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THE UNIVERSITY OF BRITISH COLUMBIA



# CEAR

The UBC Centre for Environmental Assessment Research

Okanagan Campus





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## The UBC Centre for Environmental Assessment Research

*Environmental assessment (EA) is a practical tool that supports planning and decision-making by assessing and identifying ways to enhance benefits and mitigate the potential negative impacts of development on the environment.*

### Aims

The UBC Centre for Environmental Assessment Research (CEAR) supports research about EA processes and methods, and helps integrate this information into practice. Research conducted or supported by CEAR contributes to resource development by furthering knowledge about the role that EA plays in helping to advance natural resource management practices that benefit Canadians.

CEAR facilitates the connection of conceptual, technical and applied knowledge to decision-making processes by providing a unique setting for collaboration.

The interdisciplinary approach taken by researchers linked through CEAR helps build synergies across a range of EA practice communities.

The Centre provides opportunities for participation in workshops, seminars, and guest lectures covering a range of themes in EA practice. These events support both research and training.

Activities at CEAR are open to involvement by individuals from outside UBC interested in EA and emerging challenges in natural resource management.

### Research

The emphasis at CEAR is to address key challenges in EA practice and application. This provides the foundation for our research and extension activities:

- Research that contributes to advancing EA as a planning and environmental protection tool in key Canadian resource and infrastructure sectors – such as energy, mining, transportation and municipal infrastructure.
- Research on the role of EA in supporting resource management, planning and decision-making by First Nations and Indigenous communities.
- Research in key and growing areas of EA practice, such as cumulative effects assessment, regional assessment, and accounting for climate change.
- Research that helps improve EA practice by supporting the evaluation of EA processes, regulations and law.
- Research that advances EA as an integral tool for supporting sustainability, and advancing environmental management and protection.
- Research that is connected to practice.

## Supporting Collaboration and Partnerships

### *Strategic research interests*

Looking toward the next five years, we see five key areas where our research capacities can support EA practice and application. **First**, helping to advance the role of Indigenous communities in EA processes, including the improved integration of communities and traditional knowledge into EA reviews, decisions, monitoring and follow-up. **Second**, improving the design of mitigation and follow-up programs. **Third**, broad terms such as ‘the precautionary principle’, values and significance remain difficult to define and apply with precision. There is a need for work that can better frame such concepts for use in EA practice. **Fourth**, integrating climate change into EA at multiple scales. And **fifth**, continuing our research on cumulative effects assessment.

### *Connecting to practice*

CEAR is now establishing an External Advisory Committee that will help identify research needs and opportunities, and provide connections between outcomes and practice. The CEAR advisory group will include people from governments, First Nations and Indigenous organizations, industry and business, conservation and environmental organizations, the legal profession, and other sectors.

Located in the Fipke Centre for Innovative Research at UBC’s Okanagan Campus, CEAR provides infrastructure to support and help coordinate EA research across Canada and across disciplines.

CEAR’s facilities are accessible to university colleagues from outside UBC and to those from government, First Nations, industry, and other sectors who want to participate in research and training. The setting and approach provide an opportunity for students to benefit from interaction with practitioners.

### *Integrating research and learning*

Many of the challenges and development issues that EA addresses, and the impacts of policy changes that affect EA practice in Canada are being actively debated by Canadians. EA provides a key setting for addressing different perspectives on resource use, and for informing and improving resource planning and management.

The demand for EA practitioners from a range of fields is strong and growing. Research and teaching in EA has long been interdisciplinary. The field typically requires practitioners with a breadth of scientific, technical and administrative knowledge, and many of those working in EA have graduate training.

At CEAR, graduate student research and training can be conceptually broad, but also focused on specific projects, regions, sectors or resources. Graduate learning opportunities at UBC’s Okanagan Campus include a range of advanced and innovative qualitative and quantitative tools – including the use of statistical methods, geographical information systems, modelling, risk analysis, consultation and participation, field methods, and coursework covering a variety of key development and resource sectors.

### *Skills and research diversity*

EA is a diverse and inherently interdisciplinary field. The assessment work environment emphasizes strong analytical abilities, solid writing and communication capabilities, and the skills to understand and synthesize information from a range of scientific, applied science and social science disciplines.

CEAR faculty members come from the social and physical sciences and applied sciences, and together they provide a strong interdisciplinary foundation for learning and skills development.

## Profiles

### Five Graduate Research Stories

#### GILLIAN VLASSCHAERT, MASTER OF ARTS

Gillian is working on a project with the BC Ministry of Forests Lands and Natural Resource Operations. Gillian's research is developing an approach to evaluation so that resource management agencies can better understand how knowledge from new information systems is used to help make decisions. Gillian's work centres on understanding how the data and systems developed as part of BC's new Cumulative Effects Framework are helping to inform natural resource management.

#### BRENT DEWOLFF, MASTER OF SCIENCE

Brent is examining the management of BC's natural resource roads and impacts on the environment and road users. His work focuses on the human-environment relationship facilitated by resource roads in wilderness areas. Brent's research looks at the networks of individuals who administer, manage, and use wilderness roads. The project explores how management information is disseminated, how stakeholders are involved in processes of road administration, and the effectiveness of strategies designed to lessen the impact of roads on sensitive ecosystems and wildlife.

#### STEPHEN DECKER, PHD

Stephen's work focuses on the human dimensions of wildlife management. His research is based in Newfoundland and Labrador where provincial resource managers face a range of wildlife management issues, including the impacts of resource use.

