RECENT DEVELOPMENT AT WEST MANJIMUP NURSERY

by A.W. Walker

The optimum method of Karri Regeneration is the Seed Tree System. For a number of very good reasons this method cannot be used exclusively. Some of these reasons are:

1. Karri Seed Availability: Assured seed crops may only occur one year in six, at worst, with a normal cycle of about 4 years.

2. The Regeneration Burning Capacity: Current availability of men and equipment during suitable burning weather has seen a best ever achievement of about 2500 ha in one season (and that is a quite remarkable effort). The current level of cutting is about 2000 ha per year of karri types.

   Therefore, the alternative of "holding" areas until a good seed year, is not desirable, as the result could be a task of 8000 to 10 000 ha of regeneration burning in one summer.

3. To balance sawlog and chipwood intakes and yet remain within the numerous other constraints on cutting, it is necessary to clear fall some coupes regardless of availability of seed.

The alternatives to the Seed Tree System of Regeneration (so called "artificial methods") are:
1. Direct Seeding and
2. Manual Planting

The scarcity and cost of karri seed does not permit any more than 300 ha of direct sowing per annum.

(Establishment of Karri Seed Production Areas will see increased use of direct sowing of improved seed in about 8-10 years).

This leaves manual planting of karri seedlings as the best possible regeneration alternative in non-seed years.

The requirement for karri seedlings has grown from 120 000 in 1973 to 3 million in 1979. This massive increase has required a rapid development of the karri nursery at West Manjimup, which is now the largest open-root eucalypt nursery in Australia.

The big development began in 1976/77 when a huge dam (capacity 11 million gallons) was constructed to supplement water supplies from two small dams on the location. Dozers and excavators worked under lights to finish the job on time. New paddocks were cleared and ripped, stumps blown, bracken controlled by intensive cultivation.

Considerable equipment was required to satisfy the irrigation requirement.

A 100 h.p. electric motor was transferred from a Ludlow sawmill and harnessed up to a Southern Cross 100mm pump. 2300 metres of P.V.C. mains and sub-mains were installed. 800 standpipes and sprinklers were purchased, and fitted to 6000 metres of aluminium pipes. Tractors,

implements and service equipment were acquired and immediately pressed into service.

The demanding exercise in logistics was supported by equally important inputs from Divisional, Research and Workshop staff and employees.

Traditional (pine) nursery techniques were used to grow the open-rooted seedlings. However, specific problems of weed and fungal control had to be solved quickly as they developed, with little time for experimenting with alternative chemicals or techniques.

A reciprocating root pruner was built at Manjimup workshops and it satisfies the requirement to regularly undercut the marri tap root with minimal disturbance to the seedlings.

Paralleling the rapid increase in requirement for open-rooted karri was an equally demanding need for container grown seedlings from West Manjimup for Departmental use.

Rehabilitation of log landings and associated snig tracks in karri areas is an ongoing requirement and 96 ha were planted with container stock in 1978. Gravel pit and dieback rehabilitation, landscaping and amenity plantings in the Southern Region are regular requirements. In addition, *E. muelleriana* is required for mixed karri/*E. muelleriana* plantings in 1979 and subsequent years, for future pole requirements.

Central Region requirements include tuart for Busselton, mixed eucalypts for Nannup and Kirup and salt tolerant eucalypts for Collie catchment replantings.

A total of nearly 500 000 container seedlings were established in 1979.

Besides the standard 6cm jiffy pot containers, experiments with paper pots and 3cm jiffy pots have been so successful that the majority of container karri is now grown in these smaller containers. Trials with species such as *E. gomphocephala, E. resinifera, E. globulus* and *E. camaldulensis,* in paper pots have been extremely encouraging and provided that survival and initial growth match nursery performance, a move towards greater use of paper pot stock for F.D. purposes should develop. The cost savings for paper pot seedlings are quite significant.

Approximate costs for karri in 1979 are:

Standard	6cm jiffy pots	10¢ per tree
	4cm paper pots	5¢ per tree
Open-rooted karri seedlings		1.5¢ per tree

The expansion work at West Manjimup is now complete but work is continuing on refining and improving techniques for both open-rooted and container grown seedling production.