

## Publications on the Panola Mountain Research Watershed

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### 2023

Aulenbach, B.T. and Riley, J.W., 2023, The importance of hillslope landscapes on the climatic variability in recharge and streamflow generation in a forested headwater Piedmont catchment, Panola Mountain Research Watershed, Georgia. Abstract presented at the Georgia Water Resources Conference, March 30–31, 2023, p. 54. [IP-149013]

Aulenbach, B.T. and Riley, J.W., 2023, Climatic variability in recharge and streamflow generation from riparian and hillslope landscapes in a forested headwater catchment, Panola Mountain Research Watershed, Georgia. Abstract presented at the Interagency Research in the Watersheds Conference (ICRW8), June 5-8, 2023 in Corvallis, Oregon. [IP-148992]

Riley, J.W., Pangle, L.A., and Aulenbach, B.T., 2023, Evaluating the spatial and temporal variability of groundwater uptake by riparian vegetation in a humid southeastern US catchment. *Ecohydrology*, 16(3), e2520. <https://doi.org/10.1002/eco.2520>. [IP-124836]

### 2022

Aulenbach, B.T., and Riley, J.W., 2022, The Influence of Climatic Variations on Hillslope Recharge, Groundwater Storage, and Streamflow Generation in the Piedmont Province of the Southeastern United States: Insights from a Headwater Catchment: Frontiers in Hydrology Meeting (San Juan, Puerto Rico), June 19–24, 2022. [Session: Climate Change and the Hydrological Cycle — What are we Learning from Observations?; IP-137348]

Aulenbach, B.T., Riley, J.W., and Cruz, M.A., 2022, The Panola Mountain Research Watershed: 37 years of research at a forested headwater catchment in the Piedmont of the Southeastern United States: Frontiers in Hydrology Meeting (San Juan, Puerto Rico), June 19–24, 2022. [The Catchment Showcase: Highlighting Research and Observatory Catchments that Span the Globe; IP-137349]

Riley, J.W., Pangle, L.A., and Aulenbach, B.T., 2022, Response of Runoff and Vegetation to a Flash Drought in a Subtropical Forested Catchment: Frontiers in Hydrology Meeting (San Juan, Puerto Rico), June 19–24, 2022.

### 2021

Aulenbach, B. T., Hooper, R. P., van Meerveld, H. J., Burns, D. A., Freer, J. E., Shanley, J. B., Huntington, T. G., McDonnell, J. J., and Peters, N. E., 2021, The evolving perceptual model of streamflow generation at the Panola Mountain Research Watershed: *Hydrological Processes*, v. 35(4), e141272, 14 p., <https://doi.org/10.1002/hyp.14127>. [special issue on Research and observatory catchments: the legacy and the future; IP-125152]

Aulenbach, B.T., and Riley, J.W., 2021, The distinct roles of riparian and hillslope landscapes on streamflow generation in a headwater catchment based on insights from perceptual models, hydrologic observations, and modeling: A case study from the Panola Mountain Research Watershed in the Southeastern United States: Abstract H45F-1249 presented at 2021 Fall Meeting, AGU, New Orleans, LA and online, 13–17 Dec. [IP-132201]

Aulenbach, B.T., and Riley, J.W., 2021, Estimating evapotranspiration and groundwater recharge from soil moisture profile event and recession dynamics at the Panola Mountain Research Watershed, Georgia. Abstract presented at the Georgia Water Resources Conference (virtual), March 22–23, 2021. [IP-125242]

Riley, J.W., 2021, Water table depth and meteorological data from Panola Mountain Research Watershed, 2017 – 2020: U.S. Geological Survey data release, <https://doi.org/10.5066/P9QZ0RCN>. [IP-123641]

Riley, J.W., Pangle, L.A., Aulenbach, B.T., and Forster, M.A., 2021, The buffering role of groundwater for riparian trees during drought periods. Abstract presented at the Georgia Water Resources Conference (virtual), March 22–23, 2021. [IP-125882]

