

## Introduction

Although the planned thinning operation (9000 m<sup>3</sup>) will now not go ahead this financial year, Mick Morley & Victoria Betts met with Wally Notman and myself to discuss aspects of the program, which should now begin in 2001/02.

Victoria's job is now to 'find' stands to thin that will support a commercial thinning operation to produce about 20,000 m<sup>3</sup>/yr for 5 years. At the expected average yield of 120 m<sup>3</sup>/ha, this is equivalent to ~ 170 ha/yr.

We spent a couple of hours discussing issues in the office before inspecting 3 stands in the Toolangi State Forest.

## Strategic issues

- *How to undertake the assessment?*

It was agreed that a recent set of aerial photos was essential in order to stratify stands into suitability classes. Wattle/eucalypt would need to be able to be separated on the photos. The stand/coupe selection Criteria listed in MARDAG Operational Guideline 5.1 would have to be met.

Species, age, and slope could be obtained from old coupe maps. Basal area, tree size, ht to first green branch, and terrain would have to be assessed on the ground.

The recommended pre-thinning assessment plot intensity (~1 plot/2 ha) would be too intensive for a strategic survey. I suggest that an attempt should be made (using plots) to correlate a eucalypt crown density from the photos to the minimum acceptable BA (25 m<sup>2</sup>/ha); then API of stands of appropriate age would identify suitable/unsuitable areas on the basis of BA (which is directly proportional to volume).

Reconnaissance would be needed to check tree diameters and terrain. (In most of the Toolangi area old logging debris would not be significant enough to hinder thinning machinery.)

I would not necessarily accept the 1991 Rowlands report that said only about 25% of ash regrowth would meet the thinning criteria. I can't see why a higher proportion would not be suitable.

If Alpine Ash was to be included, the stand criteria for Mountain Ash could apply to the AA, at this stage.

It was pointed out that some of the 1983 fire regrowth at Powelltown was now on the 2001/02 WUP for thinning. Central staff should liaise with Dandenong staff re utilisation contract plans.

- *Damage issues*

Thinning in the 1960s in the Central Highlands resulted in an average of 46% of retained trees with damage (due to hand-felling and tree-length snigging with bulldozers) that would downgrade the timber at final felling. This level of was and is completely unacceptable. The ash thinning done at Toolangi and Powelltown in the

early 1990s generally averaged under 20%. The current prescription requires no greater than 15%.

Damage is assessed according to the method in Appendix 3 (MARDAG Guideline), except that 1 plot per ha (not 3/ha) would be enough in most cases. This method also is designed to assess other aspects of the prescriptions, such as bay & outrow widths and BA retention.

Damage plots were set up after the 1988 trial thinning on the W side of Little Jim Track. It is now time for some of these trees to be felled to measure the spread of defect. (I will investigate how this can best be done, in conjunction with Fiona Hamilton.)

- *Fire risk*  
There is a short period of high fire risk from fresh slash produced by thinning operations in ash regrowth. The slash rots away and gets covered by other vegetation within a few years. I don't consider that carrying the fire risk should be an impediment to beginning commercial operations.
- *Impact on possum populations*  
Victoria reported that there is a trial in some regrowth (planned for thinning) to examine the use of nesting boxes by Leadbeater's possums. (This is one of David Lindenmeyer's projects.) Removal of silver wattle in the thinning operations (either deliberately or accidentally) could have an impact on the possum density.

A trial could be funded by FV to examine the impact of thinning on the possums.

## Field Inspection

### *Tin Dish coupe – Woodmore Track*

1981 MA regrowth. Victoria has put some plots in here.

Our BA sweeps on the W side of the Track indicated only 10-16 m<sup>2</sup>/ha of eucalypt and 6-8 m<sup>2</sup>/ha wattle. Most of this part would not be economically thinnable, nor does it need thinning, as it is already too sparse.

On the E side of the Tk, BA was 26-28 m<sup>2</sup>/ha MA and 4-6 m<sup>2</sup>/ha wattle. OK for thinning.

