Survey of parrot damage to Bluegums: Results for seven farms in the Williams/Darkan and Boyup Brook areas

A report to

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from

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Introduction

An assessment of parrot damage to eucalypt plantations at 11 sites on farms in the Williams/Darkan and Boyup Brook areas was undertaken during the period 27-29 August, 1993. The farms are listed in Table 1. Assessors were Peter Ritson (3 days) and Peter Beatty (1 day).

Table 1. Farm plantings assessed

Farm	District	No. sites
South	Darkan	3
Ritson	Boyup Brook	1
Stene	Darkan (Wellington Catchment)	2
Hilder	Boyup Brook	3
"Kievi"	Williams	1
Giles	Boyup Brook	1

For the locations of sites assessed on the South, Hilder and Stene farms refer to sketch maps attached as Appendix 1. On the Giles farm, only the area planted in 1991 (corner Gibbs Rd and Condinup Rd) was assessed. On the Ritson and "Kievi" farms, all the area of eucalypt plantation was assessed.

Methods

The methods used at the Stene and "Kievi" farms were the same as applied to the Wunnenberg plantation (see report by Beatty and Ritson, September, 1993). At these sites sample trees were taken as being the closest tree to each point on a 200 m × 20 m grid. The same methods were also applied to the other farms, except that sample trees for assessment were selected by taking every 10th tree in every 10th row. Also, the first and last trees in a row were assessed to check for "edge effects".

Although a small proportion of the sample trees assessed were eucalypt species other than Bluegum (*E. globulus*), the results presented in this report are only for Bluegum.

Results and Discussion

Results for the 11 sites and the Wunnenberg plantation (assessed July 1993) are summarised in the following Tables 2-4 and Figures 1-3. Some points worth noting from the results follow.

- Figures 1-3 show that log degrade caused by parrots was substantial at all but the Giles and Stenes 1 y.o. plantation sites. It is interesting that damage to the Giles plantings were only light yet Ringneck Parrots were common in and around the plantation at the time of assessment. A possible explanation for this is that parrot damage to Bluegums is a learned behaviour.

- The next best site after the Giles and Stenes (1 y.o.) sites was the Ritson site where 28% of the trees had 'Minor' log degrade and 18% were rated 'X' for log degrade. At this stage it is not possible to say how many of the trees rated 'X' will grow on with only 'Minor' degrade and how many will grow on with 'Major' or 'Extreme' degrade. Of concern for this site is that the parrots, having become established in the plantation, will cause more severe damage in following years.

- Damage was worst at the Wunnenberg site where 80% of sample trees had suffered either 'Major' or 'Extreme' log degrade.

- Damage was also very severe in all three sites assessed on the South farm. There, the percentage of trees in a combined group of 'Major', 'Extreme' and 'X' classes was 72% (1 y.o.), 48% (2 y.o.) and 50% (3 y.o.).

- Table 3 shows there was no evidence that parrots were more, or less, likely to damage trees at the end of rows rather than the midst of rows. That is, there was no evidence for an 'edge effect'. Of the seven sites where comparison between 'end trees' and 'not end trees' was possible, damage to the 'end trees' was greater in three cases and less in four cases.

- Table 4 shows that ringbarking of lead shoots was worst at the South (1 y.o.) site where 72% of lead shoots were ringbarked but was also bad at the other South sites and the Wunnenberg site (22% - 36% ringbarked).

- Table 4 also shows that the height of any ringbarking was generally < 1.5 m in 1 y.o. stands but generally ≥ 3.5 m in ≥ 2 y.o. stands. This indicates that the silvicultural option of minimising damage by pruning attacked trees to maintain their single stem form might only have to be done once, e.g. in the second summer after planting. In the 2 y.o., or older trees, any unacceptable degrade (most commonly a fork) resulting from ringbarking would tend to occur at a height greater than the minimum log length. (Assuming the minimum log length for pulpwood is 3 m.) That is, any 'unacceptable degrade' resulting from ringbarking at an age ≥ 2 years could be cut from the tree and the butt log still recovered. The stem(s) above the degrade could also be harvested provided there was no further damage to them.
  Nb: An impression gained while undertaking the surveys was that the parrots damaged the Bluegums in June/July, but not in August. By late August the parrots tended to be feeding in the pastures and not chewing the bark of Bluegums. No

objective data were gathered on this matter, but it may be useful to clarify any seasonal pattern of damage to Bluegums through further study. The information may help to develop strategies for managing parrot damage such as determining the best time to prune attacked trees to minimise the damage.

