

Curriculum Vitae
Emma J. Rosi-Marshall

Associate Scientist
Cary Institute of Ecosystem Studies

EDUCATION

PhD. 2002. University of Georgia, Institute of Ecology, Athens, Georgia.

Dissertation title: Suspended fine particulate matter quality in aquatic ecosystems and its role as a conduit for metals in riverine food webs. Advisor Judy L. Meyer

M.S. 1997. University of Georgia, Dept. of Entomology, Athens, Georgia.

Thesis title: The trophic basis of production along a river continuum: temporal and spatial variability in the flow of energy in aquatic macroinvertebrate communities. Advisor J. Bruce Wallace.

B.S. 1994. University of Michigan, Anthropology/Zoology.

RESEARCH FOCUS

Stream ecosystem processes, aquatic food webs, urban ecology, agricultural effects on streams, aquatic macroinvertebrates, western large river ecology, and contaminants.

ACADEMIC POSITIONS

Associate Scientist, July 2009 –Present, *Cary Institute of Ecosystem Studies, Millbrook NY*

Associate Professor, May 2009-June 2009, *Departments of Biology and Natural Science, Loyola University of Chicago*

Assistant Professor, September 2004-2009, *Departments of Biology and Natural Science, Loyola University of Chicago.*

Post-Doctoral Research Associate, September 2002-Present, *Department of Biological Sciences, University of Notre Dame.* Advisors: Jennifer L. Tank and Gary A. Lamberti.

Graduate Research Assistant, Summer 1997-2002, Institute of Ecology, University of Georgia, Advisor: Judy L. Meyer.

Graduate Teaching/Laboratory Assistant, Fall 1995-Spring 1997, Department of Entomology, University of Georgia, Advisor: J. Bruce Wallace.

Graduate Research Assistant, Summer 1996, Coweeta Hydrologic lab, University of Georgia.

AWARDS AND HONORS

Sujack Award for Excellence in Teaching, College of Arts and Sciences, Loyola University Chicago, Spring 2007.

Invited Participant, Institute of Ecosystem Studies Director's Program for Visiting Scientists, March 2007.

Excellence in Graduate Education, Loyola University Chicago, 2006.

Invited participant in DIALOG (Dissertations Initiative for the Advancement of Limnology and Oceanography). November 2004. Sponsored by the American Society for Limnology and Oceanography and affiliated societies and funded by NSF, NASA, NOAA, ONR.

University-Wide Fellowship, University of Georgia, Academic year 2001-2002. Awarded for academic achievement and to fund the completion of doctoral degree.

Outstanding Presentation Award, Institute of Ecology, Student Symposium, 1999, University of Georgia. Awarded for presentation entitled "An effect of urbanization on large river food webs".

Outstanding Teaching Assistant Award, 1997, Boyd Graduate School, University of Georgia.

Fellowship, National Science Foundation, Research Experience for Undergraduates. Summer 1994.

PUBLICATIONS

Griffiths, N. A., J. L. Tank, T. V. Royer, T.J. Warrner, T. C. Frauendorf, **E. J. Rosi-Marshall**, and M. R. Whiles. *in press*. Temporal variation in organic carbon spiraling in agricultural streams in the Midwestern United States. *Biogeochemistry*.

Cross, W.F., Baxter, C.V., Donner, K.C., **Rosi-Marshall, E.J.**, Kennedy, T.A., Hall, Jr., R.O., Wellard-Kelly, H.A. and Rogers, R.S., *in press*, Ecosystem ecology meets adaptive management: food web response to a controlled flood on the Colorado River, Glen Canyon, *Ecological Applications*.

Hoellein T.J., J.L. Tank, S. A. Entekin, E.J. Rosi-Marshall, M.L. Stephen, and G. A. Lamberti. *In press*. Effects of benthic habitat restoration on nutrient uptake and ecosystem metabolism in three headwater streams. *River Research and Applications*.