There were a few large logs on the ground but, generally, logs would not be an impediment to harvesting machinery. Low slopes in area visited.

### *Little Jim Track*

E side: 1971 MA/AA mixture thinned in 1991. Outrows still visible. Damage averaged 15-20% here, but external signs of this are now difficult to find. Wire-grass had spread and had probably limited the number of understorey plants that had grown back. 2 sweeps gave an average BA of 29 m<sup>2</sup>/ha, and many retained trees were 50-60 cm DBH.

W side of Tk: 1969 MA/AA mixture thinned in 1988 with an OSA feller-forwarder – part of the Young Eucalypt Program trials. Outrows still visible. Understorey has recovered more

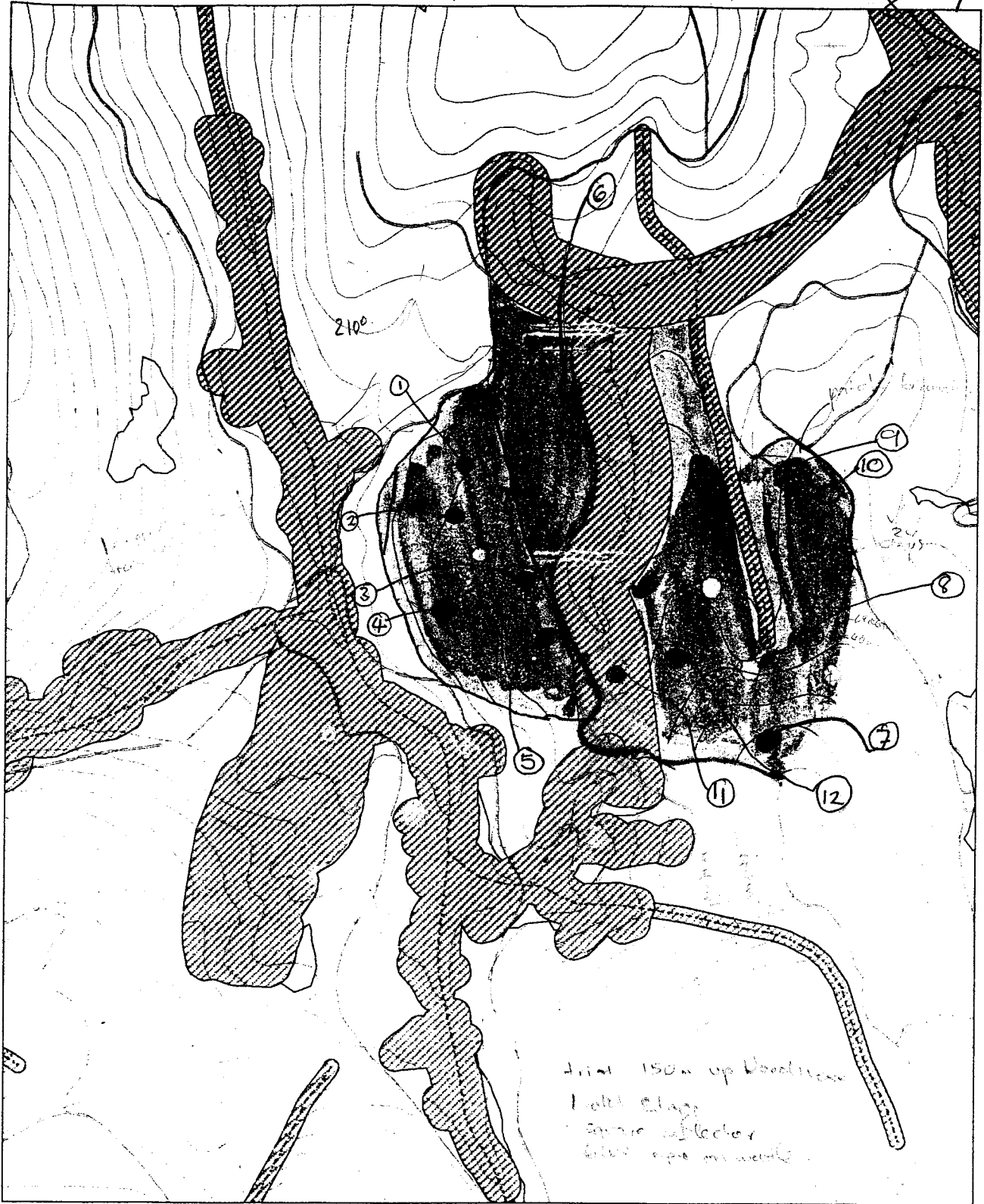
than on E side. (An NRE video of this operation plus follow-up research was made, and should be viewed.)

