SHENANDOAH WATERSHED STUDY
&
VIRGINIA TROUT STREAM SENSITIVITY STUDY

Bibliography of Associated Publications: 2021

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1989 Bricker, O.P., and K.C. Rice. Influence of bedrock geology on the chemistry of surface waters in central Maryland. AGU Chapman Conference, Hydrogeochemical Responses of Forested Catchments, Bar Harbor, Maine.

1989 Kennedy, M.M., K.C. Rice, and O.P. Bricker. The effects of storm events on episodic acidification of headwater streams on different bedrock types in Maryland and Virginia. Fall Meeting of the American Geophysical Union, San Francisco, California.

1989 Webb, J.R. Acidification of Native Brook Trout Streams in Virginia. Acid deposition effects in the Mid-Atlantic States. Conference sponsored by U.S. Environmental Protection Agency, Pittsburgh, Pennsylvania.

1990 Webb, J.R., J.N. Galloway, and G.M. Hornberger. Watershed acidification and spatial variability of alkalinity and sulfate in mountain headwater streams of Virginia. Virginia Water Resources Conference, Richmond, Virginia.

1990 Webb, J.R., J.N. Galloway, G.M. Hornberger, and E.G. Tandy. Acidification and spatial variability of alkalinity and sulfate in mountain headwater streams of Shenandoah National Park and western Virginia. Twelfth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1990 Kennedy, M.M., O.P. Bricker, K.C. Rice, and M.A. Mast. An evaluation of the effects of antecedent conditions on the episodic acidification of streams. Fall Meeting of the American Geophysical Union, San Francisco, California.

1991 Mast, M.A., K.C. Rice, O.P. Bricker, and M.M. Kennedy. Relation of stream chemistry and flowpaths during storm events at four small Mid-Atlantic watersheds. Gordon Research Conference, "Hydrological-Geochemical-Biological Interactions in Forested Catchments," Plymouth, New Hampshire.

1991 Rice, K.C., and O.P. Bricker. Stable isotopes of hydrogen and oxygen in water, Catoctin Mountain, north-central Maryland. Fall Meeting of the American Geophysical Union, San Francisco, California.

1991 Herlihy, A.T., P.R. Kaufmann, M.R. Church, P.J. Wigington, J.R. Webb, and M.J. Sale. The effects of acidic deposition on forested upland catchments in the Mid-Appalachian mountains. Abstract published in ESO and poster presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1991 Webb, J.R. and J.N. Galloway. Potential acidification of streams in the Mid-Appalachian Highlands: a problem with generalized assessments. Southern Appalachian Man and Biosphere Conference, Gatlinburg, Tennessee.

1991 Webb, J.R. and J.N. Galloway. Variation in watershed response to acidic deposition in the mountains of Virginia. Abstract published in ESO and poster presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1992 Bazemore, D.E. and K.N. Eshleman. Subsurface contribution to storm runoff in an Appalachian headwater stream. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Bazemore, D.E. and K.N. Eshleman. The vadose water contribution to stormflow in a forested mountain catchment. Abstract published in ESO and paper presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1992 Bulger, A.J. Potential acid impact on species richness in the Southern Appalachians? Environmental Resources Research Institute, Penn State University. (Invited speaker)

1992 Eshleman, K.N. A two-component mixing model for predicting regional episodic acidification of surface waters. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Galloway, J.N. Acid deposition in Shenandoah National Park: A synthesis of twelve years of measurements. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Ingersoll, S.K., B.J. Cosby, and T.H. Furman. Spatial variation in sulfate mobility in a headwater catchment in Shenandoah National Park, Virginia. Abstract published in ESO and paper presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1992 Marshall, L.M. Temporal and spatial variation in stream chemical composition of White Oak Run and Deep Run, Shenandoah National Park. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Thompson, P.A. and K.N. Eshleman. Temporal variations in streamwater chemistry in North Fork of the Dry Run, Shenandoah National Park. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Webb, J.R., B.J. Cosby, F.A. Deviney, D. Downey, J.N. Galloway, and M.E. Mitch. Nitrogen release and stream-water acidification following forest defoliation by the gypsy moth in the southern Appalachian mountain region. Southern Appalachian Man and Biosphere Conference, Gatlinburg, Tennessee.

1992 Webb, J.R., D. Downey, and M.E. Mitch. Regional biogeochemical change associated with forest defoliation by the gypsy moth. Managing Water Resources during Global Change: An International Conference. American Water Resources Association, Reno, Nevada.

1992 Webb, J.R., D. Downey, and M.E. Mitch. Streamwater Acidification associated with forest defoliation by gypsy moth in Shenandoah National Park. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Weishample, P.A. Modeling base cations driven by forest dynamics in a central Appalachian watershed, Shenandoah National Park. Thirteenth Biennial Research and Resource Management Symposium, Shenandoah National Park, Virginia.

1992 Kendall, C., M.A. Mast, and K.C. Rice. Tracing watershed weathering reactions with 13C. Proceedings Volume of the 7th International Symposium on Water-Rock Interaction, Park City, Utah.

1992 Kendall, C., K.C. Rice, and M.A. Mast. Tracing seasonal changes in sources of carbon in small catchments using ^{13}C. Spring Meeting of the American Geophysical Union, Montreal, Quebec, Canada.

1992 Kuebler, Anne, K.C. Rice, O.P. Bricker, and M.M. Kennedy. Comparison of solute mass balances and geology of four small Mid-Atlantic watersheds. Spring Meeting of the American Geophysical Union, Montreal, Quebec, Canada.

1993 Bricker, O.P., and K.C. Rice. The role of local-scale research in assessing regional-scale acid deposition effects. Spring Meeting of the American Geophysical Union, Baltimore, Maryland.

