

# Edward Schenk

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## EDUCATION:

### M.S. in Environmental Science

Technical Area: Water Resources

Indiana University-Bloomington, School of Public and Environmental Affairs (SPEA)

May 2005

### B.A. in Geology

Hanover College, Hanover, IN

May 2002

**Certifications:** Registered Geologist (RG), active since 2020, Arizona  
Certified Floodplain Manager (CFM), active since 2019, nationwide certification

## Memberships:

Friends of the Rio de Flag, Board Member, 2020 to present

Association of State Floodplain Managers, 2019 to present

Arizona Floodplain Manager Association, 2019 to present

Geological Society of America, 2008 to present intermittent

National Speleological Society, 2004 to present intermittent

Society of Wetland Scientists, 2009 to 2015 intermittent

Ecological Society of America, 2009

## Relevant awards:

2022 CityWorks Innovation Award - Departmental Award in Excellence (City of Flagstaff Water Services)

2022 City Managers Award - Aspen Award for Dortha Flood Mitigation project (Individual award)

2023 American Public Works Association - Arizona state award for emergency public improvements under \$5 million - Schultz Creek Sediment and Flood Mitigation Project (City of Flagstaff)

## PROFESSIONAL EXPERIENCE:

**Lead Hydrologist**, Rock Creek Engineering, Flagstaff, AZ 11/31/2021 – Present

I assist Rock Creek Engineering, a small civil engineering firm, in hydrology and hydraulic studies in Yavapai County and unincorporated sections of Coconino County, Arizona as well as federal and tribal lands.

**Stormwater Section Director**, Flagstaff Water Services, Stormwater Engineering, Flagstaff, AZ 11/2018-Present

I lead the Stormwater Section at the City of Flagstaff, including a \$5.1 million budget, a four person staff, 112 miles of open channels for flood control and natural value (restoration), 27 flood ALERT rain and stream gauges, stormwater construction projects, wildfire disaster mitigation (2019 Museum Fire, 2022 Pipeline Fire), and serve as liaison between the City and Northern Arizona University hydrology and engineering studies within city owned land parcels, review grading and drainage development plans, and participate on community development boards. Collateral duties include grant writing, conduct drainage investigations, and provide hydrologic and hydraulic (H&H) modeling support for floodway drainage capital improvements.

**Project Manager**, Springs Stewardship Institute, Flagstaff, AZ 10/2017-11/2018 (consultant 11/2018-Present).

I manage federal and tribal projects and contracts. Duties include creating federally mandated Quality Assurance Performance Plans, rectifying budgets and payroll, hiring, all aspects of grant management, and planning and organizing regional and national springs symposiums/conferences. I conduct field studies in military and other federal installations, preserves, and multiple use land units. The Institute focuses on research, restoration, and educational endeavors on springs, wetlands, and riparian corridors in the western US, Canada, and Mexico. We also maintain Springs Online, a free and secure database of over 140,000 groundwater dependent ecosystems throughout the world.

**Physical Science Program Manager**, Grand Canyon National Park, National Park Service, 2/2015-10/2017.

As a program manager I supervised two full time employees and up to eight interns or seasonal employees on research and management projects related to earth sciences. I developed and managed the scope of work, budget, and timeline for multiple large projects (~\$350,000/yr soft money). My position coordinated with external researchers, notably the USGS, Northern Arizona University, and Utah State University. Results were presented at internal park leadership meetings, cooperator workshops, and at annual international conferences (typically the Geological Society of America meeting). Studies included many aspects of resource planning, NEPA compliance, and resource stewardship of the >\$100 million dollar TransCanyon Water Pipeline replacement. Individual studies included a hydrograph characterization of Bright Angel Creek, a large groundwater delineation survey (dye trace) of the Grand Canyon water supply, a stream nutrient and wastewater fate study, Endangered Species fishery habitat surveys, and a fire-debris flow stream recovery study. I was the subject matter expert for the park on all matters of internal compliance, entering comments and requirements for federal projects into the centralized Planning, Environment, and Public Comment (PEPC) database. Other accomplishments included obtaining the International Dark Sky Park status for Grand Canyon, writing and editing sections of the Bison Reduction Environmental Assessment (EA), and coordinating public health studies related to uranium mining in the greater Grand Canyon area.

**Ecologist (fluvial geomorphology/watershed science)**, National Research Program, US Geological Survey, 6/2005-2/2015.

As a USGS research scientist I was responsible for developing, managing, and communicating projects involving hydrological, biological, and chemical components related to stream, wetland, and watershed restoration projects. Projects included the impacts of dam regulation on the river ecosystem (bank erosion/floodplain sediment dynamics; Roanoke River), large woody debris transport and fisheries impacts (Roanoke River, various small streams), channel restoration (Kissimmee and Pocomoke Rivers), impacts of climate change on hydrology, soils, and riparian forests (Atchafalaya River), water quality (sediment and nutrient loading) downstream of various Best Management Practices (BMPs, Difficult Run), and tidal forest sediment dynamics (Savannah River, several Mid-Atlantic streams). Studies required the creation and implementation of multi-agency study plans and field implementation including installing networks of surface water streamgages, monitoring groundwater wells, water quality datasondes, and repeat surveys (total station and conventional surveying). Data, including soils inventories and assessment, water quality and quantity, and landscape morphology was used to further the state of the science, develop watershed restoration plans, and to develop local, land unit (e.g. Park, Forest, or Refuge) scale, and regional policy. I created maps based on satellite imagery, DEMs/LiDar, and 3-D models (SfM or photogrammetry). I authored peer-reviewed articles (27), presented results to professional audiences at conferences and workshops, and provided technical expertise to resource managers at the Federal, state, corporate, and local level. Many of the workshops were held to develop resource management plans for specific Federal land units including Congaree National Park, Roanoke River National Wildlife Refuge, and the National Capital Parks Unit. I have created press releases detailing our work, web features for the USGS website, and I have spoken with local and regional media outlets.

As a program and budget manager I created and managed cooperative hydrologic and watershed projects that included up to seven accounts (>\$1,000,000) that were managed for current year, end-of-year, and out year expenditures and scope of work. I have developed the scope of work, time table, and budget for several projects including a river channel morphology study in the Southeastern US, flood studies on the Missouri River, an aquatic plant restoration project in the Anacostia River, an aquatic plant survey in the Potomac River, a soils study in Congaree National Park, and a floodplain sediment project on the Kissimmee River. Communication and problem solving skills were crucial with this position as many studies require close cooperation with private landowners and with government and NGO partners that may have different missions, goals, or values. Projects included a significant amount of collaboration with the Army Corps. of Engineers, National Park Service, US Fish and Wildlife Service, South Florida Water Management District, North

Dakota Water Commission, Dominion Power, and various other state agencies, non-profits, and universities.

**Park Operations Fellow (Natural Resources/Open Spaces)**, Parks and Recreation Dept., City of Bloomington, IN, 9/03-5/05.