An R & D project designed to measure the effect of thinning on understorey composition and structure would be desirable, in view of the variable effects at this site. (I will draft a proposal.)

*Peter Fagg*  
Silviculture Unit  
Forestry Victoria

*19/3/01*

*h/thinning/ash thinning – Toolangi- Mar 01*



200 0 200 400 Meters



Scale 1:15000



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Dept. Natural Resources & Environment - Forestry Victoria

- |  |                        |  |                                     |
|--|------------------------|--|-------------------------------------|
|  | Existing Road          |  | Permanent Stream Buffer             |
|  | Proposed Road          |  | Filter Strip                        |
|  | Streams                |  | Existing Regeneration               |
|  | Contours               |  | Steep Rocky and High Erosion Hazard |
|  | Coupe                  |  | Wildlife/Habitat Area               |
|  | Proposed Landing Point |  |                                     |

**FORESTRY COUPE PLAN**

COUPE ADDRESS: Toolangi

COUPE NAME: *Tin Dish*  
 COUPE NAME

GRID REF: GRID REF

C/- Dept Natural Resources and Environment,  
Woori Yallock, 3139  
59647 088

To Whom it May Concern:

1-12-98

This information outlines the location of nestbox and long-term monitoring sites in the Toolangi and Powelltown areas. These sites form part of a long-term monitoring project of the vertebrate fauna of the ash forests currently being undertaken by the Australian National University and supported by the Department of Natural Resources and Environment and Environment Australia.

The establishment of nestboxes at these sites will provide data on the use of nestboxes by a range of arboreal marsupials including mountain brushtail possums, greater gliders, feathertail gliders, *Antechinus* spp., Leadbeater's possums, and sugar gliders. The study has been set-up as an experiment to test the influence of a number of variables on nestbox occupation. These variable include: nestbox height (2m vs 7m), box size (50mm entrance diameter vs 100mm entrance diameter), forest age (1939 regrowth vs early 1980s regrowth/regeneration), slope of site, aspect of site, basal area of *Acacia* spp., and aspect of box. These nestboxes were put in place during November 1998 and will be checked during December 1998, January 1999, March 1999 and at a number of occasions after these dates. A total of 96 nestboxes have been placed in the forest at 24 sites across the Central Highlands

The long-term monitoring sites were established to survey arboreal marsupials using stagwatching. These sites have been set-up to estimate fluctuations in possum and glider populations. Survey information from these sites complement data collected in 1982/83, 1988/89, and 1993. I have previously sent details of the monitoring study and preliminary survey results.

I have endeavoured to check current wood utilisation plans for planned logging operations adjacent to these sites. However, please inform me if logging operations are likely to affect these sites.

Please do not hesitate to contact me if you have any questions about this project. I would also repeat my invitation for NRE staff to join our stagwatch surveys or attend other field activities.

Yours sincerely,

Ryan Incoll



# DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT

**TO:** BRUCE MCTAVISH ACTING SENIOR FORESTER, CENTRAL F.M.A.

Ref:

**FROM:** MICK MORLEY FORESTER IN CHARGE, TOOLANGI

2/10/2000

**SUBJECT:** AMENDMENT OF SPECIAL PROTECTION ZONE

## PURPOSE

1. To request amendment to convert a designated Special Protection Zone (SPZ) to a General Management Zone (GMZ).

## BACKGROUND

2. **Coupe Name:** *Tin Dish*
3. **Coupe Number:** *08/298/871/0001*
4. **Coupe Size:** *110 ha.*
5. **Zone Based On Strategic Forest Use Decision:** *Wildlife Corridor*
6. **Harvesting History:** *Harvested in 1981.*
7. **Location Of SPZ:** The SPZ is 200 metres wide and is approximately one kilometre in length. 19 year old Mountain Ash regrowth is currently present in the majority of the SPZ, a 20m stream side buffer will be necessary for approximately 750m and were appropriate a rainforest buffer will be applied as per FMA prescriptions. Refer to Map.

