

Forest Audit Program

2012-13 AUDIT OF HARVESTING AND COUPE CLOSURE

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Executive summary

Audit scope

The former Department of Sustainability and Environment (DSE; now Department of Environment and Primary Industries, DEPI) commissioned Sinclair Knight Merz (SKM) to conduct an audit of timber harvesting and coupe closure as part of its Forest Audit Program (FAP) activities for the 2012-13 financial year. The audit was conducted as a statutory environmental audit under the auspices of the *Environment Protection Act 1970* and considered the risk of harm to the environment resulting from harvesting and coupe closure activities conducted by VicForests, the former Department of Primary Industries (DPI, now DEPI) and former DSE in State forests in Victoria.

The specific focus of the audit was on:

- > Pre-harvest coupe planning and coupe marking;
- > Harvesting operations;
- > Roothing that is directly related to harvesting operations;
- > Rehabilitation of coupe infrastructure and closure of coupes following the completion of harvesting.

The audit directly considered the vegetation and land or soils of harvest coupes and the multiple beneficial uses of State forests, including: timber production, biodiversity or nature conservation, recreation, provision of visual amenity, protection of cultural heritage values and generation of water for environmental and consumptive uses

The audit considered 40 randomly selected coupes located across eight Victorian Forest Management Areas (FMAs). The coupes were either under VicForests' or DPI's operational control at the time of the audit. DSE had previously planned and managed harvesting on some of the DPI coupes. The selected coupes cover a wide range of forest types, silvicultural systems and environmental risk contexts.

Audit methodology

The audit was conducted against criteria derived from the *Code of Practice for Timber Production* 2007 (the Code), *Management procedures for timber harvesting, roading and regeneration in Victoria's State forests* 2009 (MPs) and *Fire salvage harvesting prescriptions* 2009 (FSHPs). The criteria were based on those included in workbooks prepared for the FAP's Toolbox Module 5. Depending on the characteristics of the coupe, up to seven workbooks were used to conduct the audit. The issues they covered included:

- > Forest coupe planning
- > Water quality, river health and soil protection
- > Biodiversity conservation
- > Operational provisions
- > Roothing
- > Coupe infrastructure
- > Fire salvage harvesting

A total of 263 audit criteria were included in the workbooks, these were organised by theme (of which there were 24). Criteria were derived from mandatory prescriptions of the documents listed above. Audit criteria were assessed using information contained in coupe files and other records, VicForests operating procedures, discussions with VicForests' and DPI staff and field observations made on each of the 40 audited coupes. Field assessments were made using sampling protocols developed for the FAP Toolbox's Module 5.

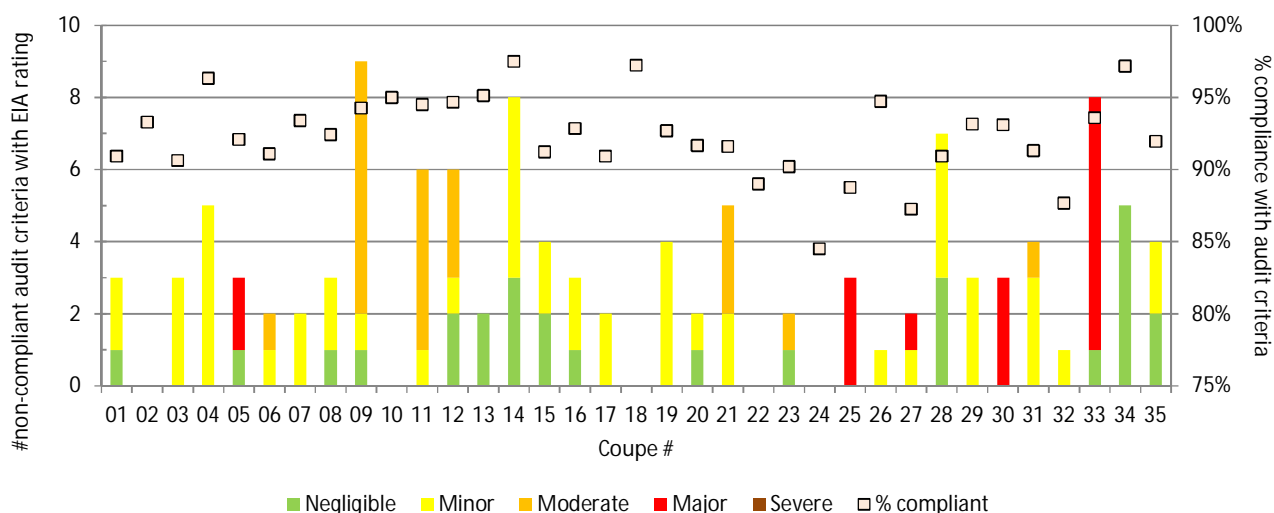
Where relevant, an Environmental Impact Assessment (EIA) rating was applied to instances of non-compliance with audit criteria. The rating tool provided an indication of the risk of harm to the environment resulting from those non-compliances. Where the EIA rating was moderate or higher, DSE's risk management framework was used to assess the risk of harm to the environment from the underlying incident or action in a way that is consistent with other risks faced by the organisations.

Assessment of compliance with audit criteria: VicForests' operations

Thirty-five coupes under VicForests' operational control were included in the audit. They were located in the Central, Central Gippsland, Dandenong, East Gippsland and Tambo FMAs and included a wide range of:

- > Forest types: including Coastal, Foothill and Mountain Mixed Species, Mountain Ash and Alpine Ash;
- > Silvicultural systems: including clearfell, clearfell with retained seed trees and thinning from below;
- > Environmental risk contexts: including various slope and soil erosion hazard classes, coupes with rainforest and special protection or special management zones (SPZ/SMZ) located nearby, coupes in special water supply catchments and coupes harvested under fire salvage prescriptions.

Overall, the audit found that harvesting and coupe closure activities in VicForests' coupes fully complied with almost 93% of applicable audit criteria (Figure 1). For individual coupes, compliance ranged between 85% and 98% of applicable audit criteria. Non-compliances leading to EIA ratings of moderate or higher were identified on 12 of the 35 audited coupes. Major EIA ratings related to single incidents on each of five of the 35 audited coupes.



Note: No non-compliances received the severe EIA rating

Figure 1 Summary of results from audited VicForests' coupes: % full compliance with audit criteria and the number of EIA ratings of each type for relevant instances of non-compliance with audit criteria. Some incidents on the audited coupes resulted in non-compliance assessments for multiple audit criteria.

Instances of non-compliance were observed for 63 audit criteria, distributed across all seven workbooks and many of their themes. Compliance was lowest for workbook 5B (Water quality, river health and soil protection), at 84%. At the workbook theme level (Figure 2), compliance ranged between 85% (forest health, road design) and 100%¹.

The EIA rating tool was applied to audit criteria relating to 15 of the 24 workbook themes. Material environmental risk² from non-compliances with audit criteria was most commonly recorded for workbook 5D (Roading; 19 non-compliances rated moderate or higher). Major EIA ratings were determined for seven workbook themes, with road design having the greatest number of non-compliances with this rating.

The most significant incidents that led to non-compliance with audit criteria included:

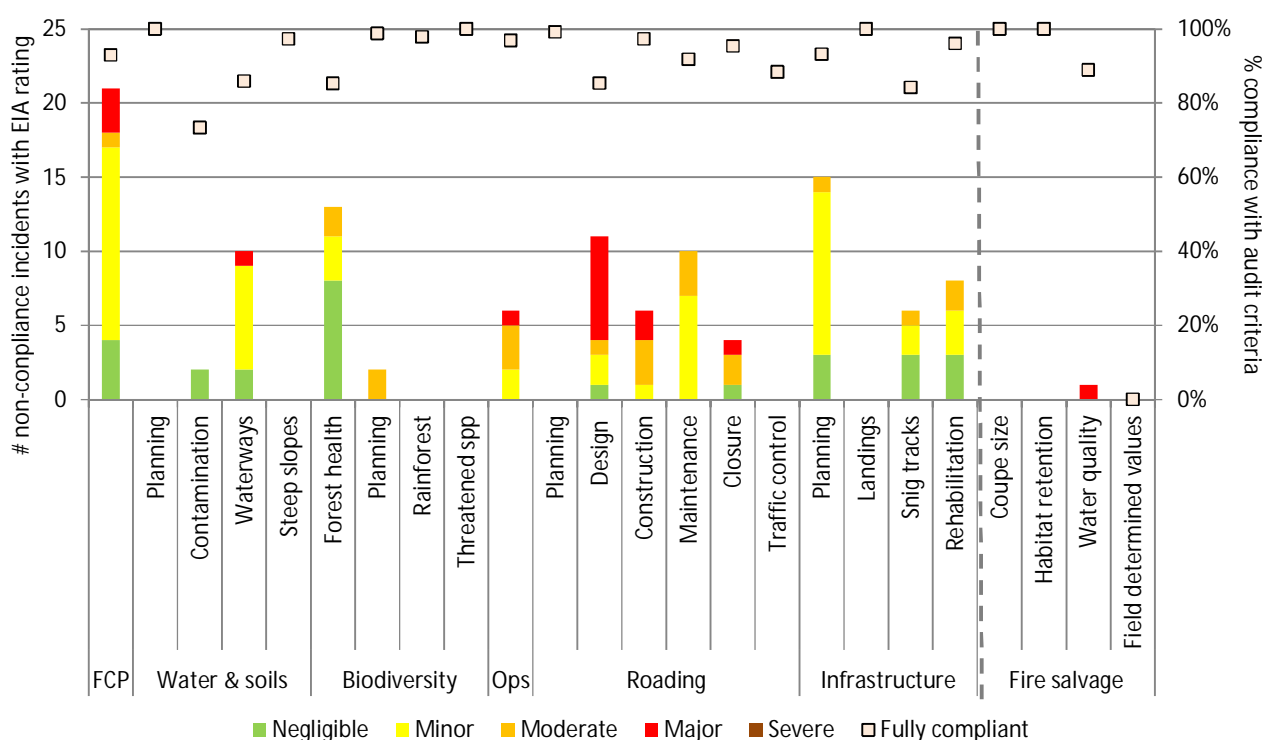
- > Two coupes where the road leading into an audited coupe crossed a permanent water course, but did not have the prescribed measures in place to protect the stream and water quality from sediment generated by

¹ Zero compliance was recorded for field determined values in workbook 5G (Fire salvage). However, as this was related to just one criterion that was applicable to two coupes, it was not considered to be representative.

