LOGGING IN MELBOURNE'S WATER CATCHMENTS: the yarra tributaries

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Victorian Parliamentary Internship Report

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THE YARRA TRIBUTARIES

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ACRONYMS

CFLA	Conservation, Forests and Lands Act 1987 (Vic)
CH FMP	Central Highlands Forest Management Plan
CH RFA	Central Highlands Regional Forest Agreement
DAFF	Department of Agriculture, Fisheries and Forestry
DSE	Department of Sustainability and Environment
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999 (Cth)
ESD	Ecologically sustainable development
FFG Act	Flora and Fauna Guarantee Act 1988 (Vic)
FMA	Forest Management Area
FMP	Forest Management Plan
IUCN	International Union for Conservation of Nature and Natural Resources
RFA	Regional Forest Agreement
RFA Act	Regional Forest Agreements Act 2002 (Cth)
SFTA	Sustainable Forests (Timber) Act 2004 (Vic)
VAFI	Victorian Association of Forest Industries
West RFA	West Victoria Regional Forest Agreement

EXECUTIVE SUMMARY

The majority of Melbourne's water supply is sourced from water catchments located in the Central Highlands, east of Melbourne. Currently, five out of ten catchments in this network are subject to logging operations. Two issues stem from the contentious practice of logging in Melbourne's water catchments. These are:

1. the impact of logging on water yield in the group of catchments known as the Yarra tributaries; and
2. the impact of logging on threatened species endemic to the Yarra tributaries, in particular, the Leadbeater's Possum.

In the context of these two issues, the objective of this report is to explain the relevant legislative framework that governs logging in State forests in the Yarra tributaries, including the provisions relating to water and to threatened species.

Furthermore, this report assesses the efficacy of the current legislative framework. It is necessary to consider whether the current legal mechanisms regulating logging

sufficiently protect and manage the natural resources and environment of the Yarra tributaries.

Resulting from this assessment, this report makes the following findings:

1. logging reduces water yield in the Yarra tributaries;
2. logging in the Yarra tributaries destroys Leadbeater's Possum habitat, the adequate existence of which is critical to the survival of the species; and
3. the legislative framework regulating logging in the Yarra tributaries is inconsistent and convoluted. Ultimately, the system fails to implement its purported principles of environmental protection and conservation.

Therefore, this report proposes that current logging practices undertaken in the Yarra tributaries are stopped for the purposes of preserving water yield and endangered species, an action that will necessitate proper compliance with the relevant provisions of the existing legislative system governing logging in water catchments and/or a review and amendment of it.

CHAPTER 1: INTRODUCTION

Currently, Melbourne is enduring its tenth year of drought. As a result, debate concerning the sustainability and management of Melbourne's water supply has intensified. 90% of Melbourne's water supply is sourced from water catchment areas located in the Central Highlands, east of Melbourne.[1] These catchment areas have been closed from the public for more than 100 years,[2] with more than 157,000 hectares reserved for the primary purpose of water supply.[3]

[1] Melbourne Water (2008) 'Water Supply Catchments', viewed 28 May 2008, <http://www.melbournewater.com.au/content/water/water_supply_catchments/water_supply_catchments.asp#2>.

[2] Ibid.

[3] Ibid.

The water catchment areas comprise of both National Park and State forest. Clearfell logging[4] practices are permissible in five of the ten catchments in Melbourne's catchment network. Situated in State forest, these five catchments are Armstrong Creek, Cement Creek, McMahons Creek and Starvation Creek (collectively known as the Yarra tributaries) and the Thomson Reservoir. Together, these five catchments provide 66% of Melbourne's water intake.[5]

Logging in water catchment areas is contentious as a result of research illustrating a causal relationship between logging and the reduction of water yield. In the context of Melbourne's current water supply shortage, it is questionable as to whether logging practices should continue.

Furthermore, the Mountain Ash forests of the Central Highlands are home to several threatened and endangered species, for example, the endangered Leadbeater's Possum, which is Victoria's faunal emblem. Endemic to the Yarra tributaries, the population of the Leadbeater's Possum is currently in decline as a result of inadequate habitat.

Following an outline of the research concerning the impact of logging on water yield and on endangered species in water catchment areas, this report explains the legislative framework under which logging in water catchments is permitted. Furthermore, it is necessary to consider whether this framework sufficiently reflects the growing political and social climate of environmental concern. This report considers whether the legislative principles of environmental protection and conservation are adequate safeguards for sustaining our natural resources and biodiversity for future generations.

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[4] Clearfell logging involves the removal of all trees in a large area in one operation. Trees needed to provide wildlife habitat, streamside reserves or other purposes are supposed to be retained: Department of Sustainability & Environment (2008) 'Forest Glossary', viewed 27 May 2008, <http://www.dse.vic.gov.au/DSE/nrenfor.nsf/childdocs/-8C77DFDA4908DBAC4A256AA400010B55-70CC43A57B52F44BCA2572F100105B72?open#C>.

[5] The Central Highlands Alliance (2008) 'Water: Logging Water Catchments', viewed 27 May 2008, <http://www.tcha.org.au/Logging_water_catchments.html>.

1.1 Methodology

This report focuses on the legislative provisions that enable the logging of water catchments in areas of State forest. Specifically, this report will investigate the effects of logging in the Yarra tributaries and the relevant legislative framework to these catchments.

Consequently, the research methods adopted include analyses of primary and secondary sources, in addition to interviewing. In assessing the efficacy of the legislative framework regulating logging in water catchments, this report draws conclusions based on comparative analyses of the legislation and the research of the impacts of logging in water catchments.

1.2 Limitations of this Report

The scope of this report assesses the legislative framework regulating logging in water catchment areas, based on the impact of logging on water yield and endangered species. This report does not consider the following issues, but acknowledges their relevance to the issue of logging in water catchments:

- the economic costs and benefits of logging in water catchments, in terms of both the value of timber and the value of water;
- the value of water catchment areas as carbon sinks;
- the debate concerning how timber resources are used after logging, for example, for woodchips; and
- the viability of alternative logging practices, such as thinning practices (where selective trees in an area are logged). As yet, insufficient research has been conducted to accurately assess the impact of thinning practices on water yield.

Additionally, this report draws conclusions based on the initial publications of the Department of Sustainability and Environment's *The Wood and Water project* –

Harvesting in State forests supplying water to Melbourne ("The Wood and Water project"), which will be published in full in September 2008. This report recognises that these conclusions pre-empt the final publication of *The Wood and Water project*.

CHAPTER 2: THE RELATIONSHIP BETWEEN LOGGING AND WATER YIELD IN THE YARRA TRIBUTARIES

2.1 Introduction: the Yarra tributaries

The Yarra tributaries comprise of four catchments: Armstrong Creek (Main and East), Cement Creek, McMahons Creek and Starvation Creek[6] ("the Yarra tributaries"). Collectively, the Yarra tributaries cover an area of approximately 15,000 ha of State forest and contribute approximately 6% to Melbourne's water supply.[7]

With the exception of Cement Creek, the Yarra tributaries catchments are completely forested.[8] The catchments are predominately vegetated with Mountain Ash (*E. regnans*) (approximately 50%) and mixed species, and to a lesser extent, Alpine Ash (*E. deligatensis*) and Shining Gum (*E. nitens*).[9]

