

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.

NSF Research Experience for Undergraduates. 1994. Oregon State University. H.J. Andrews Experimental Forest.

Field School. 1993. Rocky Mountain Biological Station.

RESEARCH FOCUS

Stream ecosystem processes, aquatic food webs, urban ecology, agricultural effects on streams, aquatic macroinvertebrates, 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 2002-2004, *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.



RESEARCH INTERESTS

Aquatic ecosystem ecology, contaminants of emerging concern on stream and river ecosystems, quantitative food webs, river biogeochemistry, agricultural byproducts inputs to aquatic ecosystems, and climate change on stream ecosystems.

SELECT PUBLICATIONS

- Rosi-Marshall, E.J. and J. J. Kelly. 2015. Antibiotic Stewardship Should Consider Environmental Fate of Antibiotics. *Environmental Science and Technology* DOI: 10.1021/acs.est.5b01519.
- Subalusky, A., C. Dutton, E. J. Rosi-Marshall, and D. M. Post. 2015. The hippopotamus conveyor belt: Vectors of carbon and nutrients from terrestrial grasslands to aquatic systems in sub-Saharan Africa. *Freshwater Biology* 60:512–525. doi:10.1111/fwb.12474.
- Hall Jr., R. O., C. B. Yackulic, T. A. Kennedy, M. D. Yard, E. J. Rosi-Marshall, N. Voichick, and K. E. Behn. 2015. Turbidity, light, and hydropeaking control daily variation in primary production in the regulated Colorado River in Grand Canyon, Arizona. *Limnology and Oceanography* 60: 512-526. doi:10.1002/lno.10031.
- Rosi-Marshall, E. J., D. Snow, S. L. Bartelt-Hunt, *A. Paspalof, and J. L. Tank. 2015. A review of ecological effects and environmental fate of illicit drugs in aquatic ecosystems. *Journal of Hazardous Materials* 282:18-25. <http://dx.doi.org/10.1016/j.jhazmat.2014.06.062>
- Hotchkiss, E. R., R. O. Hall Jr., M. A. Baker, E. J. Rosi-Marshall, and J. L. Tank. 2014. Modeling priming effects on microbial consumption of dissolved organic carbon in rivers. *JGR Biogeosciences* doi: 10.1002/2013JG002599.
- Dodds, W. K., S. M. Collins, S. K. Hamilton, J. L. Tank, S. Johnson, J. R. Webster, K. S. Simon, M. R. Whiles, H. M. Rantala, W. H. McDowell, S. D. Peterson, T. Riis, C. L. Crenshaw, S. A. Thomas, P. B. Kristensen, B. M. Cheever, A. S. Flecker, N. A. Griffiths, T. Cowl, E. J. Rosi-Marshall, R. El Sabaawi, and E. Martí. 2014. You are not always what we think you eat: Selective assimilation across multiple whole-stream isotopic tracer studies. *Ecology* **95**: 2757-2767.
- Zahn Seegert, S. E., E. J. Rosi-Marshall, C. V. Baxter, T. A. Kennedy, R. O. Hall, Jr., and W. F. Cross. 2015. Diet overlap suggests competition between native small-bodied fishes and non-native fathead minnow in the Colorado River, Grand Canyon, Arizona. *Transactions of the American Fisheries Society* 143(4):1072-1083.
- Strayer, D. L., J. J. Cole, S. E. G. Findlay, D. T. Fischer, J. A. Gephart, H. M. Malcom, M. L. Pace, and E. J. Rosi-Marshall. 2014. Decadal-scale change in a large-river ecosystem. *Bioscience* 64(6):496-510.
- Roales, J., J. H. Durán, H. A. Bechtold, P. M. Groffman, and E. J. Rosi-Marshall. 2013. High Resolution Measurement of Light in Terrestrial Ecosystems Using Photodegrading Dyes. PLoSONe. DOI: 10.1371/journal.pone.0075715
- Hall R. O. Jr., M. A. Baker, E. J. Rosi-Marshall, and J. L. Tank. 2013. Solute specific scaling of inorganic nitrogen and phosphorus uptake in streams. *Biogeosciences* 10, 6671-6693, 2013.
- Drury, Bradley, John Scott, Emma J. Rosi-Marshall, and John J. Kelly. 2013. Triclosan exposure increases triclosan resistance and alters taxonomic composition of benthic bacterial communities. *Environmental Science and Technology* 47, 8923-8930. dx.doi.org/10.1021/es401919k.



- Griffiths, N.A., J.L. Tank, T. V. Royer, S. S. Roley, E. J. Rosi-Marshall, M.R. Whiles, J. J. Beaulieu, and L. T. Johnson 2013. Agricultural land use alters the seasonality and magnitude of stream metabolism. *Limnology and Oceanography*. 58 (4), 1513-1529.
- Cross, Wyatt F., Colden V. Baxter, Emma J. Rosi-Marshall, Robert O. Hall, Jr., Theodore A. Kennedy, Kevin C. Donner, Holly A. Wellard Kelly, Sarah Zahn-Seegert. 2013. Food web dynamics in a river discontinuum. *Ecological Monographs* 83: 311-337.
- Davis J. M., C. V. Baxter, E. J. Rosi-Marshall, J. L. Pierce, and B. T. Crosby. 2013. Incorporating indirect effects into a conceptual model for predicting the effects of global climate change on stream ecosystems. *Ecosystems* DOI: 10.1007/s10021-013-9653-4.
- Rosi-Marshall, E. J., D.Kincaid, H.A. Bechtold, T. V. Royer, M.Rojas and J. J. Kelly. 2013. Pharmaceuticals suppress algal growth and microbial respiration and alter bacterial communities of stream biofilms. *Ecological Applications* 23: 583–593.
- Wellard-Kelly, H. A., E.J. Rosi-Marshall, T.A. Kennedy, R.O. Hall, Jr., W. F. Cross, and C.V. Baxter. 2013. Turbidity in a large regulated river drives patterns of resource use by macroinvertebrates. *Freshwater Science* 32: 397-410.
- Drury, Bradley, Emma J. Rosi-Marshall, and John J. Kelly. 2013. Wastewater Treatment Effluent Reduces the Abundance and Diversity of Benthic Bacterial Communities in Urban and Suburban Rivers. *Applied and Environmental Molecular Biology*. 79:1897. DOI:10.1128/AEM.03527-12.
- Bechtold, H.A., E.J. Rosi-Marshall, D.R. Warren, J.J. Cole. 2012. A practical method for measuring integrated solar radiation reaching streambeds. *Freshwater Science* 31: 379-388.
- Rosi-Marshall, E.J. and T.V. Royer. 2012. Pharmaceutical compounds and ecosystem function: an emerging research challenge for aquatic ecologists. *Ecosystems*. DOI: 10.1007/s10021-012-9553-z.
- Hoppe, P.D. E.J. Rosi-Marshall, H. A. Bechtold. 2012. The antihistamine cimetidine alters invertebrate growth and population dynamics in artificial streams. *Freshwater Science* 31(2):379–388.
- 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. 2011. Ecosystem ecology meets adaptive management: food web response to a controlled flood on the Colorado River, Glen Canyon, *Ecological Applications* 21: 2016-2055.
- 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.
- 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.
- Tank, J.L., E. J. Rosi-Marshall, N. A. Griffiths, S. A. Entekin, 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.
- Entekin, 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.



- 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.
- 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.
- 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.
- 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.
- 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. 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.

