Legacy Forest Visions

A newsletter on the science and sustainable management of all forest values

IMPACTS OF VARYING SILVICULTURAL INTENSITIES

In October 2001, the Upper Lakes Environmental Research Network (ULERN) and its project partners were awarded $903,000 over 2 ½ years from the Living Legacy Trust to initiate the NEBIE Plot Network. NEBIE stands for **N**atural disturbance and **E**xtensive, **B**asic, **I**ntensive, and **E**lite silviculture.

The NEBIE Plot Network will be one of the first field projects to go on line in the Legacy Forest. Key partners for establishing it in the Legacy Forest are Bowater Inc., ULERN, Lakehead University, University of Guelph, and the Ontario Ministry of Natural Resources.

In the Boreal and Great Lakes – St. Lawrence forest regions of Ontario, this stand-level research project is designed to compare natural disturbances with a full range of silvicultural practices. Effects on fibre production, biodiversity, soils, habitat, and economics are being studied in spruce, pine, aspen, birch, and tolerant hardwoods.

NEBIE consists of eight independent randomized complete block experiments, referred to as *installation sets*,

each testing a range of forest management intensities. Installation sets are currently located near Sioux Lookout, Dryden, Wawa, Kapuskasing, and Timmins. In 2003, they will be established near Thunder Bay, North Bay, and Petawawa.

In 2002, a candidate site for the Thunder Bay installation set was selected within the Legacy Forest to determine the impact of intensively managing jack pine on loamy clays on fibre production and floral diversity.

Density, diameter, cover, height, and health for all tree species and cover and height for all shrubs and non-woody species data will be collected at this installation. Opportunities exist to study genetic diversity of

dominant tree species, soils, insects and diseases, and plant physiology and ecology.

This long-term project supports the objectives of the Legacy Forest by providing opportunities for students to conduct their thesis research. It will also help decision-makers and resource managers better understand the implications of intensifying forest management.

For more information on the NEBIE Plot Network visit: http://www.ulern.on.ca/nebiepublic/NEBIEpublic.html.

For specific information or to be involved in the project, contact:

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NEWSLETTER NAME CONTEST

In the second issue of the *Legacy Forest Visions* newsletter, we invited readers to submit ideas for the title. Reader feedback confirms that the original name and masthead is satisfactory. Thanks to all for your input.

PRESENTING…
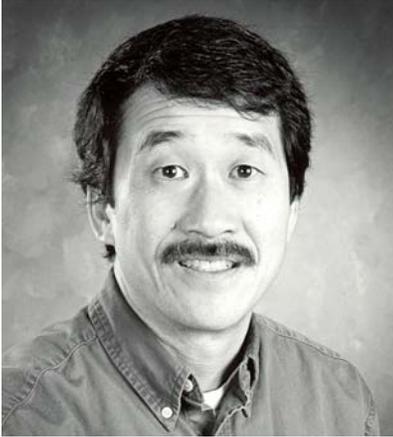
Mike Yuan is the principal investigator of the Legacy Forest's Comprehensive Recreation Management Plan project. He is also a professor, and director of the Centre for Parks, Recreation and Tourism Research at Lakehead University.

Mike received his PhD from the University of Illinois. He held various faculty and administrative positions for U.S. universities before coming to Lakehead in 2001. He focuses on regional recreation and tourism planning with an emphasis on examining macro-level supply and demand relationships.

Mike has been deeply involved with natural resource based recreation and tourism research for the past 20 years. For many years, he conducted tourism research for the State of Montana's Tourism Industry. He also developed nationally adopted resource management research frameworks for the U.S. Forest Service and established the first National Scenic Byway in Missouri.

STAKEHOLDER ADAPTATION TO GLOBAL WARMING

Northern Ontario's history is a story of competing resource needs of hunting, tourism, recreation, mining, forestry and natural areas.

Recently, the province has emerged from a challenging process of assigning northern land uses through Lands for Life, Living Legacy and the Forest Accord. Perhaps now there is a feeling that all is decided, but landscapes will change, especially in the face of global warming.

In a significantly warmed Northern Ontario, forest fires are expected to increase with consequent change in forest vegetation, stand age-class distributions across landscapes, and especially in the supply of pulpwood and timber for milling. In these circumstances, a variety of interest groups will increase pressure on managers of protected areas and commercial timber lands.

Researchers Rafael Muñoz-Marquez, Roger Suffling and Peter Deadman, in the Faculty of Environmental Studies of the University of Waterloo, are generating scenarios of global warming resource pressures. They are cooperating with Ajith Perera, Ontario Forest Research Institute, and Daniel Scott, Adaptations and Impacts Research Group of Environment Canada, to model future land use pressures at a landscape scale.

Results will be presented to stakeholders such as land managers, conservationists, and forestry companies with a view to stimulate action on how the key players can adapt to specific global warming pressures while avoiding confrontational politics. They will also be available through the Legacy Forest data sharing.

