

**2010-2011 Annual Report of the Natural Resources and Environmental  
Studies Institute  
31 March 2011**

**Overview of NRES Institute**

*OUR PURPOSE*

The Natural Resources and Environmental Studies Institute (NRES Institute) is a formal association of UNBC faculty and affiliates that promotes integrative research among its members to address natural resource systems and human uses of the environment, including issues pertinent to northern regions. The Institute's primary goal is to foster research across perspectives to better understand the functions, viability, and values of natural resource systems.

Founded on and governed by the strengths of its research-active members, the NRES Institute creates opportunities for collaboration among its members to work on complex problems and to disseminate results. It advocates both fundamental and applied research approaches to resource use that conserve ecosystem health, and sustain resource-dependent communities. The NRES Institute serves to create alliances among researchers, resource managers, and representatives of all levels of governance and industry, communities, and First Nations, which are necessary to integrate research into management, and to keep research relevant and applicable to problems that require innovative solutions.

*WHAT WE DO*

By enabling communication among researchers and potential external partners, the NRES Institute provides a conduit for basic and applied research opportunities from outside of the university, as well as a means to synthesize research findings for dissemination beyond academia. As well, we create an important bridge to the NRES Graduate Programs by providing graduate students with opportunities to interact with researchers and to showcase their own research activities. Synthesis and extension is encouraged through the peer-reviewed NRES Institute Extension Note and NRES Institute Occasional Paper Series.

*LONG-TERM VISION*

We envision the NRES Institute continuing to develop as a recognized leader in environmentally focused research and as an identifiable unit to which communities, industry, and government can turn for help with research questions and assessments of research needs.

**GOVERNANCE**

The NRES Institute is overseen by a Director (three-year term). The Director continues to work closely with an internal Steering Committee (all elected to 2-year terms by the membership of the Institute), who reflect the perspectives of the members of the Institute and ensure that it functions in accordance with its vision statement and purpose. Members of the Steering Committee that served partial or full terms during FY 2010-2011 are listed in Table 1.

Table 1. Steering Committee membership during FY 2010-2011.

<b>Name</b>	<b>Role</b>	<b>Term</b>
Michael Gillingham	Director	1 July 2008 – 30 June 2011
Kathy Lewis	Elected Member	1 July 2009 – 30 June 2011
Phil Owens	Elected Member	1 July 2008 – 30 June 2010
Phil Mullins	Elected Member	1 July 2010 – 30 June 2012
Dennis Procter	Elected Member	1 Jan 2010 – 31 Dec 2011
Ken Otter	NRES Grad Program Chair	No Fixed Term
Kyle Aben	PICS Representative	No Fixed Term
Art Fredeen	Publications Editor	Ex Officio

The NRES Institute Management Committee, which includes the Vice-President Research (Dr. Gail Fondahl), an NRES Graduate Student (Current elected student is Alex Koiter), the Dean of the College of Science and Management (Dr. Dan Ryan, ex-officio), and all members of the NRES Institute Steering Committee, meets at least once annually to seek input on the performance of the Institute.

## MEMBERSHIP

There are currently 73 members of NRES Institute (Table 2). A description of each member's research interests, and links to additional information on each member, can be found on the NRES Institute web site at [http://www.unbc.ca/nres/institute\\_members.html](http://www.unbc.ca/nres/institute_members.html).

Table 2. NRES Institute members during FY2010-2011. The four new members are indicated with an <sup>N</sup> beside their names; Associate members are indicated by the start date for their current three-year term.

<b>Name</b>	<b>Membership</b>
Aben, Kyle	November 20, 2009
Alstrom-Rapaport, C.	August 1, 2009
Arocena, Lito	Full
Aukema, Brian	August 1, 2010
Booth, Annie	Full
Burton, Philip	Full
Connell, David	Full
Costello, Allan <sup>N</sup>	Full

<b>Name</b>	<b>Membership</b>
Coxson, Darwyn	Full
Curry, John	Full
Dawson, Russ	Full
Déry, Stephen	Full
Egger, Keith	Full
Erasmus, Daniel <sup>N</sup>	Full
Fondahl, Gail	Full
Fredeen, Art	Full

