

have been based on due consideration of the underlying issues.

Addressing contingency species will be a complex task. Available information on the performance of various candidates will need to be researched and evaluated, to see which candidates can be eliminated, and to identify as far as possible which species are in contention for what site categories. Such an exercise will also identify needs for experimental work, which will include researching appropriate establishment practice in some cases, and field tests, of which at least some will need to reflect performances as actual plantations. This will require follow-through studies of silvicultural requirements. For species that are in contention appropriate seed supplies will need to be located or actually provided. In the longer term utilisation properties would need to be researched, although it is likely that lead time would be adequate between the onset of extensive planting and significant utilisation. This agenda may appear daunting. It must be realised, however, that much of it can only be addressed well in advance, and not at short notice when a need is already upon us.

Acknowledgements

We thank Profs W.J. Libby and G.B. Sweet for helpful comments on the draft, and Prof. Sweet for formative input.

References

- Burdon, R.D. 1982: Monocultures – How vulnerable? NZ Forest Service, Forest Research Institute. What's New in Forest Research? No. 115.
- FRST 1993: Research Strategy for the Public Good Science Fund 1993/94 to 1997/98. Plantation Forestry, Wood and Paper Processing. Foundation for Research, Science and Technology, Wellington.
- Jackson, D.S. 1955: The *Pinus radiata*/*Sirex noctilio* relationship at Rotoehu Forest. NZ J. For. 7(2): 26-41.
- New Zealand Forest Service 1981: Policy on exotic special purpose species. Govt Printer, Wellington.
- Sweet, G.B., R.D. Burdon. 1983: The radiata pine monoculture: an examination of the ideologies. NZJ. For. 28:325-6.
- Wilcox, M.D. 1993: Priorities for research on alternative tree species for wood production in New Zealand. NZ Forestry 38(3): 9-12.

General References

- Miller, J.T. (Ed). Introduced Forest Trees in New Zealand: Recognition, role and seed source. NZ Forest Research Institute, Bulletin No. 124 series: 1 – *Pinus nigra*; 2 – *Pinus contorta*; 3 – The larches; 4 – *Pinus mugo*; 5 – *Pinus attenuata*; 6 – The spruces; 7 – The silver firs; 8 – *Pinus pinaster*; 9 – The cypresses; 10 – *Ponderosa* and Jeffrey pines; 11 – *Eucalyptus nitens*; 12 – Radiata pine; 13 – The redwoods; 14 – Douglas fir; (continuing).

What is the Montreal process?

Don Wijewardana
Ministry of Forestry

There have been three major directions in which international action towards sustainable management of forests has developed since the Earth Summit of 1992. These are activities under the UN umbrella itself – for example, the setting up of the Intergovernmental Panel on Forests (IPF) under the aegis of the Commission on Sustainable Development (CSD) – initiatives at international and regional levels (such as the Helsinki and Montreal Processes), and measures by the NGOs and industry to develop timber certification schemes (Forestry Stewardship Council, ISO standards etc).

New Zealand has been working on all three fronts to ensure cohesion between international initiatives and our own approaches to sustainable management. In this context we want to look closely at the Montreal Process.

The Montreal Process is a non-binding agreement between ten non-European temperate countries on a set of criteria and indicators of conservation and sustainable management of their forests. The ten countries are Australia, Canada, Chile, China, Japan, Mexico, New Zealand, the Republic of Korea, the Russian Federation and the United States of America. The criteria agreed, following two years of negotiation, are intended to address how countries protect the major values derived from forests. There were seven major areas identified. These were:

- conservation of biological diversity
- maintenance of productive capacity of forests
- maintenance of forest ecosystem health and vitality
- conservation and maintenance of soil and water resources
- maintenance of forest contribution to global carbon cycles
- maintenance of long-term multiple socio-economic benefits, and
- appropriate institutional framework.

A wide range of indicators was also developed as the measurement relating to each of the criteria. For instance, the indicators of conservation and maintenance of soil and water resources criterion include

information on area of forest land with significant soil erosion, area of forest land managed primarily for protective functions, and area of forest land with significantly diminished soil organic matter. Such indicators, measured over time, will provide a view of how a country is progressing towards improving performance in each of the areas.

Each criterion has a number of similar indicators or measurements, but a single criterion, taken in isolation, cannot form a measure of sustainability: taken together, they can form a definition of sustainability and be used as a measure of whether a country is managing its forests in a sustainable manner.

There are other important points worth noting. The Montreal Process criteria and indicators are aimed at the national level. As such, they cannot be used to determine whether a particular log is derived from a sustainably managed forest. But under the criteria a statement such as "this wood is produced in New Zealand which manages its forests in a sustainable manner" is perfectly feasible. If we need a label to identify a particular piece of timber then we have to rely on a timber certification scheme. The industry is currently working towards that.

The essential point is that the initiatives such as the Montreal Process and industry/NGO pioneered certification schemes are at different points in the same spectrum of sustainable management. They complement each other and they have an important role in ensuring our wood is sustainably managed.

The next meeting of the Montreal Process will be held in New Zealand from October 30 to November 4, 1995. The main purpose of the meeting is to use individual country experiences to assess the feasibility of the indicators for general application.

If you need further information please contact Don Wijewardana, Ministry of Forestry, P.O. Box 1610, Wellington; phone 04 4721 569 or fax 04 4722 314.

A useful bulletin outlining the Montreal Process and each of the criteria and indicators in detail has been produced by The Canadian Forest Service. Their address is 351 St Joseph Boulevard, Hull, Quebec, Canada K1A 1G5. Ed.

- Weston, G.C. 1967: Exotic trees in New Zealand. NZ Forest Service, Forest Research Institute Bull. No. 13.