² Material risks of harm to the environment were regarded as instances where EIA ratings of moderate or higher were given.

road run-off. For one of these coupes, gravel and sediments from the road were observed to have been deposited in the stream.

- > One fire salvage coupe that did not provide a sufficient buffer along a permanent water course. A short section was identified where the prescribed buffer width of 30 m was not provided and harvesting came to within about 25 m of the stream. There was no evidence of sediment movement from the harvested area to the inadequately buffered stream.
- > The batter of a road leading into one coupe covered the base of several trees that were located adjacent to the road. At the time of the audit, there was no evidence that the trees had been adversely affected by this incident.
- > The mapped harvest boundary of a coupe extended by about 10-20 m beyond the mapped gross coupe boundary (defined under the Timber Release Plan [TRP]). While the MPs allow for coupe boundaries to be varied by up to 50 m from the TRP boundary without prior approval, they do so where they are mapped to geographic features that either do not exist or are not mapped correctly. That exception did not apply for this coupe.



Note: No non-compliances received the severe EIA rating

Figure 2 Summary of results for audit workbooks and workbook themes for VicForests' operations: % full compliance and the number of EIA ratings of each type for instances of non-compliance with audit criteria. Fire salvage prescriptions were only potentially applicable to five coupes. Some incidents on the audited coupes resulted in non-compliance assessments for multiple audit criteria.

Other, less significant, non-compliance issues included:

- > Regeneration burns that damaged trees outside the planned burn boundary;
- > Ineffective rehabilitation of a log landing;
- > Failure to retain long-lived understorey elements or for continuity of habitat trees in coupes where the harvest area approximated the entire TRP area and there were no substantive areas of undisturbed vegetation within the harvested area;
- > Non-reinstatement of snig track and/or boundary track cross drainage following damage during either preparation for regeneration burning or rough-heaping;
- > Placement of bark on uncorded snig tracks in clearfell harvest coupes;
- > Unauthorised machine entry into an unharvested adjoining forest area, causing damage to understorey vegetation;

- > Damage to a closed in-coupe road and other coupe infrastructure resulting from unauthorised access by members of the public during wet weather;
- > A poorly constructed road used to access a coupe. The cleared width exceeded prescriptions and the road drainage was poorly constructed and maintained, leading to damage to the road surface and adjoining areas.

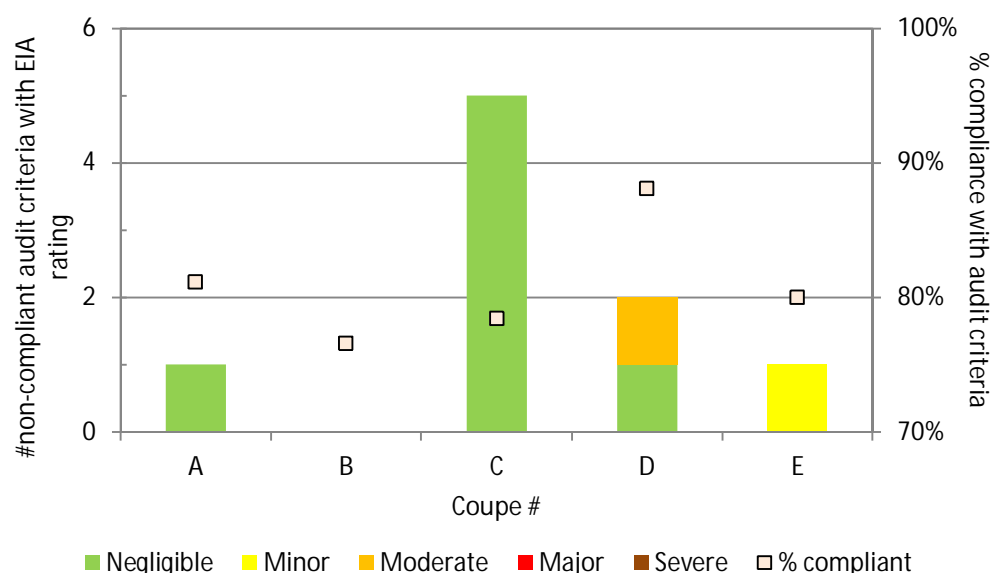
Assessment of compliance with audit criteria: DPI operations

Five coupes under the former DPI's operational control were included in the audit. They were located in the Bendigo, Horsham, Midlands and Otways FMAs and included various:

- > Forest types: including Foothill Mixed Species, Mountain Ash, Box Ironbark and River Red Gum;
- > Silvicultural systems: including single tree selection, thinning from below and collection of firewood from fallen material;
- > Environmental risk contexts: including various slope and soil erosion hazard classes, one coupe with rainforest, SPZs and SMZs located nearby and coupes in water supply catchments.

Harvesting operations on all of the former DPI coupes included in the audit were much less intensive than those on the VicForests' coupes and the environmental risk contexts were generally less pressing. None of the coupes were harvested under fire salvage prescriptions and none had formal coupe infrastructure (e.g. snig tracks, landings). The differing nature of the operations means that compliance results from VicForests' and DPI's operations are not directly comparable.

Overall, the audit found that harvesting and coupe closure activities in DPI-managed coupes fully complied with almost 81% of applicable audit criteria (Figure 3). The level of compliance for individual coupes ranged between 77% and 88% of applicable audit criteria. There was only one instance where an EIA rating of moderate or higher was given.



Note: No non-compliances received the severe EIA rating

Figure 3 Summary of results from audited former DPI coupes: % full compliance with audit criteria and the number of EIA ratings of each type for relevant instances of non-compliance with audit criteria. Some incidents on the audited coupes resulted in non-compliance assessments for multiple audit criteria.

Instances of non-compliance were observed for 26 audit criteria from workbooks 5A-5E. Compliance was lowest for workbook 5B (Water quality, river health and soil protection), at 76%. At the workbook theme level (Figure 4) full compliance ranged between 69% (chemical contamination) and 100%.

Material environmental risk was only identified for one instance of non-compliance with forest coupe planning prescriptions. This related to a coupe whose planned harvest area exceeded the prescribed maximum for the silvicultural system. The harvested area for this coupe had not exceeded the prescribed maximum area at the time of the audit.

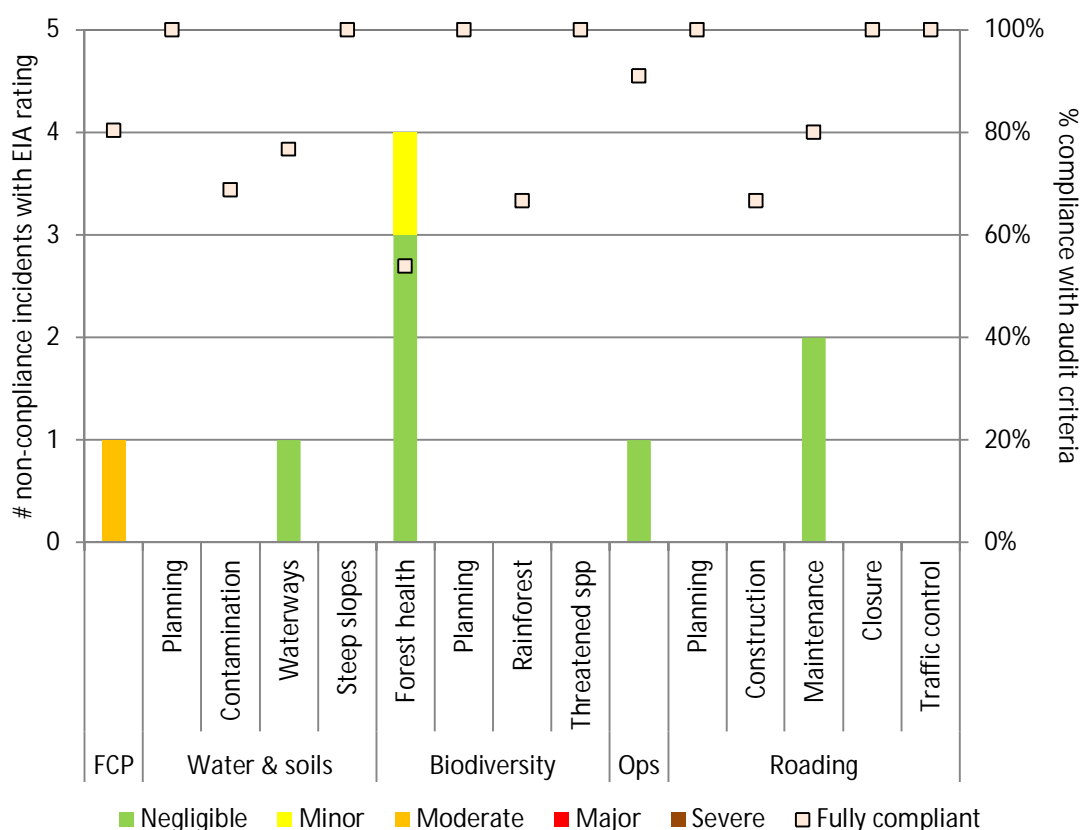


Figure 4 Summary of results for audit workbooks and workbook themes for DPI operations: % full compliance and # EIA ratings of each type for instances of non-compliance with audit criteria. Some incidents on the audited coupes resulted in non-compliance assessments for multiple audit criteria.

Risk of harm to the environment

The former DSE's Risk Management Framework was applied to all incidents contributing to non-compliances with audit criteria that recorded EIA ratings of moderate or higher. This provided an assessment of the risk of harm to the environment of timber harvesting activities that is complementary with the outcomes of other DSE risk assessments. It also provided a framework for comparing environmental risks associated with non-compliances with audit criteria in VicForests and the former DPI's harvesting operations.

