



UNIVERSITY OF  
SASKATCHEWAN

School of Environment  
and Sustainability

# Annual Report

2008 - 2009

**On the cover:**

*Students from the School of Environment and Sustainability's first cohort:*

*From left to right: MES Student Poornima Sheelanere, MSEM Student Al Scholz, PhD Student Jean Kayira, and MES Student Garrett Richards on the University of Saskatchewan campus, summer 2009*

*Photo by: Scott Bell*

*School of Environment and Sustainability*  
**Annual Report**  
2008 - 2009

School of Environment and Sustainability

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## Introduction

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Founded in July 2007, the School of Environment and Sustainability (SENS) was designed to offer graduate students Master's and Doctoral programs that are interdisciplinary in both learning and research. These programs emphasize the complex nature of environmental and sustainability challenges, and the need for interdisciplinary understandings across a range of topics. As such, the School addresses questions about environmental processes and challenges, how and which people and places are most affected by unsustainable practices, biodiversity loss, how our current policies contribute to (un)sustainability, and how Saskatchewan is placed within a global environmental and political economy. Students are given opportunities to address environmental and sustainability challenges with regional, national, and international significance.

The School's three graduate programs, the course-based Master of Sustainable Environmental Management (MSEM), the thesis-based Master of Environment and Sustainability (MES), and the Doctor of Philosophy in Environment and Sustainability (PhD), were approved by University Council in May 2008. The founding faculty members were appointed on July 1, 2008, and the School welcomed ten students into its programs in September 2008.

Over the course of the School's first academic year (2008 – 2009), the faculty met several times to develop elements of a strategic plan for the School. To date, the vision, mission, and core values have been developed and approved, and strategic priorities have been drafted.

## Vision

We will create and integrate multiple understandings of natural and human environments and be internationally known for innovative, provocative, and wide-ranging approaches to environmental sustainability.

## Mission

We enable sustainable communities and environments through collaborative research and teaching, graduate student engagement, and community involvement. We broaden understanding and develop champions of environmental sustainability by creating, exchanging, and translating knowledge using diverse perspectives.

## Core Values

As a School, we value:

- Scholarly dialogue and debate regarding environment and sustainability
- Interdisciplinary and transdisciplinary scholarship
- Innovation and academic excellence among students and faculty
- Student growth and success
- Systems and holistic approaches to environmental sustainability
- Working on a variety of spatial and temporal scales
- Collaboration in teaching, research, and engagement
- Consultative and cooperative decision-making
- Respectful and substantive engagement with wide communities



- Inclusion of different ways of knowing
- Supporting sustainable and healthy communities and environments
- Making a difference through public discourse, deliberative processes, and informed citizenship
- Leading by example through attention to our own environmental footprint

## Strategic Priorities

The following strategic priorities and research themes were discussed by faculty in early 2009. They have yet to be formally approved, and thus should be considered to be in draft form.

### Academic Strategic Priorities

- Build academic programs that are nationally and internationally recognized. The School of Environment and Sustainability at the University of Saskatchewan will be ranked among the top five graduate programs in environment and sustainability in Canada by 2014.
- Enrich the School's interdisciplinary learning environment through the integration of the diverse disciplines concerning natural systems and social systems, providing a common platform of fundamental courses to underpin the research endeavours of students in the School. The School's learning environment will utilize multiple and flexible formats, including team teaching.
- The School's student body will engage in diverse areas of study, spanning the broad scope of environment and sustainability. Students will be encouraged to form linkages with the wider community and to undertake professional development activities, with the intent of giving them multiple opportunities to broaden their understanding of environmental sustainability. In this way, the School will become the key educator for those working in environmental and sustainability fields in Saskatchewan and beyond.

### Research Strategic Priorities

- Facilitate the development of collaborative, interdisciplinary research and student learning opportunities. Research efforts within the School will be integrative, linking across disciplines and providing a broader context for student training.
- Support and nurture excellence in basic and applied research and scholarly work in environment and sustainability.
- Develop a nationally-recognized research profile by 2014.
- Facilitate the translation of knowledge generated within the School to the wider community, so that research conducted makes an impact.

### Outreach Strategic Priorities

- Encourage and participate in information exchange with the broad community regarding environment and sustainability challenges.
- Build partnerships and strengthen connections with communities beyond the University of Saskatchewan campus.

### Research Themes

- Water
- Energy
- Environmental governance
- Climate change

## Academic Programs Offered

The School of Environment and Sustainability offers three interdisciplinary graduate programs:

- **Master of Sustainable Environmental Management (MSEM):** an interdisciplinary, course-based, professional-style program that can be completed in one year of full-time study. Students enrolled in this program will be required to complete 24 credit units of course work and a 6 credit unit independent project, and to participate in the Seminar in Environment and Sustainability. This program is intended to provide prospective or current environmental practitioners a post-graduate learning opportunity in sustainable environmental management.
- **Master of Environment and Sustainability (MES):** an interdisciplinary, thesis-based program that can be completed within two years of full-time study. Students enrolled in this program will be required to complete 12 credit units of course work and a thesis based on original research, and to participate in the Seminar in Environment and Sustainability.
- **Doctor of Philosophy (PhD):** an interdisciplinary, research-based program that can be completed within three years of full-time study. Students enrolled in this program will be required to complete a qualifying examination, 6 credit units of course work, a comprehensive examination, and a dissertation based on original research, and to participate in the Seminar in Environment and Sustainability.

## Courses

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The following courses were offered by the School of Environment and Sustainability during the 2008 – 2009 academic year.

### Core Courses

#### **ENVS 801.3 Ecosystem Science and Sustainability**

**Instructor: Joe Schmutz, Sessional Lecturer**

An introduction to how principles and concepts of ecology and ecosystems science are applied to advance environmental sustainability. Students will gain a solid understanding of how natural systems function, and how scientists apply their understanding and uncertainties about ecosystems to address environmental management problems and to advance environmental sustainability.

#### **ENVS 802.3 Human Dimensions of Environmental Change**

**Instructor: Geoff Cunfer**

This course explores the past and present interactions between people and the natural world. It addresses ways that environment has molded human societies and ways that people have altered nature. Contemporary concerns for environmental sustainability are introduced by examining human entanglement with a range of natural and modified systems.

#### **ENVS 803.3 Research in Environment and Sustainability**

**Instructor: Cherie Westbrook, Department of Geography and Planning, College of Arts and Science**

The purpose of this course is to introduce graduate students to conceptual, practical, and ethical issues in conducting interdisciplinary research about environment and sustainability. By the end of the course, students will have a research plan from which their proposal and research activities can be developed.

### **ENVS 804.3 Strategic Environmental Planning and Project Management**

**Instructor: Niran Harrison**

This course will help students understand systems approaches to planning and project development, triple bottom line accounting, ethical considerations associated with professional practice, team work and leadership skills, communications, scheduling, and special issues involved with establishing interdisciplinary teams to understand the environmental implications of programs, policies, and projects.

### **ENVS 805.3 Environmental Data Analysis and Management**

**Instructor: Bing Si**

Environmental data management is complex because of its volume, qualitative and quantitative forms, and temporal and spatial characteristics. This course introduces students to statistical, qualitative, and visual methods of problem solving and data reduction and representation and describes methods for managing large and complex data sets.

### **ENVS 990 Seminar in Environment and Sustainability**

The ENVS 990 Seminar Series features topics relevant to environment and sustainability. In addition to speakers from a variety of academic and non-academic backgrounds, the seminar series includes Dialogue Community sessions, in which SENS faculty facilitate dialogue concerning environment and sustainability challenges. MES and PhD students are also required to present their research in the seminar.

### **ENVS 992.6 Project in Environment and Sustainability**

**Required For MSEM Program**

### **ENVS 994 Research in Environment and Sustainability (Thesis)**

**Required For MES Program**

### **ENVS 996 Research in Environment and Sustainability (Dissertation)**

**Required for PhD Program**

## Restricted Electives

### **ENVS 898.3 Environmental Economics and Policy Making**

**Instructor: Ken Belcher**

*This course is cross-listed with the Department of Bioresource Policy, Business, and Economics.*

This course focuses on developing a formal understanding of natural resource use and resource and environmental policy using economic models. The focus of the course will be on renewable resources with some consideration of the unique characteristics of non-renewable resources. The course will develop detailed analyses of existing and proposed natural resource and environmental policy using the economic framework to evaluate the structure, efficiency, effectiveness and flexibility of these policies. Through this approach the student will develop the tools to understand and critically evaluate environmental policy and also build a familiarity with the primary policy measures and tools.

