



# NRESi WEEKLY NEWS

## April 7 - 10, 2015

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

### NRESi NOTES

Hello everyone,

We look forward to seeing you at **NRESi's 2015 Annual Lecture next Thursday, April 17th**. This public presentation will begin at **7:30pm in UNBC's Canfor Theatre and will also be available on webcast** through Livestream and Elluminate/Collaborate (for access these options, click [here](#)). David Hughes will be doing his talk titled, "BC LNG and the Shale Revolution: Myths and Realities". The abstract is included later in the newsletter. David will also be doing next week's Friday colloquium presentation. The title for this second presentation is: "The Energy Sustainability Dilemma: BC LNG, Oil, and the Shale Revolution". They promise to be interesting presentations, as well as providing opportunities for discussion on these topics.

There is also a **Special Lecture** planned on **Monday, April 13th at 3:30 in 8-166 or online** via Livestream and Elluminate/Collaborate (link [here](#)). TWS UNBC Student Chapter is sponsoring our guest lecturer, Dr. Karen Hodges from UBC Okanagan, who will doing a presentation titled: "Population Issues at Geographic Range Edges". All are welcome to attend. Thanks to TWS for their yearly support of a guest lecturer!

A note to NRESi members: During our Steering Committee meeting this week, it was discovered that many are not able to attend the date we scheduled for this year's Annual General Meeting. I'll be getting back to everyone next week with a revised date. It will still take place over lunchtime, likely the week of April 27th.

Have a great weekend!

Leanne Elliott  
NRESi Research Manager

### FROM THE DIRECTOR & RESEARCH MANAGER



Signs of spring are everywhere you look!

Above: Hugues recently took this photo of terminal young female flowers (rosy-red) and male catkins of Hazelnut (*Corylus cornuta*) in Cottonwood Park. Beautiful!

Photo credit: Hugues Massicotte  
Below: April in Terrace: these soccer fields are a regular stopover for migrating Canada geese, *Branta canadensis* L.  
Photo credit: Phil Burton



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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**

**We're on the web at : [www.unbc.ca/nres-institute/newsletter](http://www.unbc.ca/nres-institute/newsletter)**

## UPCOMING EVENTS

## NRESi COLLOQUIUM

### Dr. Titi Kunkel

**Acting Regional Chair, South Central and  
SLI, Regional Operations at UNBC Quesnel Campus  
And Project Lead of UNBC Sustainable Communities Demonstration Project**

#### Community Transition and Renewable Energy



As Northern BC communities continue their transition, some are looking to renewable energy systems to sustain themselves. Renewable energy options in BC include bioenergy, solar, wind, geothermal, and hydro. In rural and remote locations where biomass is available at accessible distance, bioenergy has become an attractive option. This bioenergy video features interviews with leading community development and renewable energy experts. In addition, the video is a documentary of three different case studies: the biomass heating system at the Village of Telkwa, UNBC's expansion of its award-winning bioenergy system, and the energy needs of Kluskus First Nation. In this video, representatives of the village of Telkwa talk about how and why they decided to build a bioenergy system using local biomass as fuel. This system now provides heat to the municipal building, a business, a school, and four residences. The video features an interview with the Social Development Director for Kluskus First Nation explaining some of the challenges faced by the community as they seek to develop an alternative energy system for the reserve. The video also captures the bioenergy infrastructure being installed at UNBC as part of the Sustainable Communities Demonstration Project.

**Friday, APRIL 10<sup>th</sup>, 2015**

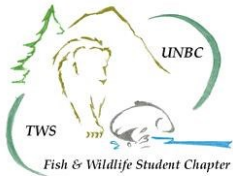
**3:30 pm - 4:30 pm  
Room: Weldwood Theatre (7-238)**

To participate remotely: [http://www.unbc.ca/nres/nresi\\_webcast.html](http://www.unbc.ca/nres/nresi_webcast.html)

## COMING EVENTS

## NRESi SPECIAL LECTURE

In partnership with:



### Dr. Karen Hodges

**Associate Professor, Biology  
University of British Columbia Okanagan**

#### Population Issues at Geographic Range Edges



The geographic ranges of species are seldom static, but the causes for the edges of ranges are often unclear. Many conservation laws and policies are structured in ways that protect range edge populations, especially if the range periphery occurs in one jurisdiction, but the main range is elsewhere (as occurs in BC's sage-steppe habitats in the Okanagan and the Vancouver Island garry oak ecosystems). Simultaneously, as global warming continues, many northern peripheral populations are acting as leading edges of range expansion. In this talk, I examine whether we have sufficient biological understanding of range edge populations, and the causes of range edges, to be able to predict which peripheral populations are genuinely valuable enough to warrant separate conservation attention or to predict which range edge populations might expand or contract. In so doing, I examine some conservation policy and data gaps, and I derive a possible classification of range edge types.