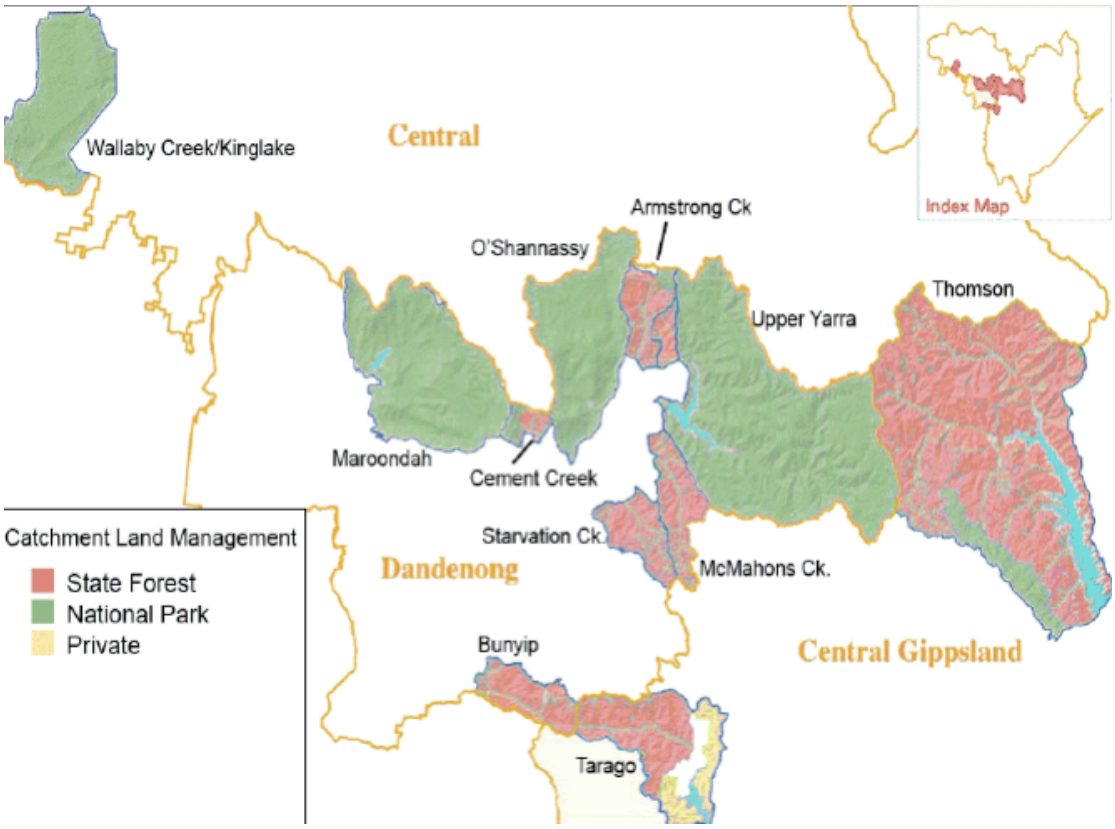
Figure 1: Melbourne's water catchment network

[6] P Feikema, P Lane, M Peel, C Sherwin, A Freebairn, O Salkin, 'Hydrological studies into the impact of timber harvesting on water yield in state forests supplying water to Melbourne – Part 1 of Hydrological studies', Research report for the Victorian Government (October 2006) 10. This report is Part 1(a) of the DSE's *Wood and Water project*.

[7] Ibid.

[8] P Feikema et al, op cit, 10-21.

[9] Ibid.



Source: Melbourne Water Catchment Network[10]

2.2 The Impact of Logging on Water Yield

Where Mountain Ash forests are aged older than 50 to 100 years, water yield is greater.[11] This is due to the evapotranspiration of older forests being lower per unit area than younger forests,[12] that is, older forests expel less water vapour into the atmosphere. Evapotranspiration is estimated as the difference between catchment rainfall and catchment water yield.[13] Therefore, a regenerating forest has a higher rate of evapotranspiration.

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[10] Melbourne Water Catchment Network and Otway Ranges Environment Network, 'Clearfell Logging in Melbourne's Native Forest Water Supply Catchments: Water Yield Issues', Presentation to the Melbourne City Council (March 2008) 3.

[11] M Peel, F Watson, R Vertessy, A Lau, I Watson, M Sutton and B Rhodes, 'Predicting Water Yield Impacts of Forest Disturbance in the Maroondah and Thomson Catchments Using the Macaque Model', Cooperative Research Centre for Catchment Hydrology, Technical Report 00/14 (December 2000) 1.

[12] Ibid.

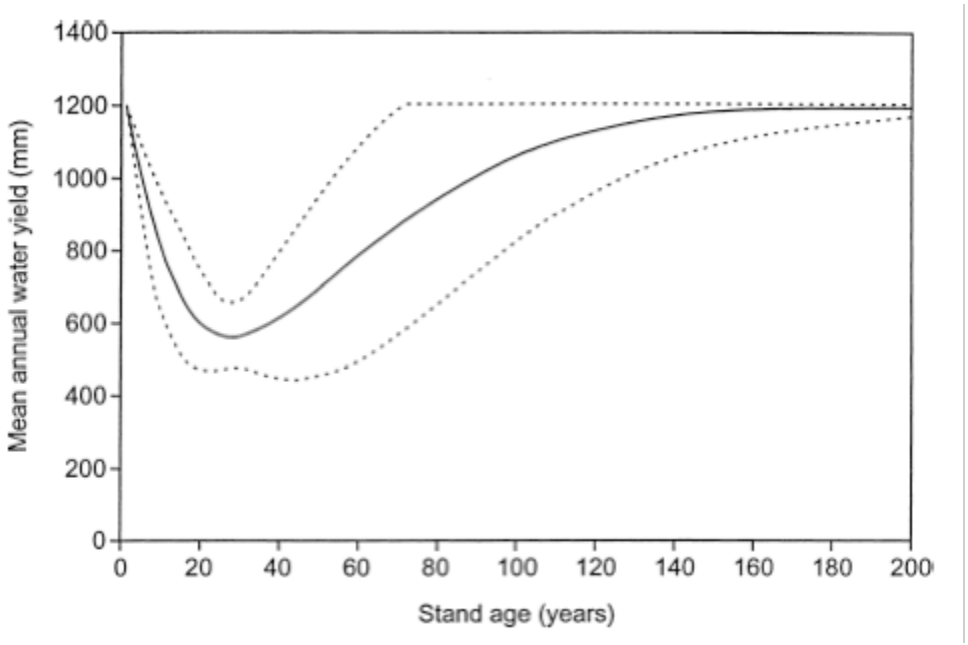
[13] P Cornish and R Vertessy, 'Forest age-induced changes in evapotranspiration and water yield in a eucalypt forest' (2001) 242 *Journal of Hydrology* 43, 47.

Much research has been conducted investigating the relationship between logging and water yield in catchment areas. This report will outline the methodology and findings of two hydrological models developed to determine the nexus between logging and water yield. These models are the Kuczera curve and the Macaque model.

The Kuczera curve

The Kuczera curve (developed by Kuczera in 1985) illustrates a generalised relationship between annual streamflow and forest stand age in Mountain Ash forests.[14] According to the Kuczera curve, a decline in water yield following clearfelling will occur, decreasing by as much as 50% at 20 to 30 years of regrowth. Water yield will then gradually increase to previous 'old growth' levels after 100 to 150 years.

Figure 2: The Kuczera curve



[14] P Feikema et al, op cit, 1.

The Kuczera curve illustrates the relationship between mean annual water yield and stand age from Mountain Ash forest catchments. The dashed lines denote the 95% confidence limits on the relationship. Source: Vertessy et al.[15]

The utility of the Kuczera curve is subject to two limitations. Firstly, as illustrated, the curve has wide error bands, particularly between 50 to 100 years of age.[16] Therefore, although the curve still conveys a decrease in water yield, the model does not provide an accurate prediction of water yield recovery during regrowth.

Secondly, as the Kuczera curve is a generalised relationship, derived from research based on Mountain Ash forest, results will differ between catchment areas, for example where characteristics such as forest age species vary.[17] Furthermore, Dr Patrick Lane, a Senior Research Fellow in Forest Hydrology at the School of Forest and Ecosystem Science, The University of Melbourne, and a contributor to the DSE's *The Wood and Water project*, outlines that this generalised relationship is relative to old growth age forest, where the disturbance is, or is near to, 100 per cent.[18]

It is important to address the issue of forest age in the Yarra tributaries. Forest age, and the age of trees subjected to logging in the Yarra tributaries is contentious by virtue of the fact that older trees produce a higher water yield. A report prepared for the Victorian Association of Forest Industries ("VAFI") (which is Victoria's industry body for native hardwood processing) states:

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[15] Vertessy, R, F Watson and S O'Sullivan, 'Factors determining relations between stand age and catchment water balance in mountain ash forests' (2001) 143 *Forest Ecology and Management* 13, 15.

[16] R Vertessy, F Watson, S O'Sullivan, S Davis, R Campbell, R Benyon and S Haydon, 'Predicting Water Yield from Mountain Ash Forest Catchments', Cooperative Research Centre for Catchment Hydrology, Industry Report 98/4 (April 1998) 8.

[17] Ibid.