### **GEOG 886.3 Advanced Environmental Impact Assessment**

**Instructor: Bram Noble**

*This course is cross-listed with the Department of Geography and Planning.*

A project-based course focusing on emerging concepts and broader applications of environmental assessment principles and practices. Course topics vary from year to year following developments in the field, and may include such topics as cumulative effects assessment, strategic environmental assessment, project scoping, assessment methods and techniques, monitoring and follow-up.

## ENVS 990: Seminar in Environment and Sustainability for 2008 - 2009

- Orientation to SENS – Karsten Liber and Ken Belcher, September 12, 2008
- Academic Integrity – Trever Crowe, Associate Dean, College of Graduate Studies and Research, and Ethics – Diane Martz, Director, Research Ethics Office, September 19, 2008
- Dialogue Community: What is Dialogue? – Marcia McKenzie and Monique Dubé, September 26, 2008
- Career Opportunities in the Environment Industry in Canada – Kevin Nilsen, ECO Canada, October 10, 2008
- The Task Force on City-University Sustainability Initiatives – Margret Asmuss, Office of Sustainability, Facilities Management Division, and Sheri Praski, Environmental Services, City of Saskatoon, October 17, 2008
- Understanding Indigenous Knowledge: Roots and Routes – Marie Battiste, Aboriginal Education Research Centre, November 14, 2008
- Fungal Bioremediation of Stressed Environments – Susan Kaminskyj, Department of Biology, College of Arts and Science, November 21, 2008
- Dialogue Community: What is Sustainability? – Marcia McKenzie and Monique Dubé, November 28, 2008
- Discourse Analysis and the Knowledge-Action Gap – MJ Barrett, Department of Curriculum Studies, College of Education, and Climbing Mount Sustainability: Business Responses to Environmental Challenges – Niran Harrison, Department of Human Resources and Organizational Behaviour, Edwards School of Business, January 16, 2009
- Hydrology of the Prairie Agricultural Region – Charles Maulé, and An Overview of the Environmental Performance Index – Sharla Daviduik, January 23, 2009
- Dialogue Community: Sustainable Development for All?: The Paradox of Global Prescriptions for Local Development/Participation – Marcia McKenzie and Jean Kayira, January 30, 2009
- Managing Biodiversity on the Northern Great Plains: Should It Be One Species (Ferruginous Hawk) or One Ecosystem (Mixed Grass Prairie) at a Time? – Joe Schmutz, and Footprint Design: Engineering for Sustainability – Alison Lackie, Footprint Design, February 13, 2009
- Dialogue Community: Waste Management in Saskatoon – Niran Harrison, Department of Human Resources and Organizational Behaviour, Edwards School of Business; Charlie Clark, Councillor, Ward 6, City of Saskatoon; and, Marcia McKenzie, February 27, 2009
- Dialogue Community: Ways of Knowing and Sustainability – Marie Battiste, Aboriginal Education Research Centre, and Sákéj Youngblood Henderson, Native Law Centre, March 13, 2009
- Mining or Maintaining Soil Fertility? Agricultural Practice in the Old and New World – Geoff Cunfer, and Integrating Silos of Environmental Assessment in Canada – Bram Noble, March 20, 2009
- Student Research in the School of Environment and Sustainability, March 27, 2009

## People

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### Administration

- Jim Basinger (BSc, Alberta; MSc, Alberta; PhD, Alberta), Acting Associate Vice-President Research, Executive Sponsor
- Karsten Liber (BSc, Guelph; PhD, Guelph), Acting Director

### Faculty

#### Standard Appointments

- Monique Dubé, Associate Professor and Canada Research Chair in Aquatic Ecosystem Health Diagnosis (BSc, British Columbia; MSc, Saskatchewan; PhD, New Brunswick) *(on leave January – December 2009)*
- Steven Franklin, Professor and Vice-President Research (BES, Waterloo; MA, Waterloo; PhD, Waterloo) *(on leave July 2008 – June 2009)*
- Vladimir Kricsfalusy, Associate Professor (MSc, Uzhgorod; PhD, Uzhgorod and the Academy of Sciences of Ukraine) *(term appointment starting June 2009)*

#### Primary-Joint Appointments

- Maureen Reed, Professor (BSc, Victoria; MA, Toronto; PhD, Waterloo) (70% SENS; 30% Department of Geography and Planning, College of Arts and Science) *(on leave September 2008 – August 2009)*

#### Secondary-Joint Appointments

- Ken Belcher, Associate Professor (BSA, Manitoba; MNRM, Manitoba; PhD, Saskatchewan) (30% SENS; 70% Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources)
- Marie-Ann Bowden, Professor (BA, Mount Allison; LLB, Queen's; LLM, Osgoode Hall) (40% SENS, 60% College of Law) *(half-time appointment) (on leave January – June 2009)*
- Geoff Cunfer, Associate Professor (BA, North Carolina; MA, Texas Tech; PhD, Texas) (25% SENS; 75% Department of History, College of Arts and Science)
- Charles Maulé, Professor (BSc, British Columbia; MSc, Alberta; PhD, Alberta) (7% SENS; 93% Department of Agricultural and Bioresource Engineering, College of Engineering)
- Marcia McKenzie, Assistant Professor (BSc, British Columbia; MEd, Brock; PhD, Simon Fraser) (25% SENS; 75% Department of Educational Foundations, College of Education)
- Bram Noble, Associate Professor (BA, Memorial; MES, Wilfrid Laurier; PhD, Memorial) (30% SENS; 70% Department of Geography and Planning, College of Arts and Science) *(on leave July – December 2008)*
- John Pomeroy, Professor and Canada Research Chair in Water Resources and Climate Change (BSc, Saskatchewan; PhD, Saskatchewan) (10% SENS; 90% Department of Geography and Planning, College of Arts and Science)
- Todd Pugsley, Professor (BSc, New Brunswick; MSc, Calgary; PhD, Calgary) (30% SENS; 70% Department of Chemical Engineering, College of Engineering)
- Bing Si, Associate Professor (BSc, Hebei Agricultural; MSc, Hebei Agricultural; PhD, Guelph) (30% SENS; 70% Department of Soil Science, College of Agriculture and Bioresources)

Assistant Professor MJ Barrett (BAS, Harvard; BEd, Queen's; MES, York; PhD (in progress), Regina), Department of Curriculum Studies, College of Education, and Associate Professor Niran Harrison (BComm, Saskatchewan; MSc, Saskatchewan; PhD (in progress), Oregon) had informal involvement in the School during 2008 – 2009.