## RECOMMENDATION.

According to Guidelines For Amending FMA Zones & Text (ref: FT/01/0005 FT/01/0008 27/04/99) SPZ and SMZ may be converted GMZ for operational or other reasons, subject to the establishment of an equivalent area of SPZ containing the same or better value elsewhere in FMA. (not possible for unique values)

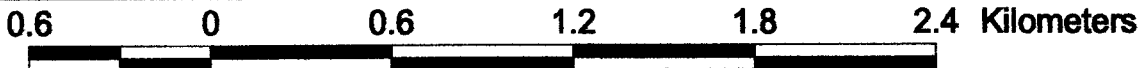
Removal of the 200 metre wildlife corridor would be practical in terms of operational ease, coupe workings and accessibility, and future planning for final harvesting.

I recommended that you approve the above amendment, please contact me if you have any comments or questions.

Mick Morley  
Forester in Charge, Toolangi

Approved: \_\_\_\_\_ Bruce McTavish Acting Senior Forester, Central F.M.A.





- Contours
- Roads
- Streams
- FM Zones
  - GMZ
  - Public Land
  - Park/Reserve
  - Private Property
  - SMZ
  - SPZ
  - Softwood
  - Tindish.shp

# Toolangi - Coupe Map

Coupe Name: Tin Dish (Thinnings)  
 Coupe Number: 08/298/871/0001  
 Area: 110ha



1:25000

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 Dept. Natural Resources & Environment - Forestry Victoria

# Fax Cover Sheet

FILE:

DATE: 21<sup>st</sup> August 2002

TIME : 5.30pm

TO: Les Walkden

Cc : Mick Morley – NRE Toolangi

FAX: 03 6344 6548 | 59629022

FROM: Rowan Eyre

RE: Regrowth Ash Thinning – Toolangi 2002/2003

Number of pages including cover sheet: 1

## MESSAGE

Dear Les,

Thanks to Rex and Andrew for their time at Toolangi last week. To assist you in determining whether you are interested in harvesting and carting this parcel of wood, the following points were clarified with the NRE during the visit.

- Average basal area currently 40-50m<sup>2</sup> – target post thinning 18-20m<sup>2</sup>
- Outrow thinning – 5metre wide outrows with minimum 15metre wide bays – Target 75% basal area removed from bays. Aim at 20 metre wide bays where possible.
- Remove all trees to a width of 10 metre along edge of roads to enable cable extraction and processing
- Roadside slash acceptable. NRE to determine whether slash is to be pushed back into outrows or heaped to burn on the edge of the road. Contractor to perform this task under direction of NRE.
- Hauler will operate on the road where necessary. NRE will arrange closure of minor roads (eg. Old Granton Rd)
- Allowable damage – 15% as per NRE prescriptions
- Anchor and Guy tree's not included in damage assessment. Guy trees to be removed where possible, without damage to remaining stems. Anchor trees to stay.

It would be helpful if you could advise me whether you are interested in the job. Our plan would be to start as soon after the start of October as possible, with the total available volume for the season around 30,000 tonne.

I look forward to discussing any issues, including harvesting and cartage rates with you.

