C. T., 2019. Climate change may alter mercury fluxes in northern hardwood forests. *Biogeochemistry* 146(1): 1-16.
233. Yao, X., & Zhang, L., 2019. Causes of Large Increases in Atmospheric Ammonia in the Last Decade across North America. *ACS omega* 4(26): 22133-22142.
234. Ye, Z., Mao, H., & Driscoll, C. T., 2019. Impacts of anthropogenic emissions and meteorology on mercury deposition over lake vs land surface in upstate New York. *Ecotoxicology*: 1-12, <https://doi.org/10.1007/s10646-019-02113-2>
235. Ye, Z., Mao, H., & Driscoll, C. T., 2019. Primary effects of changes in meteorology vs. anthropogenic emissions on mercury wet deposition: a modeling study. *Atmospheric Environment* 198: 215-225.
236. Yu, Z., Lu, C., Tian, H., & Canadell, J. G., 2019. Largely underestimated carbon emission from land use and land cover change in the conterminous United States. *Global Change Biology* 25(11): 3741-3752.
237. Zarfos, M. R., Dovciak, M., Lawrence, G. B., McDonnell, T. C., & Sullivan, T. J., 2019. Plant richness and composition in hardwood forest understories vary along



an acidic deposition and soil-chemical gradient in the northeastern United States. *Plant and Soil* 438(1-2): 461-477.

238. Zhang, Y., Benedict, K. B., Tang, A., Sun, Y., Fang, Y., & Liu, X., 2019. Persistent nonagricultural and periodic agricultural emissions dominate sources of ammonia in urban Beijing: evidence from <sup>15</sup>N stable isotope in vertical profiles. *Environmental Science & Technology* 54(1): 102-109.
239. Zhang, J., Gao, Y., Leung, L. R., Luo, K., Liu, H., Lamarque, J. F., ... & Nagashima, T., 2019. Impacts of climate change and emissions on atmospheric oxidized nitrogen deposition over East Asia. *Atmospheric Chemistry & Physics* 19(PNNSA-141420).
240. Zhang, X., Lin, C., Zhou, X., Lei, K., Guo, B., Cao, Y., ... & He, M., 2019. Concentrations, fluxes, and potential sources of nitrogen and phosphorus species in atmospheric wet deposition of the Lake Qinghai Watershed, China. *Science of the Total Environment* 682: 523-531.
241. Zhang, Y., Foley, K. M., Schwede, D. B., Bash, J. O., Pinto, J. P., & Dennis, R. L., 2019. A measurement-model fusion approach for improved wet deposition maps and trends. *Journal of Geophysical Research: Atmospheres* 124(7): 4237-4251.
242. Zhang, L., P. Zhou, S. Cao, Y. Zhao, 2019. "Atmospheric Mercury Deposition Over the Land Surfaces and the Associated Uncertainties in Observations and Simulations: A Critical Review." *Atmospheric Chemistry & Physics* 19(24): 15587-608.
243. Zhi, W., 2019. Understanding hydrological and biogeochemical control on solute export pattern at watershed scale. Doctoral Dissertation, Energy and Mineral Engineering, Pennsylvania State University.
244. Zhi, W., Li, L., Dong, W., Brown, W., Kaye, J., Steefel, C., & Williams, K. H., 2019. Distinct source water chemistry shapes contrasting concentration-discharge patterns. *Water Resources Research* 55(5): 4233-4251.
245. Zhou, H., Hopke, P. K., Zhou, C., & Holsen, T. M., 2019. Ambient mercury source identification at a New York State urban site: Rochester, NY. *Science of the Total Environment* 650: 1327-1337.
246. Zhou, C., Zhou, H., Holsen, T. M., Hopke, P. K., Edgerton, E. S., & Schwab, J. J., 2019. Ambient Ammonia Concentrations Across New York State. *Journal of Geophysical Research: Atmospheres* 124(14): 8287-8302.

247. Zikalala, P., Kisekka, I., & Grismer, M., 2019. Calibration and Global Sensitivity Analysis for a Salinity Model Used in Evaluating Fields Irrigated with Treated Wastewater in the Salinas Valley. *Agriculture* 9(2): 31.
248. Zou, C., Grove, J. H., Pearce, R. C., Coyne, M. S., & Ren, K., 2019. What happens to in situ net soil nitrogen mineralization when nitrogen fertility changes?. *Journal of Plant Nutrition and Soil Science* 182(2): 296-306.