As a Fellow I developed city policy concerning aquatic nuisance species removal and lake sediment management on a 100 acre reservoir and a separate brownfield redevelopment project. I also performed preliminary site surveys on private and public lands (200+ acres) for fish and macroinvertebrate habitat suitability and ecological disturbance (including EPA rapid bioassessment protocols). I worked with volunteer, non-profit, and prison groups to provide outdoor education classes, remove invasive weeds, and for community events (5k runs, bike to work day, etc). The work program with the prison netted over 700 volunteer hours for stream and watershed cleanup including invasive shrub removal.

**Natural Resources Supervisor**, Parks and Recreation Dept., City of Bloomington, IN, 5/04-9/04.

My accomplishments at this position include a stream bank restoration survey for Cascades Creek. The survey recorded stream bank failures and erosion sites along two stream miles using GPS/GIS, digital cameras, and measurements for inclusion in a ~\$200,000 restoration plan for a municipal property. I also developed an invasive species management plan for a 100 acre lake and its associated watershed. Other duties included installing a network of data loggers to collect information on park use and trends and the supervision of over 70 student volunteers for over 140 labor-hours of invasive species removal and trail maintenance.

**Park Ranger (Interpretation)** GS-5, National Park Service (Sequoia/King's Canyon National Parks), 5/18/03-8/21/03, and 6/3/02-10/5/02.

**Park Ranger, (Interpretation)** GS-4, National Park Service (Wind Cave National Park), 5/2000-9/2000, 40 hrs a week. Phyllis Cremonini, supervisor, can be contacted by phone at 605-745-1131.

#### RELEVANT TRAINING:

USGS sediment data collection techniques (40 hrs)  
Federal Contracting Officer Representative (COR – 24 hrs)  
Fish habitat modeling (System for Environmental Flow Analysis, PHABSIM)  
ESRI Introduction to ArcGIS 9 (16 hrs)  
ArcGIS 9.1 Labeling and Annotations (16 hrs)  
Wilderness First Aid  
Dept. of Interior Motorboat Operator's Course (40 hrs)  
Federal Aviation Safety Training  
Wildland Firefighting Type II (Red Card)

Open Water SCUBA (PADI)  
Grant writing workshop (8 hrs.)  
Search and rescue training – National Park Service (10 hrs)  
Recreational trail planning (12 hrs)  
KPSI and Hobo pressure transducer training  
Beckmann-Coulter laser diffraction sediment analyzer  
LISST sediment analyzer  
Beckman-Coulter Counter laser analyzer  
USGS surface water modeling (iRIC - MD\_SWMS)  
FEMA Emergency Operations (various classes)

#### SELECT PUBLICATIONS:

Schenk, E.R., O'Donnell, F., Springer, A.E. and Stevens, L.E., 2020. The impacts of tree stand thinning on groundwater recharge in aridland forests. *Ecological Engineering*, 145, p.105701.

Schenk, E.R., Jenness J., and L. Stevens. 2022. Declines in an Aridland River's Base Flow Due to Increasing Air Temperature: Implications for Springs Ecosystems, *Journal of the Arizona-Nevada Academy of Science* 49(2), 92-98, <https://doi.org/10.2181/036.049.0206>

Schenk, E.R., Shiefer, E., Young, E., and C. Helton. 2021. Surface Water Hydrology and Flood Recurrence in the Flagstaff, Arizona Area, 2008-2019. City of Flagstaff Technical Report. Flagstaff, AZ 81 p. DOI: 10.4211/hs.8da8bb7cb66d475ea03af1a79b38a446

Schenk, E. R., Benthem, A. J., Dixon, M. D., Mittelman, M., Skalak, K. J., Hupp, C. R., Galloway, J. M., and Nustad, R. A., 2018. Large wood distribution, mobility, and recruitment in an inter-dam river reach: a comparison with geomorphic process on the Garrison Reach of the Missouri River pre and post the historical 2011 flood. *Earth Surf. Process. Landforms*, doi: [10.1002/esp.4346](https://doi.org/10.1002/esp.4346).

Schenk, E. R., Hupp, C. R., Gellis, A. and Noe, G. 2012. Developing a new stream metric for comparing stream function using a bank–floodplain sediment budget: a case study of three Piedmont streams. *Earth Surf. Process. Landforms*. doi: 10.1002/esp.3314

## HOSTED, CHAIRED, ORGANIZED SYMPOSIUMS

2015 Floodplain Restoration Symposium, at the Society of Wetland Science 2015 Annual Meeting, Providence, Rhode Island. Co-Chair with Dr. Sarah McMillan

National Park Service Science: A Case Study of Grand Canyon Projects, at the 14<sup>th</sup> Biennial Conference of Science and Management for the Colorado Plateau, Flagstaff, AZ, Sept. 2017. Chair

Springs Ecosystem Science Symposium and Workshop, at the Museum of Northern Arizona, Flagstaff, AZ June 4-6, 2018. Co-Organizer/Co-Host.

## PUBLICATIONS:

1. **Schenk, E.R.** and Rybicki, N.B., 2006, Exploring causes of a seagrass transplant failure in the Potomac River (Virginia): *Ecological Restoration* 24(2), p. 116-118. (10% field work, 90% analysis, 90% manuscript preparation)
2. Rybicki, N. B., Yoon, S.N., **Schenk, E.R.**, and Baldizar, J.B., 2007, The Distribution of Submersed Aquatic Vegetation in the Fresh and Oligohaline Tidal Potomac River, 2004: U.S. Geological Survey Open File Report 2007-1198, online at <http://pubs.usgs.gov/of/2007/1198/>. (0% field work, 30% analysis, 20% manuscript preparation)
3. Rybicki, N.B., Justiniano- Vélez, E., **Schenk, E.R.**, and Hunter, S.E., 2008, The Distribution of Submersed Aquatic Vegetation in the Fresh and Oligohaline Tidal Potomac River, 2005: US Geological Survey, Reston VA, Open-File Report 2008-1218, 40 pgs, online:<http://pubs.er.usgs.gov/usgpsubs/ofr/ofr20081218> (30% field work, 30% analysis, 20% manuscript preparation)
4. Hupp, C.R., **Schenk, E.R.**, Richter, J.M., Peet, R.K., and Townsend, P.A., 2009, Bank erosion along the dam-regulated lower Roanoke River, North Carolina, *in* James, L.A., Rathburn, S.L., and Whittecar, G.R., eds., *Management and Restoration of Fluvial Systems with Broad Historical Changes and Human Impacts: Geological Society of America Special Paper 451*, p. 97-108 (50% field work, 50% analysis, 40% manuscript preparation)
5. **Schenk, E. R.**, and Hupp, C. R., 2009, Legacy Effects of Colonial Millponds on Floodplain Sedimentation, Bank Erosion, and Channel Morphology, Mid-Atlantic, USA: *Journal of the American Water Resources Association (JAWRA)* 45(3), p. 597-606. (20% field work, 70% analysis, 70% manuscript preparation)
6. Hupp, C. R., Noe, G. B., and **Schenk, E. R.**, 2010, Floodplains, equilibrium, and fluvial geomorphic impacts of human alterations: IN *Proceedings of the 2nd Joint Federal Interagency Conference (9thFISC and 4thFIHMC)*, Las Vegas, Nevada, June 27-July 1, p. 12. (10% field work, 30% analysis, 20% manuscript preparation)
7. **Schenk, E. R.** and Hupp, C. R., 2010, Floodplain sediment trapping, hydraulic connectivity, and vegetation along restored reaches of the Kissimmee River, Florida: IN *Proceedings of the 2nd Joint Federal Interagency Conference (9thFISC and 4thFIHMC)*, Las Vegas, Nevada, June 27-July 1, p. 12. (70% field work, 80% analysis, 80% manuscript preparation)

