



NRES WEEKLY NEWS

March 23 - 27, 2009

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. Lori Daniels

Associate Professor, Dept. of Geography, UBC



Fire History of the Southern Rocky Mountain Trench: 1540-2003

My research group and I have used tree rings to reconstruct the fire history and quantify the climate conditions associated with historic fires in the mountain forests of the Rocky Mountain Forest District. Our goal is to provide baseline data on fire frequency that can be used to guide ecologically-based restoration of the historic fire regime and fuels mitigation.

Historic fires burned during significant droughts and were most common during multi-decadal periods of warm and dry climate driven by changes in the circulation patterns in the Pacific and Atlantic Oceans. Had fires burned and scarred trees as frequently throughout the 20th century as they did over the entire fire record, we would have expected 20 fire years between 1944 and 2004. Our fire scar records included only 6 fires since 1944. The low incidence of fire during the past 65 years suggests fire suppression is having a substantial impact on the fire regime of forests in the southern Rocky Mountain Trench. We have two recommendations for managers:

1. Management decisions based on fire regime attributes must account for the full range of natural variation. In many montane forests, low to moderate severity fires burned on average every 15 to 75 years.
2. Long fire free intervals during the 20th century are the result of climate variation and fire suppression. Where fire suppression has altered the fire regime, fuels likely have accumulated and may result in severe fires. Ongoing research is designed to test for the impacts of fire suppression on forest composition, structure and fuels.

Light Refreshments will be Served

March 20, 2009

3:30 - 4:30 pm

Lecture Theatre 7-238



Dr. Gerry Kutney

Chief Operating Officer, Alterna Energy

Next FRIDAY

Biomass → Biocarbon → Bioenergy & Bioproducts

Biomass has been the energy staple of mankind through the ages. Fossil fuels, such as coal and oil, have only superseded biomass for but a brief period. For example, the world did not burn more coal than wood until the beginning of the 20th century. Oil only came into its own later in the century. We are entering an era, where biomass is beginning to resume its traditional position. In the use of biomass as a source of bioenergy, the critical factor is energy density. Wood-based bioenergy was revolutionized through the development of wood pellets. Whereas green wood chips have an energy density of ~9.5 GJ/te, a wood pellet has nearly double this amount. Coal, though, is the standard solid fuel in regard to power production, which has an energy density of ~30 GJ/te. Biocarbon, while produced from the same type of biomass as wood pellets, has an energy density equivalent to that of coal, or over 60% higher than a wood pellet. Biocarbon, also called char or charcoal, is manufactured from any biomass through carbonization. There are many markets for the product including terra preta (agricultural applications), activated biocarbon, and energy pellets. There is especially much interest in the latter application as a renewable energy replacement for fossil fuels, such as coal.

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March 27, 2009

3:30 - 4:30 pm

Lecture Theatre 7-238

PUBLICATIONS

Carmona, D.M., Faz Cano, Á., **Arocena, J.M.** (2009) "Cadmium, copper, lead, and zinc in secondary sulfate minerals in soils of mined areas in Southeast Spain". *Geoderma* 150: 150-157

Connell, David J. (2009) "Planning and its Orientation to the Future". *International Planning Studies* 14(1): 85-98

Tong, J., **Déry, S.J., Jackson, P.J.** (2009) "Topographic control of snow distribution in an alpine watershed of western Canada inferred from spatially-filtered MODIS snow products". *Hydrol. Earth Syst. Sci.* 13: 319-326

CONFERENCES / TRAVEL

Catherine Nolin and Research Associate Anisa Zehtab-Martin are traveling to Calgary, AB for the 11th *National Metropolis Conference*, 19-22 March, to facilitate a panel discussion titled: "Foreign Brides and Family Integration from Fort St. John to Halifax" and present their work (co-authored with Greg Halseth & Neil Hanlon) on "Frontiers and foreign brides: Experiences of marriage and migration in northern BC." This work is part of a collaboration with the CDI on the "Warmth of the Welcome" research project which is working to highlight the barriers to, and needs for, the strengthened participation of new immigrants in northern community life as well as to develop recommendations and concrete initiatives which foster more inclusive and welcoming communities for new immigrants in northern BC.

Kathy Lewis is attending the American Association of Geographers meeting in Las Vegas, NV and is presenting a talk on: "Dendrochronological reconstruction of western spruce budworm outbreaks near Peachland, BC".

Scott Green will be traveling to the western Arctic between March 24 and April 2 for meetings related to International Polar Year research. During his trip, he will be meeting with government and community representatives in Inuvik, Tsiigehtchic and Fort McPherson.

Four graduate student and postdoctoral members of the Forest Insect Research Group will be presenting their research at the Western Forest Insect Work Conference in Spokane, Washington during the week of March 23:

- Sambaraju, K., **Carroll, A.L.**, Zhu, J., and **B.H. Aukema**. Occurrence of mountain pine beetle infestations in western Canada: Impact of effective temperature, elevation, and past infestations
- De la Giroday, H.-M.C., **Carroll, A.L.**, and **B.H. Aukema**. Wave propagation of a climate-facilitated range expansion event: Initial patterns of epidemic spread by *Dendroctonus ponderosae* in northern British Columbia.
- McKee, F.M, **Huber, D.P.W.**, and **B.H. Aukema**. The frass is always greener on the other side of the fence: Evidence of reduced natural enemy assemblages for mountain pine beetle that colonize spruce vs. pine.
- Koopmans, J.M., de la Giroday, H.-M.C., **Lindgren, B.S.**, and **B.H. Aukema**. Take me to your leader: Does early successional non-host vegetation spatially inhibit *Pissodes strobi*?

As well, Greg Smith, a UNBC alumnus advised by **Staffan Lindgren** and **Allan Carroll**, will be giving the Memorial Scholarship address on "An assessment of interactions between endemic mountain pine beetles and a secondary bark beetle species." This prestigious award is given annually to the top graduate student in forest entomology in western North America. Congratulations Greg!

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

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