



SUSTAINABLE **FOREST**
MANAGEMENT NETWORK



RÉSEAU DE GESTION
DURABLE DES **FORÊTS**

Research Partnerships for Better Questions and Useful Answers

Margaret Donnelly, Jane Stewart,
Cynthia Kaufmann and Catherine Rostron
SFM Network

IUFRO Extension Working Party Symposium
Mattawa and Ottawa, Ontario
September 25, 2008



The SFM Network

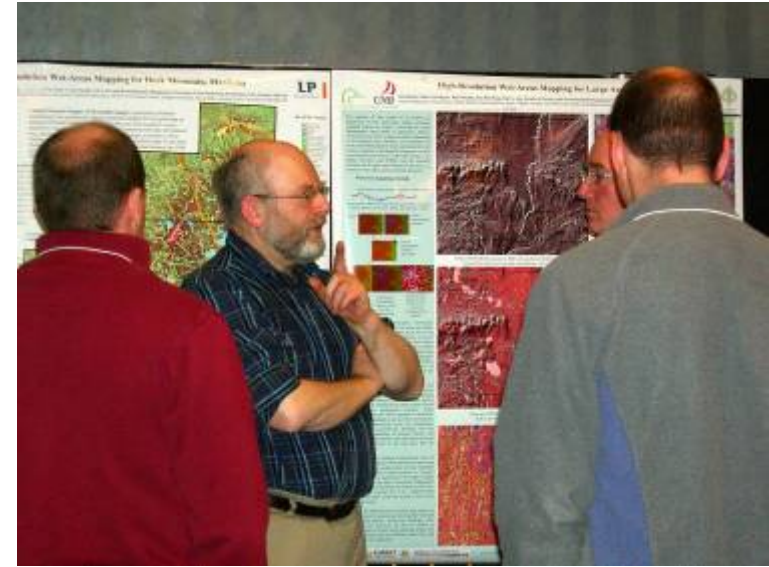
- A Network of Centres of Excellence
- Virtual research institute (no bricks & mortar)
- More than 190 researchers
- More than 310 graduate students
- 35 national projects currently supported
- Budget ~ \$7,000,000





The SFM Network

- A national not-for-profit corporation
- Governed by an elected Board of Directors
- A partnership of businesses, governments, Aboriginal organizations, NGOs and universities
- Investor-driven research priorities
- Knowledge translation and dissemination
- Public communications and education





J.D. IRVING, LIMITED



ALBERTA-PACIFIC
FOREST INDUSTRIES INC.

MANITOBA



MODEL FOREST
NETWORK

RÉSEAU DE
FORÊTS MODÈLES

Ressources naturelles
et Faune

Québec



Environnement
Canada

Environment
Canada



Sustainable Resource
Development



Over 196 Researchers at 36 Universities



SFM Network Research Framework	The Global Environment: Economic, Social, Ecological			
	<i>Strategies and Alternatives for SFM</i>			
	Policies and Institutions (D) including Aboriginal tenure and title			
	Integrated Resource Management determining Landscape Zonation (B,C)			
Intensive Mgmt	Extensive Management incl. Natural Disturbance Management (A)	Protected and 'natural' areas	Other land-use sectors	
←	<i>Stand and Landscape Level Practices</i>		→	

C&I of Ecosystem Products, Services and Values	Economic	Timber (E)	<i>The Domain of Sustainable Forest Management</i>
		Non-timber	
	Ecological	Terrestrial (F)	
		Riparian	
		Aquatic (G)	
	Social	Aboriginal (H)	
		Non-aboriginal (I)	

SFM Network
Research
Framework

The Global Environment: Economic, Social, Ecological

Strategies and Alternatives for SFM

Policies and Institutions (D) including Aboriginal tenure and title

Integrated Resource Management determining Landscape Zonation (B,C)

Intensive
Mgmt

Extensive Management

Protected
and 'natural'

Other
land-use

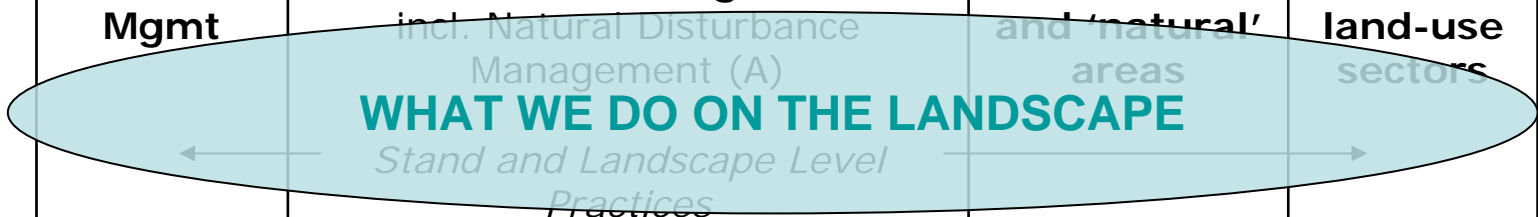
incl. Natural Disturbance
Management (A)

areas

sectors

WHAT WE DO ON THE LANDSCAPE

*Stand and Landscape Level
Practices*



The Domain of Sustainable Forest Management

C&I of Ecosystem Products, Services and Values	Economic	Timber (E)
		Non-timber
	Ecological	Terrestrial (F)
		Riparian
		Aquatic (G)
	Social	Aboriginal (H)
		Non-aboriginal (I)

SFM Network
Research
Framework

The Global Environment: Economic, Social, Ecological

Strategies and Alternatives for SFM

Policies and Institutions (D) including Aboriginal tenure and title

HOW WE REGULATE WHAT WE DO ON THE LANDSCAPE

Intensive
Mgmt

Extensive Management

Protected

Other

Management (A)
*Stand and Landscape Level
Practices*

areas

land-use
sectors

WHAT WE DO ON THE LANDSCAPE

C&I of Ecosystem Products, Services and Values	Economic	Timber (E)
		Non-timber
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The Domain of Sustainable Forest Management