The risk assessment considered 15 separate incidents on 12 VicForests coupes and one incident on a DPI coupe. Eleven incidents were assessed to pose moderate environmental risk and a further two incidents were assessed to pose high environmental risk. All moderate and high risk incidents pertained to VicForests coupes. The two highest risk incidents related to:

- > A coupe where almost the entire gross coupe area was harvested. Disturbance from harvesting, regeneration burning and rough heaping meant that no long-lived understorey elements were retained within the harvestable area as required by the Code (section 2.2.2).
- > A coupe that was accessed by a road that drained back into a permanent stream, without opportunity for drainage water to be diverted into and filtered through natural vegetation or constructed features. Sediment and gravel from the road was observed to have been deposited in the stream, although not in large quantities.

The first incident is expected to be rectified as the coupe regenerates. No specific intervention is warranted at this stage. The second incident can and should be addressed by constructing drainage that complies with Code and MP prescriptions.

While, as described above, there are locally significant issues with some individual timber harvesting operations in State forests, they are not generally considered to pose an unacceptable risk of harm to the multiple beneficial uses of those areas.

Recommendations

- 3.1 That VicForests and DEPI either include a specific soil erosion hazard class map in all coupe files or annotate the geology or other map to indicate the distribution of soil erosion hazard class(es) across the coupe.
- 3.2 That VicForests and DEPI collect and retain evidence of appropriate disposal of any prescribed industrial wastes generated on the coupe (e.g. oil drums, used engine oil, oil filters, oily rags). That evidence may take the form of a waste transport certificate or other relevant document from an Environment Protection Authority (EPA) licensed waste transporter or receiver.
- 3.3 That VicForests and DEPI include maps in coupe files that annotate the Code waterway class that is applicable to every waterway located within or adjacent to the coupe.
- 3.4 That VicForests include develop a standard procedure for demonstrating that risks from Myrtle Wilt have been considered and managed consistently with the Code and MPs on all coupe Myrtle Beech trees are present.
- 3.5 The Code provides for the coupe to extend up to 50 m beyond the mapped TRP boundary where the coupe boundary is a feature that is either not present or not mapped correctly. Where this situation does not apply, it is recommended that the coupe boundary be remarked and/or remapped where it is found to extend more than 10 m beyond the TRP boundary.
- 3.6 That VicForests review its regeneration burning planning and practices to identify further opportunities to prevent unintended damage to trees in adjacent coupes.
- 3.7 That VicForests ensure that adequate provision is made to meet planned biodiversity conservation measures during coupe marking, including retention and continuity of long-lived understorey elements and habitat trees within the harvestable area. This may include making provision for windthrow of retained habitat trees, the risk of which is exacerbated by harvesting.
- 3.8 That when VicForests constructs temporary or permanent roads into new coupes, it ensures that the prescribed measures are taken to ensure that roads in the vicinity of streams are drained correctly and that risks of stream crossings to water quality are minimised.
- 3.9 That VicForests strengthen communication between its silviculture and harvesting personnel to ensure that cross drainage on coupe infrastructure is quickly reinstated when damaged or disturbed during regeneration operations.
- 4.1 That DEPI consult with adjoining landholders regarding coupe boundaries, as required by the Code.
- 4.2 That DEPI develop a standardised coupe monitoring process to enable it to capture information about progress with its harvesting operations and gather evidence to demonstrate compliance with relevant Code and MP prescriptions.
- 4.3 That DEPI review VicForests' and other models of forest coupe planning to implement a system that strengthens its capacity to demonstrate compliance with the Code and MPs
- 5.1 That VicForests undertake an audit of existing stream crossings along coupe driveways, roadline coupes and other coupe access roads it has constructed to assess the compliance of road design and construction with Code and MP prescriptions aimed at protecting water quality from road drainage. Any non-compliant road drainage should be rectified where this is practicable and will not adversely affect water quality.

Auditee feedback

VicForests provided comments on the final draft version of this audit report. The substantive comments included:

- VicForests considers the major EIA rating applied to the non-conformance regarding the coupe buffer on salvage coupe 30 and batter fill surrounding the base of several trees on coupe 27 to overstate the potential environmental impact experienced.
- VicForests considers that the EIA tool should be reviewed.
- VicForests does not consider that non-compliance should be recorded against it for coupe 11, where damage to the road was caused by a third party accessing the coupe following closure of the access road.
- VicForests considers that Recommendation 3.2 is impractical. VicForests agree that no evidence was provided of disposal of rubbish generated on the coupe to an approved facility, although it considers that this does not imply correct disposal did not occur. VicForests noted that contractors may store rubbish at their own depot for a period of time before sending it to a waste station. In this situation there would be no practical way to link disposal to a specific coupe.
- VicForests considers that the reporting of instances of non-compliance against individual audit criteria overstates the level of non-compliance. In common with previous Module 5 audits, reporting should relate to incidents that lead to non-compliance with audit criteria.

The former DPI made no substantive comments on matters of fact in the draft audit report.

Audit summary for EPA

EPA File reference	68515-6
Auditor	Craig Clifton
Auditor term of appointment	02/10/2008-25/07/2014
Name of person requesting audit	Duncan Pendrigh Director, Operational Support and Compliance Department of Environment and Primary Industries (DEPI)
Relationship to premises/location	DEPI is the management authority for State forest in Victoria and State government regulator of timber production operations in State forests.
Date of request	05/06/2012
Date EPA notified of audit	06/06/2012
Completion date of the audit	07/06/2013
Reason for audit	The audit forms part of DEPI's annual Forest Audit Program to assess compliance with Code of Practice for Timber Production and related regulations.
Description of activity	Harvesting and harvest coupe finalisation
Current land use zoning	State forest
EPA region	Various: Gippsland, North West, Southern Metro, South West
Municipality	Various local government areas in Victoria
Lot and site details	Not applicable, 40 timber harvesting coupes in State forests in Victoria
GIS coordinates of site centroid	Not applicable, various sites
Site area (ha)	Not applicable, various sites
Members and categories of support team utilised	David Endersby – Terrestrial ecology (flora) Dr Peter Sandercock – Earth Science (soil science and soil degradation, fluvial geomorphology)
Outcome of the audit	Audit report with recommendations
Further work or requirements	Thirteen recommendations on procedures that may be adopted by VicForests and DEPI to strengthen compliance with the regulatory framework for timber harvesting in State forests and reduce environmental risks resulting from timber harvesting and related operations.

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Appendix A. Revised FAP Module 5 workbooks

Appendix B. Risk assessment methods

Appendix C. Detailed comments on instances of non-compliance with audit criteria for coupes managed by VicForests

Appendix D. Detailed comments on instances of non-compliance with audit criteria for coupes managed by the former DPI

Appendix E. Risk of harm to the environment from non-compliance with audit criteria

Glossary

Audit criteria	Criteria used to assess whether coupe regeneration and thinning activities are consistent with mandatory and guidance prescriptions of the Code and NFSG's.
Boundary track	A track constructed during harvesting that marks the boundary between the harvested area and either the boundary of the coupe or unharvested exclusion areas. The boundary track may be used in regeneration burning. Boundary tracks do not necessarily define the boundary of the entire coupe. May also be called boundary trail.
Buffer	An unharvested area surrounding or adjacent to a protected feature located on a coupe (e.g. stream, patch of rainforest).
Code	The <i>Code of Practice for Timber Production</i> 2007, which outlines mandatory prescriptions and guidelines for how timber production activities in native forests and plantations should be conducted.
Compliance	Compliance with audit criteria. Operations or planning on a coupe were either assessed to comply (or fully comply), not comply or partly comply with audit criteria. Part compliance was determined where the coupe satisfied some, but not all elements of the audit criterion. EIA ratings were applied to instances of part compliance, where this was appropriate to the criterion.
Coupe	An individual management unit within forests and plantations where timber harvesting or thinning activities are planned and conducted. Under the <i>Sustainable Forests (Timber) Act</i> 2004, a coupe is a specific area of State forest identified for the purposes of timber harvesting and regeneration in a Timber Release Plan.
DPI	Department of Primary Industries: machinery of government changes in 2012 resulted in responsibility for management of timber harvesting activities in State forest in western Victoria being transferred from DSE to DPI. DPI is now part of the Department of Environment and Primary Industries, DEPI.
DSE	Department of Sustainability and Environment: DSE has responsibility for environmental regulation of timber production activities in State forest. DSE is now part of the Department of Environment and Primary Industries, DEPI.
EIA rating tool	A tool developed for the FAP to provide a consistent basis for assessing the potential environmental implications of non-compliance with audit criteria.
EPA	Environment Protection Authority: environmental audits under the auspices of the <i>Environment Protection Act 1970</i> (EP Act) are conducted through EPA's environmental audit system (http://www.epa.vic.gov.au/our-work/environmental-auditing). EPA also regulates the management of prescribed industrial wastes in Victoria.
Exclusion area	An area on within the gross or TRP coupe area in which harvesting and harvesting machine access is not permitted.
FAP	Forest Audit Program – an annual program of statutory environmental audits coordinated by DSE to ensure that timber production operations in State forests provide for sustainable forest management.
Filter strip	A protective boundary around a drainage line, temporary stream or buffer strip. Trees may be harvested from within the filter strip, although they may not be entered by harvesting machines.
Forest coupe plan (FCP)	A plan that is prepared for each coupe that describes the biophysical character of the coupe and the nature of planned harvesting operations. Minimum content requirements of a FCP are specified by the Code. The FCP is contained within a coupe file that includes other information, including coupe monitoring records, traffic management provisions and silvicultural operations. The coupe file may also refer to information about the coupe and its operations that is held within a VicForests or DSE information management system.
Forest Management Area (FMA)	The basic unit for forest planning used in Victoria. These forest planning units are not administrative units.
FSHPs	<i>Fire salvage harvesting prescriptions</i> . 2009. These provide prescriptions for the management of timber harvesting operations in fire salvage coupes located in State forest. The FSHPs are the third

