SUSTAINABLE FOREST MANAGEMENT NETWORK
RÉSEAU DE GESTION DURABLE DES FORÊTS
Networks of Centres of Excellence
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tomorrow's forests

WINTER 2005

THE SFM NETWORK NEWSLETTER

Research excellence through training, networking, partnerships and knowledge exchange

Network Accomplishments Highlighted in National Roundtable Report and NCE Midterm Review

By Marvin Abugov
SFM Network

The accomplishments of the SFM Network have been cited by the National Round Table on the Environment and the Economy (NRTEE) in a recently released *State of the Debate Report,* ***Boreal Futures: Governance, Conservation and Development in Canada's Boreal****.*

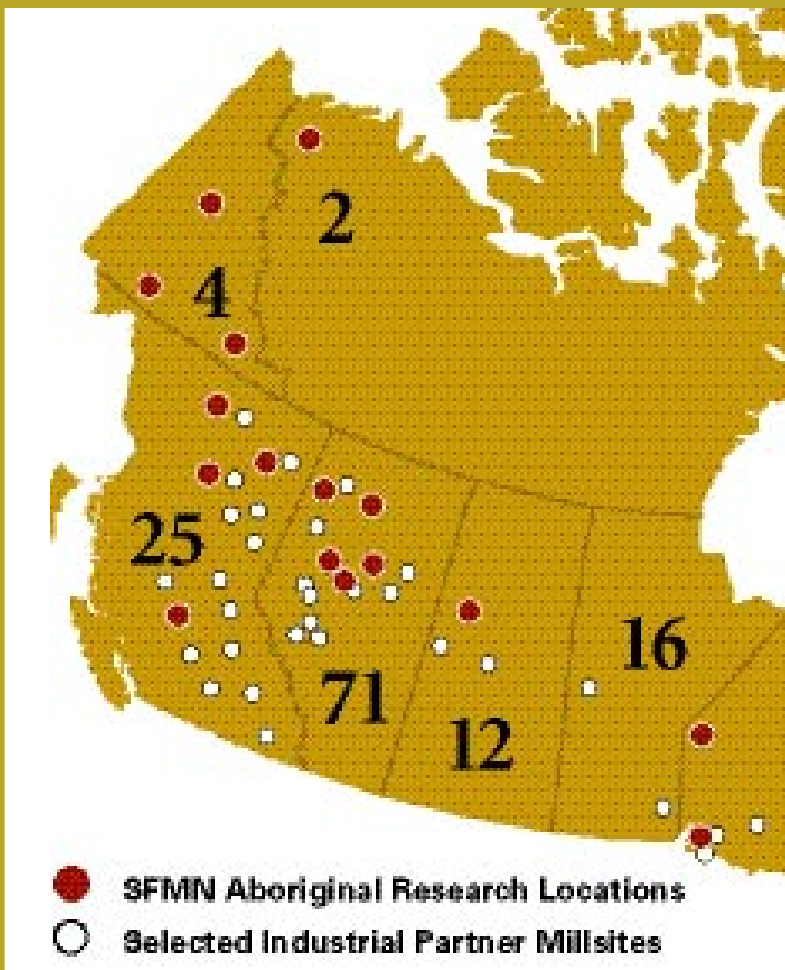
The report recommends the establishment of a boreal network of Centres of Excellence based on the success of the SFM Network and other NCEs. At the Network's 2005 Annual Meeting held in Edmonton on November 17, 2005, NRTEE Board Member and co-chair of the Boreal Forest Taskforce Wendy Carter said, "The idea would be to include the best aspects of several NCEs to focus on the boreal [forest] from an integrated landscape management perspective." The report states that, "An NCE for the boreal would be a natural extension and expansion of the work done by the SFM Network."

Accomplishments were central in presentations made to the international expert panel convened by the NCE program in October to review the work of the Network. Scientific Director Jim Fyles, who headed the Network's presentation team, says that "the midterm review was an excellent opportunity to document our successes over the last few years. In particular, we highlighted our accomplishments in partnership development, increased Aboriginal involvement, expanded communications and knowledge exchange, enhanced training, and impact on policy and practice."