1993 Bricker, O.P., A.K. O'Brien, and K.C. Rice. Seasonal cycles and long-term trends in small headwater catchments, Eastern United States. BioGEOmon Symposium on Ecosystem Behavior. Evaluation of Integrated Monitoring in Small Catchments, Prague, Czech Republic.

1993 Rice, K.C., and O.P. Bricker. Chemical and isotopic composition of storm runoff in two small watersheds on Catoctin Mountain, north-central Maryland. Spring Meeting of the American Geophysical Union, Baltimore, Maryland.

1993 Bulger, A.J. Impacts of acidification on stream fishes versus lake fishes. U.S./Canada Air Quality Committee, Shenandoah National Park, Virginia (Invited speaker).

1993 Cosby, B.J., J.R. Webb, F.A. Deviney, J.N. Galloway, and D.M. Downey. Catchment-scale nitrogen saturation following forest defoliation by the gypsy moth. Abstract published in ESO and paper presented at American Geophysical Union, Fall Meeting, San Francisco, California.

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1993 Webb, J.R. Acidic deposition and public lands in the southeastern United States. United States Information Agency, Washington, D.C.

1993 Webb, J.R. Nitrogen release and stream acidification following forest defoliation by the gypsy moth. West Virginia Academy of Science, Elkins, West Virginia.

1993 Webb, J.R. It's the sulfur, stupid. National Resource Board Conservation Issues Panel, Trout Unlimited Annual Meeting, Hershey, Pennsylvania.

1993 Webb, J.R. Aquatic effects of acidic deposition in the southern Appalachian Mountain region. Southern Appalachian Mountain Initiative Semi-Annual Meeting, Asheville, North Carolina.

1993 Webb, J.R. Adverse impact: Virginia trout stream sensitivity. Twenty-seventh Annual Meeting of the State Advisory Board on Air Pollution: Air Quality Compliance Issues of the 1990s, Williamsburg, Virginia.

1994 Bulger, A.J. Impacts of acidification on fish in Shenandoah National Park, Virginia. Mid-Atlantic Highlands Area Environmental Monitoring and Assessment Conference, Hershey, Pennsylvania.

1994 Eshleman, K.N., L.M. Miller-Marshall, and D.E. Bazemore. Episodic acidification of streams in Shenandoah National Park, Virginia. Mid-Atlantic Highlands Area Environmental Monitoring and Assessment Conference, Hershey, Pennsylvania.

1994 Hyer, K.E. and K.N. Eshleman. Changes in the acid-base composition of three headwater streams in Shenandoah National Park during precipitation events. Annual Meeting of the Virginia Academy of Science, Harrisonburg, Virginia.

1994 Webb, J.R. Observation of change in stream-water solute concentrations in Shenandoah National Park and adjacent mountain areas. Mid-Atlantic Highlands Area Environmental Monitoring and Assessment Conference, Hershey, Pennsylvania.

1994 Bricker, O.P., A.K. O'Brien, K.C. Rice, R.T. Anderson, and M.M. Kennedy. Nitrate export from forested watersheds in the Chesapeake Bay Region, USA. 15th annual Society of Environmental Toxicology and Chemistry Meeting, Denver, Colorado.

1994 Rice, K.C., and O.P. Bricker. Seasonal cycles of dissolved constituents in streamwater on Catoctin Mountain, north-central Maryland. Virginia Water Resources Conference, Richmond, Virginia.

1994 Rice, K.C., and O.P. Bricker. Effects of acidic deposition on the hydrochemistry of Bear Branch, a small forested watershed on Catoctin Mountain, north-central Maryland: Chesapeake Research Conference, Toward a Sustainable Coastal Watershed: The Chesapeake Experiment, Norfolk, Virginia.

1995 Rice, K.C., and O.P. Bricker. Relation of streamwater chemistry to hydrologic and geochemical controls in four small forested watersheds on Catoctin Mountain in north-central Maryland. Fall Meeting of the American Geophysical Union, San Francisco, California.

1995 Bulger, A.J., B.J. Cosby, K.N. Eshleman, J.N. Galloway, J.R. Webb, and C.A. Dolloff. The "Shenandoah National Park: Fish in Sensitive Habitats" (SNP: FISH) Project. An integrated assessment of fish community responses to stream acidification. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden.

1995 A.J. Bulger, B.J. Cosby, K.N. Eshleman, J.N. Galloway, C.A. Dolloff and J.R. Webb The "Shenandoah National Park: Fish in Sensitive Habitats (SNP: FISH)" project: An Integrated Assessment of Fish Community Responses to Stream Acidification. American Fisheries Society, East Coast Trout Workshop, Hershey, Pennsylvania.

1995 Bulger, A.J., B.J. Cosby, K.N. Eshleman, J.N. Galloway, C.A. Dolloff and J.R. Webb The "Shenandoah National Park: Fish in Sensitive Habitats (SNP: FISH)" project: An Integrated Assessment of Fish Community Responses to Stream Acidification. Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Gordon Research Conference, New London, New Hampshire (Invited presentation).

1995 Cooper, O.R., K.E. Hyer, M.M. Muller, J.L. Moody, and K.N. Eshleman. The impact of atmospheric dynamics on precipitation chemistry and associated streamwater acidification. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden (Poster).

1995 Cosby, B.J., A.J. Bulger, and K.N. Eshleman. An integrated modeling approach for long-term forecasts of chronic and episodic acidification effects on fish. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden (Poster).

1995 Dennis T.E. and A.J. Bulger Water chemistry variables as predictors of fish condition factor in Shenandoah National Park (USA ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden.