Table 2. Effect of parrots on tree form

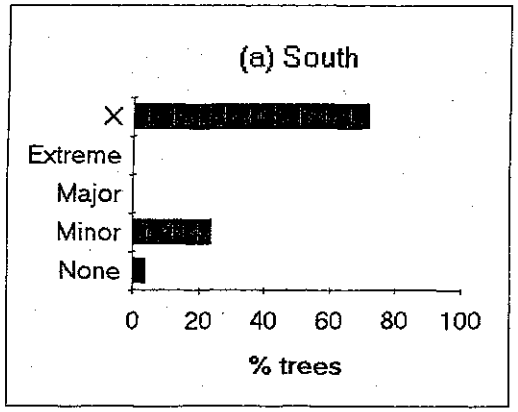
	1 y.o			2 y.o						3 y.o	4 y.o	
Farm	South	Pitson	Stene	South	Hilder 1	Hilder 2	Hilder 3	"Kievi"	Giles	South	Wunnen-berg	Stene
No. sample trees	25	162	16	96	68	186	38	38	23	32	251	65
Tree form class												
0	4	54	88	30	57	45	47	8	96	12	2	69
1	24	26	6	8	6	16	13	23	0	19	6	0
2	0	2	0	14	6	13	13	42	0	9	12	14
3	0	0	0	3	6	3	8	0	0	6	10	6
4	0	0	0	12	16	6	8	11	0	35	41	8
5	0	0	0	3	3	7	0	5	0	19	29	3
X	72	18	6	30	6	10	11	11	4	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100

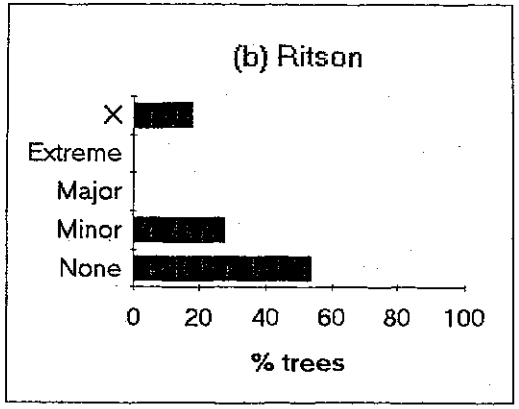
Notes:

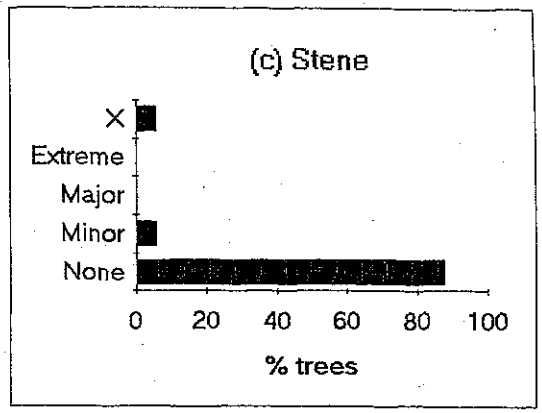
- Data are percentages of trees in each category
- Refer to maps for locations of areas
- Data for species other than Bluegum not included in the above table
- Tree form classes:

0 = no damage by parrots;
1 = bark stripped on the main stem by parrots, but no change to form;
2 = single stem tree, but parrot damage causing deformity which could be included in a pulp log;
3 = single stem tree with parrot damage causing deformity which could not be included in a pulp log;
4 = double stem tree (the fork resulting from parrot damage), neither stem dominant;
5 = multi-stem tree - same as 4, but >2 stems.
X = Only damage is that the lead shoot is ringbarked, but it is not clear what form the tree will take as a result of the damage.