Garcia, Oscar	Full
Gillingham, Mike	Full
Green, Scott	Full
Haeussler, Sybille	July 20, 2009
Hall, Kevin	Full
Halseth, Greg	Full
Hanlon, Neil	Full
Hardy, Anne	September 1, 2008
Hartley, Ian	Full
Hawkins, Chris	Full
Hawley, Alex	Lifetime Member
Heard, Doug	March 7, 2010
Helle, Steve	Full
Huber, Dezene	Full
Hume, Harold	March 21, 2010
Jackson, Peter	Full
Johnson, Chris	Full
Karjala, Melanie	November 9, 2009
Kennedy, Nabla	November 20, 2009
Lavallee, Loraine	Full
Lewis, Kathy	Full
Li, Jianbing (Jason)	Full
Lindgren, Staffan	Full
Maher, Pat <sup>N</sup>	Full
Massicotte, Hugues	Full
McGill, Bill	Full
Menounos, Brian	Full
Mullins, Phil <sup>N</sup>	Full
Murray, Brent	Full
Nolin, Catherine	Full

Opio, Chris	Full
Otter, Ken	Full
Owens, Philip	Full
Parker, Katherine	Full
Petticrew, Ellen	Full
Procter, Dennis	Full
Psyllakis, Jennifer <sup>N</sup>	March 1, 2011
Rapaport, Eric	January 1, 2009
Rea, Roy	Full
Rutherford, Mike	Full
Sambaraju, Kishan	October 10, 2008
Sanborn, Paul	Full
Sherry, Erin	September 14, 2009
Shrimpton, Mark	Full
Shultis, John	Full
Stevenson, Susan	April 5, 2009
Sui, Jueyi	Full
Summerville, Tracy	Full
Tang, Youmin	Full
Thring, Ron	Full
Wallis, Chris	July 2, 2008
Wheate, Roger	Full
Whitcombe, Todd	Full
Wilkerson, Orland	Full
Wilkening, Ken	Full
Wright, Pam	Full
Young, Jane	Full

## Report on Activities for 2010-2011

- There are currently 73 members of NRES Institute made up of 57 Full members (inclusive of one life-time member) and 16 Associate members. Membership activity in 2010-2011 included the addition of 3 new Full members, 1 new Associate member, and the non-renewal of 2 Associate members.
- The Institute hosted 24 colloquia as part of the weekly NRES Institute Colloquium Series (past abstracts available at [www.unbc.ca/nres/seminar/index.html](http://www.unbc.ca/nres/seminar/index.html)). Travel costs for four of the Colloquia speakers were paid for by the Institute. The series included the Peace Williston Fish and Wildlife Compensation Fund Annual Lecture, three Colloquium sponsored by the UNBC Fish and Wildlife Student Chapter of The Wildlife Society, and a colloquium co-hosted by the NRES Institute and the Pacific Institute for Climate Solutions.
- The 'virtual' audience attending the Elluminate broadcast versions of the Colloquia continued to grow. Weekly on-line attendance averaged about 10% of the in-room audience and totaled well over 200 viewers for the semester.
- The 6th Annual NRES Graduate Fall Research Social was held on October 1<sup>st</sup> to showcase the work of NRES Graduate Students and to welcome new graduate students to the program (approximately 14 poster presentations). We continued the model of pairing this event with a presentation by a speaker nominated by the NRES Graduate Students – Dr. Peter Kevan from the University of Guelph.
- The 6th Annual NRES Institute Research Forum (April 7th) will show case current research of NRES Graduate Students and Institute members. This event, which precedes the Annual Lecture, will feature posters by Institute members and their graduate students.
- The 6th Annual NRES Institute Lecture (April 7th) will feature Dr. Peter Ward (University of Washington).
- Three NRES Occasional Papers was published during FY 2010-11:
  - Occasional Paper No. 6: García, O. 2010. Models and limits to predictability. Natural Resources and Environmental Studies Institute Occasional Paper No. 6, University of Northern British Columbia, Prince George, B.C., Canada.
  - Occasional Paper No. 7: Haeussler, S. 2010. Climate change adaptation for British Columbia Forest and Range Ecosystems: an analysis of existing research frameworks and research needs for the Future Forest Ecosystem Scientific Council (FFESC). Natural Resources and Environmental Studies Institute Occasional Paper No. 7, University of Northern British Columbia, Prince George, B.C., Canada.
  - Occasional Paper No. 8: Noble, B. 2010. Cumulative environmental effects and the tyranny of small decisions: towards meaningful cumulative effects assessment and management. Natural Resources and Environmental Studies Institute Occasional Paper No. 8, University of Northern British Columbia, Prince George, B.C., Canada.

Papers in the peer-reviewed Occasional Papers Series are available in PDF format from [www.unbc.ca/nres/occasional.html](http://www.unbc.ca/nres/occasional.html).