Since its renewal in 2002, the Network has continued to build its partnership by attracting new partner organizations. The governments of British Columbia, Manitoba, Newfoundland and Labrador and the Yukon have joined, as have Environment Canada, Parks Canada, and Natural Resources Canada/ Canadian Forest Service. The Heart Lake First Nation, Kaska Tribal Council, Métis National Council, Moose Cree First Nation, and the Shuswap Nation Tribal Council have joined. From the industry sector, Bowater Incorporated, Manning Diversified Forest Products Ltd., and Tolko Industries Ltd. have joined, as did Riverside Forest Products Ltd. and Slocan Forest Products Ltd., although the two have since merged with Tolko and CANFOR, respectively. Ducks Unlimited Canada, an internationally known non-governmental organization (NGO), has also joined.

The NRTEE report noted the engagement of Aboriginal partners in the Network: "The SFM Network is currently the only research institute in the country that has a dedicated budget for research on Aboriginal issues [with respect to forestry]." The Network routinely brings

inside

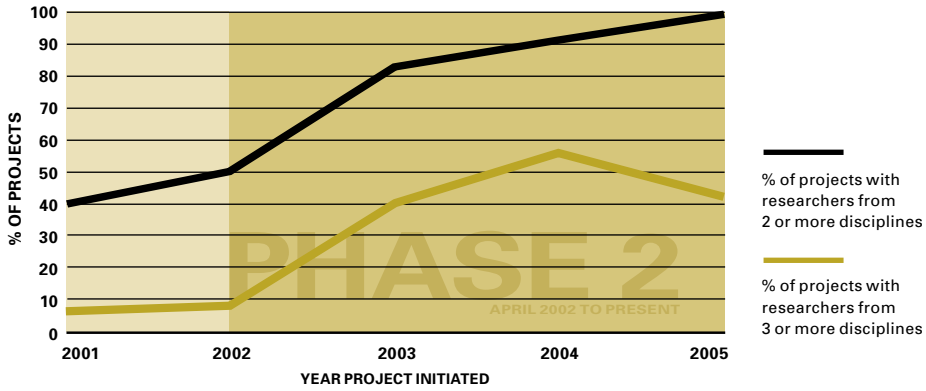


Aboriginal and non-Aboriginal forest resource managers, policy makers, researchers, and Aboriginal community members together to discuss forest research challenges and opportunities. Over the past three years, the Network has consulted with more than 30 other Aboriginal and First Nations groups across the country about opportunities to further incorporate their interests and values into the forest research agenda. In addition, issues of concern to Aboriginal peoples have grown as a component of Network research. The Network's Board of Directors includes representatives from four Aboriginal partners, currently the Gwich'in Renewable Resource Board, Little Red River Cree Nation, Heart Lake Nation, and National Aboriginal Forestry Association.

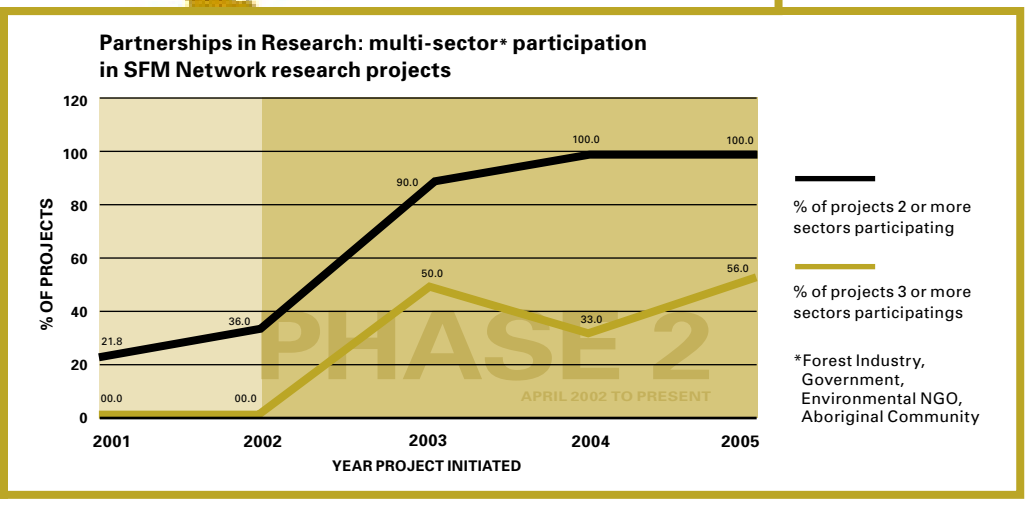
Most importantly, Network research results are beginning to find their way into government policy and industry practice across the country. Here are just a few examples:

