

4. FOREST INDUSTRIES—*Addendum*

TIMBER RESOURCE AVAILABILITY

Otway Forest Management Area

In the Otway Forest Management Area (FMA) current licence commitments are 41,154 m³ of D grade and better sawlogs per year. The current sustainable yield is 44,000 m³ per year of D grade and better sawlogs. The information presented is based on interim Statewide Forest Resource Inventory (SFRI) data and existing growth and yield information, modified to match the SFRI forest types. SFRI assessments and modelling are not complete for this area.

A new baseline model was prepared incorporating the forest management zones as published in the 1992 Forest Management Plan, the Code of Forest Practices for Timber Production (Revision #2, 1996) exclusions including rainforest, steep slopes and stream buffers. Interim SFRI data were used to update productive forest area information. Small isolated areas of productive forest were excluded from the analysis given that these stands are unlikely to be economic to harvest.

This analysis provided the baseline for assessing the impacts of the draft Comprehensive Adequate and Representative (CAR) reserve design on timber resource availability. The new timber resource availability baseline is estimated to be approximately 30,300m³ D grade and better sawlogs per year.

Factors that have contributed to the new timber resource availability figure are:

- an improved definition of productive forest based on forest type, crown cover and stand height provided by SFRI;
- balancing wood flows by forest type;
- a new and more comprehensive model to estimate the Code of Forest Practices for Timber Production (Revision #2) exclusions;
- incorporation of the forest management zones identified in the forest management plan;
- improved modeling of the Otway Forest Management Plan catchment prescriptions relating to slope and harvesting area constraints;
- the exclusion of small isolated areas of productive forest;
- inclusion of an allowance for fire risk;
- adoption of a 10 per cent contingency to allow for differences between modeled and actual available areas.

Preliminary modelling to assess the impact of the draft CAR reserve system indicates that, if the draft CAR reserve system were to be established, timber resource availability is likely to be about 27,000m³ of D grade and better sawlogs per year.

Under the new estimate of timber resource availability (TRA) for the Otway FMA, resource availability could be reduced by approximately 26 per cent against the current commitments with a further eight per cent reduction if the draft CAR reserve system was to be established.

SOCIAL AND ECONOMIC ANALYSIS

Industry Scenarios for the Otway FMA

The estimates of sawlog availability described above are presented in an updated Table 4.4, and were used to analyse a number of industry scenarios for the Otway FMA.

Table 4.4 Estimated sawlog availability under the baseline model and the draft CAR reserve system under a West Victoria RFA (m³ D grade and better sawlog) - *Updated*

	Midlands	Otway ¹	Portland	Horsham ²
Licence Commitments	58,600	41,154	13,950	880
New Estimate	45,000	30,300	12,000	na
Draft CAR reserve	40,000	27,000	10,000	880

¹This table has been updated to include estimated timber resource availability under the new estimate and draft CAR reserve scenarios for the Otway FMA.

²Separate sawlog grading criteria apply to Red Gum sawlogs harvested in the Horsham FMA.

As for the Midlands, Portland and Horsham FMAs, industry development scenarios for the Otway FMA were examined using individual spreadsheet analyses.

Initially a new estimate of TRA was developed using updated information described in Table 4.12 (Scenario 1). Scenario 2 models the industry if the draft CAR reserve system were to be established and using the new estimate of TRA. The impacts of increased value-adding that industry indicated it was intending to undertake were then modelled over Scenarios 1 and 2. Scenario 3 examined increased value-adding as identified in the mill survey using the new estimate of TRA. Scenario 4 examined the effect of establishing the draft CAR reserve system and increasing value-adding. The same assumptions outlined in the Consultation Paper were used in undertaking the Otway FMA analysis.

Given the magnitude of the estimated reduction in sawlog availability, it should be emphasised that the value-adding intentions of sawmills could be significantly affected by changes in resource availability and the results discussed below should be examined in this light. The figures reported are for sawmill employment only and it should be noted that harvesting and haulage employment would also change under each scenario.

Results of the economic analysis

The estimated output and employment of the sawmill industry for each scenario are reported for the Otway FMA in Table 4.12.