### Associate Appointments

- Scott Bell, Associate Professor (BEd, British Columbia; MA, California (Santa Barbara); PhD; California (Santa Barbara)), Department of Geography and Planning, College of Arts and Science
- Michael Gertler, Associate Professor (BES, Waterloo; MSc, McGill; PhD, Cornell), Department of Sociology, College of Arts and Science
- Xulin Guo, Associate Professor (BSc, Beijing; MSc, Beijing; PhD, Kansas), Department of Geography and Planning, College of Arts and Science
- Hayley Hessel, Associate Professor (BComm, Saskatchewan; PhD, Colorado), Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources
- Jeff Hudson, Associate Professor (BSc, Trent; MSc, Guelph; PhD, Waterloo), Department of Biology, College of Arts and Science
- Susan Kaminskyj, Associate Professor (BSc, Toronto; MSc, Toronto; PhD, York), Department of Biology, College of Arts and Science
- Ted Leighton, Professor (AB, Cornell; DVM, Saskatchewan; PhD, Cornell; DACVP), Department of Veterinary Pathology, Western College of Veterinary Medicine
- Janet McVittie, Assistant Professor (BSc, Saskatchewan; BEd, Saskatchewan; PhD, Saskatchewan), Department of Curriculum Studies, College of Education
- David Natcher, Associate Professor (BA, Alberta; MA, Alaska; PhD, Alberta), Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources
- Mehdi Nemati, Associate Professor (BSc, Amirkabir; MSc, Amirkabir; PhD, Manchester), Department of Chemical Engineering, College of Engineering
- Greg Poelzer, Associate Professor (BA, Alberta; MA, Carleton; PhD, Alberta), Department of Political Studies, College of Arts and Science
- Elizabeth Robertson, Assistant Professor (BSc, Alberta; MA, Queen's; PhD, Alberta), Department of Archaeology and Anthropology, College of Arts and Science
- Vladimir Vujanovic, Associate Professor (BSc, Zagreb; MSc, Belgrade; PhD, Belgrade), Department of Food and Bioproduct Sciences, College of Agriculture and Bioresources
- Bill Waiser, Professor (BA, Trent; MA, Saskatchewan; PhD, Saskatchewan), Department of History, College of Arts and Science
- Yangdou Wei, Associate Professor (BSc, Huazhong; MSc, Huazhong; PhD, Copenhagen), Department of Biology, College of Arts and Science
- Karen Wiebe, Associate Professor (BSc, Simon Fraser; PhD, Saskatchewan), Department of Biology, College of Arts and Science

### Sessional Lecturers

- Josef Schmutz (BSc, Wisconsin; MSc, Alberta; PhD, Queen's; BEd, Saskatchewan)

### Staff

- Sharla Daviduik, Administrative Officer (BSc, Saskatchewan; MRM, Simon Fraser; CEPIT)
- Irene Schwalm, Graduate Secretary

Joint Positions Shared with the School of Public Health and the Johnson-Shoyama Graduate School of Public Policy:

- Genine Neufeld, Development Officer (BComm, Saskatchewan) (to September 2008)
- Pam Larson, Financial Officer (BComm, Saskatchewan, CMA)
- Erica Schindel, Communications and Marketing Specialist (BComm, Saskatchewan)

## Students

### Master of Sustainable Environmental Management Students

- Mindy Neufeldt (BA, Saskatchewan)
- Peter Prebble (BBA, Prince Edward Island; MEd, Saskatchewan)
- Al Scholz (BSA, Saskatchewan; BEd, Saskatchewan)

### Master of Environment and Sustainability Students

- Åsa Almstedt (BA, Stockholm)
- Garrett Richards (BSc, Saskatchewan; BA, Saskatchewan)
- Poornima Sheelanere (BSc, Mysore; MSc, Mysore, India)

### Doctor of Philosophy in Environment and Sustainability Students

- Julia Baird (BSc, Alberta; MSc, Saskatchewan)
- Dennis Duro (MGIS, Calgary)
- Allison Henderson (BSc, Saskatchewan; MSc, Simon Fraser)
- Jean Kayira (BEd, Malawi; MA, Clark, USA)

## Student Demographics

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### Admissions

The graduate programs offered by SENS were approved by University Council on May 15, 2008, thus enabling the School to accept applications for the 2008 – 2009 academic year. The following table summarizes the admissions process for 2008 – 2009.

Table 1 - Admissions 2008 – 2009						
Program	Applications Received	Offers of Admission	Transfers from Other Units	Total Offers of Admission and Transfers	Students Who Registered	Reasons Applicants Did Not Register
MSEM	8	6	0	6	3	3 deferrals
MES	6	6	0	6	3	2 declined admission; 1 deferral
PhD	3	1	4	5	4	1 withdrawal
<b>Total</b>	17	13	4	17	10	4 deferrals; 2 declined admission; 1 withdrawal

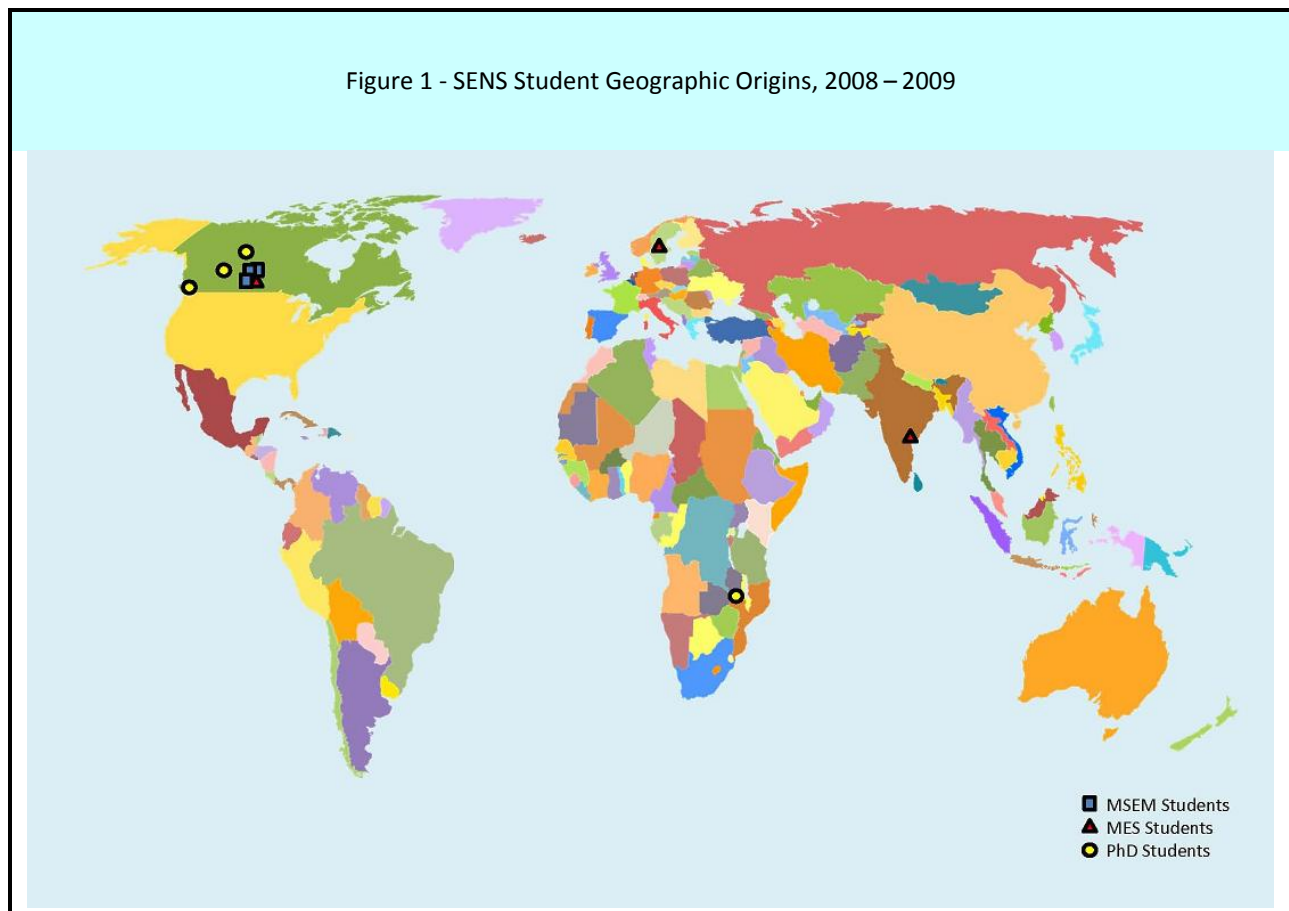
The admission grade point averages for the three programs in 2008 – 2009 were:

- MSEM – 76.5%
- MES – 85.0%
- PhD – 84.9%

The ten students who registered in SENS in 2008 – 2009 identified their geographic origins as follows:

- Saskatchewan – 5
- Other Canadian Provinces/Territories – 2
- International – 3

This distribution is shown in Figure 1.



Once SENS students have completed their graduate programs, the School will establish an alumni association to keep them apprised of SENS activities. SENS will also survey its alumni to determine where they have found employment; the frequency of these surveys has yet to be determined. Completion rates for each program will be included in future reports.