1995 Dennis T.E. and A.J. Bulger. Blacknose dace (Rhinichthys atratulus) Condition Factor: an Early Warning of Acidification Effects in Shenandoah National Park Trout Streams. American Fisheries Society, East Coast Trout Workshop, Hershey, Pennsylvania.

1995 Dennis T.E. and A.J. Bulger. Blacknose dace (Rhinichthys atratulus) Condition Factor and whole-body sodium as indicators of acidification stress in Shenandoah National Park (USA) fish populations. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden.

1995 Dennis T.E. and A.J. Bulger. Sublethal indicators of acid stress in Blacknose dace (Rhinichthys atratulus) in Shenandoah National Park. Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Gordon Research Conference, New London, New Hampshire (Invited presentation).

1995 Eshleman, K.N., K.E. Hyer, and J.R. Webb. Comparative analysis and regionalization of hydrochemical responses of small forested watersheds in the eastern Abstract published in ESO and paper presented at Fall Meeting of the American Geophysical Union, San Francisco, California (Invited paper).

1995 Eshleman, K.N., L.M. Miller-Marshall, and J.R. Webb. Long-term changes in episodic acidification of streams in Shenandoah National Park, Virginia (USA). ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden.

1995 Fitzhugh, R.D., T.H. Furman, B.J. Cosby, and J.R. Webb. Controls on stream acidity in a headwater catchment on the Appalachian plateau, West Virginia. Abstract published in ESO and paper presented at Spring Meeting of the American Geophysical Union, Baltimore, Maryland.

1995 Hyer, K.E., D.E. Bazemore, and K.N. Eshleman. Comparisons of stream hydrochemical responses among three forested mountain catchments in Virginia. Abstract published in ESO and poster presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1995 Hyer, K.E., J.R. Webb, and K.N. Eshleman. Episodic acidification of three streams in Shenandoah National Park, Virginia (USA). ACID REIGN '95? International Conference on Shenandoah National Park, Virginia (USA). Acid Reign '95? International Conference on Acid Rain, Goteburg, Sweden (Poster).

1995 MacAvoy, S.E and A.J. Bulger. Acidification Effects on Survival of Brook Trout (Salvelinus fontinalis) Embryos and Fry in Shenandoah National Park. American Fisheries Society, East Coast Trout workshop, Hershey, Pennsylvania.

1995 MacAvoy, S.E and A.J. Bulger. Survival of brook trout (Salvelinus fontinalis) Embryos and Fry in streams of different acid sensitivity in Shenandoah National Park, USA. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden.

1995 MacAvoy, S.E. and A.J. Bulger. Acid episodes kill brook trout fry in acidified streams in Shenandoah National Park. Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Gordon Research Conference, New London, New Hampshire (Invited presentation).

1995 Newman, K. and A. Dolloff. Fish Habitat and fish populations in acid-sensitive Shenandoah National Park Catchments. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden.

1995 Newman, K. and A. Dolloff. Fish Habitat differences do not explain differences in fish communities, but acid status does, in Shenandoah National Park Catchments. Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Gordon Research Conference, New London, New Hampshire (Invited presentation).

1995 Webb, J.R., B.J. Cosby, K.N. Eshleman, and J.N. Galloway. Change in the acid-base status of Appalachian mountain catchments following forest defoliation by the gypsy moth. ACID REIGN '95? International Conference on Acid Rain, Goteburg, Sweden (Poster).

1995 Webb, J.R., B.J. Cosby, K.N. Eshleman, and J.N. Galloway. - An empirical model for projection of stream-water acidification in the Mid-Appalachian mountain range. ACID REIGN '95 Conference, Goteberg, Sweden.

1996 Bulger, A.J. Patterns of fish response to acidification in Virginia vs. Scotland. Macaulay Land Use Research Institute, Aberdeen, Scotland (Invited speaker).

1996 Bulger, A.J. Transboundary air pollution effects on freshwater biota. Oceanography Department, Old Dominion University (Invited speaker).

1996 Bulger, A.J. Status of damaged trout populations and likelihood of reversibility of acid effects. Trout Unlimited, National Executive Council, August (Invited keynote speaker).

1996 Eshleman, K.N., J.N. Galloway, J.R. Webb, F.A. Deviney, R.P. Morgan II, M.K. Meagher, and N.M. Castro. Temporal patterns of dissolved nitrogen leakage from mid-Appalachian forested watersheds. American Geophysical Union Chapman Conference on Nitrogen Cycling in Forest Ecosystems, Sunriver, Oregon (Poster).

1996 Hyer, K.E. The chemical factors controlling episodic acidification in a small forested stream in Shenandoah National Park, Virginia. Annual Meeting of the Chesapeake Region Association of Biogeochemists, Charlottesville, Virginia.

1996 Cosby, B.J., J.N. Galloway, G.M. Hornberger, J.R. Webb, and A.J. Bulger. Watershed studies of natural and anthropogenic disturbances in Mid-Atlantic forested ecosystems. American Academy for the Advancement of Sciences, Annual Meeting and Science Innovation Exposition, Seattle, Washington.

1997 Eshleman, K.N. A linear model of the effects of the disturbance on nitrogen leakage form forested watersheds. Fall Meeting of the American Geophysical Union, San Francisco, California.

1997 Eshleman, K.N., J.R. Webb, and J.N. Galloway. Long-term changes in nitrogen in surface water: Deposition or forested disturbance? Third EMAP Research Symposium, Albany, New York.

1997 Eshleman, K.N., J.R. Webb, and J.N. Galloway. - Long-term changes in fluxes of nitrogen from forests to surface waters: Atmospheric deposition or disturbance? Abstract published in ESO and paper presented at Spring Meeting of the American Geophysical Union, Baltimore, Maryland.

1997 Furman, T.H. Geology drives the system. Shenandoah Symposium: Science, Myth, Culture, Shenandoah National Park, Virginia.

