

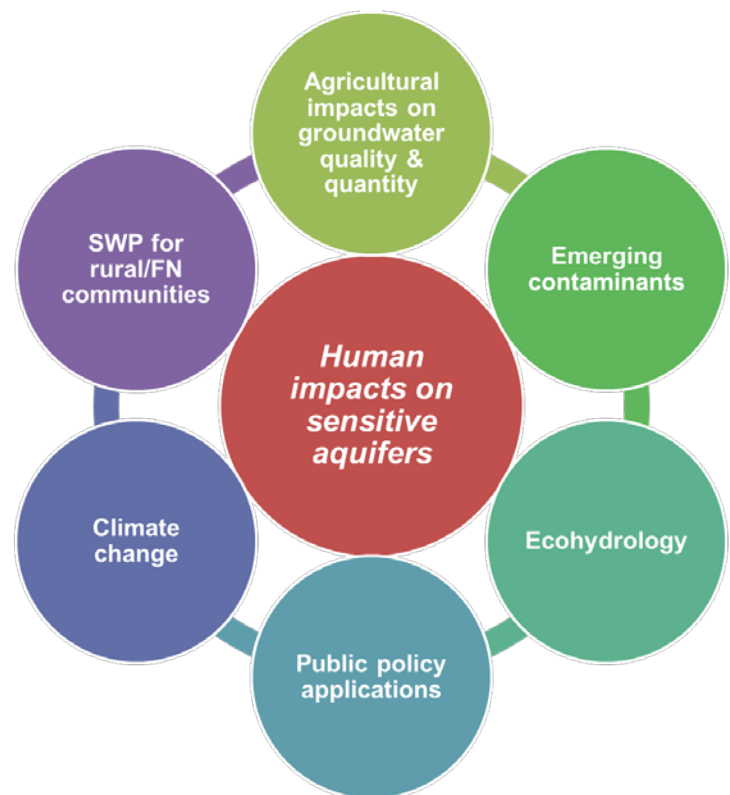


## Dr. Jana Levison

Associate Professor  
Engineering Hydrogeology  
School of Engineering  
University of Guelph

Dr. Jana K. Levison has a bachelor's degree in Civil Engineering (environmental option) and a Ph.D. in Civil Engineering (focus: anthropogenic impacts on fractured bedrock aquifers) from Queen's University, as well as a P.Eng. Designation. Dr. Levison completed her postdoctoral fellowship at the Université du Québec à Montréal, working on multidisciplinary ecohydrological modeling related to climate change. In 2009-2010 she led engineering and public policy initiatives as the Junior Fellow and Acting Executive Director of the Ontario Centre for Engineering and Public Policy at Professional Engineers Ontario. She has also worked at the Cataraqui Region Conservation Authority on the Drinking Water Source Protection team. Dr. Levison was an Associate Editor for Hydrogeology Journal from 2015 to 2019.

At the University of Guelph Dr. Levison is conducting novel research related to agricultural and climate change impacts on groundwater quality and quantity, with a focus on sensitive aquifers. Other areas of research interest include: source water protection; appropriate potable water approaches for marginalized communities; and fostering engineering and technological input into public discourse.



### Research Interests

How our activities impact groundwater



# Selected Papers and Theses

## Selected Publications

Larocque, M., Martin, A., Levison, J., Chaumont, D. (2019) A review of simulated climate change impacts on groundwater resources in eastern Canada. Canadian Water Resources Journal, <https://doi.org/10.1080/07011784.2018.1503066>

Marshall, R., Levison, J., McBean, E., Brown, E., Harper, S.L. (2018) Source water protection programs and Indigenous communities in Canada and the United States: a scoping review. Submitted to Journal of Hydrology, <https://doi.org/10.1016/j.jhydrol.2018.04.070>

Larocque, M., Cloutier, V., Levison, J. and Rosa, E. (2018) Preface to the Special Issue "Results from the Quebec Groundwater Knowledge Acquisition Program. Canadian Water Resources Journal, 43(2): 69-74, <https://doi.org/10.1080/07011784.2018.1472040>

Salek, M., Levison, J., Parker, B. and Gharabaghi, B. (2018) CAD-DRASTIC: chloride application density combined with DRASTIC for assessing groundwater vulnerability to road salt application. Hydrogeology Journal, <https://doi.org/10.1007/s10040-018-1801-7>

Persaud, E., Levison, J., Pehme, P., Novakowski, K. and Parker, B. (2018) Cross-hole fracture connectivity assessed using hydraulic responses during liner installations in crystalline bedrock boreholes. Journal of Hydrology, <https://doi.org/10.1016/j.jhydrol.2017.11.008>

MacDonald, G., Levison, J. and Parker, B. (2017) On methods for in-well nitrate monitoring using optical sensors. Groundwater Monitoring & Remediation, DOI: 10.1111/gwmr.12248, [doi/10.1111/gwmr.12248/full](https://doi.org/10.1111/gwmr.12248/full)