	source of mandatory prescriptions for management of forest harvesting operations. They only apply to fire salvage coupes that are harvested within three years of a wildfire.
Gross coupe area or TRP coupe	The coupe area or boundary originally defined in the Timber Release Plan. This area is used as the starting point for harvest planning. The actual harvested area may be significantly less than this, due to the application of forest management zoning rules or prescriptions on harvesting buffers or exclusions relating to the protection of sensitive environmental features.
Incident	An event, action or lack of action on a coupe that gives rise to an assessment of non or partial compliance with an audit criterion. The nature of the audit criteria and various prescriptions mean that a single incident may result in multiple non-compliances.
Instance	Used here to refer to an individual example or <i>instance</i> of non-compliance.
Landing	An area within the coupe that is specifically developed to sort, process and/or load trees or parts of trees for transport from the forest. Top soil is removed before landings are developed. Landings must be rehabilitated at coupe closure unless they are to be used for an adjacent coupe.
MPs	<i>Management procedures for timber harvesting, roading and regeneration in Victoria's State forests</i> . 2009. Which help to interpret the Code for timber harvesting activities in State forest. They are a secondary source of mandatory prescriptions for forest management. They are based on the Code and provide additional detail on various management prescriptions.
Rainforest	Rainforest communities comprise broad-leaved forest vegetation with closed canopy coverage (>70% projected foliage cover). They have characteristic species of native flora and fauna.
Risk management framework	A structured process for assessing the effect of uncertainty on objectives. Risk frameworks define a process for identifying, assessing and managing or treating risk. The process follows AS/NZS ISO 31000: 2009.
Rough heaping	A method of disturbing coupes in preparation for regeneration, generally after failure of regeneration after a bushfire or regeneration burn. Any remaining woody material is pushed into heaps and burnt. Soils and understorey are disturbed.
Silvicultural system	A system for managing harvesting and regeneration in forests used for timber production.
SMZ	Special management zone: land within State forest that is managed to conserve specific features, while catering for timber production and other uses under specific management conditions
Snig track	A track through a harvested coupe along with logs are towed or winched, normally towards a landing.
SPZ	Special protection zone: land within State forest that is managed for particular conservation values, forming a network designed to complement the formal reserve system. Timber harvesting and most other human disturbances are excluded from this zone.
Statutory environmental audit	An environmental audit conducted under the <i>Environment Protection Act</i> 1970.
State forest	Publicly owned and managed forest estate. Victoria has 3.4 million ha of State forest. State forest is managed for various beneficial uses including conserving flora and fauna, protecting water catchments and water supply, providing timber for sustainable forestry, protecting landscape, archaeological and historic values, and providing recreational and educational opportunities (http://www.dse.vic.gov.au/forests).
Timber Release Plan (TRP)	Timber resources in State forests in eastern Victoria are allocated to VicForests for the purposes of harvesting and/or selling through the Allocation to VicForests Order 2004 (as amended). The Allocation Order specifies the extent and location of the forest stands to which VicForests has access under this Order. VicForests must prepare a Timber Release Plan for allocated areas. Timber Release Plans (TRPs) are publicly available documents that must include: a schedule of coupes selected for timber harvesting and associated access road requirements; details of the location and approximate timing of timber harvesting in the proposed coupes; and details of the location of any associated access roads. They are prepared by VicForests in accordance with Part 5 of the <i>Sustainable Forests (Timber) Act</i> 2004, and may be reviewed and changed in accordance with section 43.

Note: Definitions for many of the above terms are taken from the Code.

1. Introduction

Sinclair Knight Merz (SKM) was commissioned by the former Department of Sustainability and Environment (DSE; now Department of Environment and Primary Industries, DEPI) to conduct an audit of timber harvesting and coupe closure as part of its Forest Audit Program (FAP). The FAP's overall objective is to assess the risk of harm to the environment resulting from timber production activities in State forests. This particular audit considers the risk of harm to the environment resulting from harvesting activities that take place in State forests throughout Victoria, including those managed by VicForests in eastern Victoria and those managed by the former DSE (now DEPI) and the former Department of Primary Industries (DPI, now DEPI) in western Victoria³. It applies audit tools from the FAP's Module 5.

The objective of the audit was to assess whether timber harvesting and coupe closure activities were appropriately conducted to achieve sustainable forest management and managed in accordance with relevant legislation, regulations, policies, regional Forest Management Plans and practice guidance. The latter is provided, for harvesting operations, by the:

- > *Code of Practice for Timber Production* 2007 (the Code [1]);
- > *Management Procedures for Timber Harvesting, Roading and Regeneration in Victoria's State Forests* 2009 (the MPs [2]);
- > *Fire Salvage Harvesting Prescriptions* 2009 (the FSHPs [3]).

The audit was conducted as a statutory environmental audit under the auspices of the *Environment Protection Act* 1970 (EP Act). The *Sustainable Forests (Timber) Act* 2004 allows the Minister for Forests to commission an audit compliance of with any relevant Code of Practice relating to timber harvesting.

This is the draft report on the audit project. Its contents include:

- > Section 2 Audit approach: outlines the formal scope of the statutory audit and its methods.
- > Section 3 Harvest coupes managed by VicForests: a description of the outcomes of the audit of VicForests' operations.
- > Section 4 Harvest coupes managed by the former DPI: a description of the outcomes of the audit of harvesting operations that were under the former DPI's operational control.
- > Section 5 Discussion: an assessment of the risk of harm resulting from timber harvesting activities considered by the audit and a review of the outcomes and recommendations of the previous Module 5 audit of harvesting and coupe closure in the light of the current audit.
- > Section 6 Conclusions and recommendations— the audit's conclusions are presented, with a collation of recommendations from previous sections.

The analysis and discussion in this report refers, at times, to specific harvest coupes. To maintain confidentiality regarding audit details, coupe identifiers have not been used here. An alternative coupe numbering scheme has been used for public reporting.

³ Timber harvesting activities in State forests in western Victoria were managed by DSE until 2012. Machinery of government changes resulted in responsibility for management of harvesting operations being transferred to DPI.

2. Audit approach

2.1 Audit scope

The scope of the statutory environment audit was documented in a work plan which was provided to the Environment Protection Authority (EPA) on 6th June 2012. The following text updates this scope to reflect the actual work undertaken.

2.1.1 Activity undertaken

The audit is concerned with the conduct of timber harvesting operations that are undertaken in State forest areas throughout Victoria, specifically:

- > Pre-harvest coupe planning and coupe marking;
- > Harvesting operations;
- > Roding that is directly related to harvesting operations;
- > Rehabilitation of coupe infrastructure and closure of coupes following the completion of harvesting.

2.1.2 Segments of the environment

The audit has been conducted on 40 harvesting coupes located across eight Victorian Forest Management Areas (FMAs); Bendigo, Central, Central Gippsland, Dandenong, East Gippsland, Midlands, Otways and Tambo. These coupes were selected from audit from a much larger set of coupes listed in 2011-12 Timber Release and Wood Utilisation Plans for Victoria.

2.1.3 Elements of the environment

The audit directly considers the vegetation, soils, cultural heritage and native fauna of harvest coupes, the waterways that drain them and some nearby elements of the forest road network.

2.1.4 Beneficial uses

The *Sustainability Charter for Victoria's State forests* [10] identifies the objectives for management of Victoria's State forests. The beneficial uses of State forests are implicit in these objectives and include:

- > Maintenance and conservation of biodiversity;
- > Production of wood and non-wood forest products;
- > Generation of clean water for environmental and consumptive uses;
- > Provision of recreational and tourism opportunities;
- > Protection and maintenance of cultural heritage values;
- > Maintenance of global carbon cycles.

2.1.5 Audit criteria

Criteria for the audit are established from mandatory prescriptions⁴ contained in one or more of these documents:

- > *Code of Practice for Timber Production* 2007 [1];
- > *Management Procedures for Timber Harvesting, Roding and Regeneration in Victoria's State forests* 2009 [2];
- > *Fire Salvage Harvesting Prescriptions* 2009 [3].

The Code and MPs apply to all coupes. The FSHPs are only relevant to coupes for which salvage harvesting was undertaken within three years of the coupe being burnt in a wildfire.

⁴ The Code also includes "guidance" on forest management practices. Since they are not mandatory requirements of timber harvesting activities in State forests, they have not been considered in this audit.

Audit criteria are based on the prescriptions contained in these documents. They relate to the seven themes, as follows:

- | | |
|--|----------------------------|
| 1. Preparation of forest coupe plans (FCPs) | 5. Roding |
| 2. Water quality, river health and soil protection | 6. Coupe infrastructure |
| 3. Biodiversity conservation | 7. Fire salvage harvesting |
| 4. Operational provisions | |

A manual for audits of harvesting and coupe closure has been developed for the FAP (FAP Module 5; [4]). The manual includes workbooks which specify the relevant prescriptions and audit criteria. Each of the workbooks was revised prior to the commencement of this audit (see section 2.2.1).

2.1.6 Stakeholder participation

The audit engaged several groups of stakeholders. The primary stakeholders included: the former DSE's Regulation and Compliance Unit, who commissioned the audit; VicForests staff involved in management of timber harvesting operations and of their environmental systems; and DSE and DPI staff involved in timber harvesting operations in audited coupes in western Victoria. This group of stakeholders were actively involved in the design of the audit program and/or the conduct of individual coupe audits.

At the former DSE's request, the audit included a field day, to which forest management stakeholders and members of the general public were invited. The half day field day provided the opportunity for interested parties to observe one of the coupe audits and to ask questions of DSE, VicForests and the audit team.

2.1.7 Timing of audit

The audit commenced in June 2012. The data collection component of the audit, including its field assessments, was undertaken between September and November 2012. Data analysis and reporting were undertaken between December 2012 and March 2013. This audit report was finalised in June 2013.

2.2 Audit methodology

The audit included four main components, which are described below.

2.2.1 Review and revision of FAP Module 5 and its workbooks

Module 5 of the FAP Toolbox [4] was developed to guide audits of harvesting and coupe closure. It comprised an overview document and a series of audit workbooks covering six of the seven themes listed above⁵. Audit criteria were drawn from the Code, MPs and FSHP. In the original version of Module 5, criteria addressed both mandatory prescriptions and non-mandatory guidance.

