Trade Cutting as a Silvicultural Tool in the Southern Jarrah Forest

by

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For many years the trade cut has been by necessity virtually the only silvicultural tool employed in the jarrah forest.

The shortcomings of this in producing a productive forest has been apparent to foresters especially those who have worked in the south where the quantity of unproductive trees is so high. Recent inventory figures have provided quantitative information in support of this. The histograms for a range of localities show the distribution of the various stand components in girth classes for Volume, Basal Area and Stem numbers. These are average figures for the type in each block. While it is sometimes dangerous to work on average figures for such distributions it is considered to be reasonably valid in the jarrah forest here where most sizes and species are represented throughout.

Table 1 summarises the information to show the effect of two cutting prescriptions on the resulting stand. The table illustrates a number of points:—

1. Following a heavy tree marking all the stands considered are still in a fully stocked condition or more.

2. Following a "clear felling" of marketable trees only two stands are left understocked while the rest remain fully stocked.

3. Under these conditions, growth stimulus on the remaining stems could be expected to be negligible. The table indicates the share of this growth which would be on potentially marketable trees.

4. This share of growth is only marginally improved by tree marking as opposed to total cutting but the total growth is possibly reduced by the additional stocking anyway.

TABLE 1

Prescriptions	Butler Virgin	Yanmah Cutover	Mersea Cutover	Sutton Virgin	Iffley Cutover	Tone Cutover
Present BAOB (sq. ft.)						
Prescription 1	109	99	143	139	129	88
1. BAOB/acre after cutting – total (sq. ft.)	86	66	122	111	89	80
2. % of this BAOB in marketable and potentially marketable trees. (i.e. % of growth going onto useful trees).	33%	46%	27%	19%	22%	60%
3. Stocking condition after cutting.	FS	TL	OS	CS	FS	FS
Prescription 2						
1. BAOB after cutting – total – sq. ft.	76	50	117	97	78	57
2. % of this BAOB in potentially marketable trees. (i.e. % of growth going onto useful trees).	25%	29%	24%	9%	11%	45%
3. Stocking condition after cutting.	FS	US	CS	FS	TL	US

Prescription 1 – remove all "tree mark" trees over 5' g.b.h. (i.e. retain all crop trees).

Prescription 2 – remove all marketable trees over 5' g.b.h.

Stocking condition (O.W. Lonergan – Research Officers Reports 1970).

(a) US – understocked.

(b) TL – threshold limit to full stocking.

(c) FS – fully stocked.

(d) CS – critically stocked.

(e) OS – overstocked.

(f) SL – suppression limit.

Various prescriptions within the marketable sector ranging from light improvement cut to "clear felling" can be applied. The silvicultural benefits of any of these systems are negligible compared to the major problems of removing the great quantity of unproductive stems. If these stems are not removed then in the choice of a cutting system administrative and management convenience is the only real consideration.

