11 NOV 2001

Environment Victoria

For immediate release

MEDIA RELEASE

Study reveals excessive logging in Portland forests

Melbourne, Sunday November 11 2001: A study commissioned by Environment Victoria has revealed that the level of logging in the native forests of the Portland Forest Management Area (FMA) is at least twice the forests' so-called 'maximum sustainable yield'. The analysis was based entirely on data provided by the Department of Natural Resources and Environment and was undertaken by independent forestry analyst, Tim Anderson.

"This is evidence of a massive government stuff-up going back over many years," said Environment Victoria campaign director, Darren Gladman. "The Government must now take swift and decisive action to address the problems that it and its predecessors have created. The native forests of the Portland FMA simply cannot sustain the two remaining sawmills."

"In an environment where the Portland region has lost over 87% of it's native vegetation cover since European settlement, logging and woodchipping at unsustainable levels risks compromising the remaining biodiversity of these important forests," Mr. Gladman said. "Environment Victoria cannot accept that species on the western most edge of their population distributions such as the Powerful Owl and the Yellow-bellied Glider, should be put at risk by what are clearly unsustainable forestry operations." Gladman stated.

Environment Victoria has presented the report to the Bracks Government and has called for the cessation of all logging and woodchipping in the Portland FMA. We have also called on the government to fund more 'exit packages' so that jobs need not be lost.

In recent years the volume of sawlog licences for the Portland FMA was reduced from 14,000 cubic meters to 9,400 cubic meters. The reduction was achieved when one of the three sawmills in the area accepted an "exit package" as part of the Victorian Forest Industry Structural Adjustment Package (Vic FISAP).

The 'exit packages' should include funds to buy and retire native sawlog licences. They should also provide funds to enable sawmills to re-tool for use of plantation timber. If the sawmills choose not to re-tool for plantation logs then money may also be required for redundancy packages and training for displaced workers.

"In South West Victoria plantations are the future of the timber industry," said Gladman. "We call on the Bracks Government to provide funding to enable the region's two remaining sawmills to make a rapid transition to the plantation resource.

For interviews or further information please contact:
Darren Gladman on 0428 833 985 or (03) 9320 5412

13 NOV 2001

MEDIA BACKGROUNDER

Portland Forest Management Area Sustainability Review

What is the report about?

The report is an assessment of the sustainability of sawlog licence allocations for the Portland Forest Management Area (FMA).

It concludes that the sawlog licence allocations are least double what might be considered the 'maximum sustainable yield' of the Portland FMA's native forests.

The study is based entirely on data provided by the Department of Natural Resources and Environment (NRE). The analysis of 'maximum sustainable yield' is based on several rudimentary indicators, such as a comparison of the total area logged per annum as a proportion of the total area of native forests designated for logging.

When a rudimentary analysis using NRE's own data indicates that sawlog licence allocations are at least twice 'maximum sustainable yield' it is clear that there are major problems in the management of the forest in question.

However, Environment Victoria is not proposing that a rudimentary calculation of 'maximum sustainable yield' should form the basis for management of our native forests. In addition, we are sceptical about the data provided by NRE and we believe that 'ground truthing' of the data would reveal that the volume of sawlogs in the Portland FMA is less than the NRE estimates.

The numbers

In testing the area harvested annually compared to the net available area, the harvesting rate is currently the equivalent of a 50-year rotation. Based on prescriptions for Coastal Mixed Forests from elsewhere in the State, the rotation period for these forests should be 120 years. This would allow a sustainable annual area logged of 188 hectares pa.

The current average area being harvested is 445 hectares. **This is approximately two and a half times the sustainable annual available area.**

When the average yield for the past 5 years (29.8m^3/ha) is multiplied by the sustainable area (188 hectares) the 'maximum sustainable yield' should be 5,602 m^3 pa.

The native forest sawlog allocation in the Portland FMA is 9,400 m^3 pa.

If logging continues at the current rate, the Portland FMA will run out of native forest sawlogs.

What needs to be done?

Environment Victoria has presented the report to the Bracks Government and has called for the cessation of all logging and woodchipping in the Portland FMA. We have also called on the government to fund more 'exit packages' so that jobs need not be lost.

The 'exit packages' should include funds to buy and retire native sawlog licences. They should also provide funds to enable sawmills to re-tool for use of plantation timber. If the sawmills choose not to re-tool for plantation logs then money will also be needed retraining and redundancy packages for displaced workers.

The Government should provide funding to enable the two remaining sawmills to make a rapid transition to the Portland region's abundant plantation timber resources.

Why the need to end all native forest logging in the region?

It would be impractical to simply reduce the sawlog licence allocation from the Portland FMA. With a sawlog licence allocation of 5,000 m^3 pa or less the economic viability of the FMA would be untenable. The forests should be 'spelled' for a generation or two.

The forests and woodlands of the Portland region have been extensively cleared and fragmented since European settlement. Over 87% of the region's native vegetation has already been lost.

Continued logging and woodchipping risks compromising the remaining biodiversity of the forests of South West Victoria.

The native forests of the region harbor a number of threatened and endangered species on the western most edge of their population distributions such as the Powerful Owl and the Yellow-bellied Glider. These species should not be put at risk by logging that is clearly unsustainable.

dence remains of regeneration in harvest areas.

"The retained canopy appears to be too dense to allow a proper regeneration of messmate.

"It is a joke to think that that standard of forest could ever be a viable commercial forest for sawlog production."

Mr Phillips said PFNC argued the Cobboboonee habitat and conservation values may well be more important than its timber-production value.

Mr Anderson said: "Our protection network's approach to the Portland forest management area and regional forest agreement next year is to advocate a balance between timber and non-timber values in the forest."

Ms Duclos said the forthcoming agreement would provide opportunities for new or expand[illegible] reserves - and much the vegetation

"I believe the federal agencies involved with the regional forest after the agreement is signed off, which could be as late as March, 2000."



LORIS Duclos and Tim Anderson (right) ...speaking out after a guided tour of the Cobboboonee by Portland field naturalist Doug Phillips. Picture: NICOLE CLEARY

17 DEC 96

Save forest: rivals

By TIM WINKLER



Pros and cons: John Slorach with the Wombat Forest Society's Tim Anderson. Picture: VIKI YEMETTAS

Loggers and conservationists have united to condemn the State Government's management of central Victoria's Wombat State Forest in an historic display of cooperation.

In a model of cooperation which could provide a basis for reducing Australia's historically bitter forest conflict, the Wombat Forest Society signed a letter with local logging contractors and sawmill owners calling on the State Government to boost spending on forest management and research.

"The organisations are also concerned that the present level of DNRE (Department of Natural Resources and Environment) funding is impinging on the ability of the department to manage the forest," the letter said.

Signed at the Daylesford Town Hall in front of the Federal Environment Minister, Senator Robert Hill and various State and Federal MPs, the letter was welcomed by a State Government backbencher, Mr Dick de Fegely, who said it was a constructive contribution to the forest's management.

However, the rosy prospect of a new era of forest detente was dashed before the ceremony's conclusion, when timber workers hijacked the ceremony, complaining that they were left out of negotiations.

The assistant federal secretary of the Construction Forestry Mining and Energy Union, Mr Michael O'Connor, told the mill owner's representative, Mr Geoff Proctor, and the Central Victorian Forestry Company manager, Mr John Slorach, that they should be ashamed of themselves for not involving the union when negotiations began 10 months ago.

Wombat Forest Society president Mr Tim Anderson said his group supported logging in the area, but also wanted conservation values protected.

The idea of the joint letter arose when the society addressed a group of loggers last year and found they shared many concerns.

AGREED TO 4TH SEPT 1996 SI

13 NOV 2001

Environment Victoria

Embargoed for 6am Tuesday 13 November

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"This is evidence of a massive government stuff-up going back over many years," said Environment Victoria campaign director, Darren Gladman. "The Government must now take swift and decisive action to address the problems that it and its predecessors have created. The native forests of the Portland FMA simply cannot sustain the two remaining sawmills."

The forests and woodlands of the Portland region have been extensively cleared and fragmented since European settlement. Over 87% of the region's native vegetation has already been lost.

"Continued logging and woodchipping risks compromising the remaining biodiversity of these important forests," Mr. Gladman said. "Environment Victoria cannot accept that species on the western most edge of their population distributions such as the Powerful Owl and the Yellow-bellied Glider, should be put at risk by logging that is clearly unsustainable."

Environment Victoria has presented the report to the Bracks Government and has called for the cessation of all logging and woodchipping in the Portland FMA. We have also called on the government to fund more 'exit packages' so that jobs need not be lost.

"The 'exit packages' should include funds to buy and retire native sawlog licences," said Mr Gladman. "They should also provide funds to enable sawmills to re-tool for use of plantation timber. If the sawmills choose not to re-tool for plantation logs then money will also be needed retraining and redundancy packages for displaced workers."

Last week the Minister for Conservation, Sherryl Garbutt, indicated that she will be seeking Federal Government financial support for 'exit packages' to assist in the structural adjustment necessitated by the over-allocation of sawlog licences.

"In South West Victoria plantations are the future of the timber industry," said Gladman. "We call on the Bracks Government to provide funding to enable the region's two remaining sawmills to make a rapid transition to the plantation resource."

For interviews or further information please contact:
Darren Gladman on [redacted] or ([redacted])

04/12/01

Portland Field Naturalists' Club Inc
P.O. Box 470, Portland, Vic, 3305

Justin Cook
Forest Manager - Glenelg

Dear Justin,

As a follow up to your phone calls last night (29/11/01), I have contacted members of our committee to update them on this issue.

Unfortunately members are not available for site inspections next week, due to other engagements.

One thing I can point out from the start is that members were not amused with talk of arbitrary decisions made by the Forests Service to resume cull-ringing in the Portland FMA, despite our views on the subject, I can assure you that not only would we take this matter up with the Minister directly, but also our concerns would be expressed in a very public manner. Something, I recall from our last meeting, that the Forests Service were keen to avoid.

Nevertheless members have agreed that the correct procedure would be for you to write a letter outlining exactly what the department are seeking to do regarding non-commercial thinning operations. They have resolved to re-examine the issue upon receipt of that letter.
It should be noted that Minister Garbutt's commitment to retain the moratorium until detailed prescriptions are set in the Forest Management Plan, is the preferred position of our club as well. It is notable that Minister Garbutt has definitely not referred to any potential alteration to the current moratorium in her most recent correspondence.

It should be pointed out that upon consideration of your forthcoming letter, that if the Portland Field Naturalists' Club were to change our position on the issue, we would expect any outcome from negotiations to be ratified in writing by your department as a sign of good faith. The breach of the moratorium earlier this year is still fresh in our minds and I am sure you can understand our caution regarding this matter.

I look forward to receiving your letter detailing exactly what the Forests Service are proposing regarding the resumption of non-commercial thinning operations (cull-ringing) in the Portland Forest Management Area.

Yours faithfully,

Doug Phillips
President (Conservation Officer)

Portland Forest Management Area

Sustainability Review©

Environment Victoria

2001







Tim Anderson

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I acknowledge that the Portland Forest Management Area was once the home of Indigenous People before they were did[posed of their land. In travels through the forests of the region I came upon places where I could feel your ancestor's presence and I respected that in some areas I did not belong.

Acknowledgment of Thanks

I would like to acknowledge the assistance that I received from various staff members within the Department of Natural Resources and Environment whilst researching this report. Requests were made for specific data and information at the planning level within Melbourne Natural Resources and Environment as well as local/ operational information at a regional level. My requests were treated with an open and cooperative approach and all information I requested was delivered.

This openness is a breath of fresh air from the secretive system that we had to deal with when information was sought under the previous State Government. This is not aimed as a political comment but a reflection of reality.

If the real aims of the Governments (State and Federal), their Agencies (who manage our natural assets and resources on the community's behalf) and the Community are in the pursuit of best outcomes for our forests, then the time for confrontation and hidden agendas needs to end.

With the problems caused by the massive staff and resource cuts that have taken place over the past decade, it is clear that there is a need for the current Government to re-staff and re-resource this Department. There is a need for a truly inclusive and properly funded system of forest Stewardship that fully and fairly integrates communities into forest management. Until this is done it will be our forests and the natural values and systems within them that will suffer.