[18] Interview with Dr Patrick Lane, Senior Research Fellow (Forest Hydrology), *School of Forest and Ecosystem Science*, *The University of Melbourne* (Melbourne, 7 May 2008). Dr Lane contributed to the Hydrological Studies of the DSE's Wood and Water project.

> "All of the available areas [for logging] are comprised of regrowth forest mostly originating from the 1939 bushfires. No 'old growth' ash forests are contained within the net areas available for timber production."[19]

Scott Gentle, Timber Communities Australia (Victoria) (a community organisation aimed at securing long term access to natural resources) coordinator, supports this view, stating, "the Armstrong catchment is all regenerated forest. There's no old grown timber harvested there or anywhere else in the Central Highlands."[20]

Furthermore, the VAFI report concludes:

> "Because logging in Melbourne's catchments is confined to advanced regrowth (not mature forest) the accompanying reduction in water yield from the affected area is far less than 50 per cent and it will recover back to its pre-harvest level far sooner."[21]

However, the occurrence of wildfire in 1926 and 1939 does not preclude old growth trees from still remaining in the Yarra tributaries. Professor David Lindenmayer, from the Centre for Resource and Environmental Studies at the Australian National University, describes natural fires as "patchy" and as leaving "a patchy environment," in contrast to backburning and human fires, which "tend to be very uniform…and tend to create a very homogenous environment."[22] Therefore, given the sporadic nature of wildfire, it cannot be definitively maintained that the 1926 and 1939 episodes of wildfire completely and uniformly destroyed old growth forest in the Yarra tributaries.

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[19] Poynter, M, and G Featherston, *Review of Timber Production in Melbourne's Water Catchments*, a report prepared for the Victorian Association of Forest Industries (2008) 13.

[20] Kath Gannaway, 'Log out for now', *Upper Yarra Mail* (Upper Ranges Shire), 5 February 2008, 1.

[21] Ibid 2.

[22] Quentin McDermott, interview with Professor David Lindenmayer, Professor, *Centre for Resource & Environmental Studies* at the *Australian National University* (Australian Broadcasting Corporation, Four Corners, 12 March 2007) viewed 3 June 2008, <http://www.abc.net.au/4corners/content/2007/s1882728.htm>.

Furthermore, according to Dr Lane,[23] in the Yarra tributaries catchment areas assessed by the DSE for *The Wood and Water project* (refer to Chapter 2.3), there are patches of Mountain Ash and Alpine Ash that would be categorised as old growth.

Sarah Rees, President of The Central Highlands Alliance (a community organisation working on conservation issues in the region), has seen first-hand the existence of old growth forest in the Yarra tributaries catchments:

> "I have been in meetings with VicForests [the state body responsible for logging in Victoria] where they have admitted to logging old growth in the Central Highlands. I have been in the Yarra Tributaries and seen the logging coupes with old growth logged in them.'[24]

In any event, Dr Richard Benyon, Principal Research Scientist for the Water for a Healthy Country Flagship and CSIRO Forest Biosciences, explains the effect of logging in the Yarra tributaries according to the Kuczera curve:

> "Some of the forest (previously being old growth forest) in the Yarra tributaries was regenerated after a wildfire in 1939 (or possibly 1926), so it is now classified as 69-year-old regrowth. According to the Kuczera curve, water yield from 69-year-old mountain ash forest is about 350 mm per year (3.5 ML/ha/year) less than from old growth forest. Logging and regeneration converts the forest back to young regrowth. Harvesting a 69-year-old forest will result in an initial increase in annual water yield of about 550 mm. Within two or three years this will begin to decrease and within seven or eight years water yield will begin to be less than what it would have been had logging and regeneration not taken place. 25 years after logging, water yield will reach a minimum. Averaged over the next 100 years, a mountain ash forest harvested and regenerated this year will yield about 250 mm/year less stream flow than if the same forest was allowed to age naturally (assuming it can be protected from wildfire for that length of time).'[25]

Therefore, regardless of whether the forest being logged is regrowth from wildfires, or old growth, based on Dr Benyon's application of the Kuczera curve, a reduction of water yield is evident where logging of water catchments has occurred.

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[23] Interview, op cit.

[24] Interview with Sarah Rees, President, *The Central Highlands Alliance* (Melbourne, 3 June 2008).

[25] Email correspondence with Dr Richard Benyon, Principal Research Scientist, *Water for a Healthy Country Flagship* and *CSIRO Forest Biosciences* (8 May 2008).

The Macaque model

By comparison, the Macaque model further develops the idealised relationship of water yield versus stand age expounded in the Kuczera curve. The Macaque model takes into account spatial and temporal variation in forest type and forest age, incorporating variables such as topography, climate and land cover.[26] This physically-based model is used to simulate hydrological processes and predict the impact of changes in catchment vegetation on water yield.[27]

Overall, the Macaque model produces similar results to the Kuczera curve, inasmuch as catchment disturbance caused by logging results in a decline in water yield. However, the Macaque model also illustrates a substantial increase in water yield in the period immediately following logging, which is then followed by a decline.[28] This increase was not detected by the Kuczera curve.

2.3 *The Wood and Water project – Harvesting in State forests supplying water to Melbourne* ("The Wood and Water project")

Background and Policy Context

In 2002, the Melbourne Water Resources Strategy Committee[29] published a report titled *21st Century Melbourne: a WaterSmart City*. The report outlines a framework for the sustainable management of Melbourne's water resources over the next 50 years. In relation to forest management, the Committee recommends that:

> "Melbourne Water, within two years, undertakes hydrological studies and releases a report on the impact of logging on water yield in the Yarra tributaries and Tarago reservoir catchments

[26] M Peel et al, op cit, 7.

[27] P Feikema et al, op cit, 28.

[28] P Cornish and R Vertessy, op cit, 54.

[29] The Committee was established by the Minister for Environment and Conservation. Members of the Committee were appointed by the Minister.

> and the Government investigates the economic, social and environmental costs and benefits of establishing plantations to allow the phasing out of logging in these catchments".[30]

In response, Action 2.21 of the Victorian Government's White Paper, *Our Water Our Future: Securing Our Water Future Together*, states that (among other requirements):

- hydrological studies on the impact of logging on water yield of catchments in State forests supplying water to Melbourne will be undertaken; and
- options aimed at improving the water yield, including potential changes to management practices and phasing out logging in these areas will be developed.[31]

The Wood and Water project will provide information outlining the costs and benefits of logging in Melbourne's water supply catchments. The hydrological studies examine several catchment areas in State forest (the Thomson, the Yarra tributaries, the Tarago and the Bunyip) and develop water yield curves based on vegetation type, stand age and mean annual precipitation.[32]

The report also includes a sustainability assessment, analysing the economic, social and environmental costs and benefits of different forest management regimes.[33]

Complete publication of *The Wood and Water project* is expected during September 2008.

Hydrological modelling of water yield in *The Wood and Water project*

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[30] Water Resources Strategy Committee Report for the Victorian Government, *21st Century Melbourne: a WaterSmart City: Final Report – Summary* (2002) 17.

[31] Victorian Government White Paper, *Our Water Our Future: Securing Our Water Future Together* (2004) 36.

[32] P Feikema et al, op cit, 3.

[33] Department of Sustainability and Environment, *Wood and Water Project: Harvesting in State forests supplying water to Melbourne*, Interim Update (March 2008).

Part 1 - Hydrological studies ("Part 1") of the project outlines the hydrological model used in the project. The methodology adopted for deriving water yield curves is twofold: hydrological researchers (including Dr Lane) obtain data from application of the Macaque model, which are then amalgamated with the Woodstock Model[34] by the Department of Sustainability and Environment ("DSE"). This marriage of two yield-predicting models aims to assess various logging operations, and the effect on both timber and water yields.[35] As described by Dr Patrick Lane,[36] this enhanced application of the Macaque model was the most efficient and effective methodology for achieving the purposes of the project.

Results of *The Wood and Water project*

Part 2 – Hydrological studies ("Part 2") uses the results of Part 1 to investigate the impact on water yield of various catchment management scenarios.[37] According to Dr Lane, although the final results of Part 2 are due for release in September 2008, the water yield curves derived in Part 1 indicate a causal relationship between logging and reduced water yield in catchment areas.[38] As a result, Dr Lane suggests that the best outcome for water sustainability would be to stop clearfell logging practices in catchment areas.[39]

The results of *The Wood and Water project* are significant as water yield curves are derived from each individual catchment. Previous research has been confined to the Thomson reservoir and the Maroondah reservoir, the results of which cannot be used to accurately describe water yield in the Yarra tributaries due to variations in topography, vegetation and climate.