Fig. 1. Log degrade caused by parrots - 1 y.o. plantings







Log Degrade Classes

None: No damage, i.e. Tree form = 0

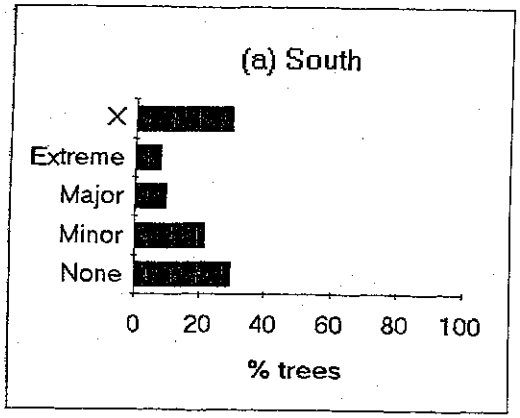
Minor: No loss of volume but, possibly, some loss of quality. Any degrade could be included in a pulp log, i.e. Tree Form = 1 or 2.

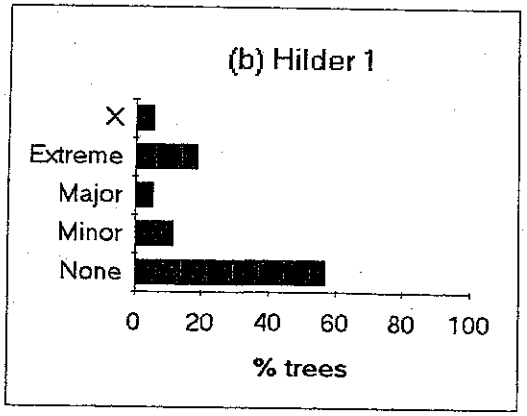
Major: Loss of volume. Single-, double- or multi-stem tree (Tree Form = 3, 4 or 5) with one only "unacceptable deformity" at either < 1 m or > 3 m height, i.e. can recover a pulp log from the lower trunk of the tree. The lead shoot(s) may be ringbarked.

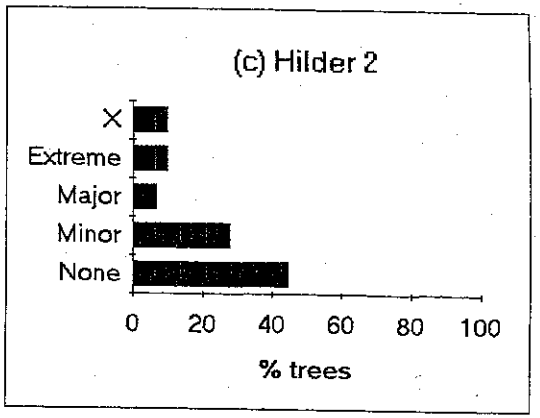
Extreme: Single-, double- or multi-stem tree with an "unacceptable deformity" between 1 and 3 m height and/or with > 1 "unacceptable deformity" in the tree.

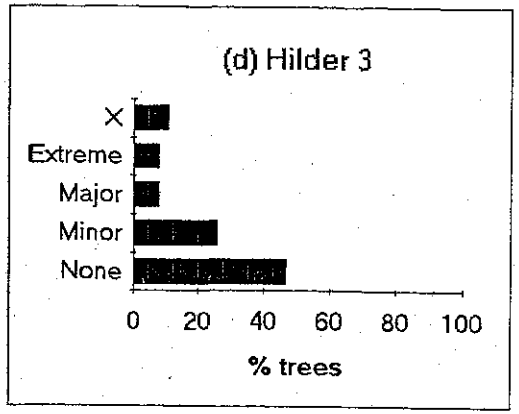
X: Only damage is that the lead shoot is ringbarked, but it is not yet clear what form the tree will take as a result of the damage.