- J.D. Irving in New Brunswick worked with Network researchers to determine the range of silviculture intensity that is compatible with the persistence of forest bird populations on the lands it manages. The New Brunswick Department of Natural Resources will also consider this information to adjust some of its threshold values for its Crown land management plans.
- Network researchers supplied briefs and contract documents to the Commission Coulombe that recommended sweeping changes to forest management in Québec.
- Network research made important contributions to support the Ontario Forest Management Guide for Natural Disturbance Pattern Emulation (2001).

Partnerships in Research: collaboration on projects from researchers from different disciplines



- Several aspects of Lousiana-Pacific Canada's proposed 20-year Forest Management Plan in Manitoba are based on Network research. This includes, for example, the plan's wetland sensitivity ranking, multi-scale indicators of biodiversity and spatial landscape assessment models, and the plan's management strategies and landscape design practices.
- Ducks Unlimited Canada is using Network research findings to provide input into changing buffer and riparian guidelines in Manitoba.
- Alberta-Pacific Forest Industries Inc. (Al-Pac) is using Network research results to better understand the cumulative effects of human activities in one of Canada's busiest corners of the boreal plain. The Network is also



helping Al-Pac understand the interactions of land use and hydrology in the boreal plain.

"Educating the next generation of researchers is critical to the ongoing work of interdisciplinary science," states Fyles. Since the Network's inception, 26 former students or Highly Qualified Personnel (HQP) have taken on academic positions at universities across Canada. Six are principal investigators on projects funded by the Network for 2005/2006. Five former HQP are now university researchers with expertise on topics involving Aboriginal communities. "We are particularly proud that Dr. David Natcher was recently appointed a Canada Research Chair at Memorial University of Newfoundland," says Fyles. One hundred and nine (109) former HQP are working for provincial, territorial, and federal government departments; 63 are working for industry and consulting companies.

Knowledge exchange has been a particularly significant growth area for the Network over the last few years. In 2003, the Network in cooperation with the NRC Research Press (2003) published a 1,039 page book of the first seven years of its research. More recently, the Network has published a unique series of Research Synthesis papers that outline various implementation recommendations and a new series of Research Notes that are short, easy to read summaries of research results. "We are in the process right now of hiring two full-time extension specialists, one based in Edmonton and one in Montréal, to further extend our research outreach to the user-sector," says Fyles.

The Network has also made strides in explaining its research efforts to Canadians. This has involved an aggressive branding campaign on two television networks, news stories in national and regional print media, articles and advertorials in national and regional forestry professional newsletters and journals, audio interviews aired across Alberta and archived to the web so that they are available internationally, and an hour-long television documentary aired many times across the country.

Overall, the accomplishments of the SFM Network have grown to the point that they are being seen across the country. "The recognition of Network successes by the NRTEE is most significant," Fyles reiterates. "Ms. Carter mentioned the need for an upcoming national leaders' conference on the future of Canada's boreal. We are looking forward to such a conference because the Network will have significant contributions to make."

For more information contact Marvin Abugov, Manager Communications: mabugov@ualberta.ca

Economic Feasibility of Recreational Enterprises with First Nations Cultural Attributes

By Ms. Kinga Uto, MSc Agricultural and Resource Economics
University of Alberta

(Reprinted with permission, Department of Rural Economy, University of Alberta)

Canada's Aboriginal communities are pursuing economic development activities at an unprecedented rate, with the goal of securing self-determined and self-reliant livelihoods, in ways that preserve and strengthen their culture. While economic activities are mostly based on primary industries, cultural tourism is increasingly being sought as a development strategy by communities wishing to participate in the global economy, and it has been highly promoted by the Canadian tourism industry for its potential to generate revenue, while providing economic enterprises compatible with Aboriginal cultural values. Under the auspices of the Sustainable Forest Management Network (SFMN), Kinga Uto and Dr. Vic Adamowicz, her supervisor, assessed the demand for cultural components of recreational camping in northeastern Alberta, to investigate the compatibility of culture-based tourism, as a development strategy, with the economic sustainability of a First Nation community in this region.