Stephen's research explores integrative approaches in Woodland caribou management. In many areas around the world failure to give more than token attention to the knowledge and opinions of local communities and resource users has resulted in opposition to resource and wildlife management efforts. This research will contribute to a better understanding of barriers and improving

opportunities for collaboration between wildlife managers and local residents.

#### ROB FRIBERG, PHD

Rob is exploring challenges and opportunities for incorporating climate change considerations within strategic-level resource management decisions, environmental assessment and land-use planning in BC. This research responds to a growing need to support decision making in the face of increasing uncertainty about future environmental conditions, and the implications of cumulative environmental effects from resource development and climate change.

BC's emerging cumulative effects framework and strategic-level planning and policy approaches at provincial and regional scales will form an important component of the study. Through a collaborative, participatory approach with stakeholders and experts, Rob's work will develop insights to support integrated governance approaches which facilitate ecological and socio-economic resilience across resource-based landscapes and regions.

#### BRANDON GREGG, MASTER OF ARTS

In partnership with the BC Ministry of Forests, Lands and Natural Resource Operations, Brandon is working to develop a methodology for identifying historic trends in forest biodiversity. The ability of Geographical Information Systems to incorporate temporally and spatially diverse data for a range of variables, and from a variety of sources, may be a critical advantage of BC's new Cumulative Effects Assessment Framework.

Brandon's research explores the feasibility of using a new protocol – including what data is needed and available, what software and tools are best suited, what level of detail is possible, and the practical potential for using some approaches in resource management.

## Profiles

### Supporting the Next Generation of Researchers

By May Li

[TAYLOR CLARK LOVES SNOW](#). It's only fitting that the UBC Okanagan Geography undergraduate student discovered snow-science, born out of a passion for skiing.

"I find it so fascinating that a small, delicate snowflake can lead to the immense, destructive power of avalanches," he says.

Studying at UBC's Okanagan campus means "being able to ski at Big White, downhill long board, and rock climb in unique places around the Okanagan. Where else can you finish class and be able to be on a chairlift in under an hour?!"

Clark originally intended to pursue a degree in economics. However, after taking a first-year Geography class, his interests changed and he became fascinated with the forces that shape our physical landscape. His newfound focus led him to conduct a directed-studies project analyzing weak layers and bed surfaces in avalanches in the Columbia Mountains in southeastern British Columbia and parts of the U.S.

Taylor has had a unique undergraduate opportunity. He has worked at the CEAR on a project that focuses on gap analyses of avalanche research in Canada along transportation corridors.

"I have examined avalanche research published from 1995 onward to develop a picture of what type of work has been done, where our knowledge strengths are, and what work needs to be done."

In particular, the research group is interested in avalanche costs and infrastructure needs for transportation routes, and understanding how these

issues might be factored into environmental assessment. This includes looking at past studies done in key places such as British Columbia highways: Coquihalla Highway and Rogers Pass.

"This has been a unique opportunity for an undergraduate student, and it provides a chance to think about career opportunities, possible graduate research, and developing research leadership skills," says Clark.

"Professors Fes de Scally and Kevin Hanna have been supervising and supporting this work, but the experience has really felt more like collaboration with colleagues."



*Analysing weak layers and bed surfaces in avalanches.*

Photo: Taylor Clark, 2015.

## CEAR Members

Members work across many disciplines and bring a broad range of skills sets and expertise to CEAR. Faculty come from the social, biophysical and applied sciences. The membership reflects the diversity of knowledge needs and the multi-disciplinarily qualities of environmental assessment practice in Canada.

**Kevin Hanna**, CEAR Director, Associate Professor, Geography, UBC, Okanagan Campus

**Gary Bull**, Professor, Chair of the Department of Forest Resources Management, Faculty of Forestry, UBC, Vancouver Campus

**Michael M. Burgess**, Professor, UBC Okanagan Campus, and the W. Maurice Young Centre for Applied Ethics, School of Population and Public Health, and Department of Medical Genetics

**Jon Corbett**, Associate Professor, Geography, UBC, Okanagan Campus

**Ross Hickey**, Assistant Professor, Economics, UBC, Okanagan Campus

**Bram Noble**, Professor, Environmental Assessment, University of Saskatchewan

**James Olson**, Professor, Associate Dean Research and Industrial Partnerships, Faculty of Applied Science UBC, Vancouver Campus

**John Parkins**, Professor, Resource Economics and Environmental Sociology, University of Alberta

**Lael Parrott**, Associate Professor, Director of the Okanagan Institute for Biodiversity Resilience and Ecosystem Services Director, UBC, Okanagan Campus

**Murray Rutherford**, Associate Professor, Resource and Environmental Management, Simon Fraser University

**Rehan Sadiq**, Professor, Associate Dean, School of Engineering, Faculty of Applied Science, UBC, Okanagan Campus

**Donna Senese**, Associate Professor, Geography, UBC Okanagan Campus

**David Scott**, Associate Professor, Earth and Environmental Sciences, UBC, Okanagan Campus

**D. Scott Slocombe**, Professor, Geography and Environmental Studies, Wilfrid Laurier University



The Fipke Centre for Innovative Research at UBC's Okanagan campus

Support for CEAR facilities is provided by the Canada Foundation for Innovation, the BC Knowledge Development Fund and The University of British Columbia.

For more information about CEAR and its researchers please contact Kevin Hanna at [kevin.hanna@ubc.ca](mailto:kevin.hanna@ubc.ca).

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