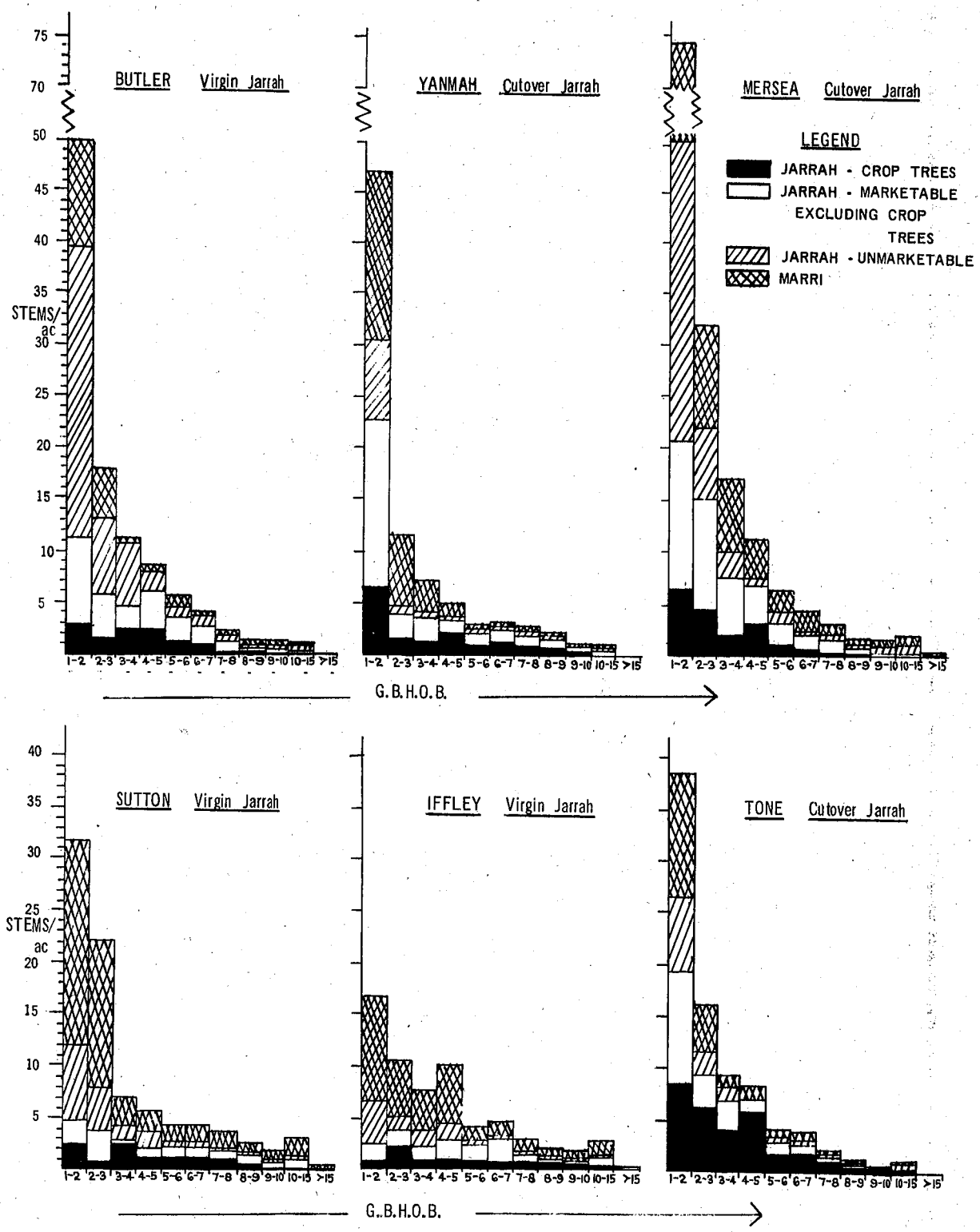
Stands in which a high proportion of their unproductive component is in the form of Marri and which are within the area proposed for future chipping operations are no real concern. While the condition of these stands cannot be rectified over-night at least it can be accomplished in the predictable future.

For stands outside this area and those which contain high proportions of unmarketable jarrah, the future seems much less promising. At this stage the utilisation of unmarketable jarrah in large quantities seems many years in the future.