## Awards

Depending on their program, SENS students are eligible to receive funding from a variety of sources:

- SENS Scholarship Funding – this funding is provided to the School by the College of Graduate Studies and Research, specifically to support SENS graduate students.
- Other University of Saskatchewan Funding – this includes funding provided to students from other academic units, and includes campus-wide awards administered by the College of Graduate Studies and Research, such as Dean’s Scholarships and the Robson Bursary.
- Tri-Council Funding – students in thesis programs are eligible to apply for SSHRC or NSERC scholarships, depending on the focus of their research. Students may also be supported by Tri-Council funds received by their supervisor.
- Other External Funding – this includes funding from provincial government sources, non-Tri-Council federal government funding, awards administered by agencies external to the University of Saskatchewan, industry funding, and funding from other faculty research grants and contracts.

## Student Initiatives

SENS’ first student cohort formed the School of Environment and Sustainability Student Association (SEnSSA) early in the academic year. The group was ratified by the Graduate Students’ Association on September 24, 2008. The founding Executive members are: Allison Henderson – President; Dennis Duro – Treasurer; Garrett Richards – Secretary; and, Mindy Neufeldt – Social Coordinator.

SEnSSA initiatives for 2008 – 2009 included the development of a website and the creation of a PAWS group. SEnSSA also held two discussion nights concerning resource development, and organized several informal “soup and slides” lunches, which featured student presentations, in the second term.

## Research and Scholarly Work

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This summary represents the research and scholarly work of those faculty holding standard, primary-joint, or secondary-joint appointments in the School of Environment and Sustainability during 2008-2009. While all research grants listed may not have been managed through the School, the research often involves SENS graduate students.

## Books, Chapters in Books, Expository and Review Articles

Benson, M., D. Newman, and **M.A. Bowden**. 2008. *Understanding Property: A Guide to Canada’s Property Law*, 2nd edition. Toronto, ON: Carswell.

**Bowden, M.A.** 2009. “Agricultural Law and the Polluter Pays in Canada.” In: *Agriculture and the Polluter Pays Principle*, M.R. Grossman, editor. London: British Institute of International and Comparative Law.

**Bowden, M.A.** and B. Weichel. 2009. “Saskatchewan Environmental Assessment.” In *Environmental Assessment in Canada*, 2<sup>nd</sup> Edition, K. Hanna, editor. Don Mills, ON: Oxford Press.

**Cunfer, G.** 2008. “Creating the Dust Bowl: Making History, Making Art.” Digital supplement to *Placing History: How Maps, Spatial Data and GIS Are Changing Historical Scholarship*, A.K. Knowles, editor. Redlands, CA: ESRI Press.

- Cunfer, G.** 2008. "Scaling the Dust Bowl." In *Placing History: How Maps, Spatial Data and GIS Are Changing Historical Scholarship*, A.K. Knowles, editor. Redlands, CA: ESRI Press.
- Cunfer, G.**, editor. 2009. *As a Farm Woman Thinks: Life and Land on the Texas High Plains*. Lubbock: Texas Tech University Press.
- Dubé, M.G.**, K.R. Munkittrick, and L.M. Hewitt. 2008. "Case Study: Pulp and Paper Mill Impacts." In *The Toxicology of Fishes*, R.T. Di Giulio and D.E. Hinton, editors. Boca Raton, FL: CRC Press.
- Duncan, L.F. and **M.A. Bowden**. 2009. *A Legal Guide to Aboriginal Drinking Water: A Prairie Perspective*. Edmonton, AB: University of Alberta Faculty of Native Studies.
- Halseth, G., **M.G. Reed**, and W. Reimer. 2009. "Inclusion in Rural Development Planning: Challenges and Opportunities." In *Rural Planning and Development in Canada in the 21<sup>st</sup> Century: Challenges and Opportunities in the Context of Globalization*, D. Douglas, editor. Toronto: Thomson.
- Hewitt M., T. Kovacs, **M. Dubé**, D. Maclatchy, P. Martel, M. McMaster, M. Paice, J. Parrott, M. van den Heuvel, and G. Van Der Kraak. 2008. Altered reproduction in fish exposed to pulp and paper mill effluents: roles of individual compounds and mill operating conditions. *Critical Review. Environmental Toxicology and Chemistry*. 27:682-697.
- Khakbazan, M., C. Hamilton, A. Moulin, **K. Belcher**, R. Mohr, K. Volkmar and D. Tomasiewicz. 2009. Modeling economic and agro-environmental dynamics of potato production systems. *Journal of Bioeconomics*. 11:65-93.
- McDermid, G.J., M.A. Wulder, N. Coops, **S.E. Franklin**, and N. Seitz. 2009. "Critical Remote Sensing Contributions to Wildlife Ecological Knowledge and Management." In *Spatial Complexity, Informatics, and Wildlife Conservation*. Tokyo: Springer-Verlag.
- McKenzie, M.** 2008. "Research Travels." In *The Practical Science of Society*, B. Kozuh, R. Kahn, and A. Kozłowska, editors. Grand Forks, ND: University of North Dakota Press.
- McKenzie, M.** 2009. "Pedagogical Transgression: Toward Intersubjective Agency and Action." In *Fields of Green: Restoring Culture, Environment, and Education*, M. McKenzie, P. Hart, H. Bai, and B. Jickling, editors. Cresskill, NJ: Hampton Press.
- McKenzie, M.**, P. Hart, H. Bai, and B. Jickling, editors. 2009. *Fields of Green: Restoring Culture, Environment, and Education*. Cresskill, NJ: Hampton Press.
- Noble, B.F.** 2008. Review of *A Contract with the Earth*, by Newt Gingrich and Terry Maple, 2007. *Environments*. 36(1).
- Noble, B.F.** 2009. "From Projects to Priorities: Toward a More Strategic Environmental Assessment Process. Guest Statement." In *Environmental Change and Challenge: A Canadian Perspective*, 3<sup>rd</sup> Edition, P. Dearden and B. Mitchell. Don Mills, ON: Oxford University Press.
- Noble, B.F.** 2009. Review of *The Great Sand Hills: A Prairie Oasis*, by Rebecca L. Grambo, photographs by Branimir Gjetvaj, 2008. *Great Plains Research*. 19(1):128.
- Noble, B.F.** and J. Harriman Gunn. 2009. "Strategic Environmental Assessment." In *Environmental Assessment in Canada*, 2<sup>nd</sup> Edition, K. Hanna, editor. Don Mills, ON: Oxford Press.
- Pugsley, T.** 2009. CFD modeling of bubbling fluidized beds of Geldart A powders. In *Computational Gas-Solids Flows and Reacting Systems*, S. Pannala, M. Syamlal and T. O'Brien, editors. Hershey, PA: IGI Global.

**Reed, M.G.** 2009. "Husbands' Wives and Other Myths of Activism by Forestry-Town Women." In *Gendered Intersections: A Collection of Readings for Women's and Gender Studies*, 2<sup>nd</sup> Edition, L. Biggs and S. Gingell, editors. Halifax: Fernwood Publishing.

**Reed, M.G.** 2009. "Environmental Governance and Gender in Canadian Resource Industries and Communities." In *Resource and Environmental Management in Canada: Addressing Conflict and Uncertainty*, 4<sup>th</sup> Edition, B. Mitchell, editor. Don Mills, ON: Oxford University Press.

**Reed, M.G.** 2009. "Environmental Justice and Community-based Ecosystem Management." In *Speaking for Ourselves: Environmental Justice in Canada*, R.J. Agyeman, P. Cole, R. Haluza-Delay, and P. O'Riley, editors. Vancouver, BC: UBC Press.

## Papers in Refereed Journals

Barlow, J., and **S.E. Franklin**. 2008. Mapping avalanche chutes in the Canadian Rockies with Landsat TM and DEM data. *Canadian Journal of Remote Sensing*. 34(5):516-525.

Barlow, J., Y. Martin, and **S.E. Franklin**. 2009. Characterizing debris slide occurrence using digital data: paraglacial activity in Chilliwack Valley, British Columbia. *Canadian Journal of Earth Science*. 43(3):181-191.