1997 Hyer, K.E., J.N. Galloway, and K.N. Eshleman. Episodic nitrate and ammonium transport along a spatial gradient in a forested headwater stream in Virginia. Abstract published in ESO and paper presented at Spring Meeting of the American Geophysical Union, Baltimore, Maryland.

1997 Galloway, J.N. Landscape under siege: atmospheric factors. Shenandoah Symposium: Science, Myth, Culture, Shenandoah National Park, Virginia.

1997 J.R. Webb, B.J. Cosby, F.A. Deviney, and J.N. Galloway. Observation of change in regional stream-water composition following forest defoliation. Fall Meeting of the American Geophysical Union, San Francisco, California.

1997 Buffam, I.D., J.N. Galloway, and L.K. Blum. A low flow/high flow comparison of dissolved organic matter concentrations and bacterial growth in an Appalachian stream. American Society of Limnology and Oceanography (Poster).

1998 Eshleman, K.N. Assessment of forested disturbance in the mid-Atlantic region: a multi-scale linkage between terrestrial and aquatic ecosystems. United States Environmental Protection Agency Mid-Atlantic Integrated Assessment: Working Conference, Baltimore, Maryland.

1998 Webb, J.R., F.A. Deviney, B.J. Cosby, and J.N. Galloway. 1998. Change in the acid-base status of streams associated with forested mountain watersheds in the mid-Appalachian region. United States Environmental Protection Agency Mid-Atlantic Integrated Assessment: Working Conference, Baltimore, Maryland.

1998 Webb, J.R., F.A. Deviney. The acid status of the St. Marys River: the Virginia Trout Stream Sensitivity Study results. Maple Flats Symposium. Sponsored by Virginia Natural History Society and George Washington and Jefferson National Forests, Charlottesville, Virginia.

1998 Bricker, O.P., and K.C. Rice. Nitrate export from seven small, forested catchments in the Chesapeake Bay watershed, Eastern USA. Spring Meeting of the American Geophysical Union, Boston, Massachusetts.

1998 Church, T.M., J.R. Scudlark, K.M. Conko, O.P. Bricker, and K.C. Rice. Transmission of atmospherically deposited trace elements through an undeveloped, forested Maryland watershed. Fall Meeting of the American Geophysical Union, San Francisco, California.

1999 Bulger, A.J. Fish responses to acidification in the southeastern US versus the northeastern US. Hubbard Brook Research Foundation, Hanover, New Hampshire (Invited symposium speaker).

1999 Deviney, F.A. Detecting change in streamwater concentrations time series through outlier modeling. Abstract published in ESO and paper presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1999 Eshleman, K.N. Modeling the effects of disturbance on dissolved nitrogen export from forested watersheds. Abstract published in ESO and poster presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

1999 Rice, K.C., J.P. Raffensperger, and J.R. Webb. Hydrological and geochemical controls on episodic acidification of streams in Shenandoah National Park, Virginia: Development and testing of a predictive model. Virginia Water Research Symposium, Richmond, Virginia.

1999 Cosby, B.J. and A.J. Bulger. Incorporating Fish Responses into a Geochemical Model of Acidification for Virginia Mountain Streams. Annual Meeting of the American Fisheries Society, Charlotte, North Carolina.

1999 Bulger, A.J., B.J. Cosby, and J.R. Webb. Current and Projected Status of Trout Stream Fish Communities in the Southeastern U.S. Under Continued Acid Deposition. Annual Meeting of the American Fisheries Society, Charlotte, North Carolina.

1999 Bulger, A.J., M. Steg, and T.E. Dennis. Stream chemistry and fish species richness in Shenandoah National Park (Virginia, U.S.A.). Annual Meeting of the American Fisheries Society, Charlotte, North Carolina.

1999 Deviney, F.A. Searching for gypsy moth: modeling additive and innovational interventions in streamwater concentration time series. Abstract published in ESO and paper presented at Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Bulger, A.J. Congressional Staff Workshop on Acid Rain, the Capitol, Washington D.C. (Invited speaker).

2000 Bulger, A.J. Chemical thresholds and potential recovery patterns in fish populations after acidification. Hubbard Brook Research Foundation, Hanover, New Hampshire (Invited symposium speaker).

2000 Reinhardt, K. and T. Furman. The Effects of Flood Disturbance on Stream Biogeochemistry in Shenandoah National Park. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, San Francisco, Washington, D.C.

2000 Rice, K., G.H. Hornberger, and J.R. Webb. Episodic Variations of Acid-Neutralizing Capacity in Streamwater at Paine Run, Shenandoah National Park, Virginia. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Pochatila, J., B. Jones, and J. Herman. Geochemical Investigation of Weathering Reactions in South Fork Brokenback Run, Shenandoah National Park: A Mass-Balance Approach. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Galloway, J.N. Shenandoah National Park: People and Biogeochemistry. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Webb, J.R., F.A. Deviney, B.J. Cosby, A. Bulger, and J.N. Galloway. Changes in the Acid-Base Status of Streams in Shenandoah National Park and the Mountains of Virginia. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Eshleman, K.N., D. Fiscus, N. Castro, J.R. Webb, and F.A. Deviney. Computation and Visualization of Regional-Scale Forest Disturbance and Associated Dissolved Nitrogen Export from Shenandoah National Park. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Deviney, F.A., J.R. Webb, and K.N. Eshleman. A Disturbance in the Forest: Modeling Chemical Response to Gypsy Moth. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Bulger, A., S. MacAvoy, and T.E. Dennis. Stream Acidification Effects on Fish Species Richness, Mortality, and Condition Factor in Shenandoah National Park, VA, USA. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Cosby, B.J., A. Bulger, J.R. Webb, and J.N. Galloway. Acidic Deposition and Fish in the Shenandoah National Park: Past, Current, and Future Responses. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Cosby, B.J., J.N. Galloway, G.H. Hornberger, A. Bulger, and J.R. Webb. The Shenandoah Watershed Study: Twenty years of hydro-biogeochemical research in the Shenandoah National Park. Abstract published in ESO and paper presented at the

Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C.

