

TENDING SECOND GROWTH KARRI :  
LEFROY BROOK REGENERATION 1875

by

O.W. Loneragan

That late thinning is better than no thinning (e.g. Jarrah Pole Thinning) and early treatment is better than a late one (e.g. Pine Silviculture 1970) are communications that should pass through all levels of management into the field. The present writer finds the evidence on the karri growth rates confirms that of the other species (above). The data in the 1971 measurements and report, shows the actual rate percents are very low (Harvey, For. Notes 9(3): 24-27) 43 years after thinning, but demonstrates the increase due to late thinning (7B) ranges from 18-36 percent consistently better than the unthinned (7A) solving  $\frac{7B-7A}{7A} 100 (\%)$ . Also the standing volumes of the

16 largest trees 5 050c.ft in the thinned plot and 4 150c.ft in the unthinned (W.A.F.D. Ann. Rep. 1967: 31-32) demonstrated a response of 22 percent greater saleable volume in the thinned stand 40 years after thinning. This increase in value must not be ignored and confirms the purpose of thinning by putting more saleable growth on the crop trees.

The evidence on basal area increments for treatments in these stands is important to the present writer. It is inconceivable that early treatments in the second growth stands could not double the saleable growth in the basal area increments from about 1.6 to over 3.0 sq.ft/ac/an. The present growth has been obtained in the presence of weeds and dominated trees. In other words, the degree of stagnation of saleable growth becomes worse the longer thinning is delayed due to the continually increasing competition: hence the need for early and frequent thinning to maximise production.

The question of frequency of thinning also may be examined on the evidence of the diminishing value of the growth rates: certainly not later than when the rates in the thinned stands again equal those in the unthinned stands:

the available information extrapolated from the Big Brook data, suggests this point may be approached about 10 years after thinning to 80 crop trees

20	"	"	"	"	60	"	"
30	"	"	"	"	40	"	"

Response to these treatments at the age of 25 years in these plots was very high in the first 5 years; but at 10 years growth rates for all treatments were less than four percent at the age of 35 years. Weeds and dominated trees again were present.

Observers agree that the condition of the late-thinned and untreated stands become virtually the same: "it is apparent --- that the stand is greatly overstocked" (Meachem, 1954: Second Growth Karri Forest mss) and Harvey (1971 p.p.) proposes that the next thinning in 1972 is well overdue.

In the design of experiments for tending regeneration, a number of hypotheses can be and have been proposed. The experimental trees for example should be accompanied by an adequate number of instruments, when it is required to establish quantitative relationships for the treatments. Each factor of the environment assumes greater importance at limiting intensities, and a different optimum range comes into existence for all factors with every change, in one effective factor. The value of measurements of important environmental factors has been very well demonstrated (W.A.F.D. Annual Reports, 1967: 26-28; 1971: 26-29; Havel, J.J.).

Limitations in the value of observations made in the absence of instruments to measure habitat factors are demonstrated in the attached report on litter accession in some eucalypt stands.