

**2009-2010 Annual Report of the Natural Resources and Environmental
Studies Institute
15 April 2010**

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. In 2009, two additional positions were created on the NRES Institute Steering Committee: a publications editor (ex-officio) and a seat for a Pacific Institute for Climate Solutions (PICS) representative. Members of the Steering

Committee that served partial or full terms during FY 2009-2010 are listed in Table 1.

Table 1. Steering Committee membership during FY 2009-2010.

Name	Role	Term
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 Burton	Elected Member	1 January 2008 – 31 Dec 2009
Dennis Procter	Elected Member	1 January 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 **Katherine Stewart**), the Dean of the College of Science and Management (**Dr. Bill McGill**, 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

Table 2 lists the current 70 members of NRES Institute – the five new members are indicated with an ^N beside their names; Associate members are indicated by the start date for their current three-year term. 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.

Table 2. NRES Institute members during FY2009-2010

Name	Membership
Aben, Kyle ^N	November 20, 2009
Alstrom-Rapaport, C.	August 1, 2009
Arocena, Lito	Full
Aukema, Brian	Full
Booth, Annie	Full
Burton, Philip	Full
Chipeniuk, Ray	May 1, 2007

Name	Membership
Lewis, Kathy	Full
Li, Jianbing (Jason)	Full
Lindgren, Staffan	Full
Massicotte, Hugues	Full
McGill, Bill	Full
Menounos, Brian	Full
Montgomery, Patrick	January 1, 2008

Name	Membership
Connell, David	Full
Coxson, Darwyn	Full
Curry, John	Full
Dawson, Russ	Full
Déry, Stephen	Full
Egger, Keith	Full
Fondahl, Gail	Full
Fredeen, Art	Full
Garcia, Oscar	Full
Gillingham, Mike	Full
Green, Scott	Full
Haeussler, Sybille ^N	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 ^N	March 21, 2010
Jackson, Peter	Full
Johnson, Chris	Full
Karjala, Melanie	November 9, 2009
Kennedy, Nabla	November 20, 2009
Lavallee, Loraine	Full

Name	Membership
Murray, Brent	Full
Nolin, Catherine	Full
Opio, Chris	Full
Otter, Ken	Full
Owens, Philip	Full
Parker, Katherine	Full
Petticrew, Ellen	Full
Procter, Dennis	Full
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 ^N	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 2009-2010

- There are currently 70 members of NRES Institute made up of 55 Full members (inclusive of one life-time member) and 15 Associate members. Membership activity in 2009-2010 included the addition of 4 new Associate members, and the 3-year renewal of 3 Associate members.

