

Forestry Matters

We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

-Aldo Leopold (1886-1948),
quoted in The Quiet Crisis by Stewart L. Udall, 1963



October 2010

Dates to Remember

- Oct 31 Halloween-Ghosts and Goblins everywhere.
- Nov 3 Final date to drop September session full year or half courses without academic penalty.
- Nov 11 Remembrance Day Service-Soldiers Tower
- Dec 9 MFC Presentations

REMINDER: Tenure Forum meeting is Thursday, November 25th at the Faculty Club from 7-9 pm



... live to let live to let live ...

My endless nature poem is hand-printed with green printing ink on an endless band of white ash veneer (2.7 metres or 9 feet long), and is suspended by a clear monofilament nylon line to move freely in endless winds. This nature sculpture is designed to evoke thoughts on the meaning of all forms of life, including humans and endangered species, over all time. **Although** my nature sculpture appears to have two surfaces and two edges, the half-twist creates a Möbius band with just one surface and one edge, which are endless.



By Paul Aird, Professor Emeritus, Faculty of Forestry

Remember When?

During one of the MFC trips to North Bay someone decided to create a self likeness of Dr David Balsillie using his van as the medium.



Forestry People

Dear Faculty of Forestry Colleagues..

It is with deep sadness that I pass on to you that Dr Peter de Groot, an Adjunct Professor in our Faculty, passed away this past Friday morning, 22 Oct 2010.

Peter was a Senior Research Scientist in Forest Entomology at the Canadian Forest Service Centre in Sault Ste Marie who joined our Faculty in 1999. He was a great mentor to myself and the students in my lab, whom he met and worked with in varying capacities, either as a supervisor, committee member or as part of my larger research group.

He took great pride in contributing to the student experience in our Faculty as well as inspiration from his fellow academics, whom he met on my students' committees...These associations were compelling reasons for him to remain so actively involved as an Adjunct Professor with our Faculty over the years.

His wisdom, his guidance, his standards, his knowledge, and most of all his

humour will be sorely missed by us all.

Please join me and my lab in wishing his family and friends our deepest condolences.

Sandy

Tajinder P Singh's paper titled 'Integration of World Carbon Markets' has been accepted for presentation at the EUEC Conference on Energy and Environment, the largest annual energy conference in US, to be held at Phoenix, Arizona from Jan 31 to Feb 3, 2011.

Dr. Feng'e Yang received Outstanding Doctoral Research Award (ODRA) from the International Union of Forest Research Organizations (IUFRO) at the XXIII IUFRO World Congress held in Seoul, South Korea from August 23 – 28, 2010. She was selected as one of the eight recipients for the ODRA for her path-breaking doctoral dissertation which includes various economic



analyses on Ontario's stumpage pricing system. Dr. Yang received her Ph.D. degree in November 2008 and her Ph.D. research supervisor was Prof. Shashi Kant at the Faculty of Forestry, University of Toronto.

CONGRATULATIONS TO:
November Convocation List:

MScF:
Gifty Ewurama (Rama) Acquah
Erin Elizabeth Mycroft
Nan (Crystal) Wu

PhD:
Laura Leslie Timms
Benjamin George Kuttner

Haliburton Forest 2010



A number of individuals from the Faculty of Forestry attended the IEA Bioenergy Task 43 and Long-Term Soil Productivity International Workshop held in Kamloops, BC, May 31- June 4, 2010 (see picture). The groups' strong presence was evident at the workshop, with a number of oral and poster presentations.

In the photo



Top row (L to R): Dr. C.T. Smith (Professor, Faculty of Forestry, UofT and Associate Leader of IEA Bioenergy Task 31 and 43), Derek Wolf (MScF candidate, Faculty of Forestry, UofT)

Bottom row (L to R): Jon McKechnie (PhD candidate, Civil Engineering, UofT), Peter Ralevic (PhD candidate, Faculty of Forestry, UofT), Brenna Lattimore (Research Officer and Sessional Lecturer, Faculty of Forestry, UofT), Dr. Dave Morris (OMNR and Adjunct Professor, Lakehead University), Jessica Iraci (MScF candidate, Faculty of Forestry, UofT), Cameron McBurney (MScF candidate, Faculty of Forestry UofT)

Missing: Dr. Sally Krigstin (Assistant Professor, Faculty of Forestry, UofT)

Group contribution

Oral presentations:

Jiangbang Gan and Tat Smith – Optimal utilization of forest biomass for energy production.