**Monday, APRIL 13<sup>th</sup>, 2015**

**3:30 pm - 4:30 pm  
Room: 8-166**

To participate remotely on Livestream or Elluminate: [http://www.unbc.ca/nres/nresi\\_webcast.html](http://www.unbc.ca/nres/nresi_webcast.html)

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**

## UPCOMING EVENTS

## NRESi's 2015 ANNUAL LECTURE

### David Hughes

Geoscientist, Independent Energy Policy Analyst &  
Formerly with Geological Survey of Canada



#### BC LNG and the Shale Revolution: Myths and Realities

Politicians in the US and Canada have promoted LNG exports as a way to monetize the perceived gas bounty made possible by the so-called "shale revolution". However, a review of major US shale gas plays suggests production is not sustainable at low prices and high volumes in the medium- and long-term. Several US shale plays are already past peak production and the recent collapse in oil prices suggests that other plays will not be far behind. In Canada, gas production is down 20% below its all-time peak in 2002. Ramping up BC production to supply five LNG terminals would require spectacular growth, from 409% to 542%, and the drilling of between 37,800 and 43,700 new wells at a cost of up to \$385 billion. These projects are vulnerable both from a lowered price in export destinations and from higher domestic gas prices. If the nascent BC LNG industry gets off the ground its economic impact is likely to be far less than purported, its environmental impact significant, and its impact on future Canadian energy security worrisome.

David Hughes is a geoscientist who has studied the energy resources of Canada and the U.S., including 32 years spent with the Geological Survey of Canada as a scientist and research manager, where he headed unconventional gas and coal research. His research focus is on unconventional fuels, primarily shale gas and tight oil, but also coalbed methane and other unconventional sources including oil sands, coal gasification and gas hydrates. Hughes is currently President of Global Sustainability Research Inc., a consultancy dedicated to research on energy and sustainability issues. Clients include a range of energy companies, investment firms and non-profits.

**Thursday, APRIL 16<sup>th</sup>, 2015**

**7:30pm in UNBC PG's CanforTheatre**

**RECEPTION to FOLLOW**

To participate remotely: [http://www.unbc.ca/nres/nresi\\_webcast.html](http://www.unbc.ca/nres/nresi_webcast.html)

## UPCOMING EVENTS

## NRESi COLLOQUIUM

### David Hughes

Geoscientist, Independent Energy Policy Analyst &  
Formerly with Geological Survey of Canada



#### The Energy Sustainability Dilemma: BC LNG, Oil, and the Shale Revolution

David will also be doing a second talk during our weekly colloquium. Please watch for details on this presentation next week.

**Friday, APRIL 17<sup>th</sup>, 2015**

**3:30 pm - 4:30 pm**  
**Room: Weldwood Theatre (7-238)**

To participate remotely: [http://www.unbc.ca/nres/nresi\\_webcast.html](http://www.unbc.ca/nres/nresi_webcast.html)

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**

## DISSERTATION DEFENSE NOTICE

### GRADUATE DISSERTATION DEFENCE

Ms. Stefanie LaZerte is a candidate for the degree:

**Doctor of Philosophy in Natural Resources and Environmental Studies**

Ms. LaZerte will be defending her dissertation entitled:

**“Sounds of the City: The Effects of Urbanization and Noise on Mountain and Black-Capped Chickadee Communication”**

Supervisor: **Dr. Ken Otter**

Date: **April 13, 2015** Time: 9:00am Room: 10-4034 T & L Building (PG Campus)

## THESIS DEFENSE NOTICE

### GRADUATE THESIS DEFENCE

Mr. Michael Klaczek is a candidate for the degree:

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

Mr. Klaczek will be defending his thesis entitled:

**“Denning Ecology of Barren-Ground Wolves in the Central Canadian Arctic”**

Supervisor: **Dr. Christopher Johnson**

Date: **April 13, 2015** Time: 9:30am Room: 6-305 (PG Campus)

