Warra 8G Post Harvest Agreed Position

The Design Group unanimously agreed that the harvesting of Warra 8G was as close as practical to the agreed design for harvesting.

Participant	Agreement Date	Media
Roger Linnel		
George Harris		
Marcus Tatton		
Ian Johnston		
Mark Leech		

Agreed Position

Agreement was reached to leave the narrower Eastern wing unburnt. This would provide an onsite opportunity to compare burnt/unburnt areas for regeneration and the affects on adjacent undisturbed forest.

Browsing: it was agreed to establish 4 browsing exclosures, 2 in unburnt sites and 2 in burnt sites.

The Design Group generally agreed that the design and implementation of harvesting in Warra 8G was a success.

The Design Group accepted that the Warra 5D single tree selection approach and the large amounts of retained slash results in a lack of eucalypt regeneration

The Design Group agreed that this method or some adaptation of it, applied at an appropriate scale could provide:

- Social licence for managing mixed wet eucalypt forest,
- improved biodiversity outcomes
- improved special timber recovery (although not demonstrated in this trial),
- less burning and
- adequate eucalypt regeneration.

Marcus Tatton maintained his concern regarding the use of fire and its decreasing social and environmental acceptance, as well as the increased potential for escapes, occupational health and safety issues and potential degrade of trees that may become scorched. He was also concerned with the wide scale application of an unproven trial. Marcus's comments have been appended.

Roger Linnel noted that the “pub talk” from contractors indicates that there is still a need for more training in special timber recovery and specialist operations. He emphasised that the care and presentation of special timber logs is still very poor.

The use of fire as a forest management tool was discussed at length. It was explained that there had been an historic sequence of landscape level wild fires in the Southern Forests that had influenced the current forest composition. Fire would still be used in the “new silviculture” to reduce wildfire risk and provide receptive seed beds for eucalypt regeneration on a much more site specific basis than with the clearfell burn and sow system. Rapid eucalypt establishment, facilitated by a receptive ash bed helps to minimize browsing damage.

There was much discussion around the requirements for eucalypt regeneration. George Harris both on the day and in subsequent conversation supported the appropriate use of fire as a cost effective tool providing slash reduction and effective eucalypt regeneration. Ian Johnston noted that large piles of slash to be burnt will provide a mosaic of burnt and unburnt ground. Mark Neyland explained that late April burns would produce a mosaic of burnt and unburnt ground.

The Design Group discussing issues at Warra 8G March 2006

It was generally agreed that this style of silviculture may provide more options for future generations.

Ian Johnston commended the harvesting and those responsible “for having a red hot go”.

Marcus Tatton recognised that this trial represented a harvesting technique that was culturally more acceptable to changing resource attitudes, but maintained his concern about the use of fire.

increased options for special timber management as well as maintaining the eucalypt component.

The combined effects of shading and heavy slash layers provide a much reduced opportunity for acceptable eucalypt regeneration. This became evident to all participants upon revisiting Warra 5D.


Warra 5D lack of eucalypt regeneration

It was agreed that unburnt slash should be placed in the more heavily shaded areas, least likely to successfully regenerate eucalypts. The proposed treatment of heaping and slash burning should provide adequate seedbed for eucalypt regeneration. While it appears that a successful burn in Warra 8G will not be possible in 2006 due to wet conditions, this has demonstrated the narrow window of opportunity available to provide "cool" burning conditions.

Special timber species, mainly shade tolerant understorey species will have adequate opportunities for regeneration as there are many receptive sites. The areas are generally narrow giving access to local "seed banks" and the cooler burns are more conducive to rainforest regeneration.