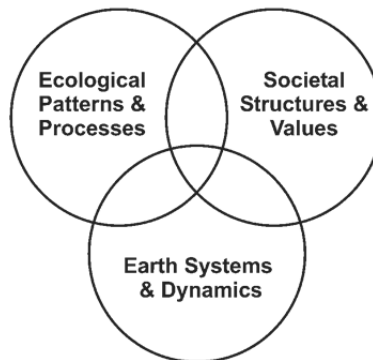
- One NRES Institute Research Extension Note was published during 2010-11:  
REN-06 Biological and physical characteristics of drinking water from wells in Kamdini Parish, Northern Uganda. (Chris Opio, 2010)

Papers in the peer-reviewed Research Extension Notes Series are available in PDF format from [www.unbc.ca/nres/research\\_extension\\_notes.html](http://www.unbc.ca/nres/research_extension_notes.html).

- Throughout 2010-11, the Institute's Director and UNBC Pacific Institute for Climate Solutions (PICS) representative, Kyle Aben, worked together to maximize the linkages between PICS and the NRES Institute. In 2009, Kyle became a non-term member of the Institute's Steering Committee and he has worked hard to help promote not only the linkage between PICS and the Institute, but also the Institute itself drawing on his past experience as a fund raiser. As one of the outcomes of revisions to the format of the weekly NRES Institute Newsletter (distributed to all Institute members, NRES Graduate Students, and about 150 individual locally and provincially), a new weekly feature entitled 'PICS News' has been added to the newsletter. PICS also sponsored one of the NRES Institute Colloquia, bringing in an expert from the UK on the psychology of climate change, and contributed to enhancing the NRES graduate student participation in the NRES Institute's Annual Lecture event.
- Throughout FY 2010-2011, the Institute maintained its 'loose' association with the Future Forests Ecosystem Science Council (FFESC) – the UNBC Coordinator for the FFESC program, Sybille Haeussler (an NRES Institute Associate member), is housed within the NRES Institute office when she is on campus. Dr. Haeussler's GAP analysis (funded by FFESC) was published as an NRES Institute Occasional Paper.
- During FY 2010-2011, the Institute's Director worked with Institute members to update the Institute's Google Earth interface that links research-specific websites with physical research locations in Google Earth ([www.unbc.ca/nres/research\\_locations.html](http://www.unbc.ca/nres/research_locations.html)). There are currently 141 NRES Institute research-related locations on the web site.
- In October 2010, the NRES Institute and the Community Development Institute (CDI) were approached to lend their support to an Omineca Beetle Action Coalition (OBAC) proposal for an OBAC agricultural initiative partnership with UNBC. The NRES Institute and the CDI have since been asked by OBAC and the UNBC VP Research to help facilitate a working group that will attempt to rank the needs of this initiative relative to agricultural initiatives in northern BC. The directors of CDI and the NRES Institute have agreed to co-chair such a working group.
- During this reporting period, the NRES Institute has taken on the role of promoting the presentation of Undergraduate Theses (NRES 430 and related disciplines) within the College of Science and Management. By sponsoring this coordinated event (to be held on April 4<sup>th</sup> in 2011) it is the hope of the Institute's Steering Committee that we can help to better engage and highlight undergraduate involvement in research at UNBC.

## RESEARCH

The NRES Institute links a community of researchers with varied backgrounds and research interests empowering them to pursue their disciplinary research in an interdisciplinary context. Consequently, many of the research initiatives undertaken by Institute members are collaborative efforts with other Institute members. Research endeavors can be broadly grouped into one or more of the following categories: *Ecological Patterns and Processes*, *Societal Structures and Values*, and *Earth Systems and Dynamics*.



Individual members of the Institute have strong disciplinary expertise in the natural, physical, environmental and social sciences. The NRES Institute provides a forum to promote integrative research to address natural resource systems and human uses of the environment, including issues pertinent to northern regions.

Please see [www.unbc.ca/nres/research.html](http://www.unbc.ca/nres/research.html) for a complete list of current research projects. Many of the projects currently being undertaken by Institute members can be viewed in a Google Earth format from the NRES website (<http://www.unbc.ca/assets/nres/projects.kmz>).