Tim Anderson

The data and information supplied by the Department of Natural Resources and Environment in the preparation of this report is often in draft form. Due to the complexities of the Statewide Forest Resource Inventory process and the priorities given to the statewide sequence that this process is being done, some of the information is yet to be properly 'calibrated' and data-sets reconciled.

In using area and volume statements I have discarded any 'numbers' that where widely variable from others in that data set.

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Executive Summary

The Portland FMA has a number of sustainability indicators that bring into question the validity of the Regional Forest Agreement interim 'Sustainable Sawlog Yield' of 10000m^3 pa.

This report has calculated a number of 'theoretical sawlog volumes' within the context of the report's analysis. Department of Natural Resources and Environment are bound to manage our forests in a way that complies with a raft of Commonwealth and State Legislation and Regulation.

This report shows that the RFA prescribed sawlog volumes cannot be met and are at least double what they should be. The Timber Resource Assessment carried out for the Regional Forest Agreement process in Western Victoria was only ever to be considered as a basic assessment. The last page of the Timber Resource Analysis states *"The results from these Timber Resource Analysis can be only considered indicative, although the range of key issues has been addressed in these analyses, utilising currently available data. Full growth and yield information from SFRI is not yet available*[1]*."*

The Timber Resource Analysis only established the new RFA productive area base and the growth rates for these areas. The volume set under the RFA of 10 000m3 pa only reflects these factors. The history of 'sawmiller's selection' over the past 100-150 years has left the Portland Forests with very few sawlogs and a shortage of areas in a regrowth phase.

NRE needs to apply a 'degradation coefficient' to the area based used for sustainability calculations to allow for the substantial sawlog removal from the past. Th method used by NRE to arrive at the sustainable yield will only work if the forest is theoretically 'fully stocked' at the time of the assessment. This is a fundamental flaw found in many Forest Management Areas in the State.

In testing the area harvested annually compared to the net available area, the harvesting rate is currently the equivalent of a 50-year rotation.

In testing the average actual volumes being achieved over the past 6 years, the volume is consistent with the expected standing volume of a 60-year-old forest.

Based on prescriptions for Coastal Mixed Forests from elsewhere in the State, the rotation period for these forests should be 120 years. This would allow a sustainable annual area logged of 188 hectares pa.

- The current average area being harvested is 445 hectares. This is approximately two and a half times the sustainable annual available area.

- When the average yield for the past 5 years (29.8m3/ha) is multiplied by the sustainable area (188 hectares) the **Sustainable Yield should be 5602 m3 pa.**

- The average 'actual yield' from the past 6 years is much higher than would be expected based on the condition of the forest stands. This indi8cates that the harvesting schedules are targeting the better areas that remain.

- The minimum stand height used in the Portland FMA is allowing logging on areas that are unviable. This is 10 meters below the minimum statewide height. The historic height potential has only been around current heights. This very low criteria appears to be only to enable the net productive area to be maintained at an artificially high amount. This allows a higher sustainable yield.

- There will be an unavoidable gap in timber availability due to the lack of adequate areas of regrowth and the past 'sawmiller's selection.' A gap in supply is a breach of Regional Forest Agreement,

[1] Timber Resource Analysis. NRE 2001 Pg.4.

Ecologically Sustainable Forest Management principles that ensure inter-generational equity. The implication is that the sustainable yield is too high. For future generations to be guaranteed their rightful access to sawlog volume and quality, the sustainable yield will need top be dropped to a sub-5 000m3-pa level.

In conclusion,

Portland is currently being logged at a rotation of around 60 years, as suggested from a number of sources. This is half what is required by the system that regulates sawlog production in Victoria. There are major issues in terms of sawlog quality and quantity as a result of past logging practises.

The current sustainable yield volume of 10 000m3 pa is at least double what it should be. At 5 000m3 pa or less the economic viability of the FMA would be untenable. Coastal forests across the State are very marginal, the sawmillers generally do not want the type of sawlogs that come from them and the contractors find them uneconomic to log.

One thing is clear, that despite the old 'sawmiller's selection' having taken the sawlog quality trees out quicker than they could be replaced, the forest remain structurally and visually forests. This means that there are opportunities for other forest based enterprises (tourism and recreation), as well allowing these over-worked forests to rest.

The forests should be 'spelled' for a generation or two, with a possibility of a small-scale 'niche' industry, operating to assist rehabilitation of some areas. The slow growing nature of the forests produces stable timber. The current timber industry will not suffer due to the loss of sawlogs from the State Forest areas due to the private forestry that surrounds the Portland Region.

Project Objectives

The project, commissioned by Environment Victoria, is aimed at testing the assumptions built in relation to the West Victorian Regional Forest Agreement into the Portland FMA, as well as other factors relating to sawlog sustainability within the FMA.

The RFA reduced the 'sustainable yield' for the region from 14 000m3 pa. to 10 000m3 pa.

The proposed review would test two hypotheses:

a. How many years can the current sawlog volume of 10 000m3 pa. be supplied from the FMA?
b. Given the current condition of the region's forests, is it possible to supply a commercial volume at all, and if so what is the predicted volume?

In order to address these two questions, this report will examine a number of 'indicators' to test for consistency across the indicators and to identify possible rotation periods and sustainable sawlog levels.

This report will examine the Portland Forest Management Area under the following broader headings:

- Sustainability, what is it?
- Rotation Lengths: required and implied.
- Timber Volumes: Current yields, Wood Utilisation Plans and Age Class Distribution
- RFA Assessments (Timber Resource Analysis) and Impacts
- Future Wood Flows.

The scope of this report will be limited by the depth that the resourcing for this report allows and the amount of information available.

The final report contains an overview of the region's forests, historic utilisation, technical data, information and analysis.

Portland FMA Overview

The Portland Forest Management Area lies in Victoria's south-west corner essentially west of Port Campbell and south of the Grampians. Most of the FMA has seen extensive clearing of forests, woodlands and native grasslands since the arrival of white settlers in the region, primarily for agricultural purposes. Major population centres in the FMA are Hamilton, Warrnambool and Portland. The Portland area was the site of the first permanent invasion by illegal European boat people in Victoria.

The remaining forested areas lie in the western end of the FMA. They extend from Portland north to almost Horsham. East of the main forested areas are a number of isolated forest blocks, small in area and surrounded by private land.

The forested areas used for sawlog production lie around Portland and Heywood, the Cobboboonee and Annya State Forests. These are mixed coastal forests with the primary species logged being 'messmate' (E.obliqua).

One important feature of the Portland FMA are the flora and fauna values. These forests are the western most range of the Yellow-bellied Glider and floristically are as diverse as the nearby Grampians.

There is an extensive and expanding private forestry industry in the region, that processes pine logs and the Port of Portland has export of woodchip and whole logs from this resource.

With the area being permanently settled by non-indigenous people for over 150 years, there has been a constant utilisation of the forests around Portland. The establishments of towns with their infrastructure and the expanding agricultural and industrial activities have needed a constant source of timber, posts and firewood.

Until the 1980's the Portland forests were logged under the selection system, which meant that the timber industry 'felled the best and left the rest'. This is commonly known as 'sawmiller's selection' as opposed to the 'stand improvement' selection system also known as 'silvicultural selection'. During the 1980's a group selection silvicultural system was also introduced. Under this system, coupes are nominated as a gross area, and operationally the logging would target clusters of suitable trees and remove them. This would allow a better regeneration of eucalypts and was naturally economically better for the loggers.

During the late 1990's the forests of the Portland FMA witnessed the spectacle that many other areas around the state had already experienced, an industrial approach to logging. Highly mechanised and specialised machinery and operations that saw the productive sections of the forest treated as simply timber supply zones. This means that non-timber values receive no or minimal considerations. This has been an gradual but obvious shift from the original intent of the Timber Industry Strategy. The spectacular understory is reduced to smashed vegetation as the machinery work to snig out logs or pulpwood under the commercial thinning operations.





Anecdote:

"Two years ago I was asked to attend a tour of the Cobboboonee and Annya Forests by the Portland Field Naturalists. This tour was in response to an alarm in the community over a change of practice in operations within the forests.

When I arrived at the starting point for the tour, I was interested to find a wide cross-section of people from the community angry at operations within the forest. Confronting NRE staff, in one of the most heated exchanges I have witnessed in a decade of forest issues, were farmers, councillors, sawmillers and a number of other interested and angry people. At that stage I did not believe that there was any way the tour would happen such was the anger.

Tempers were contained and the tour did commence. As the day went on it was very interesting to see how this community was affronted by an intensification in the logging operations towards what is generically called 'industrial logging'. This is a universal concern that the implementation of the TIS is now being shifted to allow an approach to harvesting that is inconsistent with the true intent of "multiple value forest management".

On the tour I was interested to gain a feel for the local view on the sustainability of the forests. There were certainly a number of well-qualified and informed people on the tour.
The general feeling was that the bush "was stuffed", that repeated selective logging had almost stripped the bush of all the better logs.

I am a firm believer that one of the most important indicators of sustainability, and too often and too easily dismissed by NRE, is 'local knowledge'. It is now very obvious and tragically too late, that the Midlands FMA is in dire straits. It was in the mid to late 1980's that sawmillers and contractors raised concerns over the rate, type and intensification of logging in the Wombat Forest.

Tim Anderson

Until the system of management within NRE and the way the community engages the issue can evolve into a collaborative and non-confrontational exchange, forests will be overcut and important timber and non-timber values compromised and destroyed."

Sustainability, what is it?

This report is primarily dealing with the concept of sustainability in regards to sawlog. Under the management principles set out in the Timber Industry Strategy and the Ecologically Sustainable Forest Management principles of the West Victoria Regional Forest Agreement, the production of sawlogs in Victoria has to be within the context of non-timber value considerations.

Timber Industry Strategy

The framework under which Victoria manages its State Forests is still the Timber Industry Strategy (TIS). This Government Statement was developed under Hon. Joan Kirner the then Minister for Conservation, Forests and Lands, August 1986. The Strategy set out a framework as well as mechanisms that were aimed at delivering 'an economically viable timber industry within an environmentally acceptable framework.'(TIS)

Successive state governments have maintained the TIS, and on a global basis it was a progressive strategy.

The TIS discusses forest management and a sustainable use (page 33) in the following way:

> *"With appropriate management the production and utilisation of all forest values such as soil and catchment protection, timber, recreational opportunities, and conservation of flora and fauna habitats, can be maintained on a sustainable basis indefinitely."*

The strategy goes on ...'The Government proposes that:

- *Victoria's forests will be managed on a sustainable basis for sawlogs and for all other non-wood products and values from each hardwood management area.*
- *Long term sustainable yield will be implemented within ten years for each hardwood management area.*
- *Sustainable volumes of sawlogs will be included in legislation related to the management of forests.*
- *Sustainable volumes of sawlogs from mature forests will be calculated for minimum rotations of 80 to 150 years depending on forest type.*
- *There will be a legislative requirement to cut within sustainable volumes.*

The very fact that the Timber Industry Strategy is no longer printed or available is deplorable. The very document that sets out the whole way in which our State Forests are run, and how the industry is structured, needs to be accessible to all Victorians both now and in the future.

Sustainability

The sustainable yield figure must not be a widely fluctuating figure that allows one generation to use the following generations timber or trees. Historic utilisation has to be a key factor built into sustainability figures.

If an area has had a utilisation history that has compromised the potential productivity of standing resource, the sustainable yield figures needs to account for past use. A 'Sustainable Sawlog Yield' is theoretically the volume of sawlog that a forest grows each year. This means that the total standing volume of the forest stays the same, and the equivalent of the growth increment is removed each year. In financial terms the standing

volume is the capital and the sustainable yield is the interest. By only spending the interest annually you preserve the capital.

In its simplest form NRE have to ensure that they only take the volume equal to the growth increment and should only log an area equal to the net productive area divided by the rotation period.

In reality, the setting of sustainable yield levels has not given enough consideration to the current condition of each forested area. If an area has had a history of excessive logging or logging that has removed a large proportion of the mature trees in the past, this method used by NRE in the setting of sustainable yield will set a figure that is unachievably high. The result will be the inevitable over-harvesting in relation to area annually logged, resulting in a gap in supply or ever-decreasing sustainable yield volumes.