The Module 5 overview document describes a field assessment procedure for making the observations required to verify some audit criteria or compliance elements. Module 2 of the FAP Toolbox [5] describes the procedure for selecting audit targets.

Module 5 workbooks were revised prior to the commencement of this audit. The existing workbook structure was maintained, with the exception that criteria relating to FSHPs were consolidated into a single workbook for use only on applicable coupes.

Complementary prescriptions from the Code and MPs were consolidated and matching audit criteria developed. This significantly reduced the number of audit criteria and level of duplication within and between workbooks. Non-mandatory or guidance elements of the Code and other prescriptions were not used to form audit criteria, as compliance is not specifically required. The revised workbooks, as used in this audit, are included in Appendix A.

⁵ In the original FAP Module 5 toolbox, specific fire salvage harvesting prescriptions were incorporated into relevant sections of workbooks dealing with the other themes.

The audit target selection process and field assessment procedures (from Module 2 [5] and the Module 5 overview document [4]) were not substantively modified.

2.2.2 Audit target selection

FAP Module 2 [5] outlines a risk-based approach for the selection of audit targets in which pre-determined environmental risk factors (specified by in Module 2 and by the former DSE) influence the chance of selection for an individual coupe. Those factors include:

- > Average slope;
- > Soil erosion hazard;
- > Silvicultural system;
- > Presence of rainforest within or near the coupe;
- > Area planned to be harvested;
- > Special land protection requirements (including presence of a Special Protection or Special Management Zone [SPZ/SMZ] within 500 m of the coupe or coupe location within a water catchment area).

Coupes are divided into three risk rating groups with 60%, 25% and 15% of coupes selected from the high, moderate and low risk groups, respectively.

SKM was engaged by the former DSE to undertake audits in 40 coupes, of which at least two were to be located in a Melbourne Water catchment area (Table 1). Under the Module 2 coupe selection scheme, 24 of these coupes were to be high risk coupes, 10 were to be moderate risk coupes and six were to be low risk coupes. However, since fewer than 24 coupes were assessed to be in the high risk class, the coupe selection process had to be amended, with all 18 high risk and 16 moderate risk coupes included in the audit target list. Coupes in the moderate and low risk classes were selected at random.

Table 1 Intended and actual distribution of coupes between FMAs and risk groups. Harvesting operations in the FMA are managed by VicForests unless otherwise indicated.

FMA	High risk		Moderate risk		Low risk		# coupes
	Intended	Actual	Intended	Actual	Intended	Actual	
Bendigo (former DPI)					1	1	1
Central¹	4	3	2	3	2	2	8
Central Gippsland	3	3	1	1	2	2	6
Dandenong	7	7					7
East Gippsland²	3	1	8	9		1	11
Horsham (former DPI)			1				1
Midlands (former DPI)					1		1
Otways (former DPI)	1		1				2
Tambo			3	3			3

1. One of the selected high risk coupes was not audited because it had been completed several years previously and had well-established regeneration. Two moderate risk coupes were substituted because the initial coupes had well-established regeneration.

2. All but one of the high risk coupes in East Gippsland FMA were not accessible at the time of the audit because of road closures resulting from damage during recent storm events. The lack of additional high risk coupes meant that these were replaced by randomly selected moderate risk coupes and one low risk coupe.

The intended distribution of coupes between FMAs and risk groups is given in Table 1. In discussions with VicForests about the selected coupes, it was identified that some were either not appropriate for audit (as coupes had been closed several years previously and regeneration was already well-established) or could not be accessed at the time of the audit due to road closures following storm damage during the preceding winter.

Where substitute coupes were required, they were selected from the same FMA as the original target coupes, mostly from the moderate risk group.

2.2.3 Review of coupe files and other evidence of auditee harvesting and coupe closure practice

Compliance with the majority of audit criteria was assessed from information that is held in coupe files, the auditees' information systems or their standard operating procedures (particularly VicForests Utilisation Procedures). Relevant evidence sources were reviewed for each coupe prior to field assessment. Where audit criteria were applicable to the particular coupe (and many were not), coupes were assessed to comply, partly comply or not comply. Partial compliance was assessed where it could only be demonstrated that harvesting and closure operations on coupe satisfied some elements of the individual audit criterion or that the criterion was satisfied for only part of the coupe.

Notes on the reasons for partial or non-compliance assessment were included in the comments section of the workbook. For relevant audit criteria, an assessment was made of the potential environmental impact of (instances of) non or partial compliance using the method outlined in Appendix B.1. Where further information was required to complete assessment against audit criteria, this was also noted in the workbook. Requests were subsequently made to the auditees to provide that information.

2.2.4 Field assessment of coupes

Compliance with some audit criteria may only be assessed through field observation. FAP Module 5 outlines a field methodology for such observations. It is based on a sampling approach rather than a complete assessment of the entire coupe and its infrastructure. To minimise disruptions to operations, the intensity of sampling is lower in coupes that are being harvested at the time of the field assessment.

Minimum sample sizes for active and non-active coupes and various types of compliance criteria are given in Table 2. After some experience with these procedures, sampling distances for snig tracks and boundary tracks were at least doubled to provide a more comprehensive sample of the coupe. Buffer widths were assessed at regular intervals along the sample transect using either a range finder or hip chain.

Soil erosion hazard (SEH) was assessed on each coupe, except where the soil type was the same as a nearby, previously audited coupe.

Table 2 Field sampling protocols for audited coupes recommended by FAP Module 5 [4]

Attribute	Active ¹ coupe sampling protocol	Non-active ¹ coupe sampling protocol
Width and location of filter strips	100 m	200 m
Width and location of riparian buffers	200 m	400 m
Width and location of rainforest buffers	200 m	400 m
Special protection zone (SPZ) buffer widths	200 m	400 m
Roading²	200 m	500 m
Snig tracks	200 m	200 m
Boundary tracks	100 m	200 m
Landings	1	Up to 2

1. Active coupes are those in which harvesting was actually taking place at the time of the field audit. Non-active coupe sampling protocols were applied in all closed coupes and in open coupes in which harvesting was not actually taking place at the time of the audit.

2. Roads that formed part of the existing forest road network were typically not assessed. Most roads that were assessed were in-coupe roads or roads that were constructed to get access to the audited coupe or group of coupes of which the audited coupe formed part.

An informal briefing on key findings of field assessments and the coupe file review were provided at the conclusion of audits in each FMA or VicForests' operational area.

2.2.5 Preliminary reporting of audit results

Audit workbooks were completed in draft form following the coupe file review and field assessment of coupes. These draft workbooks included assessments against all applicable criteria and provided a summary of the main instances of non-compliance with audit criteria and areas where further information may assist in clarifying potential instances of non-compliance.

Draft workbooks were provided to auditees (in VicForests and former DPI and DSE) and the opportunity provided to challenge assessments of compliance, as well as to provide additional information to support such challenges. Responses and additional information provided by auditees were subsequently evaluated and the workbooks finalised.

2.3 Risk assessment approach

Two forms of risk assessment were undertaken for instances where audit criteria were not fully satisfied, the first using the FAP's environmental impact assessment (EIA) rating tool [5] and the second applying the former DSE's Risk Management Framework (which is based on the Australian and International Standard for risk management; AS/NZS ISO 31000: 2009 [6]).

Environmental impact assessment tool

The EIA tool [5] may be used to assess the risk of harm to the environment resulting from non-compliance with audit criteria. It considers three factors:

- > Extent of impact or disturbance – based on the percentage of the sampled area or length over which the impact is detected or if the impact results in offsite effects;
- > Duration of impact – the period over which the affected area is expected to recover to pre-impact levels;
- > Environmental asset value – which is defined by the relative environmental value or resilience to impact of the affected area.

The combined EIA assessment scales risk of harm to the environment between *negligible* (short duration impacts within the marked harvest area) and *severe* (long term impact in buffers, reserves or off the harvested site). Details of the EIA tool are provided in Appendix B.1.

The EIA tool could not be applied to instances where non-compliance with an audit criterion did not directly translate to a risk of environmental harm. Examples of this situation include non-compliance with criteria relating to the way in which planning or design provisions of the Code or MPs are undertaken or where non-compliance results in reputational or other non-environmental risks. Experience in application of the EIA tool suggests that in some instances it may overstate the real level of environmental risk or impact. This is particularly true where the non-compliance results in a risk of harm to the environment outside the coupe boundary.

Former DSE Risk management framework

The former DSE had its own Risk Management Framework (Appendix B.2; [7]), which was based on the relevant Australian and International Standard (AS/NZS ISO 31000: 2009; [6]). Use of this framework enabled risks associated with non-compliance with the regulatory framework for harvesting and coupe closure operations to be evaluated in the same way as other risks faced across the organisation. This provided a basis for risks associated with non-compliance with audit criteria to attract the same level of management attention as other similarly-rated risks faced across the Department.

The Risk management framework was only applied to incidents resulting in non-compliance with audit criteria where the EIA rating tool flagged the potential for material impact on the environment. This was taken to include all incidents leading to a moderate or higher EIA rating. Since the scope of this audit is restricted to risks of harm to the environment resulting from harvesting and coupe closure, only environmental consequence criteria (and not social, governance or economic criteria; Appendix B.2) were considered during the assessment.

2.4 Audit team

The audit team was led by Craig Clifton, an Environmental Auditor (Natural Resources) appointed pursuant to the *Environment Protection Act* 1970. The support team included:

- > Doris Pallozzi: Project Director and EPA-appointed Environmental Auditor in Industrial Facilities (SKM)
- > Mark Poynter: Forest management specialist (Treepoynt Pty Ltd)
- > David Endersby: Terrestrial ecologist (SKM)⁶
- > Dr Peter Sandercock (SKM): Geomorphologist (SKM)³
- > Chloe Hanson-Boyd (SKM): Climate change and natural resource management consultant (SKM)
- > Gary Selwyn: Technical director, compliance management (SKM).