- The Institute hosted 35 colloquia (up from 29 in 2008-2009) as part of the weekly NRES Institute Colloquium Series (past abstracts available at www.unbc.ca/nres/seminar/index.html). As proposed in our last Annual Report, the Institute began a program of providing matching funds to bring in one Colloquium speaker per semester. The series included the Peace Williston Fish and Wildlife Compensation Fund Annual Lecture, the 2nd Annual Colloquium sponsored by the UNBC Fish and Wildlife Student Chapter of The Wildlife Society, and a colloquium co-hosted by the NRES Institute, PICS, and the Psychology Program.
- In September 2009, the Institute purchased the audio-visual equipment necessary to enable us to broadcast our Colloquium series on the web (thus avoiding the weekly fees charged by the Teaching and Learning Centre). Weekly on-line attendance averaged about 10% of the in-room audience and totaled well over 100 viewers for the semester. Demand for this service continues to grow, as do requests for the Institute to archive talks, but we will continue to maintain our policy of making these presentations available in real-time only.
- The 5th Annual NRES Graduate Fall Research Social was held on October 2nd to showcase the work of NRES Graduate Students and to welcome to graduate students to the program (approximately 14 poster presentations). This year we expanded the event to include an NRES Institute by the speaker nominated for a Colloquium by the NRES Graduate students – Dr. Andrew Derocher. The combined event was extremely well received and will be the model that we attempt to use in future years.
- The 5th Annual NRES Institute Research Forum (March 18th) showcased current research of NRES Graduate Students and Institute members. This event, which precedes the Annual Lecture, featured approximately 30 posters and was attended by approximately 100 individuals from the University and general public.
- The 5th Annual NRES Institute Lecture (March 18th) featured Dr. Bram Noble (University of Saskatchewan). Dr. Noble's talk was entitled, "Cumulative Environmental Effects and the Tyranny of Small Decisions". The Institute solicited Dr. Noble's nomination for the talk because of perceived need to educate local researcher, government, and the general public about the need to move to a cumulative effects model relative to development. Dr. Noble's presentation, as well as his Colloquium on March 19th, was extremely well attended and he met with many faculty and government individuals. Interest in cumulative effects sparked by this talk led to a NRES Institute Brown Bag lunch on the subject of cumulative effects (see below). Because of the significant losses to the Endowment fund that normally funds the Research Forum and Annual Lecture (70181), the Institute wholly supported both of these activities from its operating budget in FY 2009-2010.
- During FY 2009-2010, the Institute undertook a major revision of its website. The site www.unbc.ca/nres continues to be the virtual 'home' for both the NRES Institute and the NRES Graduate Program. This 'home' page provides the context and rationale behind the combined interdisciplinary program and then branches to both a home page for the Institute (www.unbc.ca/nres/institute_overview.html) and the NRES Graduate Program (www.unbc.ca/nres/grad_overview.html), both maintained by the Director of the Institute. This improved structure continues to provide support to the NRES Graduate

Program while making the distinction between the Institute and the Graduate Program much clearer. The home page for the Graduate Program highlights random graduate student project profiles, and the Institute's home page rotates member research profiles. Additional new features on the Institute's home page include direct links to the Institute's publication series (Research Extension Notes and Occasional Papers), web broadcasts of the Colloquium series, the display of Institute member project locations and links in Google Earth, and a page highlighting recent publications of Institute members (drawn weekly from the NRES Newsletter).

- One NRES Occasional Papers was published during FY 2009-10:

Occasional Paper No. 5: Haeussler, S. and H. Thorpe. (editors and compilers). 2009. Complexity Science and Global Change Workshop Summary. Occasional Paper No. 5, Natural Resources and Environmental Studies Institute University of Northern British Columbia, Prince George, B.C., Canada and Bulkley Valley Centre for Natural Resources Research and Management, Smithers, B.C., Canada.

This Occasional Paper was the Institute's first joint publication – in this case with the Bulkley Valley Centre for Natural Resources Research and Management, the agency with which the NRES Institute co-sponsored the workshop on which the proceedings were based.

Papers in the peer-reviewed Occasional Papers Series are available in PDF format from www.unbc.ca/nres/occasional.html.

- Three NRES Institute Research Extension Note were published during 2008-09:

REN-03: Effects of Partial Cutting on Forage Lichens for Caribou in a Subalpine Forest: The Pinkerton Mountain Silvicultural System Trial Revisited 10 years After Harvesting (Susan Stevenson and Darwyn Coxson)

REN-04: Pre-harvest stand structure and wildlife habitat attributes at a group selection site in the Interior Cedar-Hemlock Zone (Susan Stevenson and Eric Phillips)

REN-05: Propagation and fungal inoculation of black huckleberry and velvet-leaf blueberry: How can these species be used in ecological reclamation? (Irene McKechnie, Phil Burton, and Hugues Massicotte)

Irene McKechnie, the last extension note (REN-05), was the recipient of the inaugural \$500 cash prize (supported by the NRES Institute, the Dean of Graduate Programs, and NSERC) for the best Research Extension Note submitted by an NRES Graduate Student.

Papers in the peer-reviewed Research Extension Notes Series are available in PDF format from www.unbc.ca/nres/research_extension_notes.html.