During FY 2010-2011, the Director and Steering Committee attempted to assess interest in a number of potential Institute-wide research initiatives. As a follow up to the Occasional Paper on Bioenergy published by a number of Institute members in early 2009, a number of exploratory discussions were held between Institute members (sitting on the Board of Directors of the John Prince Research Forest) and the Tl'azt'en First Nation about potential. In August 2010, the Institute Director, the Director of the CDI, and the VP Research met with the Tl'azt'en on the Tachie Reserve to explore how UNBC might facilitate the Tl'azt'en's exploration of using bioenergy at the community scale. No firm developments have yet to arise from these discussions.

As a follow up to the NRES Institute Annual Lecture on cumulative effects, and the Institute's Occasional Paper on Cumulative Effects written by Dr. Bram Noble, the Institute (led by Drs. Fredeen, Summerville, and Gillingham) developed a proposal for a series of workshops on cumulative effects. The submission, entitled "Climate change in the context of cumulative impacts: Maintaining resilient northern BC ecosystems", proposed to bring together a 'community of practice' within the diverse membership of the NRES Institute to attempt to place climate change in a cumulative-effects framework. Although this initiative was not funded, we

will continue to pursue ways in which Institute members can contribute to the examination of cumulative effects within the BC context.

## **BUDGET REPORT**

Total revenues for FY 2010-2011 came from the single source of overhead redirection.

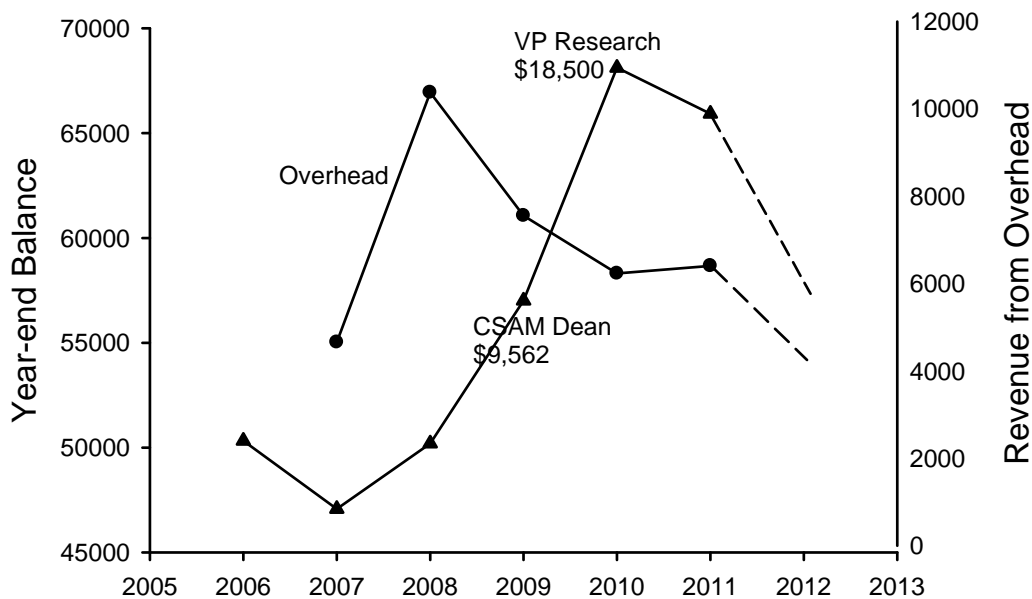
Overhead redirection from the Vice-Provost for Research and matching overhead redirection from the Ecosystem Science and Management Program (B. Aukema, A. Booth, A. Fredeen, S. Lindgren, K. Otter, K. Parker, R. Rea, P. Sanborn, J. Young), and from Environmental Science (L. Arocena, P. Jackson) totaled \$6,408.

Total expenditures (\$8,955.00) included the stipend to the Director, sponsorship of the NRES Institute Colloquium series, advertising, support for the Fall Grad Ice Breaker, office costs, and the partial support of the NRES Institutes Annual Lecture and Research Poster Session. Our year-end closing balance was \$65,927.00, a net decrease in our year-end balance of approximately \$2,547 from FY 2010-2011 (Table 3; Figure 1).

Table 3. Brief budget summary for the NRES Institute's operating budget (30181) in FY 2009-2010. A detailed breakdown of the budget can be found in Appendix I.

<b>Opening Balance (April 2010)</b>	\$68,475.00
<b>Total Revenues (FY 10-11)</b>	\$6,408.00
<b>Total Expenditures</b>	<b>(\$8,955.00)</b>
<b>Year End Balance</b>	\$65,927.00

Figure 1. Trend (2006 through 2011, with projection to 2012) in the year-end balance for the Institute's operating budget (left axis) and revenue from overhead redirection (right axis). The marked increase in year-end balances for FY 2008-2009 and FY 2009-2010 were the result of one-time transfers to the NRES Institute operating budget, despite the continued decline in the value of overhead redirection to the Institute since FY 2007-2008.