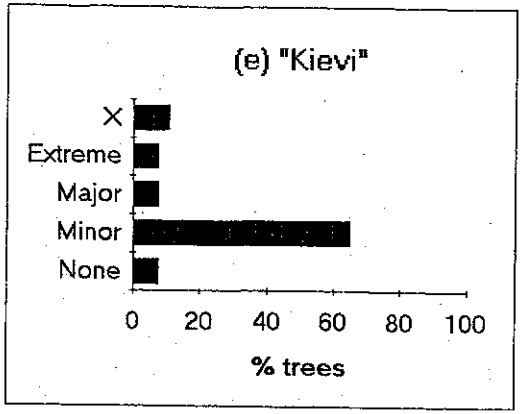
Fig. 2. Log degrade caused by parrots - 2 y.o. plantings











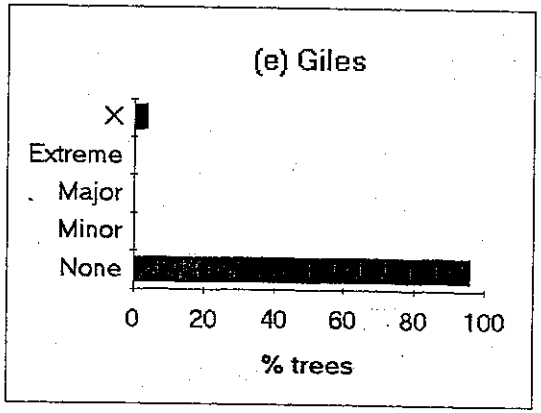
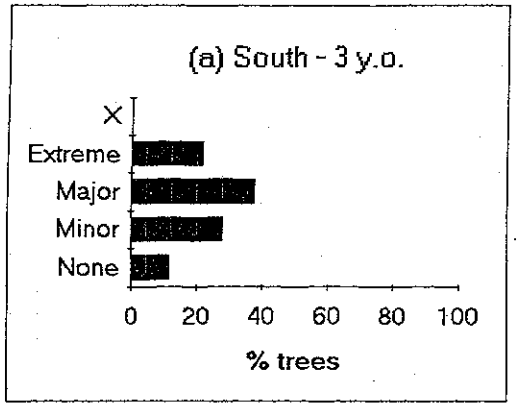
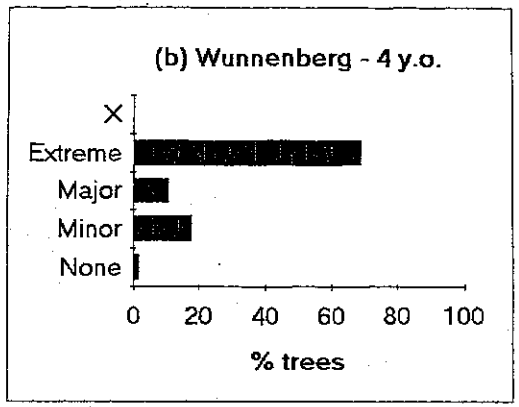


Fig. 3. Log degrade caused by parrots - 3 & 4 y.o. plantings





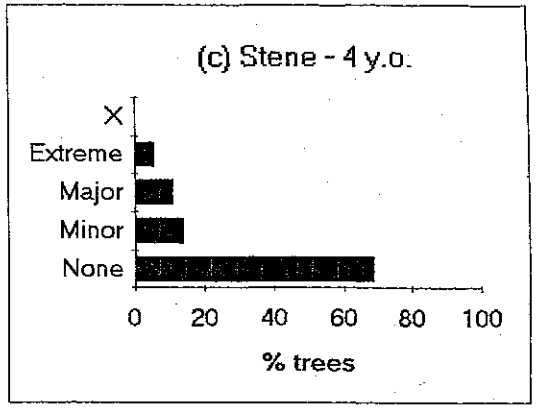


Table 3. Proportion of sample trees with either 'Major', 'Extreme' or 'X' degrade

Site	'End' trees	'Not End' Trees
1 y.o. plantings		
South	69%	75%
Ritson	14%	19%
Stene	N/A*	6%
2 y.o. plantings		
South	50%	47%
Hilder 1	37%	29%
Hilder 2	18%	28%
Hilder 3	29%	22%
"Kievi"	N/A**	N/A**
Giles	N/A***	4%
3 & 4 y.o. plantings		
South	50%	61%
Wunnenberg	N/A**	N/A**
Stene	N/A*	17%