This is the situation for many of Victoria's forest areas. At some stage, governments, agencies and communities have to show some moral character and ensure that future generations are not deprived because this generation wants it all now.

The Timber Industry Strategy defines the Calculation of Sustainable Yield of Sawlogs in this way:

The major factors affecting the calculations of sustainable yield of timber from native forests are net productive areas, rotation ages and the condition of the stands.

Page 33 of the Timber Industry Strategy defines sustainable yield as:

Sustainable Yield is the achievement and maintenance in perpetuity of a certain level of periodic outputs of the products and services of forests without impairment of the productivity of the land.

The West Victoria Regional Forest Agreement identifies that there was a loss of productive capacity[2], as a result of over 100 years of '*generally repeated selective harvesting operations and, as a consequence, a significant proportion of the forest now contains widely spaced mature trees with limited regrowth. As a result the productive capacity of the forests has declined*[3].'

As part of the RFA, timber resource assessments were required to be carried out on all FMAs, where SFRI assessment was not complete. The Portland Forest Management Area had a Timber Resource Analysis carried out that was used as the basis for reviewing productivity of the FMA. The results of this assessment were used to provide an annual sawlog level from which volumes were adjusted as a result of the implementation of the CAR reserve design and implications from the TRA.

After the Second World War, there was a tremendous pressure put on many of Victoria's forests, as a result of the post-war boom. At that time there was political direction to produce timber regardless of the consequences to the forest.

The forests in the Portland FMA were among those that suffered. There is a strong local opinion that this logging was a huge contributor to the currently degraded state of these forests.

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[2] West Victoria Regional Forest Agreement . March 2000. Attachment 9. Page 62.
[3] West Victoria Regional Forest Agreement . March 2000. Attachment 9. Page 62

Timber Volumes: Current yields, Age Class Distribution and Wood Utilisation Plans

The main merchantable timber from the Portland Forests is messmate (E.obliqua). Some other species, manna gum (E.viminalis) and peppermint (E.radiata and E.willisii) are used, but these are a very minor component.

Timber Resource Analysis

The modelling that NRE carried out for the Timber Resource Analysis for the Portland Forest Management Area during the RFA, is based on messmate growth and area analysis. Foothill Mixed Species is the forest type defined in the RFA as productive. NRE have stratified the net productive areas of this Forest type into four Forest Types, these are based on the percentage of messmate and the average stand height. See table below.

Forest Type	% Messmate	Height	Notes
FMS 1	>75%	> 18m	
FMS 2	50-75%	> 18m	
FMS 3	25-50%	> 20m	18-20m if dominant regrowth
Unproductive		< 18m	<20m FMS3 unless regrowth

Table 1. West RFA Portland FMA- Timber Resource Analysis. NRE Web-site.

The three Forest Types have been assessed as to their annual growth rate (cubic meters of sawlog per hectare pa). For the 3 forest types the average Periodic Annual Increment (PAI) are:

FMS 1 has an average growth rate of 0.6 m^3/ha/year
FMS 2 has an average growth rate of 0.5 m^3/ha/year
FMS 3 has an average growth rate of 0.4 m^3/ha/year

There is confusion between strategic and operational level NRE material, that labels the productive areas of the Portland forests as Foothill Mixed Species within the context of the Timber Resource Analysis and Coastal Mixed Species in The Wood Utilisation Plans. The structure and the Periodic Annual Increment and location of these forests are more consistent with Coastal Mixed Species.

Section 5 of the TRA (page 3) are the results of applying 'growth by area' assessments and the inclusion of the draft CAR reserve system applied to the RFA.
Below is an extract from the West RFA Portland FMA- Timber Resource Analysis.

5. Results

These results are based on an average PAI of 0.5 m^3/ha/yr, adjusted for productivity strata (0.6, 0.5, 0.4 m^3/ha/yr)

	FMS1	FMS2	FMS3	TOTAL
PAI (m^3/ha/yr)	0.6	0.5	0.4	
Area (ha)	6,466	17,336	3,720	27,522
TRA (m^3/year D+ net sawlog)	**3,880**	**8,670**	**1,490**	**14,040**

Note: Net available productive area (1984) was 27,188 ha
Current sustainable yield is 14,000 m^3/yr

Applying a contingency allowance of 15% gives a base rate of 12,000 m^3/year.

Application of the draft CAR reserve design will reduce the net available productive area by 19% from 27,520 ha to 22,260 ha.

	FMS1	FMS2	FMS3	TOTAL
PAI (m^3/ha/yr)	0.6	0.5	0.4	
Area (ha)	5,467	13,903	2,893	22,263
TRA (m^3/year D+ net sawlog)	**3,280**	**6,950**	**1,160**	**11,390**

Including the 15% contingency allowance produces the following results.

With 15% contingency	**Base**	**12,000**	m^3/year
Draft CAR reserve design		**10,000**	

These results indicate that, based on the current data, and incorporating the assumptions outlined above, the current licence commitments (13,950 m^3/year) will not be able to be met. Using the current description of the forest, assuming that the growth rates apply, and incorporating Code of Forest Practices exclusions, the benchmark level for this area is 12,000 m^3/year. Adoption of the draft CAR reserve system will reduce this volume by 17% (around 2,000 m^3/year).

Note that these estimates assume that the lowest productivity (FMS3) stands are available for harvesting. The economic viability of these stands under prevailing market conditions should be taken into consideration when determining licence levels.

The results from these Timber Resource Analyses can only be considered indicative, although the range of key issues has been addressed in these analyses, utilising currently available data. Full growth and yield information from SFRI is not yet available.

A statewide review of sustainable yield is required in 2001 and will utilise SFRI based resource data wherever possible. This review will also incorporate regionally defined prescriptions and constraints, and will provide opportunity for community input[4].

End Extract

.....

Comment:

The assessment process used in the RFA is assumptive. What the final volume represents is the 'theoretical' volume. The application of stand condition considerations in the case of the Portland forests will have a significant impact on what the current sustainable yield should be set at. If the theoretical sustainable sawlog volume is applied to a forests area that is already significantly de-stocked, then there will be an inevitable 'gap' in the sawlog supply over the current rotation.

A gap in the supply of timber means that the Sustainable Yield is TOO HIGH.

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[4] West RFA Portland FMA Timber Resource Analysis. Page 3.

The selective practices of the past have seen most of the best timber cut out. While there are a large proportion of the productive areas still relatively well stocked with trees, large parts of these areas are stocked with very poor sawlog quality trees.

Statewide Forest Resource Inventory Analysis

The Statewide Forest Resource Inventory project is a major leap forward in forests planning. The project is using a standardised assessment of all of Victoria's publicly owned forest areas, which will result in 'spatial' models for each FMA.

NRE have produced a Program Overview as a report titled *SFRI- Victoria's Statewide Forest Resource Inventory*[5]. This report states that the 'mission statement' for SFRI is:

'To provide forest managers with a reliable, timely and complete set of forest resource information for making informed and consistent sustainable yield forecasts, and decisions on forest land-use planning and resource allocation.'

Prior to the SFRI, sustainable yield calculations relied on very coarse, inconsistent and often inadequate information. The emerging sustainability issues across the State are partly as a result of these inadequacies. The advances in computers have enabled complex spatial models to start to be built. Ultimately every characteristic and value will be able to be layered on top of each other to form a much more sophisticated picture of our Forest Management Areas.

This report has been able to use draft SFRI data (supplied by NRE) in order to determine a number of profiles of the Portland Forests, This has enabled the building of Age-Class and Species profiles. See attachment 2.

	Senescent Total	Late Mature Total	Mature Total	Early Mature Total	Regrowth Total	Unevenage Total	Undefined	Total
Annya		55	1,380		120	4,130	185	5,870
Cobboboonee	325	165	625		75	1,525	40	2,755
Curracurt	5	25	630		35	1,810	45	2,550
Glenaulin	330	20	670		35	3,845	130	5,030
Gorae	60	90	1,665		50	2,750	150	4,765
Hotspur	85	155	1,815	10	85	2,005	330	4,485
Mt Clay	10	95	1,330			520	90	2,045
Mt Eccles			245		5	665	245	1,160
Surrey	15	30	1,515		145	3,970	135	5,810
Weecurra	75	760	3,845	5		185	1,005	5,875
Winyayung		35	790		40	370	35	1,270
Grand Total	905	1,430	14,510	15	590	21,775	2,390	41,615

Table 1. Age Class Distribution Portland FMA. Source: Draft NRE SFRI Data. 2001.

The Statewide Forest Resource Inventory uses an assessment of Relative Age and Growth Stage. This information is used to estimate the age of forest areas by assessing the age of the trees by the shape and form of the crowns as interpreted from Aerial Photographic information and grouped into polygons of

[5] SFRI- Victoria's Statewide Forest Resource Inventory. Program Overview
Forest Services Technical Reports 97-1. Department of Natural Resources and Environment 1997.

similar characteristics. For more information on this process NRE has produced a number of Technical Reports, ie. SFRI- Victoria's Statewide Forest Resource Inventory Program Overview. (Forests Service Technical Reports 97-1).

Table 1 above lists the Forest Management Blocks from the productive areas of the Portland FMA. The columns list the amount of forest area (hectares) for each of the 'Age Classes" used in the SFRI. This information is used in determining the age class distribution within each block, for the setting of sustainable yield levels. This information allows for a more accurate determination of the age of trees within the forest for use in the planning of future wood supply availability.

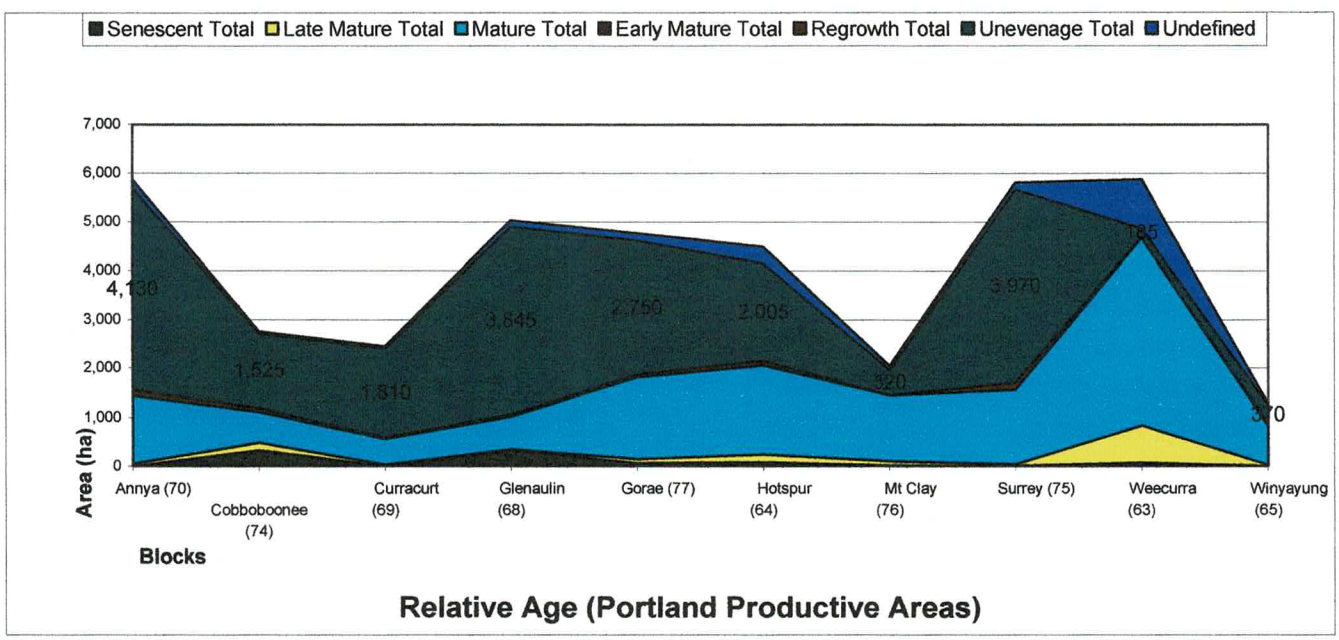
The area statements that are contained in the table above show that there is a significant overlap in the areas defined in the table. The productive area for the FMA is 22263 hectares and the table arrives at a total area of 41 615 ha. The data is important in gaining a spatial sense of the relative age composition of the forest areas.