⁶ Member of Craig Clifton's formal audit support team under EPAs environmental audit system

3. Harvest coupes managed by VicForests

3.1 Overview of findings

Thirty-five harvest coupes were selected for audit from VicForests' operational area. These coupes were located in Central, Central Gippsland, Dandenong, East Gippsland and Tambo FMAs and included a variety of forest types, silvicultural systems and environmental risk contexts.

The revised workbooks 5A-5F were used on all 35 coupes and workbook 5G was used on the five audited coupes that were harvested under fire salvage prescriptions. Planning and operations on each coupe were assessed against up to 244 audit criteria (259 on fire salvage harvest coupes). Coupes were assessed to fully, partly or not comply with audit criteria that were applicable to their specific landscape setting, operations and stage in the plan-harvest-close-regenerate-handback coupe life cycle⁷⁸. The EIA rating tool was applied where the coupe did not fully comply with a particular audit criterion and there was potential for this to directly result in some form of environmental impact⁹.

3.1.1 Compliance with audit criteria

Overall, VicForests' operations in the audited coupes were found to fully comply with almost 93% of applicable audit criteria (Figure 5). Of the 114 instances where the EIA rating tool was applied, 77 (68%) were assessed to have negligible or minor potential environmental impact (Figure 5). Sixteen instances of non-compliance were assessed to have major potential environmental impact, although these related to single incidents on each of five coupes. No severe EIA ratings were given.

Non or partial compliance was assessed against 63 of the 259 criteria used in the audit.

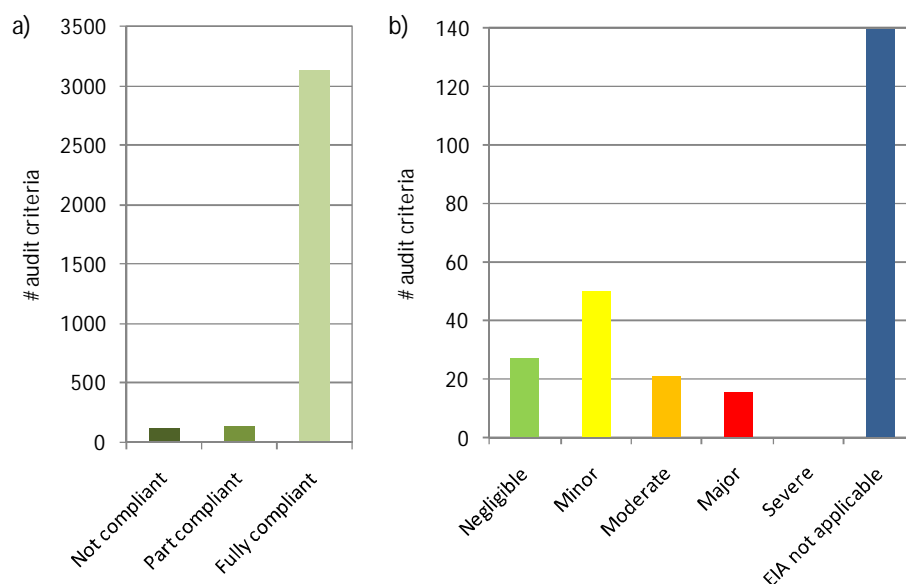


Figure 5 Overview of harvesting and closure audit outcomes for coupes managed by VicForests. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings were applied or were not applicable.

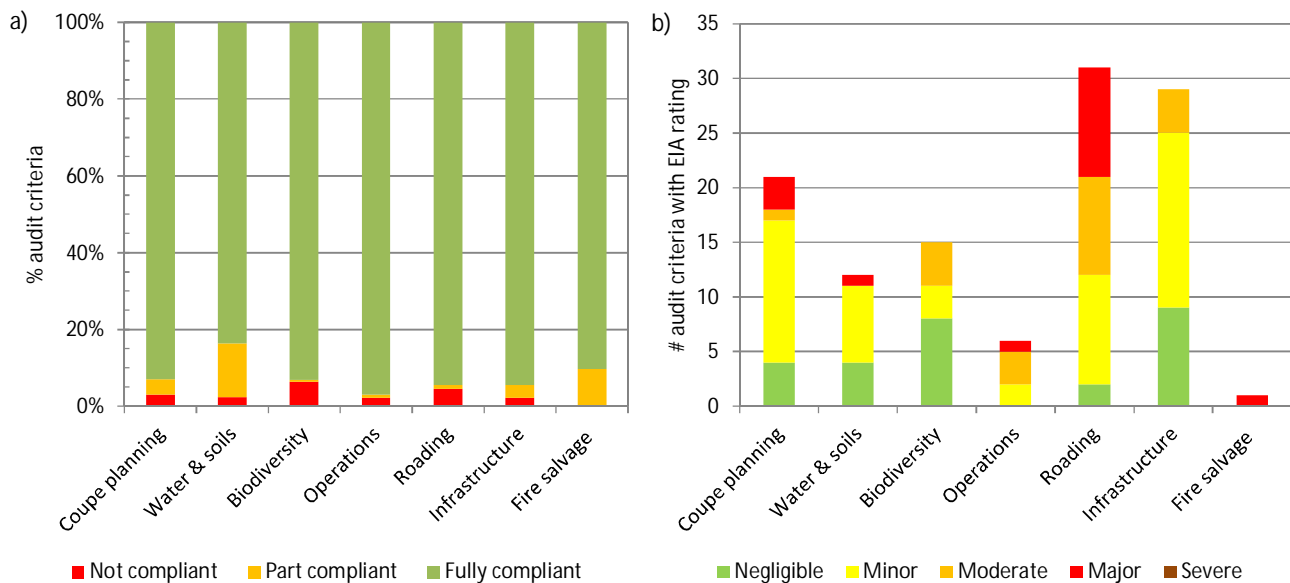
⁷ On average only 39% of audit criteria were applicable to an individual coupe.

⁸ These are the main stages in VicForests' management of coupes under the Timber Release Plan (TRP). They have responsibility to plan for and manage harvesting operations. The coupe is closed once harvesting has been completed and contractors undertake the works required to stabilise and rehabilitate coupe infrastructure (landings, snig tracks, temporary roads). Once the coupe has been satisfactorily regenerated, it is proposed for finalisation and handback to DSE (now DEPI) and removed from the TRP.

⁹ Non-compliances that pertained to planning \ activities or the audit criterion requirement to provide evidence of some form were not assessed to lead directly to some form of potential environmental impact.

3.1.2 Compliance across the seven workbook themes

Coupes were assessed to fully comply with between 84% and 97% of applicable audit criteria for individual workbooks (Figure 6). Most of the non-compliances to which EIA ratings were applied were in relation to workbooks 5E (Roding), 5F (Coupe infrastructure) and 5A (Forest coupe planning). While the EIA ratings were mostly negligible or minor, there were 10 instances of major EIA ratings for roding prescriptions and three for coupe planning prescriptions. The major EIA ratings for roding related to single incidents on each of three coupes.



Note: No severe EIA ratings were given.

Figure 6 Harvesting and closure audit outcomes by audit workbook themes. a) Instances of non, partial and full compliance with applicable audit criteria; b) EIA ratings applied to non or partly compliant audit criteria. Multiple non-compliances sometimes resulted from a single incident.

3.1.3 Incidents or events leading to non-compliance with audit criteria

Some individual incidents were assessed to result in non-compliances with multiple audit criteria. The 256 recorded instances of non and partial compliance resulted from 222 individual incidents. EIA ratings were applied to 137 of these events (Figure 7). While the majority were the responsibility of VicForests and its contractors, some related to the former DSE's responsibilities for management of State forests (e.g. existing pest plant and animal issues) and the general forest roding network (Figure 7).

Most of the incidents for which the EIA rating tool was applicable resulted in negligible or minor EIA ratings. All of the major EIA ratings were the result of single incidents on five of the audited coupes. Each of these was within the operational control of VicForests or its contractors. Fifteen incidents on nine coupes were responsible for all of the moderate EIA ratings (Figure 7). Three of these were outside of VicForests' operational control.

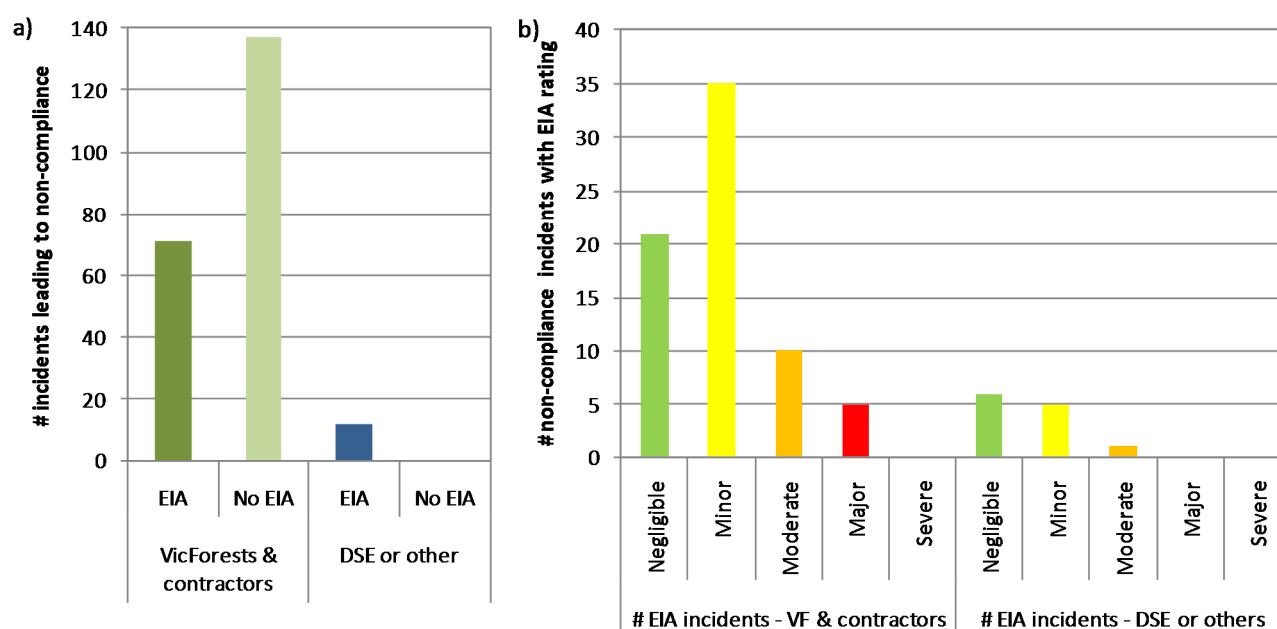
The incidents resulting in the highest (major category) EIA ratings included:

- > Two occasions (coupes 25 and 33) where the road leading into an audited coupe crossed a permanent water course, but did not have the prescribed measures in place to protect the stream and water quality from sediment carried by road run-off. For coupe 33, gravel and sediments from the road had entered the stream. There was no evidence of the movement of sediments from the road leading to coupe 25 to the nearby stream. These incidents led to non-compliances being assessed against audit criteria relating to water and soils, operational provisions and roding (workbooks 5B, 5D and 5E, respectively).
- > One coupe (30) having not provided a sufficient buffer along a permanent water course adjoining a fire salvage coupe. A short section was identified where the prescribed buffer width of 30 m was not provided

and harvesting came to within about 25 m of the stream. There was no evidence of sediment movement from the harvest area to the inadequately buffered stream. This incident led to non-compliances being assessed against audit criteria relating to water and soils and fire salvage harvesting (workbooks 5B and 5G, respectively).