8. **Schenk, E.R.**, Hupp, C.R., Richter, J.M., and Kroes, D.E., 2010, Bank erosion, mass wasting, water clarity, bathymetry, and a sediment budget along the dam-regulated lower Roanoke River, North Carolina: U.S. Geological Survey Open-File Report 2009-1260, p. 112, available only at <http://pubs.usgs.gov/of/2009/1260/>. (50% field work, 70% analysis, 70% manuscript preparation)
9. Tanner, C., Hunter, S., Reel, J., Parham, T., Naylor, M., Karrh, L., Busch, K., Golden, R.R., Lewandowski, M., Rybicki, N., **Schenk, E.**, 2010, Evaluating a Large-Scale Eelgrass Restoration Project in the Chesapeake Bay: *Restoration Ecology*, 18(4), p. 538-548. (5% field work, 10% analysis, 10% manuscript preparation)
10. Moulin, B., **Schenk, E. R.** and Hupp, C. R., 2011, Distribution and characterization of in-channel large wood in relation to geomorphic patterns on a low-gradient river: *Earth Surface Processes and Landforms*, 36: n/a. doi: 10.1002/esp.2135 [\[Link\]](#) (50% field work, 50% analysis, 50% manuscript preparation)
11. **Schenk, E. R.**, Hupp, C. R. and Gellis, A., 2012, Sediment Dynamics In The Restored Reach Of The Kissimmee River Basin, Florida: A Vast Subtropical Riparian Wetland. *River Research and Applications*.28(10), p. 1753-1767. doi: 10.1002/rra.1577 [\[Link\]](#) (50% field work, 70% analysis, 80% manuscript preparation)
12. Hupp, C.R., Noe, G.B., **Schenk, E.R.**, and Benthem, A.J., 2013, Recent and historic sediment dynamics along Difficult Run, a suburban Virginia Piedmont stream: *Geomorphology*, 180-181, p. 156-169. <http://dx.doi.org/10.1016/j.geomorph.2012.10.007> [\[Link\]](#) (80% field work, 50% analysis, 20% manuscript preparation)
13. Skalak, K.J., Benthem, A.J., **Schenk, E.R.**, Hupp, C.R., Galloway, J., Nustad, R.A., and Wiche, G. 2013. Large dams and alluvial rivers in the Anthropocene: the impacts of the Garrison and Oahe Dams on the Upper Missouri River: *Anthropocene*, 2, p. 51-64. (40% field work, 20% analysis, 10% manuscript preparation)
14. **Schenk, E. R.**, Hupp, C. R., Gellis, A. and Noe, G., 2013. Developing a new stream metric for comparing stream function using a bank–floodplain sediment budget: a case study of three Piedmont streams: *Earth Surf. Process. Landforms*, 38, p. 771–784. doi: 10.1002/esp.3314 [\[Link\]](#) (60% field work, 70% analysis, 80% manuscript preparation)
15. **Schenk, E.R.**, Moulin, B., Hupp, C.R., and Richter, J.M., 2013. Large wood budget and transport dynamics on a large river using radio telemetry. *Earth Surf. Process. Landforms*, DOI: 10.1002/esp.3463. (60% field work, 80% analysis, 80% manuscript preparation).
16. Pizzuto, J., **Schenk, E. R.**, Hupp, C. R., Gellis, A., Noe, G., Williamson, E., ... & Newbold, D. 2014. Characteristic length scales and time-averaged transport velocities of suspended sediment in the mid-Atlantic region, USA. *Water Resources Research* 50, doi: [10.1002/2013WR014485](https://doi.org/10.1002/2013WR014485).
17. **Schenk, E. R.**, McCargo, J. W., Moulin, B., Hupp, C. R. and Richter, J. M. 2014. The influence of logjams on largemouth bass (*Micropterus salmoides*) concentrations on the Lower Roanoke River, a large sand-bed river. *River Res. Applic.*. doi: 10.1002/rra.2779
18. **Schenk, E.R.**, Skalak, K.J., Benthem, A.J., Dietsch, B.J., Woodward, B.K., Wiche, G.J., Galloway, J.M., Nustad, R.A., and Hupp, C.R., 2014, Geomorphic change on the Missouri River during the flood of 2011: U.S. Geological Survey Professional Paper 1798–I, 25 p., <http://dx.doi.org/10.3133/pp1798I>.
19. Batson, J., Noe, G. B., Hupp, C. R., Krauss, K. W., Rybicki, N. B., & **Schenk, E. R.**, 2014, Soil Greenhouse Gas Emissions and Carbon Budgeting in a Short-Hydroperiod Floodplain Wetland. *Journal of Geophysical Research: Biogeosciences*. (Published, not in print)
20. Hupp, C. R., **Schenk, E. R.**, Kroes, D. E., Willard, D. A., Townsend, P. A., & Peet, R. K., 2015, Patterns of floodplain sediment deposition along the regulated lower Roanoke River, North Carolina: Annual, decadal, centennial scales. *Geomorphology*, 228, 666-680.
21. Hupp, C.R.; Kroes, D.E.; **Schenk E.R.**; and G.B. Noe. 2015 Sediment and Carbon Sequestration in the Lower Atchafalaya Basin, Louisiana. In Proceedings of the 3rd Joint Federal Interagency Conference (10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference), April 19 – 23, 2015, Reno, Nevada.