2000 Brewer, P., Sullivan, T., Cosby, B.J., Munson, R. Acid Deposition Effects to Forests and Streams in the Southern Appalachian Mountains. In Proceedings of Air and Waste Management Association, Salt Lake City, Utah.

2000 Eshleman, K.N., D. Fiscus, N. Castro, J.R. Webb, and F.A. Deviney. Computation and visualization of regional-scale forested disturbance and associated dissolved nitrogen export from Shenandoah National Park. Abstract published in ESO and paper presented at the Special Session "Biogeochemistry of Shenandoah National Park" Spring Meeting of the American Geophysical Union, Washington, D.C (Invited paper).

2000 Webb, J.R., F.A. Deviney, Jr., B.J. Cosby, A.J. Bulger, and J.N. Galloway. Acidic Deposition and the Status of Virginia's Wild Trout Resource: Revisited. Poster presented at Wild Trout VII, Yellowstone National Park, Wyoming.

2000 Rice, K.C., Chanat, J.G., and Hornberger, G.M. Hydrological and geochemical controls on episodic acidification of streams in Shenandoah National Park, Virginia: Development and testing of a predictive model: NPS/USGS Cyber Seminar based in Ft. Collins, Colorado.

2001 Bulger, A.J. Blood, poison and death: acid rain effects on fish in the eastern US. Conference, "Acid Rain: Are the Problems Solved?" Sponsored by Center for Environmental Information; Co-sponsored by (in part) U.S. EPA, National Park Service, Fish and Wildlife Service, Geological Service, NOAA, Ecological Society of America, American Fisheries Society, American Lung Association and Environment Canada, Washington D.C. (Invited symposium speaker).

2001 Bulger, A.J. Acidification and fish biodiversity loss. Fisheries sustainability symposium. American Fisheries Society Annual Meeting, Phoenix, Arizona (Invited symposium speaker).

2001 Eshleman, K.N., D.A. Fiscus, N.M. Castro, J.R. Webb, and A.T. Herlihy. Regionalization of disturbance-induced nitrogen leakage from mid-Appalachian forests using a linear systems model. Abstract published in ESO and paper presented at Spring Meeting of the American Geophysical Union, Boston, Massachusetts (Invited paper).

2001 Eshleman, K.N., D.A. Fiscus, N.M. Castro, J.R. Webb, and F.A. Deviney. Computation and visualization of regional-scale forest disturbance and associated dissolved nitrogen export from Shenandoah National Park. The Second International Nitrogen Conference, Program and Abstracts, Potomac, Maryland.

2001 Chanat, J.G., Rice, K.C., and Hornberger, G.M. Variability in concentration-discharge plots - modeling results with implications for field studies. Abstract published in ESO and poster presented at Spring Meeting of the American Geophysical Union, Washington, D.C.

2001 Chanat, J.G., Rice, K.C., and Hornberger, G.M. Variability in concentration-discharge plots - modeling results with implications for field studies: Gordon Research Conference on Hydrobiogeochemistry of Forested Catchments.

2001 Chanat, J.G., Rice, K.C., and Hornberger, G.M. Application of a modified TOPMODEL to simulate episodic patterns of acid-neutralizing capacity versus stormflow in three headwater catchments in Shenandoah National Park, Virginia: AGU Chapman Conference on State-of-the-Art Hillslope Hydrology.

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2001 Rice, K.C., Chanat, J.G., Hornberger, G.M., and Webb, J.R.Concentration-discharge patterns in acid-neutralizing capacity during stormflow in three small, forested catchments in Shenandoah National Park, Virginia: Gordon Research Conference on Hydrobiogeochemistry of Forested Catchments.

2001 Rice, K.C., Chanat, J.G., Hornberger, G.M., and Webb, J.R. Concentration-discharge patterns in acid-neutralizing capacity during stormflow in three small, forested catchments in Shenandoah National Park, Virginia: USGS Appalachian Region Integrated Science Workshop Proceedings, Gatlinburg, Tennessee.

2001 Chanat, J.G., K.C. Rice, and G.M. Hornberger. Variability in concentration-discharge plots - modeling results with implications for field studies. Abstract published in ESO and paper presented at Spring Meeting of the American Geophysical Union, Boston, Massachusetts.

2002 Jung, R.E., M. Bank, K.C. Rice, M.T. Southerland, and D. Sparling. Amphibian-stressor investigations as part of the U.S. Geological Survey Amphibian Research and Monitoring Initiative (NE ARMI) in the Northeast region. Symposium on Multiple Stressor Effects in Relation to Declining Amphibian Populations, ASTM, Pittsburgh, Pennsylvania.

2001 Rice, K.C., Chanat, J.G., Hornberger, G.M., and Webb, J.R. Hydrological and geochemical controls on episodic acidification of streams in Shenandoah National Park, Virginia: Virginia Water Research Symposium.

2002 Bulger, A. J. Recovery from aquatic acidification? Workshop on Models for Biological Recovery from Acidification in a Changing Climate. Sponsored by Norwegian Institute for Water Research, Oslo, Norway (Invited symposium speaker).

2002 Deviney, Jr., F.A., A. J. Bulger, B. J. Cosby, J.N. Galloway, and J.R. Webb. Analysis of Power to Detect Regional Trends in Water-Quality Indicators in Virginia Mountain Streams. Abstract published in ESO and poster presented at Spring Meeting of the American Geophysical Union, Washington, D.C.