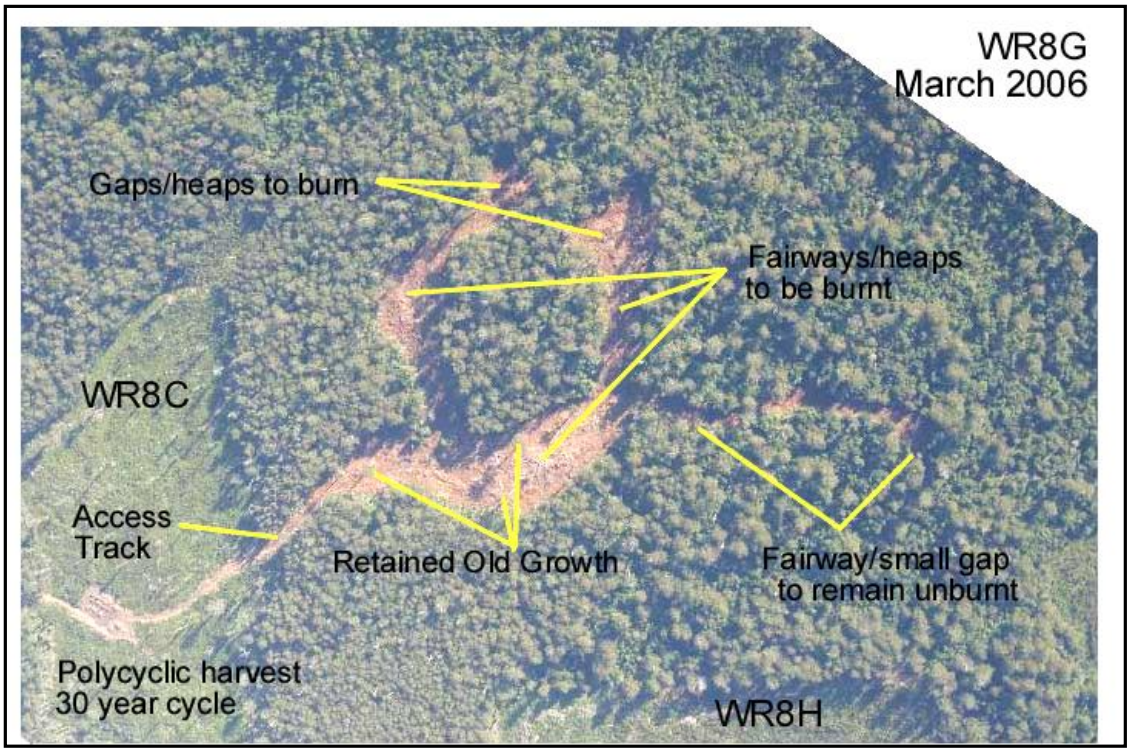
Polycyclic Harvesting: the polycyclic period of 30 years does not imply that each new entry will be along-side the previous harvesting. Taking 3 harvests of up to 30% of harvestable cover leaves at least 10% that can be used for buffers between entries or to retain particular communities, eg leatherwood or immature Celery-top pine. Location of the second entry may be market determined, targeting a particular species and/or size mix. As this trial demonstrated, operational constraints may mean that more cover remains, this trial achieving 50% or 4.5 ha of targeted cover removal.

Group Discussion

While most group members had been exposed to the previous trials and had reached an understanding of the issues associated with the single tree selection of Warra 5D, Marcus Tatton had not had that background. It was unanimously agreed to revisit Warra 5D, the first Single tree/Group Selection trial(SGS1) and the aggregated/variable retention trial, Warra 8E, to provide Marcus with an equivalent background enabling debate to occur from a similar knowledge base.

It was agreed that to maintain commercial viability on these lower productivity operations there is a great need to match contractors to operations and forest types, especially when there is a greater richness of special timber. All agreed that there is a need to do things in a different way, this will require identifying smaller contractors with appropriate training.

Aerial Observation



The aerial photo taken on 20th March 2006 clearly shows the access, fairways, gaps and the effect of orientation of fairways and shadow. From the shadows, the photo must have been taken at about mid-morning Summer Time, indicating that the N directional fairways would have significant morning and afternoon shading. Narrow east-west fairways are likely to remain in shadow for the majority of the day.