Kinga surveyed northeastern Alberta campers in the summer of 2004, using field interviews and mail-out questionnaires. The heart of the survey consisted of two economic experiments: an Attribute-Based Stated Choice experiment, designed to assess demand for various components of camping, and a Best-Worst experiment, to assess respondents' motivations for camping. The former examined demand for a cultural component which, to the researchers' knowledge, had not yet been done in this framework. It revealed that northeastern Alberta campers are generally uninterested in cultural attractions at campgrounds, to the extent that they are not willing to pay a premium for such services. This finding was validated by the results of the Best-Worst experiment, which revealed that camping activities meeting the intellectual motive for recreation – such as learning about other cultures – are relatively unimportant to respondents. Instead, people are most motivated by the opportunities for relaxing with family and friends that camping provides.

The recreation demand model indicates that respondents have very strong preferences for basic camping amenities such as fishing opportunities, beaches, and highly serviced campgrounds. This model was combined with data on current visitation to northeastern Alberta campgrounds to create a calibrated simulation model of visits for the region. The simulation model was used to forecast visitation to the First Nation's proposed resort and assess economic feasibility under a variety of assumptions about future supply and demand states. Owing to the resort's favourable qualities and location, very strong visitation rates were indicated vis-à-vis other campgrounds in the region, independent of the provision of cultural services.

Four SFM Network students presented their research findings at a poster session at the 34th Annual Canadian Science Writers Conference, June 17-21, 2005 in Jasper, Alberta.

(L-R) Ms. Kinga Uto (UofA), Mr. Eric Neilson (UNB), Mr. Brock Simons (UBC) and Ms. Piyangi Jayasinghe (UBC) are standing in front of Brock's poster.

This research demonstrates that a market for Aboriginal tourism should not be taken for granted, and highlights the importance of adequate market research prior to embarking on specialized forms of tourism. It also shows that, despite the lack of interest in Aboriginal cultural attractions in the area examined, if the proposed resort is built according to campers' preferences, the First Nation can expect to attract a good share of the region's camping market and create an economically successful enterprise.

For more information contact Ms. Kinga Uto: kinga.uto@ualberta.net

SFM Network Co-hosts 2005 Aboriginal Field School

Quaaout Resort, Chase, B.C.

By Dr. Marc Stevenson, SFM Network
Aboriginal Program Manager

The Network and Shuswap Nation Tribal Council (SNTC) co-hosted the annual SFMN Aboriginal field school on September 6-8, 2005, at Quaaout Resort near Chase, B.C. Organized and run by Marc Stevenson (SFMN), Bruce Macnab (SFMN) and Warren Fortier (SNTC), this event hosted 11 students from across Canada for two days.

Perhaps the most successful and well-attended cross-cultural awareness training camp to date, students obtained an in-depth understanding of Aboriginal needs, rights and interests with respect to forestry from a number of instructors and other presenters on topics of wide ranging importance to First Nations peoples. These included "Institutional conditions for success" (Harry Bombay, NAFA), "Aboriginal capacity for SFM" (Pamela Perreault, Garden River First Nation/UBC), "Aboriginal and Treaty Rights" (Monique Ross, Canadian Institute of Resources Law), "SNTC approaches to forestry" (Jim McGrath and Warren Fortier, SNTC), and "Shuswap Nation land claims" (Bonnie Leonard, SNTC). The contributions of Secwepmec elders, Ernie Philips and Joe Michel, provided an unparalleled cultural learning opportunity for students as they were exposed first hand to Secwepmec cultural history, traditions, knowledge and understandings.

Dr. Stevenson would like to personally thank all those students and instructors who made this event a great success, and to wish Warren Fortier and Jim McGrath the best in their new positions with the UBC Faculty of Forestry and the Kamloops Indian Band, respectively.

"I enjoyed hearing Ernie Philip and Joe Michel's presentations and participation (as well as Felix's), the opportunity to participate in a sweat, the beautiful setting. The agenda was well organized and comprehensive. I particularly enjoyed learning about other aboriginal forestry initiatives (NAFA, etc) and approaches to criteria and indicators."

