

Genetic Values and Old-growth Conservation Policies

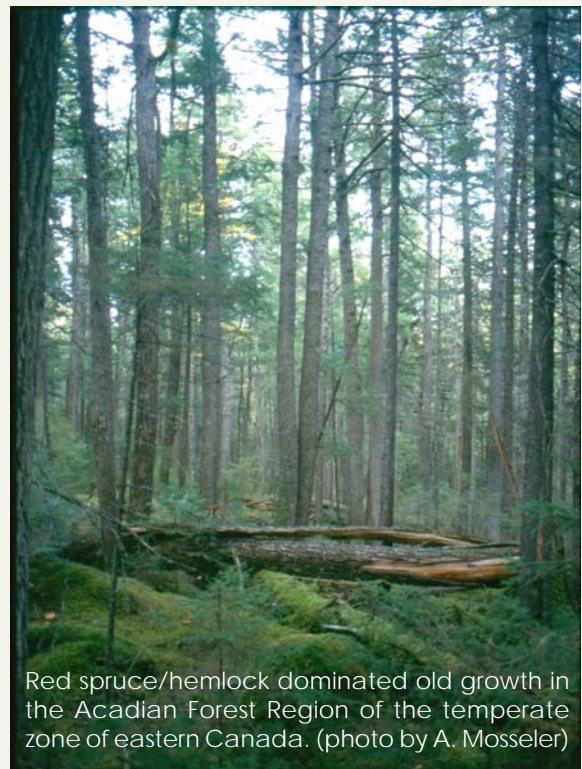
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Why should we be concerned about conserving old-growth forests? Old growth (OG) is aesthetically important to people, but what are the science issues pertaining to this question? Some professional foresters would maintain that OG consists largely of overmature, decadent, non-productive trees whose fiber could be put to commercial use. Although this may be partly true for many older stands of early successional, fire-origin forest types of boreal regions, it may be far from true for the long-lived, late-successional, shade-adapted forest types of temperate or tropical zones that regenerate naturally through gap-replacement processes rather than following catastrophic stand replacement.

For instance, the species-rich, temperate-zone forests of eastern North America dominated by species such as red spruce (*Picea rubens*), eastern hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), yellow birch (*Betula alleghaniensis*), and to a lesser extent eastern white pine (*Pinus strobus*), can form multi-layered canopies with complex age-class structures. These forests have average ages of 150+ years with some trees at their maximum longevity of 350+ years (Mosseler *et al.* 2003a). These are remarkably beautiful forests (photo), but are now exceptionally rare because human activity has largely eliminated these forest types.

These forests are characterized by both standing and fallen trees in varying stages of decay. This structural complexity creates much of the habitat for OG-adapted or OG-associated wildlife. This habitat value has been the central focus of public pressure to preserve this type of forest cover. Unfortunately, these forests are now so rare that they run the risk of being eliminated from human consciousness as well as of being physically eliminated from our forested landscapes. Eventually we may no longer be arguing about OG conservation because there may be only a few people left with any memory or understanding of what such OG was.

Recent genetic studies have given us another important reason to value OG. Data from OG forests indicate that there may be important relationships between tree and stand age, and both genetic diversity and reproductive



Red spruce/hemlock dominated old growth in the Acadian Forest Region of the temperate zone of eastern Canada. (photo by A. Mosseler)

fitness (Mosseler *et al.* 2003b). Thus, older populations of trees may be important reservoirs of genetic diversity and seed sources for regeneration and survival of late-successional species in decline across the globe. This ecological function may be particularly important for the survival of species within an increasingly fragmented landscape and with respect to adaptation and survival under changing environments (e.g., climate change).

Therefore, as a matter of public policy, it may be important to consider protecting and conserving ecologically representative samples of OG forests across the landscape in order to ensure that late-successional populations and species continue to survive and evolve. These late-successional forest types are an important component of forest biodiversity and natural beauty.

Papers cited:

Mosseler, A., Lynds, J.A., and Major, J.E. 2003a. Old-growth forests of the Acadian Forest Region. *Environmental Reviews* 11: 47-77.

Mosseler, A., Major, J.E., and Rajora, O.P. 2003b. Old-growth red spruce forests as reservoirs of genetic diversity and reproductive fitness. *Theoret. Appl. Genet.* 106: 931-937.



XXII IUFRO World Congress, 8-13 August 2005, Brisbane, Australia

If this is your first time at an IUFRO World Congress, do not miss the Introductory Session:

“Making the Most of the Congress”

This very first session of the Congress aims at first-timer delegates and provides guidance on how to make the most of the scientific sessions of the Congress, the time in between sessions and other congress events. Participants will be familiarised with the facilities available at the Brisbane Convention & Exhibition Centre and best practices of making contacts with fellow researchers, exchanging information, and building partnerships for research cooperation within IUFRO's global network.

We are looking forward to meeting you in the Great Hall, Brisbane Convention & Exhibition Centre on Sunday 7 August, 2005, 17:00 -18:00 hours. www.iufro2005.com

The Global Forest Information Service (GFIS)

*- a tool to provide your information to the forestry community -
available at the IUFRO World Congress*

GFIS is an initiative of the Collaborative Partnership on Forests (CPF). It is led by the International Union of Forest Research Organizations (IUFRO), together with the Food and Agriculture Organization of the UN (FAO), the Center for International Forest Research (CIFOR), CAB International and the United Nations Forum on Forests (UNFF) secretariat. A range of additional partners contribute information to GFIS.