SFM Network
Research
Framework

The Global Environment: Economic, Social, Ecological
DRIVERS OF HOW WE REGULATE AND WHAT WE DO
Strategies and Alternatives for SFM

Policies and Institutions (e) including Aboriginal tenure and title

HOW WE REGULATE WHAT WE DO ON THE LANDSCAPE

Integrated Resource Management determining Landscape Zonation (B-C)
Intensive Mgmt Extensive Management Protected Other
incl. Natural Resources and 'natural' land-use
Management (A) areas sectors
Stand and Landscape Level Practices

WHAT WE DO ON THE LANDSCAPE

C&I of Ecosystem Products, Services and Values	Economic	Timber (E)
		Non-timber
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Policies and Institutions (e) including Aboriginal tenure and title

HOW WE REGULATE WHAT WE DO ON THE LANDSCAPE

Intensive Mgmt	Extensive Management including	Protected areas (natural)	Other land-use sectors
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WHAT WE DO ON THE LANDSCAPE

Management (A)
*Stand and Landscape Level
Practices*

C&I of Ecosystem Products,
Services and Values
WHAT WE WANT
Ecological Economic
Social

Timber
(E)

Non-timber

Terrestrial (F)

Riparian

Aquatic
(G)

Aboriginal
(H)

Non-aboriginal
(I)

The Domain of Sustainable Forest Management

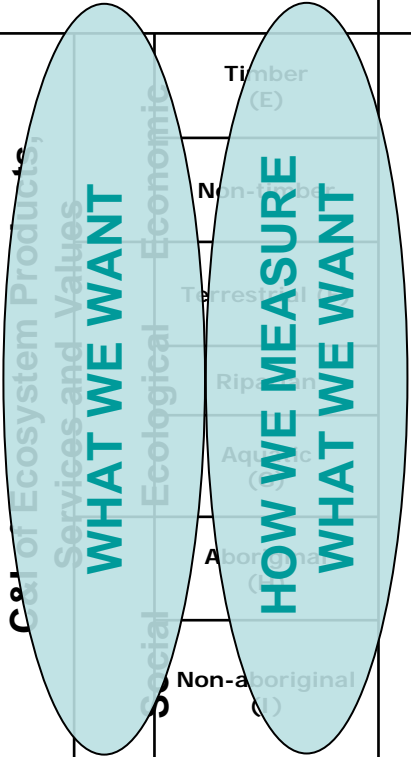
SFM Network
Research
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The Global Environment: Economic, Social, Ecological
DRIVERS OF HOW WE REGULATE AND WHAT WE DO
Strategies and Alternatives for SFM

HOW WE REGULATE WHAT WE DO ON THE LANDSCAPE

	Policies and Institutions (B) including Aboriginal tenure and title		
	Integrated Resource Management determining Landscape Zonation (B,C)		
Intensive Mgmt	Extensive Management including	Protected areas (natural)	Other land-use sectors
	Management (A) WHAT WE DO ON THE LANDSCAPE <i>Stand and Landscape Level Practices</i>		

The Domain of Sustainable Forest Management



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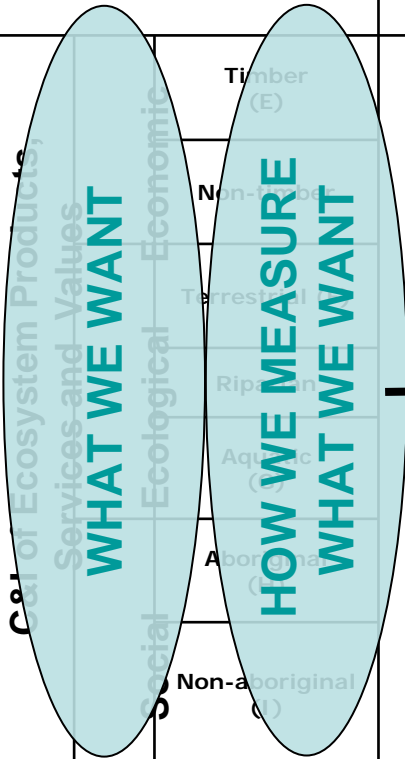
Policies and Institutions (B) including Aboriginal tenure and title
HOW WE REGULATE WHAT WE DO ON THE LANDSCAPE
Integrated Resource Management determining Landscape Zonation (B-C)

Intensive Mgmt	Extensive Management <i>including</i>	Protected areas <i>(natural)</i>	Other land-use sectors
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WHAT WE DO ON THE LANDSCAPE
*Management (A)
Stand and Landscape Level
Practices*

The Domain of Sustainable Forest Management

WHAT WE GET

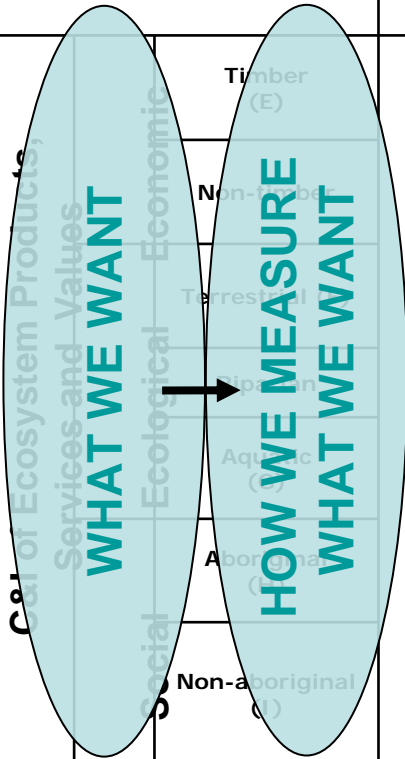


SFM Network
Research
Framework

The Global Environment: Economic, Social, Ecological
DRIVERS OF HOW WE REGULATE AND WHAT WE DO
Strategies and Alternatives for SFM

Policies and Institutions (e.g. including Aboriginal tenure and title)
HOW WE REGULATE WHAT WE DO ON THE LANDSCAPE

Intensive Mgmt Extensive Management Protected areas Other land-use sectors
WHAT WE DO ON THE LANDSCAPE
Stand and Landscape Level Practices



The Domain of Sustainable Forest Management

WHAT KNOWLEDGE DO WE NEED TO ENSURE THAT WE CAN SUSTAIN THE SUPPLY OF WHAT WE WANT INTO THE FUTURE?



