

Wendy A. Monk

Environment and Climate Change Canada | Canadian Rivers Institute | co-located at University of New Brunswick |
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Interdisciplinary scientist integrating hydrology, aquatic ecology, and geospatial analyses in biomonitoring, ecohydrology and environmental flows. Experienced practitioner incorporating novel data tools to isolate individual stressors driving benthic macroinvertebrate community structure in multiple stressor environments. Collaborator with local, national, and international partners: government scientists, academics, non-governmental organisations, and community groups.

EDUCATION

Ph.D. Ecohydrology, Department of Geography, Loughborough University, UK (June 2006)

B.Sc. Geography, Loughborough University, UK (June 2002). First Class Honours.

EMPLOYMENT AND RESEARCH EXPERIENCE

Adjunct Professor (December 2017 - present)

Faculty of Forestry and Environmental Management, University of New Brunswick, Canada

Research Scientist (July 2017 - present)

Environment and Climate Change Canada; co-located at University of New Brunswick, Canada

Research Associate (January 2014 - July 2017)

Canadian Rivers Institute, Faculty of Forestry and Environmental Management, University of New Brunswick, Canada

NSERC Visiting Research Fellow with Environment & Climate Change Canada (September 2010 - January 2014)

Environment and Climate Change Canada, University of New Brunswick, Canada

Research Scientist (February 2009 - August 2010)

Canadian Rivers Institute, University of New Brunswick, and Environment and Climate Change Canada, University of New Brunswick and University of Victoria, Canada

Postdoctoral Research Fellow (February 2006 - January 2009)

Canadian Rivers Institute, University of New Brunswick, and Environment and Climate Change Canada, University of Victoria, Canada

RESEARCH ACTIVITIES

Compson, Z.G., **Monk, W.A.**, Curry, C.J., Gravel, D., Bush, A., Baker, C.J.O., Al Manir, M.S., Riazanov, A., Hajibabaei, M., Shokralla, S., Gibson, J.F., Stefani, S., Wright, M.T.G., and D.J. Baird. 2018. Chapter Two - Linking DNA metabarcoding and text mining to create network-based biomonitoring tools: A case study on Boreal wetland macroinvertebrate communities. In Bohan, D.A., Dumbrell, A.J., Woodward, G., and Jackson, M. (Eds). *Advances in Ecological Research*. 59:33-74.

Monk, W.A., Z.G. Compson, D.G. Armanini, J.M. Orlofske, C.J. Curry, D.L. Peters, J.B. Crocker and D.J. Baird (2018). Flow velocity-ecology thresholds in Canadian rivers: a comparison of trait- and taxonomy-based approaches. *Freshwater Biology*. 63:891-905.

Dafforn, K., E. Johnston, A. Ferguson, C. Humphries, **W.A. Monk**, S. Nichols, S. Simpson, M. Tulbure and D.J. Baird (2016). Big data opportunities and challenges for assessing multiple stressors across scales in aquatic ecosystems. *Marine and Freshwater Research*. 67:393-413.

Peters, D.L., D. Caissie, **W.A. Monk**, S.B. Rood and A. St-Hilaire (2016). An ecological perspective on floods in Canada. *Canadian Water Resources Journal*. 41:288-306.

Gibson, J.F., S. Shokralla, C.J. Curry, D.J. Baird, **W.A. Monk**, I. King and M. Hajibabaei (2015). Large-scale biomonitoring of remote and threatened ecosystems via high-throughput sequencing. *PLoS One*. 10(10):e0138432.