AGE CLASS

As a result of the past history of selective logging activity in these forests as well as the stand height and site quality variations across the region, there is a need to properly examine just what are the current sawlog potential of these areas really is.

The Graph illustrates the Relative Age Class distribution for the Forest Blocks within the productive areas of the FMA. Most of the age class distribution is between Mature and Unevenage. There is little regrowth to provide for future intermediate sawlog production.

The Sustainable Yield for the FMA can only be set on the basis of a proper estimate of the actual standing volume in the Mature and Unevenage portions and divide this by the rotation requirement of 120 years. Areas that have had final harvests, or contain no sawlog should be left out of the equation.



Graph 1. Relative Age Graph Productive Blocks Portland FMA. Draft SFRI data. NRE 2001.

Stand Conditions

The history of waves of selective logging across the forests surrounding Portland and other population centres, there is no doubt that the condition of the forests from a sawlog point of view is marginal at best at current levels. The requirements for Ecologically Sustainable Forest Management, post-RFA, only reinforces the intent of the Timber Industry Strategy, and will limit logging.

While there are criticisms of the old 'sawmiller's selection method as it progressively removes the best trees and does not allow regeneration in all circumstances, at least when we reach the situation that the Portland Forests are in today, there is still a forest. Structurally, the forest as a forest and not a fibre factory still has value. It is unevenaged. Only those that see the forests as 'standing sawlogs' would see the difference, the general public would still describe them as intact forests.

With modern techniques such as clearfell, seedtree and shelterwood, if the modelling is flawed, and the forest area is overlogged the consequences for the forest are quite different. With clearfell techniques when the sawlogs are all gone, so is the forest. What is left will be zones of evenage regrowth. Little better than a mono-culture plantation.

Modern foresters often criticise the old 'saw-millers selection' but they really should take a look at the Portland Forests and then the Otways.

The average volume of sawlog that is coming from the Portland FMA, as supplied in figures by NRE for this report are surprisingly high. An inspection of much of the productive areas has revealed vast areas of forest with little or no sawlogs in them. I believe that the logging is being targeted in the better productivity/better standing resource. There is an annual requirement to supply the licensed volume. The Wood Utilisation Plans reinforces that logging is being concentrated in the better areas.

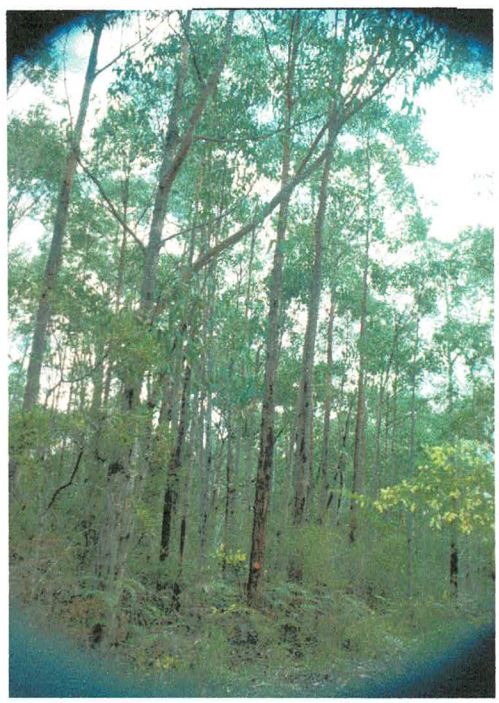
"*In conversations with people closely involved in logging in the region are surprised that the average yield is this high.*" How long this can be maintained needs to be explored.

This practice has been the undoing of the Midlands FMA. The Wombat has been ruthlessly targeted for the past 25 years and the timber industry is now on the brink of closure, in order to ensure inter-generational equity. The Midlands net productive areas include distinct forest areas. The Wombat State Forest is the main productive area. Also included are forests such as the Enfield and pre-RFA, the Cobaws. The logging sequence in this region has been driven by the biggest sawmills who have demanded big sawlogs. Instead of evening out the log grades and logging evenly all of the areas, the Wombat has been the main supply area. This greed from one sawmill in particular will now see the probable closure of the FMA. Certainly inter-generational equity will demand it.

The photos used below were taken to be representative of the various forest structures, that exemplify the variability of the forest stands in today's Portland FMA. Not what the forest was 150 years ago, nor what it might be in 100 years. It is important to gain an appreciation of what condition the forests are in now, in order to view the Portland FMA when determining sustainability.

Regrowth

The photo below is of a stand of regrowth within the Cobboboonee Forest. The tree in the centre of the picture has a diameter of 150 mm.



The trees in the photo may become sawlogs in 80-100 year's time, based on the prescription for Coastal Mixed Species forests to be managed on a 120 year rotation. The FMA appears to have a significant lack of areas from which a future wood supply can deliver constant volumes or constant grades of sawlogs.

While the lack of regrowth is a symptom of the previous logging history, forest planning must now comply with the RFA ESFM principles. The fourth ESFM Principle is to :- '**Maintain the productive capacity and sustainability of forest ecosystems**' *Implicit in the term sustainability is the understanding that irreversible damage through resource use is not imposed on the capacity of the forest to supply goods or services to present and future generations (Ferguson et al 1996).* The application of this Principle will need careful consideration in the case of Portland.

Forest areas such as Portland with very low growth rates are the most vulnerable to prolonged gaps in the resource if sustainable yield rates are set too high. Put simply, a slow growing forest will take longer for trees to reach maturity. It is therefore imperative that a constantly updated and accurate logging history record is kept.

While there appears to work in progress to produce a logging history map, the draft viewed for this report at NRE Portland office was very coarse in detail and certainly did not contain the scale of information needed to accurately keep track of what has been logged under what silvicultural prescription and when.

Unevenage Forest Stands. Portland FMA. 2001.

Unevenage Forest

The three photos on the preceding page are of unevenage forest within the Cobboboonee Forest. They where selected to represent the range of forest type within this age-class category. The forest areas represented do contain sawlogs, often only as sections of much longer logs. The trees are felled for a single section.

The SFRI displays these areas as unevenage on the maps.

Many of the trees are leaning, and the larger trees were clearly left by earlier loggers due to their lack of suitability as sawlogs.

For these areas to be fully factored into area statements that are then multiplied by the growth factor will lead to unsustainable logging rates. These areas should have a 'degradation coefficient' applied. This would balance the previous de-stocking.





NRE apply many 'fudge factors' to their calculations. We need to see these 'factors' applied to introduce realistic conservatism into the calculations of sustainable yield rates, not to simply keep sawlog levels at a maximum level. The emerging unsustainability of many of Victoria's Forest Management Areas is testimony to the pitfalls of maximisation of sawlog levels based on coarse and inadequate information.

The following photo illustrates a post-seedtree coupe. The retained trees display a large degree of visual defects and significant bends in the trunk. The sawlog quality at the final harvest will be low.

In recent years NRE have engage Midway's to carry out 'commercial thinning' of some areas. These operations are principally modifying the species mix of retained trees to almost pure messmate. Current operations follow a silvicultural strategy to thin these ares of trees under 300mm in diameter, and allow the retained trees to grow on for a further 15 years. Based on the current net area being logged at present, the thinned areas will only contribute 2-3 years sawlog supply.

The photo shows that the understorey vegetation has been squashed into the ground. This reflects an evolving attitude within NRE to interpret the Timber Industry Strategy, in a post-RFA climate to mean that the reserves now cater for the non-timber values and the General Management Zones are open to optimal management.

In an FMA that has been identified under the RFAs as having quite diverse Ecological Vegetation Classes, and with the variation and beauty of the under-storey, this style of operation is questionable.

The nature of the unevenage forested areas in the Portland FMA are very sparse in terms of sawlogs and potential sawlogs. The sustainable yield assessment must apply a realistic apprasial of these areas with realistic stocking rates and realistic re-stocking rates. A failure to do this will mean an inflated and invalid sustainable yield.



Stand Height

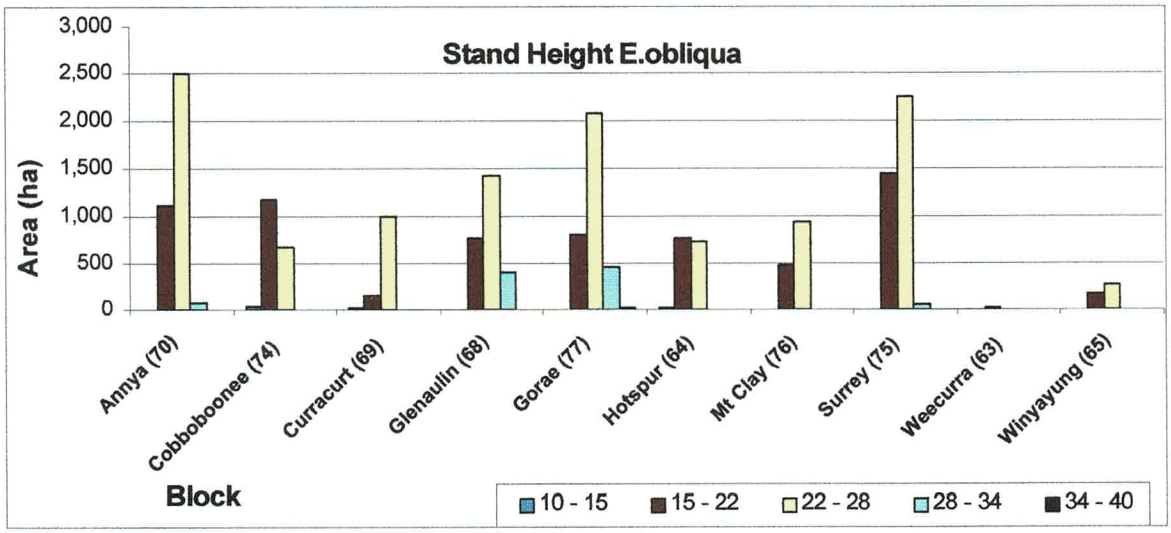
As a part of the Victorian Regional Forest Agreement process, the Timber Resource Analysis where carried out for FMA's where the SFRI process was not completed. As a part of this process various criteria were used to establish the net productive areas for each FMA in order to arrive at sawlog volume estimates.

One of the criteria used in establishing the net productive area was the elimination of areas of lower productivity generally based on stand heights. In the east of the State a stand height of 28 meters is used as

the benchmark. In the west, there has always been a lower criteria, due to the nature of the forests, pre-RFA 24m. The areas excluded in the Midlands (Enfield) are very similar to the Portland forests, in both past utilisation, stand height and structure.

The Timber Resource Analysis carried out for the Midlands FMA during the RFA, excluded areas under 22 meters average canopy height from contributing to the Net productive areas for sustainable yield projections. The greatest cuts in sawlog volume as a result of this assessment were from these exclusions. The Wombat was simply based on the 1996 sustainable yield review.

The Portland TRA needs to explain the assumptions that allowed the unevenage areas that contain virtually no sawlogs being included in the TRA assessment. There must be consistency.



Graph 2. Stand Height for Messmate by Forest Block. NRE supplied data. 2001.

The RFA lowers this standard for the west to 22 meters. Clause 72 (d), page 14, of the West Victoria Regional Forest Agreement states:

"recognise that the expected available volume of D+ sawlogs referred to in Clause 772(a) includes a component of forest stands which may be less desirable to harvest under existing market conditions, due to low yields, accessibility and product distribution but not areas which are considered unproductive for sawlogs, for example less than 22 meters stand height."

When this criteria is applied to the Portland FMA, and in particular to messmate, the main commercial species, the total area used in the calculations would be 13295 ha (8968 hectares are under 22meters). This multiplied by the average PAI used in the Portland TRA of 0.5 m3 pa/ha, would suggest a Sustainable Sawlog Volume of 6647.5 m3 pa.

This issue has been already raised in relation to the forests of the Portland FMA and the Enfield forest, in the Midlands FMA. Since the signing of the RFA, NRE's response has been to explain that this does not exclude timber harvesting from these areas, it only indicates factors used in determining sawlog volumes.

A more reasonable approach and one that conforms to the post-RFA Ecologically Sustainable Forest Management requirements for the 'Precautionary Principle' and 'Inter-Generational Equity Obligations, would be to only consider the areas with an average canopy height of 22 meters and greater in current sustainable yield calculations.