Please Advise

Rowan Eyre

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*Amnd  
Mick ok  
START NRE  
Toolangi*

Mark's estimate of Ash Thinning resource  
 - next 3 years (for original 9000)

Thinning

Thinning volume - Central FMA

Yield assumed 100m<sup>3</sup>/ha ← reasonable assumption  
 Gross/net reduction 50% ← tighten this figure up.  
 Age Between 14 and 30 years x →  
 All SPZ areas excluded

**UNSUSTAINABLE TOTAL VOLUME**

District	Mountain Ash												Alpine Ash			Total		
	0-15 degree slope				15-22 degrees slope				0-15 degree slope				15-22 degrees slope					
	Gross	Net	Volume	50%	Gross	Net	Volume	make 1%	Gross	Net	Volume	Gross	Net	Volume	Gross	Net	Volume	
Alexandra	106	53	5300	26	26	13	1300	589	295	29450	46	4550	812	406	40600			
Marysville	380	190	19000	156	156	78	7800	403	202	20150	96	9550	1130	565	56500			
Toolangi	1263	632	63150	206	206	103	10300	32	16	1600	0	0	1501	751	75050			
<b>Total</b>	<b>1749</b>	<b>875</b>	<b>87450</b>	<b>388</b>	<b>388</b>	<b>194</b>	<b>19400</b>	<b>1024</b>	<b>512</b>	<b>51200</b>	<b>141</b>	<b>14100</b>	<b>3443</b>	<b>1722</b>	<b>172150</b>			

**SUSTAINABLE VOLUME**

District	Mountain Ash												Alpine Ash			Total		
	0-15 degree slope				15-22 degrees slope				0-15 degree slope				15-22 degrees slope					
	Gross	Net	Volume	50%	Gross	Net	Volume	make 1%	Gross	Net	Volume	Gross	Net	Volume	Gross	Net	Volume	
Alexandra	7	4	353	2	2	1	87	39	20	1963	6	303	54	27	2707			
Marysville	25	13	1267	10	10	5	520	27	13	1343	13	637	75	38	3767			
Toolangi	84	42	4210	14	14	7	687	2	1	107	0	0	100	50	5003			
<b>Total</b>	<b>117</b>	<b>58</b>	<b>5830</b>	<b>26</b>	<b>26</b>	<b>13</b>	<b>1293</b>	<b>68</b>	<b>34</b>	<b>3413</b>	<b>19</b>	<b>940</b>	<b>230</b>	<b>115</b>	<b>11477</b>			

9,000m<sup>3</sup>

# Silvicultural Discussion

20/2

- Outrow vs non outrow - stocking dependent
  - Harley
  - Batt
  - Pike
- Hi stocking operation vs no/low stocking approach
  - Measuring techniques
  - Decision making tree e.g. feeding parameters
    - Slope
    - Total BA
    - Euc BA
    - Stk Ht
    - etc.
- \* Morgans - impact on operation
  - approach to handling.

\*

Continuum in stocking

e.g.  $48 \text{ m}^2/\text{ha}$  -  $0^2/\text{ha}$ .

- (i) Reduce BA by 50%
- (ii) Reduce BA to  $20 \text{ m}^2$
- (iii) Where Euc BA  $< 10 \text{ m}^2$
- (iv) Aim to optimise

- 5-8m spacing

- 60 yrs of age

- Min retention

- "Processing Bays"

- Op + Down Hill

250 - 400 stems

20m<sup>2</sup> final crop  
aim 25 m<sup>2</sup>/ha  
50% basal area.

## NOTES ON PROPOSED ASH THINNING OPERATIONS AT TOOLANGI

### Background

A licence has been issued to Midway Ltd to take 9000 m<sup>3</sup> of ash logs as thinnings from the Toolangi District. 4 or 5 coupes have been listed on the WUP as potential thinning coupes. At an estimated (conservative) yield of 120 m<sup>3</sup>/ha, approx. 75 ha will be needed to supply the 9000 m<sup>3</sup>.

The thinning should be conducted according to the current *Guidelines and Prescriptions for Ash Thinning Operations (GPATO)*.

### Inspection

The Kalatha Camp coupe was briefly inspected by Michael Morley, Peter Ford and myself on 12 Dec 00. The W end of the coupe (originated in 1973) had moderate slopes, quite a bit of old material on the ground, and the (large) trees were relatively sparse – not suitable for thinning. This coupe is a mixture of Mountain Ash (~35%) and Alpine Ash (~65%).

