

DR. NEAL SCOTT

Associate Professor

Appointment Status

Associate Professor and Canada Research Chair in Greenhouse Gas Dynamics and Ecosystem Management
Geography, Arts and Sciences, Queen's University at Kingston
Full-time, Term, Associate Professor
Tenure Status: Tenure

Academic Background

1996/9 Postdoctorate, Land use change/Greenhouse gas emissions, Landcare Research
New Zealand Ltd Supervisors: Dr. Kevin Tate, 1994/1996/6

Queen's University at Kingston
Distinction
Student selected award for Excellence in Teaching

2008/7 Canada Research Chair II
Natural Sciences and Engineering Research Council of Canada (NSERC)
Prize / Award

Professional Memberships

2000 American Geophysical Union
1995 New Zealand Soil Science Society
2005 Canadian Water Quality Network
1988-2012 Soil Science Society of America

Undergraduate Teaching and Course Development

2005 Instructor and Course Designer, Queen's University at Kingston
Course title: GPHY 207 Biogeography: Space, Time, and Life

2007 Instructor and Course Designer, Queen's University at Kingston
Course title: GPHY 412 Land-use Change and the Earth System

2007 Instructor and Course Designer, Queen's University at Kingston
Course title: GPHY 317 Soils, Environment, and Society

2012 Instructor and Course Designer, Queen's University at Kingston
Course title: GPHY 302 Environmental Modelling (15% lectures)

Undergraduate Supervisory Experience

2014/5-2015/4 Jackson, Sarah. Bachelors. June 2015. Queen's University.
Thesis/Project Title: Summer RA: Increased temperature and snowfall impacts on High Arctic ecosystems.

2014/5-2014/9 Mark, Jamie. Bachelors. June 2016. Queen's University.
Summer RA: GHG balance of perennial grass bioenergy systems

2013-2014/4 Mendelson, Andrew. Bachelors (completed). Queen's University.
Summer RA: Thesis/Project Title: Thesis: Net GHG production from perennial

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2013/5-2014/4 McTaggart, Emily, Bachelor's (Completed), Queen's University
Summer RA. Thesis/Project Title: Historic Landuse/Landcover Change
Detection in the Frontenac Arch Biosphere Reserve
Present Position: Masters program in Environmental Sustainability, Sept. 2014, Ottawa

2013/5-2014/4 Geissler, Kirstin, Bachelor's (Completed), Queen's University
Thesis/Project Title: Historic Landuse/Landcover Change Detection in the
Frontenac Arch Biosphere Reserve
Present Position: Masters program in Environmental Sustainability, Sept. 2014, Western

2013/5-2014/4 Rosenblat, Sara, Bachelor's (Completed), Queen's University
Thesis/Project Title: Historic Landuse/Landcover Change Detection in the
Frontenac Arch Biosphere Reserve
Present Position: Masters program in Resource and Env. Management, Dalhousie

2012/5-2012/9 Yue, Jayrin, Bachelor's (Completed), Queen's University
Summer RA: Disturbance alters trace gas fluxes in High Arctic systems
Present Position: Thermal Environmental Advisor, Husky Energy.

2011/5-2012/4

- 2010/5-2011/4 McParland, Daniel Bachelor's (Completed), Queen's University
Summer RA: Thesis/Project Title: Nitrogen addition alters N₂O emissions in switchgrass
Present Position: Completed MSc at UBC, Consultant in Toronto area.
- 2010/5-2011/4 Tamminga, Aaron Bachelor's (Completed), Queen's University
Summer RA: Thesis/Project Title: Variation in soil properties as a function of forest ecosite in Ontario
Present Position: PhD student, Geography, UBC
- 2009/5-2010/4 Neil, Allison. Bachelor's (Completed), Queen's University
Summer RA: Thesis/Project Title: Disturbance effects on carbon fluxes in high Arctic ecosystems.
Present Position: MA student, Geography, Carlton
- 2009/9-2010/4 Gagliardi, Stephanie Bachelor's (Completed), Queen's University
Thesis/Project Title: Variation in leaf area index in forest ecosite types
Present Position: MSc student, U. of Toronto
- 2008/5-2009/4 Fisher, Evangeline Bachelor's (Completed), Queen's University
Summer RA: Thesis/Project Title: Temperature effects on soil trace gas production
Present Position: Environmental consulting firm in California
- 2008/5-2008/8 Philpott, Timothy Bachelor's (Completed), Queen's University
Summer RA: Stabilization of atmospheric CO₂ in soybeans
Present Position: PhD student, Univ. British Columbia, Forest Soils
- 2008/5-2008/8 Bencharif, Sarah Bachelor's (Completed), Queen's University
Summer RA: Soybean effects on nitrous oxide production
Present Position: Masters program in Journalism at Ryerson
- 2007/9-2008/4 Hinke, Alexandra Bachelor's (Completed), Queen's University
Summer RA: Thesis/Project Title: Thesis: Cycling of carbon and nitrogen in Arctic vegetation communities
Present Position: PhD student, Dept. Biology, University Utrecht