Regeneration

Successful regeneration of forest cover including commercial species and maintenance of biodiversity is of fundamental importance in sustainable forest management. It is a legal requirement under the Forest Practices Code 2000 to successfully regenerate forest after harvesting,

- *All techniques will take account of how much tree cover is to be removed, what site preparation is required to promote growth and what will be the source of new growth i.e. seed, nursery plants or advance growth of seedling, coppice or lignotuberous origin.*
- *Where a stand has less than 20 live trees per hectare over 10m tall remaining, the coupe shall be mapped as stocked or have 65% of 16m^2 plots stocked and no understocked patch shall exceed 1 ha in size nor should the total understocked area exceed 20% of the coupe.* Forest Practices Code 2000

While this is a trial to establish new silvicultural treatments it remains subject to the requirements of the Forest Practices Code. It is important to remember that the Warra Trials are about finding alternatives to cleafell burn and sow silvicultural in wet eucalypt forests, the successful regeneration of eucalypts is a priority. The Warra 8G trial design provides

Productivity

The productivity achieved was one of the highest in the Warra Trial, and three times higher than that at the original SGS coupe.

- *2186 tonnes or m^3 harvested*
- *4.5 ha or approximately 15% of the coupe*
- *20 working days to complete* Edwards 2006

A number of factors contributed to the improved productivity, including the design of the operation, moving from the focus on single tree selection to fairways and groups, previous experience of the contractors and forest structure with a large volume of regrowth eucalypt and less dangerous old growth stems. *Many of the smaller regrowth trees were pushed, with the root ball then being cut from the trunk.* This provided a further productivity gain.

Marketing

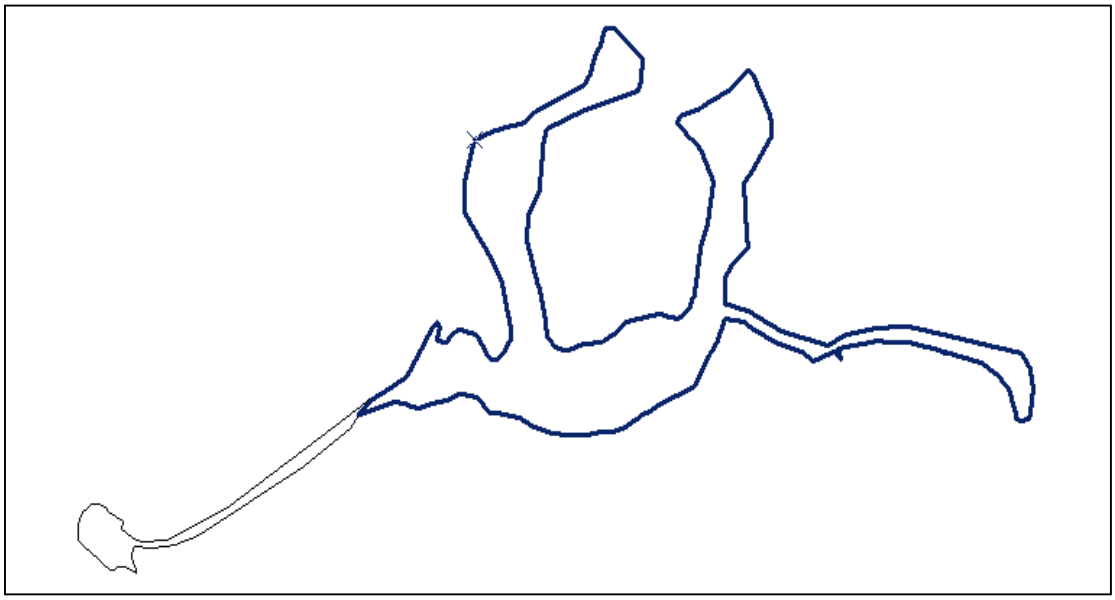
Given the difficult market conditions experienced at the time of harvest and the reported lack of special timber in the area harvested, the focus was on selling the higher quality eucalypt sawlog. No attempt was made to do anything with the horizontal scrub, the only abundant special timber. It must be noted that this species has no current market of any significance and its marketing will be the subject of further work. It is also important to emphasise that the proposed method of managing the alternatives to clearfell burn and sow will result in less damage to "edge" horizontal and more availability of it within coupe~~.~~s