Due to the high percentage of areas of the Portland forests that are currently highly degraded, combined with the very low annual growth rate, the areas lower than 22m should only be included in the area statements used to calculate sustainable yields as they approach this 22 meters in height. The requirements

for 5 yearly Statewide Sustainable Yield Reviews would allow a mechanism for the inclusion of these areas efficiently as they reach a truly merchantable size.

The Portland TRA has instead used a minimum stand height of 18m. The past logging history, as defined in the West Victoria RFA (page 62) says that:

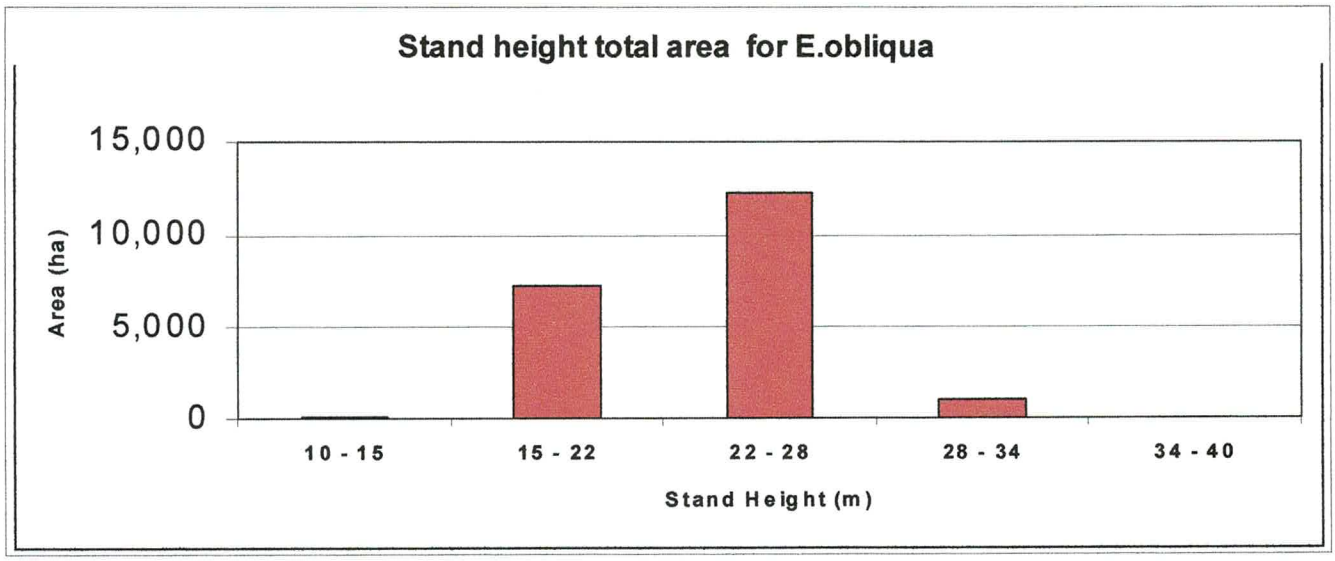
Timber harvesting in the Portland Forests has been undertaken for more than 100 years. Harvesting has generally involved repeated selective harvesting operations and, as a consequence, a wide proportion of the forest now contains widely spaced mature trees with limited regrowth. As a result, the productive capacity of the forests has declined.

The statement says that 'a wide proportion of the forest now contains widely spaced mature trees' suggests to the reader that there may be a forest estate of sparsely stocked mature trees. The question is 'what is the sawlog potential of these mature trees?'

The history of repeated selection logging operations has seen the successive removal of the best trees. This has left the Portland forests poorly stocked with commercial sawlogs. In many forests it is common to find trees of 100-150mm diameter under taller trees that are in fact the same age as the taller canopy trees. The smaller trees are suppressed and have lost in nature's race for light and dominance, although they are the same age as the taller trees.

Graph 2. shows the Stand Height of messmate for each of the main productive blocks in the Portland FMA. The graph shows the relative condition and structure of each of the blocks. It is worth noting here that an examination of the coupes that were logged in the 1994/95 and 1999/00 figures supplied by NRE, show a strong correlation between the stand height and the number of coupes in each.

Annya- 3 coupes, Glenaulin- 1 coupes, Gorae- 4 coupes, Hotspur-2 coupes, Mt Clay- 1 coupes and Surrey- 5 coupes. The current WUPs show similar concentrations.



Graph 3. Total Stand Height for Messmate. Portland FMA. Draft SFRI data NRE. 2001.

Conclusion

As stated above, in circumstances such as the Portland FMA, where we have degraded forests and slow growth rates, to use a total net area as a basis for calculating sustainable yield will inevitably lead to further degradation of the forests and future shortfalls in supply.

When the areas sub-22 meters are excluded from the calculations, the area used would be 13 295ha. **When this is multiplied by the average growth rate the sustainable sawlog yield would be 6 647.5 m^3 pa.**

'I have had a repeated anecdote told to me in the research for this report. It relates to a trial run by a former forester from the region. I am told that the forester's name was Moore, and that he attempted a regeneration/growth trial along Elbow Bend Rd. This area grew to around 20 feet and got no higher.'

This reinforces the argument that with the low growth rates, it is risky to include the low canopy areas, on the assumption that they will in fact reach a higher height.

Rotation Lengths: required and implied.

The system used in the Timber Resource Analysis by NRE is to define the net productive area and then multiply this by the either the Mean Annual Increment or Periodic Annual Increment (depending on the quality and type of growth measurement plots and records). As stated elsewhere in this report, a major shortcoming in this approach is that it needs to assume that the forest stand condition at that time is as near to fully stocked as possible. Or that the logging that has taken place in the past has approximated the volumes predicted to be removal by the 'sustainable yield' figure suggested by the above assessment technique. If not, the destocking will cause shortfalls in future supplies.

In researching this report, NRE have provided figures that give the Actual Volumes achieved in logging operations during the late 1990's as well as the Net Area logged in these operations.

This report has used these figures to compare both the 'actual sawlog volumes' as well as the 'net areas logged' with the 'total net productive areas' and 'expected standing sawlog volumes' taken from a table prepared to predict sawlog volume with various rotation lengths. This method will put into context what rotation length recent operational levels are in line with.

The TRA has used the 0.5 m^3/ha PAI as the average growth increment for the assessment. This report will use the same average for the following analysis.

NRE have supplied the data used in this assessment in two forms. The first request was for Net Area and Volume statements by coupe for the years 1994/95 and 1999/00. In order to achieve a realistic average yield per hectare, I have not used three of the 1994/95 coupes as they had a very low sawlog volume (10-11 m^3/ha) because they where salvage operations. Below are the coupes listed and the average cubic meters per hectares. This is also graphed for a visual representation.

Table 2.Actual Timber Volumes and Net Areas Logged !994/95 & 1999/00

Coupe	Type	(ha)	Sce.	Type	RL (t)	D+ (m^3)	D+m^3/ha Yield (m3/ha)
03/064/707/010	CMS	86	S	GSE	58.13	2238.10	26.0
03/070/901/099	CMS	40	E	GSE	17.93	880.15	22.0
03/070/913/010	CMS	14	S	GSE	45.25	679.18	48.5
03/070/917/010	CMS	40	E	GSE	249.74	1648.21	41.2
03/071/508/099	CMS	89	S	GSE	79.68	2087.46	23.5
03/075/706/099	CMS	43	S	GSE	56.26	940.71	21.9
03/075/717/099	CMS	55	S	GSE	47.73	1481.67	26.9
03/075/718/099	CMS	17	S	GSE	15.86	582.95	34.3
03/077/811/010	CMS	34	S	GSE	82.96	668.30	19.7
03/064/707/10	CMS	38	S	GSE		1322.40	34.8
03/075/703/10	CMS	94	S	GSE		3585.47	38.1
03/075/714/10	CMS	100	S	GSE	50.11	3271.28	32.7
03/077/809/10	CMS	85	E	GSE		1559.07	18.3
03/077/815/10	CMS	25	E	GSE		526.67	21.1
						Average Yield	**29.2 m3/ha**

Average Stand Height for Messmate in the productive GMZ & SMZ areas Portland FMA. Supplied by NRE Portland Office. September 2001.

S- survey with GPS	E- estimated boundary	GSE- group selection	CMS- Coastal Mixed Species

Explanation of Coupe Numbering System

- The first column of the table gives the coupe address, which is a numbering system used in each FMA. The string of numbers defines the FMA/ the Management Block/ the Compartment within the Block/ the coupe number. The numbering of the coupes changed during the period that the data covers. The new system replaces the coupe number with the year that the coupe first appears in the Wood Utilisation Plans, ie /01 has become /97.

Taking the first coupe listed in the table as an example:

03/064/707/010
Reads as: 03 – Portland FMA number
064 – Hotspur Management Block
707 – Compartment with Hotspur
010 – Coupe Number (coupe is a sub-unit of a compartment)

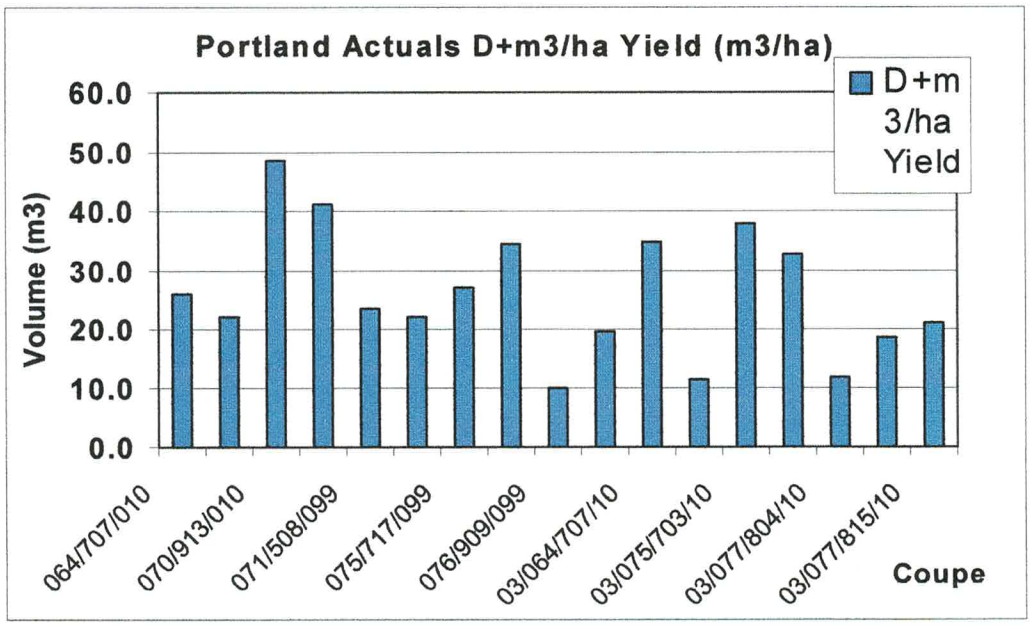
The Management Blocks within the Portland FMA and their numbers are:

Annya (70)	Cobboboonee (74)	Curracurt (69)
Glenaulin (68)	Gorae (77)	Hotspur (64)
Mt Clay (76)	Mt Eccles (71)	Surrey (75)
Weecurra (63)	Winyayung (65)	

- The second column denotes the Forest Type. In the case of these coupes are CMS or Coastal Mixed Species.
- The Third column is the Net area logged.
- The fourth Column explains how the net area statement is sourced
- The fifth Column is the logging system used, in this case all Group Selection (GSE)
- The sixth column is the volume of residual wood taken from the coupe (tonnes).
- The next column is the volume of D+ sawlog (meters).

The final column is very important. This column is the volume of sawlog divided by the net area. This produces a volume of sawlog that was on each hectare that was logged.

Sawlog Yields



Graph 4. Actual Sawlog per Hectare 1994/95 & 1999/00. NRE supplied data September 2001.

Graph 4. shows the variations in yield from the range of coupes. This reflects the variations in site class as well as the level of sawlog quality tress that are left in the coupe as a result of the repeated selective logging.

NRE Portland is currently preparing a logging history map. The daft that I saw shows the since 1960 all of the forests have had scheduled logging across virtually all of area.