- The Director of the Institute held several meetings with the UNBC Pacific Institute for Climate Solutions (PICS) representatives and staff to attempt to improve linkages between PICS and the NRES Institute. One of the outcomes of these meetings was to offer PICS a seat on the NRES Institute Steering Committee (currently held by Kyle Aben); offers of additional support to PICS, including links to PICS from the NRES website, have yet to be pursued by PICS.

- Throughout FY 2009-2010, the Institute maintained its 'loose' association with the Future Forests Ecosystem Science Council (FFESC) – the UNBC Coordinator for the FFESC program, Sybille Haeussler, is housed within the NRES Institute office when she is on campus, and we are working with Sybille to develop the GAP analysis resulting from Dr. Haeussler's research review into an NRES Institute Occasional Paper.
- In an attempt to provide support to UNBC-based public awareness groups, the NRES Institute partnered with the UNBC Green Campus Coordinator to sponsor the Prince George screening of Tapped (a documentary on the bottled-water industry).

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 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 2009-2010, 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. The Tl'azt'en are looking at bioenergy at the community scale. At the same time the John Prince Research Forest (JPRF) is looking to diversify and research has the potential for a link with co-management. Based on the preliminary discussions that had taken place with the Board of JPRF and Tl'azt'en Chief, Tommy Alexis was keen to see research developing with UNBC around bioenergy. Based on this interest a Brown Bag Lunch was convened with interest Institute members on 10 November 2009 where a number of potential research opportunities (including opportunities with the Aleza Lake Research Forest were discussed). One of the specific needs of the Tl'azt'en was a business case study and this opportunity was communicated to the Business Program at UNBC. A combination of lack of specific interest on the part of researchers and a change in leadership of the Tl'azt'en resulted in no further pursuit of this research area.

As a follow up to the NRES Institute Annual Lecture on cumulative effects, a brown bag lunch was held on March 26th, 2010. At that meeting, there was broad consensus that the many members of the Institute could potentially contribute to a research collaboration around the concept of cumulative effects. The group decided that creating a learning environment (e.g.,

workshop) would provide a good first stage of building the capacity of UNBC to be a regional centre of expertise for cumulative impact assessments (CIA). By many of us learning more about CIA before getting involved in the details of CIA, such as technical debates about metrics, we can best assess what role we can fill relative to this research need. There are some big questions out there to grapple with that would help us to understand what CIA is – or should be. An intensive two- or three-day workshop was suggested as a starting point for exploring this research area and it something that the Institute will be trying to facilitate in the next several months.

BUDGET REPORT

Total revenues for FY 2009-2010 (\$18,332.80) came from two sources. Overhead redirection from the Vice-Provost for Research and matching overhead redirection from the Ecosystem Science and Management Program (B. Aukema, D. Coxson, A. Fredeen, S. Green, C. Johnson, S Lindgren , K. Otter , K. Parker , P. Sanborn, and R. Rea) totaled \$6230.00. An additional \$18,500.00 in one-time income came from the transfer from a former NLUI at the direction of the VP Research, Dr. Fondahl.

