



NRES WEEKLY NEWS

Nov. 29 - Dec. 3, 2010

A newsletter for faculty, staff and students
who participate in the
Natural Resources & Environmental Studies Institute
and NRES Graduate Programs

COMING EVENTS

NRESI RESEARCH COLLOQUIUM SERIES

This Friday

Dr. Brent Murray

Environmental Science Program, UNBC

Mountain Pine Beetle System Genomics:

Spatial genetic structure of the mountain pine beetle outbreak in western Canada

The mountain pine beetle, (*Dendroctonus ponderosae*), is currently causing an epidemic of record size in Western Canada. Tree mortality, mostly lodgepole pine (*Pinus contorta*), has occurred over 15 million hectares of forest through the combined action of the beetle and its fungal associates (primarily, *Grosmannia clavigera*). The Tria Project, Mountain Pine Beetle Systems Genomics, is a multidisciplinary investigation of these three primary organisms in the outbreak – beetle, fungus, and the host pine. A major goal of the project is to develop an integrated landscape map containing information on the genomic variation of each organism. This information can be used to infer current dispersal patterns, long-term phylogeographic processes and to study adaptive changes associated with a shift into new environments. This talk will highlight some of the key research achievements of the Tria project and discuss recent developments in the analysis of the spatial genetic structure of the mountain pine beetle. Information on “neutral” microsatellite variation in beetles from 49 sampling locations throughout BC and AB shows a North-South population structure that is supported by Bayesian structure analysis, North-South genetic relationships and diversity gradients, and the lack of isolation by distance in the northernmost cluster. Our findings are consistent with spatiotemporal analyses of the current epidemic that supports a multi-center hypothesis. Northern outbreaks are consistent with an expansion out of the Chilcotin plateau while southern outbreaks are consistent with multiple centers of origin.



November 26, 2010

3:30 - 4:30 pm

Lecture Theatre 7-150

**Next
Wednesday**

Dr. Olav Hjeljord

University of Life Sciences, Norway

High density Scandinavian moose populations— how to maintain high quality animals?

Over the past fifty years Scandinavian moose populations have increased dramatically. Concurrently, moose body mass and demographic performance have decreased in some regions, but have remained stable or decreased only slightly in other regions. By comparing the different regions, we tested the “Range quality hypothesis”. This hypothesis states that moose with more preferred forage (rowan, aspen, *Salix* sp.) should have better demographic performance due to higher intake of energy and nutrients compared to moose feeding on browse of medium/low preference (birch). However, extensive surveys of browse utilization showed that preferred species made up 25-35% of the diet in our high-performance regions and 45-60% in the low-performance regions. Furthermore, the relationship between browsing pressure and shoot length was negative for rowan, aspen and *Salix* sp., but positive for birch. In spite of increased harvest and a reduction in animal density by up to 50% in regions of low moose performance over the last 10-20 years, animal condition has not improved. Results are discussed in relation to range carrying capacity, recover of over-browsed ranges and cohort effects transferred between generations (smaller mothers producing smaller calves).



December 1, 2010

3:30 - 4:30 pm

Lecture Theatre 7-212

For Elluminate information and link to the webcast: http://www.unbc.ca/nres/nresi_webcast.html
For a list of upcoming seminars: <http://www.unbc.ca/nres/seminar/>

OTHER COMING EVENTS

UNBC will be receiving each seminar in high definition video in the Access Grid collaboration node room in Admin 2024.

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**2010 COAST to COAST Canadian Seminar Series:
The Marine Environment and Climate Change: Problems and Possible Solutions**

November 30 — 11:30-12:20

Climate Impacts of Freshwater Forcing of the Ocean General Circulation
Richard Peltier, University of Toronto, Centre for Global Change Science

During the past million years of Earth history, climate variability has been dominated by a 100 kyr cycle of continental scale glaciation and deglaciation. Each of these quasi-periodic events owed its existence to the minute variations in the distribution of solar radiation caused by gravitational n-body effects in the solar system. In each cycle of this process continental glaciation was accompanied by a fall of mean sea level of approximately 120 m. The glaciation phase of each cycle persisted for approximately 90,000 years whereas the deglaciation phase was much more rapid, lasting approximately 10,000 years. During deglaciation, the return of freshwater to the ocean basins was responsible for highly significant disruptions of climate, foremost among which was the so-called "Younger-Dryas" climate reversal during which northern hemisphere surface temperatures were forced to return to near full-glacial cold conditions even as the system was in the process of returning to a state of modern warmth. This phenomenon provides a target for testing the transient response of the global climate models that are employed to make predictions of the influence of global warming due to increasing concentrations of the atmospheric greenhouse gases. This test will be described in detail.

<http://c2c.irmacs.sfu.ca/>

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2010 Doug Little Memorial Lecture Series

December 2, 2010 7:30 pm

Canfor Theatre (6-213)

Dr. Briony Penn
Journalist and Adjunct Professor
School of Environmental Studies,
Geography Department and Restoration of Natural Systems Program
University of Victoria



The Big Burn

The combination of a gutted Forest Service, vast areas of not sufficiently restocked for-estlands, a quirky loophole in the Kyoto Protocol and a provincial government ideologically driven to sell off public assets has created the perfect opportunity to burn down BC's forests in a biofuel boondoggle and the last barriers to privatization of BC's crown forests. Journalist Briony Penn expands on a series of interviews conducted with over a dozen ex-government foresters, industry representatives, contract foresters, silvicultural-ists, forest sector round table participants and political representatives to provide insight into the direction that government is taking Crown forests — with no public consultation and a media that is failing to serve public interests. The voices of the whistle blowers point to a colossal failure of imagination by government that has implications to forest health, climate change mitigation and adaptation, other public interests in Crown lands from public access to biodiversity and water quality, First Nation interests and international credibility on carbon accounting and standards. The lecture will explore the dystopic picture of what is planned and the alternate vision for Crown forests that has been put forward by the critics as a world leader in ecosystem services and valuation.

