

## 2. Tree considerations

*Chaired by Dan Binkley*

Dan Binkley's opening advice was that we first list species characteristics which could be expected to impact on soil properties and, perhaps, sustainability. Then species of potential commercial, scientific or even political interest should be selected to introduce a range of the more crucial characteristics.

Of the many characteristics listed, litter quality, root distribution, the ability to fix N, the deciduous/evergreen comparison and potential economic lumber value appeared to dominate. Species giving a range of these properties include: *Pinus radiata*, *Pseudotsuga menziesii*, *Acacia melanoxylon*, Poplar species, *Eucalyptus nitens*, *Cupressus macrocarpa* and possibly native species such as rimu and beech.

The use of mixed species was discussed and was rejected because of the increase in design complexity that would be required. As an alternative, it may be possible to assess the possible interaction between plots of adjacent species.

Species selection was followed by a discussion of the management of plots of different

species. This revolved around emphasis on processes, which in turn may influence management, and the initial selection of the best practical management techniques known to maximise production. It was emphasised that this is not a forest management study, but the silviculture needs to be relevant to current practices.

While not wholly conclusive, there was general support for realistic management designed to maximise the performance of each species in conjunction with associated studies of individual processes which could ultimately influence management. Some of these process studies could be done most rapidly with stand densities much greater than would be practical for commercial production.

It was also suggested that silvicultural practices should ensure full site occupancy within 5 years of starting the experiment and that split plot designs may offer some degree of flexibility with respect to contrasting silvicultural treatment. Maximum site occupancy should produce the maximum effects of the species on the site.