Graduate Teaching and Course Development

- 2006 Instructor and Course Designer, Queen's University at Kingston
Course title: Geography 819 Modelling the Earth System.
- 2009-10 Instructor and Course Designer, Queen's University at Kingston.
Course title: Geography 857 Professional Development Seminar in Geography

Graduate and Postdoctoral Supervision

- 2014/9-2016/5 Arruda, Sean Master's Thesis (In Progress), Queen's University

Principal Supervisor Student Degree Expected Date: 2016/5
Thesis/Project Title: Effects of temperature and snowfall changes on soil biogeochemical processes in a high Arctic ecosystem
Present Position: MSc student

2013/92014/7 Blaser, Amy Master's Thesis (In Progress), Queen's University
Co-Supervisor. Student degree expected 2015/06.
Thesis/Project Title: Factors Controlling the Net Carbon Balance of High Arctic Wet Sedge Ecosystems at Cape Bounty, Nunavut
Present Position: MSc student

2013/92015/9 Djomo, Adrien Research Associate (In Progress) Queen's University
Principal Supervisor Thesis/Project Title: Quantifying the contribution of Africa's tropical forests to the global carbon budget
Present Position: Research Associate

2012/92015/7 Buckley, Emma Master's Thesis (In Progress), Queen's University
Co-supervisor Student Degree Expected Date: 2015/9.
Thesis/Project Title: Controls on Net Carbon Balance of Polar Desert Ecosystems in the High Arctic
Present Position: MSc student

2011/92015/7 Peng, Bill Master's Thesis (In Progress), Queen's University
Principal Supervisor Expected date: 2015/09.
Thesis/Project Title Effects of Wood Ash Addition on Soil Calcium and Nitrogen Cycling Processes in Boreal Forest Ecosystems
Present Position: MSc student

2010/92012/12 Graham, Amanda Master's Thesis (Completed), Queen's University
Principal supervisor Thesis/Project Title: Nitrogen Fixation and the Fate and Turnover of Carbon Fixed through Hydrogen-Coupled Carbon Dioxide Fixation in Soybeans
Present Position: Environmental Scientist, Ministry of Environment and Climate Change, Ontario

2009/52011/6 Wagner, Ioan PDF Research Associate (Completed), Queen's University
Principal supervisor Thesis/Project Title: Factors controlling carbon exchange in high Arctic ecosystems
Present Position: Canadian High Arctic Research Station

2009/92012/1 J(c)4(ti)-3(c)4(e)1 24990 1 249.29 208.34 Tm [(Th)-8(e)4(sis)-3(/(')1090 1 24s249.29 29

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Carlson, M., C. Alvaro, J. Chen, W. Kurz, N. Roulet, N. Scott, C. Tarnocai. 2010. Management actions to maintain the role of Canadian forests and peatlands in climate regulation. *Chronicle 86*: 434443.

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Canadian Geophysical Union Hydrology and Biogeosciences Sections, U of Toronto Toronto,
ON. January 2014.

Geissler, K., EMcTaggart, S. Rosenblat, N. Scott. Scale Implications in Studies of Use and

Wagner, I., A. Beamish, A. Cassidy, P. Treitz, and N.A. Scott 2011. Relationships among phenology, NDVI, and CO₂ exchange in three Arctic plant community types. Canadian Remote Sensing Society, Sherbrooke, QC. June 2011.

Van Ewijk, K., P.M. Treitz, and N.A. Scott 2011. Contrasting Conifer Plantations and Natural Forest Stands in Central Ontario using Spectral, LiDAR and Textural Information. Canadian Remote Sensing Society, Sherbrooke, QC. June 2011.

Jaggard, E., K. Kyser, N.A. Scott 2011. Soil organic carbon cycling in southeastern Ontario switchgrass fields as indicated by ¹³C natural abundance. Advanced Stable Isotope Technologies and Applications Conference, Queen's University, June 2011.