Tank, J.L., **E. J. Rosi-Marshall**, T.V. Royer, M. R. Whiles, N. A. Griffiths, T. C. Frauendorf, and D. J. Treering. 2010. Occurrence of maize detritus and a transgenic insecticidal protein (Cry1Ab) within the stream network of an agricultural landscape. *Proceedings of the National Academies of Sciences* 107: 17645-17650.

Hoellein, T., J. L. Tank, J. J. Kelly, **E.J. Rosi-Marshall**. 2010. Seasonal variation in nutrient limitation of microbial biofilms colonizing organic and inorganic substrata in streams. *Hydrobiologia* 649: 331-345.

Cross, W.F., **E.J. Rosi-Marshall**, K. Behn, T. A. Kennedy, R. O. Hall, A. E. Fuller, and C.V. Baxter. 2010. Invasion and production of New Zealand mud snails in the Colorado River, Glen Canyon. *Biological Invasions* DOI 10.1007/s10530-010-9694-y.

- Chambers, C.P., M.R. Whiles, **E.J. Rosi-Marshall**, J.L. Tank, T.V. Royer, N.A. Griffiths, M.A. Evans-White, A. Stojak. 2010. Responses of stream macroinvertebrates to Bt maize leaf detritus. *Ecological Applications* 20: 1949-1960.
- Tank, J.L., **E. J. Rosi-Marshall**, N. A. Griffiths, S. A. Entrekin, and M. L. Stephen. 2010. A review of allochthonous organic matter dynamics and metabolism in streams. *Journal of the North American Benthological Society, Special 25th Anniversary Issue* 29: 118-146e.
- Warrner, T.J., T.V. Royer, J.L. Tank, N. A. Griffiths, **E.J. Rosi-Marshall**, and M.R. Whiles. 2010. Origin and bioavailability of dissolved organic carbon in agricultural headwater streams in Indiana, USA. *Biogeochemistry* 95:295–307.
- Entrekin, S.A., J.L. Tank, **E.J. Rosi-Marshall**, T.J. Hoellein, G.A. Lamberti. 2009. Response of secondary production by macroinvertebrates to large wood addition in three Michigan streams. *Freshwater Biology* 54 (8): 1741-1758.
- Hoellein T. J., Tank, J.L., **E.J. Rosi-Marshall**, S.A. Entrekin. 2009. Temporal variation of substratum-specific rates of N uptake and metabolism and their relative contribution at the stream-reach scale. *Journal of the North American Benthological Society* 28: 305–318.
- Griffiths, N.A., J.L. Tank, T.V. Royer, C.P. Chambers, M.A. Evans-White, T.C. Frauendorf, **E.J. Rosi-Marshall**, M.R. Whiles. 2009. Microbial respiration and decomposition of conventional and genetically-engineered corn detritus in Midwestern US agricultural streams. *Ecological Applications*. 19: 133–142.
- Schofield, K.A., C.M. Pringle, J.L. Meyer, and **E.J. Rosi-Marshall**. 2008. Functional redundancy of macroconsumers across human-impacted landscape. *Freshwater Biology* 53: 2587–2599.
- Tank, J. L., **E. J. Rosi-Marshall**, M.A. Baker R. O. Hall. 2008. Are rivers just big streams? Using a novel method to quantify nitrogen demand in a large river. *Ecology* 89: 2935–2945.
- Cordova, J. M., **E. J. Rosi-Marshall**, J.L. Tank, and G. Lamberti. 2008. Coarse particulate organic matter transport in low-gradient streams of the Upper Peninsula of Michigan. *Journal of the North American Benthological Society* 27: 760–771.
- Entrekin, S.A., J. L. Tank, **E. J. Rosi-Marshall**, T. J. Hoellein, and G. A. Lamberti. 2008. Responses in organic matter accumulation and processing to an experimental wood addition in three headwater streams. *Freshwater Biology* 53: 1642–1657.
- Marvier, M., Y. Carriere, N. Ellstrand, P. Gepts, P. Kareiva, **E.J. Rosi-Marshall**, B. Tabashnik, L. L. Wolfenbarger. 2008. Harvesting data from USA's grand experiment with genetically engineered crops. *Science* 320: 452-453.