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[34] According to Dr Lane (refer to n 23), the Woodstock Model is used by the DSE to predict yield to determine timber-harvesting schedules.

[35] P Feikema et al, op cit, 4.

[36] Interview, op cit.

[37] Department of Sustainability and Environment, *Wood and Water Project: Harvesting in State forests supplying water to Melbourne*, Interim Update (March 2008).

[38] Interview, op cit.

[39] Interview, op cit.

2.4 Conclusion

- The Kuczera curve illustrates a generalised relationship between logging and water yield. These results are relative to logging of old growth Mountain Ash forest. Where regenerated forest is logged, the Kuczera curve still detects a reduction in water yield, although it is not as significant as that of old growth forest.

- The forest in the Yarra tributaries is comprised of both regenerated and old growth forest.

- The Macaque model also suggests that logging reduces water yield. However, these results have greater relevance as they are derived incorporating catchment variation, such as topography, climate and vegetation. Hydrological studies have applied the Macaque model to assess water yield in the Thomson (where logging takes place) and the Maroondah catchments (where logging does not take place).

- The initial results of *The Wood and Water project* confirm the findings of previous research, in that logging causes a decrease in water yield. These results are significant as they are derived according to the specific catchment characteristics of the Yarra tributaries.

- Therefore, despite slight variations in the methodologies of hydrological studies, it is possible to conclude that logging in the Yarra tributaries reduces water yield.

CHAPTER 3: THE LEGISLATIVE FRAMEWORK REGULATING LOGGING IN THE YARRA TRIBUTARIES

3.1 Introduction

There are a number of Victorian and Commonwealth Acts of parliament that are relevant to the Yarra tributaries. These Acts enable logging to be carried out in the Yarra tributaries. In contrast, they also include provisions to maintain and conserve the water supply derived from the Yarra tributaries.

3.2 *Sustainable Forests (Timber) Act 2004* (Vic) and the Sustainability Charter

The *Sustainable Forests (Timber) Act 2004* (Vic) ("SFTA") legislates the logging of State forests by VicForests, whereby the Minister responsible for the environment allocates "timber resources" to VicForests that it is allowed to log.[40] VicForests, a State body, is able to log this State forest for commercial purposes. The Yarra tributaries include State forest (refer to Figure 1).

The SFTA requires VicForests to comply with a code called the *Code of Forest Practice for Timber Production* ("the Code").[41] It is created under a separate piece of legislation (outlined at Chapter 3.3). The Code attempts to impose mandatory practices on VicForests with a view to enabling logging in water catchments whilst at the same time preserving the water resource.

The SFTA enables employees of the DSE (referred to as "authorised officers") to suspend logging where continuation would pose an "imminent threat to the environment".[42] If logging in the Yarra tributaries is such a threat, this section of the SFTA enables the Government to stop logging in the Yarra tributaries. This section has never been enforced.

Sustainability Charter for Victoria's State Forests

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[40] *Sustainable Forests (Timber) Act 2004* (Vic) s 13(a).

[41] Ibid s 46(a). The Code is outlined at Chapter 3.3.

[42] Ibid s 71(b)(i).

The SFTA purports to establish a framework for ensuring "sustainable forest management" in State forests. The concept of sustainable forest management is interrelated with that of "ecologically sustainable development" ("ESD"). The objectives of ESD include to "enhance individual and community wellbeing,"[43] to "provide equity within and between generations,"[44] and to "protect biological diversity and maintain essential ecological processes and life-support systems."[45] In order to promote these objectives, the Minister responsible for the environment must determine criteria and indicators for sustainable forest management, and may also create a Sustainability Charter.

The Minister did create a Sustainability Charter ("the Charter") in 2006. Two particular objectives of the Charter are relevant:

1. To maintain and conserve the soil and water resources of State forests.[46]

   The Charter identifies the Victorian Government's Water White Paper, *Our Water Our Future: Securing Our Water Future Together (2004)*, as "providing an integrated management strategy to help conserve the water resources of our State forests."[47] The Charter recognises the impact of forest-based activities such as logging on water quality and resolves to monitor water resources and report back to the community with the results.[48] There has not yet been any such reporting. Meanwhile, logging in water catchments including the Yarra tributaries continues.

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[43] Ibid s 5(3)(a).

[44] Ibid s 5(3)(b).

[45] Ibid s 5(3)(c).

[46] Department of Sustainability and Environment, *Sustainability Charter for Victoria's State Forests* (May 2006) 3.

[47] Ibid 5.

[48] Ibid.

2. To ensure Victoria's legal, institutional and economic frameworks effectively support the sustainable management of State forests.[49]

   The Charter recognises that consistent monitoring and reporting on the condition of the State forests is integral to maintaining sustainable forest practices. According to the Charter, this system of review improves knowledge, understanding and awareness of the values associated with State forests.[50] Additionally, the Victorian Government is to conduct high quality research and development into sustainable forest management, which in turn will provide a basis for informed policy making and development.[51]

3.3 *Conservation, Forests and Lands Act 1987* (Vic) and the Code

The objective of the *Conservation, Forests and Lands Act 1987* (Vic) ("CFLA") is to establish a legislative framework under which the Minister responsible for the environment can be "an effective conserver of the State's lands, waters, flora and fauna"[52] and allows the Minister to implement productive uses of the lands, waters, flora and fauna that are "environmentally sound, socially just and economically efficient."[53]

As mentioned above, the CFLA regulates the making of Codes of Practice. The Minister may make Codes of Practice, which specify standards and procedures for the carrying out of any objects or purposes of a relevant law.[54] A public authority, including VicForests, must not take action contrary to a Code of Practice.[55]

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[49] Ibid 3.

[50] Ibid 7.

[51] Ibid.

[52] *Conservation, Forests and Lands Act 1987* (Vic) s 4(a).

[53] Ibid s 4(b).

[54] Ibid s 31(1).

[55] Ibid s 67(1).

The Code of Practice for Timber Production 2007 ("the Code")

The Code is a statutory document pursuant to the CFLA. The Code applies to all land in Victoria, both public and private, that is being used, or intended to be used for timber production and is applicable to the State forest in the Yarra tributaries. Several statutes, including the CFLA, Forests Acts and SFTA require forest operations to comply with the Code.

The Code governs the management of timber production in order to fulfil various "objectives". These objectives include the development of an "economically viable timber industry", the promotion of the conservation of environmental, social and cultural values and "ecologically sustainable management for ongoing timber production", and the enhancement of public confidence in the management of Victoria's forests.[56]

In addition to these broad purposes, the Code outlines seven specific principles, intended to be consistent with the objectives of the Sustainability Charter for Victoria's State forests (refer to Chapter 3.2).

The fourth Code principle is that soil and water assets within forests are conserved, and river health is maintained or improved.[57]

To give effect to this principle, the Code creates mandatory actions that must be undertaken to ensure the maintenance of water quality, soil protection and river health. Mandatory actions include the proper management and disposal of waste products, minimising the crossing of waterways and maintaining buffer and/or filter strips to each side of the waterway of sufficient width.[58]

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[56] Department of Sustainability and Environment, *Code of Practice for Timber Production* (2007) 5.

[57] Ibid 8.

[58] Ibid 18.

The Code outlines fourteen Forest Management Areas ("FMAs") in Victoria. The FMAs relevant to the Yarra tributaries are Central, Dandenong and Central Gippsland.[59] The Code provides that Forest Management Plans ("FMPs") are prepared for all FMAs in State forests in Victoria in accordance with the *Forests Act 1958* (Vic).[60] The relevant FMP is the Central Highlands FMP ("CH FMP") as outlined above. The CH FMP incorporates all three relevant FMAs. The Code requires that FMPs relevant to each FMA must satisfy certain obligations, one of which is to provide for the maintenance or enhancement of water quality, water quantity and river health.[61]

3.4 *Forests Act 1958* (Vic) and the Central Highlands FMP

The significance of the *Forests Act 1958* (Vic) ("the Forests Act") to the Yarra tributaries is that it enables "working plans" to be prepared and put into action. The applicable plan relevant to the Yarra tributaries is the CH FMP, which contains guidelines for the taking of "forest produce".[62]

The CH FMP outlines three aims in relation to streams and catchments:

1. to maintain biological values associated with rivers and streams;
2. to ensure water quality is suitable for current and likely future use; and
3. to maintain at least current water yields from catchments used for domestic and irrigation water supply.[63]

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[59] Ibid 12.