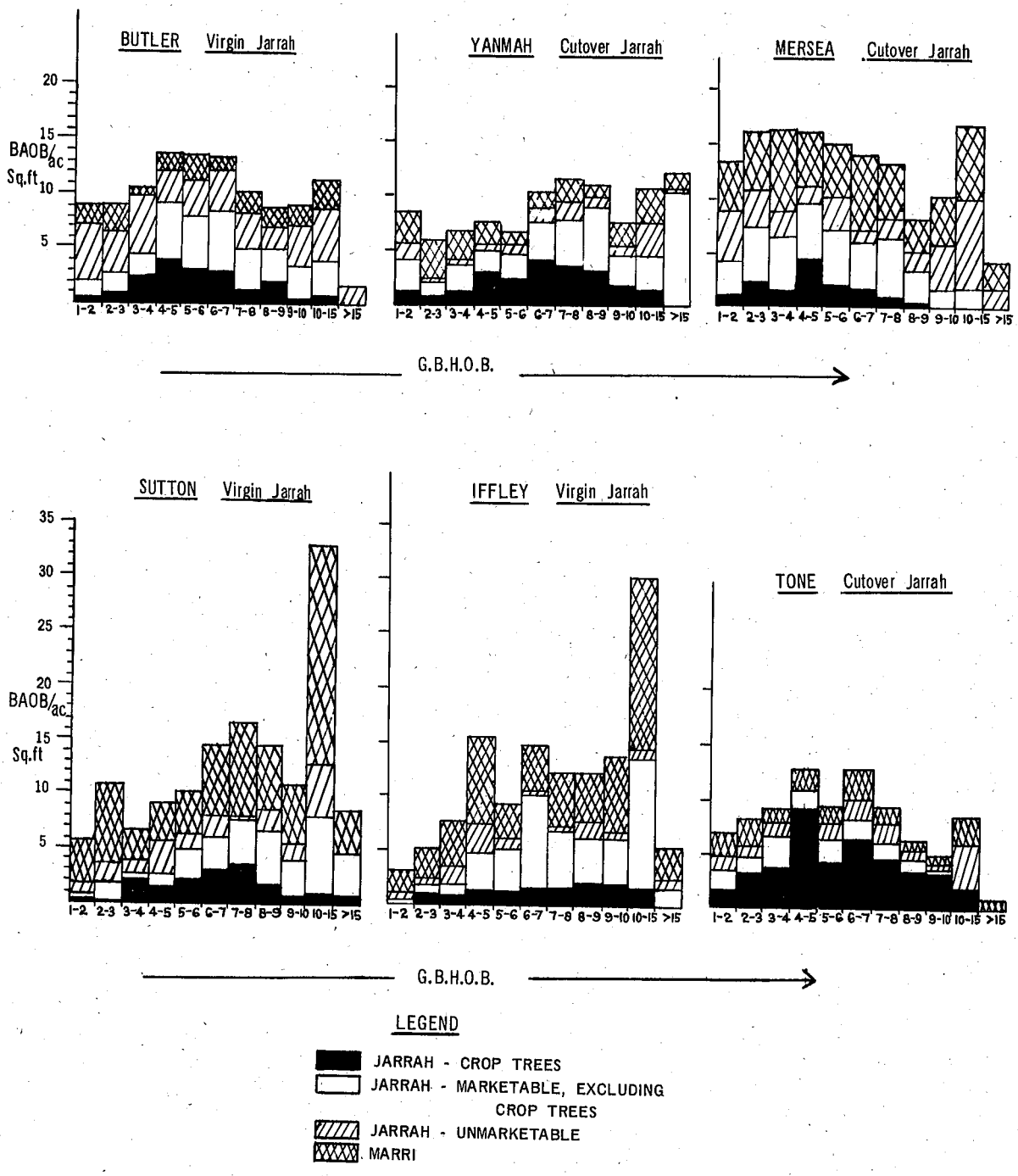
Unfortunately the bulk of these areas are also of low total productivity and it is doubtful if they could even justify funds for improvement work.

There seems to be no answer to this problem and it appears we must accept the fact that we can do no more than an exploitation cut of many thousands of acres of this type of country in the south. The implications of this are serious in that resistance to other land users might be hard to justify. Unless it can be shown to be of value for other species or watershed protection they must inevitably be lost as State Forest. This makes it all the more imperative that the maximum area of potentially good forest be retained and put into a state of maximum production. Future wood production predictions must surely be based on a much lesser area than the existing State Forest.

STEMS PER ACRE BY GIRTH CLASSES



BASAL AREA PER ACRE BY GIRTH CLASSES



VOLUME PER ACRE BY GIRTH CLASSES