22. Gellis, A.C., Noe, G.B., Clune, J.W., Myers, M.K., Hupp, C.R., **Schenk, E.R.**, and Schwarz, G.E., 2015, Sources of fine grained sediment in the Linganore Creek watershed, Frederick and Carroll Counties, Maryland, 2008–10: *U.S. Geological Survey Scientific Investigations Report 2014–5147*, 56 p., <http://dx.doi.org/10.3133/sir20145147>. (20% field work, 10% analysis, 10% manuscript preparation)
23. Campbell, S.H., Rybicki, N.B., and **Schenk, E.R.**, 2015, The distribution of submersed aquatic vegetation and water lettuce in the fresh and oligohaline tidal Potomac River, 2007: *U.S. Geological Survey Open-File Report 2014–1259*, 33 p., <http://dx.doi.org/10.3133/ofr20141259>.
24. Kroes, D.E., **Schenk, E.R.**, Noe, G.B., Benthem, A.J. 2015. Sediment and nutrient trapping as a result of a temporary Mississippi River floodplain restoration: The Morganza Spillway during the 2011 Mississippi River Flood. *Ecological Engineering* 82:91-102. [doi:10.1016/j.ecoleng.2015.04.056](https://doi.org/10.1016/j.ecoleng.2015.04.056)
25. **Schenk, E.R.**, McCargo, J.W., Moulin, B., Hupp, C.R. and Richter, J.M., 2015. The Influence of Logjams on Largemouth Bass (*Micropterus Salmoides*) Concentrations on the Lower Roanoke River, a Large Sand-Bed River. *River Research and Applications*, 31(6), pp.704-711.
26. **Schenk E.R.**; Hupp C.R.; Gellis A.; and G.B. Noe. 2015 Developing a Stream Metric for Comparing Stream Function Using a Bank-Floodplain Sediment Budget: A Case Study of Three Piedmont Streams. In Proceedings of the 3rd Joint Federal Interagency Conference (10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference), April 19 – 23, 2015, Reno, Nevada.
27. Gellis, A.C., Noe, G.B., Clune, J.W., Myers, M.K., Hupp, C.R., **Schenk, E.R.** and Schwarz, G.E., 2015. Sources of fine-grained sediment in the Linganore Creek watershed, Frederick and Carroll Counties, Maryland, 2008–10: US Geological Survey Scientific Investigations Report, 2014–5147, 56 p.
28. Gellis, A.C., Myers, M.K., Noe, G.B., Hupp, C.R., **Schenk, E.R.** and Myers, L., 2017. Storms, channel changes, and a sediment budget for an urban-suburban stream, Difficult Run, Virginia, USA. *Geomorphology*, 278, pp.128-148.
29. Skalak, K., Benthem, A., Hupp, C., **Schenk, E.**, Galloway, J. and Nustad, R., 2017. Flood effects provide evidence of an alternate stable state from dam management on the upper Missouri River. *River Research and Applications*, 33(6), pp.889-902.
30. Tobin, B.W.; Springer, A.E.; Kreamer, D.K.; and **E.R. Schenk**. 2017. A Review: The distribution, flow, and quality of Grand Canyon Springs, Arizona (USA). *Hydrogeology*.
31. Fuller, C.C., Cain, D.J., Croteau, M-N., Barasch, D.A., Beisner, K.R., Stoliker, D.L., **Schenk, E.R.**, 2018, Biogeochemical data of water, sediments, periphyton, and macroinvertebrates collected from springs in and near Grand Canyon National Park, Arizona: U.S. Geological Survey data release, <https://doi.org/10.5066/P9CR6GCW>.
32. Gillespie, J.L., Noe, G.B., Hupp, C.R., Gellis, A.C. and **Schenk, E.R.**, 2018. Floodplain Trapping and Cycling Compared to Streambank Erosion of Sediment and Nutrients in an Agricultural Watershed. *JAWRA Journal of the American Water Resources Association*.
33. **Schenk, E. R.**, Benthem, A. J., Dixon, M. D., Mittelman, M., Skalak, K. J., Hupp, C. R., Galloway, J. M., and Nustad, R. A., 2018. Large wood distribution, mobility, and recruitment in an inter-dam river reach: a comparison with geomorphic process on the Garrison Reach of the Missouri River pre and post the historical 2011 flood. *Earth Surf. Process. Landforms*, doi: [10.1002/esp.4346](https://doi.org/10.1002/esp.4346).
34. **Schenk, E.R.**; Jenness, J.S.; and Stevens, L.E. 2018. Springs Distribution, Flow, and Associated Species in the Verde River Basin, Arizona. Springs Stewardship Institute Technical Report to One for the Verde. Museum of Northern Arizona, Flagstaff, AZ. 47 p. DOI: 10.13140/RG.2.2.27113.95846
35. Bair, R.T.; Tobin, B.W.; Healy, B.D.; Spangenberg, C.E.; Childres H.K.; and **Schenk, E.R.**, 2019. Modeling Temperature Regime and Physical Habitat Impacts from Restored Streamflow. *Env. Management*. <https://doi.org/10.1007/s00267-019-01157-8>
36. Hupp, C. R., Kroes, D. E., Noe, G. B., **Schenk, E. R.**, & Day, R. H.; 2019. Sediment trapping and carbon sequestration in floodplains of the lower Atchafalaya Basin, LA: Allochthonous versus autochthonous carbon sources. *Journal of Geophysical Research: Biogeosciences*, 124. <https://doi.org/10.1029/2018JG004533>

37. Marineau, M., Wright, S., Gaeuman, D., Curran, C., Stark, K., Siemion, J., & **Schenk, E.R.**, 2019. Overview of Five Recent Bedload Monitoring Field Experiments Using Hydrophones. *SEDHYD 2019 Conference Proceedings*, Reno, NV. 14 p.
38. Noe, G.B., Boomer, K., Gillespie, J.L., Hupp, C.R., Martin-Alciati, M., Floro, K., **Schenk, E.R.**, Jacobs, A. and Strano, S., 2019. The effects of restored hydrologic connectivity on floodplain trapping vs. release of phosphorus, nitrogen, and sediment along the Pocomoke River, Maryland USA. *Ecological Engineering*, 138, pp.334-352.
39. Cartwright, J.M., Dwire, K.A., Freed, Z., Hammer, S.J., McLaughlin, B., Misztal, L.W., **Schenk, E.R.**, Spence, J.R., Springer, A.E. and Stevens, L.E., 2020. Oases of the future? Springs as potential hydrologic refugia in drying climates. *Frontiers in Ecology and the Environment*, 18(5), pp.245-253.
40. **Schenk, E.R.**, O'Donnell, F., Springer, A.E. and Stevens, L.E., 2020. The impacts of tree stand thinning on groundwater recharge in aridland forests. *Ecological Engineering*, 145, p.105701.
41. Noe, G.B., Hupp, C.R., **Schenk, E.R.**, Doody, T.R., and Hopkins, K.G., 2020, Physico-chemical characteristics and sediment and nutrient fluxes of floodplains, streambanks, and streambeds in the Chesapeake Bay and Delaware River watersheds: U.S. Geological Survey data release, <https://doi.org/10.5066/P9QLJYPX>.
42. Noe, G.B., Hopkins, K.G., Metes, M.J., Ahmed, L., Claggett, P.R., Doody, T.R., **Schenk, E.R.**, and Hupp, C.R., 2020, Predictions of floodplain and streambank geomorphic change and flux, streambed characteristics, and catchment inputs and exports of sediment and nutrients for stream reaches in the Chesapeake Bay and Delaware River watersheds: U.S. Geological Survey data release, <https://doi.org/10.5066/P93OUWYZ>.
43. Porter, R., Joyal, T., Beers, R., Loverich, J., Laplante, A., Spruell, J., Youberg, A., **Schenk, E.**, Robichaud, P. and Springer, A., 2021. Seismic Monitoring of Post-Wildfire Debris Flows Following the 2019 Museum Fire, Arizona. *Frontiers in Earth Science*, 9, p.235. doi: 10.3389/feart.2021.649938
44. Stevens, L.E., **Schenk, E.R.** and Springer, A.E., 2021. Springs ecosystem classification. *Ecological Applications*, 31(1), p.e2218.
45. **Schenk, E.R.**, Shiefer, E., Young, E., and C. Helton. 2021. Surface Water Hydrology and Flood Recurrence in the Flagstaff, Arizona Area, 2008-2019. City of Flagstaff Technical Report. Flagstaff, AZ 81 p. DOI: 10.4211/hs.8da8bb7cb66d475ea03af1a79b38a446
46. Noe, G.B., Hopkins, K.G., Claggett, P.R., **Schenk, E.R.**, Metes, M.J., Ahmed, L., Doody, T.R. and Hupp, C.R., 2022. Streambank and floodplain geomorphic change and contribution to watershed material budgets. *Environmental Research Letters*, 17(6), p.064015.
47. **Schenk, E.R.**, Jenness J., and L. Stevens. 2022. Declines in an Aridland River's Base Flow Due to Increasing Air Temperature: Implications for Springs Ecosystems, *Journal of the Arizona-Nevada Academy of Science* 49(2), 92-98, <https://doi.org/10.2181/036.049.0206>
48. Cain, D.J., Croteau, M.N., Fuller, C.C., Beisner, K.R., Campbell, K.M., Stoliker, D.L. and **Schenk, E.R.**, 2023. Aquatic insect accumulation of uranium at spring outflows in the Grand Canyon region as influenced by aqueous and sediment geochemistry and biological factors: implications for monitoring. *Environmental Monitoring and Assessment*, 195(7), pp.1-20.
49. Porter, R., Joyal, T., Beers, R., Youberg, A., Loverich, J., **Schenk, E.** and Robichaud, P.R., 2023. Characterization of Environmental Seismic Signals in a Post-Wildfire Environment: Examples from the Museum Fire, AZ. *Journal of Geophysical Research: Earth Surface*, p.e2022JF006962.
50. **Schenk, E.R.**, Haden, A., Loverich, J. and Wood, A., 2023. Post-wildfire sediment transport modeling versus field observations: Northern Arizona case studies. *SEDHYD 2023 Proceedings*, St. Louis, MO.