[60] Ibid 13.

[61] Ibid.

[62] *Forests Act 1958* (Vic) s 22.

[63] Department of Environment and Sustainability, *Forest Management Plan for the Central Highlands* (May 1998) 38. Note that the name of the Department responsible for the environment has changed since the CH FMP was made, as it was then the Department for Natural Resources and Environment.

The CH FMP refers to Kuczera's study of water yield,[64] which identifies regenerating Mountain Ash forests as using more water than natural forests.[65] The CH FMP requires more research to be undertaken in order to accurately assess any correlation between logging and water yield, particularly in mixed-species forests.[66]

The CH FMP designates certain areas as Special Water Supply Catchments, which form the basis for Special Area Plans. Special Water Supply Catchment Areas are identified as such due to recognition of their significance as water supply areas under the *Water Act 1989* (Vic) ("the Water Act"), which is referred to at Chapter 3.6. Appendix R of the CH FMP outlines these areas.

The Yarra tributaries are categorised as restricted access catchments, and are therefore managed by agreement between Melbourne Water and the DSE.[67] In these restricted access catchments, a maximum of 30% of the catchment is to be logged in a 10-year period, and only one of the four areas can be logged in a year.[68]

The CH FMP includes a capacity for review. However, the review is not mandatory, nor is performing a review legally binding. Reassessment and refinement of the CH FMP may be undertaken where changes in government policy, community expectations, technology or timber market conditions occur, or new information emerges.[69]

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[64] Refer to Chapter 2.2.

[65] Department of Environment and Sustainability, *Forest Management Plan for the Central Highlands* (May 1998) 38.

[66] Ibid 39.

[67] Department of Environment and Sustainability, *Forest Management Plan for the Central Highlands*, Appendices (May 1998) 60.

[68] Ibid.

[69] Department of Environment and Sustainability, *Forest Management Plan for the Central Highlands* (May 1998) 74.

This CH FMP applies until 2008 or until other circumstances warrant a major review.[70]

3.5 *Regional Forest Agreements Act 2002* (Cth) and the Central Highlands RFA

Under the *Regional Forest Agreements Act 2002* (Cth) ("RFA Act"), Regional Forest Agreements ("RFAs") give effect to obligations of the Commonwealth[71] by way of agreement between the Commonwealth and a State in respect of the forest in a region or regions. The RFA must have regard to the following:

- environmental values;
- indigenous heritage values;
- the economic value of forested areas and forest industries;
- social values; and
- principles of ESD.

Furthermore, the RFA must provide for a comprehensive, adequate and representative forest reserve system, and operate to ensure the long-term stability of forests and forest industries.[72]

The Act outlines that Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ("the EPBC Act") does not apply to RFA logging operations undertaken within the parameters of an RFA.[73] This means that logging can take place in threatened species habitat which is prevalent in the Yarra tributaries. The EPBC Act is discussed further at Chapter 3.7.

<u>The Central Highlands Regional Forest Agreement</u>

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[70] Ibid.

[71] *Regional Forest Agreements Act 2002* (Cth) s 3(a).

[72] Ibid s 4.

[73] Ibid s 6(4).

The Central Highlands Regional Forest Agreement ("the CH RFA") applies to the Yarra tributaries and establishes the framework for the management of logging in the Central Highlands, as agreed by the Commonwealth and Victorian Governments as the CH RFA is an agreement between those two parties. The CH RFA outlines both legally binding and non-binding obligations.

Under the CH RFA, Victoria confirms its commitment to the ongoing implementation of its plans, codes and prescriptions relevant to achieving "ecologically sustainable forest management".[74] However, the Commonwealth and Victorian Governments have expressly agreed that this provision is not legally binding. Therefore, it is intended that commitment to this obligation is discretionary.

Furthermore, the CH RFA recognises the catchment areas of the Central Highlands region (which includes the Yarra tributaries) as integral to Melbourne's water supply.[75] As a result, the CH RFA specifies forming a "long-term timber harvesting and water production strategy" for the Thomson Reservoir.[76] However, the CH RFA does not outline such provisions for other catchment areas in the Central Highlands, such as the Yarra tributaries. More generally, the CH RFA acknowledges forest uses other than logging, which are to be determined in accordance with Victorian legislation, giving due regard for protection of environmental and heritage values.[77] Again, this recognition of the importance of water catchment areas and other forest uses is not legally binding, enforcing no obligation to uphold or implement this acknowledgement.

3.6 *Water Act 1989* (Vic)

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[74] *The Central Highlands Regional Forest Agreement 1998* s 33.

[75] Ibid s 81.

[76] Ibid.

[77] Ibid s 77.

In the context of the legislative framework governing logging in the Yarra tributaries, the Water Act makes water corporations, such as Melbourne Water, responsible for managing Melbourne's water supply.

A specific purpose of the Water Act is to provide for the protection of catchment conditions.[78] More generally, the Water Act also seeks to ensure water resources are conserved and properly managed for "sustainable use",[79] and to provide a framework to protect and enhance environmental qualities of waterways and their in-stream uses.[80]

The Water Act provides for the assessment of and accounting for water. To uphold this purpose, the Minister responsible for the environment must ensure that "sustainable water strategies" are undertaken by the State in accordance with the Act.[81] These sustainable water strategies are discussed above (at Chapter 2.3), which outlines the policy context of the Victorian Government's report, *21st Century Melbourne: a WaterSmart City (2002)*.

The Water Act regulates water corporations, including Melbourne Water. Melbourne Water must have regard to various principles in performing its functions, exercising its power and carrying out its duties. These principles include a fundamental consideration for conserving "ecological integrity"[82] and the need to ensure "sustainable management of water resources."[83] Melbourne Water must also encourage and facilitate community involvement in the making and implementation of arrangements relating to the use, conservation and management of water resources.[84]

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[78] *Water Act 1989* (Vic) s 2(k).

[79] Ibid s 2(d).

[80] Ibid s 2(j).

[81] Ibid s 22(ac).

[82] Ibid s 93(d).

[83] Ibid s 93(a).

[84] Ibid s 93(b).

The Water Act outlines specific functions of Melbourne Water, one of which is to manage, operate, maintain and protect water storages for the collection, harvesting, storage, treatment and distribution of water.[85]

3.7 *Environment Protection and Biodiversity Conservation Act 1999* (Cth)

Part 3 of the EPBC Act provides for protection of the environment from actions involving Commonwealth land. A person or body corporate must have approval of activities involving Commonwealth land, and must not undertake action that has, will have or is likely to have a significant impact on the environment.[86] Part 3 also requires approval of activities of Commonwealth agencies significantly affecting the environment.[87]

As discussed at Chapter 3.5, Part 3 of the EPBC Act does not apply to logging operations undertaken according to a valid RFA.[88] This suggests that, given RFA logging operations do have a significant impact on the environment, the exemption needs to be in place to enable logging to proceed at all. This exemption does not take into consideration the existence of water catchments in an RFA area, nor the prevalence of habitat of threatened species listed in the EPBC Act.

3.8 Conclusion

This diagram summarises the legislative framework that enables the logging of the Yarra tributaries. This diagram illustrates the interrelated system that governs logging operations. Clearly, this framework is complex, and as such, the efficacy of this system is discussed in Chapter 5.