- Roger Suffling

For further information contact Roger at rcsuffli@uwaterloo.ca.

EVALUATING TREE IMPROVEMENT STRATEGIES

The Superior-Woods Tree Improvement Association with Bowater, Dryden Forest Management, Weyerhaeuser, Forintek Canada and the Ontario Forest Research Institute (OFRI) have partnered to study wood quality traits in black spruce and jack pine tree improvement programs.

Part of this project will be carried out in Bowater's Dog River-Matawin of the Legacy Forest. The objectives are:

1. To estimate the genetic variation, heritability and age correlation of wood density, growth traits (e.g. height and volume) and dry fibre weight for 3 ages (approx. 5, 10 and 15 years) of black spruce and jack pine.

2. To evaluate the impact of different selection scenarios on genetic gains in fibre yield, growth traits and wood quality.

3. To evaluate the impact on 2nd generation selections and tree improvement strategy.

The Association will coordinate field activities with its industry partners to collect the raw data (tree height, diameter and wood cores). In the spring, wood cores will be collected and sent to the Forintek Canada laboratory for assessment of wood quality.

All the data from the field measurements and from the wood quality assessment will be sent to the OFRI in Sault Ste. Marie for analysis. Project results will be used to evaluate tree improvement strategies using different selection traits. Data and information from the project will be provided to the Legacy Forest to archive for future use and access.

Project results will impact one of the tree improvement programs servicing the Legacy Forest. They could also impact tree improvement strategies across Ontario.

- Paul Charrette

Planning Workshop
March 29 - 30

Nearly 40 participants from industry, academia, government, non-government, and First Nations attended the first Legacy Forest Planning workshop.

Brainstorming topics included public relations, data management, funding, partnerships, and research gaps. Participants drafted vision and mission statements and goals. A follow-up report will guide further action steps. The next session is schedule for August 25 and 26.

PROTECTED AREA VALUES

Protected areas are the way to the future! At least that is the view of SAMPAA (Science and Management of Protected Areas Association). A major topic of their recent tri-annual conference in Victoria, BC, was extending protected area values beyond their boundaries.

The Legacy Forest project exemplifies this new role for protected areas. This partnership venture is conducting research that combines wood fibre production with the protection of biodiversity. Biodiversity is a protected areas value that will influence silviculture management practices.

Extending protected areas values into surrounding regions and their integration into forest and other management plans will help to ensure regional long-term economic viability.

In the surrounding regions, these values will give shape to the perceptions and understanding of a sustainable land ethic that really considers only one area worth protecting…and that one area of course is the planet Earth!

- Gordon Ringius

History is part of our memory. Our potential is part of our future. Yesterday is only good to help us avoid the old mistakes and to improve on what we have done.
- Jack O'Toole

EVENTS

Steering Committee Meeting
June 10, 2003
At the next quarterly meeting, the Legacy Forest Steering Committee will address recommendations from the Framework Committee regarding the *planning workshop follow-up report*.

Framework Meeting
May 15, 2003
The Legacy Forest Framework Committee discussed research and funding opportunities, and reviewed the *planning workshop follow-up report*.

Interactive Display at Timmins
May 7 - 10, 2003
Graduate students Ian Sinclair and Jason Freeburn presented an interactive display of the Legacy Forest, organized by Ulf Runesson, at the Central Canada Boreal Forest Expo.

National Forest Congress
May 1 - 2, 2003
Kevin Crowe attended the 9th National Forest Congress in Ottawa, Ontario to network with and inform its participants of the Legacy Forest.

Michigan Presentation
April 22 - 23, 2003
Reino Pulkki explained silvicultural research opportunities in the Legacy Forest to the Great Lakes Silviculture Summit at the Michigan Technological University, in Houghton.

Classification Demonstration
April 22, 2003
Ulf Runesson and Shawn Mizon demonstrated vegetation classification techniques to Joe Ladouceur and James Harrison of Greenmantle Forest Inc.

Image Analysis Demonstration
April 17, 2003
Ulf Runesson and Shawn Mizon demonstrated image analysis techniques for vegetation classification to James Holland, of Ducks Unlimited.

Radio Interview
April 9, 2003
Gerald Graham of CBC radio interviewed Robin Reilly on the Legacy Forest. To listen to the broadcast, visit:
www.legacyforest.ca/resources

Progress Report
April 7, 2003
A Status Report was submitted to the Living Legacy Trust. A copy is posted on the website.

Television Interview
March 31, 2003
Reino Pulkki gave an interview to Thunder Bay Television on the Legacy Forest workshop. To see the interview, visit:
www.legacyforest.ca/resources

Stratification Meeting
March 28, 2003
At the Legacy Forest Stratification Committee meeting, Wayne Bell, OFRI, shared ideas to define zones of differing silvicultural intensities. Then John MacGillivray, Bowater, shared his ideas on practical criteria to classify different silvicultural intensities.