Riley, J.W., Pangle, L.A., Aulenbach, B.T., and Forester, M., 2021, Water-table fluctuations to estimate transpiration from groundwater: What is the area of contributing vegetation?: Abstract H25G-1110 presented at 2021 Fall Meeting, AGU, New Orleans, LA and online, 13–17 Dec. [IP- XXXXXX]

Staudinger, Maria, van Meerveld, H. J., Aulenbach, B.T., 2021, Precipitation, air temperature, streamflow, and water table levels from selected wells at the Panola Mountain Research Watershed, 2001 – 2003: U.S. Geological Survey data release, <https://doi.org/10.5066/P96549L0>. [IP-131119]

Staudinger, M., Seibert, J., and van Meerveld, J.J., 2021, Representing groundwater-surface water interactions in a bucket-type catchment model: *Water Resources Research*, 57, e2020WR028835, 23 p., <https://doi.org/10.1029/2020WR028835>.

## 2020

Aulenbach, B.T., 2020, Effects of climate-related variability in storage on streamwater solute concentrations and fluxes in a small forested watershed in the Southeastern United States: *Hydrological Processes*, 34:189–208, <https://doi.org/10.1002/hyp.13589>. [Interplay of hydrology and geochemistry in small catchments; IP-104585]

Aulenbach, B.T., and Riley, J.W., 2020, Feasibility and implications of two approaches for estimating recharge from hydrologic events at the Panola Mountain Research Watershed, Georgia. Abstract presented at the Seventh Interagency Conference on Research in the Watersheds, Tifton, Ga., March 30–April 2, 2020. [IP-113460]

Aulenbach, B.T., and Riley, J.W., 2020, Using soil moisture profile event and recession dynamics from multiple landscape positions to constrain groundwater recharge occurrence in a forested, seasonally-water limited watershed in the Southeastern United States: Abstract H066-07 presented at 2020 Fall Meeting, AGU, online, 1–17 Dec. [IP-121242; presentation IP-124357]

Riley, J.W., Pangle, L.A., Aulenbach, B.T., and Forster, M.A., 2020, Do riparian forests alter water uptake in response to flash droughts? Case study from Panola Mountain Research Watershed. Abstract presented at the Seventh Interagency Conference on Research in the Watersheds, Tifton, Ga., March 30–April 2, 2020. [IP-113437]

Riley, J.W., Pangle, L.A., Aulenbach, B.T., and Forster, M.A., 2020, Comparing Sap Flow and Groundwater Uptake Across a Range of Vadose Zone Wetness Conditions in a Humid Riparian Zone: Abstract H056-0002 presented at 2020 Fall Meeting, AGU, online, 1–17 Dec. [IP-121040]

Shanley, J.B., Saraceno, JohnFranco, Aulenbach, B.T., Chalmers, Ann, Fair, Jennifer, Ryan, K.A., Matt, Serena, Cartwright, Marissa, and Stubbins, Aron, 2020, DOM dynamics from a long-term optical sensor deployment at Sleepers River, Vermont: Abstract H056-0018 presented at 2020 Fall Meeting, AGU, online, 1–17 Dec.

## 2019

Aulenbach, B.T., 2019, Data and estimates for wet deposition and streamwater solute fluxes at Panola Mountain Research Watershed, Stockbridge, Ga., water years 1986–2016: U.S. Geological Survey data release, <https://doi.org/10.5066/P94JC2PD>. [IP-105054]

Aulenbach, B.T., 2019, Climate-related variability in streamwater solute concentrations and fluxes Panola Mountain Research Watershed, Georgia. [abs.]. Abstract presented at the Georgia Water Resources Conference, April 16–17, 2019, Athens, Georgia. [IP-104589]