Brenna Lattimore – Biofuel feedstocks from agricultural resources: Environmental risks and criteria and indicators for sustainable practices. \

Sally Krigstin et al.-- Valuation of biomass harvesting in Eastern Ontario mixedwood stands.

Dave Morris et al., -- Productivity response to varying levels of organic matter removal along broad soil fertility and climatic gradients: A North American – wide LTSP synthesis.

John McKechnie et al. – Forest bioenergy or forest carbon? Assessing trade-offs in greenhouse gas mitigation with wood fuels and forest carbon.

Jessica Iraci et al. – The contribution of downed woody debris to biomass nutrient pools in Northeastern Ontario mixed wood stands.

Poster presentations:

Derek Wolf-- Biomass removal, retention and costs associated with biomass harvesting in the partial harvest systems in Ontario's Great Lakes- Saint Lawrence forest region: Preliminary results.

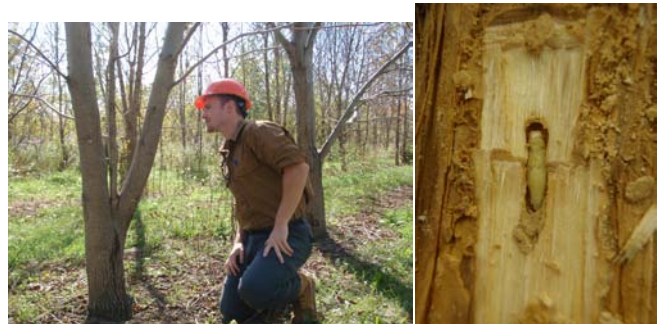
Cam McBurney et al.-- Changes in soil N reserves resulting from various levels of biomass removal and their impact on black spruce foliar nutrition, photosynthetic capacity and productivity.

Peter Ralevic et al. -- Expanding the Life Cycle Assessment approach to include ecosystem carbon fluxes along the forest bioenergy supply chain.

Master's Student Presents at Entomological Society of Ontario AGM

Lucas Roscoe

On October 15-17, 2010, M.Sc.(F) student Lucas Roscoe from Dean Sandy Smith's Entomology Lab attended the Entomological Society of Ontario's Annual General Meeting at the Oakwood Inn Resort in Grand Bend, Ontario. At this meeting, he presented for the first time some of his research on the biological control of the Emerald Ash Borer, or EAB. Since its discovery in Detroit and Windsor in 2002, EAB has killed millions of ash trees in Canada and the United States. The larvae of this pest kill ash trees by feeding in the layer between the bark and sapwood. This damage disrupts the movement of nutrients within the trunk, causing crown dieback and the death of the tree. In the past 8 years, EAB has been found as far south as Kentucky and North to Sault Ste. Marie, Ontario. Due to the widespread planting of ash in urban regions throughout North America, the management of EAB is of the utmost importance.



One of the most interesting means of controlling EAB is biological control using North American wasp parasitoids. A small black and crimson colored wasp called *Phasgonophora sulcata* attacks beetles similar to EAB in North America. Interestingly, it has been noticed that this wasp also attacks EAB. Analogous to the development of titular character of the *Alien* movie franchise, the hapless EAB larvae act as hosts for the developing *P. sulcata* larva. When the host reaches the final stages of its development, the wasp larvae kills it and completes its own development within the EAB's body. Although it is known that this wasp can successfully attack EAB, little else is known about *P. sulcata*. At the meeting, Lucas presented some of his work on the abundances of different life stages of *P. sulcata* over one season in an EAB-infested site, and on the changes in the amounts of eggs carried by females throughout their lifetimes. His research, done with the assistance of the Canadian Forest Service in Sault Ste. Marie, Ont., indicates that compared to other North American parasitoids of EAB, the lifecycle of *P. sulcata* may be well-synchronized to attack EAB larva. Additionally, he observed that female *P. sulcata* contain a higher average number of eggs than other wasp parasitoids at a given age. Although many more

questions need to be answered before it can be known if this wasp can effectively manage EAB in the field, these results indicate that *P. sulcata* has some of the attributes important in biological controls of pests such as EAB.