Table 4.12: Industry scenarios for Otway FMA

		1998/99 Current Commitments	1. New Estimate of TRA	2. Draft CAR reserve	3. New Estimate of TRA and Value- Adding	4. Draft CAR reserve and Value- Adding
Mill Production^a	Units					
Seasoned Timber	m ³ /yr	9,305	7,519	6,955	9,327	8,616
Green Timber	m ³ /yr	21,086	16,114	14,544	14,361	12,986
Residues	m ³ /yr	44,476	34,281	31,061	34,317	31,163
Gross Value of Production^b						
Seasoned Timber	\$M/yr	7.83	6.27	5.78	8.06	7.47
Green Timber	\$M/yr	6.14	4.68	4.22	4.05	3.66
Residues	\$M/yr	1.25	0.96	0.87	0.96	0.87
Total	\$M/yr	15.22	11.91	10.87	13.07	12.00
Employment ^c	Persons	149	123	115	128	120

^a This includes material from State forest and other sources ^b In 1997-98 dollars. ^c Full time equivalent.

Where mills receive sawlogs from both the Midlands and Otway FMAs, the information in Table 4.12 refers to the production and employment due to or derived from the resources sourced, or committed, from the Otway FMA. It is recognised that a significant reduction in resource availability from both FMAs could compound the affect on those mills that draw resource from both FMAs. Again, it is emphasised that individual enterprise decisions and other economic factors affecting individual mills over time would determine any actual changes. In the case of the Otway FMA the harvested volume over the past several years has been less than licence allocations. This needs to be considered in evaluating impacts on production and employment. Based on the actual harvested volume (1997/98) sawmill employment was estimated to be the equivalent of 132 full-time positions.

Any changes to direct sawmill employment and value of production could have further economic and social flow-on effects. Harvesting and haulage employment mentioned previously will also be affected and additional flow-on effects would be expected.

Social Impact Assessment

Chapter 4 of the West Consultation Paper provided background to the development of town resource clusters (TRCs) for social impact analysis and discussed the implications of the new estimates of TRA and draft CAR reserve scenarios on communities within the Midlands, Portland and Horsham TRCs. The following is the analysis for the Otway TRC, based on Table 4.12.

Changes in Mill Employment

In the Otway TRC, a reduction in employment of the equivalent of 26 full-time positions is estimated to result from reducing sawlog allocations from the level of current commitments to the new estimate of timber resource in the Otway FMA. However, as noted above, actual harvesting levels have been less than the current commitment level and as such a proportion of the reduction in jobs can be considered as opportunities foregone, rather than losses of current employment. If the draft CAR reserve system were to be established, a reduction of the equivalent of a further 8 jobs is estimated. While the models for the two value-adding scenarios show a lower impact on employment, this will depend on the way in which any value-adding occurs under different resource availability.

A reduction in resource availability in the Otway FMA could also have implications for the Midlands TRC, given that a small number of mills draw part of their supply from the Otway FMA.

As discussed previously, it needs to be recognised that the results are influenced by the assumptions made in modelling the potential resource changes, which reflect only one of the possible ways of implementing a resource reduction under the new estimated TRA and if the draft CAR reserve system were to be adopted.

It has been assumed that any change in resource availability will be evenly distributed across all mills receiving wood from each FMA. However, individual enterprise decisions and other economic factors affecting individual mills over time would determine actual changes. For example it is also possible that a reduction in supply could be accommodated by rationalisation of mills, which could then result in different impacts across TRCs than that based on a pro-rata reduction for each.

The following analysis is based on a review of timber industry employment and population characteristics for the Otway TRC.

Otway TRC

Mills located within the Otway TRC draw the highest percentage of their resource from the Otway FMA. Changes in resource supply and availability from this FMA primarily affects mill employment within the Otway TRC.

There are four mills within this TRC that may be impacted upon by changes in resource from the Otway FMA; two mills at Colac and mills at Forrest and Barongarook.

Table 4.13 shows the towns of residence for mill employees within the Otway TRC. Although Colac and Forrest are the most common residential locations of mill employees within this TRC, mill employees also live in smaller towns located throughout the TRC. Changes in mill employment within this TRC are likely to impact most on the towns of Colac and Forrest as well as other smaller towns within the TRC.

Table 4.13 Mill Employees Place of Residence: Otway TRC

Town	Percent
Colac	50.0
Forrest	31.9
Barongarook	6.9
Birregurra	2.8
Winchelsea	2.8
Barwon Downs	2.8
Elliminyt	2.8
Total	100.0

Note: Table shows the residential location of employees, for employees where the location of their employment is within a TRC.