2002 Galloway, J.N., A.J. Bulger, B.J. Cosby, F.A. Deviney, Jr., and J.R. Webb. Shenandoah Watershed Study: 20 Years of Catchment Hydrogeochemistry. Abstract published in ESO and poster presented at Spring Meeting of the American Geophysical Union, Washington, D.C.

2002 Cosby, B.J., J.R. Webb, J.C. Blankinship, D.L. Welsch and F.A. Deviney, Jr. Base Cations In Northern Red Oak Trees, Soils, and Surface Waters of Shenandoah National Park, VA. Abstract published in ESO and poster presented at Spring Meeting of the American Geophysical Union, Washington, D.C.

2002 Webb, J.R., B.J. Cosby, J.C. Blankinship, D.L. Welsch and F.A. Deviney, Jr. Base Cations In Northern Red Oak Trees, Soils, and Surface Waters of Shenandoah National Park, VA. Poster presented at the National Forest Health Monitoring Program Meeting, New Orleans, Louisiana.

2002 Rice, K.C. Modeling streamwater chemistry during episodic acidification in Shenandoah National Park: National Park Service national meeting, Ft. Collins, Colorado.

2003 Webb, J.R. A Red Flag to Regulators: Lack of Recovery From Stream Acidification in Western Virginia Trout Streams. Presentation for Congressional Briefing on Air Pollution Threats to National Parks, sponsored by the National Parks Conservation Association, Washington, D.C.

2003 Deviney, Jr., F.A., Cosby, B.J., Galloway, J.N., Hornberger, G.M., Rice, K.C., and Webb, J.R. Time series models to predict acid-neutralizing capacity from stream discharge, Shenandoah National Park, Virginia: Gordon Research Conference on Catchment Science.

2003 Jung, R.E., P. Nanjappa, E.H.C. Grant, and K.C. Rice. Vernal pool amphibian monitoring as part of the NE ARMI program. Society of Environmental Toxicology and Chemistry 24th Annual Meeting, Austin, Texas.

2004 Deviney, Jr., F.A., B.J. Cosby, G.M. Hornberger, K.C. Rice, and J.R. Webb. Vulnerability to episodic acidification of streams in Shenandoah National Park. Virginia Mountain Streams Symposium, University of Virginia, Charlottesville, Virginia.

2004 Deviney, Jr., F.A., K.C. Rice, and J.R. Webb. Vulnerability to episodic acidification of streams in Shenandoah National Park. Fall Meeting of the American Geophysical Union, San Francisco, California.

2004 Grant, E.H.C., R.E. Jung, and K.C. Rice. Stream salamander species richness and abundance in relation to environmental factors in Shenandoah National Park. Virginia Mountain Streams Symposium, University of Virginia, Charlottesville, Virginia.

2004 Rice, K.C., F.A. Deviney, Jr., and J.R. Webb. Vulnerability of streams to episodic acidification in Shenandoah National Park. Virginia Water Research Symposium.

2004 Webb, J.R. Effects of Acidic Deposition in the Forested Mountain Watersheds of the Central and Southern Appalachian Mountains. Atlantic Science and Conservation Strategies Workshop (The Nature Conservancy), Point Clear, Alabama.

2004 Webb, J.R., B.J. Cosby, F.A. Deviney, Jr., and J.N. Galloway. Evidence for Recovery from Streamwater Acidification in Shenandoah National Park, Virginia. Annual meeting of the Virginia Chapter of the American Fisheries Society, Lexington, Virginia.

2004 Webb, J.R. B.J. Cosby, F.A. Deviney, Jr., J.N. Galloway, S.W. Maben, A.J. Bulger. Are Brook Trout Streams in Western Virginia and Shenandoah National Park Recovering From Acidification? Virginia Mountain Streams Symposium, Department of Environmental Sciences, University of Virginia, Charlottesville, Virginia.

2005 Webb, J.R. Identification of Native Brook Trout Streams That Are Impaired by Acidification. National Water Research Symposium: Balancing Water Law and Science, Virginia Water Resources Research Center, Virginia Tech, Blacksburg, Virginia.

2006 Webb, J.R. Conservative Forest Management: A Fundamental Tool for Mitigation of Acidic Deposition Impacts in Forested Mountain Watersheds of the Central Appalachian Region, Society of American Foresters, Pittsburg, Pennsylvania.

2006 Grady, A. E., T. M. Scanlon, and J. N. Galloway, Declines in dissolved silica concentrations in western Virginia streams (1988- 2003), Abstract published in EOS and paper presented at Fall Meeting of the American Geophysical Union, San Francisco, California.

2006 Rice, K.C., F.A. Deviney, Jr. and G.M. Hornberger. Time series and recurrence interval models to predict the vulnerability of streams to episodic acidification in Shenandoah National Park, Virginia. Spring Meeting of the American Geophysical Union, Baltimore, Maryland.

2006 Rice, K.C., F.A. Deviney, Jr., G.M. and Hornberger. Time series and recurrence interval models to predict the vulnerability of streams to episodic acidification in Shenandoah National Park, Virginia. GSA Abstracts with Programs Vol. 38, No. 7; Philadelphia, Pennsylvania.

2007 Galloway, J.N., and J.R. Webb. Atmospheric deposition to streams. National Park Service Eastern Rivers Summit, Shepherdstown, West Virginia.

2008 Rice, K.C. Geologic controls on stream water chemistry in Shenandoah National Park: Virginia Division of Geology and Mineral Resources Symposium. Geologic research in the Blue Ridge and Valley and Ridge Provinces of Virginia, Charlottesville, Virginia

2009 Rice, K.C., J.R. Webb, F.A. Deviney, Jr., and J.P Schaberl. Examining sulfate behavior along a North-South gradient of unglaciated Eastern U.S. catchments. NADP meeting, Saratoga Springs, New York.