- Rosi-Marshall, E. J.**, J. L. Tank, T.V. Royer, M.R. Whiles, M. Evans-White, C. Chambers, N.A. Griffiths, J. Pokelsek, and M.L. Stephen. 2007. Toxins in transgenic crop byproducts may affect headwater stream ecosystems. *Proceedings of the National Academy of Sciences* 104:16204-16208.
- Entrekin, S.A., **E.J. Rosi-Marshall**, J.L. Tank, T.J. Hoellein, G.A. Lamberti. 2007. Macroinvertebrate secondary production in forested sand-bottom streams of the upper Midwest. *Journal of the North American Benthological Society* 26: 472–490.
- Hoellein, T. J., J. L. Tank, **E. J. Rosi-Marshall**, S. A. Entrekin, and G. A. Lamberti. 2007. Controls on spatial and temporal variation of nutrient uptake in three Michigan headwater streams. *Limnology and Oceanography* 52: 1964-1977.
- Cordova, J., **E.J. Rosi-Marshall**, A. Yamamuro, G.A. Lamberti. 2007. Quantity, controls, and functions of large woody debris in Midwestern U.S.A. streams. *River Research and Applications* 23: 21–33.
- Rosi-Marshall, E.J.**, A.H. Moerke, and G.A. Lamberti. 2006. Ecological responses to rehabilitation of a Northern Michigan trout stream. *Environmental Management* 38: 99-107.
- Rosi-Marshall, E.J.** and J.L. Meyer. 2004. Quality of suspended fine particulate matter in the Little Tennessee River. *Hydrobiologia* 519: 29-37.
- Rosi-Marshall, E.J.** 2004. Quality of suspended fine particulate matter along an urban river. *Freshwater Biology* 49: 515-625.
- Rosi-Marshall, E.J.** and J.B. Wallace. 2002. Invertebrate food webs along a stream resource gradient. *Freshwater Biology* 47:129-141.
- Rosi-Marshall, E. J.**, J.L. Meyer, K. Neumann and W.B. Lyons. 2001. Defining away metal contamination in Georgia streams. Hatcher, K.J. (ed.) *Proceedings of the Georgia Water Resources Conference*. Published by the Institute of Ecology, University of Georgia.
- Rosi, E. J.** 1999. A critique of new water quality criteria in Georgia: policy and ecological implications. Hatcher, K.J. (ed.) *Proceedings of the Georgia Water Resources Conference*. Published by the Institute of Ecology, University of Georgia.

Book Chapter

- Tank, J.L., M.J. Bernot, and **E.J. Rosi-Marshall**. 2006. Nitrogen limitation and uptake. In: Methods in Stream Ecology, eds F.R. Hauer and G.A. Lamberti. Academic Press (pp: 213-238).

Published Reports

- Rosi-Marshall, E.J.**, Kennedy, T.A., Kincaid, D.W., Cross, W.F., Kelly, H.A.W., Behn, K.A., White, T., Hall, R.O., Jr., and Baxter, C.V., 2010, Short-term effects of the 2008 high-flow experiment on

macroinvertebrates in the Colorado River below Glen Canyon Dam, Arizona: U.S. Geological Survey Open-File Report 2010-1031, 28 p.

Melis, T.S., Topping, D.J., Grams, P.E., Rubin, D.M., Wright, S.A., Draut, A.E., Hazel, J.E., Jr., Ralston, B.E., Kennedy, T.A., **Rosi-Marshall, E.J.**, Korman, Josh, Hilwig, K.D., and Schmit, Lara M., 2010, 2008 High-flow experiment at Glen Canyon Dam benefits colorado river resources in Grand Canyon National Park: U.S. Geological Survey Fact Sheet 2010-3009, 4 p.