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Foreword

Forest vegetation management (FVM) is key to successful forest stand establishment around the world. Levels of investment in FVM are determined by the silvicultural intensity desired. FVM also is vital in the mixed production systems of agro-forestry. FVM includes a wide variety of practices that involve a number of questions about biologic and economic justifications, appropriate methods and timing of application, growth and yield implications, concerns about environmental consequences, and public acceptability.

The 4th International Conference on Forest Vegetation Management (IFVMC), held in Nancy (France) from 17 to 21 June 2002, dealt with many of these questions. The conference emphasized the ecological consequences of FVM. The robust response of forest vegetation to FVM practices illustrates the tremendous capacity of native flora to adapt to new environmental conditions, but also reflects the nature of past events during past centuries. Influences of FVM practices on vegetation diversity were of particular interest. Forest vegetation manipulation can be used as a tool of ecological management to restore wild habitat or river quality, or to improve the productive capacity of a site. FVM often modifies the habitat of wild animals in favor of one or another species according to structure and composition of the plant communities created. Spatial and time scales also need to be taken into account when analyzing the consequences of perturbations to forest plant communities.

Conference speakers emphasized the need for diversification and optimization of FVM practices. Public opposition to forest use of herbicides, although not fully justified according to the assessment of risks by scientists (as underlined by several works), is now considered as reality and serves as an impetus to explore new methods of FVM. Work to integrate current data into models that will facilitate optimizing the relative efficiency of herbicides and to reduce the environmental impact is progressing. Research on the development of herbicides produced from natural compounds, use of pathogenic organisms (for example to control woody plants), and the development of new concepts founded based on a sound understanding forest succession continues. Research on new methods for FVM should increase and will require a substantial research effort.

A strong aspect of this 4th international conference was the presentations regarding ecological relationships between trees and associated vegetation. Results from long-term studies continue to show how much forest yields can be increased with FVM. The results are consistent for a wide range of tree species and site conditions. These large responses continue to show that the current understanding of site index or site productivity is inadequate and requires further research. Original research combining several controlled factors including water, light, microclimate, nutrients or indirect factors such as associated fauna are assisting in interpreting the complexity of plant interference. It is an ongoing challenge to translate this information into an operational context that can be applied in

general situations. Conference participants identified the need to develop general models that are capable of assembling our current information into a set of testable hypotheses that can advance the field of FVM.

Socioeconomic aspects of FVM also were addressed at the conference. Studies presented sought to identify the relationship between FVM and various social goals. The perceived conflict between goals of wood production and other functions supported by public opinion were discussed. Public perception is defined by value systems and other motivation that brings a variety of perspectives to the issues. Including social and ecological aspects often involves imposing constraints and additional costs that are not generally compensated in the price received for wood, with advantages and disadvantages often accruing differently among regions depending on the degree of social concern. Emerging sustainable forestry certification systems are providing one way to address concerns and costs. FVM information systems can provide a way to manage multiple functions at various temporal and spatial scales. This approach, however, needs to integrate information concerning socioeconomic, and the dynamics of renewable resources. This area of research is largely an open domain.

The 4th IFVMC brought 130 participants from 22 countries. Nearly 150 (oral or poster) presentations were delivered and were published in a book of Popular Summaries of the conference (to order: cduboscq@afpp.net). This special issue of *Annals of Forest Science* contains 20 articles reviewed according to the usual criteria of the journal. Several articles will be published in following issues of the journal. Synthesis of conference is available on the ifvmc web site: www.ifvmc.org

The conference was lead by Henri Frochot, Catherine Collet (INRA, France) and Philippe Balandier (Cemagref, France), in collaboration with Robert Campbell (Canadian Forest Service), Paul Christensen (PC Consul, Denmark), Michael Newton (Oregon State University, USA), Dean Thompson (Canadian Forest Service, Canada) and Robert Wagner (University of Maine, USA) for the Scientific Committee, the Association Française de Protection des Plantes (afpp, France) for administration, and Organizing Committee for all logistics and tours.

The conference was sponsored by IUFRO in the scope of the work group PI 13 00, Forest Vegetation Management, chaired by Robert Wagner. Previous conferences held on 1992 in Auburn (Alabama, USA), 1995 in Rotorua (New Zealand), 1998 in Sault Ste. Marie (Ontario, Canada).

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*Henri Frochot, Catherine Collet,
Philippe Balandier and Robert Wagner*