Demand for forest education and outreach

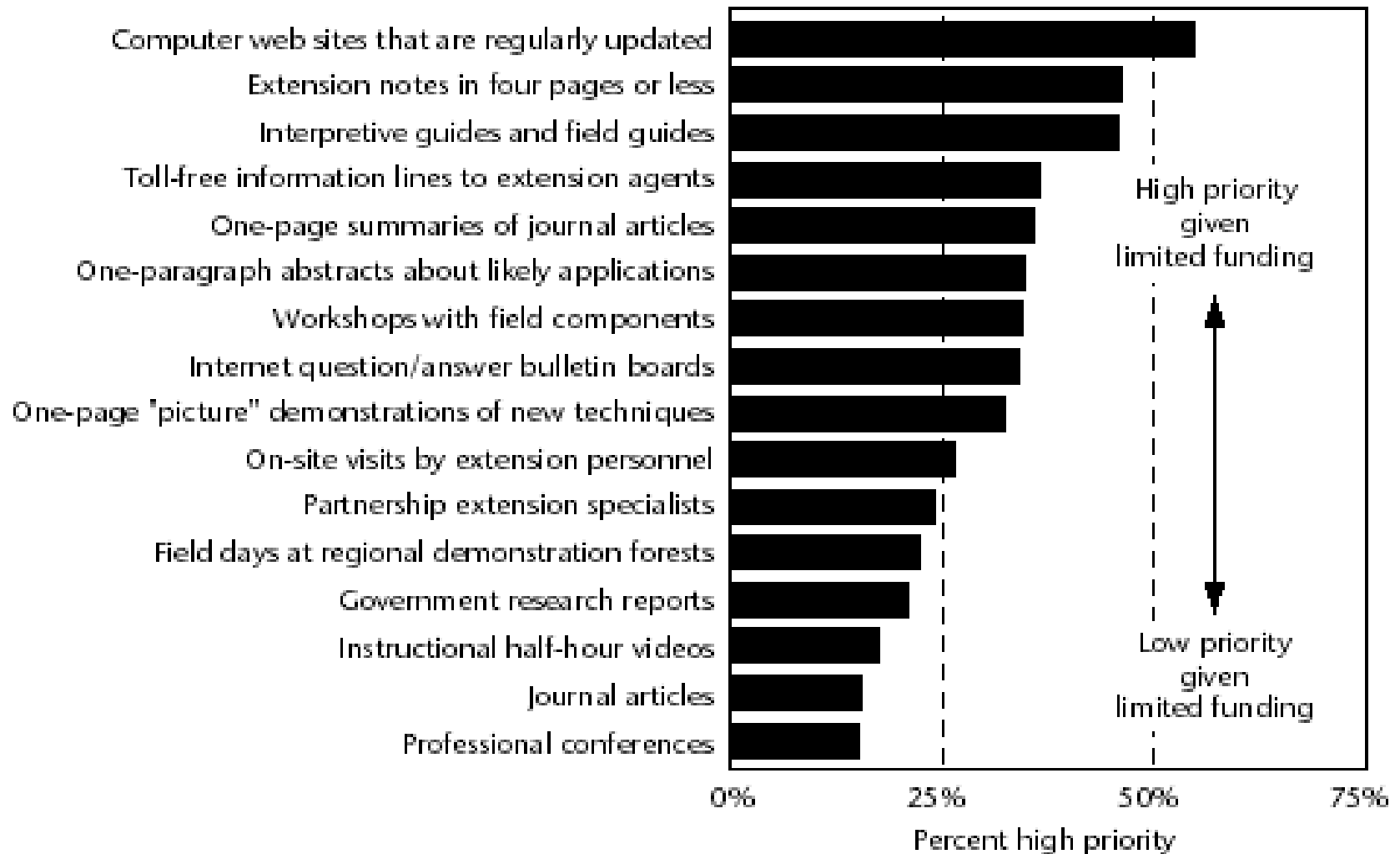
- Continuing education requirements for professional foresters and forest technologists.
- Travel restrictions for government and industry foresters
- Remote locations
- Dial-up internet
- Disconnect between language of researchers and practitioners





What is the Knowledge Exchange program?

- KETE = 'Knowledge Exchange and Technology Extension'.
- Program initiated to promote adoption and use of new knowledge and implementation of research results.
- Goal - to facilitate the development of alternative policies and practices in support of sustainable forest management.
- Two-way exchange of knowledge to promote understanding of management problems & complexity of solutions.
- SFM Network Knowledge Exchange Strategy is available for further information.



Preferred methods for information transfer given limited funding. Taken directly from Gregory and Satterfield's (1999; Figure 7.5) survey of British Columbian resource managers.