Biswas, A., and **B.C. Si**. 2009. Spatial relationship between soil hydraulic conductivity and soil physical properties in a farm field. *Canadian Journal of Soil Science*. 89:473-488.

Borton, D.L., D.L. Cook, W.K. Bradley, R. Philbeck, **M.G. Dubé**, N.J. Brown-Peterson, W.R. Streblov. 2009. Science Advisory Panel Independent Review: Responses of fathead minnows (*Pimephales promelas*) during life-cycle exposures to pulp mill effluents at four long term receiving water study sites. *Integrated Environmental Assessment and Management*. 5(2):270-282.

Chau, H.W., **B.C. Si**, Y.K. Goh, and V. Vujanovic. 2009. A novel method for identifying hydrophobicity on fungal surfaces. *Mycological Research* (doi:10.016/j.mycres.2009.06.007).

Chi, B.L., **B.C. Si**, F. Walley and T. Yates. 2009. Topographic indices and yield variability in a rolling landscape of Western Canada. *Pedosphere*. 19(3):362-370.

Clarke, K., G.A. Hill, and **T. Pugsley**. 2008. Improved VOC bioremediation using a fluidized bed peat bioreactor. *Process Safety and Environmental Protection*. 86:283-290.

Clarke, K., G.A. Hill, and **T. Pugsley**. 2009. Gas-solid packed and fluidized bed models for bioremediation of volatile organic compounds in air. *Biochemical Engineering Journal*, 46:34-43.

Collingwood, A., **S.E. Franklin**, X. Guo, and G. Stenhouse. 2009. A medium-resolution remote sensing classification of agricultural areas in Alberta grizzly bear habitat. *Canadian Journal of Remote Sensing*. 35(1):23-36.

Driedger, K., L. Weber, C.J. Rickwood, **M. Dubé**, and D. Janz. 2009. Overwinter alterations in energy stores and growth in juvenile fishes inhabiting areas receiving metal mining and municipal wastewater effluents. *Environmental Toxicology and Chemistry*. 28(2):296-304.

Emery, E., J. Oliver, **T. Pugsley**, J. Sharma, and J. Zhou. 2009. Flowability of moist pharmaceutical powders. *Powder Technology*, 189(3):409-415.

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- McKenzie, M.** 2009. Scholarship as intervention: critique, collaboration, and the research imagination. *Environmental Education Research*. 15(2):217-226.
- Noble, B.F.** 2008. Promise and dismay: the state of strategic environmental assessment systems and practices in Canada. *Environmental Impact Assessment Review*. 29(1):66-75.
- Noble, B.F.** 2008. Strategic approaches to regional cumulative effects assessment: a case study of the Great Sand Hills, Canada. *Impact Assessment and Project Appraisal*. 26(2):79-80.
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- Spencer, P., R. Pollock, and **M.G. Dubé**. 2008. Effects of un-ionized ammonia on histological, endocrine, and whole organism endpoints in slimy sculpin (*Cottus cognatus*). *Aquatic Toxicology*. 90:300-309.
- Wang, K., **S.E. Franklin**, X. Guo, Y. He, and G.J. McDermid. 2009. Problems in remote sensing of landscapes and habitat. *Progress in Physical Geography*. 33(6):747-768.
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- Wormsbecker, M., and **T. Pugsley**. 2009. Distributor induced hydrodynamics in a conical fluidized bed dryer. *Drying Technology*. 27(6):797-804.
- Wormsbecker, M., **T. Pugsley**, and H. Tanfara. 2009. Interpretation of the hydrodynamic behaviour in a conical fluidized bed dryer. *Chemical Engineering Science*. 64(8):1739-1746.
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## Papers in Non-Refereed Journals

**Bowden, M.A.** 2009. Up the creek: amendments to the Federal Navigable Waters Protection Act. Saskatchewan Bar Notes No. 3.

**Reed, M.G.** 2008. Community-based conservation. In *Encyclopedia of Geography*, B. Warf, editor. Thousands Oaks, CA: Sage Publications.

**Reed, M.G.** 2008. Biosphere reserves. In *Encyclopedia of Geography*, B. Warf, editor. Thousands Oaks, CA: Sage Publications.

## Contributed (Non-Invited) Papers/Abstracts in Published Conference Proceedings

Barlow, J., **S.E. Franklin**, and C. Hopkinson. 2008. Estimation of deposition and erosion using high spatial resolution optical imagery and LiDAR data. ASPRS 59th Annual Meeting. Portland, OR.

Biswas, A., and **B.C. Si**. 2008. Scaling properties of depth controlled spatial pattern of soil water storage. Canadian Society of Soil Science Annual Meeting. Prince George, BC.

Biswas, A., and **B.C. Si**. 2008. Model averaging for water retention curve. Canadian Society of Soil Science Annual Meeting. Prince George, BC.

Biswas, A., and **B.C. Si**. 2009. Is soil water storage pattern stable over time? Canadian Water Resources Association, Prairie Chapter. Saskatoon, SK.

Biswas, A., and **B.C. Si**. 2009. Soil water storage benchmarking for environmental monitoring. Proceedings of the 2009 Soils and Crops Workshop. Saskatoon, SK.

Chau, H.W., **B.C. Si**, and V. Vladimir. 2008. Using a modified stereo microscope to measure contact angles for assessing hydrophobicity. Canadian Society of Soil Science Annual Meeting. Prince George, BC.

Chau, H.W., and **B.C. Si**. 2009. Soil water repellence index: early time and steady state perspective. Proceedings of the 2009 Soils and Crops Workshop. Saskatoon, SK.

Chau, H.W., **B.C. Si**, Y.K. Goh, and V. Vujanovic. 2009. Fungal surface measurements: water contact angles. Proceedings of the 2009 Soils and Crops Workshop. Saskatoon, SK.

He Y., **S.E. Franklin**, and X. Guo. 2009. Narrow-linear and small-area forest disturbance detection and mapping from high spatial resolution imagery. Proceedings, ASPRS 60th Annual Meeting. Baltimore, MD.

Hunter, A., and **B.C. Si**. 2009. Assessment of soil hydrophobicity: standard and mini-disc infiltrimeters. Proceedings of the 2009 Soils and Crops Workshop. Saskatoon, SK.

Hunter, A., and **B.C. Si**. 2009. Assessment of soil hydrophobicity and critical water content of organic and hydrocarbon affected materials in reclamation. CONRAD Symposium. Edmonton, AB.

Hunter, A., H.W. Chau, and **B.C. Si**. 2009. Comparison of field methods for measuring soil hydrophobicity. Proceedings of the 2009 Soils and Crops Workshop. Saskatoon, SK.

Kreba, S., and **C. Maulé**. 2008. Effects of seasonality upon water and solute movement in the unsaturated zone. Vancouver, BC. Available online at: [www.bioeng.ca/annual-meeting-papers/vancouver-2008](http://www.bioeng.ca/annual-meeting-papers/vancouver-2008).

**Maulé, C.**, and T.A. Fonstad. 2008. Feedlot Rainfall Runoff Evaluation for Saskatchewan. Canadian Biosystems Engineering. Vancouver, BC. Paper No. CSBE08302. Abstract available online at: [www.bioeng.ca/annual-meeting-papers/vancouver-2008](http://www.bioeng.ca/annual-meeting-papers/vancouver-2008).

Pennock, D., T. Yates, K. Phipps, R. Farrell, **B.C. Si**, and A. Bedard-Haughn. 2008. Hydrological triggers for CH<sub>4</sub> and N<sub>2</sub>O emission events from prairie wetlands. Canadian Society of Soil Science Annual Meeting. Prince George, BC.

**Reed, M.G.**, and C. Amuzu. 2008. Conceptualizing gender and adaptive governance in Canadian forestry communities: gender issues in natural resources and management – perception and experiences in different parts of the world. IUFRO Conference on Gender and Forestry. Dehradun, India. Proceedings found at: [www.iufrogenderindia.uni-freiburg.de/](http://www.iufrogenderindia.uni-freiburg.de/)

## Technical Reports Relevant to Academic Field

**Belcher, K.** and J. Lokken. 2008. Saskatchewan Cervid Game Farming Economic Analysis. Submitted to Dr. Paul James in fulfillment of research contract.