Aulenbach, B.T., and Riley, J.W., 2019, Panola Mountain Research Watershed—34 years of research at a forested headwater catchment in the Piedmont of the Southeastern United States [abs.]. Abstract PA11C-0974 presented at 2019 Fall Meeting, AGU, San Francisco, Calif., 9–13 Dec. [IP-110613]

Aulenbach, B.T., and Riley, J.W., 2019, Temporal variations in soil moisture profiles with varying landscape positions in a small forested watershed in the Southeastern United States with implications for flowpaths, recharge, and evapotranspiration [abs.]. Abstract H43G-2063 presented at 2019 Fall Meeting, AGU, San Francisco, Calif., 9–13 Dec. [IP-110637]

Riley, J.W., Pangle, L.A., and Aulenbach, B.T., 2019, Coupled measurement of sapflux and water-table fluctuations to quantify groundwater versus soil-water utilization by riparian trees during weather extremes [abs.]. Abstract H33H-2008 presented at 2019 Fall Meeting, AGU, San Francisco, Calif., 9–13 Dec. [IP-110470]

Riley, J.W. and Pangle, L.A., 2019, Spatial and temporal dynamics of groundwater uptake by riparian vegetation at the Panola Mountain Research Watershed. [abs.]. Abstract presented at the Georgia Water Resources Conference, April 16–17, 2019, Athens, Georgia.

Ross, C.A., Ali, G., Spence, C., Oswald, C., and Casson, N., 2019, Comparison of event-specific rainfall–runoff responses and their controls in contrasting geographic areas: *Hydrological Processes*, 33: 1961–1979, <https://doi.org/10.1002/hyp.13460>.

## 2018

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Aulenbach, B.T., and Peters, N.E., 2018, Quantifying climate-related interactions in shallow and deep storage and evapotranspiration in a forested, seasonally water-limited watershed in the Southeastern United States: *Water Resources Research*, 54:3037–3061, <https://doi.org/10.1002/2017WR020964>. [IP-086326]

Riley, J.W., Pangle, L.A., and Aulenbach, B.T. 2018, Spatial variation and characteristics of groundwater evapotranspiration across a headwater riparian zone [abs.]. Abstract presented at 2018 Fall Meeting, AGU, Washington, D.C., 10–14 Dec.

## 2017

Aulenbach, B.T., 2017, Data for estimating monthly water budgets at Panola Mountain Research Watershed, Stockbridge, Ga., water years 1986-2015: U.S. Geological Survey data release, <https://doi.org/10.5066/F7XS5SNV>. [IP-085355]

Aulenbach, B.T., and Peters, N.E., 2017, The roles of shallow and deep storage on drought at a small forested, water-limited watershed near Atlanta, Georgia [abs.]. Abstract presented at the Georgia Water Resources Conference, Athens Georgia, April 19–20, 2017. [IP-083755]

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## 2016

Aulenbach, B.T., Burns, D.A., Shanley, J.B., Yanai, R.D., Bae, K., Wild, A., Yang, Y., and Yi, D., 2016, Approaches to stream solute load estimation for solutes with varying dynamics from five diverse small watersheds. *Ecosphere*. 7(6):22 p. doi:10.1002/ecs2.1298 [IP-065579]

Aulenbach, B.T., and Peters, N.E., 2016, The Roles of Shallow and Deep Groundwater Storage During Drought at Panola Mountain Research Watershed, Georgia, U.S.A [abs.]. Abstract H54E-04 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec. [IP-078369]

Ghosh, D.K., Wang, D., and Zhu, T., 2016. On the transition of base flow recession from early stage to late stage. *Advances in Water Resources*. 88:8–13. <http://dx.doi.org/10.1016/j.advwatres.2015.11.015>

Riley, J.W. and Aulenbach, B.T., 2016, Event Water Balance and Recharge at the Panola Mountain Research Watershed, Georgia, U.S.A. [abs.]. Abstract presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec. [IP-078490]