– Joleen Timko, PhD candidate
Faculty of Forestry, UBC

Workshop Attendees (top photo):

First Row (l to r): Janene Shearer (UM), Warren Fortier (Shuswap Nation Tribal Council), Sarah Antonia Martz (UBC), Lisa Ambus (UBC), Heather Nickisher (UM), Pamela Perreault (UBC), Nancy MacPherson (UBC)

Second Row (l to r): Marc Stevenson (SFMN), Joleen Timko (UBC), Yuki Arai (UofA), Jim McGrath (Shuswap Nation Tribal Council), Joe Michel (Elder, Adams Lake Indian Band), Garth Greskin (UBC)

Third Row (l to r): Kati Berninger (UofM), Harry Bombay (NAFA), Bruce Macnab(SFMN)

Fourth Row (l to r): Eric Neilson (UNB), Chris Hennigar (UNB), Ernie Philip (Elder, Little Shuswap Indian Band), Felix Arnouse (Chief, Little Shuswap Indian Band)

Elder, Mr. Ernie Philips, in full regalia, demonstrated several tribal dances during the workshop.

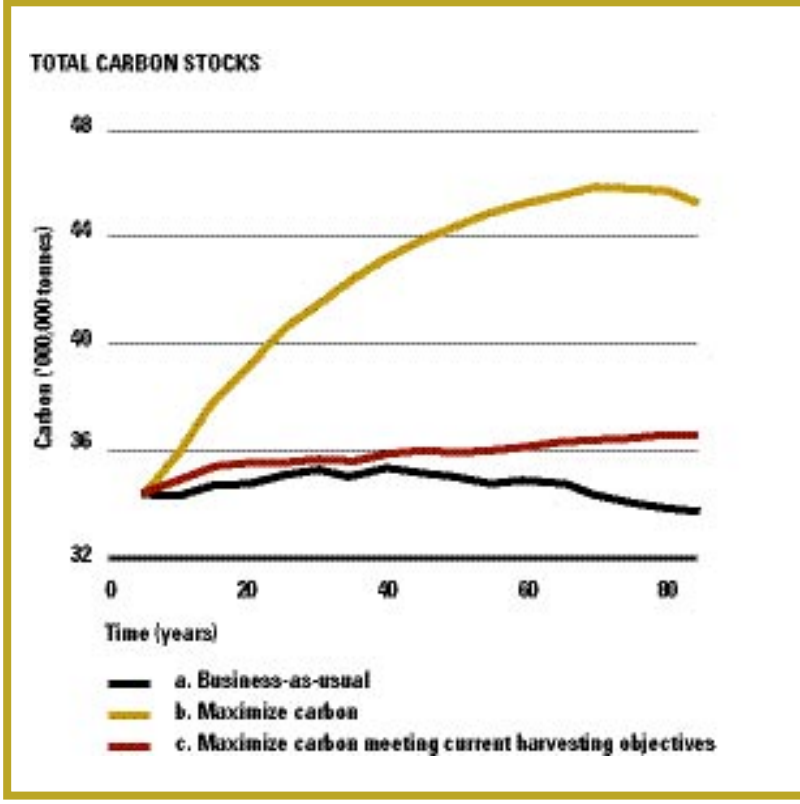
Adapted Timber Supply Model can now Use Carbon (C) as Forest Management Indicator