- > The batter of a road leading into coupe 27 covered the base of several trees that were located adjacent to the road, which is in breach of the MPs (section 1.6.3.7). At the time of the audit, there was no evidence that the trees had been adversely affected by this incident. The incident led to non-compliances being assessed against audit criteria relating to roading (workbook 5E).
- > The mapped harvest boundary of coupe 05 extended by about 10-20 m beyond the mapped gross coupe boundary (defined under the TRP). The MPs allow for coupe boundaries to be varied by up to 50 m from the TRP boundary without prior approval, where they are mapped to geographic features that either do not exist or are not mapped correctly. That exception did not apply for this coupe and hence non-compliance with the relevant audit criterion was recorded.

VicForests consider that this boundary error is within the measurement uncertainty of GPS equipment used to mark the coupe and map the harvested area and that mapped harvest areas that are within 50 m of the mapped TRP coupe should not be considered to be non-compliant.



Note: No severe EIA ratings were given. Incidents for which the former DSE or other agents were considered responsible included existing (i.e. existing prior to harvest) pest plant and animal management issues, management of the general forest roading network and unauthorised access to coupes by members of the general public. All other non-compliance incidents were within VicForests' or its contractor's operational control.

Figure 7 Incidents leading to assessments of non or partial compliance with audit criteria. a) Numbers of incidents with and without EIA ratings and management responsibility; b) EIA ratings applied to incidents.

A variety of other issues contributed to assessments of non or partial compliance with audit criteria that had moderate EIA ratings. These issues were uncommon and generally only identified on single coupes. They included:

- > Regeneration burns (on several coupes) damaging trees outside the planned burn boundary, either in exclusion areas within the gross coupe boundary or in adjacent coupes;
- > Ineffective rehabilitation of a log landing;
- > Failure to retain long-lived understorey elements or for the continuity of habitat trees (one coupe each) in coupes where the harvest area approximated the entire TRP or gross coupe area and there were no substantive areas of undisturbed vegetation;
- > Non reinstatement of snig track and/or boundary track cross drainage following damage during either preparation for regeneration burning or rough-heaping;

- > Placement of bark on uncorded snig tracks in clearfell harvest coupes;
- > Unauthorised machine entry into an unharvested adjoining forest area, causing damage to understorey vegetation;
- > Damage to a closed in-coupe road and other coupe infrastructure resulting from unauthorised access during wet weather by members of the public;
- > A poorly constructed road used to access a coupe. The cleared width exceeded prescriptions and the road drainage was poorly constructed and maintained, leading to damage to the road surface and adjoining areas.

3.1.4 Repeated non-compliances not triggering EIA ratings

Repeated instances of non or partial compliance that did not trigger EIA assessments were recorded for several audit criteria. Many represented specific procedural breaches of the Code¹⁰. The main examples of these were:

- > *Forest coupe planning criterion 18: Forest coupe plan (FCP) maps the soil erosion hazard class (or classes) and slope of the coupe area and associated operational restrictions:* section 2.1.3 of the Code requires that the FCP map the soil erosion hazard class, coupe slope and associated operational restrictions and the coupe. While the coupe files generally included multiple copies of useful maps, none of the audited coupe files included maps of soil erosion hazard class. Most mapped slope, particularly where it was an operational constraint, and many mapped the underlying geology (but not soil type). However, none fully complied with this Code requirement.

Recommendation 3.1

That VicForests and DEPI¹¹ either include a specific soil erosion hazard class map in all coupe files or annotate the geology or other map to indicate the distribution of soil erosion hazard class(es) across the coupe.

- > *Water quality, river health and soil protection criterion 5: Evidence provided that all wastes removed to approved disposal facility:* the Code (section 2.2.1) requires that all wastes are removed to an approved disposal facility. Non-compliance with this audit criterion does not (strictly) represent a specific breach of the Code as wastes may be disposed as prescribed without evidence being provided to or by VicForests. However, compliance can only be assessed where such evidence is gathered.

VicForests staff routinely monitor for the presence of wastes on the coupe and expect contractors to dispose of any wastes an appropriate way. However, they do not require contractors to provide evidence that they have been removed to an approved disposal facility and expressed no interest in doing so.

The auditor's view is that the audit criterion (and the Code prescription on which it is based) is valid but not fully auditable. General rubbish, at least, can be appropriately disposed via contractors' household waste collections, without the possibility of evidence being provided. However, industrial wastes that are prescribed under Environment Protection Authority (EPA) regulations (the *Industrial Waste Resource Regulations*¹²; e.g. any oily rags, oil drums, used engine oil, oil filters) may only be disposed of to a licensed waste transporter or waste receiver. Since waste transfer certificates or other receipts are issued for the transport and/or disposal of such wastes and so it should be possible to gather evidence that they have been disposed appropriately for auditing purposes.

¹⁰ In some instances, non-compliance with an audit criterion does not strictly breach the Code, MPs or FSHPs. For example, some of the audit criteria were written to assess the effectiveness of prescribed actions: the Code (etc.) is only breached where the prescribed actions were not undertaken and not where the prescribed actions failed to achieve their environmental protection (or other) objective.

¹¹ DEPI has been included in this and other recommendations, where they are relevant to consistent non-compliance issues (see section 4).

¹² <http://www.epa.vic.gov.au/business-and-industry/guidelines/waste-guidance/industrial-waste-resource-guidelines>

Recommendation 3.2

That VicForests and DEPI collect and retain evidence of appropriate disposal of any prescribed industrial wastes generated on the coupe (e.g. oil drums, used engine oil, oil filters, oily rags). That evidence may take the form of a waste transport certificate or other relevant document from an Environment Protection Authority (EPA) licensed waste transporter or receiver.

- > *Water quality, river health and soil protection criterion 13: FCP provides evidence that waterways classified into Code categories (permanent, temporary, drainage line):* the Code (section 2.2.1) requires that all waterways in coupes are classified as permanent rivers, streams, pools and wetlands, temporary streams or drainage lines. While waterways within coupes were identified and appropriate exclusion areas delineated during marking, most coupe files contained no explicit evidence that the Code's classification system had been applied. They were therefore not compliant with the audit criterion and unable to demonstrate that the Code had been applied.

Some coupes files (most commonly in Dandenong FMA) included maps with annotations of waterway class. Such maps were assessed to comply with this criterion and provide evidence of the application of this Code prescription.

Recommendation 3.3

That VicForests and DEPI include maps in coupe files that annotate the Code waterway class that is applicable to every waterway located within or adjacent to the coupe.

- > *Biodiversity conservation #11 Where Myrtle Beech present on gross coupe area, FCP provides evidence that MP Myrtle Wilt hygiene requirements have been followed:* the Code (2.3.4) requires that where Myrtle Wilt is known to exist, precautionary measures must be applied to minimise its spread. Since the disease is endemic in forest containing Myrtle Beech, these hygiene measures should be followed in coupes in which this species is located. None of the files for audited coupes with Myrtle Beech provided any evidence of this and discussions with VicForests staff suggested that they did not consider Myrtle Wilt to be an issue in their area.

Since Myrtle Beech trees are typically located in rainforest or riparian exclusion areas, they are typically protected from damage as a result of harvesting: hence the requirements of the Code are satisfied by default and there is no specific risk of harm to the environment from non-compliance with the audit criterion. However, the audit found cases where harvesting or roading activities were conducted in the vicinity of Myrtle Beech trees. The lack of specific consideration of Myrtle Wilt hygiene may have contributed to some risk of harm to the environment in these settings.

Recommendation 3.4

That VicForests include develop a standard procedure for demonstrating that risks from Myrtle Wilt have been considered and managed consistently with the Code and MPs on each coupe which has Myrtle Beech trees present.

3.1.5 Positive observations of VicForests' harvest planning and operations

VicForests' harvest planning and operations on the 35 audited coupes were found to fully or partly comply with 97% of applicable audit criteria. While there were incidents on coupes that led to non-compliance with audit criteria, some of which had potential or actual environmental impact, harvest coupe planning, operations and closure were generally compliant with the Code, MPs and (where relevant) FSHPs.

Several positive observations about VicForests planning and operations are worth noting, including:

- > *Protection of sensitive environments:* many of the coupes contained sensitive environments, including temporary and permanent streams and rainforest patches. Many were also located adjacent to SPZs and SMZs that were created to protect particular environmental or cultural values. With very few exceptions, coupe marking was undertaken conservatively and ensured: that protected areas were correctly identified; the required buffers (or filters) were provided; and that these areas were not inappropriately affected by harvesting operations.

Buffer widths were commonly significantly greater than the minima specified by the Code and/or SPZ definitions. This was typically reflected topographic constraints, as many of the gullies drained by permanent streams and in which rainforest patches were located were steep and not accessible to logging machinery.

