

Matthew R.V. Ross

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Education

Duke University, Ph.D. Ecology 2017

University of Colorado at Boulder, B.A. Ecology and Evolutionary Biology with a Minor in French 2010

Employment

Colorado State University Department of Ecosystem Science and Sustainability

Assistant professor of water quality 2018–present

University of North Carolina at Chapel Hill

Post-doctoral researcher in the Global Hydrology Lab with Tamlin Pavelsky 2017–2018

Publications

MRV Ross, F Nippgen, BA Hassett, BL McGlynn, ES Bernhardt. *Pyrite oxidation drives exceptionally high weathering rates and geologic CO₂ release in mountaintop-mined landscapes*. Global Biogeochemical Cycles. doi: [10.1029/2017GB005798](https://doi.org/10.1029/2017GB005798)

AA Pericač CJ Thomas, DA Kroodsma, MF Wasson, MRV Ross, NE Clinton, DJ Campagna, Y Franklin, ES Bernhardt, JF Amos. *Mapping the yearly extent of surface coal mining in Central Appalachia using Landsat and Google Earth Engine*. PLOS ONE. doi: [10.1371/journal.pone.0197758](https://doi.org/10.1371/journal.pone.0197758)

F Nippgen, MRV Ross, ES Bernhardt, BL McGlynn. *Creating a more perennial problem? Mountaintop removal coal mining enhances and sustains sailine baseflows of Appalachian watersheds*. Environmental science & technology. doi: [10.1021/acs.est.7b02288](https://doi.org/10.1021/acs.est.7b02288)

MRV Ross, BL McGlynn, ES Bernhardt. *Deep impact: effects of mountaintop mining on surface topography, bedrock structure, and downstream waters*. Environmental science & technology. doi: [10.1021/acs.est.5b04532](https://doi.org/10.1021/acs.est.5b04532)

MRV Ross, ES Bernhardt, MW Doyle, JB Heffernan. *Designer ecosystems: incorporating design approaches into applied ecology*. Annual Reviews of Environment and Resources. doi: [10.1146/annurev-environ-121012-100957](https://doi.org/10.1146/annurev-environ-121012-100957)

MC Arnold, LA Friedrich, TT Lindberg, MRV Ross, NM Halden, ES Bernhardt, VP Palace, RT Di Giulio. *Microchemical analysis of selenium in otoliths of two West Virginia fishes captured near mountaintop removal coal mining operations*. Environmental Toxicology and Chemistry. doi: [10.1002/etc.2885](https://doi.org/10.1002/etc.2885)

MR Ross, SC Castle, NN Barger. *Effects of fuels reductions on plant communities and soils in a Pi~non Juniper woodland*. Journal of arid environments. doi: [10.1016/j.jaridenv.2011.11.019](https://doi.org/10.1016/j.jaridenv.2011.11.019)

Grants and Awards

2016

- Grand Prize AGU/NASA Data Visualization and Storytelling Competition
- Fellow for Intergovernmental Panel on Biodiversity and Ecosystem Assessment
- Finalist for Mozilla Fellowship for Open Science

2015

- Third Place Duke Data Visualization Contest

- Duke Data+ Mentor
- Gordon Research Conference Rising Star

2013

- NSF Graduate Research Fellowship

2012

- NSF IGERT for Wireless Intelligent Sensor Networks
- Honorable Mention NSF Graduate Research Fellowship

Selected Presentations

F Nippgen, MRV Ross, ES Bernhardt, BL McGlynn. *Deconstructing the deconstruction of Appalachia: Mountain-top mining effects on hydrology across temporal and spatial scales*. Fall Meeting of the American Geophysical Union, New Orleans, December 2017.

MRV Ross, F Nippgen, BL McGlynn, ES Bernhardt. *Yesterday's forest, tomorrow's savannah? Legacies in the man-made mountains of Appalachia*. Fall Meeting of the American Geophysical Union, New Orleans, December 2017. *Invited

F Nippgen, MRV Ross, ES Bernhardt, BL McGlynn. *Short and long-term effects of a large-scale critical zone disturbance on hydrologic response*, UCOWR, Fort Collins, June 2017

MRV Ross, F Nippgen, BL McGlynn, ES Bernhardt. *Disturb 1% of the land, generate 50% of the regional ion flux*. Society for Freshwater Science, Raleigh, June, 2017.

MRV Ross, F Nippgen, BL McGlynn, ES Bernhardt. *Tracing disturbance impacts on water quantity and quality through a stream network*. European Geophysical Union, Vienna, April, 2017

MRV Ross, F Nippgen, Hassett B., BL McGlynn, ES Bernhardt. *Melting mountains of Appalachia: exceptionally high weathering rates in mined watersheds*, American Geophysical Union Fall Meeting, 2016

Nippgen F., MRV Ross, ES Bernhardt, McGlynn, B.L. *Mountaintop removal mining: from ephemeral to perennial streams*, American Geophysical Union Fall Meeting 2016

Posters

MRV Ross, *Sensing rivers and streams*. Gordon Research Conference, Lewiston, ME, June 2017

KL Jaeger, MRV Ross, *Process domains in synthetic landscapes: slope-area relationships in the mountaintop mining region of central Appalachia*. American Geophysical Union Fall Meeting. San Francisco, CA. (12/2014)