51. **Schenk, E.R.**, Loverich, J.B. and Haden, A., 2023. Modeling Post-Wildfire Flood Dynamics to Determine Urban Stormwater Infrastructure Needs: Flagstaff Arizona Case Study. *SEDHYD 2023 Proceedings*, St. Louis, MO.

#### CONFERENCE OR TECHNICAL WORKGROUP PRESENTATIONS (this list is not exhaustive):

1. **Schenk, E.R.**, and N.B. Rybicki. 2006, Sedimentation, erosion, and water quality at a seagrass transplant site and reference site (Virginia): In Proceedings from the 3<sup>rd</sup> National Conference on Coastal and Estuarine Habitat Restoration, Dec. 9-13, New Orleans, online at: <http://www.estuaries.org/?id=181>. (INVITED)
2. **Schenk, E.R.** and Rybicki, N.B., 2006, Monitoring the decline in aquatic invasive species dominance in the tidal Potomac River, 1990-2004: National Invasive Weeds Awareness Week Conference, Washington, DC
3. Hupp, C.R. and **Schenk, E.R.**, 2008, Bank erosion and sediment budget along the regulated lower Roanoke River, NC: Geological Society of America, Denver, CO.
4. Hupp, C.R. and **Schenk, E.R.**, 2009, Carbon sequestration and sedimentation patterns along restored reaches of the Kissimmee River floodplain, Florida, USA, Society of Wetland Scientists, Madison, WI.
5. Hupp, C.R., **Schenk, E.**, Gray, R., Noe, G., Gellis, A., and Rybicki, N., 2009, Difficult Run Floodplain Study: Fluvial geomorphic parameters of Difficult Run, a Piedmont tributary to the Chesapeake Bay: USGS Chesapeake Science Meeting, Shepherdstown, West Virginia. (INVITED)
6. Hupp, C.R., **Schenk, E.R.**, and Richter, J.M., 2008, Bank erosion along the lower Roanoke River, North Carolina downstream of Piedmont dams: American Water Resources Association, Virginia Beach, VA.
7. **Schenk, E.R.** and Hupp, C.R., 2008, Legacy effects of colonial millponds on modern floodplain sedimentation, bank erosion, and channel morphology, Mid-Atlantic Region, USA: American Water Resources Specialty Conference, Virginia Beach, VA.
8. **Schenk, E.R.**, and Hupp, C.R., 2008, A Sediment Budget for the Regulated Lower Roanoke River, NC: Geological Society of America Conference, Houston, TX, online at: [http://gsa.confex.com/gsa/2008AM/finalprogram/abstract\\_150620.htm](http://gsa.confex.com/gsa/2008AM/finalprogram/abstract_150620.htm)
9. Hupp, C., **Schenk E.R.**, Gray, R., Noe, G., Gellis, A., and Rybicki, N., 2009, Difficult Run Floodplain Study: Fluvial geomorphic parameters of Difficult Run, a Piedmont tributary to the Chesapeake Bay: USGS Chesapeake Science Meeting, Shepherdstown, West Virginia. (INVITED)
10. **Schenk, E.R.**, Hupp, C.R., and Moulin B., 2009, Spatial trends in large woody debris (LWD) storage and transport on the lower Roanoke River, North Carolina: Ecological Society of America Conference, Albuquerque, NM, online at: <http://eco.confex.com/eco/2009/techprogram/P18625.HTM>
11. **Schenk, E.R.**, Hupp, C.R., and Moulin B., 2009, Spatial trends in large woody debris (LWD) storage and transport on the lower Roanoke River, North Carolina: 40th Binghamton Geomorphology Symposium, Blacksburg, VA (INVITED)
12. Gellis, A., Noe G., Hupp, C.R., **Schenk, E.**, Clune, J., and Myers, M., 2010, Linganore Creek, MD: A focus study watershed of the USGS Chesapeake Bay Program: USGS Chesapeake Bay Science Workshop. Rocky Gap, Maryland. (INVITED)
13. Hupp, C.R., Noe, G.B., and **Schenk, E.R.**, 2010, Floodplains, equilibrium, and fluvial geomorphic impacts of human alteration: Joint Federal Interagency Conference, Las Vegas, Nevada. (INVITED)
14. Hupp, C.R., **Schenk, E.**, Noe, G., Gray, R., Kelly, P., Ostroski, N., Rybicki, N., and Gellis, A., 2010, Bank erosion and floodplain deposition dynamics indicate best management options for Piedmont tributaries to the Chesapeake Bay: the Difficult Run case-study, USGS Chesapeake Bay Science Workshop, Rocky Gap, Maryland. (INVITED)
15. Noe, G.B., Ostroski, N., Wolf, K., Bealing, K., **Schenk, E.**, Robinson, M., Loperfido, J.V., Hogan, D., Gellis, A., Rybicki, N., and Hupp. C., 2010, Nutrient mineralization and budgeting the effects of riparian ecosystem processes on water quality: the Difficult Run Floodplain Study: USGS Chesapeake Bay Science Workshop. Rocky Gap, Maryland. (INVITED)
16. **Schenk, E.R.**, Moulin, B.M., and Hupp, C.R., 2010, Trends in large wood storage and transport on the low-gradient Roanoke River, North Carolina: American Geophysical Union, Fall Meeting 2010, abstract #EP43D-0775. (INVITED)