- Armanini, D.G., A. Idigoras Chaumel, **W.A. Monk**, J. Marty, K. Smokorowski, M. Power and D.J. Baird. (2014). Benthic macroinvertebrate flow sensitivity as a tool to assess effects of hydropower-related ramping activities in streams in Ontario (Canada). *Ecological Indicators*. 46:466-476.
- Peters, D.L., **W.A. Monk** and D.J. Baird. (2014). Cold-regions hydrological indicators of change (CHIC) for ecological flow needs assessment. *Hydrological Sciences Journal*. 59(3-4):502-516.
- Worrall, T., M. Dunbar, C. Extence, C. Laize, **W.A. Monk** and P.J. Wood (2014). The identification of hydrological indices for the characterisation of macroinvertebrate community response to flow regime variability. *Hydrological Sciences Journal*. 59(3-4):645-658.
- Armanini, D.G., **W.A. Monk**, L. Carter, D. Coté and D.J. Baird (2013). Towards generalised reference condition models for environmental assessment: a case study on rivers in Atlantic Canada. *Environmental Monitoring and Assessment*. 185(8):6247-6259.
- Monk, W.A.**, N.M. Wilbur, R.A. Curry, R. Gagnon and R.N. Faux (2013). Linking landscape variables to cold water refugia in rivers. *Journal of Environmental Management*, 118:170-176.
- Lento, J., **W.A. Monk**, J.M. Culp, R.A. Curry, D. Cote and E. Luiker.(2013). Responses of Low Arctic stream benthic macroinvertebrate communities to environmental drivers at nested spatial scales. *Arctic, Antarctic, and Alpine Research*. 45(4):538-551.
- Peters, D.L., D. Atkinson, **W.A. Monk**, D.E. Tenenbaum and D.J. Baird (2013). A multi-scale hydroclimatic analysis of runoff generation in the Athabasca River, western Canada. *Hydrological Processes*. 27:1915-1934.
- Orlofske, J.M., **W.A. Monk** and D.J. Baird (2013). Chapter 21. Ecohydraulics for river management: can mesoscale lotic macroinvertebrate data inform macroscale ecosystem assessment? In Maddock, I., Harby, A., Kemp, P. and Wood, P.J., *Ecohydraulics*. Wiley & Sons, Chichester, UK. pp. 357-374.
- Peters, D.L., D.J. Baird, **W.A. Monk** and D.G. Armanini (2012). Establishing standards and assessment criteria for ecological instream flow needs in agricultural regions of Canada. *Journal of Environmental Quality*. 41:41-51.
- Monk, W.A.**, D.L. Peters and D.J. Baird (2012). Assessment of ecologically-relevant hydrological variables influencing a cold-region river and its delta: the Athabasca River and the Peace-Athabasca Delta, northwestern Canada. *Hydrological Processes*. 26(12):1827-1839.
- Monk, W.A.**, P.J. Wood, D.M. Hannah, M.J. Dunbar, C.A. Extence and R.P. Chadd (2012). How does macroinvertebrate taxonomic resolution influence ecohydrological relationships in riverine ecosystems. *Ecohydrology*. 5:36-45.
- Armanini, D.G., **W.A. Monk**, D.E. Tenenbaum, D.L. Peters and D.J. Baird (2012). Influence of runoff regime type on a macroinvertebrate - based flow index in rivers of British Columbia (Canada). *Ecohydrology*. 5:414-423.
- Armanini, D.G., N. Horrigan, **W.A. Monk**, D.L. Peters and D.J. Baird. (2011). Development of a benthic macroinvertebrate flow sensitivity index for Canadian rivers. *River Research and Applications*. 27:723-737.
- Monk, W.A.**, Peters, D.L., Baird, D.J. and Curry, R.A. (2011). Quantifying trends in indicator hydrological variables for regime-based groups of Canadian rivers. *Hydrological Processes*. 25:3086-3100.
- Monk, W.A.**, P.J. Wood, D.M. Hannah and D.A. Wilson (2008). Instream ecological response to inter-annual variability in the hydrological regime for rivers in England and Wales. *River Research and Applications*. 24:988-1001.
- Monk, W.A.**, P.J. Wood, D.M. Hannah and D.A. Wilson (2007). Selection of river flow indices for the assessment of hydroecological change. *River Research and Applications (Short Communication)*. 23:113-122.
- Monk, W.A.**, P.J. Wood and D.M. Hannah (2007). Chapter 10: Examining the influence of river flow regime on instream ecology. In Wood, P.J., Hannah, D.M. and Sadler, J.A., *Hydroecology and Ecohydrology: Past Present and Future*. Wiley & Sons, Chichester, UK, pp. 165-184.
- Greenwood, M. T., Wood, P.J. and **Monk, W.A.** (2006). The use of fossil caddisfly assemblages in the reconstruction of flow environments from floodplain paleochannels of the River Trent, England. *Journal of Paleolimnology*. 35:747-761.
- Monk, W.A.**, P.J. Wood, D.M. Hannah, D.A. Wilson, C.A. Extence and R.P. Chadd. (2006). Flow variability and macroinvertebrate community response within riverine systems in England and Wales. *Rivers Research and Applications*. 19:595-615.