## THESIS DEFENSE NOTICE

### GRADUATE THESIS DEFENCE

Mr. Andrew Dunbrack is a candidate for the degree:

**Master of Arts in Natural Resources and Environmental Studies (Environmental Studies)**

Mr. Dunbrack will be defending his thesis entitled:

**“Recreational Access to Industrial Forest Land by Port Alberni Recreational Stakeholders”**

Supervisor: **Dr. Annie Booth**

Date: **April 14, 2015** Time: 2:30pm Room: 6-205/211 (PG Campus)

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**

## THESIS DEFENSE NOTICE

### GRADUATE THESIS DEFENCE

Mr. Michael Bridger is a candidate for the degree:

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

Mr. Bridger will be defending his thesis entitled:

**“Assessing Cumulative Impacts of Forest Development on the Abundance and Distribution of Furbearers ”**

Supervisor: **Dr. Chris Johnson**

Date: **April 15, 2015** Time: 9:00am Room: 6-205/211 (PG Campus)

## THESIS DEFENSE NOTICE

### GRADUATE THESIS DEFENCE

Ms. Anna Kobylinski is a candidate for the degree:

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

Ms. Kobylinski will be defending her thesis entitled:

**“Vertical Distribution, Nitrogen Content, and Natural <sup>15</sup>N and <sup>13</sup>C Abundance of Epiphytic Macrolichen Functional Groups and Soil in Sub-Boreal Spruce Forests of Central British Columbia”**

Supervisor: **Dr. Art Fredeen**

Date: **April 15, 2015** Time: 2:30pm Room: Senate Chambers (PG Campus)

## THESIS DEFENSE NOTICE

### GRADUATE THESIS DEFENCE

Ms. Serena Black is a candidate for the degree:

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

Ms. Black will be defending her thesis entitled:

**“Building Resilience in the Agricultural Sector of the Omineca: Assessing Barley (Hordeum Vulgare) Cultivars Response to Water Stress and Cultural Practices of Northern Producers ”**

Supervisor: **Dr. Scott Green**

Date: **April 16, 2015** Time: 1:00pm Room: 6-307 (PG Campus)

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**

## DISSERTATION DEFENSE NOTICE

### GRADUATE DISSERTATION DEFENCE

Mr. Raju Aryal is a candidate for the degree:

**Doctor of Philosophy in Natural Resources and Environmental Studies**

Mr. Aryal will be defending his dissertation entitled:

**“Simulating Past and Future Mass Balance of Place Glacier Using a Physically-Based, Distributed Glacier Mass Balance Model”**

Supervisor: **Dr. Peter Jackson**

Date: **April 17, 2015** Time: 1:00pm Room: 10-4520 (PG Campus)

## DISSERTATION DEFENSE NOTICE

### GRADUATE DISSERTATION DEFENCE

Ms. Faye Hirshfield is a candidate for the degree:

**Doctor of Philosophy in Natural Resources and Environmental Studies**

Ms. Hirshfield will be defending her dissertation entitled:

**“The Impact of Ice Conditions on Local Scour Around Bridge Piers”**

Supervisor: **Dr. Jueyi Sui**

Date: **April 24, 2015** Time: 9:00am Room: 6-306 (PG Campus)

## PUBLICATIONS

**Daniel J. Erasmus**, Sharon Brewer and Bruno Cinel. 2015. Integrating bio-inorganic and analytical chemistry into an undergraduate biochemistry laboratory. *Biochem. Mol. Biol. Educ.*, 43:2 121-125

**Daniel J. Erasmus**, Sharon Brewer and Bruno Cinel. 2015. Assessing the Engagement, Learning, and Overall Experience of Students Operating an Atomic Absorption Spectrophotometer with Remote Access Technology. *Biochem. Mol. Biol. Educ.* 43:1 6-12

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**



## MEMBERS IN THE NEWS

The news in this section and next is from NRESi's social media connections to UNBC and others. See the original posts and hear the latest first by [following us!](#)

Brian Menounos was part of a team received who a lot of media attention earlier this week, on findings from their glacier research. The UNBC press release can be found [here](#). Their work was covered by a range of media outlets. Some of these included:

- [PG Citizen](#)
- [Vancouver Sun](#)
- [The Tyhee](#)
- [NBC News](#)
- [New York Times](#)
- [Yahoo Canada News](#)
- [Digital Journal](#)

The Natural Sciences and Engineering Research Council of Canada (NSERC) also tweeted UNBC's press release to their broad audience. Congratulations Brian!