The presentation was well-received by members of the Entomological Society of Ontario. The meeting and facility were excellent, and Lucas is looking forward to continuing his research and presenting his work at future conferences.

On October 2nd and 3rd Ian Dunn (MFC 09) and Ben Filewod (MSc.F 09) competed in the University of Toronto's Inter-Collegiate Regatta representing the Faculty of Forestry. Competition was fierce as teams from McGill, Queens, and Quelp made the journey to Toronto's harbour. Racing on Sunday proved to be a battle against the elements with winds consistently above 35 kph, relentless rain, and abnormally cool temperatures for early October. No doubt a product of their forestry background, the U of T team thrived in the atrocious conditions, pulling



off an overall win against their bitter rivals.

Professor Sain and co-applicant Professor Krigstin were jointly awarded two NSERC Engage grants for developing mouldable products using papermill waste streams. Collaborating industry partners are committed to improving their products by including materials which have environmentally favorable characteristics. Sample of a prototype bottle is seen here.



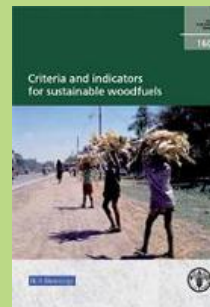
Student Research Highlight of the Month-Jason D'Souza

My research focuses on the extraction of biomass from the bark of trees, and utilizing this to make rigid polyurethane foams (PUF). PUFs are used for various applications including insulation and in the interior mouldings of cars. Natural biopolymers can be used to replace some of the synthetic polyols (polymers made from petroleum for polyurethane reactions) and also impart unique mechanical properties. However, there is a fog obscuring the relationship between the composition of the natural polyol and the resultant foam properties, which will hopefully be uncovered by my research.

MFC graduate Brenna Lattimore, Professor Tat Smith and colleagues associated with IEA Bioenergy Task 31 "Biomass production for Energy from Sustainable Forestry" and the Food and Agriculture Organization of the United Nations (FAO) Forestry Division published FAO Forestry Paper 160: Criteria and Indicators for sustainable woodfuels. Copies can be downloaded from the FAO web site at <http://www.fao.org/forestry>.

FAO Forestry Paper 160: Criteria and indicators for sustainable woodfuels

<<http://www.fao.org/docrep/012/i1673e/i1673e00.htm>>



In many developing countries, woodfuels are still commonly used for household cooking and heating and are also important for local processing industries. In many developed countries, wood-processing industries often use their wood by-products for energy production. In some countries, notably the Nordic countries, forest

residues are increasingly used for industrial-scale electricity generation and heating. Several developing countries have enormous potential to produce energy from forests and trees outside forests, for both domestic use and export. However this potential is not often properly reflected in national energy-development strategies. This publication sets out principles, criteria and indicators to guide the sustainable use of woodfuel resources and the sustainable production of charcoal. It is designed to help policy- and decision-makers in forestry, energy and environment agencies, non-governmental and other civil-society organizations and the private sector ensure that the woodfuel sector reaches its full potential as an agent of sustainable development.

Dr. Fidel Castro Díaz-Balart, Scientific Advisor of the Council of State of the Republic of Cuba visits the Faculty of Forestry



Professors Sally Krigstin and Mohini Sain were recent recipients of two NSERC Engage grants in partnership with Myers Industries of Canada and Swissplas.Limited. Both projects involve development of specific green materials widely sought after by consumer product industries.