**Belcher, K.** 2008. Summary of Ecological Goods and Services Policy Measure Options. Report submitted to the Lower Souris Watershed Committee as partial fulfillment of Ecological Goods and Service Policy Objective of ACAAF Proposal.

**Belcher, K.** 2009. Agri-Environmental Policy Measure Analysis. Submitted to the Lower Souris Watershed Committee as partial fulfillment of Ecological Good and Service Policy Objective of ACAAF Proposal.

De Laporte, A., **K. Belcher** and A. Weersink. 2009. Wetland Policy in Canada. Submitted to Ducks Unlimited Canada and Agriculture and Agrifood Canada in partial fulfillment of ACAAF Greenhouse Gas and Wetland project.

Gignac, H. and **M. Reed**. 2008. Mont Saint-Hilaire Biosphere Reserve Periodic Review Report 2007-08. Prepared on behalf of the Canadian Biosphere Reserves Association for submission to the Canadian Commission for UNESCO. Ottawa, ON.

**Maulé, C.** and **B. Si**. 2009. Feedlot Seepage. Saskatchewan Agricultural Development Fund.

**Noble, B.F.**, and J. Harriman. 2008. Regional Strategic Environmental Assessment in Canada: Principles and Guidance. Research report prepared for the Canadian Council of Ministers of Environment, Environmental Assessment Task Group. Ottawa, ON: CCME.

**Noble, B.F.**, and J. Harriman. 2008. Regional Strategic Environmental Assessment (R-SEA): Methodological Guidance and Good Practice. Research report prepared for the Canadian Council of Ministers of Environment, Environmental Assessment Task Group, under contract agreement with Alberta Environment. Ottawa, ON: CCME.

Yu, M. and **K. Belcher**. 2009. An Economic Analysis of Landowners' Willingness to Adopt Riparian Wetland Conservation Management: A Saskatchewan Case Study – Summary Report submitted to Ducks Unlimited as partial fulfillment of requirements of ACAAF Greenhouse Gas and Wetland project.

## Invited Lectures (Outside the U of S) and Invited Conference Presentations

- Belcher, K.** 2008. The targeting of Canadian agri-environmental policy: an analysis of suitability. Canadian Agricultural Economics Society Annual Meeting. Quebec City, QC.
- Belcher, K.** 2008. The measurement of direct value of forage production. Forage Industry Stakeholder Forum, Saskatchewan Forage Council. Saskatoon, SK.
- Bowden, M.A.** 2009. Contaminated site liability and EMPA: current concerns and future reforms. Risk and Insurance Managers' Society (Saskatchewan Chapter) Annual Meeting.
- Cunfer, G.** 2008. A reconnaissance survey of wind erosion on the Southern Great Plains. Second International Meeting on Historical Geographic Information Systems. University of Essex, UK.
- Cunfer, G.** 2008. Historical ecology: David Foster's Thoreau's Country: journey through a transformed landscape. Panelist. Annual Meeting of the Social Science History Association. Miami, FL.
- Dubé, M.** 2009. The "special" role of women in aquatic cumulative effects assessment. Platform invited. President's Women Scholars Speakers Series, University of Lethbridge. Lethbridge, AB.
- Dubé, M.** 2009. Adding to water innovation at the Saskatchewan Research Council. Platform invited. Saskatchewan Research Council. Saskatoon, SK.
- Dubé, M.,** E. Pietroniro, C. Westbrook, and D. Duro. 2008. Improving capacity for assessment and management of water: development of THREATS for Saskatchewan. Platform invited. 35th Annual Aquatic Toxicity Workshop. Saskatoon, SK.
- Dubé, M.,** C. Rickwood, K. Hruska, R. Pollock, C. Levesque, and M. Driessnack. 2008. Comparative analysis of response patterns between laboratory and field mesocosm studies. Invited platform presentation. 35th Annual Aquatic Toxicity Workshop. Saskatoon, SK.
- Dubé, M.,** H. Schreier, L. Jackson, C. Westbrook, **B. Noble,** M. McMaster, M. Servos, K. Munkittrick, P. Duinker, and L. Greig. 2009. A framework for watershed-based cumulative effects assessment. Platform Invited. Saskatchewan Association of Watersheds Symposium. North Battleford, SK.
- Karimipour, S., and **T. Pugsley.** 2009. Application of the particle in cell approach for the simulation of bubbling fluidized beds of Geldart A Particles. Session Lead Paper. CFD 2009. Melbourne, Australia.
- McKenzie, M.** 2008. EE research: to what end? North American Association for Environmental Education Research Symposium. Opening Panel Presentation. Wichita, KS.
- McKenzie, M.** 2009. Cultural imaginaries and intersubjective experience: researching socioecological pedagogy. Monash University. Melbourne, Australia.
- McKenzie, M.** 2009. Invited symposium on methodology and pedagogy: exploring current directions in environmental education research. Closing Remarks. Co-chair. 5th World Environmental Education Congress. Montréal, QC.
- McKenzie, M.,** and A. Morehouse. 2009. Grassroots pedagogies: experience, critique, and the socioecological. Invited Division B Symposium. Ecojustice in Curriculum and Community.



- Noble, B.F.** 2008. Regional environmental assessment: concept, scope, applications. Invited workshop presentation. Cameco Corporation and Areva Resources. Saskatoon, SK.
- Noble, B.F.** 2009. Regional strategic environmental assessment. Keynote Address. World Wildlife Fund, Workshop of Regional Strategic Environmental Assessment. Ottawa, ON.
- Noble, B.F.**, and P. Duinker. 2008. Perspectives on cumulative effects assessment: towards a watershed-based approach. Aquatic Toxicity Workshop. Saskatoon, SK.
- Reed, M.G.** 2008. Community based ecosystem management and ecotourism in Canadian biosphere reserves. Invited lecture and consultation, extended by the China/Man and the Biosphere Program of UNESCO, to visit and consult with managers of the Biotianiman Biosphere Reserve, China.
- Reed, M.G.** 2008. Interrogating adaptive capacity of the society-forest system through the looking glass of gender: questions and prospects. Invited commentary for the conference Adaptation of Forests and Forest Management to Changing Climate with Emphasis on Forest Health: A Review of Science, Policies, and Practices. Umeå, Sweden.
- Reed, M.G.** 2008. Conceptualizing gender and adaptive governance in Canadian forestry communities. Invited keynote presentation for the conference Gender Issues in Natural Resources and Management – Perception and Experiences in Different Parts of the World, IUFRO Conference on Gender and Forestry. Dehradun, India.
- Reed, M.G.** 2009. Gender and governance in forestry communities. Invited lecture for the MES program, Nature-based Recreation and Tourism, School of Outdoor Recreation, Parks, and Tourism, Lakehead University. Thunder Bay, ON.
- Reed, M.G.** 2009. Gender and rurality in Canadian collaborative environmental management decision-making. Invited lecture for the PhD course: PFS0042 Gender and Natural Resource Management, Faculty of Forestry, Swedish University of Agricultural Sciences. Umeå, Sweden.

## Contributed (Non-Invited) Papers/Abstracts at Conferences

- Birk, J. and **B. Noble**. 2009. Institutional development of environmental impact assessment follow-up in the Saskatchewan uranium mining industry. Annual Meeting of the Association of American Geographers. Las Vegas, NV.
- Cuddington, A., and **K. Belcher**. 2009. The contribution of carbon-based payments toward wetland conservation compensation on agricultural landscapes. Poster presented at Ducks Unlimited Canada, Institute of Wetland and Waterfowl Research Symposium. Winnipeg, MB.
- Cunfer, G.** 2008. Manipulating the environment. Panel Commentator. Annual Northern Great Plains History Conference. Brandon, MB.
- Cunfer, G.** 2008. Is GIS changing historical scholarship? A book session on placing history (Knowles and Hillier) and historical GIS (Gregory and Ell). Organizer, Chair and Panel Discussant. Annual Meeting of the Social Science History Association. Miami, FL.
- De Laporte, A., A. Weersink, **K. Belcher** and P. Farnese. 2009. Wetland policy in Canada. Canadian Agricultural Economics Society Annual Meeting. Toronto, ON.
- Dubé, M.**, H. Schrier, C. Westbrook, **B.F. Noble**, D. Duro, A. Squires, M. McMaster, and M. Servos. 2008. The challenges of aquatic cumulative effects assessment: the need to move beyond the norm. Canada Water Network. Vancouver, BC.

