



NRES WEEKLY NEWS

January 3 - 13, 2012

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

Jan. 13, 2012

Yubao Li

Wenzhou University, China and
Visiting Research Fellow, UNBC



Imaging and modeling approaches to characterize sediment environments in China

The erodible fraction of land surfaces is an important parameter for calibration and validation of models to predict wind erosion. Effective assessment of the erodibility of sandy surfaces needs accurate information on erodible and non-erodible surface grains. Field sand collection and sieving have been broadly used to obtain grain size fractions. However, this traditional method results in surface destruction of sample plots and does not allow for calculation of the areas covered by each size fraction. It is easy for human eyes to discriminate grains of different sizes from both images and in the field but it is nearly impossible to count grain numbers and measure geometry of each size fraction. Based on an image processing system and a geographic information system (Erdas Imagine and ArcGis), we developed a method that can discriminate clasts, non-erodible grains, and fine materials. The approach can also count numbers and calculate the geometry of each clast and grain larger than 0.42 mm that is believed to be semi-erodible. This technological system can perform high-resolution image acquisition, image processing, modeling and extraction, vectorization, statistical analyses and validation. It was applied to a sandy area located 38°59'08"N and 109°08'49"E in Inner Mongolia, China. The approach presented here may provide a better methodology for calibration and validation of wind erosion models, assessment of soil surface erodibility, and studies into physical processes of wind erosion.

Friday, January 13, 2012

3:30 - 4:30 pm

Room: 7-152

Jan. 20, 2012

Dr. Bill McGill

Professor, Ecosystem Science & Management
UNBC



Are Ecosystems Fragile?

One hears much about loss of diversity and fragile ecosystems both in the scientific literature and the more accessible media. Energy is directed to protecting fragile species, communities and areas to prevent global catastrophe. What do these terms mean and is the current discussion informative?

This colloquium explores the meaning and evidence for the term "fragile ecosystem" and associated or derivative terms. It provides evidence around: 1) concepts of fragility; 2) methods of measuring fragility, diversity and their connection to ecosystem productivity; 3) indicators of decline in biodiversity; and, 4) problems with estimation of species extinctions. This leads to some heuristic questions such as "why are alien species ecologically bad?", "if some parts of the globe have more generalist species and others have more specialized species why is it undesirable if the range of generalist species increases?", "are ecosystem dynamics being conflated with fragility?", "is fragility even a useful concept"?

In light of the foregoing questions, examples are presented that suggest ecosystems and nature are not fragile, that human activity has generated new and currently desired ecosystems, and that changing suites of organisms over the last 3 billion years have driven the most profound changes on earth including atmospheric oxygen, global glaciations (snowball earth) and development of the Phanerozoic. It is concluded that we may protect against global catastrophe by directing our energies to globally significant planetary scale processes and boundaries rather than local processes for which there is no evidence of global scale thresholds.

Friday, January 20, 2012

3:30 - 4:30 pm

Room: 7-152

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

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

PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: Michelle Keen: keenm@unbc.ca

ELSEWHERE

GLOBAL FRIDAYS
ROOM 1079 - SENATE
12:00 - 1:30 pm

January 13, 2012
Dr. John Price, Department of History, University of Victoria
“Orienting Canada: Race, Empire and the Transpacific”

Anthropology in Our Backyards

Tuesday, January 17, 2012
7:30 - 9:00 pm
ArtSpace (above Books & Co)

“Forensics, Memory and Development: An Eclectic View from the Antipodes”

José Pablo Baraybar

Executive Director: Equipo Peruano de Antropología Forense (EPAF) Peruvian Forensic Anthropology Team and
Adjunct Faculty Member, Geography Program, UNBC

CONGRATULATIONS

Brian Menounos and **Peter Jackson** received a grant from Compute Canada for climate downscaling work in the mountains of Patagonia and Western Canada. The downscaled temperature and precipitation fields will be used to model glacier mass balance in these environments.

PUBLICATIONS

Pickles, B.J., **Egger, K.N.**, **Massicotte, H.B.** and **D.S. Green** 2012 “Ectomycorrhizas and climate change.” *Fungal Ecology* 5: 73-84

Lindgren, B.S. 2011 “Review of Herberstein, M.E. (editor).2011.“*Spider Behaviour. Versatility and Flexibility.*” (Cambridge University Press: Princeton, NJ) *ISBE Newsletter Supplement to Behavioral Ecology* 23(2): 5
Also reprinted slightly modified in *Bulletin of the Entomological Society of Canada* 2011 43(4): 204-205

Gorzalak, M.A., Hambleton, S. and **H.B. Massicotte** 2012 “Community structure of ericoid mycorrhizas and root-associated fungi of *Vaccinium membranaceum* across an elevation gradient in the Canadian Rocky Mountains.” *Fungal Ecology* 5: 36-45

Tennant, C., **Menounos, B.**, Ainslie, B., Shea, J. and **P. Jackson** 2012 “Comparison of modeled and geodetically-derived glacier mass balance for Tiedemann and Klinaklini glaciers, southern Coast Mountains, British Columbia, Canada.” *Global and Planetary Change* 82-83, 74-85

Albers, S.J. and **E.L. Petticrew** 2012 “Ecosystem response to a salmon disturbance regime: implications for downstream nutrient fluxes in aquatic systems.” *Limnology and Oceanography* 57: 113-123

McConkey, T., Bulmer, C. and **P. Sanborn** 2012 “Effectiveness of five soil reclamation and reforestation techniques on oil and gas well sites in northeastern British Columbia.” *Canadian Journal of Soil Science* 92(1): 165-177

TRAVEL / RESEARCH / CONFERENCES

Danielle Smyth is making the following presentation:

Smyth, D., **Fredeen, A.L.** and K. Wilkening 2012 “The road to sustainability at Canada’s Green University™.” 8th International Conference on Environmental, Cultural, Economic and Social Sustainability, January 10-12, Robson Square, Vancouver.

Catherine Nolin travels to Merida, Mexico this week to attend the Conference of Latin Americanist Geographers to present a paper and chair the Graduate Student Paper competition.

Nolin, C. 2012 “Caal v. Hudbay Minerals Inc.: Bare life and the violent development of Canadian mining on indigenous lands in Guatemala.” Universidad Autónoma de Yucatán, Merida, MX, January 11-13. (<http://www.clag2012.org/>).

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