Ken M. Fritz, Research Ecologist, in EPA's National Exposure Research Laboratory

Systems Exposure Division
Mailing Address

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Area of Expertise: My expertise is stream ecology. Some areas of my research include community and ecosystem responses to forestry practices and mountaintop removal mining, the role of habitat modifiers or ecosystem engineers in the community structure and ecosystem processes, and the development of indicators for hydrological permanence and ecological condition. Since joining ORD, I have been the principal investigator on a nationwide study to characterize headwater physical and biological features across a gradient of flow permanence. The intent of this research is to provide scientific information that may guide policy decisions regarding jurisdictional waters under the Clean Water Act. Additionally, this work lays the foundation for critically assessing the ecological integrity of temporary streams, which represent a significant proportion of U.S. stream miles.

Select Publications:

Alexander, L.C., B. Autrey, J. DeMeester, K.M. Fritz, D.C. Goodrich, W.G. Kepner, C.R. Lane, S.D. LeDuc, S.G. Leibowitz, M. McManus, A.I. Pollard, H. Raanan Kiperwas, C.E. Ridley, K. Schofield, P.J. Wigington, Jr. 2015. Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence. U.S. Environmental Protection Agency, Office of Research and Development, EPA/600-R-14/475F.

Fritz, K.M., E. Hagenbuch, E. D'Amico, M. Reif, P.J. Wigington, Jr., S.G. Leibowitz, R.L. Comeleo, and J.L. Ebersole. 2013. Comparing the extent and permanence of headwater streams from two field surveys to values from hydrologic databases and maps. Journal of the American Water Resources Association 49:867-882.

Fritz, K.M., W. R. Wenerick and M. S. Kostich. 2013. A validation study of a rapid field-based rating system for discriminating among flow permanence classes of headwater streams in South Carolina. Environmental Management 52:1286-1298.

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.

Fritz, K.M., B.R. Johnson, and D.M. Walters. 2008. Physical indicators of hydrologic permanence in forested headwater streams. Journal of the North American Benthological Society 27:690-704.

Walters, D.M., K.M. Fritz, and R.R. Otter. 2008. The dark side of subsidies: Adult stream insects export organic contaminants to riparian predators. Ecological Applications 18:1835-1841

View more research publications by Ken Fritz.

Education:

- Ph.D. in Biological Sciences, 2002, Auburn University
- M.S. in Biology, 1997, Kansas State University
- B.S. in Zoology, 1993, Southern Illinois University

Professional Experience:

- Research Ecologist, USEPA, ORD/NERL/EERD now SED, 2003 to Present
- Federal Post-Doctoral Fellow/Ecologist, USEPA, ORD/NERL, 2002 to 2003

Honors and Awards:

- 2013 Scientific and Technological Achievement Award (Level III; Providing science to inform decisions on compensatory mitigation of headwater streams affected by surface mining)
- 2013 Scientific and Technological Achievement Award (Level III; Predicting effects of headwater stream disturbance on downstream water quality)
- 2011 Team Superior Performance Award, Waters of the United States, Technical Support Team (For producing a report of high quality, on time and responsive to the needs of the Office of Water)
- 2011 Scientific and Technological Achievement Award (Level I; Identifying mechanisms of contaminant bioaccumulation and developing indicators of ecosystem recovery)
- 2010 NERL Special Achievement Teamwork Award (For addressing science needs in headwater streams following recent court rulings)
- 2010 Scientific and Technological Achievement Award (Level II; Providing science to address the jurisdictional determination of headwater streams under the Clean Water Act)
- 2008 Federal Service Excellence Award for Project Team Award2006 EPA Honor Award - Non-Supervisory Award for Advancing Environmental Protection (For developing novel scientific approaches, training State and Regional scientists, and organizing a national study to improve the biological assessment of headwater stream ecosystems)
- 2006 NERL Special Achievement Teamwork Award (For initiating a research program drawing from stream ecology, ecological modeling, and ecotoxicology to address problems of waste site characterization and ecological exposure assessment)
- 2004 Quality Step Increase Award