17. **Schenk, E.**, Hupp, C., Gray, R., Ostroski, N., Kelly, P., Noe, G., Gellis, A., and Rybicki, N., 2010, Bank erosion and floodplain deposition dynamics indicate best management options for Piedmont tributaries to the Chesapeake Bay: the Difficult Run case-study: USGS Chesapeake Bay Science Workshop, Rocky Gap, Maryland. (INVITED)
18. Bealing, K., Noe, G.B., Hupp, C., **Schenk, E.**, and Rybicki, N., 2011, Carbon sequestration in wetlands: Developing a carbon budget for the urban, Piedmont floodplains of Difficult Run, Virginia: Joint Regional Meeting of the South Atlantic and Mid-Atlantic Chapters of the Society of Wetland Scientists, Reston, Virginia.
19. Hupp, C.R., **Schenk, E.R.**, and Moulin, B., 2011, Bank erosion and potential large wood generation along the lower Roanoke River, North Carolina: National Surface Water Conference, Tampa, FL. (INVITED)
20. Hupp, C., **Schenk, E.**, Noe, G., Gray, R., Kelly, P., and Rybicki, N., 2011, Bank erosion and floodplain deposition dynamics on Difficult Run, VA: a Piedmont stream in the Chesapeake Bay watershed: Joint Regional Meeting of the South Atlantic and Mid-Atlantic Chapters of the Society of Wetland Scientists, Reston, Virginia. (INVITED)
21. Hupp, C.R., **Schenk, E.R.**, Pierce, A.R., and Noe, G.B., 2011, Floodplain geomorphic processes and environmental impacts of human alteration along Coastal Plain rivers: Federal Interagency Sedimentation Conference, Las Vegas, NV. (INVITED)
22. Moulin, B., **Schenk, E.R.**, and Hupp, C.R., 2011, Spatial trends in woody debris (LWD) distribution and storage on the lower Roanoke River, North Carolina: National Surface Water Conference, Tampa, FL. (INVITED)
23. Noe, G.B., Hupp, C.R., Rybicki, N., Gellis, A., Ostroski, N., Wolf, K., **Schenk, E.**, Robinson, M., Bealing, K., and Myers, M., 2011, The effects of riparian ecosystem processes on water quality: nutrient mineralization and budgeting in the Difficult Run Floodplain Study: National Conference on Ecosystem Restoration, Baltimore, Maryland.
24. Noe, G.B., Hupp, C., Rybicki, N., Ostroski, N., Wolf, K., **Schenk, E.**, Robinson, M., and Bealing, K., 2011, Hydrogeomorphic controls of soil nutrient mineralization in floodplain wetlands: Joint Regional Meeting of the South Atlantic and Mid-Atlantic Chapters of the Society of Wetland Scientists, Reston, Virginia.
25. Noe, G.B., Hupp, C., Rybicki, N., **Schenk, E.**, Gellis, A., Skalak, K., Loperfido, J.V., Hogan, D., Böhlke, J.K., Hyer, K., and Jastram, J., 2011, Nutrient and sediment sources, transport, retention, and effects of best management practices in the urban Difficult Run watershed, Virginia: Third Maryland Streams Symposium, Westminster, Maryland. (INVITED)
26. Rybicki, N., Noe, G.B., Hupp, C.R., Ostroski, N., Wolf, K., **Schenk, E.R.**, Robinson, M., and Bealing, K., 2011, The effects of vegetation on cycling and trapping of nutrients, South Atlantic and Mid Atlantic Society of Wetland Scientists Meeting: Reston, Virginia, March 7-8, 2011 (INVITED)
27. **Schenk, E.R.**, Moulin, B., and Hupp, C.R., 2011, Large wood dynamics on the low-gradient Roanoke River, North Carolina: tagged wood analysis: National Surface Water Conference. Tampa, FL. (INVITED)
28. **Schenk, E.R.** and Hupp, C.R., 2011, Large wood transport dynamics on the low-gradient Roanoke River, North Carolina: American Geophysical Union, Fall Meeting 2011, abstract #B13C-0576.
29. **Schenk, E.R.**, Hupp, C.R., and Gellis, A., 2011, Sediment dynamics in restored and channelized reaches of the Kissimmee River Basin, Florida: Society of Wetland Scientists SAC/MAC Joint Chapter Meeting 2011, Reston, VA. (INVITED)
30. Batson, J., Noe, G.B., Hupp, C.R., Krauss, K., Rybicki, N., **Schenk, E.**, 2012, Soil CO<sub>2</sub> and CH<sub>4</sub> emissions and carbon budgeting in dry floodplain wetlands: INTECOL/SWS/GEER International Wetlands Conference, Orlando, Florida. (INVITED)
31. Gellis, A.C., Noe, G.B., Hupp, C.R., **Schenk, E.R.**, and Skalak, K., 2012– Sediment budgets in small watersheds of the Chesapeake Bay, Soil to Sea Geomorphology: First Annual Amtrak Conference, Philadelphia, PA. (INVITED)
32. Gellis, A.C., Myers, M.M., Noe, G., Hupp, C.R., **Schenk, E.**, and Blomquist, J., 2012, Presented poster on Sediment Budget Results for Linganore Creek, MD 2003-2009: 2012 USGS Chesapeake Bay Annual Workshop, Reston, VA. March 14-15, 2012.
33. Hupp, C.R., Noe, G.B., and **Schenk, E.R.**, 2012. Recent and historic sediment dynamics along Difficult Run, a suburban Virginia Piedmont stream: First Annual Amtrak Conference, Philadelphia, PA. (INVITED)
34. Hupp, C.R., Noe, G.B., and **Schenk, E.R.**, 2012. Recent and historic floodplain and channel dynamics along Difficult Run, Virginia: Geological Society of America, Charlotte, NC.
35. Hupp, C.R. and **Schenk, E.R.**, 2012. Sedimentation patterns on the restored reach of the Kissimmee River floodplain: INTECOL – Society of Wetland Scientists, Orlando, FL.