Because the current funding model for the NRES Institute is fundamentally dependent on overhead redirection, the Director will continue to work with each member of the Institute to ensure that they both maximize their research overhead return to UNBC, and that they consider fully participating in the overhead redirection program available to Institute members. We are confident that this approach will both maximize the return to the University and to the Institute.

The Institute has three additional endowments. The main endowment (70105) is the Northwood/Canfor endowment (former to the NRES Faculty). This endowment gained approximately \$6320 in interest during 2010-2011 with expenses for the NRESI Annual Lecture projected to be approximately \$3000. The NRESI Endowment (46055) has an FY 2010-2011 year-end balance of \$4,384.37. In addition, plans to merge the Linnea Fund (34164; balance \$3,600.00) with the NRESI Endowment have been put on hold because the nature of the two funds are fundamentally different – the Linnea fund permits the spending of the principle while the NRESI Endowment is a traditional endowment fund in which only interest can be used.

### PLANS FOR 2011-2012

The biggest challenge facing the NRES Institute is that, despite continued efforts by the Director and Steering Committee to work with the upper administration at UNBC, the Institute is not getting any closer to its goal of becoming self-sustaining and, for the most part, exists because of the efforts of few individuals who are running the Institute ‘off the side of the desk’. For its long-term success it needs to grow to the level where it can be sustained with reasonable efforts by those adequately resourced to maintain it. Although clearly central to UNBC’s mission and increasingly called upon by UNBC to assist with UNBC’s mandate, the Institute is not currently in a position that guarantees its continued existence despite its extensive membership. It is critical that the Institute secure half-time administrative support to be sustainable. Although a number of models have been suggested and discussed with the Administration over the last several years, it is critical that the Institute acquire these resources soon.



The Institute intends to continue to play a role in facilitating UNBC-based research as part of the Pacific Institute for Climate Solutions and to attempt to contribute to the development of a cumulative-impacts framework within British Columbia. To that end, the Institute intends to explore possible linkages with Resources North (<http://www.resourcesnorth.org>) in contributing to such a framework. We will continue to sponsor the Colloquium Series, an NRES Graduate Student Icebreaker early in Fall 2011 (the guest lecturer has already been identified), as well as the Annual Research Forum and Annual Lecture Series during Winter 2012. Some of the changes/initiatives that the Institute intends to initiate in 2009-2010 include the following.

- The Institute will continue to work with the Office of External Relations and the Vice-President Research to build financial support for the Institute.
- Although the Institute may be able to contribute to specific research initiatives as a whole, the Steering Committee intends to work with the membership to determine the best ways to foster the continued development of interdisciplinary research among Institute members. As funds become available, potential ways in which the Institute may benefit its members could include assistance with proposal development, conference travel, networking meetings, seed grants, and/or graduate student fellowships.
- The NRES Institute was one of the important components in the announcement of the New North Foundation. During the next year, the Steering Committee intends to continue to engage UNBC's administration in how the Institute could realize its potential as a key player in this initiative.
- The Steering Committee believes that the Institute can play a lead role in interdisciplinary research around the concept of cumulative impacts – not only from an ecological and resource perspective, but also from the perspective of northern communities, and First Nations.
- The Institute intends to continue to support the NRES Graduate Program, while promoting NRES Institute Extension Notes, by continuing to offer a cash prize for the best Extension Paper authored by an NRES Graduate Student (\$500 split equally between NRES Institute and Dean of Graduate Programs). This Annual competition will be held in September of each year and will be adjudicated by a sub-committee of the NRES Institute Steering Committee.
- The Institute will continue to reach out to members of the UNBC community and general public by continuing to broadcast all of the NRES Institute Colloquia on the web. To become more efficient at delivering Colloquia, the Steering Committee has decided to redirect funds currently spent on weekly refreshments into: 1) employing a graduate student to cover the Elluminate broadcasts of the Colloquia; and 2) to divert additional monies into the support of Colloquia speakers.
- To encourage the continued growth and accessibility of the NRES Institute publications, the Director will be working with the UNBC Librarian to house the Research Extension Note and Occasional Paper series within the soon-to-be-formed UNBC Digital Repository.

For more details on NRES Institute, please visit our website at [www.unbc.ca/nres](http://www.unbc.ca/nres)