Hachborn, E., Berg, A., Levison, J. and Ambadan, J. (2017) Sensitivity of GRACE-derived groundwater level changes in southern Ontario, Canada. Hydrogeology Journal, DOI: 10.1007/s10040-017-1612-2, <http://rdcu.be/tLXt>

Levison, J., Larocque, M., Ouellet, M.A., Ferland, O. and Poirier, C. (2016) Long-term trends in groundwater recharge and discharge in a fractured bedrock aquifer – past and future conditions. Canadian Water Resources Journal, DOI: 10.1080/07011784.2015.1037795, <http://dx.doi.org/10.1080/07011784.2015.1037795>

Betts, A., Gharabaghi, B., McBean, E., Levison, J., Parker, B. (2015) Salt vulnerability assessment methodology for municipal supply wells. Journal of Hydrology, 531(3): 523-533, <https://doi.org/10.1016/j.jhydrol.2015.11.004>

Girard, P., Levison, J., Parrott, L., Larocque, M., Ouellet, M.A., Green, D. (2015) Modelling cross-scale relationships between climate, hydrology, and individual animals: Generating scenarios for stream salamanders. Frontiers in Environmental Science, 3: 51, DOI: 10.3389/fenvs.2015.00051, <http://journal.frontiersin.org/article/10.3389/fenvs.2015.00051/abstract>

Starr, G. and Levison, J. (2014) Identification of crop groundwater and surface water consumption using blue and green virtual water contents at a subwatershed scale. Environmental Processes, 1(4): 497-515, DOI: 10.1007/s40710-014-0040-8, <http://link.springer.com/article/10.1007/s40710-014-0040-8>

Levison, J., Larocque, M. and Ouellet, M.A. (2014) Modeling low-flow bedrock springs providing ecological habitats with climate change scenarios. Journal of Hydrology, 515: 16-28, DOI: [dx.doi.org/10.1016/j.jhydrol.2014.04.042](https://doi.org/10.1016/j.jhydrol.2014.04.042)

Levison, J., Larocque, M., Fournier, V., Gagné, S., Pellerin, S. and Ouellet, M.A. (2013) Dynamics of a headwater system and peatland under current conditions and with climate change. Hydrological Processes, DOI: 10.1002/hyp.9978, <http://onlinelibrary.wiley.com/doi/10.1002/hyp.9978/abstract>

Levison, J. and Novakowski, K. (2012) Rapid transport from the surface to wells in fractured rock: a unique infiltration tracer experiment. Journal of Contaminant Hydrology, 131: 29-38, DOI: 10.1016/j.jconhyd.2012.01.001, <http://www.sciencedirect.com/science/article/pii/S0169772212000022>

Levison, J., Novakowski, K., Reiner, E. and Kolic, T. (2012) Potential of groundwater contamination by polybrominated diphenyl ethers (PBDEs) in a sensitive bedrock aquifer (Canada). Hydrogeology Journal, 20(2): 401-212, <http://link.springer.com/article/10.1007%2Fs10040-011-0813-3>

Levison, J. and Novakowski, K. (2009) The impact of cattle pasturing on groundwater quality in bedrock aquifers having minimal overburden. Hydrogeology Journal, 17: 559-569, <http://link.springer.com/article/10.1007%2Fs10040-008-0385-z>

## Conference papers

Browne, D., Levison, J., Limay-Rios, V., Novakowski, K., Schaafsma, A. (2017) Groundwater contamination in fractured bedrock and sandy aquifer environments from agricultural neonicotinoid use. GeoOttawa2017, Proceedings of the 70th Canadian Geotechnical Conference and the 12th Joint CGS/IAH-CNC Groundwater Conference, Ottawa, ON.

Levison, J., Martin, A., Larocque, M. (2017) Impact of climate change on groundwater availability in Eastern Canada. GeoOttawa2017, Proceedings of the 70th Canadian Geotechnical Conference and the 12th Joint CGS/IAH-CNC Groundwater Conference, Ottawa, ON.

Persaud, E., Levison, J., MacRitchie, S., Rixon, S. (2017) Integrated water cycle management in the Great Lakes Basin under changing climate conditions. GeoOttawa2017, Proceedings of the 70th Canadian Geotechnical Conference and the 12th Joint CGS/IAH-CNC Groundwater Conference, Ottawa, ON.

Saleem, S., Levison, J., Parker, B., Martin, R. (2017). Simulation of nitrate transport in groundwater from agricultural lands using a field-scale model. GeoOttawa2017, Proceedings of the 70th Canadian Geotechnical Conference and the 12th Joint CGS/IAH-CNC Groundwater Conference, Ottawa, ON.

Levison, J. and Novakowski, K. (2011) Rapid transport from the surface to wells: a unique infiltration tracer experiment. GeoHydro, 1st Joint Meeting of CANQUA/IAH-CNC, Québec City, Québec (DOC-2148), 28-31 Aug.