EARLY THINNING OF KARRI REGENERATION

by

B.E. HARVEY

In January 1972, thinning of five year old karri regeneration was begun along the eastern slopes adjacent to Pine Creek Road south of the junction with Henwood Road.

The aim in establishing these trial plots was primarily to demonstrate the effect of thinning at such early stages in the growth and the regeneration. A series of thinning spacings were made and each will be compared with growth of stems in their natural state in the control plot. It is planned that measurements will be made regularly in the future and that they will indicate a thinning distance that maximises the production of merchantable karri.

DESCRIPTION OF THE AREA PRIOR TO THINNING

Under the Group Selection System the total area of 122 acres was logged in 12/66 and a regeneration burn carried out in January 1967.

In October/November 1971 the area was converted to a clean-cut. Care was taken in falling and snigging to avoid damage to the 4½ year old regeneration which was up to 30 feet in top height.

THE KARRI REGENERATION

Prior to the thinning the regeneration was quite vigorous in growth, where it existed. However as a result of the Group Selection type of system and the removal of timber approximately five years after the burn, many gaps with little or no regeneration exist. Snig tracks and log landing areas caused some bare and open spaces. Other areas comprised little regeneration but thick scrub regrowth. Often small suppressed karri existed under the Netic and Trymalium canopy cover.

The karri regeneration along with the scrub species formed a tightly packed regrowth stand, supporting each other in standing erect with their crowns competing for height

dominance, and thus maximum sunlight gain. This plant association was completely broken down by a thinning prescription which brought about the removal of all plant species except karri which was thinned to the prescribed espacement.

THE HECTARE PLOTS

Six plots, each of hectare (2.47 acres) were established by hand slashing all the regrowth scrub and chopping the karri stems as near to their base as possible. Plastic tubing (in metre lengths) was used to select stems to be retained at their prescribed spacings. The C.U.R.A.R.A. gang worked in the thick scrub and regeneration using short handled slashers and then pruning axes on any larger stems (e.g. coppice growth). The regrowth was very dense as can now be seen in the control plot, and the thinning was hard and tedious work. Large logs and tops made the task even more difficult. However the C.U.R.A.R.A. gang worked well and are to be commended for their efforts during the dry summer months.

The thinning was completed in the first week of March totalling about 740 man hours (including travelling and maintenance time) and costs of approximately $900 in wages, thus averaging about $60 per acre. This included time involved in falling stags and cull trees, and would not normally be carried out in these thinning operations.

RESULTS AND OBSERVATIONS

There was found to be a slight tendency towards under-thinning the regeneration and the plots show that some stems are a little closer than their prescribed espacement.

The first effects of the thinning were noticed after the first few weeks when some wilting of the leaves of smaller karri stems was observed. However this was not very widespread nor severe, and the majority of stems have recovered completely.

Two unfavourable effects of the thinning were seen as:

1. The stems removed were left remaining as sharp spikes protruding upright and presenting dangerous ground

over which to walk.

2. The brush and karri removed were left to dry on ground providing a dangerous fire hazard.

However this latter problem will be solved as the winter months bring rain and the degradation of the thinnings, and thus a considerable reduction in fire hazard for next summer.

It has been observed during the past few weeks that the thinned karri stumps are coppicing and at some time will need another removal by hand or spraying.

At the beginning of March, and before the first rains, after quite a long dry hot spell of weather, a series of days with high winds resulted in noticeable wind damage. This was particularly noticeable in the 2 x 2, 3 x 3, 4 x 4, and 5 x 5 metre spacings. The remaining two plots (control and 6 x 6 metre) showed nil damage. During these days of strong winds about a dozen stems snapped completely and between one in ten to one in twenty received what appear to be irrecoverable leans. Although at first this damage appeared severe, random sampling checks prove the damage to be only minor at the moment. The damage varies from 11% in the 2 x 2m plot to 2% in the 4 x 4m and nil in the 6 x 6m plot. It was thought that perhaps with the coming of the winter rains that the further weighing down of the crowns would increase the damage already caused by the wind after the thinning.

However, the first rains have only been moderate to light in amounts and as yet no further damage is obvious. In fact it appears as though some amount of the damaged stems have shown a recovery in straightening up from their leans. This could be due to the availability of moisture in the soil and its uptake into the plants' vascular systems increasing the rigidity of the stem.

The winter effects on the regeneration should be observed closely as these first few years will determine their loss or survival.

Senior Silviculturist B.J. White has stated after observation of the early effects of the thinning that perhaps karri regeneration in its early years of rapid upward growth depends on support from other plant species in maintaining it erect. Thinning would thus be more advisable in either its first year of growth before it can be affected by wind etc. or

after its firm establishment at age 15 - 20 years.

However these trials are important in that their relative effects and growth rates can be compared to that of the control plot. Sample trees have been measured for g.b.h.o.b. and height and have been tagged as permanent samples. It is recommended that these stems be measured every three to five years and their rate of girth and height growth be calculated and then compared between plots.

Thus it can be concluded that early detrimental effects upon the thinning are only minor at this stage and that it is hoped these plots may indicate a suitable thinning regime from which to gain maximum merchantable volume.