Sustainable Forestry in Theory and Practice

Report from the IUFRO Conference on Sustainable Forestry in Theory and Practice *
by Keith Reynolds, Coordinator of IUFRO Working Party 4.03.03

Group photograph taken by Glenn Brearley, Forest Research, after the conference field trip when delegates visited the Forest Research, Northern Research Station in Roslin.

Following the 1992 Earth Summit, forest research organizations around the world have been developing and testing new approaches to deliver sustainable forest management. Major international initiatives such as the Montreal Process and the Ministerial Conference on the Protection of Forests in Europe (MCPFE), and the growing importance of forest certification programs, attest to international recognition of the importance of sustainable forestry within the forest sector and for the general public.

A basic goal of the IUFRO Conference, Sustainable Forestry in Theory and Practice, was to demonstrate how scientific knowledge has evolved in recent years to address the challenges posed by sustainable forestry. The conference addressed four broad themes: 1, Science and Policy; 2, Inventory and Monitoring; 3, Statistics and Modelling; and 4. Information and Knowledge Management. Beyond simply reviewing the current state of the art within each theme, however, the conference aimed at fostering dialog across thematic areas and produced the following results:

Science and Policy. In attempting to solve the problems of Forest Sustainability, scientists need to better define what it means to integrate, if so-called integrative solutions are to be more than a collection of papers stapled together. In the policy process, integration needs to be cross-sectoral. One clear opportunity for moving toward integrated analysis is for modellers and information scientists to work with natural and social scientists in framing a problem, before trying to solve it.

Inventory and Monitoring. Inventory and Monitoring are basic and essential to the science of sustainable forestry, because it is through them that raw data relating to the state and dynamics of forests and their environments are obtained. Good design is essential, to ensure that the right data is collected cost-effectively, and this design process involves the use of statistical and modelling methods. Analysis and modelling data lead to information and knowledge, which need to be well managed to ensure deployment leading to effective policy solutions.

Statistics and Modelling. Modelling techniques often are the only realistic way to approach the design and evaluation of a wide range of strategies for complex and uncertain forestry issues that can range from local to global spatial scales, and from very short to very long temporal scales. Over-reliance on static criteria and indicators of sustainability could be potentially misleading and should be treated with great care, and ideally in a modelling context.

Information and Knowledge Management. Knowledge management systems, which ultimately must deal with the meaning of information, should provide an appropriate framework for the required dialog between science and policy. In addition, such systems can provide not only rigorous methods for deriving monitoring requirements, but also clear specifications for interpreting monitoring data based on the science/policy dialog.