2009. Rice, K.C., B.J. Cosby, F.A. Deviney, and J.R. Webb. Differences in Sulfate Behavior along a North-South Gradient of Unglaciated Eastern U.S. Catchments. American Geophysical Union 2009 Fall Meeting, San Francisco, California.

2009 Riscassi, A. and T. M. Scanlon. Streamwater mercury dynamics within three headwater catchments in Shenandoah National Park, VA. American Geophysical Union 2009 Fall Meeting, San Francisco, California.

2009 Scanlon, T.M., S.M. Ingram, and A.L. Riscassi. Terrestrial and in-stream influences on the spatial variability of nitrate in a forested headwater catchment. Gordon Research Conference, Proctor Academy, New Hampshire.

2010 Riscassi, A.L., K.J. Hokanson, and T.M. Scanlon. 2010. Streamwater particulate mercury and suspended sediment dynamics in a forested headwater catchment. American Geophysical Union 2010 Fall Meeting, San Francisco, California.

2011 Riscassi, A.L. and T.M. Scanlon. Controls on streamwater HgD and DOC export from three mid-Appalachian forested headwater catchments. The 10th International Conference on Mercury as a Global Pollutant (ICMGP), Halifax, Nova Scotia.

2011 Scanlon, T.M. Stream water nitrogen dynamics: Recent findings from the Shenandoah Watershed Study. Virginia Tech, Department of Forest Resources and Environmental Conservation. Blacksburg, Virginia.

2011 Webb, R., J. Miller, J. Cosby, J. Galloway, and S. Maben. The Virginia Trout Stream Sensitivity Study 2010 Survey: Evidence for Recovery from Acidification. Southern Division American Fisheries Society East Coast Trout Workshop, Frostburg, Maryland.

2011 Rice, K.C., F.A. Deviney, Jr., B.J. Cosby, and J. Lynch. Understanding sulfate dynamics in unglaciated Eastern U.S. catchments. GSA Annual Meeting, Minneapolis, Minnesota.

2012 Burns, D.A., K.C. Rice, G.B. Lawrence, T.J. Sullivan, and A.C. Ellsworth. Stream chemistry and sensitivity to acid deposition along the Appalachian Trail. NADP meeting, Portland, Maine.

2012 Snyder, C.D., J.D. Jastram, N.P. Hitt, J. Wofford, and K.C. Rice. Macroinvertebrate responses to increasing stream temperatures in Shenandoah National Park, Virginia (USA). Fall Meeting of the American Geophysical Union, San Francisco, California.

2012 Robison, A.L., T.M. Scanlon, B.J. Cosby, J.R. Webb, and J.N. Galloway. Base cation controlled recovery from acidification in streams in the Ridge/Blue Ridge provinces. American Geophysical Union 2012 Fall Meeting, San Francisco, California.

2012 Robison, A.L., T.M. Scanlon, B.J. Cosby, J.R. Webb, and J.N. Galloway. Base cation driven recovery of streams from acidification in the Ridge/Blue Ridge province of western Virginia. Biogeomon. Belfast, Maine.

2012 Scanlon, T.M., A.L. Riscassi. Controls on mercury transport from forested headwater catchments in Shenandoah National Park and beyond. American Geophysical Union 2012 Fall Meeting, San Francisco, California.

2012 Webb, J.R. The SWAS-VTSSS Program. Appalachian Stewardship Foundation Directors Meeting, Hawks Nest State Park, West Virginia.

2013 Jastram, J.D., C.D. Snyder, N.P. Hitt, K.C. Rice, and J. Wofford. Status and trends of aquatic resources in Shenandoah National Park—A summary of monitoring results (1979-2009). Virginia Chapter of the American Fisheries Society meeting, Lexington, Virginia.

2013 Robison, A.L., T.M. Scanlon, B.J. Cosby, J.R. Webb, and J.N. Galloway. Climate driven warming of streams in Shenandoah National Park, VA. Robert J. Huskey Graduate Research Exhibition, University of Virginia. Charlottesville, Virginia.

2013 Robison, A.L., T.M. Scanlon, B.J. Cosby, J.R. Webb, and J.N. Galloway. Controls on Acid Recovery in Western Virginia Streams: Past, Present, and Future. U.S.-Japan Joint Seminar on Catchment Hydrology and Forest Biogeochemistry, Honolulu, Hawaii.

2013 Scanlon, J. N. Galloway, B.J. Cosby, J.R. Webb, and A.L. Robison. Virginia's Mountain Streams: What Thirty Years of Research Tells Us About Future Impacts of Acid Rain and Climate Change. Mountain Stream Symposium II, James Madison University, Harrisonburg, Virginia.

2013 Robison, A.L., T.M. Scanlon, B.J. Cosby, J.R. Webb, K. Hayhoe, and J.N. Galloway. Modeling potential interactions of acid deposition and climate change at four watersheds in Shenandoah National Park, VA using the dynamic biogeochemical model PnET-BGC. American Geophysical Union Fall Meeting. San Francisco, California.

2014 Stoken, O. M., A. L. Riscassi, and T. M. Scanlon. Association of dissolved mercury with dissolved organic carbon in rivers and streams: The role of watershed soil organic

carbon, American Geophysical Union 2014 Fall Meeting, San Francisco, CA. – [*Winner, Outstanding Student Presentation Award*].

2014 Riscassi, A.L., A.L. Robison, T.M. Scanlon, B.J. Cosby, J.R. Webb, and J.N. Galloway. Geologic controls on the chemical stream water response to atmospheric pollution (acid and Hg deposition) in Shenandoah National Park. Geological Society of America Annual Meeting, Vancouver, Canada.