Knowledge Exchange Strategy

Three core strategies have evolved to facilitate knowledge exchange and application of SFM Network research:

1. SFM Strategic Frameworks
2. Enhanced Researcher and Partner Linkages
3. Inventory, organization, synthesis and dissemination of completed SFM Network research

Research Project Life Cycle and the KE Model

- Model an attempt to develop a different approach to KE – throughout the process not only after project completion
- Critical that Researchers & Partners understand they **both** have responsibilities in process

Research
Priority &
CFP

Networking
Workshops

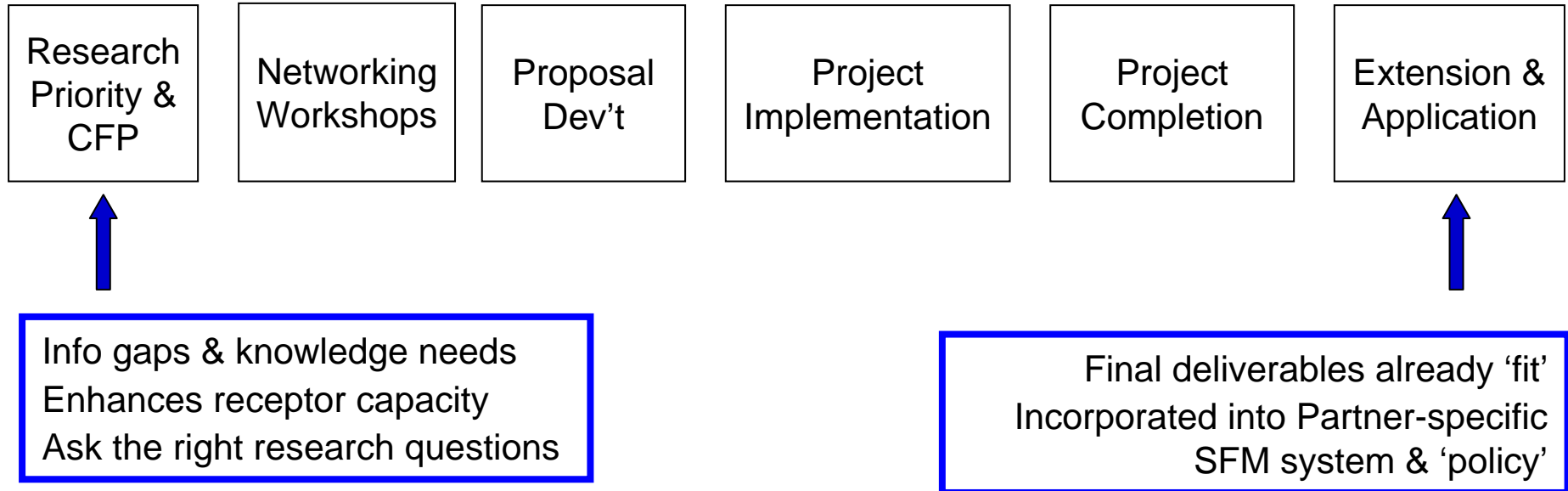
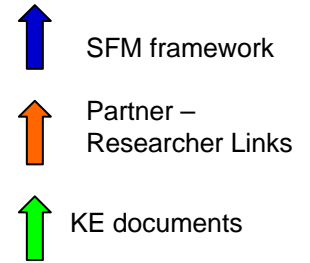
Proposal
Dev't

Project
Implementation

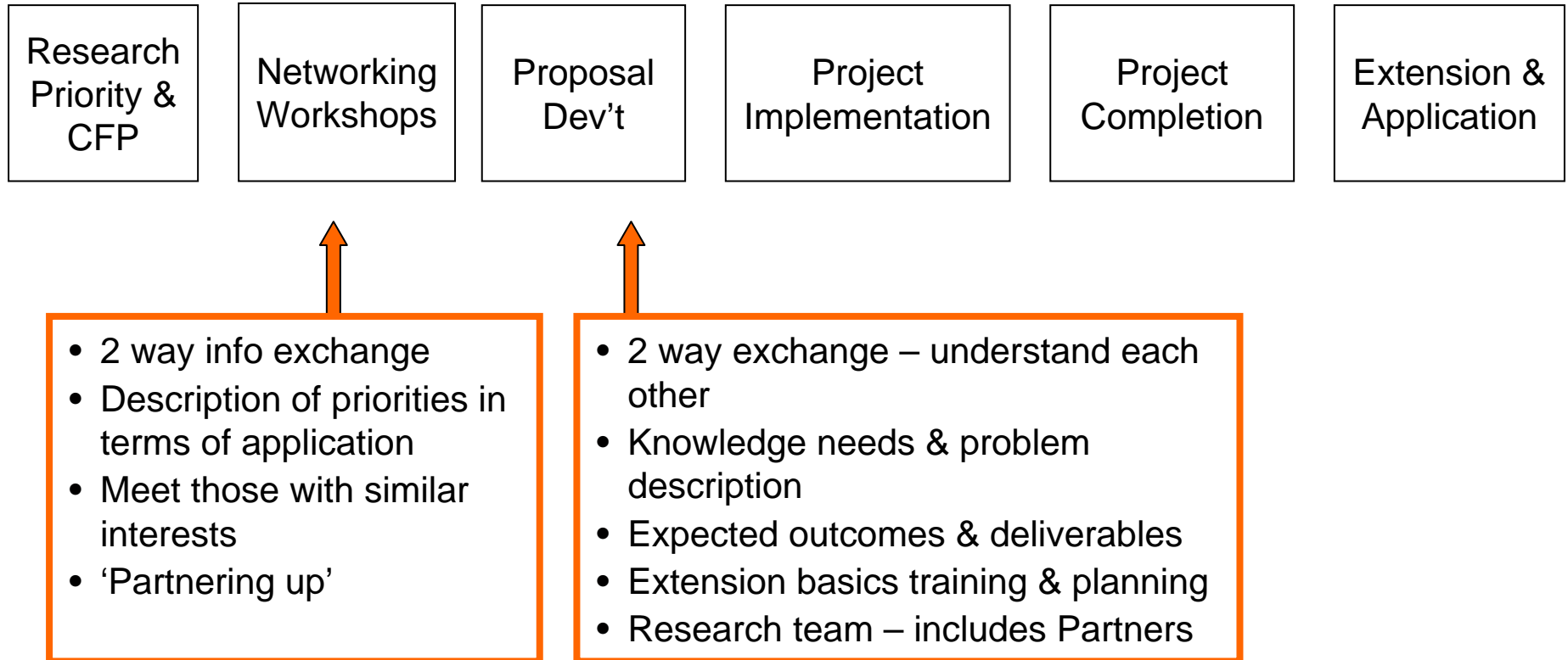
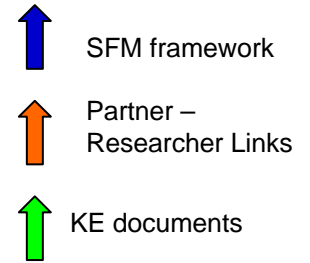
Project
Completion