Faculty of Forestry's innovative wood products was been selected for display at the United Nations Geneva - Exhibitions of Innovative Wood Products on 11 to 15 October 2010 at joint meetings of UNECE Timber Committee and Society of Wood Science and Technology and in January 2011 for the International Year of the Forest at Palais des Nations to inaugurate the International Year of the Forests.



Item 1) Although it is a common phenomenon in nature, spalted wood is often unusable due to advanced decay. In a controlled environment. In research conducted by Ph.D. candidate Daniella Tudor, the spalting process is optimized for minimal weight loss and fungal pigment formation. As a result, it increases the wood value by transforming low-grade material into ornamental wood, its artistic value being assured by uniqueness or the resulting patterns.

Item 2) High temperature thermal modification using oil imparts desirable properties to wood by darkening its colour, concealing surface stain and destroying certain hygroscopic functional groups in wood to make it more dimensionally stable and resistant to decay. In Canada there are available sources of underutilized hardwoods and low grade softwoods that have been infested by mountain pine beetle. Applying a thermal treatment to these species creates an opportunity for value added wood products that support Canadian Forest Industry.

Item 3) In Canada, forest residue biomass is commonly a waste material, left in the forest after felling operations, available in plenty and not having any direct use. It possesses woody pieces, twigs, barks, foliages etc. which can be utilized as raw material for making of boards, however only limited research has been done in this area. The primary objective of this project is to develop and examine the feasibility biomass-based innovative panels and analyze their suitability for applications in construction and furniture industries.

Sally Krigstin, Forest Biomaterials Science Program Coordinator

Our Woodsports Club is once again submitting three teams to the Lindsay Sir Sandford Fleming competition on November 6th. We will have 18 people from the MFC, M.Sc.F., and Ph.D. programs participating; two men's teams and one women's. The competition begins at 8am and runs until 5pm for anyone that is in the area and wants to drop by to cheer us on. We are following up on our previous championship performance last year at McGill in the water-boil and look forward to another solid performance this year! For more information on the event, contact dan.johnston@utoronto.ca.

DR. Sean Thomas has a short article in UT magazine on leaf dieback early this summer in central Ontario. Check out his article at: <http://www.magazine.utoronto.ca/leading-edge/sugar-maple-industry-climate-change-effects-on-canadian-forest-sean-thomas/>

ALUMNI NOTICE:

Sadia Butt (MFC graduate and current PhD candidate) has agreed to take the helm of the Faculty of Forestry Alumni Association. Alumni may contact her at sadia.butt@utoronto.ca

Many thanks to Adrina Ambrosii for her many years of dedicated service to the Faculty and it's Alumni.

New Frontiers of Forest Economics at the at the XXIII IUFRO World Congress held in Seoul, South Korea from August 23 – 28, 2010: Professor Shashi Kant organized and chaired a sub-plenary session on New Frontiers of Forest Economics at the IUFRO Congress. The session was held on August 27, 2010, and around 1000 scientists from all around the world participated in the session. Four invited speakers - Nobel Laureate Prof. Elinor Ostrom (Indiana University, USA), Prof. David Laband (Auburn University, USA), Prof. Urs Fischbacher (University of Konstanz, Germany), and Prof. Karl-Gustaf Lofgren (Umea University, Sweden) - shared their perspectives about the emerging frontiers of forest economics at the session.



Decision Support Tools

for Conservation Planning in Settled Landscapes

December 15,16,17th 2010

Faculty of Forestry, University of Toronto

33 Willcocks St.

Toronto, Ontario

- Hospitality is provided for breaks and lunches (please let us know if you have any dietary requirements)
- Reading materials for the Decision Support for Natural Heritage Systems Planning for Settled Landscapes, including chapters 1-3 of the Marxan Good Practices Handbook, will be provided before the course by email (you do not need to bring this material to the workshop)
- Please arrange your own accommodation in the city of Toronto
- To register, please contact Heather Coleman at hcoleman@pacmara.org
- Course Fees:
 - Day 1 - \$200
 - Days 2 and 3 - \$550
- The Marxan training on Days 2 and 3 includes hands-on computer training in Marxan.
- GIS experience and excel skills are prerequisite.