

Curriculum Vitae

Shannon Maureen Sterling

Director of Dalhousie Hydrology Research Group

Associate Professor, Earth and Environmental Sciences, Faculty of Science, Dalhousie University

Personal Information

Language	• English and French
Mailing Address	• Department of Earth and Environmental Sciences, 1459 Oxford St., Dalhousie University, Halifax, Nova Scotia, Canada, B3H 4R2
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Education and Training

Ph.D.	• Duke University , 2005, Department of Earth and Ocean Sciences, Nicholas School of the Environment and Earth Sciences
Post Doc. Fellow	• Université de Paris VI , 2005-2007. UMR 7619 Sisyphe, Hydrologie Appliquée, Paris, France. Marie Curie Post-doctoral research fellow
M.Sc.	• University of British Columbia , 1997, Geography.
B.Sc. Hons.	• McGill University , 1993, Geography.

Selected Recognitions

2019	Keynote Speaker for Gordon Research Conference on Catchment Science, June 23-28, Proctor Academy NH, USA. Landscape Evolution over Space and time
2017-18	Science Atlantic Distinguished Speaker, Atlantic Canada Lecture Tour
2014-15	Best Environmental Science Professor, as elected by students at Dalhousie University
2011-12	Best Environmental Science Professor, as elected by students at Dalhousie University
2005-2007	Marie Curie Intra-European Post-Doctoral Fellow
2004-2006	Government of France – Embassy of the United States Chateaubriand Fellowship Award

Current Research Interests

Topics	• Carbon drawdown potential of restoration of acidified forest and aquatic environments. • Evolutionary Hydrology . Evolution of water availability through geologic time. • Catchment Hydrology . Freshwater chemistry in acidified environments and mitigation.
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Selected Publications

An asterisk identifies members of my research group.

Submitted	Hart*, K., G. Kennedy, S.M. Sterling (2021), Distribution, drivers, and threats of aluminum in groundwater in Nova Scotia, Canada, in review at <i>Water</i> , water-1225287.
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- Sterling, S.M.**, T. A. Clair, L. Rotteveel*, N. O'Driscoll, D. Houle, E.A. Halfyard, K. Keys, (2021). Kejimikujik Calibrated Catchments: a benchmark dataset for long-term impacts of terrestrial and freshwater acidification, in review at *Hydrologic Processes*, HYP-20-0978.
- Rotteveel*, L. and **Sterling, S. M.** (2021): The Surface Water Chemistry (SWatCh) database: A standardized global database of water chemistry to facilitate large-sample hydrological research, *Earth Syst. Sci. Data Discuss.* [preprint], <https://doi.org/10.5194/essd-2021-43>, in review, 2021
- Sterling, S. M.**, MacLeod, S.* , Rotteveel, L.* , Hart, K., Clair, T. A., Halfyard, E. A., & O'Brien, N. L. (2020). Ionic aluminium concentrations exceed thresholds for aquatic health in Nova Scotian rivers, even during conditions of high dissolved organic carbon and low flow. *Hydrology and Earth System Sciences*, 24(10), 4763-4775.
- Rotteveel*, L., & **Sterling, S. M.** (2019). Five aluminum seasonality regimes identified in chronically acidified rivers of Nova Scotia. *Environmental Science & Technology*, 54(2), 807-817.
- Adriaan J. Teuling, Emile de Badts, Femke A. Jansen, Richard Fuchs, Joost Buitink, Anne J. Hoek van Dijke, and **Shannon M Sterling** (2019). Climate change, re-/afforestation, and urbanisation impacts on evapotranspiration and streamflow in Europe. *Hydrology and Earth System Science Discussions*. hess-2018-634
- Ronny Meier, Edouard L. Davin, Quentin Lejeune, M. Hauser, Yan Li, B. Martens, Natalie M. Schultz, **Shannon M. Sterling**, and W. Thiery. (2018). Evaluating and improving the Community Land Model's sensitivity to land cover. *Biogeosciences*. 15: 1–27.
- Björnerås, C., Weyhenmeyer, G.A., Cicendajeva, M., Evans, C.D., Gessner, Laudon, H., Lehtoranta, J, Monteith, D.T., Noges, P., Oulehle, F., Räike, A., Riise, G., Rusak, J.A., Sire, J., **Sterling, S.M.**, Kritzberg, E.S. (2017). Global increase of iron concentrations in freshwaters. *Global Biogeochemical Cycles*. 2017GB005749R
- Goulden, T., Jamieson, R., Hopkinson, C., **Sterling, S.M.**, 2016. Sensitivity of DEM, slope, aspect and watershed attributes to LiDAR measurement uncertainty. *Remote Sensing of Environment*, 179, pp. 23–35
- Keys, K., **Sterling, S.M.** Guan, Y.* , 2015. Using historic soil survey data to map soil erosion hazard for land-use planning in Nova Scotia. *Canadian J of Soil Science*, 95: 299–304.
- Clair, T., Pelletier, N., Bittman, S., Leip, A., Arp, P., Moran, M.D., Dennis, I., Niemi, D., **Sterling, S.M.**, Drury, C., Yang, J., 2014. Interactions between reactive nitrogen and the Canadian landscape: a budget approach. *Global Biogeochemical Cycles*. 2014GB004880.
- Sterling, S. M.**, Garroway, K., Guan, Y., Ambrose, S. M., Horne, P., & Kennedy, G. W. (2014). A new watershed assessment framework for Nova Scotia: A high-level, integrated approach for regions without a dense network of monitoring stations. *Journal of Hydrology*, 519, 2596-2612.
- Creed, IF, Jones, J, Buttle, ..., Sebestyen, S, Spittlehouse, D, **Sterling, S.M.**, Williams, M, Winkler, R, Yao, H, 2014. Changing forest water yields in response to climate warming: Results from long-term experimental watershed sites across North America. *Global Change Biology*, GCB-14-0050. DOI: 10.1111/gcb12615. Accepted March 2, 2014.
- Goulden, T., Jamieson, R., Hopkinson, C., **Sterling, S.M.**, 2014, Sensitivity of hydrological outputs from SWAT to DEM spatial resolution. *Photogrammetric Engineering and Remote Sensing*. 13-072. Accepted February 13, 2014.
- Goulden, T., Hopkinson, C., Jamieson, R., **Sterling, S.M.**, 2014. Sensitivity of watershed attributes to spatial resolution and interpolation method of LiDAR DEMs in three distinct landscapes. *Water Resources Research* 50(3), 1908-1927. DOI: 10.1002/2013WR013846R. Accepted January 9, 2014.
- Sterling, S.M.**, A. Ducharme, J. Polcher, 2013. Impact of land cover change on the terrestrial water cycle. *Nature Climate Change*, doi: 10.1038/NCLIMATE1690