Brent R. Johnson, Ecologist, in EPA's National Exposure Research Laboratory

Systems Exposure Division
Mailing Address

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Area of Expertise: My research generally focuses on developing and refining assessment methods for both headwater streams and large rivers. This includes developing rapid measures of ecosystem function, as well as novel techniques for determining how headwaters can influence quality of downstream waterbodies. My current work specifically focuses on impacts from Appalachian coal mining and also attempts to address science needs resulting from recent litigation dealing with headwaters and isolated wetlands.

Select Publications:

Johnson, B.R., P. C. Weaver, K.A. Hammer, J.M. Lazorchak, C.T. Nietch, and D.H. Funk. 2015. Elevated ion concentrations inhibit larval mayfly growth and development. *Environmental Toxicology and Chemistry. Env. Toxicol. Chem* 34:167-172

Burke, R.A., K.M. Fritz, C.D. Barton, B.R. Johnson, S. Fulton, R.D. Hardy, D.A. Word, and J.D. Jack. 2014. Impacts of mountaintop removal and valley fill coal mining on C and N processing in terrestrial soils and headwater streams. *Water, Air, and Soil Pollution* 225; DOI: 10.1007/s11270-014-2081-z

Johnson, B.R., K.M. Fritz, and R. Price. 2013. Estimating benthic secondary production from aquatic insect emergence in streams affected by mountaintop removal coal mining, West Virginia, USA. *Fundamental and Applied Limnology* 182(3): 191-204; DOI:10.1127/1863-9135/2013/0403

Entrekin, S.A., M. Evans-White, B.R. Johnson, and E. Hagenbuch. 2011. Rapid expansion of natural gas development poses a threat to surface waters. *Frontiers in Ecology and the Environment* 9:503-511; DOI:10.1890/110053

Johnson, B.R., A. Haas, and K.M. Fritz. 2010. Use of spatially explicit physicochemical data to measure downstream impacts of headwater stream disturbance. *Water Resources Research* 46, W09526; doi:10.1029/2009WR008417

Johnson, B.R., K.M. Fritz, K.A. Blocksom, and D.M. Walters. 2009. Larval wSalamanders and Channel Geomorphology are Indicators of Hydrologic Permanence in Forested Headwater Streams. *Ecological Indicators* 9:150-159

View more research publications by Brent Johnson.

Education:

- Ph.D. in Entomology, 2002, The University of Georgia
- M.S. in Biology, 1995, Marshall University
- B.S. in Environmental Science, 1993, Georgetown College

Professional Experience:

- Research Ecologist, USEPA, ORD/NERL/EERD, 2003 to Present
- Environmental Biologist, Kentucky Division of Water, 2001 to 2003
- Graduate Assistant, The University of Georgia, 1997 to 2001
- Environmental Specialist, Florida Department of Environmental Protection, 1995 to 1997

Honors and Awards:

- *2013 Scientific and Technical Achievement Award (STAA), Level III* - Providing Science to Inform Decisions on Compensatory Mitigation of Headwater Streams Affected by Surface Mining
- *2013 Scientific and Technical Achievement Award (STAA), Level III* -Predicting Effects of Headwater Stream Disturbance on Downstream Water Quality
- *2011 Scientific and Technical Achievement Award (STAA), Level I* - Identifying Mechanisms of Contaminant Bioaccumulation and Developing Indicators of Ecosystem Recovery
- *2010 Scientific and Technical Achievement Award (STAA), Level II* – Providing science to address the jurisdictional determination of headwater streams under the Clean Water Act