36. Noe, G.B., Hupp, C., **Schenk, E.**, and Rybicki, N., 2012, Factors influencing nutrient and sediment retention by riverine wetlands in the Chesapeake watershed: Chesapeake Bay Program STAC workshop, Buckeystown, Maryland. (INVITED)
37. Noe, G.B., Hupp, C., Rybicki, N., **Schenk, E.**, and Batson, J., 2012, Nutrient and sediment cycling and retention in urban floodplain wetlands: INTECOL/SWS/GEER International Wetlands Conference, Orlando, Florida. (INVITED)
38. **Schenk, E.R.**, Hupp, C.R., 2012, A bank-floodplain sediment budget approach along select Piedmont streams within the Chesapeake Bay watershed: First Annual Amtrak Conference, Philadelphia, PA. (INVITED)
39. **Schenk, E.R.**, Nustad, R., 2012, Model Development on the Missouri River - Garrison Reach: 49th Annual Joint ND Water Convention and Irrigation Expo, Bismarck, ND. (INVITED)
40. **Schenk, E.R.**, Kroes, D.E., and Hupp, C.R., 2012, Carbon and sediment sequestration patterns within the Atchafalaya Basin and Morganza Spillway before and after the Lower Mississippi flood of 2011: Geological Society of America, Charlotte, NC, Online at: <https://gsa.confex.com/gsa/2012AM/webprogram/Paper207480.html>
41. **Schenk, E.R.**, Hupp, C.R., and Kroes, D.E., 2012, Sedimentation patterns within the Atchafalaya Basin and Morganza Spillway before and after the lower Mississippi flood of 2011: INTECOL Conference, Orlando, Florida (INVITED)
42. Batson, J., Noe, G.B., Hupp, C.R., **Schenk, E.R.**, and Rybicki, N.B., 2013, Impacts of urbanization on hydrology, geomorphology, and biogeochemical cycling in Piedmont floodplains: Society of Wetland Scientists, Duluth, Minnesota. (INVITED)
43. Gellis, A.C., Noe, G.B., Clune, J.B., Myers, M.K., Hupp, C.R., **Schenk, E.**, Blomquist, J., and Schwarz, G., 2013, Sources of Fine-Grained Sediment in the Linganore Creek watershed, Maryland: 2008 to 2010: Soil to Sea Geomorphology: Second Annual Amtrak Conference, May 17-18, 2013, Baltimore, MD. (POSTER)
44. Hupp, C.R., **Schenk, E.R.**, Kroes, D.E., and Noe, G.B., 2013, Impacts of channelization on riparian wetlands I: The effect of human alterations on hydrologic, connectivity, sediment and nutrient storage, and wetland habitat: Society of Wetland Scientists, Duluth, MN. (Presented by Noe due to sequestration restrictions on travel)
45. Noe, G.B., Hupp, C., **Schenk, E.**, Batson, J., Krauss, K., Wolf, K., and Ahn, C., 2013, The role of floodplains in the trapping and cycling of phosphorus: Society of Wetland Scientists, Duluth, Minnesota. (INVITED)
46. **Schenk, E.R.**, Hupp, C.R., Kroes, D.E., and Noe, G.B., 2013, Impacts of channelization on riparian wetlands II: The effect of human alterations on hydrologic, connectivity, sediment and nutrient storage, and wetland habitat: Society of Wetland Scientists, Duluth, MN. (Presented by Noe due to sequestration restrictions on travel)
47. Noe, G.B., Hupp, C.R., **Schenk, E.R.**, Batson, J., Krauss, K.W., Ensign, S., Wolf, K.L., and Ahn, C., 2013, Linkages between hydrogeomorphology and nutrient availability in wetlands. Annual AGU meeting, San Francisco. (INVITED)
48. Hupp, C.R., **Schenk, E.R.**, Kroes, D.E., and Willard, D.A., 2013, Historic and recent floodplain sediment deposition patterns on the lower Roanoke River, NC. Geological Society of America, Denver, CO.
49. Pizzuto, J., **Schenk, E.R.**, Hupp, C.R., Gellis, A., Noe, G., Williamson, E., Karwan, D.L., O'Neal M., Marquard, J., Aalto, R., and Newbold, D. 2013, Extracting length and time scales of downstream suspended transport from sediment budget data: ~100 to 1000-yr travel times from the Appalachians to the Chesapeake Bay, U.S.A. Annual AGU meeting, San Francisco.
50. Skalak, K., Benthem, A., Gellis, A., Harvey, J., Hupp, C., Larsen, L., Noe, G., Pizzuto, J., **Schenk, E.R.** 2013. Advancing knowledge gained from sediment budgets through sediment age dating and fingerprinting in small watersheds. Annual AGU meeting, San Francisco.
51. Benthem, A., Skalak, K. J., **Schenk, E. R.**, Hupp, C. R., & Galloway, J. 2013. Estimating Aeolian transport along the Missouri River after the 2011 flood. In *Geological Society of America Abstracts with Programs* (Vol. 45, No. 7).
52. Moulton, C., Benthem, A., Skalak, K., and **Schenk, E.R.** 2013. The distribution and geomorphic impacts of large wood from high magnitude, dam-era floods. In *Geological Society of America Abstracts with Programs* (Vol. 45, No. 7).
53. **Schenk, E. R.**, Kroes, D. E., & Hupp, C. R. 2013. Wetland subsidence and accretion in the Atchafalaya River Basin related to human disturbance. In *Geological Society of America Abstracts with Programs* (Vol. 45, No. 7).
54. **Schenk, E. R.**; Hupp, C. R.; Gellis, A.; Noe, G. 2014. A new stream metric for comparing stream function using a bank-floodplain sediment budget. Joint Aquatic Science Meeting, Portland, OR. (Abstract ID: 13195)
55. Hupp, C. R.; **Schenk, E. R.**; Kroes, D. E.; Noe, G. B.; Willard, D. A., 2014. Human impacts on sedimentation dynamics in response to alteration of stream flow to floodplain connectivity joint aquatic science meeting, portland, or. (Abstract ID: 13203)