Production Outcomes

The volumes of wood produced reflected the composition and structure of the forest. The majority of the area harvested was regrowth eucalypt with no available sawlog special timber species. However, in remaining areas there is abundant regeneration of a number of special timber species. A comparison of the recovered volumes with the detailed inventory undertaken to facilitate the design process is not relevant as a greater proportion of regrowth forest was included in the final harvested area.

Product	Size Range	Pulpwood Vol	Sawlog Vol	Total
P/W Euc		634.98		
P/W Euc Regrowth		840.04		
S/L Cat 1/3 Euc Appearance	<45cm		17.20	
S/L Cat 1/3 Euc Appearance	>=85cm		87.85	
S/L Cat 1/3 Euc Appearance	45<65cm		36.39	
S/L Cat 1/3 Euc Appearance	65<85cm		38.29	
S/L Cat 1/3 Euc App. Regrowth	<45cm		182.21	
S/L Cat 1/3 Euc App. Regrowth	45<65cm		258.04	
S/L Cat 1/3 Euc App. Regrowth	65<85cm		88.91	
S/L Cat 1/3 Euc Construction	45<65cm		2.23	
TOTAL		**1475.02**	**711.12**	**2186.14**

The final harvest boundary provides the evidence of the closeness of fit given operational constraints.



Operational Considerations

As agreed by the Design Group in 2004, access to Warra 8G had to be undertaken at minimal expense and as a summer operation. To facilitate that, access was gained from WR8C and the landing in WR8C was re-used. Rather than constructing a Class 4 summer road into the coupe, a corded snig track was established and a negotiated rate was agreed with the contractor to cover the extra snigging distance.

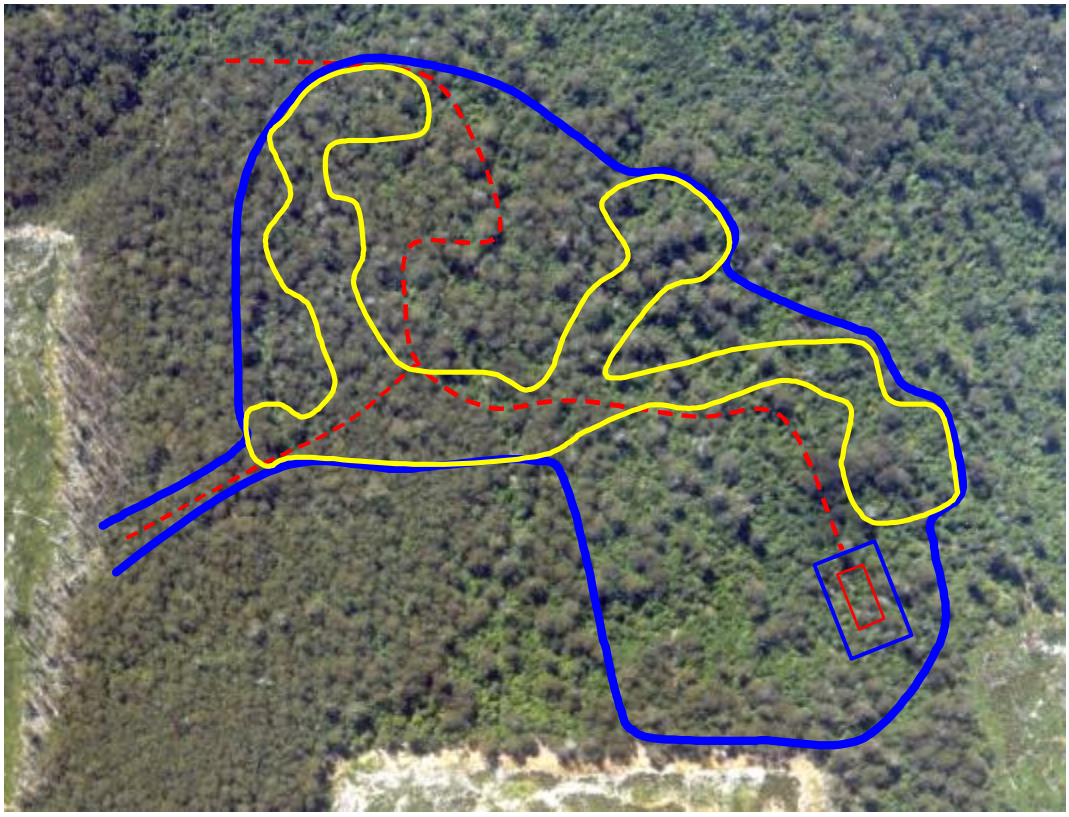
The WR008G Harvesting Report by Leigh Edwards has provided some of the following information.