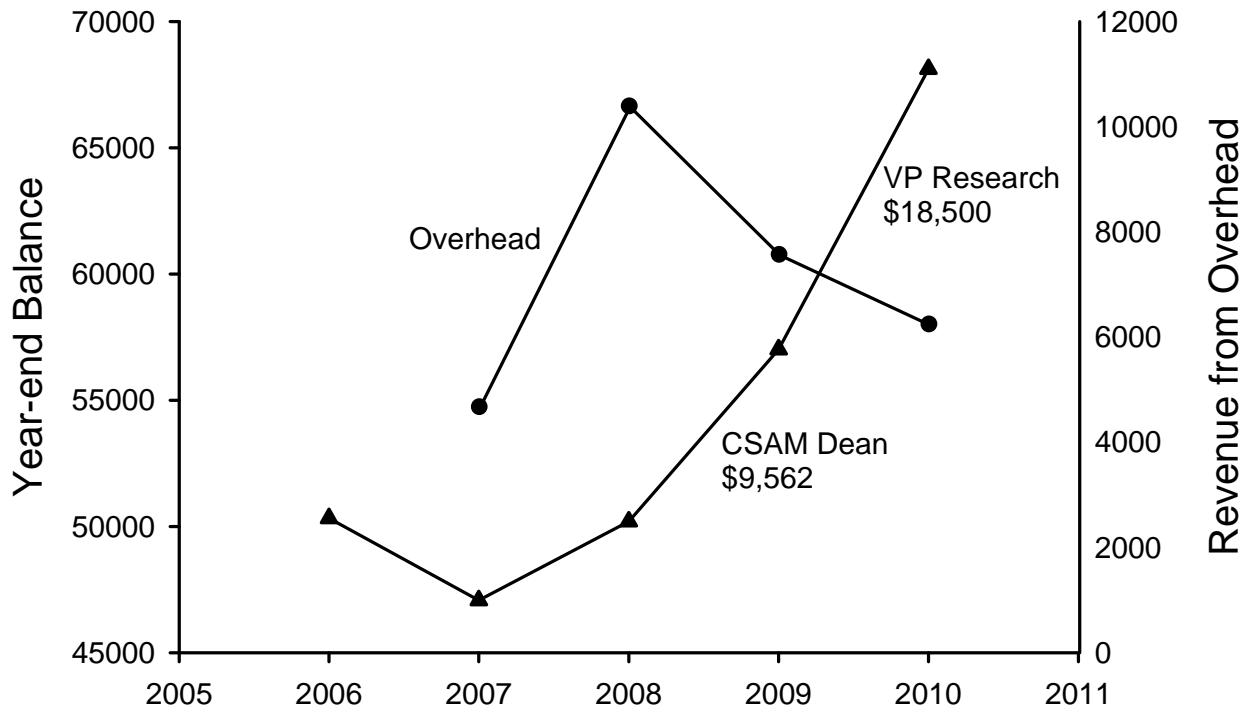
Total expenditures (\$13,622.00) included stipend to the Director, sponsorship of the NRES Institute Colloquium, advertising, support for the Fall Grad Ice Breaker, office costs, and the full support of the NRES Institutes Annual Lecture and Research Forum (normally covered by the Doug-Little/Canfor Endowment [Fund: 70105], but covered this year by the Institute’s operating budget [Fund 30181] because of significant investment losses suffered by the endowment. Our year-end closing balance was \$68,116.00, a net increase in our year-end balance of approximately \$11,000 from FY 2008-2009 (Table 3).

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.

Opening Balance (April 2008)	\$57,008.00
Total Revenues (FY 08-09)	\$24,730.00
Total Expenditures	(\$13,622.00)
Year End Balance	\$68,116.00

Despite significant one-time transfers to the Institute in both 2008-2009 and 2009-2010, the current ‘permanent’ funding base for the NRES Institute is overhead redirection. Because of these one-time injections, the Institute’s year-end balance has been increasing despite an alarming drop in overhead redirection to the Institute (Figure 1). Without these one-time transfers the Institute would have been in a deficit position for both FY 2008-2009 and FY 2009-2010.

Figure 1. Trend (2006 through 2010) 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 are 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 be contacting 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.

PLANS FOR 2010-2011

The Institute intends to continue to play a role in facilitating UNBC-based research as part of the Pacific Institute for Climate Solutions as well as the Future Forest Ecosystems Scientific Council Initiatives. We will continue to sponsor the Colloquium Series, an NRES Graduate Student Icebreaker early in Fall 2010, as well as the Annual Research Forum and Annual Lecture Series during Winter 2011. 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. To facilitate this process, the Institute will be reworking its brochure to make it clearer what the Institute has to contribute

to the research agenda of UNBC and to the north in general. We will also attempt to draw more attention to the potential to directly contribute to the Institute's Endowment fund. In addition, the Director will work with the Office of External Relations to combine the existing Linnea fund and the NRES Institute Fund (the same contributors and purpose).

- 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 recently announced New North Foundation. During the next year, the Steering Committee intends to more fully 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 hopes to work closely with the Community Development Institute (CDI) on this initiative.
- 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