56. Noe, G. B.; Hupp, C. R.; **Schenk, E. R.**; Batson, J.; Rybicki, N. B.; 2014. interactions among hydrologic connectivity, geomorphology, and nutrient and carbon cycling in an urban, piedmont floodplain wetland Joint Aquatic Science Meeting, Portland, OR. (Abstract ID: 13230)
57. Benthem, A.J., Strong, L., **Schenk, E.R.**, Skalak, K., Hupp, C.R., and J. Galloway. 2014. Flood induced increases in Aeolian transport along the Missouri River. AGU 2014 Fall Meeting Abstracts.
58. Skalak, K., Benthem, A., **Schenk, E.R.**, Hupp, C.R., Galloway, J., Nustad, R. 2014. Longitudinal dam interactions control channel morphology: the impacts of the Garrison and Oahe Dams on the Upper Missouri River. AGU 2014 Fall Meeting Abstracts.
59. **Schenk, E.R.**, Hupp, C.R., and Moulin, B. 2014. The interaction between logjams, channel evolution, and sport fisheries on a dam regulated low gradient river. AGU 2014 Fall Meeting Abstracts.
60. Hupp, C.R., Kroes, D.E., Schenk, E.R., and G.B. Noe. 2015. Sediment and Carbon Sequestration in the Lower Atchafalaya River Basin, Louisiana. Proceedings of the 3<sup>rd</sup> Joint Federal Interagency Conference. Reno, NV
61. **Schenk, E.R.**, Hupp, C.R., Gellis, A., and G. Noe. 2015. Developing a new stream metric for comparing stream function using a bank-floodplain sediment budget: a case study of three Piedmont streams. Proceedings of the 3<sup>rd</sup> Joint Federal Interagency Conference. Reno, NV
62. **Schenk, E.R.**, Healy, B.D., Smith, E.O., Tobin, B.W., Valle, C.M., and MacKinnon, P.D., 2015, Impacts of a recent wildfire and major flash flood on endangered humpback chub habitat – Shinumo Creek, Grand Canyon. Geo. Soc. of America Meeting, Baltimore, MD.
63. Bair, R., **Schenk, E.R.**, Tobin, B., and H. Childres. 2016. Potential impacts on native and invasive fish habitat in Bright Angel Creek (AZ) with the redesign of Grand Canyon water intake infrastructure. GSA Annual Meeting, Denver, CO. DOI: 10.1130/abs/2016AM-282429.
64. Keski-Hynnila, K.L., Tobin, B., and **E.R. Schenk**. 2016. Water chemistry, water flow and fishery management along Bright Angel Creek and its tributaries in Grand Canyon National Park. GSA Annual Meeting, Denver CO. DOI: 10.1130/abs/2016AM-281731.
65. **Schenk, E.R.**, Tobin, B.W., Thornton, R., Stillman, J., Childres, H., and Valle, C.M., 2016, An overview of surface water studies of desert spring fed streams related to the large-scale replacement of the TransCanyon Pipeline in Grand Canyon National Park. Geo. Soc. of America Meeting, Denver, CO.
66. Noe, G.B., Hupp, C.R., **Schenk, E.** and Claggett, P., 2016, December. Regional Measurement and Modeling of Floodplain Wetland Nutrient and Sediment Fluxes: The Chesapeake Watershed. In *AGU Fall Meeting Abstracts*.
67. Williams, T.M., Tobin, B., and **E.R. Schenk**. 2016. Determining the contributing streamflow from crystalline and carbonate-karst aquifers in relation to hyporheic flow in spring fed Bright Angel Creek, Grand Canyon National Park, AZ. GSA Annual Meeting, Denver, CO. DOI: 10.1130/abs/2016AM-281745.
68. Jones, N.A., Tobin, B., and **E.R. Schenk**. 2017. Sinkhole geomorphology and distribution on the Kaibab Plateau, Grand Canyon National Park. GSA Annual Meeting, Seattle, WA. DOI: 10.1130/abs/2017AM-304321.
69. Tanski, N., **Schenk, E.R.**, and B. Tobin. 2017. Potential knickpoint retreat on the Colorado River due to historically low Lake Mead levels, Grand Canyon National Park. GSA Annual Meeting, Seattle, WA. DOI: 10.1130/abs/2017AM-304304.
70. **Schenk, E.R.**, Tobin, B., Tanski, N., and M. Marineau. 2017. Determining the process of desert stream recovery following debris flow and implications of climate change. GSA Annual Meeting, Seattle, WA. DOI: 10.1130/abs/2017AM-304328.
71. Tobin, B., Schindel, G.M., Zappitello, S.J., **Schenk, E.R.**, and A.E. Springer. 2017. Grand Canyon dye tracing: challenges, concerns, and results. GSA Annual Meeting, Seattle, WA. DOI: 10.1130/abs/2017AM-301651.
72. Skalak, K., A Benthem, CR Hupp, **E Schenk**, J Galloway. 2017. Flood effects provide evidence of an alternate stable state caused by dam management on the Upper Missouri River. AGU 2017 Fall Meeting Abstracts
73. Noe, G.B., Hopkins, K., Claggett, P., Hupp, C.R., **Schenk, E.**, Bourg, N., Metes, M. and Hogan, D.M., 2018, December. Measuring and Modeling Regional Sediment and Nutrient Fluxes of Floodplains and Streambanks, from Mountains to the Sea. In *AGU 2018 Fall Meeting Abstracts*.
74. **Schenk, E.R.** 2018. Springs flows restoring surface water features post disturbance – Shinumo Creek, Grand Canyon. 2018 Springs Ecosystem Science Symposium, Flagstaff, AZ.
75. **Schenk, E.R.**, Grams, P.E., Schmidt, J., Friend, M., and C. Ring. 2018. River channel evolution in sediment surplus environments: a case study of Colorado River reaches in incised reservoir sediments. Joint 70<sup>th</sup> Rocky Mountain Annual Section / 114<sup>th</sup> Cordilleran Annual Section GSA Meeting, Flagstaff, AZ.
76. Stevens, L.E., **Schenk E.R.**, and Springer, A.E. 2019. Springs Ecosystem Stewardship. Geological Society of America Annual Meeting, Phoenix, AZ.
77. Noe, G., Hopkins, K., Claggett, P., Hupp, C., **Schenk, E.**, Metes, M., Ahmed, L., Hogan, D. 2019. Floodplain/streambank modulation of river loads of sediment and nutrients, from reaches to watersheds to regions. American Geophysical Union Annual Meeting, San Francisco, CA.

78. Loverich, J., Youberg, A., Carr, J., and **Schenk, E.R.**, 2019. Museum Fire Response and Risk Management. Arizona Floodplain Management Association Fall Meeting, Yuma, AZ.
79. Noe, G.B., Hopkins, K., Claggett, P., Hupp, C.R., **Schenk, E.**, Metes, M., Ahmed, L. and Hogan, D.M., 2019. Floodplain/Streambank Modulation of River Loads of Sediment and Nutrients, from Reaches to Watersheds to Regions. *AGUFM, 2019*, pp.H51C-06.
80. Smith, C. and **Schenk, E.R.** 2021. Implementing CMMS for Open Channel Stormwater Management. Arizona Water and Symposium annual conference. Virtual.
81. **Schenk, E.R.** and Smith, C. 2021. Going digital with open channel storm water asset management for a high elevation municipality. Association of State Floodplain Managers annual conference. Virtual.
82. Smith C. and **Schenk E.R. 2021**. Bringing Stormwater into the 21st Century: Integrating Real-Time Asset Management, Flow, and Maintenance. 2021 StormCon Conference, Milwaukee, WI.
83. **Schenk, E.R. 2021**. Managing post-fire floods at a municipal level: a Flagstaff, AZ case study. Fire and Rain Panel, 2021 StormCon Conference, Milwaukee, WI.
84. Beers, R., Robichaud, P., Joyal, T., Porter, R., Youberg, A., Loverich, J., and **Schenk, E.R.** 2021. [GEOMORPHIC MONITORING AND RESPONSE IN A POST-FIRE EPHEMERAL CHANNEL, A CASE STUDY FROM HIGH ELEVATION, STEEP SLOPES IN ARIZONA](#). Geological Society of America 2021 Meeting, Portland, OR.
85. **Schenk, E.R.**, Haden, A., Loverich, J. and Wood, A., 2023. Post-wildfire sediment transport modeling versus field observations: Northern Arizona case studies. *SEDHYD 2023 Proceedings*, St. Louis, MO.
86. **Schenk, E.R.**, Loverich, J.B. and Haden, A., 2023. Modeling Post-Wildfire Flood Dynamics to Determine Urban Stormwater Infrastructure Needs: Flagstaff Arizona Case Study. *SEDHYD 2023 Proceedings*, St. Louis, MO.
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