Pat Maher, an Associate NRESi Member based at Cape Breton University, is involved in the Outdoor Recreation and Spring Symposium, on May 27-28, 2015 that is linked to a previous children's university talk he did. You can learn more about this event and other work he is involved on his [Twitter page](#).

## OTHER UNBC EVENTS OF INTEREST

### Cell & Molecular Biology Interest Group (CMBIG) Lecture

Date & Time: Monday, April 13th, 2015 at 11:30

Where: 7-150, UNBC PG Campus

**Guest Lecturer:** Dr. Sharon Aviran, Assistant Professor of Biomedical Engineering from University of California, Davis

**Presentation Title:** Deciphering RNA structure from genomic big data and probabilistic Models

**Presentation Abstract:** Despite great interest in solving RNA secondary structures due to their impact on function, it remains an open problem to determine structure from sequence alone. Several high-throughput approaches to RNA structure determination have recently emerged, which facilitate parallel and high-resolution measurements of structural information for a multitude of distinct RNAs in a single experiment. One of these techniques, SHAPE-Seq, was the first to couple a chemistry-based approach to structure determination, called SHAPE, with next-generation sequencing of its DNA products. Following sequencing, an algorithmic pipeline recovers the desired information from the noisy measurements, representing a novel approach to rapid, consistent, and fully automated analysis of this new wealth of information. I will describe SHAPE-Seq and its model-based approach to analysis. I will then discuss several very recent and exiting breakthroughs in experimental structure determination along with the informatics challenges that they present. I will conclude by highlighting the role that model-based computer simulations can play in facilitating rational experiment design of these advanced and complex sequencing-based methods.

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO:** [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)

## OTHER UNBC EVENTS OF INTEREST

### Chief Roger William

Speaking to University Wide Audience on

### The Tsilhqot'in Land Title Case



Photo credit: Monica Lamb-Ts'otl/Photo

April 13, 2015

3:00—4:30 pm Room: The Gathering Place


Everyone Welcome

Chief William will speak about the importance of the Tsilhqot'in Case, the importance of the testimony given by the Tsilhqot'in Elders in the case, and also the importance of the testimony of the people and Elders for the Environmental Review of the Taseko/Prosperity Mine at Fish Lake.

Sponsored by: Department of Anthropology Global Fridays  
Department of First Nations Office of Research


**UNBC** UNIVERSITY OF  
NORTHWESTERN BRITISH COLUMBIA

## OTHER UNBC EVENTS OF INTEREST



### The Community Development Institute at UNBC presents:

#### Community Speaker Series





**Lori Ackerman**  
Mayor, City of Fort St. John

**Free Public Lecture**  
Wednesday, April 15, 2015  
7:00-8:30 pm

**The Prince George Public Library**  
*Bob Harkins Branch*  
Keith Gordon Room  
888 Canada Games Way  
Prince George, BC

Speaker Series Co-Sponsors:



For information, contact the CDI at:  
(250) 640-4700  
jennifer.hal@unbc.ca

**Building a Revitalized Future:  
The Role of Community Leadership and Vision**  
Mayor Ackerman's presentation will discuss the importance of community leadership, and the power of a community vision, in building and sustaining vibrant and livable communities. Mayor Ackerman will speak to effective ways to engage stakeholders, including community residents, business owners, local government employees, and elected officials. Her talk will address ways to draw on community strengths and maintain interest and participation in the process of revitalization over time. Finally, Mayor Ackerman will discuss the different components of an effective revitalization plan, and how to manage challenges and opportunities encountered.

Mayor Ackerman has lived in the Peace Region for over 30 years and became Mayor of Fort St. John in 2011. She has been appointed to a number of boards, and from 2002-2013 was the Executive Director of Sci-Tech North, a non-profit organization that supports innovators and entrepreneurs in the Northeast. Mayor Ackerman serves as the Vice Chair of the BC Regional Science and Technology network, and as a member of the Economic Development Association of BC.