Table 4.14 shows the town locations from which mill employees within the Otway TRC purchase household goods and services. The towns of Colac and Forrest are primary locations from which goods and services are sourced within this TRC, suggesting that changes in mill employment and incomes within this TRC will also have indirect impacts on these towns. In addition to this effect, there may also be further implications from changes to business expenditure on goods and services by mills that could be affected by the draft CAR scenario.

Table 4.14 Mill Employees Source of Household Expenditure: Otway TRC

Town	Percent
Colac	61.2
Forrest	31.9
Barongarook	6.9
Total	100.0

Unemployment Rates Within The Otway TRC

Table 4.15 shows the unemployment rate for the general population and the unemployment rate for males 15-64 years of age for specific towns located within the Otway TRC, where employment may be affected under the draft scenario. The unemployment rate is one indicator of how sensitive communities are to employment change in the timber industry. Mill employees reside in each of the towns that are listed in Table 4.15.

In the Otway TRC the majority of towns listed have slightly lower unemployment rates for the general population than for the West Victoria RFA region and Rural Victoria. The rate of unemployment for males aged 15-64 years is also similar or below the West Victoria RFA region and Rural Victorian rates. In the case of Winchelsea, however, both rates are significantly higher, as is the rate for males aged 15-64 years in Forrest. This suggests these towns may be sensitive to significant direct changes in timber industry employment.

Table 4.15 Unemployment Rates for Towns within the Otway TRC

	Unemployment Rate	Unemployment Rate (males 15-64 years)
Otway TRC		
Colac	7.8	7.9
Forrest	7.7	15.8
Barongarook	6.1	7.8
Birregurra	7.1	9.3
Winchelsea	17.8	21.4
West RFA region	9.2	9.6
Rural Victoria	10.2	10.8

Note: All employment values based on ABS urban centres/localities. Unemployment rates for the towns of Forrest and Barongarook are based upon the Census Collector District (CDD) in which the town is located.

Source: ABS 1996 census data.

WATER SUPPLY ISSUES

Forested catchments in the Otway and Midlands Forest Management Areas are an important source of water for several towns and cities, including Ballarat, Geelong, Warrnambool and several smaller population centres. Water from West Victoria catchments is also important for irrigation both within and outside the region and the Hepburn mineral springs are an important tourist destination.

Issues relating to water quality and yield and the relative economic values of water and timber, and the conduct of water research in the Otway State forest have been raised during the RFA public consultation process.

Road construction, timber harvesting and recreation and other activities may adversely affect water quality and yield from forested catchments. As part of Victoria's Ecologically Sustainable Forest Management system (see Chapter 5), a range of measures are currently in place to address the risks associated with these activities. The Victorian Code of Forest Practices for Timber Production, and associated forest management prescriptions require the establishment of buffers and filters along streams and watercourses, establish limitations on harvesting on steep slopes and design standards and planning procedures for road construction and stream crossings. Forest operators involved in commercial timber harvesting operations are required to undertake training in environmental care principles which emphasise the measures required to protect soil and water values.

Both the Otway and Midlands Forest Management Plans address water supply issues in detail. In each Plan, a range of measures have been established for domestic water supply catchments (which exceed the minimum requirements of the Code of Forest Practices) including limitations on the area and proportion of catchments to be harvested over time, seasonal restrictions on harvesting and more restrictive slope

limits for timber harvesting. The standards established in the Otway Forest Management Plan are based on detailed modelling of stream flow determined by research conducted in the Central Highlands and a detailed assessment of the capacity of various supply systems to cope with small reductions in total catchment yield in the Otways. In some catchments where a large proportion of the stream flows are diverted for domestic water supply, such as Arkins Creek, no logging is permitted as a consequence of the strategy established in the Otway Forest Management Plan.

Established limits on harvesting in water supply catchments within the Midlands FMA are detailed in Table 4.16 and in the Otway FMA, in Table 4.17. In the Midlands FMA a maximum of only 5 per cent of public land within the catchment can be harvested over any 3 year period.

Harvesting operations conducted since the establishment of the Otway and Midlands Forest Management Plans have conformed to the area limits established. In some cases, the harvested area has been substantially less than the area permitted, particularly in the Otways.