The goals of GFIS are

- To enhance access to all types of forest information for all stakeholders, including governments, researchers, forest managers, NGOs, community groups and the public at large; and
- To contribute to an improved understanding of complex forest-related issues, to better decision-making and to facilitate a more informed public engagement in forest policy and forest management at all levels.

What GFIS does

GFIS is an internet gateway that provides access to forest-related information through a single entry point. GFIS catalogues key information resources, such as news, meetings and publications, provided by partners. Searching among these resources at www.gfis.net is free and provides direct access to the original information.

GFIS is a partnership

All information available through GFIS is provided by organizations around the world concerned with forests and forestry. Partners also contribute to system and partnership enhancements, as well as capacity building efforts to strengthen developing country institutions. GFIS, like other CPF initiatives, is entirely built on the commitments of its partners.

Availability of GFIS at the Congress in Brisbane

GFIS will be available through the following fora at the Congress in Brisbane.

- The first GFIS session will be organized at the IUFRO-SPDC **Pre-Congress Training Course** on “The Use of Information and Communication Technology Tools in Forest Research” **in Gympie on Friday, August 5th**.
- Two GFIS demonstrations will be made in the **Exhibition Hall on Tuesday from 9:00am-9:30am (August 9th)** and on **Wednesday from 12:30pm - 1:00pm (August 10th)**. There will be an opportunity for questions and for hands-on sessions during the demonstrations.
- Information about GFIS and demonstrations in person will be available through the IUFRO booth **during the whole Congress week**. You can find the **IUFRO booth in the main foyer** of the Convention Center.
- The **GFIS core partners will also distribute GFIS information** and demonstrate it in person at the Congress, e.g. GFIS is reachable through a stand of CAB International in the Exhibition hall (the stand number of CABI is No 88).
- There will be an **opportunity for questions and for hands-on sessions** at several places during the Congress week, **so, please come along** - all feedback will be warmly welcomed!

GFIS home: www.gfis.net * CPF home: www.fao.org/forestry/site/2082/en

Forestry Education: Between Science and Practice

Report from the conference in Wageningen, The Netherlands, 6 - 9 April 2005, by Siegfried Lewark (IUFRO units [6.15.00](#) and [6.18.02](#)) and Pieter Schmidt (IUFRO unit [6.06.04](#))

The field of profession of university educated foresters is changing. New competencies and attitudes are needed, as the field is broadening into natural resource management. Hence, the Forestry Chairs of Wageningen University organized the symposium *Forestry education: between science and practice* together with IUFRO, SILVA and IFSA. Five main topics were discussed:

- How should science and management-orientation be balanced in forestry curricula and courses?
- What type of forestry curricula and courses are needed, and at which levels?
- Can forestry education be part of natural resource management curricula?
- Which opportunities does "Bologna" offer?
- What are the basic skills and competencies that forestry students should acquire?

The conference revealed that new challenges and developments included methods like problem-based learning and e-learning, and contents like gender aspects and balancing between science and practice. In the discussions it became clear, however, that the situations and approaches as well as curriculum structures varied considerably.



Conference group photo

Meetings

Find announcements and reports of IUFRO events on our [online calendar](#) and the [homepages](#) of the IUFRO Units involved.

IUFRO Co-sponsored meetings

International Bamboo Inventory Training Workshop

24 October – 4 November 2005

Beijing and Zhejiang Province, China

Organized by: ICBR, INBAR, FAO, UNEP and IUFRO

Website: <http://www.inbar.int> (news)

Contact: Fu Jinhe Ph.D., Coordinator of IUFRO Working Party [5.11.05](#) Bamboo and Rattan, Email: jfu@inbar.int

Fourth International Poplar Symposium Meeting the Needs of a Growing World through Poplar and Willow Science: Combining Traditional and Novel Approaches in the Genomic Era

Nanjing, China, 5-9 June 2006

Hosted and organized by Nanjing Forestry University and IUFRO Poplar and Willow Working Party [2.08.04](#)

Email: IPS2006@njfu.edu.cn

Website: <http://ips2006.njfu.edu.cn/>

Patterns and Processes in Forest Landscapes: Consequences of Human Management

Bari, Italy, September 26-29, 2006

IUFRO Landscape Ecology Working Party [8.01.03](#)

<http://research.eescience.utoledo.edu/lees/iufro>

<http://www.greenlab.uniba.it/events/iufro2006>

Non-IUFRO Meetings

Symposium on Tropical Rainforest Rehabilitation and Restoration - Existing Knowledge and Future Directions Shangri-La's Tanjung Aru Resort, Kota Kinabalu, Sabah, Malaysia, 26 - 28 July, 2005

Jointly organized by Sabah Forestry Department, WWF and FAO. <http://www.ysnet.org.my/symposium.htm>

Biodiversity and Environmental Services in Developing Countries

Copenhagen Denmark, 17-18 August 2005

International conference organized by the Danish Research Network on Environment and Development (ReNED). Website: www.rened.dk

Proceedings

Peterson, Charles E.; Maguire, Douglas A., eds. 2005. **Balancing Ecosystem Values: Innovative Experiments for Sustainable Forestry.** Proceedings of a conference. Gen. Tech. Rep. PNW-GTR-635. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 389p.

Pdf now online (in 5 sections for ease of downloading): <http://www.fs.fed.us/pnw/publications/gtr635/index.shtml>

Conference co-sponsored by IUFRO Divisions I and IV.