**UNBC** UNIVERSITY OF  
NORTHWESTERN BRITISH COLUMBIA

3333 University Way • Prince George, BC • Canada • V2N 479

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**



## OTHER UNBC EVENTS

**TERRACE LECTURE  
SERIES**  
4837 Keith Avenue  
Terrace, BC  
Room 147  
12:00pm - 1:00pm

### **Development of a Food Security Program at the University of Northern British Columbia**

**Dr. Phil Burton (Associate Professor and NW Regional Chair, UNBC Northwest)**  
**Wednesday, April 22, 2015**

There is widespread interest in local food production and sustainable agriculture in northern B.C. The extent to which young people are interested in these issues as a career is uncertain, however. Considerations in the development of a 'Sustainable Food Systems' undergraduate program, including options for regional delivery, will be discussed. Community input is invited.

This presentation will also be available to remote participants by following on [Livestream](#).

## OTHER EVENTS OF INTEREST

**Ecohealth in Action Webalogue - Wednesday, April 15, 2015 at 12:30-2:00pm PDT.**

The Ecohealth in Action Webalogue series, hosted by the Western Node of CoPEH-Canada, aims to highlight the diverse ways in which practitioners, professionals, policy-makers, community members and researchers are responding to topical issues at the nexus of health, ecosystem, and society. The interactive 90-minute sessions will focus especially on action and practice, and will purposefully profile issues that cut across disciplines, sectors, jurisdictions, species and geographical boundaries.

Our topic for the month of April is: "**Activism in Academia: A good idea, in theory**"

This webalogue will explore the different mechanisms by which people in academia may be able to overtly advocate (a.k.a. 'do activism') for the well-being of human beings and the ecosystems on which we depend. With a hostile political climate ever narrowing avenues for solidary action, we do not pretend to come with answers for how exactly to reconcile our perspectives and knowledge with whatever it is that drives us to act. Instead we hope to discuss options we are familiar with, add to that your ideas, and discuss some of the theoretical bases for taking actions that complement our convictions.

The presenters for the April webalogue will be:

- \* Bjorn Stime, PhD Candidate at the University of British Columbia, School of Population and Public Health, MPH and BSc in Environmental Sciences
- \* Dr. Ben Brisbois, Postdoctoral fellow at the Dalla Lana School of Public Health, University of Toronto, PhD in Population and Public health and MSc in Environmental Studies

**NOTE to UNBC participants:** Those interested in participating in the Webalogue with a group of others UNBC, or learning more about CoPEH-Canada, please contact Shayna Dolan (CoPEH-Canada Western Node Coordinator at [dolans@unbc.ca](mailto:dolans@unbc.ca)).

You can REGISTER for this webalogue by visiting: <http://ecohealthkta.net/webalogue-registration-april/> For more information on this event, past and future webalogues please visit: <http://ecohealthkta.net/>

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**

## SUSAN STEVENSON SCHOLARSHIP FUND

As its first project of this kind, the Natural Resources and Environmental Studies Institute (NRESi) is building a fund to support a scholarship in memory of wildlife ecologist and NRESi member Susan Stevenson. During a 35-year career built primarily in the BC central interior, Susan designed and implemented important research and inventory projects related to mountain caribou habitat, lichen biology, and silvicultural systems, collaborating with a diverse range of researchers, and gave generously of her expertise to the next generation of scientists. Susan exemplified the Institute's values of interdisciplinary curiosity and unselfish collaboration, and enriched the lives of all those who worked and studied with her. The Institute invites you to join it in supporting the Susan Stevenson Scholarship Fund:

1. Visit UNBC Development Office's website: [www.unbc.ca/giving](http://www.unbc.ca/giving)
2. Click on the grey **Make a Gift** button
3. Enter the information requested
4. When you reach the question of **Please direct my donation to:** select **Other**
5. ***Important*** - In the **Comments** area, add that you would like your gift to be contributed to the **Susan Stevenson Scholarship Fund**

## SHARE YOUR PHOTOS & STORIES

Do you have a favourite photo, story or update from your research that you would like to share with your fellow members and the broader NRESi community in the newsletter? Send them to Leanne to include in an upcoming edition!

## COLLOQUIUM ARCHIVE

Did you miss a colloquium or special lecture? Visit NRESi's webcast archive to catch up! This can be found through the following link: <http://www.unbc.ca/nres-institute/colloquium-series/archived-colloquium-series>

## ARCHIVE OF PAST EVENTS

Information, links, proceedings, and other information from past NRESi hosted and co-led events can be found at: <http://www.unbc.ca/nres-institute/special-events>. This site currently includes information about the Forest Tenure events (Annual Lecture and workshop) and a link to the Cumulative Effects Workshop site.

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

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: [leanne.elliott@unbc.ca](mailto:leanne.elliott@unbc.ca)**