Extension &
Application

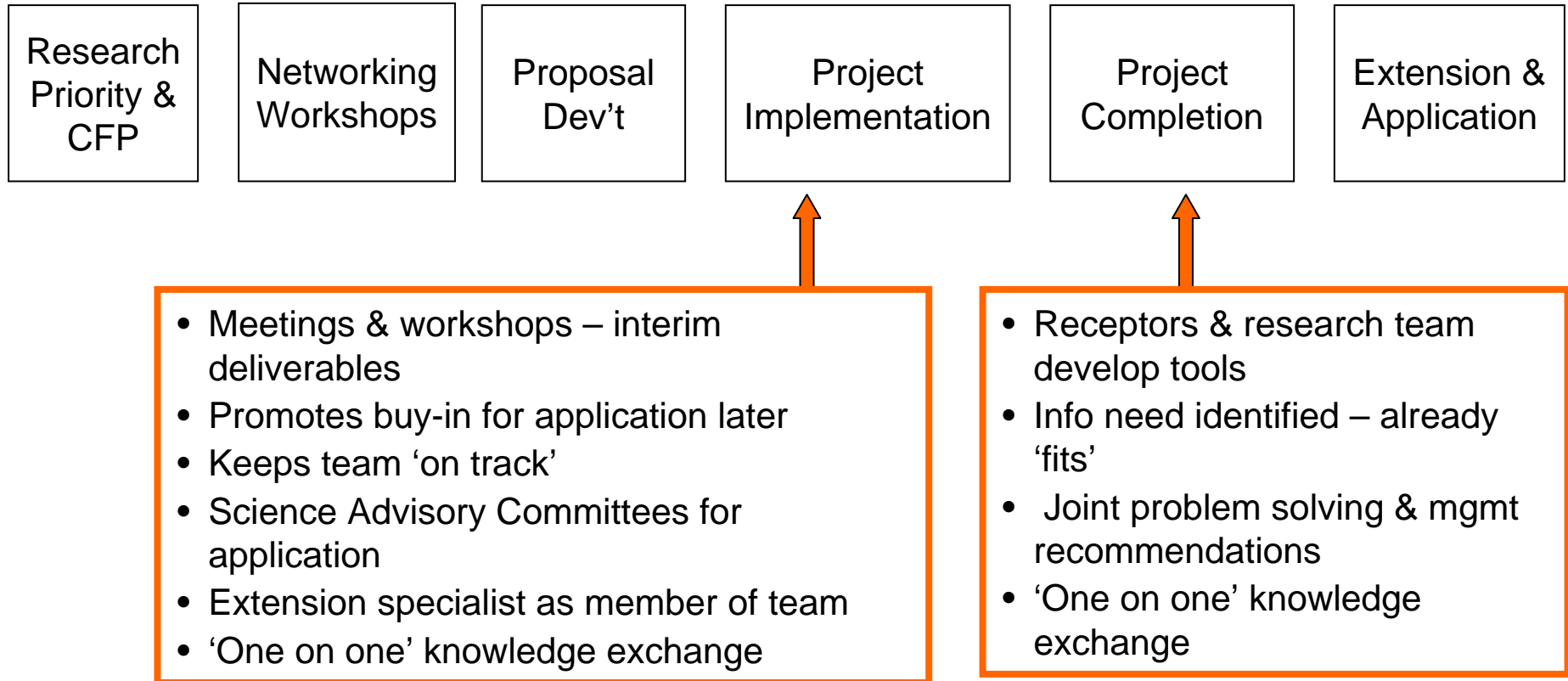
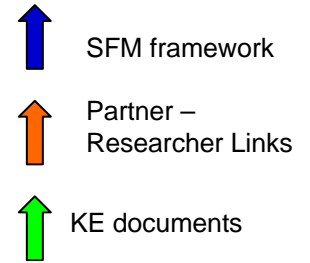
Research Project Life Cycle and the KE Model



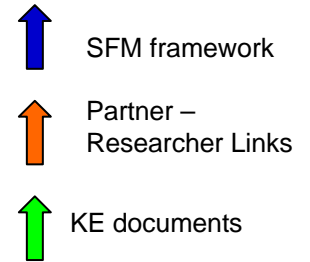
Research Project Life Cycle and the KE Model



Research Project Life Cycle and the KE Model



Research Project Life Cycle and the KE Model



• Extension tools & implementation documents developed for integration into SFM framework & policy of directly involved partners

- Research team deliverables extended to other partners via website
- Integration into SFM system approach via Network knowledge exchange program
 - Management & policy recommendations via Network synthesis reports
 - Implementation workshops
 - Research notes