Image Segmentation
March 24, 2003
Shawn Mizon illustrated image segmentation techniques for Quetico Provincial Park to Dr. Geoff Lipsett-Moore, zone ecologist of Ontario Parks.

Conference Presentation
March 20, 2003
Reino Pulkki presented on Forest Management in Ontario and the Legacy Forest at a regional conference on Forest Management Policies and Practices, at the University of Minnesota.

Opportunities for Research Projects

The Legacy Forest is an area of about 1 million hectares including Quetico Provincial Park and the southern half of the Dog River-Matawin Forest. It was selected for research on sustainability of Intensive Forest Management.

The project is the result of collaboration among many groups with varying interests in the forest. Please visit the website at www.legacyforest.ca to see the current list of partners and projects.

To accommodate and influence future forest management planning and operational activities, the partners are recruiting more projects and research to the Legacy Forest. Below is a list of current projects in the Legacy Forest also available on the website.

Project Title	Objective	Principal Investigator
Development of a Comprehensive Recreation Planning Framework	To develop a comprehensive recreation-planning framework for Crown lands and use it to predict the recreation related outcomes of differing intensive forest management practices on resource use.	Mike Yuan Associate Professor School of Outdoor Recreation, Parks, and Tourism Lakehead University
Linking Nutrient-Based Aquatic Ecology and Biodiversity in Small Streams and Standing Water Bodies with Intensive Forest Management	To identify threshold values indicating how much of the landscape can be managed under intensive forest management on the Boreal Shield without significantly impacting water quality and quantity within a watershed, and thus the overall aquatic environment.	Ellie Prepas Canada Research Chair in Sustainable Water Management Faculty of Forestry and the Forest Environment Lakehead University
Investigating Socio-Economic Implications of Intensive Forest Management Options in Ontario	To develop a multi-criteria decision analysis framework to investigate the socio-economic implications of IFM. This research will provide critical information to policy and decision-makers about how society might balance the socio-economic tradeoffs inherent in implementing IFM, and how the costs, benefits and incentives might be distributed in any allocation of resource and property rights.	Jason Jabbour PhD Candidate Faculty of Forestry University of Toronto
Incorporating Wood Quality Traits in Black Spruce and Jack Pine Tree Improvement Programs in Northwestern Ontario for High-Quality and Maximum Fibre Yield Production	To estimate the genetic variation, heritability and age-age correlation of wood density, growth traits (e.g. height, dbh and volume) and dry fibre weight at three ages in black spruce and jack pine; and evaluate the impact of different selection scenarios on genetic gains in fibre yield and wood quality.	Paul Charette Forest Genetics Ontario

Project Title	Objective	Principal Investigator
Evaluating the impact of forestry on bird communities in northern Ontario: toward an adaptive management paradigm	Test the hypothesis that bird communities in landscapes managed for timber output are similar to those in landscapes subject only to natural disturbances. Bird communities will be compared between landscapes where forestry has taken place and landscapes subject only to natural disturbances, thus providing an assessment of past forestry practices.	Ryan Zimmerling Bird Studies Canada
Modeling angling behaviour and road access relationships: a study of two resident northern Ontario angling populations	This study will examine the reasons why resident anglers of northern Ontario choose specific angling destinations. These reasons will include consideration of the type of access for angling destinations along with other salient characteristics that drive angling behaviours (e.g., travel distance, fishing quality). The study will adopt a choice modeling approach.	Len Hunt PhD candidate Department of Geography and Environmental Studies Wilfrid Laurier University
NEBIE Plot Network	To establish a plot network to compare natural disturbances with a full range of extensive to elite silvicultural practices in the Boreal and Great Lakes St. Lawrence regions of Ontario. A set of plots will be established in the Legacy Forest.	Wayne Bell Research Scientist Ontario Forest Research Institute
Building a Carbon and Nitrogen Soils Data Base for the Legacy Forest	Carbon and nitrogen are two key forest elements that are affected, both positively and negatively, by disturbance. Establishing a database that is linked to disturbance history (e.g. fire, harvesting, silviculture) will help us to track changes in these important pools over time. This project will serve as a starting point by incorporating information from 1,000 soil samples.	Nancy Luckai Assistant Professor Faculty of Forestry and the Forest Environment Lakehead University
Identification of Climate Change Related Land Use Conflicts and Climate Change Adaptive Strategies in Northwestern Ontario	To analyze the overlapping impacts of anthropogenic climate change in Northwestern Ontario on forestry, tourism and other economic sectors.	Rafael Muñoz-Márquez PhD candidate School of Planning Faculty of Environmental Studies University of Waterloo

If you are interested in one of these activities or initiating a new project, please contact:

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