2014 Rice, K.C., Scanlon, T.M., Lynch, J.A., and Cosby, B.J. Decreased Atmospheric Sulfur Deposition across the Southeastern U.S.: When Will Watersheds Release Stored Sulfate? American Geophysical Union 2014 Fall Meeting, San Francisco, CA.

2015 Scanlon, T.M., Robison, A.L. and A.L. Riscassi. Modeling the impact of climate change on the acid-base status of a forested, upland watershed in Shenandoah National Park, Virginia. 9th International Conference on Acid Deposition. Rochester, NY.

2015 Scanlon, T. M., K. C. Rice, A. L. Riscassi, and B. J. Cosby. Sulfur mass balances of forested catchments: Improving predictions of stream sulfate concentrations through better representation of soil storage and release, American Geophysical Union Fall Meeting, San Francisco, CA.

2015 Riscassi, A.L., Scanlon, T.M. and J. Cummings. Delayed and variable recovery from acid deposition in Shenandoah National Park streams: A story of geologic history, long-term monitoring, and management of air and water resources. 9th International Conference on Acid Deposition. Rochester, NY.

2015 Rice, K.C., Scanlon, T.M., Lynch, J.A., and Cosby, B.J. Decreased atmospheric sulfur deposition across the southeastern U.S.: When will watersheds release stored sulfate? Acid Rain 2015, Oct. 19-23; Rochester, NY

2015 Jastram, J.D., and Rice, K.C. Synthesis of thirty years of surface-water quality and aquatic-biota data in Shenandoah National Park: Collaboration between the U.S. Geological Survey and the National Park Service: GSA national meeting, Nov. 1-4, 2015; Baltimore, Md.

2015 Atkins, J.W. and A.L. Riscassi. Impact of episodic acidification on brook trout in Shenandoah National Park. University of Virginia Huskey Research Exhibition. Charlottesville, Virginia. – [*First place poster in Biological and Biomedical Sciences 2 session*].

2016 Galloway, J. N. Virginia's Mountain Streams, Sentinels of Change. Thomas Jefferson Awards. Virginia Museum of Natural History.

2016 Rhea, A. 2016. Spatial Variation of Dissolved Organic Carbon and Nitrate in Paine Run, Shenandoah National Park. Undergraduate Research, Environmental Sciences Department, University of Virginia. Charlottesville, VA.

2016 Camper, T. Tree Cores as Chroniclers of Mercury Exposure in the Shenandoah National Park. Undergraduate Research, Environmental Sciences Department, University of Virginia. Charlottesville, VA.

2016 Riscassi, A.L. Thirty-seven years of monitoring Virginia's mountain streams: Understanding the relationship between the atmosphere, land, water and biota. Presentation to the Rivanna Master Naturalists. Charlottesville, Virginia.

2016 Riscassi, A.L., Camper, T., Lee, T., Druckenbrod, D. and T.M. Scanlon. Tree Rings as

Chroniclers of Mercury Exposure in Shenandoah National Park, Virginia, American Geophysical Union Fall 2016, San Francisco, CA (invited speaker)

2017 Jensen, A.J., Riscassi, A.L., and T.M. Scanlon. The effect of wildfire on stream mercury and organic carbon in a Southern Appalachian forested watershed in the Eastern United States. International Conference on Mercury as a Global Pollutant (ICMGP) 2017. Providence, RI.

2017 Oda, T., M. B. Green, R. Urakawa, T. M. Scanlon, S. D. Sebestyen, K. J. McGuire, M. Katsuyama, K. Fukuzawa, M. B. Adams, and N. Ohte. Stream runoff and nitrate recovery times after forest disturbance in US and Japan, American Geophysical Union 2017 Fall Meeting, San Francisco, CA.

2017 Scanlon, T. M. Reductions in acid deposition: Implications for catchment biogeochemistry and water balance, Gordon Research Conference on Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Lewiston, ME, June 2017 – invited.

2018 Riscassi, A.L. 2018. Shenandoah Watershed Study (SWAS) a long-term stream water quality monitoring program 1979 – current. Chesapeake Bay Watershed Cooperative Ecosystems Study Unit (CHWA CESU) Partners Meeting. National Conservation Training Center (NCTC) Shepherdstown, WV.

2018 Riscassi, A., Harmon, P., May, C., Scanlon, T. and Galloway, J. Three decades since the 1990 Clean Air Act Amendments: How has acid deposition, streamwater chemistry and fish species richness responded/recovered? American Fisheries Society. Atlantic City, NJ.

2018 Riscassi, A.L., Scanlon, T.M. and Galloway, J.N. Stream geochemical response to reductions in acid deposition in headwater streams: chronic versus episodic recovery from acidification. American Geophysical Union 2018 Fall Meeting, Washington D.C.

2019 Cummings, J., and Riscassi, A.L. The Key to Park Protection—Cooperative Conservation: monitoring, management, and research in Shenandoah National Park. National Atmospheric Deposition Program conference. Boulder, CO.

2019 Riscassi, A.L., Scanlon, T.M. and Galloway, J.N. The Shenandoah Watershed Study-Virginia Trout Stream Sensitivity Study (SWAS-VTSSS): 40 years of stream monitoring and research in mid-Appalachian headwater catchments. American Geophysical Union 2019 Fall Meeting, San Francisco, CA.

2021 Scanlon, T.M. Monitoring Change in Virginia Mountain Streams: Forty Years of Watershed Science. Consortium of Universities for the Advancement of Hydrologic Science Inc. (CUAHSI) catchment seminar series ‘Research and Observatory Catchments: the legacy and the future’. Online seminar series, March 10, 2021.