

The Essential Role of Science in Sustainable Forestry

Ontario Forest Co-op Science Day

Sault Ste. Marie, Ontario (April 4, 2007)

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The Landscape has Changed...

- Forestry-related legislation & regulation are more comprehensive and far-reaching than ever before
 - New federal Species at Risk Act
 - Bill 184 – Revised Ontario Endangered Species Act
 - Revised Conservation Parks & Reserves Act
 - Revised Environmental Assessment Act
 - Crown Forest Sustainability Act

The Landscape has Changed...

- Virtually all industry-managed forestlands are 3rd-party certified, committing the industry to address environmental issues beyond those that are regulated
 - Canada's forest lands = 310 million ha
 - Forest land subject to management = 143 million ha
 - Certified forest lands = 123 million ha (85%)
 - 40% of the world's forest certification area is in Canada

The Landscape has Changed...

- Environmental awareness is higher than it's ever been in Canadian history
 - Urbanization of Canada has led to heightened awareness of implications of environmental issues
 - Classroom education incorporates environmental awareness into the curriculum
 - Changing demographics are leading to a shift towards environmentally-aware managers
 - Increased wealth has led to environmental philanthropy by aging boomers

The Landscape has Changed...

- Procurement of “green” products has become mainstream
 - Procurement policies increasingly used in the marketplace, and by governments
 - Sensitivity heightened towards avoiding potentially controversial fibre sources
 - Surveys and labels increasingly used to document responsible product sourcing

The Landscape has Changed...

- Advances within science and technology have made data gathering and analysis easier
 - Analytical methods can reach extremely low levels
 - What is “zero”?
 - Electronic field data gathering has led to availability of large data sets to describe environmental systems

The Landscape has Changed...

- Collaboration & partnerships are becoming commonplace
 - Increased numbers of customer/ENGO collaborative activities, some involving industry
 - OfficeDepot / NatureServe / CI / TNC
 - Increased industry partnerships with ENGOs
 - FPAC / CBI Memorandum of Understanding
 - FPAC / DU Working Agreement
 - FPAC / WWF Partnership
 - Individual company partnerships with ENGOs
 - DU partnerships with Weyerhaeuser, LP, Al-Pac...
 - WWF partnership with Catalyst Paper

...the Role of Science has Not

- Development of environmental policy requires a foundation in scientific knowledge
 - Enables zeroing in on the key source of an environmental concern, rather than a presumed cause
 - Allows an understanding of the mechanism causing the environmental issue, to aid in establishing the solution
 - Provides an opportunity to learn and adapt, in striving to optimize the positive results for the environment

...the Role of Science has Not

- Science must be brought to bear at the right point in policy development
 - Early injection of information can improve accuracy of problem definition
 - Ensuring a sound scientific foundation for regulatory details is critical in constructing workable policy
 - In the absence of science, it is easier to apply rhetoric or adopt dogma into the development of policy that as a result may be less environmentally relevant and less effective, in the end

...the Role of Science has Not

- *Asking the right questions* is the only way in which to undertake science that will be
 - Relevant
 - Cost-effective
 - Accurate

Science does Matter

- Policy development is faced with addressing perceptions, as well as realities
 - How the execution of science is managed has a big influence on whether science matters
- Policy development is shaped by societal norms, in terms of expectations on industry
 - Framing research questions with an understanding of society's expectations will influence whether science matters

Forestry Science is now More Holistic

- Today's more integrated view of the *forest* influences the need for a more integrated view of *forest science*
- Bridging the barriers between the various scientific disciplines is the task at hand
- It's not the "same old forest science"
 - ...or was it ever?

NCASI's Forestry Research Program

- First five years of NCASI's Canadian Operations have focused on understanding the key environmental questions facing the forest industry
 - Ensuring relevant science available for SARA
 - Reviewing key factors forestry can influence to foster biodiversity
 - Considering approaches to maintaining water quality
 - Exploring the role managed forests can play in achieving broader landscape environmental objectives

Species at Risk Database

- Managing for species at risk is complicated
 - Currently 844 species (or sub-species, populations) listed, in review, or scheduled for review by COSEWIC
- Database created to track status levels, new reports, and data
 - Practical tool for member companies to stay current on regional SAR
 - Helps prioritize industry's research efforts on species with the greatest risk and least information
 - Helps prioritize species by relevance to forestry sector

Bird-Forestry Relationships

Literature Review

- Report Findings:
 - Forest management found to temporarily enhance habitat for some species, and diminish it for others
 - At the stand scale, effects are often proportional to the extent of harvest operations
 - Fragmentation does not appear to be a serious issue for most of Canada's commercial forest areas, but may be in areas interspersed with other land uses
 - Information on edge-effect is conflicting, and tends to vary by species and local conditions
 - A number of research gaps were identified
- Canadian Wildlife Service considering results within context of Migratory Birds Convention Act regulations

Global Industry Carbon Footprint

- Emissions
 - Direct emissions - manufacturing
 - Indirect emissions
 - * Purchased power - manufacturing
 - * Transport (assuming are indirect)
 - * Methane from products in landfills

• Carbon sequestration

- Forests
- Products in use
- Products in landfills

• Avoided emissions

- Biomass energy
- CHP
- Recycling
- Substitution effects

Global Industry Carbon Footprint

- The global forest product industry's value chain emissions are largely offset by sequestration
 - Several different types of avoided emissions provide further benefits
- Manufacturing-related emissions are important
 - Can be expected to be constant or grow more slowly than output
- Transport emissions are a small part of the global profile
 - But will be increasingly important
- Landfill methane is very important to the global profile
 - But is expected to be less important over time
- Sequestration, especially in products, is a very important part of the industry's profile
 - It will almost certainly become increasingly important over time
- Continued progress will depend on appropriate public policies, especially policies that...
 - Keep used products out of landfills and reduce methane emissions
 - Provide incentives for CHP and access to "green" power markets
 - Facilitate capital turnover
 - Ensure adequate supplies of biomass as raw material and fuel

Forestry as Part of the Solution

- Application of science by the industry has advanced the ability to meet sustainability objectives
 - Meeting stakeholder, customer, and government expectations
- Uncovering the positive role forestry can play in ensuring continued diverse, sustainable landscapes will require dedicated, credible science
 - Opportunities to reduce negative aspects and foster positive contributions of forestry will be enhanced, given the growing discovery of the positive role managed forests play on the landscape, in meeting the confluence of society's environmental needs and expectations