Graham, A., N.A. Scott, P. Cen, K. Kyser, D. Layzell 2011. Hydrogen Coupled CO₂ Fixation in Soybean Crop Soils. Advanced Stable Isotope Technologies and Applications Conference, Queen's University, June 2011.

Dong, Z., N.A. Scott, et al. N₂ Fixation, H₂ production & N₂O emissions 2011. Annual General Meeting of the Green Crop Network. Montreal, QC, May 2011.

Graham, A., N.A. Scott, P. Cen, K. Kyser, D. Layzell 2011. Hydrogen Coupled CO₂ Fixation in Soybean Crop Soils. Annual General Meeting of the Green Crop Network, Montreal, QC. May 2011.

Jaggard, E., K. Kyser, and N.A. Scott 2011. Carbon Sequestration under switchgrass production in southeastern Ontario. ECO Canada Conference, Montreal, QC. March 2011.

McParland, D., and N.A. Scott 2011. Nitrous Oxide Emissions From a Switchgrass Field Across

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intact and disturbed high Arctic ecosystems at Cape Bounty, Melville Island, Nunavut. ArcticNet AGM Meeting, Ottawa, ON. Dec. 2010.

Wagner, I., A. Beamish, A. Cassidy, Freitz, and N.A. Scott 2010. Relationships among phenology, NDVI, and CO₂ exchange in three high Arctic plant community types. ArcticNet AGM Meeting, Ottawa, ON. Dec. 2010.

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Stephens, T., N.A. Scott, GPHY 317 Class 2010.

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Island. Annual General Meeting of the ArcticNet Research Network Vancouver, BC Dec.
2009.

Mabee W.E., J. Mirck, A. Pollard, Freitz, N. Scott 2009

Gregory, F., N.A. Scott, P.M. Treitz. 2008. Seasonal variation in net carbon exchange in three high-arctic vegetation communities. Arctic Net AGM, Quebec City, Dec. 2008.

Hincke, A.J.C., D.M. Atkinson, P.M. Treitz, N.A. Scott. 2008. The influence of vegetation communities on soil carbon and nitrogen storage in mid high Arctic ecosystems Arctic Net AGM, Quebec City, Dec. 2008.

Cen, Y-P, M. Morrison, E. Gregorich, N.A. Scott, D.B. Layzell. 2008. Soil N₂O Emissions Associated with Soybean Symbiosis. Green Crop Network Annual General Meeting, Vancouver, Dec. 2008.

Philpott, T., Y-P. Cen, D.B. Layzell, K. Kyser, N.A. Scott. 2008. Soil carbon sequestration in H₂-saturated soybean soil. Green Crop Network Annual General Meeting, Vancouver, Dec. 2008.

van Ewijk, K., P. Treitz, N. A. Scott. 2008. The characterization of vertical forest structure, using lidar derived complexity indices, to enhance forest vegetation classification in Central Ontario. Canadian Association of Geography, May 2008.

Lamoureux, S.F., M.J. Lafrenière, T. Lewis, N. Scott, P. Treitz, M. Simpson, A. Simpson, P. Francus, S. Finkelstein, G.H.R. Henry and V. St. Louis. 2008. Integrated research at the Cape Bounty Arctic Watershed Observatory: a Canadian International Polar Year program to identify hydrological, biogeochemical, geomorphic and vegetative sensitivity and responses to climate change. Canadian Geophysical Union, Banff, AB. April 2008

Consulting Activities

n/a

Research Funds-

Period of Funding	Role	Principal Applicant	Funding Organization	Title	Amount (CAN\$)
2015/4 2018/3	Collaborator	Lamoureux, Scott; Lafreniere, Melissa	Natural Sciences and Engineering Research Council (NSERC)- N 2 q 2		

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				on High Arctic watershed fluxes: Cape Bounty, Melville Island experimental watershed observatory	
2007/4-2010/3	Co-applicant	McCaughey, Harry	NSERC	Canadian Carbon Program: Ontario Flux Station: Carbon and Water Cycling in Boreal Mixedwood Forests	\$612,000
2006/1-2009/12	Co-applicant	Davidson, Eric	US Dept. of Energy	Renewal of Collaborative Research: Economically Viable Forest Harvesting Practices	\$456,000
2007/4-2009/3	Co-applicant	Pollard, Andrew	OCE	Optimizing Ontario-based Wood Pellet Production for Co-firing and Market Development and Penetration	\$540,000
2006/1-2008/12	Co-applicant	Hollinger, David	US Dept. of Energy	Using model analyses and surfaceatm8l 0 G [

