

## **Natalie A. Griffiths**

Postdoctoral Research Associate

Oak Ridge National Laboratory, Environmental Sciences Division

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## **Education and Training**

- 2011 University of Notre Dame, Biological Sciences, PhD  
Dissertation title: Quantifying the impact of row-crop agriculture on carbon dynamics in Midwestern streams.
- 2005 University of Toronto, (Canada) Honors B.Sc. with High Distinction. Zoology and Physiology

## **Research and Professional Experience**

- 2010-pres. Postdoctoral Research Associate, Environmental Sciences Division, Oak Ridge National Laboratory (ORNL). Projects: (1) Spruce and peatland responses under climatic and environmental change, (2) Sustainability of short rotation pine as a bioenergy feedstock in the southeastern U.S., (3) Long-term monitoring of Walker Branch Watershed.
- 2004-2009 Teaching Assistant and Co-instructor, Department of Biological Sciences, University of Notre Dame (UND), and Department of Zoology, University of Toronto (U of T).
- 2005-2008 Research Assistant, Department of Biological Sciences, UND. Project: Cycling of novel allochthonous carbon in agricultural streams (NSF-funded). Principal Investigators: Drs. J.L. Tank, E.J. Rosi-Marshall, T.V. Royer, and M.R. Whiles.
- 2004-2005 Undergraduate Thesis, Department of Zoology, U of T. Title: Are there hot spots for *Elliptio complanata* in the shallow littoral zone of a large Canadian Shield lake.
- 2004-2005 Undergraduate Thesis, Department of Botany, U of T. Title: Anatomical and functional organization of the stem and root xylem of *Sarcandra glabra*.
- 2003-2005 Research Assistant, Department of Zoology, U of T, and Department of Biological Sciences, UND. Project: Lotic Intersite Nitrogen eXperiment II (LINXII).
- 2002-2003 Undergraduate Thesis, Department of Botany, U of T. Title: Parental effects due to host plant quality in swamp milkweed beetles.

## **Publications**

1. Griffiths, N.A., J.L. Tank, S.S. Roley, and M.L. Stephen. 2012. Decomposition of maize leaves and grasses in restored agricultural streams. *Freshwater Science* 31:848-864.
2. Griffiths, N.A., J.L. Tank, T.V. Royer, T.J. Warrner, T.C. Frauendorf, E.J. Rosi-Marshall, and M.R. Whiles. 2012. Temporal variation in organic carbon spiraling in Midwestern agricultural streams. *Biogeochemistry* 108: 149-169.
3. Parish, E.S., M.R. Hilliard, L.M. Baskaran, V.H. Dale, N.A. Griffiths, P.J. Mulholland, A. Sorokine, M.E. Downing, R.S. Middleton, and N.A. Thomas. 2012. Multimetric spatial optimization of switchgrass plantings across a watershed. *Biofuels, Bioproducts and Biorefining* 6:58-72.
4. 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 Academy of Sciences of the United States of America* 107:17645-17650.
5. Chambers, C.P., M.R. Whiles, E.J. Rosi-Marshall, J.L. Tank, T.V. Royer, N.A. Griffiths, M.A. Evans-White, and A.J. Stojak. 2010. Responses of stream macroinvertebrates to Bt maize leaf detritus. *Ecological Applications* 20:1949-1960.
6. 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* 29:118-146.

7. Warrner, T.J., T.V. Royer, J.L. Tank, N.A. Griffiths, E.J. Rosi-Marshall, and M.R. Whiles. 2009. Origin and bioavailability of dissolved organic carbon in agricultural headwater streams in Indiana, USA. *Biogeochemistry* 95:295-307.
8. Griffiths, N.A., J.L. Tank, T.V. Royer, E.J. Rosi-Marshall, M.R. Whiles, C.P. Chambers, T.C. Frauendorf, and M.A. Evans-White. 2009. Rapid decomposition of maize detritus in agricultural headwater streams. *Ecological Applications* 19:133-142.
9. 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 of the United States of America* 104:16204-16208.
10. Griffiths, N.A. and H. Cyr. 2006. Are there hot spots for *Elliptio complanata* in the shallow littoral zone of a large Canadian Shield lake? *Canadian Journal of Fisheries and Aquatic Sciences* 63:2137-2147.

### **Awards and Recognition**

1. 2011 - Eli J. and Helen Shaheen Graduate School Award in Science, UND.
2. 2010 - Sigma Xi Grant-in-Aid of Research. Title: Decomposition of corn leaves and native and invasive grasses in the floodplains of restored agricultural streams (\$965).
3. 2009 - Certification of Teaching Excellence from the Kaneb Center for Teaching and Learning and the Department of Biological Sciences, UND.
4. 2009 - Kaneb Center's Outstanding Graduate Student Teacher Award for Excellence in Teaching, UND.
5. 2008-2009 - Bayer Predoctoral Research Fellowship, UND (\$8,000).
6. 2008-2009 - National Science Foundation (NSF) Doctoral Dissertation Improvement Grant (DDIG). Title: Transport, sorption, and degradation of Cry1Ab toxins derived from genetically engineered corn crop byproducts in agricultural streams (\$11,499).
7. 2007-2010 - Natural Sciences and Engineering Research Council of Canada (NSERC) Post-Graduate Scholarship: Doctoral (PGS-D). Title: The role of agricultural land use on carbon cycling in Midwestern headwater streams (\$63,000).
8. 2007 - North American Benthological Society Presidential Award (\$600).
9. 2005-2006 - NSERC Post-Graduate Scholarship: Masters (PGS-M). Title: The role of agricultural land use on carbon cycling in Midwestern headwater streams (\$17,300).

### **Synergistic Activities**

1. Reviewer for *Ecosystems*, *Forest Ecology and Management*, *Freshwater Science* (formerly the *Journal of the North American Benthological Society*), *Frontiers in Ecology and the Environment*, *Hydrobiologia*, *International Review of Hydrobiology*, *Journal of the American Water Resources Association*, *Journal of Environmental Quality*, *Limnology and Oceanography* (2008-present).
2. Contributing member to the Faculty of 1000 Marine and Freshwater Ecology section (2008-present).
3. Member of the National Ecological Observatory Network (NEON) STReam Experimental Observation Network (STREON) working group (2011-present).
4. Memberships in: American Geophysical Union, Association for the Sciences of Limnology and Oceanography, Ecological Society of America, Society for Freshwater Science (formerly the North American Benthological Society; NABS).
5. NABS Executive Committee graduate representative (2010), NABS Graduate Resources Committee (GRC) Chair (2009-2010), NABS Strategic Planning Committee graduate representative (2008-2009), GRC student workshop organizer (2008-2009), GRC live auction committee (2007-2008).

### **Graduate and Postdoctoral Advisors**

*Postdoctoral Advisors:* Dr. P.J. Mulholland, Dr. P.J. Hanson.

*PhD Advisor:* Dr. J.L. Tank

*Undergraduate Advisors:* Dr. H. Cyr, Dr. T.S. Field, Dr. A.A. Agrawal, Dr. P.A. Van Zandt.