By Eric Neilson, MScF Candidate
University of New Brunswick

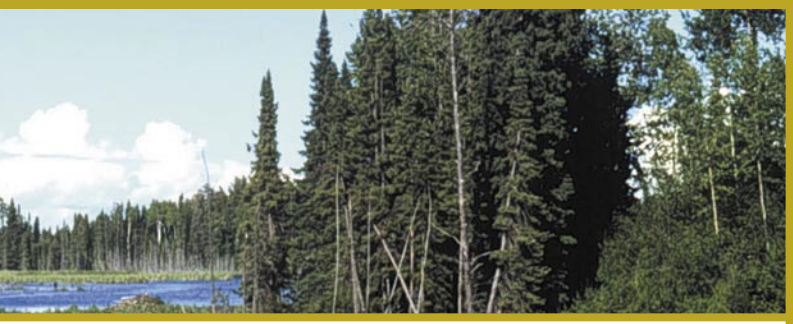
Increasing concentration of atmospheric carbon dioxide (CO_2) is widely believed to be contributing to global warming and climate change. Forests in Canada play a pivotal role in the global carbon cycle and account for about 30% of the earth's terrestrial forest carbon (C) stores. Through the process of photosynthesis, areas of growing forest absorb and sequester C from the atmosphere and store it as woody biomass. Forest managers therefore have a direct impact on the C balance of Canadian forests. Decisions made at the management level will impact future forest C stocks, and increases in forest C may offer economic incentives through the Kyoto Protocol's emissions trading mechanisms.

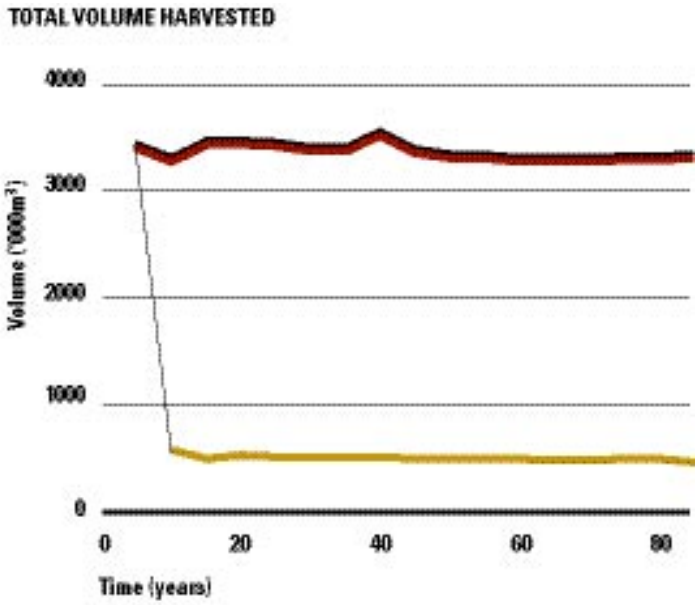
Pending a 2006 decision by the federal government on whether forest management will be included in Canada's emissions accounting framework under the Kyoto Protocol, forest managers may be asked to report C emissions changes on their landscapes. Should this be the case, managers will have to calculate forest C using one of several C dynamics models. Quantifying the amount of C on forested landscapes is an onerous task, which is facilitated by a computer model developed by the Canadian Forest Service called the Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3). The model simulates C in forms of biomass and dead organic matter in the forest based on amounts of timber volume. Data on timber volume are readily available and used extensively in forest management in Canada. Currently, the CBM-CFS3 is one of a few forest C models recognized by the International Panel on Climate Change that forest managers can use to report forest C stock changes. Managers can use CBM-CFS3 to either determine the effects of current or proposed management actions on forest C, or actively manage for forest C throughout their planning horizon. It is feasible to include management indicators for C in forest management planning.

Current timber supply analysis, in New Brunswick and other provinces, is conducted using linear programming and timber supply models. These models are flexible in nature to accommodate management objectives for timber and non-timber values. It is a logical step to include forest C as another indicator of forest health, productivity, and sustainability.



Projected forest carbon stocks and total volume harvested beginning in 2002 on the Bowater Maritimes Inc. Crown License in New Brunswick. Three management scenarios are projected for 80 years:





a. 'business-as–usual' management,
b. management to maximize carbon in the forest, and
c. management to meet business-as-usual timber harvest levels while maximizing forest C.

Eric Neilson, a Masters student at the University of New Brunswick supervised by Dr. David MacLean, conducted a case study of effects of forest management on C using the Bowater Maritimes Inc. New Brunswick Crown timber license. The landbase encompasses about 400,000 hectares of forested woodlands. The CBM-CFS3 was used to simulate amounts of forest C based on volume, age class and terrestrial ecozone. Forest C yield curves were then input into a timber supply model and linear programming was used to search for alternative harvesting solutions that favour C.