**Dubé, M.**, N. Nadorozny, K. Mazurek, G. Putz, and C. Westbrook. 2009. Improving capacity for assessment and management of water: development of The Healthy River Ecosystem Assessment System (THREATS) for Saskatchewan. THREATS SK Initiation Meeting. Saskatoon, SK.

Harriman, J., and **B. Noble**. 2008. Re-defining cumulative effects assessment in the context of regionally-based strategic environmental assessment. International Association for Impact Assessment, Special Conference on Cumulative Effects Assessment. Calgary, AB.

Hart, P., C. Russell, and **M. McKenzie**. 2008. What counts as quality in environmental education research: issues of representation and legitimation. North American Association for Environmental Education Research Symposium. Wichita, KS.

Lidestav, G., and **M.G. Reed**. 2009. Making a difference in theory and practice. Organizers for the Second Gender and Forestry Conference. Umeå, Sweden.

**McKenzie, M.** 2009. Culture and practice and the research imagination, in panel on Participation, Social Justice, and Theory. American Association of Geographers Conference. Las Vegas, NV.

**McKenzie, M.** 2009. How do we restore and reinhabit through our research? 9th Invitational Seminar in Environmental and Health Education Research. Montebello, QC.

**McKenzie, M.**, C. Russell, P. Hart, and J. Heimlich. 2008. The things we do with research: or, EE research to what end? North American Association for Environmental Education Research Symposium. Wichita, KS.

**McKenzie, M.**, C. Russell, C. Fawcett, and J. Dillon. 2008. Life, art, and tears: researching pedagogy. North American Association for Environmental Education Research Symposium. Wichita, KS.

**McKenzie, M.**, J. Kayira, and A. Wals. 2009. ESD for all?: the paradox of global prescriptions for local development/participation. World Environmental Education Congress. Montréal, QC.

Nasen, L., and **B. Noble**. 2009. Assessing the impact of oil and gas activity on grassland ecosystems. Annual Meeting of the Association of American Geographers. Las Vegas, NV.

**Noble, B.** and B. Bitter. 2008. A strategic approach to regional cumulative effects assessment in the Great Sand Hills, Saskatchewan. International Association for Impact Assessment, Special Conference on Cumulative Effects Assessment. Calgary, AB.

**Noble, B.**, and J. Birk. 2009. Roles and stakes in environmental impact assessment follow-up in Saskatchewan's mining industry. Paper presentation. Annual Meeting of the Canadian Association of Geographers. Ottawa, ON.

**Reed, M.G.** 2009. Gender and collaborative planning in Canadian national parks. Annual General Meetings of the Canadian Association of Geographers. Ottawa, ON.

**Reed, M.G.** 2009. Guess who's (not) coming for dinner: expanding the terms of public involvement in Canadian sustainable forest management. Second Gender and Forestry Conference. Swedish University of Agricultural Sciences, Umeå, Sweden.

Russell, C., P. Hart, **M. McKenzie**, and L. Fawcett. 2009. Emerging issues in representation and legitimation in environmental education research. American Association of Environmental Education. San Diego, CA.

Squires, A.J., C.J. Westbrook, and **M.G. Dubé**. 2008. Identification of water quantity and quality trends contribution to cumulative effects in the Athabasca River Basin. Platform Presentation. 35th Annual Aquatic Toxicity Workshop. Saskatoon, SK.

Yu, J. and **K. Belcher**. 2009. An economic analysis of landowners' willingness to adopt riparian wetland conservation management: a Saskatchewan case study. Ducks Unlimited Canada, Institute of Wetland and Waterfowl Research Symposium. Winnipeg, MB.

## Research Grants and Contracts

**Belcher, K.** 2007 - 2009. Lower Souris Watershed Committee. Lower Souris Ecological Goods and Services Pilot – Advancing Canadian Agriculture and Agri-Food (ACAAF) Program.

**Belcher, K.** 2008. Economic Analysis of Game Farming in Saskatchewan. Dr. Paul James.

**Dubé, M.** 2006 – 2010. Development of the healthy river ecosystem assessment system (THREATS) for Saskatchewan. Saskatchewan Environment.

**Dubé, M.** 2007 – 2011. Direct and indirect effects of metal pollutants on lotic food webs: comparative sensitivities of warm water and cold water forage fish. Natural Sciences and Engineering Research Council Discovery Grant Program.

**Dubé, M.** 2008. Characterization of the reference condition for aquatic ecosystems and assessment of potential change due to mining activity in the South Nahanni River Basin (NWT), Government of Canada Department of Indian and Northern Affairs, Cumulative Impacts and Monitoring Program.

**Dubé, M.** 2008. Land-water interactions: towards sustainable development. UNESCO International Hydrology Programme.

**Dubé, M.** 2008 – 2009. Effects of land-use on Lake Diefenbaker. Mid Sask Regional Economic Development Authority.

**Dubé, M.** 2008 – 2010. Examination of the effects of mixtures, metals, and toxicity modifying factors on fathead minnows at Vale Inco, Junction Creek, Sudbury, ON. Natural Sciences and Engineering Research Council of Canada and Vale Inco, NSERC Collaborative Research and Development Program.

**Dubé, M., I. Pickering, K. Liber, and D. Janz.** 2008 – 2011. Investigation of temporal and spatial distribution, fate and biological effects of selenium in a boreal aquatic ecosystem. Natural Sciences and Engineering Resource Council of Canada, NSERC Collaborative Research and Development Program.

**Dubé, M.** 2008 – 2012. Development of the healthy river ecosystem assessment system (THREATS) for assessing and adaptively managing the cumulative effects of man-made development on Canadian freshwaters. Canadian Water Network, Network of Centres of Excellence Program.

**Dubé, M.** and K. Bakker (advisory collaborator). 2008 – 2012. Developing a Canadian water security framework as a tool for assessing cumulative impacts and improving watershed governance. Canadian Water Network, Network of Centres of Excellence Program.

**Dubé, M.** 2009. Key Lake mesocosm study of selenium effects, uptake and assimilation. Cameco Research Grant.

**Dubé, M.** 2009. Development of a framework for cumulative effects assessment and an ecological monitoring plan for northwest Saskatchewan. Saskatchewan Environment and Resource Management.

**Dubé, M.** 2009 – 2012. Remediation of selenium using microalgae. Project to support Cameco research. Saskatchewan Research Council Innovation Fund.

**Dubé, M.** 2009 – 2012. Development of a global decision-support software for assessing potential water liabilities associated with new and emerging energy technologies. Western Economic Diversification Canada.

**Franklin, S.E.** 2006 – 2011. Environmental Stress and Remote Sensing. NSERC Collaborative Research and Development Program.

**Franklin, S.E.** 2008 – 2013. LiDAR and Multispectral Remote Sensing. NSERC Discovery Grant.

**Franklin, S.E.** 2009 – 2013. Environmental Refugia/Biodiversity. Australian Research Council Linkage.

Gutmann, M. and **G. Cunfer.** 2007 – 2012. Population and Environment in the Great Plains. U.S. National Institute of Child Health and Human Development.

Hanna, K., and **B.F. Noble** (co-investigator). 2009 – 2012. Effectiveness and Canadian Environmental Impact Assessment. Social Sciences and Humanities Research Council of Canada.

**McKenzie, M.** 2009. Teacher Candidate Participatory Research. Ranton MacIntosh Research Grant, University of Saskatchewan.

**McKenzie, M.** 2009. SSHRC President's Fund, University of Saskatchewan.

**Maulé, C., and B. Si.** 2007 – 2009. Feedlot Seepage. Saskatchewan Agriculture Development Fund.

**Noble, B.F.,** A. Aitken (collaborator), and G. Poelzer (collaborator). 2009 – 2012. Strategic Environmental Assessment in Arctic Oil and Gas Development. Social Sciences and Humanities Research Council of Canada: Northern Communities Grants.