The E end (near Siberia Junction) was quite flat, with few downers, and understorey quite light. Tree density was low for a 27 yr-old stand. The dominants/co-dominants were quite clear and tall – 35-40 m – with 15-20 m boles.

### Plot data

Plots (15m x 15m) have been measured in 3 coupes (up to 12 Dec) and the following analysis/comment is based on the results from those plots.

This is summarised in the following Table.

Coupe Name	Kalatha Camp	Kalatha Creek	Perry's
Age	27 yrs	26 yrs	24-26 yrs
No of plots put in	5	4	5
Mean BA/ha	47 m <sup>2</sup> /ha	46 m <sup>2</sup> /ha	48 m <sup>2</sup> /ha
Mean no. trees/ha	560	510	590
Mean spacing of doms/co-doms.	6.6 m	n/a	5.9 m
DBHOB above which all stems should be retained for 50% BA retention.	36 cm	42 cm	36 cm
% of stems > 40 cm DBHOB	21 %	30 %	18 %

Despite the age differences, the 3 coupes have similar BAs. The only coupe which does not meet the criteria in GPATO is Kalatha Creek, because >25% of stems are >40 cm DBHOB. This means that, under the normal outrow and bay thinning system, too many sawlog size logs would be produced. All other criteria are met. Although stem density (no./ha) is lower than what I would have expected, the height and diameter of the trees to be removed (mean tree size approx. 0.3 m<sup>3</sup>) would make thinning in all coupes an economic proposition for the contractor.

If the stands were mixed species, I would recommend a 'uniform' thinning system (as per NFS Guideline No 12, p. 16), but as the potential for damage is much higher in ash species, an outrow/bay system, in which extraction tracks are straight (not winding around retained trees), is the only way to go.

### Proposed thinning system/equipment

The proposed contractor plans to use a fixed felling head, to allow full control over where the cut tree is placed. This is fine, but to operate effectively, a large counterweight on the base is needed, thus requiring an 8 m outrow apparently. With a bay width of 14 m, this corresponds to a removal of 36% of crop trees. Even with a bay of 16 m, this is a 33% removal, which is unacceptably greater than the 24% allowed by GPATO. [The contractor has been told by M Morley (on my advice) that outrows must not exceed 6 m in width, even though GPATO says 4.5 m maximum.]

Floppy heads were used successfully to thin ash regrowth in the late 1980s and early 1990s at Toolangi and Powelltown.

*- Wanatah or Rossie*

It is not clear whether the head proposed will debark the logs 'at the stump'. If not, that is another major disadvantage of the proposed system: a large processing area/landing would be required, bark would not be evenly distributed around the coupe, and the pad of slash for the machines to work on would be thinner.

The contractor also plans to use a grapple skidder to take out the trees in long lengths. This has great potential to result in damage to retained trees beside the extraction tracks. It has been used in mixed species thinning in Boola Boola, but this operation only just met the <15 % damage prescription. In ash species, which are much more sensitive to bumps, 'longwood' thinning would be unlikely to meet the damage standard. (Such operations in ash regrowth in the early 1970s lead to average damage levels of >45%, with disastrous consequences to future sawlog quality.)

### Conclusions

1. **The equipment planned to be used by the contractor is not appropriate for thinning ash regrowth, based the silvicultural prescriptions and our knowledge of longwood systems used elsewhere.**
2. **The Tin Dish coupe that is also on the WUP (being younger - 19 yrs old?), would probably be a better proposition to thin, i.e. more of the future mortality could be harvested and the response to the thinning would be gained earlier in the life of the stand. (For the next WUP, coupes of 1978-82 origin should be targeted for thinning.)**

Peter Fagg & Peter Ford  
Operations, Forestry Victoria  
22 Dec 2000

0428 516783

57 722675

*Richo:*

- Cat 320
- Modified boom + stick
- fixed head / feller/processor
- ⇒ Swing diameter ~ 5.0m  
    < 6.0m
- ⇒ Fallen + processed = debark  
    - debark  
    - cut to length (on site)
- ⇒ Forwarder to loading loc.