The second tier of data supplied by NRE has been aggregated from annual figures for the intermediate years between 1994/95 and 1999/00. The table below summarises this data.

Year	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	Total
Sawlog m^3	11 265	13 714	11 915	13 606	13 112	12 071	75 683
Area ha,	428	Not calculated	417	432	448	504	2229 (for 5 years only)
Area as % of net area. (22263)	2%	n.a.	2%	2%	2%	2.3%	2% Net Area %
Average $m^{3/ha}$	26.3	n.a.	28.5	31.5	29.3	23.9	Average 29.8 $m^{3/ha}$

Table 3. Actual Sawlog Volume and Net Area harvested Summaries. !994/95 – 1999/00. Portland FMA. NRE supplied data. 2001

From this data there are two indicators that point to current logging levels that are inconsistent with Timber Industry Strategy rotation periods. This is in breach of publicly **stated rotation periods for State Forests.**

Based on the annual harvesting (demonstrated in the above data) of an average of 2% of the net productive areas, the current net area logged annually equates to a fifty-year rotation.

In Garry Kerr's publication 'Of Sawyers and Sawmills', A history of the Timber Industry in Victoria's Far South West[6], in an interview with Henry (Tim) Hodgetts, an ex-forest officer, refers to the time it takes to grow a sawlog in the forests of the region.

"This is a slow growing forest- 60 years at least to grow a tree. Doug Beauglehole and I once had a job of going round counting rings. See, they make a ring for every year. We couldn't find a decent mill log under 90 years old. We'd follow the faller, and as he felled them we'd have a look. Yes, 90 years old. The ones they're falling today wouldn't be that, they'd be 30! They're only small- saplings! No good!"

The pre-RFA sustainable yield level was set at 14 000m^3 pa. While there could be an argument to suggest that reductions bought about by the RFA will lead to less area being harvested, the average yield for the last 6 years has been less than the licence volume.

The table below is a simple construct of rotation periods from 50 to 120 years. The annual growth rates for each of the Portland forest types is multiplied by the rotation, this gives the theoretical volume of sawlogs that should be standing on each hectare at the end of the rotation period.

The report uses this table as a gauge to allow the average net volume that is currently being achieved in the Portland FMA with the rotation period that would grow that volume.

Table 4. Predicted Sawlog Volume per hectare based on rotation length and growth increment.

Rotation Length	**50**	**60**	**70**	**80**	**90**	**100**	**120**
FMS-1 0.6 PAI	30	36	42	48	54	60	72
FMS-2 0.5 PAI	**25**	**30**	**35**	**40**	**45**	**50**	**60**
FMS-3 0.4 PAI	20	24	28	32	36	40	48

Based on average 'actual volumes' achieved from the above data, and comparing to Table 4 above, the average volume that is being achieved ($30^{3/ha}$) is consistent with the expected sawlog volume for a 60 year old forest stand. The average area cut annually is also consistent with a 50-60 year rotation.

In most Forest Management Areas in the State there is currently a strategy to even out future wood supplies from the forests by cutting the current and next rotations at under the minimum rotation requirements.

I believe that this is only serving to allow current timber volumes to be maintained at an unsustainably high level. A minimum rotation is set to preserve non-timber products and to ensure that mature and sound trees are logged. This current practise is one that has contributed to the unsustainability in many FMAs. The intensity of modern logging means that if the regeneration has not performed to the optimum standards, then there will be a shortfall in the resource. Non-timber values may also be compromised.

[6] Of Sawyers and Sawmills. A history of the timber industry in Victoria's far south west. 1995. Garry Kerr. Mains Books. PO Box 316, Portland. Victoria 3305

Conclusion

The Portland FMA, in its current state, will not be able to be modelled or managed on this concept of 'reduced nominal rotations'. When an area is as de-stocked of suitable trees and as full of unmerchantable trees as Portland, it is impossible to maintain a constant timber volume, while adjusting or evening out future wood supplies. The sawlogs are not there now, nor will they be in the near to medium future.

The Age Class Distribution graph, shows that there is an almost complete lack of regenerating areas, the future sawlogs.

Confusion exists between NRE documents regarding the forest type within the Portland FMA. The TRA report has defined the Portland forests as Foothill Mixed Species (FMS), the Wood Utilisation Plans define the forests as Coastal Mixed Species (CMS).

The East Gippsland 'Review of Sustainable Sawlog Yield'[7] Appendix 2 (page 31), states that for Coastal Mixed Species the growth rate is 0.6 $m^{3/}$ ha pa. The Report states:

8. The minimum harvest age is 65 years for all forest types except Coastal and Alpine mixed species where it is 85 years...

9. Nominal rotation age is 80 years for all forest types except Coastal and Alpine mixed species where it is 120 years.[8]

When the volumes per hectare that are being achieved are compared to the expected sawlog volumes expected after specified growing periods, the current volume of sawlogs approximates the volumes from a sixty year old coupe. This should be an indicator to NRE that the stocking is below what it should be.

If the amount of sawlog that are currently being achieved are half the volume of a 120 year old forest with 0.5 m^3pa PAI, then the sustainable yield should be halved, 5 000 m^3pa. **This approach should be adopted until the stocking rates are consistent with rotational requirements.**

The current NRE web-site (www.nre.vic.gov.au) carries an explanation page titled Forest Sustainability. This site defines Sustainability as:

Sustainability means using a resource at a rate which will not reduce the amount of that resource in the future.
This page also states that forest policies aim to ensure that:

- *Victoria's forests will be managed on a sustainable basis for sawlogs and for all non-wood products and values from each Forest Management Area.*
- *Sustainable volumes of sawlogs from mature forests will be calculated on the basis of the next harvest occurring in 80-100 years time, depending on the forest type.*

"We must ensure that the people of the future are at least as well off we are now. This means we must use our natural resources, including our forests, in a way which does not degrade them."

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[7] Review of Sustainable Sawlog Yield. East Gippsland Forest Management Area. Forests Service Technical Reports 96-2

[8] Review of Sustainable Sawlog Yield. East Gippsland Forest Management Area. Forests Service Technical Reports 96-2

The Portland FMA needs to be managed in away the ensures that the current volumes taken from the forest do not degrade the sawlog resource. Planning, management and operations must only improve the forest not continue the decline.

Wood Utilisation Plans

The Wood Utilisation Plans are the annual operational plans that schedule the coupes that are to be logged, the gross area of the coupe, the forest type, the type of harvesting and the volumes of sawlog and residual wood expected. The wups form that basis of fulfilling timber industry demands for wood and the Department's requirements for non-timber value considerations.

For this report, the Wood Utilisation Plans for the last 7 years have been reviewed. Attached to this report are a copy of these plans standardised into a form that follows coupes as they first appear on the wups and as they progress through to harvesting, using the Wombat Forest Society wup auditing system.

Under the Wood Utilisation Plan scheme, coupes are meant to under go a 3 year listing process that allows time for public comment on each coupe and issues that may be relevant to them.

Below is a page picked randomly from the attachments. It shows a number of coupes from the Surrey Block (Block 75). This page shows the wide variability in the coupe planning process.

Each Compartment is listed between the solid horizontal lines. Listings for sawlog and residual volumes shows a very rounded off set of estimates.

Year	Year status		Coupe Number	Name	Forest type	Gross area	Silv	Sawlog	Residual
2000-01	2nd year	approved	03/075/708/01	T&W Rd East	FMS Mat	146	GS	1000	2000
2000-01	3rd year	approved	03/075/709/01		FMS Mat	70	GS	1000	2000
2001-02	3rd year	proposed	03/075/709/02	Fish Holes Rd	FMS mat	43	STR	1000	2000
1994-95	3rd year	harvest sch	03/075/709/10	Jacky Swamp Rd	FMS mat	112	S	1000	1000
1995-96	2nd year	harvest sch	03/075/709/96	Jacky Swamp Rd	FMS mat	112	S	1250	1250
1996-97	3rd year	harvest sch	03/075/709/10	Jacky Swamp		350		1000	1000
1997-98	2nd year	Harvest Sch	03/075/709/98	Jacky Swamp	FMS mat	250	S	1000	2000
1998-99	3rd year	Harvest Sch	03/075/709/00	Jacky Swamp	FMS mat	200	GS	1000	2000
2000-01	3rd year	approved	03/075/709/30		FMS R	51	ESP		0
2000-01	2nd year	approved	03/075/710/01	Jacky Swamp Rd	FMS Mat	123	GS	500	1500
2001-02	1st year	proposed	03/075/710/01	Jacky Swamp	FMS mat	105	GSE	700	1500

				Rd					
1995-96	2nd year	harvest sch	03/075/710/96	Cut Out Dam Rd	FMS mat	246	S	1000	1000
2000-01	1st year	approved	03/075/711/00	Coffeys Ln corner	FMS Mat	23	GS	500	1000
1994-95	1st year	harvest sch	03/075/711/10	Coffeys Lane Nth	FMS mat	60	S	500	500
1997-98	3rd year	Harvest Sch	03/075/711/99	Coffee Ln North	FMS Mat	250	S	500	2000
2000-01	1st year	approved	03/075/712/00	Coffeys Ln Nth	FMS Mat	80	GS	1000	2000
2000-01	1st year	approved	03/075/713/00	Coffeys Ln Sth	FMS Mat	20	GS	500	500

Table 5. Source: Wood Utilisation Plans 1994/95 – 2000/01. NRE. (Prepared by Loris Duclos).

The area of the coupe would appear to have no relationship to the expected Volume from the coupe. This is typical for Group Selection. When the net area logged is above 40-50%, the operation is removing merchantable trees from a large area, that will be unavailable for logging for 120 years. The operation is more closely described as clearfell.
With the large areas that are currently bare of sawlogs, combined with these areas of large group selection, the likelihood of running out of 'areas' to log is increased.

The coupe 'Jacky Swamp Rd, has had its gross area adjusted from 1994/95 of 112 hectares and an expected sawlog volume of 1250 m3 then in 1996/97 of 350 hectares and 1000 m3 of sawlog (3 times the area for less volume).

Below is a table of what the predicted volume and net areas are compared to predicted (wup) for the 1999/00 logging season.

Coupe Number	Year	Gross Area (ha)	Net Area (ha)	Sawlog (m3)	Residual (tonnes)
03/064/707/10	1994/95	164		1000	1000
Logged	1999/00		86	2238	59
03/070/901/99	1998/99	25		500	1500
Logged	1999/00		40	880	18
03/070/913/10	1996/97	42		1000	1000
Logged	1999/00		14	679	45
03/070/917/10	1994/95	50		500	500
Logged	1999/00		40	1648	249
03/071/508/99	1997/98	706, 220, 164		500	2000
Logged	1999/00		89	2087	80
03/075/706/99	1997/98	200, 140		1000	3000
Logged	1999/00		43	940	56
03/075/717/99	1997/98	100		1000	2000
Logged	1999/00		55	1481	48
03/075/718/99	1997/98	200		1000	2000
Logged			17	583	16
03/075/718/99	1997/98	220		1000	2000
Logged			17	583	16
03/076/909/99	1997/98	360, 240, 112,		1000	200
Logged			86	869	869
03/077/811/10	1994/95	105, 150		1000, 2000	1000

Logged			34	668	83

Table 6 Coupes logged in 1999/00 and their WUP listing.

The Table 6, shows the wide variability in the volumes actually achieved in comparison to those 'predicted' in the wups. There are also to inevitable differences in the net area vs the gross area, typical in selection or group selection operations.

The volumes achieved in some of these coupes are quite high in contrast to the overall condition or quality of the forests. This suggests that the better areas are being scheduled. The question is how much is left?

It must be very hard for interested local people and groups to adequately respond to wup submissions when there is demonstrable variation between the coupes nominated for logging in the wups compared to those that end up being logged

Powerful Owl

The West Victorian RFA provided for 25 Powerful Owl Management Areas for the maintenance of the Powerful Owl. The protection provisions adopted for the Portland FMA is the minimal option.
Each pair has only been allowed 500ha of mature forest in each Special Protection Zones, within a 3.5km circle of the nesting tree. A lot of these areas are highly fragmented among the General management areas.

In other areas there have been provisions made for 500ha of Special Protection Zones and 500ha of Special Management Zones, which requires that the 500ha must be maintained at 30 years and older with the SMZ.