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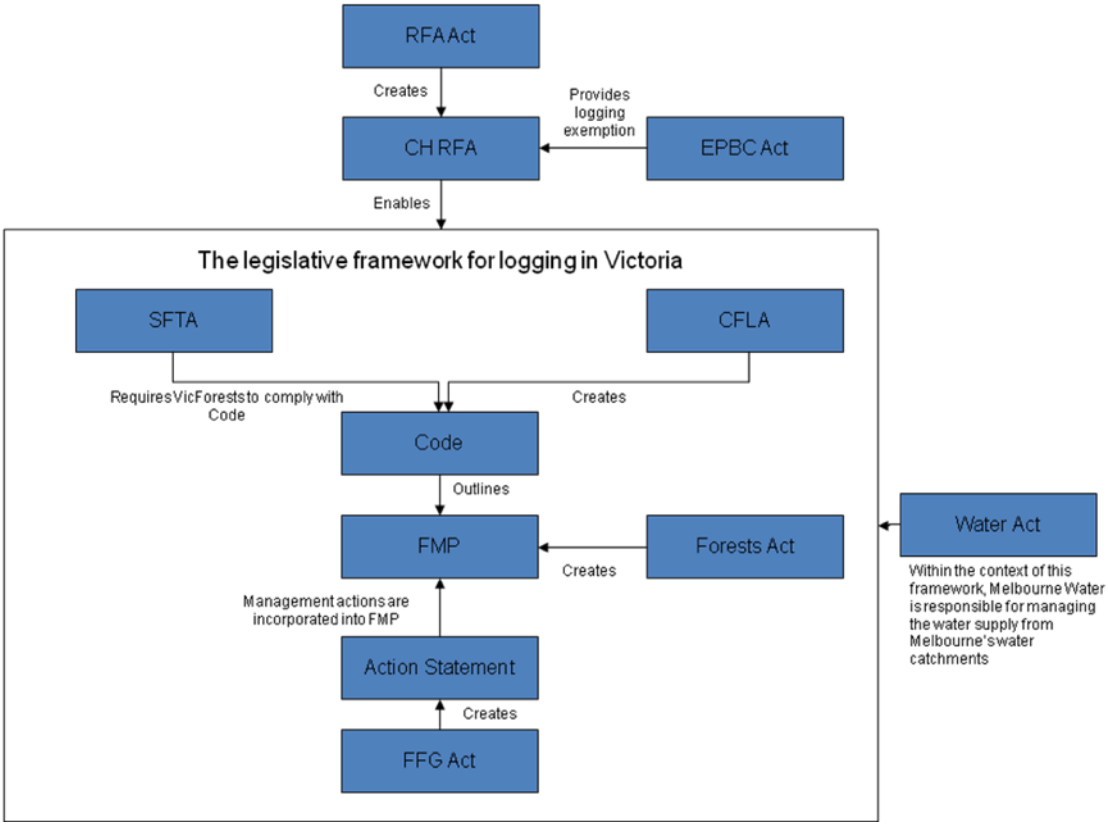
[85] Ibid s 171B(e).

[86] *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) s 26(1).

[87] Ibid s 28(1).

[88] Ibid s 38(1).

Figure 3: Diagram of Legislative Framework



CHAPTER 4: LEGISLATIVE PROTECTION OF ENDGANGERED SPECIES: THE LEADBEATER'S POSSUM

4.1 Introduction

In addition to the effect of logging on water yield, logging in the Yarra tributaries has broader environmental consequences. This chapter will consider the impact of logging on threatened species that inhabit the Yarra tributaries, in particular, the Leadbeater's Possum. The Leadbeater's Possum is endemic to the Yarra tributaries. Relevant legislation is the Victorian *Flora and Fauna Guarantee Act 1988* ("the FFG Act").

4.2 The Leadbeater's Possum

Current species status

The Leadbeater's Possum is listed as a threatened taxon under Schedule Two of the FFG Act.[89] Additionally, the Leadbeater's Possum is listed as endangered under the EPBC Act.[90] According to the IUCN,[91] when assessed in 1996, the population of the Leadbeater's Possum was estimated at 5000 individuals. This assessment expected the population to endure further fragmentation and decline.[92] In 2007, Professor David Lindenmayer estimated the current population to be approximately 2000 individuals,[93] illustrating dramatic decline.

Habitat requirements

The Leadbeater's Possum was rediscovered in 1961 and has since been confined to inhabiting the Montane Ash forests of the Central Highlands.[94] As outlined at Chapter 2.1, these forests are largely comprised of three eucalypt species: the Mountain Ash, the Alpine Ash and the Shining Gum. The survival of the Leadbeater's Possum depends on its ability to inhabit the hollows of these trees for nesting and shelter. According to Professor David Lindenmayer's research on the ecology and habitat requirements of the Leadbeater's Possum, it takes eucalypt between 120 to 200 years to develop hollows. As such, logging rotation schedules of between 50 to 120 years preclude the recruitment of hollow-bearing trees.[95]

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[89] *Flora and Fauna Guarantee Act 1988* (Vic) Schedule 2.

[90] Department of the Environment, Water, Heritage and the Arts (2008) 'Species Profile and Threats Database: *Gymnobelideus leadbeateri* – Leadbeater's Possum', viewed 4 June 2008, <http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=273>.

[91] International Union for Conservation of Nature and Natural Resources.

[92] IUCN Red List of Threatened Species (1996) 'Gymnobelideus leadbeateri: *the Leadbeater's Possum*', viewed 13 May 2008, <http://www.iucnredlist.org/search/details.php/9564/summ>.

[93] Peter Weekes, 'State's Emblem Nearly Extinct', *The Sunday Age* (Melbourne), 5 August 2007, accessed 3 June 2008, <http://www.theage.com.au/news/national/states-emblem-nearly-extinct/2007/08/04/1185648212901.html>.

[94] Department of Sustainability and Environment, *Flora & Fauna Guarantee Action Statement: Leadbeater's Possum* (1995) 1.

[95] Australian National University Centre for Research and Environmental Studies (2006) 'David Lindenmayer's Research on the Ecology and Habitat Requirements of the Leadbeater's Possum', viewed 4 June 2008, <http://cres.anu.edu.au/dbl/lbpossumdbl.php>.

4.3 *Flora and Fauna Guarantee Act 1988* (Vic)

The FFG Act establishes a framework for the conservation and management of Victorian biodiversity. The purpose of the FFG Act is to conserve native Victorian flora and fauna and to manage potentially threatening processes.[96]

Furthermore, public authorities must be administered so as to have regard to the objectives of the FFG Act.[97] A public authority is defined as a body established for a public purpose by or under any Act,[98] for example, VicForests.[99] Ensuring public compliance gives integrity to the practical application of the FFG Act's objectives. As a result, the FFG Act is Victoria's primary piece of environmental protection legislation.

The FFG Act outlines several methods for implementing these objectives of environmental protection. These include a Flora and Fauna Guarantee Strategy, Action Statements and management plans.

- The Strategy must be prepared as soon as possible, outlining how the conservation and management objectives are to be achieved.[100]

- The Action Statement must also be prepared, detailing what has been done to conserve and manage a particular taxon or community of flora or fauna, and what is intended to be done.[101] The Action Statement may also include information on what needs to be done.[102]

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[96] *FFG Act 1988*, op cit, s 1.

[97] Ibid s 4(2).

[98] Ibid s 3.

[99] *State Owned Enterprises Act 1992* (Vic) ss 14(1)-(5).

[100] *FFG Act 1988*, op cit, s 17(1).

[101] Ibid s 19(2).

[102] Ibid.

- Management plans may also be prepared at the discretion of the Secretary.[103] If prepared, the management plan must include details of the taxon or community or potentially threatening process, the objectives of conservation and management, the social and economic consequences of the plan, and the schedule for review of the plan.[104]

Additionally, it is worth noting that the protective provisions of the FFG Act are excluded where logging is conducted in areas containing flora listed as threatened under the FFG Act. The *Flora and Fauna Guarantee (Forest Produce Harvesting) Order 1998* authorises the taking of protected flora from State forests, where such taking is the result of logging.[105] However, a similar exclusion in areas of threatened fauna does not exist. Therefore, the protection afforded by the FFG Act remains intact and applies to logging operations conducted in the threatened species habitat in the Yarra tributaries.

4.4 Flora and Fauna Guarantee Action Statement: Leadbeater's Possum

The Action Statement specifically prepared for the Leadbeater's Possum was first published in 1995. Although not a revision of the Action Statement, the most recent version was prepared for web publication in 2003.[106] The Action Statement includes details of description and distribution of the Leadbeater's Possum, its conservation status, management issues affecting the Leadbeater's Possum and management actions designed to resolve these issues. The Action Statement also outlines the applicable legislative powers.

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[103] Ibid s 21(1).

[104] Ibid ss 23(1)(a)-(d).

[105] Flora and Fauna Guarantee (Forest Produce Harvesting) Order 1998 (17 December 1998) G 50 *Victoria Government Gazette* 3087, 3088.