**Noble, B.F.,** R. Patrick (co-investigator), **M. Dubé** (collaborator), R. deLoe (collaborator), and H. Schrier (collaborator). 2009 – 2012. Institutional Arrangements for Watershed-based Cumulative Effects Assessment. Social Sciences and Humanities Research Council of Canada: Canadian Environmental Issues Grants.

**Reed, M.G., B. Noble, M.A. Bowden, G. Cunfer,** K. Liber, and N. Harrison. 2009. Shifting Sands: Shaping Sustainability in Northwestern Saskatchewan. Social Sciences and Humanities Research Council of Canada, Canadian Environmental Issues Workshop and Conference Grant.

**Reed, M.G.** and R. Gibson. 2009 – 2012. Environmental Governance for Sustainability and Resilience: Innovations in Canadian Biosphere Reserves and Model Forests. Social Sciences and Humanities Research Council, Canadian Environmental Issues.

Smyth, S., J. Nolan and **K. Belcher.** 2008. Economic and Spatial Impacts of Biofuels. Genetics, Ethics, Law and Society (GELS).

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## Public and Community Outreach

Outreach is a key component of the activities of the School of Environment and Sustainability. Extensive consultation with members of the campus community and stakeholders in the Saskatoon area took place in 2006 – 2007, during the preparation of the proposal to establish the School. Over the past two years, the School has continued to work with other

academic units and organizations, with the aim of creating formal and informal partnerships. The following list provides a summary of the outreach activities of the School between 2007 – 2009.

## Events and Activities Within the Campus Community

- Campus Sustainability Day: Greenhouse Gas Forum, October 24, 2007. Facilitated by Acting Director Maureen Reed.
- “Backcasting from Sustainability: An Introduction to the Natural Step Framework,” with John Purkis, The Natural Step, January 25, 2008. Presented by the Department of Geography, the Department of Native Studies, and the School of Environment and Sustainability.
- International Week 2008. Bridging Global Communities. Sponsorship of event and meeting with Severn Cullis-Suzuki. January 28 – February 8, 2008.
- Green Career Fair. Sponsorship of “Green Corporations: Paradox or Possibility?” – Toby Heaps, Corporate Knights, February 6, 2008.
- “Want to Learn More About Employment in the Environment Industry?” Presentation by Kevin Nilsen, ECO Canada, October 10, 2008. Sponsored by the School of Environment and Sustainability.
- International Week 2009. Sustainable World: Canada and Beyond. Sponsorship and participation in Career Fair. February 2 – 8, 2009.

## Events and Activities Beyond Campus

- Natural Step Training with John Purkis, January 25, 2008. Co-sponsored by the Saskatchewan Environmental Advisory Committee and the School of Environment and Sustainability, with members of City of Saskatoon Council and University of Saskatchewan stakeholders in attendance.
- Saskatchewan Environmental Industry and Managers’ Association Tradeshow, March 5, 2008. Presentation by Charles Maulé, Professor, College of Engineering.
- “Breakdown or Breakthrough? Our Environmental Prospect.” The 2008 Whelen Visiting Lectureship with Dr. Norman Myers, April 7 – 9, 2008. Acting Director Maureen Reed, Administrative Officer Sharla Daviduik, and Associate Professor Geoff Cunfer were on the Whelen Planning Committee, as was Associate Professor Niran Harrison.
- Human Ecology Week 2008: Health in Harmony with the Environment. April 7 – 11, 2008. Sponsorship by the School of Environment and Sustainability.
- “An Overview of the School of Environment and Sustainability.” Presentation to the Saskatchewan Chamber of Commerce Environment Committee by Acting Director Maureen Reed, May 15, 2008.
- “An Overview of the School of Environment and Sustainability.” Presentation to the RoadMap 2020 Sustainability Champions by Acting Director Karsten Liber, February 27, 2009.
- RCE Saskatchewan “Spring Into Action Workshop,” June 8 – 9, 2009. School faculty were involved in the planning of this workshop, and the School provided sponsorship and administrative support.
- Task Force on City-University Sustainability Initiatives. The School’s Executive Sponsor and Acting Director are members of this Task Force, which includes representatives from the University of Saskatchewan Facilities Management Division, Office of Sustainability, and the College of Engineering. Membership from the City of Saskatoon includes representatives from Infrastructure Services, Utility Services, and Environmental Services. Administrative support is provided by the School. The Task Force’s mandate is to provide advice and input to the City of Saskatoon and the University of Saskatchewan on the potential for and strategies associated with joint sustainability initiatives that can improve the quality of the local environment and contribute to innovation in a manner that is socially acceptable, environmentally sound, and economically feasible. Examples of initiatives include the implementation of “green” purchasing policies and testing recycled materials for use in road paving. Meetings were held on January 17, 2008, March 3, 2008, April 21, 2008, September 4, 2008, November 13, 2008, March 2, 2009, and May 8, 2009.

## Governance

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### Committees

The School of Environment and Sustainability follows a collegial model of decision-making, where committees are responsible for overseeing the development of many academic policies and procedures, with final approval from the faculty as a whole. Two major committees, the Admissions and Awards Committee and the Academic Programs Committee, were struck in 2008 – 2009. Their membership was as follows:

#### **Admissions and Awards Committee**

- Ken Belcher, Associate Professor, Graduate Chair
- MJ Barrett, Assistant Professor
- Marie-Ann Bowden, Professor
- Bing Si, Associate Professor

#### **Academic Programs Committee**

- Charles Maulé, Professor, Chair
- Monique Dubé, Associate Professor (*to January 2009*)
- Marcia McKenzie, Assistant Professor
- Bram Noble, Associate Professor (*as of January 2009*)

## Infrastructure

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Prior to the appointment of its core faculty and the approval of its academic programs, the School was housed in offices in the Arts Building (autumn 2007). In November 2007, the SENS administrative office moved to a vacant office in the Law Building; the College of Law provided additional office space for administration, faculty (standard and primary-joint appointments), and students in 2008. Faculty with secondary-joint appointments continued to maintain their offices in their home departments. However, with new faculty appointments and the increased student intake expected in autumn 2009, additional space will be needed. The School will also need to acquire laboratory space in order to realize its full potential, as it cannot develop strength in the natural sciences without such space.

The School continues to work with Facilities Management Division to finalize renovation details for its permanent home in Kirk Hall. SENS will occupy the entire north wing of the third floor of Kirk Hall, with additional office space allocated in the west wing. The School expects to move to Kirk Hall in autumn 2009.

## Finances

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### School of Environment & Sustainability

#### Consolidated Statement of Operations

For the Period from May 1, 2008 – April 30, 2009

<b>Fund balances, beginning of year</b>	\$132,789.45
<b>Revenue<sup>(1)</sup></b>	
Student Fees	\$2,037.58
Base Budget (University of Saskatchewan)	374,915.98
Internal Transfers	
Graduate Scholarship Allocation	60,000.00
Capital Equipment Allocation	8,000.00
Additional Transfers <sup>(2)</sup>	257.49
<b>Total Funds Available</b>	<b>\$578,000.50</b>
<b>Expenses</b>	
Salaries	287,581.10
Employee Benefits	42,575.71
Operational Supplies and Expenses	25,793.26
Travel	6.27
Maintenance, Rental and Renovations	175.15
Scholarships, Bursaries and Prizes	10,000.00
Capital Assets	7,932.97
<b>Total Expenses</b>	<b>\$374,064.46</b>
<b>Fund balances, end of year<sup>(3)</sup></b>	<b>\$203,936.04</b>

- (1) Only operating funding is summarized; research funding for the School of Environment and Sustainability is not included.
- (2) Relates to Minor Capital Equipment funding for 2007 - 2008 that was transferred in during 2008 - 2009 as well as a transfer out of funds to support International Week.
- (3) The funding allocation provided an allowance for initial start-up costs to permit the School to grow and become fully operational. This surplus will become depleted over time.