## 2015

Appels, W.M., Graham, C.B., Freer, J.E., and McDonnell, J.J. 2015, Factors affecting the spatial pattern of bedrock groundwater recharge at the hillslope scale. *Hydrological Processes* 29(21):4594–4610. <https://doi.org/10.1002/hyp.10481>

Aulenbach, B.T., and Huntington, T.G., 2015, Hydrologic and Climatic Variability in and Modeling of Streamwater Sulfate Concentrations at Panola Mountain Research Watershed, Georgia, U.S.A. [abs.]. Abstract H33F-1686 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. [IP-067849]

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McKee, A. and Aulenbach, B.T., 2015, Dendrochronological assessment of drought severity indices for Panola Mountain Research Watershed, Georgia, U.S.A. [abs.]. Abstract GC41A-1064 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. [IP-067555]

Riley, J.W. and Aulenbach, B.T., 2015, Evaluation of Soil Moisture, Storm Characteristics, and Their Influence on Storm Runoff and Water Yield at the Panola Mountain Research Watershed, Georgia, U.S.A. [abs.]. Abstract H43I-1662 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. [IP-067847]

Saraceno, J. Shanley, J., and Aulenbach, B., 2015, Contrasting dissolved organic carbon dynamics at two forested catchments interpreted from high-frequency optical sensor measurements. [abs.]. Abstract B11F-0498 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. [IP-069914]

Shanley, J., Saraceno, J., Aulenbach, B., Mast, A., Clow, D., Hood, K., Walker, J, Murphy, S, Torres-Sanchez, A, Aiken, G., and McDowell, W., 2015, Comparing stream DOC fluxes from sensor- and sample-based approaches. [abs.]. Abstract B11F-0499 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. [IP-XXXXXX]

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Peters, N.E., Burns, D.A., and Aulenbach, B.T. 2014, Evaluation of high-frequency mean streamwater transit-time estimates using groundwater age and dissolved silica concentrations in a small forested watershed. *Aquatic Geochemistry* 20:183-202. <https://doi.org/10.1007/s10498-013-9207-6> [IP-049194]

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Saraceno, J.F., Shanley, J.B., and Aulenbach, B.T. 2014, Multi-site field verification of laboratory derived FDOM sensor corrections: The good, the bad and the ugly [abs.]. Abstract H11B-0870 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec. [IP-XXXXXX]

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Appels, W.M., Graham, C.B., and McDonnell, J.J. 2013, Groundwater recharge patterns on hillslopes: exploring the role of soil depth, bedrock permeability, and lateral flow [abs.]. Abstract H32D-05 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Aulenbach, B.T., Burns, D.A., Shanley, J.B., Yanai, R.D., Bae, K., Wild, A., Yang, Y., and Dong, Y. 2013, Uncertainty of streamwater solute fluxes in five contrasting headwater catchments including model uncertainty and natural variability (Invited) [abs.]. Abstract B24B-03 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec. [IP-050308]

Hooper, R.P. 2013, Examining the concept of baseflow using end-member mixing analysis (Invited) [abs.]. Abstract H23N-08 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Peters, N.E., Burns, D.A., and Aulenbach, B.T. 2013, Evaluation of high-frequency mean streamwater transit-time estimates using groundwater age and dissolved silica concentrations in a small, forested watershed [abs.]. Abstract H52F-07 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Shanley, J.B., Saraceno, J.F., Pellerin, B.A., Dornblaser, M.M., Clow, D.W., Aulenbach, B.T., Walker, J.F., and Aiken, G.R. 2013, Interpreting organic carbon cycling from high-frequency stream FDOM, turbidity, and CO<sub>2</sub> measurements at the USGS WEBB watersheds [abs.]. Abstract H53H-1526 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

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Aulenbach, B.T., Peters, N.E. and Freer, J.E. 2012, Watershed storage-baseflow relations and monthly water balances at Panola mountain Research Watershed, Georgia, U.S.A. [abs.]. Abstract H13D-1363 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

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## 2007

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