Victorian Environmental Assessment Council

River Red Gum Investigation - Draft Proposals Paper

Explanatory Notes on the Timber Volume Calculations and Methodology

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Overview

These notes are provided to give some background on the methodology used by VEAC to calculate the impacts of its Draft Proposals Paper (released 19 July 2007).

Current Situation

Sawlogs are commercially harvested from 25,164 ha of state forest in the Barmah, Goulburn and Gunbower forests. Some harvesting is also undertaken in smaller forests within the region. Standard logs, residual logs and firewood are harvested as a by-product of sawlog harvesting.

Sustainable yield is calculated for sawlogs only. The supply of other products is determined by the level of sawlog harvesting.

The current Estimate of Sawlog Resource is 5,200 cubic metres net (5,806 cubic metres gross equivalent) per year.

Current (2006/07) commercial allocation levels by product are:-

Sawlogs	6,072 cubic metres gross (equivalent)
Standard logs	4,428 cubic metres gross
Residual logs and firewood	10,983 cubic metres gross (equivalent)

Commercial harvesting is administered by DSE via its licensing system. There are 31 licences held by 23 commercial licensees. Individual licensee volumes range from 75 to 2,855 cubic metres gross (equivalent). Eleven licensees cut more than one product.

Area

As a result of VEAC's proposed recommendations the productive area available to the timber industry will fall from 25,164 ha to 10,105 ha.

The remaining state forest will be made up of the majority of the currently available parts of Gunbower State Forest, Benwell State Forest and the Guttram State Forest.

Of the 10,105 ha, 65% is high site quality and 35% is low site quality. It should be noted that high site quality in Gunbower is less productive than high site quality at Barmah.

Diameter Growth Rates

Diameter growth rates have been measured on Continuous Forest Inventory (CFI) plots since 1959 in Gunbower and 1961 in Barmah. These plots have been measured at approximately 10 year intervals since then.

Mean Annual Diameter Increment (cm/yr) - Barmah CFI plots

Period	1961 to 1965	1965 to 1979	1979 to 1987	1987 to 1995	1995 to 2006
Trees <100 cm	0.403	0.366	0.338	0.442	0.186
All trees	0.410	0.361	0.329	0.444	0.190

Mean Annual Diameter Increment (cm/yr) - Gunbower CFI plots

	1959 to 1969	1969 to 1998	1998 to 2005
Trees <100 cm	0.241	0.268	0.140
All trees	0.240	0.267	0.149

Diameter increments have fallen considerably in the last 10 years. Increments measured in Barmah have dropped by 60 % compared to the 1987-1995 period. In Gunbower the average increment has dropped by 40%. This is due to decreased flooding caused by increased water diversion for agriculture and domestic supplies coupled with the ongoing drought.

These increments mean that, in Barmah Forest, it currently takes the average tree (30 to 100 cm DBHOB) 54 years to grow 10 cm DBHOB. In Gunbower this figure is 71 years.

Sawlog Volume Growth Estimates

Sawlog volume growth rates have been estimated for each site quality in each of the three main commercial forests using a combination of tree diameter information, growth rates and product profiles (the amount of sawlog produced by trees of different sizes). The calculated rates are shown in Appendix 7. These range from a high of 0.38 cubic metres per year to a low of 0.08 cubic metres per year.

These growth rates are very low by comparison with other forest types commonly harvested in Victoria.

Summary of results

Assuming :-
no timber harvesting in Special Management Zones (SMZ)

With NO VEAC land tenure changes
Assuming 1980's growth rate (achieved by environmental watering)
Sawlog harvest levels would approximate 6,200 m3/year.
Assuming 1995-2006 growth rate (recent growth rates continue)
Sawlog harvest levels would approximate 3,200 m3/year

With proposed VEAC area changes
Assuming 1980's growth rate (achieved by environmental watering)
Sawlog harvest levels would approximate 2,200 m3/year.
Assuming 1995-2006 growth rate (recent growth rates continue)
Sawlog harvest levels would approximate 1,300 m3/year

Discussion of Methods

The method used to produce these estimates of sawlog availability is only indicative. More detailed analysis will be needed once the land base has been finalised. It is reasonable to assume that lower growth rates caused by drought and changes in the diameter distribution since measurements in the 1980s will mean that these estimates do not fully reflect the current condition of these forest areas.

Reality Check

If the lack of flooding in the Gunbower State forest continues not only will growth increment remain low but tree mortality could increase significantly. This will mean that harvesting at the estimated sustainable levels will be difficult to sustain.

Further work required

To address the potential problems in the methodology mentioned above further inventory work is required. This should include:

- estimating the diameter distribution for sawlog and potential sawlog trees in the Gunbower State Forest
- verifying the product profiles
- assessing the current drought stress status of trees to enable the estimate of volume loss that might occur under changed flooding regimes.