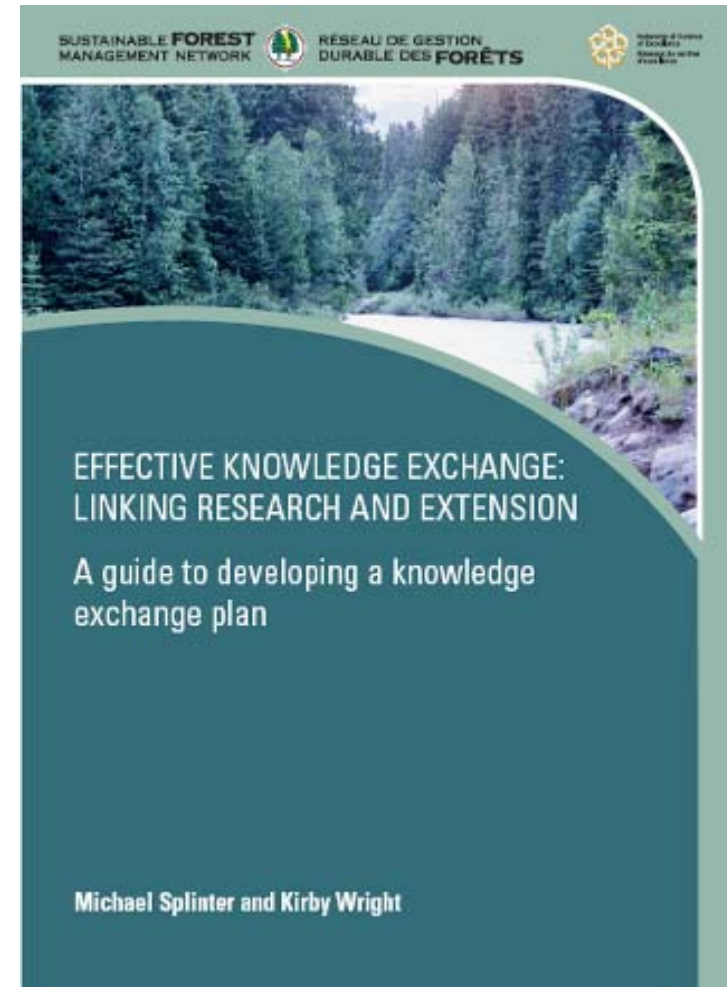
Partner involvement in knowledge exchange

- Direct engagement with research teams from project initiation to completion and implementation.
- Discussions at annual Network Partners Meetings:
 - Program direction and priorities
 - Identification of potential workshop topics, locations, partnerships
- Through the Network Knowledge Exchange planning committee
 - Partner reps, university and extension reps, Network staff
- Through regional (provincial) discussion forums



Resources for Research Teams

- 'Extension Basics' toolkit.
- "Guidelines to Authors" available for authors looking to write research notes and synthesis reports.
- Research Notes and Synthesis Reports on website.
- Network staff available to assist research teams with Knowledge Exchange planning & various activities associated with their projects.



SFM Network Knowledge Exchange Plan

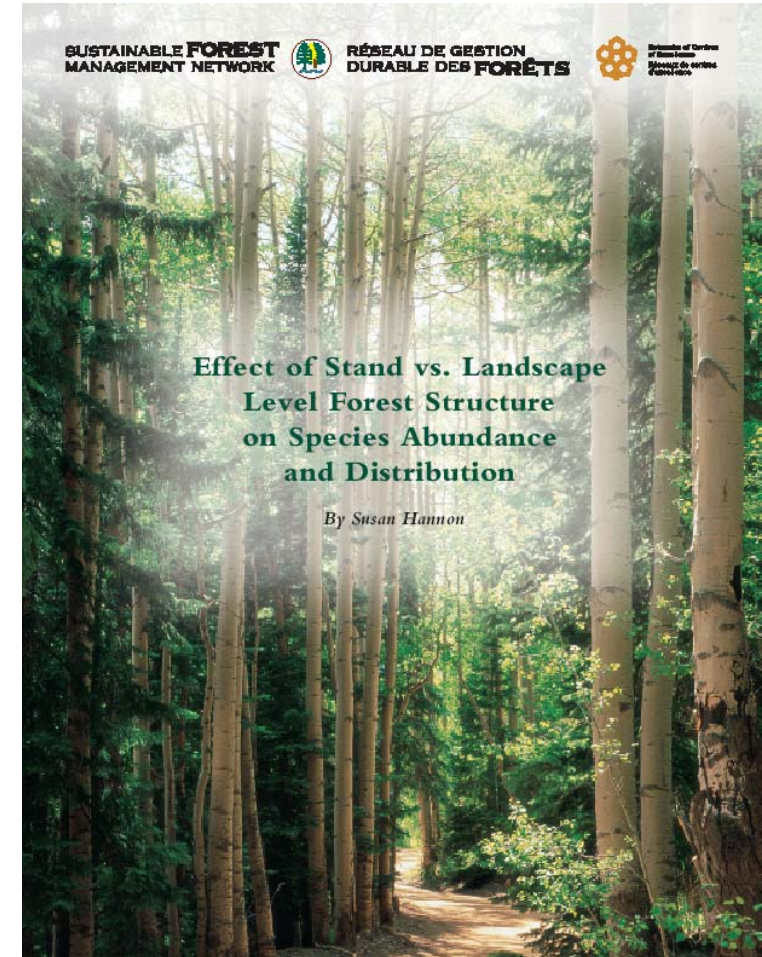
Project title: Forest successional dynamics in the eastern-central Canadian boreal forests: modelling compositional and structural pathways and their diversity characteristics