The impacts of timber harvesting and fire on ash forest catchment have been intensively studied in the Central Highlands forests, east of Melbourne. Experiments conducted in the Corranderrk Catchment involved clearfall treatments of sub catchments ranging from 52 to 65 hectares of even-aged Mountain Ash forest and monitoring of streamflows in the catchments. A clear yield depression was observed in these catchments as the forest regenerated. However, application of these findings in larger catchments needs to consider the different hydrological properties of mixed species and other forest types, the multi-aged structure of forests in a larger catchment, the relatively small proportion of large catchments harvested each year and differences between the hydrological properties of large and small catchments. It is not possible to simply translate the yield depressions observed in the small experimental catchments to a catchment supplying a large water supply reservoir.

Some community groups have proposed exclusion of logging from all catchments used for water supply in the Otway State forest and the Wombat State forest as a means of protecting water quality and yield. Implementation of such a strategy would require a complete cessation of timber harvesting in the Wombat State forest and would limit harvesting to 46 per cent of the area of the Otway State forest and 49 per cent of the Ash/Mountain Mixed Species forest sawlog resource.

Table 4.16 Harvesting prescriptions for water catchments in the Midlands FMA

Catchment	Winter harvesting suspension	Maximum Coupe Size (Ha)
Blackwood	1 June – 31 October	35
Bullarto	1 June – 31 October	20
Colbrook	1 June – 31 October	5
Collier Gap	1 June – 31 October	2
Djerriwarrh	1 June – 30 September	15
Hickmans Ck	1 June – 31 October	40
Koreweinguboorra	1 June – 31 October	15
Lal Lal Lake Environs	1 June – 31 October	5
Long Gully	1 June – 31 October	15
Merrimu	1 June – 30 September	40
Moorabool	1 June – 30 September	10
Mount Cole	1 June – 31 October	20
Musical Gully	1 June – 30 September	2
Pykes Creek	1 June – 30 September	40
Rossllynne	1 June – 30 September	40
Shepherds Creek	1 June – 31 October	40
Sugarloaf	1 June – 30 September	20
Troy	1 June – 30 September	2
White Swan	1 June – 31 October	20
Wombat	1 June – 31 October	20

Table 4.17 Harvesting prescriptions for water catchments in the Otway FMA

Catchment	Winter harvesting suspension	Total catchment area (ha)	Annual harvest area (ha)	Max harvest area per decade (ha)
Arkins Ck ^(a)			0	0
St George River	1 May to 30 Nov	1,580	25	145
Skenes Ck	1 May to 30 Nov	820	12	70
West Barham River	1 May to 30 Nov	1,000	25	150
Upper Barwon (west branch)	1 June to 31 Oct	5,020	230	145
Upper Barwon (east branch)	1 June to 31 Oct	3,740	172	860
Upper Barwon (Callahans Creek)	1 June to 31 Oct	3,920	178	890
Gellibrand (upper Gellibrand)	1 June to 31 Oct	2,560	119	595
Gellibrand (Lardners Ck)	1 June to 31 Oct	6,580	288	1,440
Gellibrand (Charleys Ck)	1 June to 31 Oct	5,160	178	890
Gellibrand (Asplin Ck)	1 June to 31 Oct	3,220	149	745
Gellibrand (Carlisle River)	1 June to 31 Oct	8,000	316	1,580
Gellibrand South (Skinners Ck)	1 June to 31 Oct	7,560	324	1,620
Gellibrand South (Crinoline Ck)	1 June to 31 Oct	5,560	221	1,105
Gellibrand South (Sheepyard Ck)	1 June to 31 Oct	3,580	154	770
Upper Barwon (Dewings Ck)	1 June to 30 Sept	2,740	111	555
Gellibrand (Gum Ck)	1 June to 30 Sept	7,780	343	1,715
Gellibrand (Loves Ck)	1 June to 30 Sept	9,620	351	1,755
Painakalac Ck	1 June to 30 Sept	3,540	171	855
Pennyroyal Ck	1 June to 30 Sept	3,620	124	620
Mathews Ck	1 June to 30 Sept	1,680	64	320
Gosling Ck	1 June to 30 Sept	1,900	57	285

(a) There is no harvesting in this catchment.

A program of research in the Otway State forest in the East Barham Catchment was established during 1990 as part of the State-wide Silvicultural Systems Project. The experimental design addressed potential physical and biological (but not bacteriological) impacts of harvesting. It did not provide for any consideration of variation in water yield following harvesting, although yield data were collected as a basis for the quality studies. Water yield was not raised by the community as an issue of concern at the time although, as described earlier, it was an important issue in developing the Otway FMP.