[106] Department of Sustainability and Environment, *Flora & Fauna Guarantee Action Statement: Leadbeater's Possum* (1995) 1.

Intended management actions include a revision of the current zoning system, and measures for logging coupe planning and harvesting, such as ensuring the protection of hollow trees (essential for Leadbeater's Possum habitat), and continued research into the adoption of alternative silvicultural methods. According to the Action Statement, these intended actions should be incorporated into the Forest Management Plan.

The CH FMP outlines land use within the known distribution of the Leadbeater's Possum, including where logging is permitted and prohibited. The CH FMP provides for habitat classification and management, detailing a system of retaining habitat for the Leadbeater's Possum.[107]

4.5 The Impact of Logging on the Leadbeater's Possum

Under the FFG Act, a "potentially threatening process" is defined as "a process which may have the capability to threaten the survival, abundance or evolutionary development of any taxon or community of flora or fauna."[108] A potentially threatening process is eligible for listing if, in the absence of appropriate management, it poses or has the potential to pose a significant threat to the survival or evolutionary development of a range of flora or fauna.[109] Any person may nominate a potentially threatening process to be added to the Processes List.[110]

The current rate of logging exceeds the time it takes for sufficient tree hollows to develop. As a result, there is a current critical shortage of nest sites, a shortage that will continue for the next 100 to 300 years given current logging practices.[111] According to Lindenmayer and Ough, as a result of clearfelling, "hollow-bearing trees

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[107] CH FMP 21-22.

[108] *FFG Act 1988*, op cit, s 3.

[109] Ibid s 11(3).

[110] Ibid s 12(1).

[111] Australian National University Centre for Research and Environmental Studies (2006) 'Leadbeater's Possum Home page', viewed 13 May 2008, <http://cres.anu.edu.au/dbl/lbpossumhp.php>.

and their dependent fauna are significantly reduced in abundance. An 80-year clearfelling rotation will render large areas of forest unsuitable for cavity dependent animals."[112] This will directly impact the population of the Leadbeater's Possum.

Furthermore, this issue is identified in the Action Statement for the Leadbeater's Possum. The Action Statement recognises the difficulty in reconciling logging operations and environmental protection. Two problems arise from the current practice of clearfelling. Firstly, this practice subjects the forest to high intensity fire and varying degrees of exposure.[113] As a result, it cannot be guaranteed that trees will remain standing through the following rotation. Secondly, the 80-year rotation period is an insufficient time period to allow for hollows in the trees to develop.[114]

4.6 Conclusion

The current vulnerability of the Leadbeater's Possum can be attributed to a shortage of suitable habitat hollows. The rate at which logging occurs does not allow for sufficient regrowth and development of habitat trees, illustrating deficiencies in the management of logging practices. Consequently, it is reasonable that current logging operations are considered a potentially threatening process under the FFG Act.

4.7 Recommendations

- Logging in habitat areas must be listed as a potentially threatening process under the Act.

- Logging management must be reviewed in order to develop sustainable rates of logging, if logging is to continue.

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[112] D B Lindenmayer & K Ough, 'Salvage Logging in the Montane Ash Eucalypt Forests of the Central Highlands of Victoria and Its Potential Impacts on Biodiversity' (August 2006) 20(4) *Conservation Biology* 1005, 1007.

[113] Department of Sustainability and Environment, *Flora & Fauna Guarantee Action Statement: Leadbeater's Possum* (1995) 3.

[114] Ibid.

- Ideally, logging should be excluded from habitat areas to compensate for the damage already inflicted and to allow for sufficient forest regeneration in the Yarra tributaries.

CHAPTER 5: ASSESSMENT OF THE LEGISLATIVE FRAMEWORK REGULATING LOGGING IN THE YARRA TRIBUTARIES

5.1 Introduction

In light of the above outline of the relevant Acts and other instruments regulating logging in water catchments (Chapter 3), it is necessary to assess the efficacy of this framework. This assessment will consider whether the current legal mechanisms are sufficient in their endeavours to conserve and manage Victoria's State forest in the Yarra tributaries. The conclusions outlined in this report are reached by means of comparing the legislative provisions to the relevant research relating to water yield (Chapter 2) and the Leadbeater's Possum (Chapter 4).

In particular, two aspects of the legislative framework must be considered:

1. the effectiveness of the principles of ESD; and
2. the inadequacies of the RFA process in protecting water catchment areas.

5.2 Principles of "ESD" in Theory and Practice

A common thread between the pieces of legislation and other instruments of regulation is a purported adherence to the principles of ESD. The SFTA defines ESD as development that "improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends."[115] According to the EPBC Act, the principles of ESD include the following:

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[115] *SFTA 2004*, op cit, s 2.

- decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;[116]

- if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;[117] and

- the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.[118]

The SFTA, the Code, the Water Act, the EPBC Act and the CH RFA all refer to these principles. However, as outlined in Chapter 2, hydrological studies illustrate that logging adversely impacts water yield in catchment areas. This fact is at odds with the principles of ESD. In terms of these principles, logging in water catchment areas fails to uphold these principles because:

- Decision-making processes have not effectively integrated economic, environmental, social and equitable considerations. In the current context of Melbourne enduring its tenth year of drought, it is not socially interested, equitable or environmentally sustainable to continue logging in water catchment areas, to the detriment of water yield.

- A lack of research regarding the impact of logging on water yield in mixed species forests is acknowledged in the CH FMP. Yet, the CH FMP also recognises the findings of the Kuczera curve, illustrating a causal relationship between logging and reduced water yield. According to principles of ESD,

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[116] *EPBC Act 1999*, op cit, s 3A(a).

[117] Ibid s 3A(b).

[118] Ibid s 3A(d).

this lack of research should not be used as an excuse for continuing logging practice, despite resulting in environmental degradation.

- As outlined above, the current rate of logging in the Central Highlands directly impacts the availability of suitable habitat trees for the Leadbeater's Possum. As a result, the population of the Leadbeater's Possum has endured significant decline. Therefore, the continuation of logging in these areas contradicts the principle that conservation of biodiversity should be a fundamental consideration in decision-making.

Conclusion

An objective of the Sustainability Charter is to ensure Victoria's legal, institutional and economic frameworks effectively support the sustainable management of State forests.[119] However, the dissonance between theory and application of the principles of ESD undermines the integrity of Victoria's legislative framework regulating logging in the Yarra tributaries.

5.3 The Regional Forest Agreement System

The Commonwealth Department of Agriculture, Fisheries and Forestry ("DAFF") describe the 20-year Regional Forest Agreements as attempting to "balance the full range of environmental, social, economic and heritage values that forests can provide for current and future generations."[120] The RFA process "plans for the conservation

[119] Department of Sustainability and Environment, *Sustainability Charter for Victoria's State Forests* (May 2006) 3.

[120] Department of Agriculture, Fisheries and Forestry (2007) 'About RFAs: RFAs Why?', viewed 28 May 2008, <http://www.daff.gov.au/rfa/about/why>.

and management of Australia's native forests."[121] As a result, the RFA process renders the Victorian Government responsible for ensuring forest resource security and sustainability.

In the context of water catchments located within State forest that are subject to logging, some inadequacies emerge from the RFA process as a system of environmental protection and management.

The following issues must be considered.

5.3.1 The exclusion of environmental protection legislation from water catchment areas subjected to logging

The EPBC Act affords the most far-reaching legislative provisions for environmental protection, conservation and management. However, protective provisions of the EPBC Act do not apply to areas where logging is undertaken within the parameters of a valid RFA.[122] This exclusion may be justifiable in some areas of State forest, where logging is an appropriate practice. It is beyond the scope of this report to consider whether all logging operations are environmentally sound. However, where RFA logging occurs in water catchment areas and threatened species habitat, it is inappropriate for the protective measures of conservation and sustainability outlined in the EPBC Act to be excluded from application.

As the primary piece of federal environmental protection legislation, the EPBC Act should contain provisions for the protection of water catchment areas situated in areas of State forest reserved for logging, rather than an indiscriminate exclusion where a valid RFA exists.

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[121] Department of Agriculture, Fisheries and Forestry (2007) 'Regional Forest Agreements Home', viewed 28 May 2008, <http://www.daff.gov.au/rfa>.