Project Objectives	Deliverables	Target Audience	Who?	When?
<ul style="list-style-type: none"> • To quantify successional pathways of forest cover types • To determine rates of change in species composition & relate to spatial forest planning models • To define & classify stand structure types using both live and CWD characteristics & quantify successional pathways of stand structure 	<p>Workshop & field tour</p> <p>Research notes: A B</p>	<p>Research team including research scientists, graduate students and project partners</p> <p>Forest and Resource Managers, Planners</p>	<p>Chen</p> <p>Graduate student A B</p>	<p>September 2006</p> <p>July 2007</p>
<ul style="list-style-type: none"> • To quantify post-fire & post-logging stand composition for the purpose of forest mgmt planning • to examine the similarity of stand structural attributes including live tree structure & CWD in relation to logging & fire 	<p>Research notes: C D</p>	<p>Forest and Resource Managers, Planners</p>	<p>PI & collaborators</p>	<p>July 2008</p>
<ul style="list-style-type: none"> • To complete a synthesis of forest successional models for forest mgmt planning 	<p>KETE Synthesis doc on forest successional pathways</p>	<p>Senior managers, researchers, Forest and Resource Managers</p>	<p>PDF</p>	<p>2006</p>



Publications: Synthesis documents

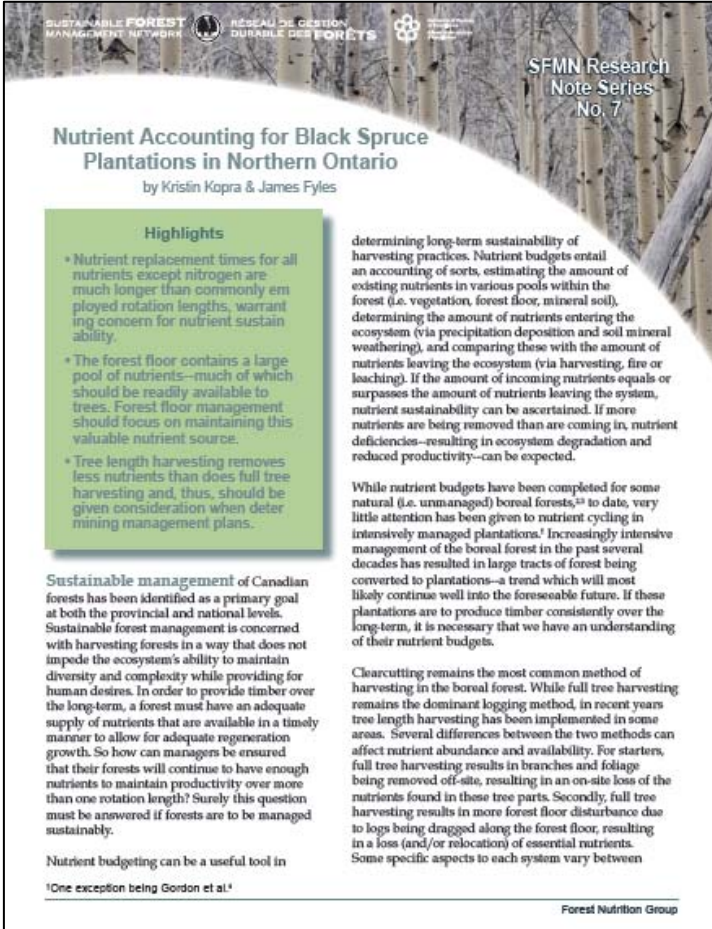
- Synthesize research findings from several related projects
- Emphasis on implementation
- 13 documents on a variety of topics:
 - Fire cycles across the boreal forest
 - Public participation in forestry
 - Capacity for whom? Capacity for what? Aboriginal capacity and Canada's forest sector
 - Alternative tenure approaches for sustainable forest management: lessons for Canada





Publications: Research notes

- Brief 4-6 page summaries of research findings
- Emphasis on implementation
- 34 research notes on a variety of topics:
 - Tenure and NTFPs
 - Bio-fuels and forestry
 - Aboriginal-caribou relationships
 - Ecosystem management
- New research notes developed by research teams



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SFMN Research Note Series No. 7

Nutrient Accounting for Black Spruce Plantations in Northern Ontario

by Kristin Kopra & James Fyles

Highlights

- Nutrient replacement times for all nutrients except nitrogen are much longer than commonly employed rotation lengths, warranting concern for nutrient sustainability.
- The forest floor contains a large pool of nutrients—much of which should be readily available to trees. Forest floor management should focus on maintaining this valuable nutrient source.
- Tree length harvesting removes less nutrients than does full tree harvesting and, thus, should be given consideration when determining management plans.

Sustainable management of Canadian forests has been identified as a primary goal at both the provincial and national levels. Sustainable forest management is concerned with harvesting forests in a way that does not impede the ecosystem's ability to maintain diversity and complexity while providing for human desires. In order to provide timber over the long-term, a forest must have an adequate supply of nutrients that are available in a timely manner to allow for adequate regeneration growth. So how can managers be ensured that their forests will continue to have enough nutrients to maintain productivity over more than one rotation length? Surely this question must be answered if forests are to be managed sustainably.

Nutrient budgeting can be a useful tool in

determining long-term sustainability of harvesting practices. Nutrient budgets entail an accounting of sorts, estimating the amount of existing nutrients in various pools within the forest (i.e. vegetation, forest floor, mineral soil), determining the amount of nutrients entering the ecosystem (via precipitation deposition and soil mineral weathering), and comparing these with the amount of nutrients leaving the ecosystem (via harvesting, fire or leaching). If the amount of incoming nutrients equals or surpasses the amount of nutrients leaving the system, nutrient sustainability can be ascertained. If more nutrients are being removed than are coming in, nutrient deficiencies—resulting in ecosystem degradation and reduced productivity—can be expected.

While nutrient budgets have been completed for some natural (i.e. unmanaged) boreal forests,¹ to date, very little attention has been given to nutrient cycling in intensively managed plantations.² Increasingly intensive management of the boreal forest in the past several decades has resulted in large tracts of forest being converted to plantations—a trend which will most likely continue well into the foreseeable future. If these plantations are to produce timber consistently over the long-term, it is necessary that we have an understanding of their nutrient budgets.