Contractors

The operation consisted of 3 machines and 4 persons as follows:
1 Rubber tyred skidder
2 Excavators: one in the bush and one on the landing.
Personnel: *The crew was Vince Watson (previously involved with harvesting at WR005D and 17B) on the landing excavator, with two chaps sharing the skidding and landing chainsaw operator role, and Harvey Watson falling in the bush with an excavator.*
Having the faller operating the bush excavator was unusual, but with the narrow fairways the 'big yellow wedge' (the excavator) was used regularly. And as the excavator is immobile while the trees is being actually cut, the feller may just as well do the limbing and skidding preparation. Edwards 2006

Closeness to the Agreed Design

Leigh Edwards presented a photo map displaying approximate harvesting boundaries for the Warra 8G and the extent of harvesting. Following the on-ground review, it was agreed that the operation interpreted the Design Groups position in a very pragmatic way, cognisant of the site conditions, forest structure, prevailing markets and contractor availability. Huon District staff, Leigh Edwards and the contractor are to be congratulated for an excellent outcome.



Final Harvest Plan WR8G, 6th Jan 2006

SGS 2 Design Group: Warra 8G

The reconvened Design Group visited the completed Warra 8G Long Term Research trial on Wednesday the 8th March 2006. The purpose of the visit was to analyse the operational outcome in light of the Design Groups Agreed Position of November 2004.

The report builds on all previous work, supporting the object of the Warra Silvicultural Systems Trial (SST) to compare feasible alternative systems with routine clearfall, burn and sow silviculture and to develop silvicultural alternatives for areas where habitat, special timber species or aesthetics have additional value. *The Small Group Selection treatments seek to maintain the social licence, particularly for wood production from Old Growth forests, by exploring the use of small scale, polycyclic harvesting and regeneration methods.*
SGS 2 Design Group Report December 2004.

This report captures the essence of the discussion and provides the agreed final consensus view of the group.

Design Group Membership
The reconvened group consisted of

- Mark Leech (facilitator and independent silviculturist),
- Roger Linnel (special timber sawmiller),
- Ian Johnston (boat builder, special timber user and member of the 1st Design Group),
- George Harris (wood worker and former President of the Tasmanian Woodcraft Guild),
- Marcus Tatton (Designer Maker) and
- Mark Neyland (Principal Research Officer, Native Forests) with the invaluable support and assistance of Leigh Edwards (Senior Silvicultural Technician).
- Huon District Staff provided operational management
- Contractors
    - Lane Watson: Logging contractor
    - Hazells: Post harvest restoration.