There are a number of POMA's that overlap considerably. These overlaps contain a lot of General Management Zone, which allows logging, with no need for special management considerations. With this overlap, logging thinning both commercial and non-commercial, within the GMZ areas could compromise the overall viability of the owls.

This report recommends that as part of the Portland Forest Management Area 'Management Plan', which has to be completed by the middle of 2002, or it is a breech of the RFA.

The reason for the maintenance of Protection Zones around each pair of owls is to provide for an adequate food source for the pair and their fledglings. This requires there to be not only nesting hollows for the owl, but also for the various possums etc to maintain viable populations and numbers to then maintain the food supply for the owls. Within much of the areas surrounding the POMAs, that lie within the productive areas, the long-term effect of the selective logging has been to see the gradual removal of mature trees.

The Portland forests are now at a point where there are strategies to commercially thin some areas in order to boost sawlog production. There have also been areas that have had the 'veteran trees' ring-culled for silvicultural reasons.

The intensity, in both time and scale, of these operations may be in conflict with the NRE's decision to apply the minimum POMA criteria. If areas have their hollow-bearing trees killed and removed in overwood removal operations and other areas have commercial and/or non-commercial thinning operations, then the criteria for the owl will need revision.

The RFA identified the conflict between the '*need to improve the productivity of the forests*[9]' as well as the protection and maintenance of hollow-bearing trees in the final West Victorian Regional Forest Agreement. Attachment 9 (page 62) which discusses Silvicultural Practices in the Portland Management Area.

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[9] West Victoria Regional Forest Agreement . March 2000. Attachment 9. Page 62

Conclusion

It would seem that in the end NRE cannot have it both ways. The productive capacity will not be able to be fully realised via silvicultural measures in order to ensure adequate regeneration and productivity improvements and still retain hollows for Powerful Owl food-source populations. The need for a stronger form of POMA will need to be applied, which will then have restrictions on logging intensities.

The switch to seedtree silvicultural management in parts of the FMA, further compromises the suitability of the current Powerful Owl management options. The removal of far more trees than the selective logging has a much greater impact on the habitat values in a post-logging coupe, and therefore the approach to non-timber considerations.

The development of the Management Plan for the Portland FMA, is scheduled for completion within the next 10months as a result of an RFA commitment. The development of this plan will need to satisfy this conflict.

Fragmented forests Blocks

The FMA has many isolated blocks of forest around the main production forests- the Cobboboonee, Annya Forests and Hotspur forest area. These areas of historically retained public land that are highly fragmented and should be viewed as important bio-diversity sinks instead of being retained as productive areas, for little more than they help to maintain the productive area base and therefore add to the sustainable yield. Within the context of these areas being logged, the proportional impact on wildlife will be severe. Once the areas are highly modified by logging activities, there may not be adjacent forested areas for the displaced wildlife to survive.

• ESFM/ RFA

The implementation of the West Victoria Regional Forest Agreement has now imposed a new requirement in the management of, and the operations in our State Forests. There is now an ongoing requirement to work within the context of the prescribed Ecologically Sustainable Forest Management System.

The box below is an extract from the West Victoria Regional Forest Agreement, Comprehensive Regional Assessment, Vol.1. In applying the ESFM principles in relation to the sustainable yield rate for the Portland FMA I make the following observations:

Principle 1 Maintain the full suite of forest values for present and future generations

The current highly worked over condition of the Portland FMA's productive areas has left the forests with a poor stocking of what are defined as merchantable quality trees.

The current Sustainable Yield rate for the RFA has been done using the theoretical 'growth increment'. This means that if the Portland forests where in a near pristine state at the start of the assessment period (1999/00), then 10 000m3 pa would be theoretical level that could be logged sustainably each year without impacting on the original gross standing volume of the forests. In other words 10 000m3 is how much the forests grow in a year in volume.

This is not a realistic figure for a forests that have had the history of the Portland FMA. The selective logging has left most areas stocked with non-merchantable trees. The annual growth ids distributed in these as well as the merchantable trees. This means that if the logging rate is based on providing the volume (10 000m3), it will inevitably mean that more area than is sustainable will be logged annually. At some stage if

you have cumulatively cut more than the cut the not area divided by the prescribed rotation, then the forests will be cut out before the regeneration has matured.

This will undoubtably mean a gap in the resource and a decline in the quality of sawlog for the next 2-4 generations.

Principle 3 Protect and maintain biodiversity

The changes to a more industrial style of operations within the Portland FMA ha the potential to impact on the third principle.

Principle 4 Maintain the productive capacity and sustainability of forest ecosystems

This report has demonstrated that the current levels and rate of logging are definitely impacting on sustainability within the FMA

Principle 5 Maintain forest ecosystem health and vitality
This principle reflects the concept of ecological integrity whereby the health and vitality of an ecosystem is maintained under changing environmental conditions. Structural and functional changes can occur in ecosystems as a result of threatening processes, such as land clearing, fire, pollution, pests and diseases. These can cause significant shifts in species composition, loss of key biological components, or the degradation of ecosystem processes. Consideration of ecological integrity means determining thresholds of environmental change whereby each threshold results in a reorganisation of the ecosystem to a different but appropriate level. The properties and processes of forest ecosystems over management periods become important considerations for maintaining ecological integrity over time.

NRE has to make a clear choice in relation to this principle. If a strategy of systematic remedial work is carried out to remove the non-merchantable trees from the unevenaged areas of the FMA, and a continuation of the practise of converting these ares to messmate only, then NRE will be in breach of the RFA, under this principle.

Principle 9 Utilise the precautionary principle for prevention of environmental degradation

The precautionary principle does not appear to be within the NRE lexicon. The approach to sustainable yield setting is based on getting the optimum sawlog volume set as sustainable yield, by favouring almost every variable in the equation towards timber over non-timber values.

This is clearly seen elsewhere in the use of Forplan, which has the ability to have a number of non-timber values incorporated into the model. NRE does not include any.

As discussed elsewhere in this report, the Timber Resource Analysis for Portland, has not applied the precautionary principle. To not include the current resource condition into the assessment has given an unsustainable figure.

The Precautionary Principle should be immediately applied in Portland until the completion of the SFRI, 5 years from now.

Ecologically Sustainable Forest Management Assessment Criteria

Ecologically Sustainable Forest Management has been assessed against nine principles for ecologically sustainable forest management and the five environmental management system criteria namely: public transparency; monitoring; compliance; scientific and technical basis; and review (Table 16.1).

The nine principles have been developed for national application from the Montreal Process, Forest Stewardship Council Principles and Australian Forestry Council Principles for Environmental Care in Native Hardwood Logging.

Principle 1 Maintain the full suite of forest values for present and future generations
This principle addresses the issue of intergenerational equity, that is, that forests be managed to meet present needs without compromising the ability of future generations to meet their own needs (Young 1993). It provides the context in which principles 2-9 must be considered.

Principle 2 Maintain and enhance long-term multiple socio-economic benefits to meet the needs of societies
The basis of this principle is the promotion of forest-related economic activity which is consistent with the maintenance of the environment and satisfaction of the socio-economic requirements for income, employment, goods and services. Implicit in this principle is the optimum use of the forest economy's capital stock (human, man-made and natural resource capital) through management so as to maximise the long-term welfare or benefit of society in terms of goods and services it requires. The forest economy covers timber and other forest products and uses, water supply, minerals, grazing, recreation and tourism.

Principle 3 Protect and maintain biodiversity
The maintenance of biodiversity is fundamental to achieving ecologically sustainable forest use (ESDWG 1991, Commonwealth of Australia 1992b). Incorporated into the concept of biodiversity is variation at the ecosystem, species and genetic levels.

Principle 4 Maintain the productive capacity and sustainability of forest ecosystems
Sustained production of biomass by forest ecosystems is essential to the well-being of all living things. The productive capacity of a forest can be influenced through the silvicultural regime and other management activities. Implicit in the term sustainability is the understanding that irreversible damage through resource use is not imposed on the capacity of the forest to supply goods or services to present and future generations (Ferguson *et al* 1996).

Principle 5 Maintain forest ecosystem health and vitality
This principle reflects the concept of ecological integrity whereby the health and vitality of an ecosystem is maintained under changing environmental conditions. Structural and functional changes can occur in ecosystems as a result of threatening processes, such as land clearing, fire, pollution, pests and diseases. These can cause significant shifts in species composition, loss of key biological components, or the degradation of ecosystem processes. Consideration of ecological integrity means determining thresholds of environmental change whereby each threshold results in a reorganisation of the ecosystem to a different but appropriate level. The properties and processes of forest ecosystems over management periods become important considerations for maintaining ecological integrity over time.

Principle 6 Protect soil and water resources
Forests contribute significantly to the maintenance and conservation of the soil resource; they afford water catchment protection, and maintain the quality and quantity of water.

Principle 7 Maintain forest contribution to global carbon cycles
Carbon is stored in Australian forests as living plant and animal biomass and dead organic matter in the form of forest debris. As a general rule, carbon is accumulated and stored in forests that are growing and which, as a consequence, contribute positively to carbon storage. Forests in which carbon is accumulated through photosynthesis but offset by the loss of carbon resulting from biomass decomposition or death are carbon neutral. Generally, forests that make a negative contribution to carbon storage are those that are regularly burnt, harvested on short rotations, or subject to heavy soil disturbance.

Principle 8 Maintain natural and cultural heritage values
Heritage encompasses archaeological sites, historic places and customs (cultural heritage), and natural values or objects (natural heritage) that are of aesthetic and social value and passed down to the present generation from past generations.

Principle 9 Utilise the precautionary principle for prevention of environmental degradation
In applying the precautionary principle, public and private decisions should be guided by:

1. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and
2. an assessment of the risk-weighted consequences of various options.

In interpreting this principle, particular attention was paid to processes based on 'risk assessment' and 'risk management' strategies. Such processes are important to minimise environmental impacts and avoid serious or irreversible damage to the environment.

A full description of the nine principles is provided in the Statewide ESFM assessment report (VicRAFSC 1997b).



Midway, Commercial Thinning Pup Stack.

Conclusion

The Portland FMA has a number of sustainability indicators that bring into question the validity of the Regional Forest Agreement interim 'Sustainable Sawlog Yield' of 10000m^3 pa.

This report has calculated a number of 'theoretical sawlog volumes' within the context of the report's analysis.

The areas that have indicated anomalies are:

1. Rotation Period

This report has found a number of indicators that show that the Portland FMA is currently harvesting at a rate that approximates a rotation of 60 years.

This report looked at the net area logged annually, this was around 2% of the available area. **Logging two percent of the available area is a 50 year rotation.** Over the last past 5 out of 6 years (1995/96 no net area available) the average net area logged has been 445 hectares, for an average yield of 12 394 m^3 of sawlog.

At the above logging levels this is the equivalent of 27.8 m^3/ha. In order to supply the RFA sawlog level of 10 000m^3 pa, a total of 360 hectares a year will needed to be cut. This is the equivalent of a 62-year rotation. Based on the appropriate 120 year rotation, the annual area logged should be 185.5 hectares.

If the annual area that should be logged is 185.5 hectares and the current average yield per hectare is 27.8m3, then this would indicate that the sustainable yield should be no more than 5157 m3 pa.

Using the East Gippsland 'Review of Sustainable Sawlog Yield'[10] Appendix 2 (page 31), as a guide to management by NRE in similar forest types, (ie. for Coastal Mixed Species the growth rate is 0.6 m$^{3/}$ ha pa.) , the minimum harvest age is 65 years for all forest types except Coastal and Alpine mixed species where it is 85 years...and based on. Nominal rotations the age is 80 years for all forest types except Coastal and Alpine mixed species where it is 120 years.[11]

If the proper rotation period is 120 and not 60 years then the sustainable yield should be approximately half what it was/is. This would be around 5 000m^{3}pa. If the ESFM requirements are applied that guard intergenerational equity, the yield could well be reduced to around <2-3 000m^3 pa. This is compounded by the lack of regrowth. Almost all of the net productive areas are classified by the SFI data as mature or unevenage.

In pure sawlog production terms, vast areas currently contain virtually no sawlogs. If the Portland FMA's future is seen as a sawlog producing area, then massive and costly remedial silvicultural intervention would be needed. This would dramatically alter the forests as they are. It is of concern that thinning practises mirror those from other areas, in the retention of only one species, the most merchantable- messmate.