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We're on the web at : www.unbc.ca/nres/newsletter

OTHER COMING EVENTS (cont'd)

FORREX Webinar:

Taking a Second Look at Biogeoclimatic Ecosystem Classification

Tuesday, December 7, 10:30-11:30 am.

(Sybille Haeussler, PhD, RPF. University of Northern BC)

The Biogeoclimatic Ecosystem Classification (BEC) system has underpinned terrestrial ecosystem management and conservation planning in British Columbia since the early 1970s. BEC has served BC well for 40 years, but is now critically challenged because:

- BEC champions in government, academia and the private sector are being laid off or are retiring;
- BEC is based on outdated notions of climax ecosystems in equilibrium with climate;
- The scientific value of the BEC approach is not fully understood by a younger generation of scientists and resource managers, as they grapple with accelerating rates of change.

This webinar addresses ways to ensure that BEC remains robust and useful in an uncertain future.

Everyone is welcome. Mark your calendar!

Teleconference number (toll free): 1 866 596 5278

Conference ID number: 3120346#

Prior to the teleconference, download the presentation to your computer, from the following ftp site:

<http://www.bvcentre.ca/forrex-webinar>

Questions about the webinar? contact

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FORREX envisions a society of continuous learners making decisions supporting sustainable ecosystems and communities.

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Members of the Drought Research Initiative (DRI) invite all interested parties to attend an upcoming workshop to be held in Winnipeg, Manitoba 7-9 February 2011. This will be a wonderful opportunity to discuss the impacts and drivers of droughts with a focus on the Canadian Prairies. Further details on this workshop may be obtained at: <http://www.drinetwork.ca/> .

Please feel free to contact either **Stephen Déry** or the DRI investigators for further details.

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CHRIS NEEDS YOUR VOTES!

Chris Opio is among the **TOP 10 Finalists** chosen among 2000 nominations in the **CBC Champions of Change**. Please visit the link below and **VOTE** (10 votes per email address) for Chris to win the Top Volunteer in the International Category. The winner will receive **\$25,000** towards his/her charity (clean drinking water for Uganda: <http://nudf.org/>). Please vote for Chris now! <http://www.cbc.ca/change/christopherpio.html>

REMINDER: Share your information about recent publications, grants, and/or other honours you may have received with others interested in NRES issues.

PLEASE EMAIL ALL INFORMATION AND MATERIAL TO MICHELLE KEEN: keenm@unbc.ca

PUBLICATIONS

Déry, S.J. (2010) Book Review: Snow and Climate. *Polar Research* 29: 461-462

Clark, Erin L., Carroll, Allan L., and **Dezene P.W. Huber** (2010) "Differences in the constitutive terpene profile of lodgepole pine across a geographical range in British Columbia, and correlation with historical attack by mountain pine beetle". *The Canadian Entomologist* 142:557-573

Child, K.N., Aitken, D.A. and **R.V. Rea** (2010) "Morphometry of moose antlers in central British Columbia". *Alces* 46:123-134

Child, K.N., Aitken, D.A., **Rea, R.V.** and R.A. Demarchi (2010) "Potential vulnerability of bull moose in central British Columbia to three antler-based hunting regulations". *Alces* 46:113-121

TRAVEL / CONFERENCES / FIELD WORK

Brian Menounos traveled to Ottawa (23-25 November) to participate in meetings with several MPs. These meetings are part of the Canadian Foundation for Climate and Atmospheric Sciences' (CFCAS) 'scientists on the hill' campaign. The objective of this campaign is to encourage the Government, and members of the opposition parties to support science on climate change, extreme weather, and air pollution.

The week of November 22nd **Pam Wright** will attend the BC Parks all staff meeting in Victoria to lead two workshops: Building Successful Partnerships Between Parks & Universities; and Monitoring for Long Term Ecological Change in BC Parks.

GRADUATE THESIS DEFENCES

Mr. Samuel Albers is a candidate for the degree:

Master of Science in Natural Resources and Environmental Studies (Biology)

Mr. Albers will be defending his thesis entitled:

"The Salmon Disturbance Regime: Effects on Biofilm, Sediment and Water"

Supervisor: Dr. **Ellen Petticrew**

Date: **December 2, 2010**

Time: **1:00 pm**

Room: **Senate Chambers**

https://cms.unbc.ca/assets/nres/defences/albers_101202.pdf

Ms. Young Joo Jenny Lee is a candidate for the degree:

Master of Science in Natural Resources and Environmental Studies (Biology)

Ms. Lee will be defending her thesis entitled:

"Fungal Community Assessment in Canadian Arctic Soils from Alexandra Fiord, Ellesmere Island, Nunavut"

Supervisor: Dr. **Keith Egger**

Date: **December 16, 2010**

Time: **9:00 am**

Room: **Senate Chambers**

https://cms.unbc.ca/assets/nres/defences/young_101216.pdf

Ms. Anne-Marie Flores is a candidate for the degree:

Master of Science in Natural Resources and Environmental Studies (Biology)

Ms. Flores will be defending her thesis entitled:

"Does the Mineralocorticoid Receptor have a Functional Role in the Teleost Gill?"

Supervisor: Dr. **Mark Shrimpton**

Date: **December 16, 2010**

Time: **1:00 pm**

Room: **Senate Chambers**

https://cms.unbc.ca/assets/nres/defences/flores_101216.pdf