Clearcutting remains the most common method of harvesting in the boreal forest. While full tree harvesting remains the dominant logging method, in recent years tree length harvesting has been implemented in some areas. Several differences between the two methods can affect nutrient abundance and availability. For starters, full tree harvesting results in branches and foliage being removed off-site, resulting in an on-site loss of the nutrients found in these tree parts. Secondly, full tree harvesting results in more forest floor disturbance due to logs being dragged along the forest floor, resulting in a loss (and/or relocation) of essential nutrients. Some specific aspects to each system vary between

¹One exception being Gordon et al.¹

Forest Nutrition Group

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Welcome to the Sustainable Forest Management Network

The Sustainable Forest Management Network (SFMN or SFM Network) is an incorporated non-profit Canadian research group. SFM is a Network for Centres of Excellence (NCE). With our partners, we fund, plan, conduct, and apply interdisciplinary, university-based research that addresses issues related to sustainable forest management.

New Features

Visit our events listing for upcoming SFM Network [workshops](#) and [CIF e-lectures](#).

Synthesis report: "[Alternative tenure approaches to achieve SFM](#)" now available.

New [research notes](#) now available.

[2009 Celebration](#) Join us in Gatineau Quebec for our major conference April 21-23, 2009.

www.sfmnetwork.ca

Information for:

[Partners](#)[The Public](#)[Researchers](#)[Students](#)

Quick Links:

[Knowledge Exchange](#)[Current SFM Network Projects](#)[Forest Futures](#)[Sustainable Aboriginal
Communities](#)

Networks of Centres
of Excellence

Extension Activities

- Extension Courses & Professional Continuing Education
 - Ecosystem based management (Université Laval)
 - Variable retention (College of Alberta Professional Foresters & University of Alberta)
 - E-lecture series with Canadian Institute of Forests

SUSTAINABLE FOREST
MANAGEMENT NETWORK



RÉSEAU DE GESTION
DURABLE DES FORÊTS

Canadian Institute of Forestry
Institut forestier du Canada

WHAT DO WE KNOW? WHERE DO WE NEED TO GO?

ASSESSING THE STATE OF KNOWLEDGE OF SUSTAINABLE FOREST MANAGEMENT

ELECTRONIC LECTURE SERIES SCHEDULE ALL E-LECTURES START AT 1:30 PM EST



THE RELATIONSHIP BETWEEN PROTECTED AREAS AND SUSTAINABLE FOREST MANAGEMENT – KISSING COUSINS OR FAMILY FEUD?

September 17, 2008

Dr. Yolanda F. Wiersma
Assistant Professor, Department of Biology
Memorial University



MANAGING WATER RESOURCES IN CANADA'S FORESTS

November 12, 2008

Dr. Irena Creed
Associate Professor
University of Western Ontario



ONE SIZE DOESN'T FIT ALL: FINDING WAYS TO HARMONIZE ABORIGINAL AND INDUSTRY INTERESTS IN FORESTS

October 1, 2008

Dr. Stephen Wyatt
Professor, Social Forestry and Forest Policy
Université de Moncton, campus d'Edmundston



UNMIXING THE MIXEDWOODS: BIODIVERSITY, PRODUCTIVITY AND CLIMATE CHANGE ISSUES IN THE BOREAL MIXEDWOODS

November 26, 2008

December 3, 2008
December 10, 2008

Dr. Ellen Macdonald
Professor
University of Alberta



CLIMATE CHANGE AND FOREST MANAGEMENT: THE FUTURE AIN'T WHAT IT USED TO BE

October 15, 2008

Dr. Mark Johnston
Senior Research Scientist
Saskatchewan Research Council



Dr. Nicolas Lecomte
Président, Valeur Nature
Beaucanton, Québec



VALUING NATURE: MARKET-BASED APPROACHES TO FOREST ECOSYSTEM MANAGEMENT

October 29, 2008

Dr. Vic Adamowicz
Associate Dean and Professor
University of Alberta

All electronic lectures are free to CIF/IFC members; \$25 per lecture for non-members: www.cif-ifc.org/en/e-lecture

FOR ADDITIONAL INFORMATION OR TO REGISTER:

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Canadian Institute of Forestry/Forestry Research Partnership
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Phone: 705 744-1715 ext. 609 Fax: 705 744-1716



- Development of Regional Discussion Forums
 - Quebec: Implementation of EBM
 - Manitoba: Landscape level planning guidelines workshop
 - Ontario: Aboriginal perspectives on woodland caribou
- Workshops & National level partnerships – Forest Product Association Canada, CIF, Model Forest Network – for co-hosting workshops, increase visibility, opportunities





Reflections



Regional vs. National

- Different regions in Canada have different needs and priorities
 - BC: Mountain pine beetle
 - Manitoba: Landscape planning and design
 - Quebec: Ecosystem based management
- Development of regional discussion forums
 - Networking groups of industry, province, First Nations and NGOs
 - Initiate workshops of regional interest
 - Local workshops are better attended, less expensive
- E-lectures and distance-based learning



“I wanted to thank you again for the great opportunity that you and the rest of the workshop organizers and your sponsors provided to the forest management community in Manitoba this week... Here in Manitoba as elsewhere I’m sure, it is difficult to get staff and interested groups out to this sort of workshop due to travel and budget restrictions. ...There is a need for more of these types of events.”

- Tim Swanson, Eastern Region Operations,
Manitoba Conservation



Building connections between researchers and practitioners

- Network staff act as liaisons between researchers and partner organizations
- Knowledge exchange starts from the beginning of the research project
- Connections are relationship-based; they need networking opportunities and they take time to develop





- Over the past decade, there has been a strong change in forestry research
 - Increased collaboration between industry, government, First Nations directly with researchers
 - A generation of graduate students “trained” in working with partner organizations

- Indicator of success: The extensionist’s job is obsolete?





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