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[10] Review of Sustainable Sawlog Yield. East Gippsland Forest Management Area. Forests Service Technical Reports 96-2

[11] Review of Sustainable Sawlog Yield. East Gippsland Forest Management Area. Forests Service Technical Reports 96-2

The Code of Forest Practice[12] requires that *"Native forest stands should be regenerated with species and provenances native to the area, or general locality, with the objective of maintaining the local genetic pools and species mix."* The current thinning and regeneration operations are turning the forest into a messmate forest. Inconsistent with the Code of Forest Practice.

With the large and well-established private forestry sector in the region, there is the potential for an argument to phase out logging in the State Forests of the FMA. The lost employment in this sector could easily move across to the private sector. The sawmills of the region already have combined sawlog intakes from both areas.

It is time that the future is given full weighting in forest planning.

Stand Height

The Portland forests as they are today have only marginal sawlog quality. The canopy height and slow growth rates combine to limit the sawlog potential. When these factors are applied to Portland, as they are other similar forests in the State, the net productive area base from which calculations are made should be a lot lower.

The RFA certainly contains a clause that appears to rule out sub-22 meter canopy height areas as being unproductive: . Clause 72 (d), page 14, of the West Victoria Regional Forest Agreement states:

"recognise that the expected available volume of D+ sawlogs referred to in Clause 72(a) includes a component of forest stands which may be less desirable to harvest under existing market conditions, due to low yields, accessibility and product distribution but not areas which are considered unproductive for sawlogs, for example less than 22 meters stand height."

When the areas sub-22 meters canopy height (8968ha) are excluded from the calculations, the net area used would be 13 295ha. **When this is multiplied by the average growth rate (0.5 m^3/ha) the sustainable sawlog yield would be 6647.5 m^3 pa.**

A failure to realistically apply 'elimination, exclusion and limitation' criteria to forests such as the Portland FMA, where we have degraded forests and slow growth rates, to use a total net area and a totally stocked forest, as a basis for calculating sustainable yield will inevitably lead to further degradation of the forests and future shortfalls in supply.

The RFA lowered the minimum stand height in the west from 24 meters to 22 meters.

This issue has already been raised in relation to the forests of the Portland FMA and the Enfield forest, in the Midlands FMA. Since the signing of the RFA, NRE's response has been to explain that this does not exclude timber harvesting from these areas, with a stand height of less than 22 meters it only indicates factors used in determining sawlog volumes.

When this criteria is applied to the Portland FMA, and in particular to messmate, the main commercial species, the total area used in the calculations would be 13295 ha. This multiplied by the average PAI used in the Portland TRA of 0.5 m3 pa/ha, would suggest a Sustainable Sawlog Volume of 6647.5 m3 pa.

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[12] Code of Forest Practices Revision 2. 1996
Department of Natural Resources and Environment.

The Sustainable Yield for the FMA can only be set on the basis of a proper estimate of the actual standing volume in the Mature and Unevenage portions and divide this by the rotation requirement of 120 years. Areas that have had final harvests, or contain no sawlog should be left out of the equation.

Timber Resource Analysis

It is clear that the TRA assessment carried out fort the RFA was not able, nor did it consider the current state of the forest to a depth that would allow a realistic sustainable yield figure to be arrived at.

A forest that has had a history of selective harvesting is a lot more difficult to carry out quick assessments of its stand quality/standing volume. In the case of Portland this is further compounded by the limitations of a very low growth rate and a high defect rate in the trees from insect infestation, as is common with Coastal Forests.

The assessment process used in the RFA is assumptive. What the final sawlog volume availability represents is the 'theoretical volume'. The application of stand condition considerations in the case of the Portland forests will have a significant impact on what the current sustainable yield should be set at. If the theoretical sustainable sawlog volume is applied to forests area that are already significantly de-stocked, then there will be an inevitable 'gap' in the sawlog supply over the current rotation.

A gap in the supply of timber means that the Sustainable Yield is too high.

The selective practices of the past have seen most of the best timber cut out. While there are a large proportion of the productive areas still relatively well stocked with trees, many of these areas are stocked with very poor quality tress from a sawlog perspective.

Powerful Owl

The productive capacity of forests will not be able to be fully realised via silvicultural measures in order to ensure adequate regeneration and productivity improvements and still retain hollows for Powerful Owl food-source populations. The need for a stronger form of POMA will need to be applied, which will then have restrictions on logging intensities. It would seem that in the end NRE cannot have it both ways.

The switch to seedtree silvicultural management in parts of the FMA, further compromises the suitability of the current Powerful Owl management options. The removal of far more trees than the selective logging has a much greater impact on the habitat values in a post-logging coupe, and therefore the approach to non-timber considerations.

The development of the Management Plan for the Portland FMA, is scheduled for completion within the next 10months as a result of an RFA commitment. The development of this plan will need to satisfy this conflict.

In conclusion,

Portland is currently being logged at a rate that suggests from a number of sources, a rotation of around 60 years. This is half that is required by the Timber Industry Strategy. There are major issues in terms of sawlog quality and quantity as a result of past logging practises.

One thing is clear, that despite the old 'sawmiller's selection' having taken the sawlog quality trees out quicker than they could be replaced, the forest remain structurally and visually intact forests.

Abbreviations

ESFM Ecologically Sustainable Forest Management

FMA Forest Management Area

GMZ General Management Zone

MAI Mean Annual Increment

NRE Department of Natural Resources and Environment

PAI Periodic Annual Increment

POMA Powerful Owl Management Area

RFA Regional Forest Agreement

SMZ Special Management Zone

SPZ Special Management Zone

TRA Timber Resource Analysis

WUP Wood Utilisation Plan

WVRFA West Victoria Regional Forest Agreement

CMS Coastal Mixed Species

FMS Foothill Mixed Species

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Attachment 1: Portland FMA Timber Resource Analysis

WEST RFA
PORTLAND FMA

Timber Resource Analysis

This report summarises the Timber Resource Availability analysis (TRA) for Portland Forest Management Area (FMA), which has been undertaken as part of the West RFA.

Note that the figures presented here are based on a combination of interim SFRI data and include very general estimates of growth rates for this mixed species forest type. SFRI assessments and modelling are not complete for this area.

These results are indicative only and are not to be interpreted as a change in the sustainable yield rate. The sustainable yield rate will be determined once the RFA is finalised and full SFRI data are available, and will be based on modelling which will incorporate significantly more detail than has been possible in this process.

1. Current Commitments

The current legislated sustainable yield rate for Portland FMA is 14,000 m^3/year D+ net sawlog. Current licence commitments are 13,950 m^3/year D+ net sawlog.

2. Methodology

Revised resource information is available as part of the SFRI project covering the productive blocks of Portland FMA. A more detailed description of productive forest is now available and replaces the previous 1984 assessment.

Use of GIS based SFRI data provides a standard basis of comparison for this analysis. Spatial data are required to determine the impact of the draft CAR reserve design.

Three productive forest types have been identified based on species composition and stand height.

Forest type	% Messmate	Height	Notes
FMS1	> 75%	> 18m	
FMS2	50-75%	> 18m	
FMS3	25-50%	> 20m	18-20m if dominant regrowth
Unproductive		< 18m	<20m FMS3 unless dominant regrowth

This Timber Resource Availability analyses is based on area statements derived from SFRI data, net of 1996 Code of Forest Practices exclusions. Stream buffering for Code exclusions was identified from NRE Corporate Library streams data (to identify permanent watercourses), and land systems data (to identify areas of high erosion risk). Permanent streams were buffered 20m and minor streams in areas of high erosion risk are buffered 10 m. All swamps, as identified in the GIS layer, were buffered 20 m.

The resultant available net productive area is 27,500 ha. Isolated small productive areas in Moleside, Weecurra and Cavendish blocks have not been included in this total.

This compares with a net productive area of 28,348 ha from the 1984 assessment, of which 27,188 ha was considered available.

3. Assumptions for Timber Resource Analysis

a) Average Periodic Annual Increment

An average Periodic Annual Increment (PAI) of 0.5 m^3/ha/year has been assumed for this analysis. This is considered to be appropriate as

- In the absence of new growth data, this rate is consistent with previous assessments and with a diameter increment of 0.5 cm/year. An average growth rate of 0.5 cm/year is not unreasonable for this forest type and is consistent with previous studies of short term increment and with growth rates in other low productivity forests.
- The best increment from MESSIM modelling used previously was 1 m^3/ha/year. This was based on the assumption that cull removal would be carried out in conjunction with all operations, with a maximum retained cull dbh of 15 cm. While cull removal is an important silvicultural operation required to restore degraded sites to full sawlog productivity, cull operations have not been undertaken at the intensity envisaged in 1984. Plots used in the MESSIM study tended to be located in better areas and were not treated in the manner of CFI plots.
- A value of 0.5 m^3/ha/year is consistent with the current sustainable yield rate of 14,000 m^3/year

b) Scaling of the average increment based on SFRI productive forest types

To take advantage of the productivity breakdown available from the SFRI data, the average PAI has been scaled as follows:

- FMS2 has an average growth rate (0.5 m^3/ha/year)
- FMS3 has a lower growth rate (0.4 m^3/ha/year)
- FMS1 has a higher growth rate (0.6 m3/ha/year).

Using SFRI data (species composition and stand height) gives a more detailed breakdown of the productive resource. It is appropriate to vary increment based on the assessment of productive forest types.

Applying the increment in this way provides a base which is consistent with the previous sustainable yield forecast.

4. Timber Resource Analysis methodology

Timber resource availability for the RFA has been determined by applying the relevant PAI for each forest type to the net available productive area.

A new base model was prepared using SFRI spatial data, with availability determined by Code of Forest Practices exclusions.

The impact of the draft CAR reserve design was determined by overlaying the draft CAR reserve design (incorporating Code exclusions) with the SFRI productive area to provide a revised estimate of net available productive area.

Timber Resource Analyses in other areas have included a minimum contingency allowance (to allow for factors not readily identified in the modelling process), plus an allowance for fire. Given the simplistic approach taken to TRA for Portland and the lack of updated growth and yield data, an allowance of at 15% is considered appropriate for this analysis.

5. Results

These results are based on an average PAI of 0.5 m^3/ha/yr, adjusted for productivity strata (0.6, 0.5, 0.4 m^3/ha/yr)

	FMS1	FMS2	FMS3	TOTAL
PAI (m^3/ha/yr)	0.6	0.5	0.4	
Area (ha)	6,466	17,336	3,720	27,522
TRA (m^3/year D+ net sawlog)	**3,880**	**8,670**	**1,490**	**14,040**

Note: Net available productive area (1984) was 27,188 ha current sustainable yield is 14,000 m^3/yr

Applying a contingency allowance of 15% gives a base rate of 12,000 m^3/year.

Application of the draft CAR reserve design will reduce the net available productive area by 19% from 27,520 ha to 22,260 ha.

	FMS1	FMS2	FMS3	TOTAL
PAI (m^3/ha/yr)	0.6	0.5	0.4	
Area (ha)	5,467	13,903	2,893	22,263
TRA (m^3/year D+ net sawlog)	**3,280**	**6,950**	**1,160**	**11,390**

Including the 15% contingency allowance produces the following results.

With 15% contingency	**Base**	**12,000**	m^3/year
	Draft CAR reserve design	**10,000**	

These results indicate that, based on the current data, and incorporating the assumptions outlined above, the current licence commitments (13,950 m^3/year) will not be able to be met. Using the current description of the forest, assuming that the growth rates apply, and incorporating Code of Forest Practices exclusions, the benchmark level for this area is 12,000 m^3/year. Adoption of the draft CAR reserve system will reduce this volume by 17% (around 2,000 m^3/year).

Note that these estimates assume that the lowest productivity (FMS3) stands are available for harvesting. The economic viability of these stands under prevailing market conditions should be taken into consideration when determining licence levels.

The results from these Timber Resource Analyses can only be considered indicative, although the range of key issues has been addressed in these analyses, utilising currently available data. Full growth and yield information from SFRI is not yet available.

A statewide review of sustainable yield is required in 2001 and will utilise SFRI based resource data wherever possible. This review will also incorporate regionally defined prescriptions and constraints, and will provide opportunity for community input.