

## **Forest Genetic Resources**

### **IFA Forestry Policy Statement 1.2**

The Institute of Foresters of Australia (IFA) advocates the need to conserve Australia's unique forest genetic resources, for both their intrinsic biodiversity value and their existing and potential use for society.

#### **The Issue**

Australia has a global responsibility to conserve its diversity of genetic resources and high level of endemism. Potential threats to this conservation include clearing, habitat modification, unsustainable land management, and the impacts of exotic species and "genetic pollution" of native forests. Conservation is and will be increasingly threatened by climatic and environmental changes such as salinisation and isolation by extensive clearing. Management is challenged by Australia's vast geography, the occurrence of many species within limited areas and the variation between different populations or provenances of widespread species.

#### **Background**

Australia's vast geographical range, wide climatic diversity and long isolation from other continents has produced a unique flora. Knowledge of Australian flora is being continually refined, with the continent currently containing 77 orders, 251 families and over 15,000 species.

Genetic diversity is founded on the basis of how different species adapt to changing conditions. This can be viewed on two levels: the genetic diversity between species and within species. Conservation of this diversity is important to support the evolution of species in their adaptation to changing environmental conditions and to maintain genetic variation to prevent inbreeding.

Conservation can be "in situ" within forests and conservation reserves, or "ex situ" within arboreta, gardens and seed stores. One of the major conservation strategies in genetic diversity has been the establishment of a Comprehensive, Adequate and Representative (CAR) reserve system that captures diversity across forest communities and maintains species viability.

#### **Policy**

The IFA supports and encourages:

- Primary conservation of Australian forest species and genetic variation within species through the CAR system of reserves, which is actively managed in response to biotic and abiotic influences
- Recognition of vegetation clearing legislation and Codes of Forest Practice to protect and regulate the use of genetic resources outside conservation reserves
- Use of "ex situ" measures to conserve genetic diversity of rare, endangered or commercially significant Australian flora
- Continued research into the genetic structure of forest communities, species and populations to provide a basis for conservation of gene pools and encourage the use of genetic resources
- Continued research into gene flow between plantations and native stands to assess the risk of seed and pollen dispersal, allelic introgression and their impact on native gene frequencies.

The IFA considers that:

- Australia has a global responsibility to conserve its forest genetic resources, particularly assisting to conserve exotic forest genetic resources (those of commercial importance in Australia or threatened in their natural habitat)
- The production of native forests managed through natural regeneration has an important role in conservation of forest genetic resources
- A register should be maintained of endangered species and threatened species, extending to subspecies, varieties, forms and outstanding individuals.