[122] *EPBC Act 1999*, op cit, s 38(1).

As further discussed at Chapter 5.3.2, the RFA itself is not a reliable instrument of environmental protection as significant obligations under the Agreement are non-binding.

Conclusion

This report does not contend that all RFAs are ineffective instruments in governing logging operations. Rather, the CH RFA is a deficient instrument of forest management as it does not recognise the exceptional environment of the Central Highlands, namely as an area integral to Melbourne's water supply and endemic threatened species. In this context, the Commonwealth's primary piece of environmental protection legislation should not be excluded from application to logging in the Yarra tributaries.

5.3.2 The non-binding nature of RFA obligations

As aforementioned, the CH RFA consists of both binding and non-binding obligations. The Commonwealth and Victorian Governments expressly agree that the following obligations are non-binding:

- within each five-year period, a review of the performance of the Agreement will be undertaken;[123] and
- the outcomes of the review will be made public. The mechanism for the review will be determined by both Parties before the end of the five year period and the review will be completed within three months.[124]

Since 1998, when the CH RFA was signed, no review has been conducted. Although this breaches no binding obligation, the failure to review the performance of the CH RFA suggests a lack of transparency in forest management. Additionally, the failure

[123] *RFA Act 2002*, op cit, s 36.

[124] Ibid s 38.

to review demonstrates a lack of willingness to engage with the public regarding the implementation of the CH RFA.

Furthermore, even if such obligations *were* binding, due to the very nature of contract law, in order for the obligation to be enforceable, the Commonwealth Government would have to sue the Victorian Government, or vice versa. Considering the current political climate in which the Australian Labor Party forms the government at both Commonwealth and State levels, and in any event, this is not practically conceivable.

Recommendation

The Commonwealth and Victorian Governments should undertake a review of the CH RFA in accordance with the State's obligations outlined in the Agreement, regardless of their status as non-binding.

5.3.3 Inconsistent political policy: the Otway Ranges watershed

Introduction

The Otway Ranges include important water catchment areas, supplying water to 300,000 people in the region of Geelong, the Bellarine Peninsula, the Great Ocean Road, Colac, Warrnambool and inland towns.[125] These areas of former State forest were subject to logging under the West Victoria Regional Forest Agreement ("West RFA"), signed in 2000 by the then Bracks Government.

The 2002 Victorian State Election

[125] Otway Ranges Environment Network (2008) 'Clearfell Logging in the Otway Forested Catchments: Water Yield and Water Quality Issues', viewed 27 May 2008, <http://www.oren.org.au/issues/water/report/impact.htm>.

In 2002, prior to the State election, the Bracks Government released the *Forests and National Parks* policy document. This document included the following commitments:

1. Labor will immediately reduce wood chipping and logging in the Otways by 25%, following the surrender of a major timber licence.
2. Labor will create a single national park, extending from Anglesea to Cape Otway. This will protect key areas of the Otways.[126]

This volte-face by the former Bracks Government undermines the validity of the RFA process. The Bracks Government signed the West RFA in 2000, and yet in 2002 committed to end clearfell logging in the Otways and to create a continuous national park, reversing long-standing Labor forest policy.

A report conducted by the Allens Consulting Group for VAFI states that:

> "The industry representative interviewed in the course of this project generally regarded the Otways decision as a watershed and felt that they no longer felt there was no longer any policy certainty as regards the future resources available for harvesting."[127]

The Government's changeable approach to logging policy does not engender confidence in the management of Victoria's State forests. Inconsistency is not only evident in the Government's handling of the Otway Ranges, but generally in logging policy. Steve Bracks' Labor Party 1999 Election Platform included the key priority of "strongly protecting Victorian water catchment areas, and excluding logging in closed water catchments."[128] The priority has not been honoured, as logging continues in closed water catchments, including the Yarra tributaries.

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[126] Otway Ranges Environment Network (2008) 'State Government Otway Policies 2002', viewed 27 May 2008, <http://www.oren.org.au/campaign/politics/alppolicy.htm>.

[127] Report to the Victorian Association of Forest Industries, 'Victoria's Forest Industries: an Economic Impact Assessment', The Allen Consulting Group (March 2006) 47.

[128] Australian Labor Party, *Our Natural Assets: Valuing Victoria's natural environment* (1999) 21.

The inconsistent political management of logging in the Otway Ranges exemplifies the inadequacies of the RFA process itself, inasmuch as the reversal of the West RFA recognises an insufficiency in RFA's ability to protect water catchment areas in State forest. Furthermore, this reversal suggests that RFAs are easily dispensable, in instances where public pressure is strong enough to force political change.

Implications of the West RFA reversal for the Central Highlands

The reversal of the West RFA only two years following its signing by the Bracks Government suggests that government approach to forest policy is fluid. Therefore, the current permissibility of logging in the Yarra tributaries will depend on the community's ability to influence government policy.

In terms of logging in the Yarra tributaries, the following is worth noting:

- Eleven local councils, representing just fewer than two million people, have passed resolutions to end logging in Melbourne's water catchments. The following councils have signed motions opposing logging: Yarra, Cardinia, Kingston, Moreland, Knox, Port Phillip, Maroondah, Bayside, Whitehorse, Yarra Ranges and Melbourne.[129]

- A petition of 901 signatures opposing logging in the Yarra tributaries catchments was presented to the Legislative Assembly (6 May 2008) by the Member of the Legislative Assembly for Gembrook, Ms Tammy Lobato.[130]

These measures reflect growing community concern regarding the current practice of logging in the Yarra tributaries and the need to ensure sustainable management of Melbourne's water supply. As illustrated by the diversity of local councils opposed to

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[129] The Central Highlands Alliance (2008) 'Home: The Central Highlands of Victoria', viewed 27 May 2008, <http://www.tcha.org.au/Home.html>.

[130] Victoria, *Parliamentary Debates* (Hansard), Legislative Assembly, 6 May 2008, 1478 (Tammy Lobato, Gembrook).

logging in the Yarra tributaries, this concern is not limited to those directly involved with logging operations or residing in the Central Highlands.

Conclusion

The Victorian Government's phasing out of logging in the Otway Ranges implies that community action has significant sway in remedying the inadequacies of the legislative RFA process. The cancelling of the West RFA undermines the RFA process, inasmuch as the Victorian Government was unwilling to stand by its original convictions and policies regarding the West RFA.

5.4 Conclusion and Recommendations

- The principles of "ecologically sustainable development" purport to promote sustainable conservation and management practices. However, logging operations in the Yarra tributaries do not effectively implement and uphold these principles.

- Application of the EPBC Act should not be excluded where an RFA governs logging practices in areas of water catchment and threatened species habitat. To remedy this exclusion, s 38 of the EPBC Act should be amended and/or removed.

- The Commonwealth and Victorian Governments must review the CH RFA in accordance with the State's obligations to do so, despite the parties having agreed that the obligation to review is not mandatory. To do so will give greater integrity and transparency to the RFA process.

- The cancellation of the West RFA by the Bracks Government highlights inconsistency and variability in the Government's management of logging practices.

- Additionally, this cancellation establishes a precedent, demonstrating that the Victorian Government has sufficient power to overturn the CH RFA in order to protect water catchments and threatened species habitat

- Community pressure will draw attention to the inadequacies of the RFA process

CHAPTER 6: CONCLUSION

The inherent complexity of the legislative framework governing logging in the Yarra tributaries necessitates an overhaul of logging management and practices. The multifarious nature of this system manifests inconsistency, inasmuch as the legislation struggles to reconcile the objectives of promoting sustainable management and environmental protection, and the practice of enabling logging to continue.

The effects of logging of the State forest in the Yarra tributaries water catchments are twofold: logging both reduces water yield from the area, and reduces the habitat of species endemic to the area. Current regulatory instruments, in particular the CH RFA, do not sufficiently recognise the exceptional environmental significance of the Yarra tributaries, as a contributor to Melbourne's water supply and as essential to the survival of the Leadbeater's Possum.

As a result, logging in the Yarra tributaries should be stopped until legislative reform creates adequate mechanisms of environmental protection and conservation which prohibits it.

Ultimately, this report recommends that the system be stringently reviewed and amended accordingly. In place of the current complex, multi-layered system regulating logging operations, a more streamlined framework is preferable.

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Legislation

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Sustainable Forests (Timber) Act 2004 (Vic).

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