* no 'end' trees at Stenes - ends of rows bordered by native forest
** end trees not identified at the "Kievi" and Wunnenberg sites
*** end trees at the Giles site were eucalypt species other than Bluegum

Table 4. Ringbarking of lead shoots

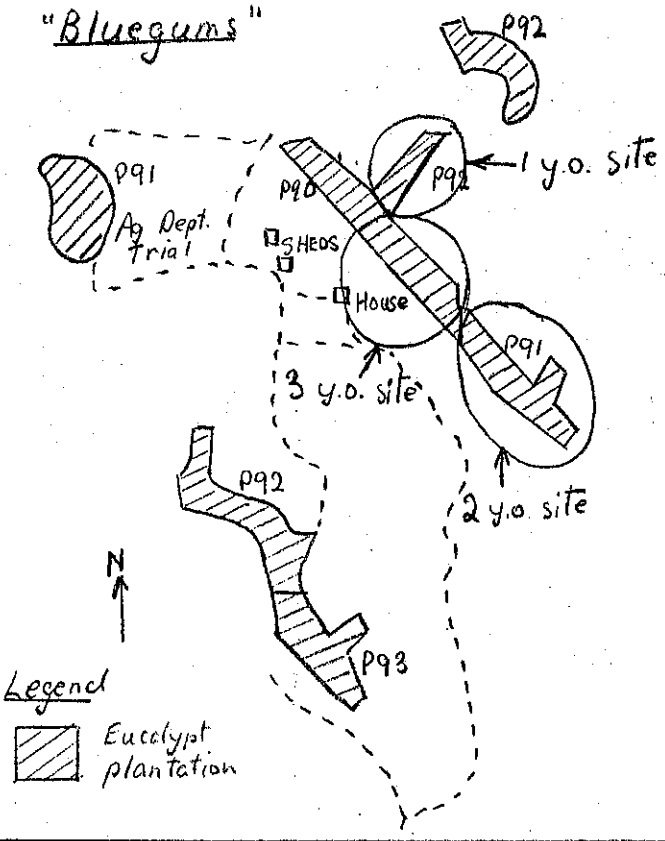
	1 y.o			2 y.o						3 y.o.	4 y.o.	
Farm	South	Ritson	Stene	South	Hilder 1	Hilder 2	Hilder 3	"Kievr"	Giles	South	Wunnen-berg	Stene
No. lead shoots*	25	162	16	112	82	226	41	47	23	54	515	74
Lead shoot ringbarked?												
Yes**	72	18	6	36	12	11	12	9	6	22	30	1
No**	28	82	94	64	88	99	88	91	94	78	70	99
Total**	100	100	100	100	100	100	100	100	100	100	100	100
Ave. ht of ringbark (m)	1.2	1.1	0.5	4.4	3.7	3.6	3.5	3.8	5.0	5.1	4.8	8.5

* the lead shoot on each stem (of single-, double- and multi-stem sample trees) was assessed.

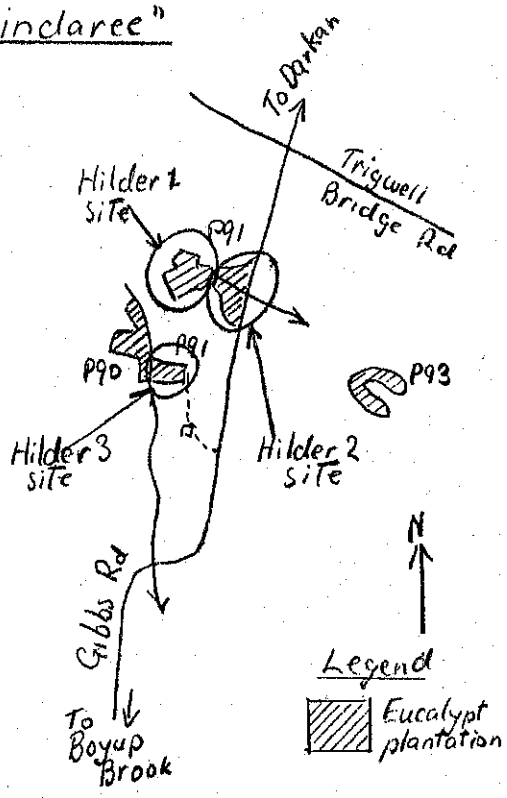
** data are percentages

Appendix 1. Sketch maps of farms.