The project was suspended in 1992 following a review of research priorities within the Victorian Department of Natural Resources and Environment (NRE). Attempts were made to find partners among the water industry beneficiaries who may have been able to contribute funding support. None of the local water authorities were able to provide funds at that time and the Minister for Natural Resources subsequently agreed to decommission the project in 1994.

NRE continues to participate in water quality and yield research through the Cooperative Research Centre (CRC) for Catchment Hydrology. Results from research projects undertaken through the CRC will continue to be applied in the development and improvement of prescriptions for forested catchments in West Victoria.

As part of the consultation program for the development of the West Victoria RFA, a Water Forum was held in Geelong on 1 December 1999. The Forum provided an opportunity for community stakeholders, forest hydrologists and timber and water industry stakeholders to identify and discuss issues of concern and to learn about recent advances in forest hydrological research. The outcomes of this workshop will be an important source of information for the RFA Steering Committee in finalising the RFA. The Executive Summary from the independently reported proceedings of the Forum is included in Appendix 4. The forum concluded that there is a need to recognise that forest management involves a complex suite of issues and that forests have many different values for many people. As community values range across a broad spectrum, detailed scientific support is needed for the effective development of public policy. There is much value in involving scientists, the community and policy makers in the debate. Forest management is about reconciling the different uses and values placed on those uses by the community.

OTHER INDUSTRY ISSUES

Plantations

Plantations in the West Victoria RFA region contribute significantly to the State's overall softwood supply, particularly for sawlogs, preservation roundwood and pulpwood for industries within the region, Victoria and South Australia. They also supply sawlogs, pulplogs and chips for export. The total area of softwood plantations in the West region is approximately 92,000 hectares. Current supplies to industries in the West region from these softwood plantations are estimated at 1,007,000-1,020,000 m³ of sawlogs, 149,000-161,000 m³ of roundwood for preservation purposes and 606,000-671,000 m³ for pulpwood. The plantations contribute significantly to the regional economy, especially in the Green Triangle Region, and provide substantial

environmental and agricultural productivity benefits to landholders and the broader community if established on cleared land. The total area of hardwood plantations in the region is approximately 27,000 hectares. It was estimated that 15,000-20,000 hectares of new hardwood plantations would be established in 1999.

Stakeholders, interest groups and local communities have identified industrial plantation development and commercial farm forestry as important issues. Details on the substantial established softwood plantation industry in the region and the smaller, but rapidly expanding hardwood plantation resource are described in the West Victoria CRA Volume One report (VicRFASC 1999a).

Although the Regional Forest Agreement cannot be prescriptive about private plantation development and investment in the region, it addresses complementary issues about public native forests. Actual investment in plantation establishment and development is a commercial decision for companies and individuals that requires more detailed resource and economic assessments at the regional and local levels. Whilst plantation resources and associated processing industries are well established and expanding in the Green Triangle area in the west of the region, the Central Victorian Farm Plantations Inc. is promoting plantation development in the east.

Both Governments have developed a range of policies and programs, especially the Commonwealth's Plantations 2020 Vision and the State's Private Forestry Strategy, to encourage and facilitate plantation development on cleared land. In total, up to \$13 million of Commonwealth and State funding has been allocated over the four-year period from 1996 to support extension, demonstration, education, planning, coordination and practical research and development to increase private forestry in Victoria.

In addition, Commonwealth and Victorian legislation pertaining to plantation development has been reviewed. Victorian forestry rights now provide for agreements between landowners and tree growers that give legal title for trees separate from the land and forestry plantations can be established in some areas without requiring a planning permit. Export controls have been removed from timber sourced from Victorian plantations, and an export licence is no longer required for such material.

Firewood

There is significant demand for firewood from domestic users in the West region, particularly close to urban centres. Over 100 commercial cutters of firewood and minor forest produce regularly remove firewood from State forests across the West region supplying regional markets and urban centres outside the region. Firewood and minor forest produce requirements have been considered in the development of the draft CAR reserve system, however, the availability of firewood and minor forest produce will be reduced if the draft CAR reserve system were to be adopted.

Full consideration of firewood issues in the Ararat-Stawell area will be made when the Environment Conservation Council has completed its study on the box-ironbark forests during 2000.