Three scenarios were compared: 1) a current 'business-as-usual' scenario, providing a baseline of forest C under current management (Fig. 1a); 2) management to maximize forest C (Fig. 1b); and 3) management constrained to maintain current timber harvest levels but otherwise maximizing forest C stocks. Managing only for C reduced harvest levels to 100,000 m^3 per year compared to 685,000 m^3 per year under the business-as-usual approach. However, the third 'timber-plus-C' scenario resulted in 61,000 tonnes more forest C per year than the business-as-usual case during the first Kyoto commitment period from 2008-2012, while still maintaining planned harvest levels. This increased C could qualify as an emissions offset, which could be sold to other sectors of the economy at current C trading rates. Strategies for maintaining high forest C amounts included longer rotation ages, managing for more hardwood stand types on the landscape, and more use of selection harvesting instead of clearcutting. The approach linking CBM-CFS3 with Woodstock timber supply planning allows forest managers to determine ways to alter harvesting schedules to maximize or maintain forest C.

The project was funded by the Sustainable Forest Management Network, Bowater Maritimes Inc., NSERC, and the University of New Brunswick Faculty of Forestry and Environmental Management, and was conducted in cooperation with the CFS Carbon Accounting Team.

For more information contact Mr. Eric Neilson: d3sw@unb.ca

SFM Network Partners

GRANTING COUNCILS

- Networks of Centres of Excellence / Government of Canada
- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Social Sciences and Humanities Research Council of Canada (SSHRC)

PARTNERS

Governments

- Government of Canada (Environment Canada)
  (Natural Resources Canada, Canadian Forest Service)
  (Parks Canada, Ecological Integrity Branch)
- Government of Alberta (Innovation and Science)
  (Sustainable Resource Development)
- Government of British Columbia (Ministry of Forests and Range)
- Government of Manitoba (Manitoba Conservation)
- Government of Newfoundland and Labrador (Department of Natural Resources)
- Government of Ontario (Ministry of Natural Resources)
- Gouvernement du Québec (Ministère des Ressources naturelles et de la Faune)
- Government of Yukon (Department of Energy, Mines and Resources)

Industries

- Abitibi-Consolidated Inc.
- Ainsworth Lumber Co. Ltd.
- Alberta-Pacific Forest Industries Inc.
- Bowater Incorporated
- Canadian Forest Products Ltd.
- Daishowa-Marubeni International Ltd.
- J.D. Irving, Limited
- Louisiana-Pacific Canada Ltd.
- Manning Diversified Forest Products Ltd.
- Millar Western Forest Products Ltd.
- Tembec Inc.
- Tolko Industries Ltd.
- Weyerhaeuser Company

NGO

- Ducks Unlimited Canada

Aboriginal Groups

- Gwich'in Renewable Resource Board
- Heart Lake First Nation
- Kaska Tribal Council
- Little Red River Cree / Tallcree First Nation
- Métis National Council
- Moose Cree First Nation
- Shuswap Nation Tribal Council

Institutions

- University of Alberta (host institution)
- Concordia University
- Dalhousie University
- Lakehead University
- McGill University
- Memorial University of Newfoundland
- Royal Roads University
- Ryerson University
- Thompson Rivers University
- Trent University
- Université de Moncton
- Université de Montréal
- Université de Sherbrooke
- Université du Québec à Chicoutimi
- Université du Québec à Montréal
- Université du Québec à Rimouski
- Université du Québec à Trois-Rivières
- Université du Québec en Abitibi-Témiscamingue
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Affiliated Members

- Canadian Institute of Forestry
- Forest Ecosystem Science Cooperative, Inc.
- Forest Engineering Research Institute of Canada (FERIC)
- Lake Abitibi Model Forest
- Manitoba Model Forest
- National Aboriginal Forestry Association

October 2005

Vision

The forests of Canada will maintain their extent, diversity and ecological vitality and be managed in a manner that will provide for the broad social, cultural and economic needs of all Canadians.

Mission

The Sustainable Forest Management Network is a national partnership in research and training excellence. Its mission is to deliver an internationally recognized, interdisciplinary program that undertakes relevant university-based research. It will develop networks of researchers, industry, government and First Nations partners, and offer innovative approaches to knowledge transfer. The Network will train scientists and advanced practitioners to meet the challenges of modern natural resource management.

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