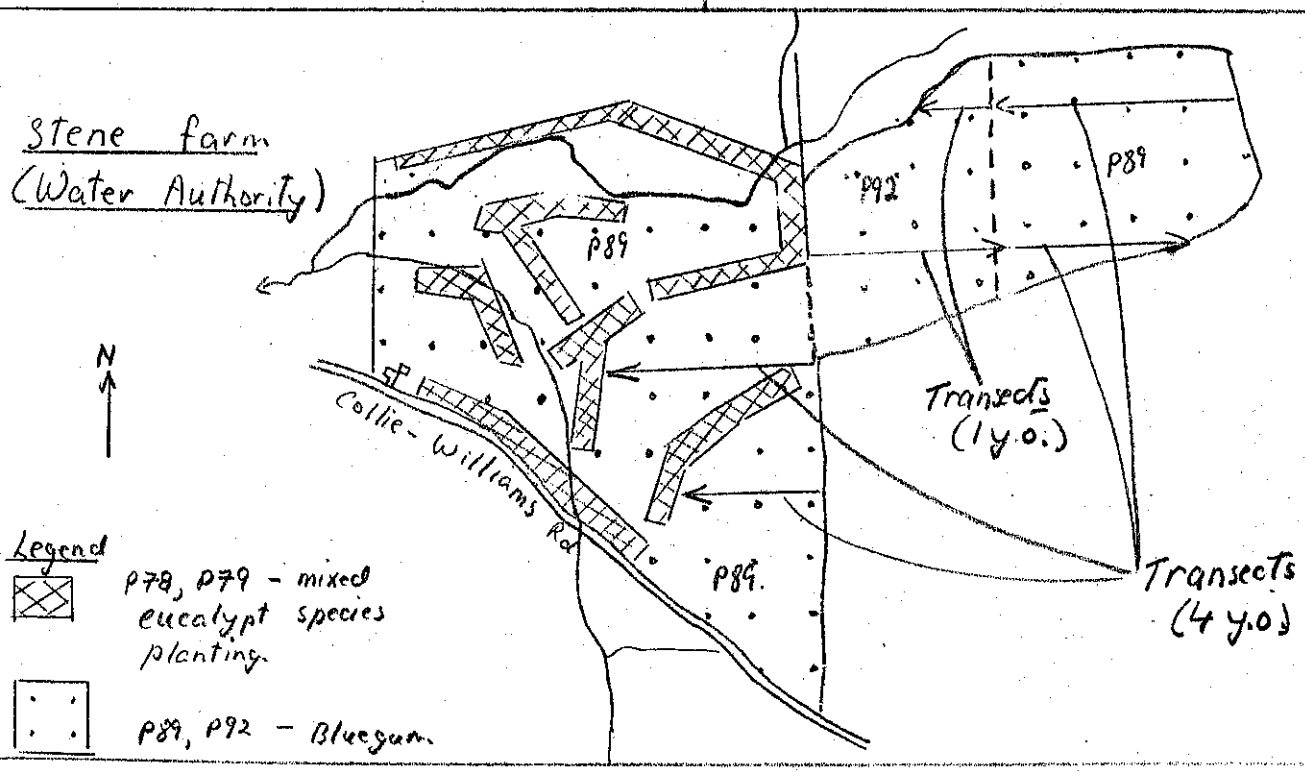
South farm "Bluegums"



Hilder farm "Binclaree"



Stene farm (Water Authority)



Note: Sketch maps not drawn to scale.