- > *Monitoring and recording contractors' non-compliance incidents:* many of the coupe diaries and files recorded instances of and the locations where trees had been accidentally felled by contractors into exclusion areas (as well as other instances of contractors' non-compliance with prescriptions). Few, if any of these incidents would have been identified otherwise as their environmental impact was typically not discernible at the time of the audit. While these incidents were all recorded as non-compliances in this audit (as the Code only provides for approved felling into exclusion areas, which is taken to mean approval in advance), their recording is indicative of thorough supervision and contractor management by VicForests staff and should be continued.
- > *Coupe mapping:* VicForests use of GPS surveys and GIS ensures that coupe files are equipped with a variety of useful and informative maps to assist in coupe planning, monitoring and auditing.
- > *Coupe rehabilitation:* while there were a few exceptions, coupe infrastructure was generally successfully rehabilitated by the time the coupes were closed. Snig tracks and boundary tracks were generally more than adequately cross-drained and there was minimal risk of their contributing sediment to nearby watercourses. Landings were generally successfully rehabilitated, although not necessarily fully revegetated at the time of this audit. The auditor's experience from FAP Module 7 audits of coupe regeneration and finalisation (conducted within 1-5 years of closure) is that coupe infrastructure remains stable and that snig tracks and landings eventually regenerate successfully.

3.2 Coupe selection and coupe characteristics

Thirty-five harvest coupes were selected for audit from VicForests' operational area (Table 3, Table 4). These were distributed across Central, Central Gippsland, Dandenong, East Gippsland and Tambo FMAs. The coupes included a wide range of forest types, silvicultural systems and risk contexts. Five of the operations were fire salvage operations and one was a thinning operation rather than a final harvest. Only two of the coupes were active harvest coupes at the time of the audit.

Table 3 Characteristics of harvesting operations on audited VicForests coupes

FMA	Average area harvested	Forest type (# coupes) ¹					Silvicultural system (# coupes) ²			
		AA	CMS	FMS	MA	MMS	CF	CF-ST	CF-Salv	THB
Central	23.6 ha	4		1	3		5		3	
Central Gippsland	23.6 ha	1		1	2	2	2	4		
Dandenong	18.4 ha			1	6		6	1		
East Gippsland	25.2 ha		3	7		1		8	2	1
Tambo	26.5 ha	1		1		1	1	2		

Note:

1. Forest type: AA – Alpine Ash predominant, CMS – Coastal mixed species, FMS – Foothill mixed species, MA – Mountain Ash predominant, MMS – Mountain mixed species
2. Silvicultural system – CF – Clearfell, CF-ST – Seed tree retained, CF-Salv – Clearfell salvage operation, THB – Thinning from below

The majority of coupes were located in landscapes where harvesting posed relatively low risk to soils and water quality values. Only nine of the 35 VicForests coupes were located in very steep terrain, with average slopes exceeding 20°. Just four had soils with at least one horizons having high soil erosion hazard. Rainforest was present within the gross coupe boundary on 17 of the 35 coupes. Special protection or special management zones (SPZs and SMZs), which have been established to protect specific forest values, were located on or adjacent to 26 of the coupes.

The coupe file reviews and field assessments were undertaken in two stages. The work in East Gippsland and Tambo FMAs was undertaken between 15th and 20th October 2012. Audits in Central, Dandenong and Central Gippsland FMAs were undertaken between 12th and 21st November 2012.

Table 4 Environmental risk factors for audited VicForests' coupes

FMA	Average slope		Soil erosion hazard ¹		Rainforest present ²	Melbourne Water catchment	SPZ/SMZ present ³
	<20°	≥20°	High	Low-Medium			
Central	7	1	1	7	5		6
Central Gippsland	3	3	1	5	3	2	3
Dandenong	3	4	1	3	5		5
East Gippsland	10	1	1	6	4		9
Tambo	3	0		2			3

Note:

1. Soil erosion hazard: highest assessed hazard for a soil horizon. Information not reported for some coupes.
2. Rainforest stands present in gross coupe area – confirmed by field assessment during coupe reconnaissance.
3. Special Protection Zone (SPZ) or Special Management Zone (SMZ) located within or adjacent to the gross coupe area.



Examples of landscape settings in which the audit of harvesting and coupe closure was conducted.

3.3 Audit results

The following sections present and discuss the results of the audits of VicForests' operations, organised by workbook. Reference numbers have been allocated to each coupe to enable cross-checking between workbooks and criteria.

3.3.1 Forest coupe planning

Workbook 5A for forest coupe planning includes 44 compliance elements (Appendix A) relating to planning and preparation for harvesting and the extent to which the harvesting operations conform to coupe planning requirements of the Code and MPs. The audit found that 92% of applicable audit criteria were fully satisfied and that a further 4% of applicable criteria¹³ were partly satisfied (Table 5). The level of compliance with relevant audit criteria was consistent between FMAs and (for full compliance) varied only between 91% (Tambo FMA) and 94% (Dandenong and East Gippsland FMAs).

¹³ Note that compliance and non-compliance rates in this section are reported against applicable audit criteria. Many of the criteria were not applicable to the planning and operations conducted on individual coupes. This may have reflected that particular values to be protected were not present (e.g. criteria relating to rainforest or old growth forest protection were not applicable in coupes that did not have rainforest and/or old growth forest within the gross coupe boundary) or that the criteria was not applicable to the stage of the coupe in the plan-harvest-rehabilitate-close life cycle addressed by this audit (e.g. criteria relating to landing rehabilitation could not be assessed on coupes in which the landing was still being used). Non-compliance was assessed against audit criteria rather than Code or MP prescriptions. There may be several audit criteria that relate to a single Code or MP prescription.

Table 5 Compliance with audit criteria relating to forest coupe planning prescriptions in the Code and Management Procedures: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	8	4%	9	4%	210	93%
Central Gippsland	6	3%	8	5%	160	92%
Dandenong	5	2%	8	4%	192	94%
East Gippsland	6	2%	12	4%	284	94%
Tambo	5	6%	3	4%	77	91%
Overall	30	3%	40	4%	923	93%

The EIA tool was not considered to be applicable to most (70%) incidences of non-compliance with audit criteria relating to forest coupe planning (Table 6). This was on the basis that there was no direct link between non-compliance and environmental impact. Of the instances of non-compliance with audit criteria for which the EIA tool could be applied, most were assessed to have negligible or minor environmental impact (Table 6). One instance of non-compliance was assessed to have moderate environmental impact and three instances were assessed to have major environmental impact¹⁴.

Instances of non-compliance were assessed against nine of the 44 compliance elements (Appendix C.1). Moderate or major EIA ratings were determined for instances of non-compliance with three criteria (10, 28 and 41), two of which (criteria 28 and 41) related to the same incident on coupe 30. Detailed comments on all non-compliances and the respective EIA ratings are given in Appendix C.1.

Table 6 Assessed environmental impact potentially resulting from instances of non-compliance with audit criteria: percentage of instances of non-compliance assessed to have a particular environmental impact rating or for which the EIA tool was not considered to be applicable.

FMA	Environmental impact rating					
	Negligible	Minor	Moderate	Major	Severe	EIA not applicable
Central	2 (12%)	3 (14%)	0	1 (6%)	0	11 (65%)
Central Gippsland	0	4 (29%)	0	0	0	10 (71%)
Dandenong	0	3 (23%)	0	0	0	10 (77%)
East Gippsland	0	3 (17%)	0	2 (11%)	0	13 (72%)
Tambo	2 (25%)	0	1 (13%)	0	0	5 (65%)
Overall	4 (6%)	13 (19%)	1 (1%)	3 (4%)	0	49 (70%)

The most significant areas of non-compliance (i.e. with moderate or higher EIA rating) relate to incidents on three coupes, including:

- > Coupe 30: where a small section of the harvest area transgressed into the extended buffer for a permanent stream in a fire salvage coupe (EIA: major);
- > Coupe 12: where machinery (assumed to be used in preparation for regeneration burning) travelled over a coupe boundary and damaged understorey vegetation for several tens of metres (EIA rating: moderate);
- > Coupe 05: where harvesting took place slightly outside the TRP area without prior approval or a valid justification based on the way the coupe boundary was to be identified (EIA: major).

VicForests have argued that the third incident did not represent non-compliance because harvesting was mapped less than 50 m outside the TRP boundary and so within locational uncertainties of coupe marking and

¹⁴ Two of the non-compliances with audit criteria were for the same coupe (30) and related to a single incident.

mapping of the harvest area boundary. It is the auditor's view that while this may be true, the Code (section 2.1.5) and MPs (section 2.1.6) only provide support for harvesting outside the TRP areas where this is greater than 50 m and has prior approval or where it is less than 50 m, but relates to a boundary that was set to a geographic feature that was either not present or not accurately mapped. Neither of the exceptions applied in this case.

Recommendation 3.5

The Code provides for the coupe to extend up to 50 m beyond the mapped TRP boundary where the coupe boundary is a feature that is either not present or not mapped correctly. Where this situation does not apply, it is recommended that the coupe boundary be remarked and/or remapped where it is found to extend more than 10 m beyond the TRP boundary.

3.3.2 Water quality, river health and soil protection

Workbook 5B for water quality, river health and soil protection includes 35 compliance elements (Appendix A) relating to the maintenance of soil health, protection of the quality of water draining from them and in-coupe and downstream river health values. The workbook includes specific sections dealing with:

- > Planning for protection of water quality (2 audit criteria);
- > Mitigation of risks from chemical contamination (7 audit criteria);
- > Protection of waterways and riparian buffer and filter strips (20 audit criteria);
- > Management of harvesting operations on steep slopes (3 audit criteria).

The audit found that 84% of applicable audit criteria were fully satisfied and that a further 14% of applicable criteria were partly satisfied (Table 7). The level of compliance varied somewhat between FMAs, with full compliance ranging between 77% and 88% of applicable audit criteria for Tambo and Dandenong FMAs, respectively.

Table 7 Compliance with audit criteria relating to water quality, river health and soil protection prescriptions in the Code and Management Procedures: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	1	1%	16	15%	87	84%
Central Gippsland	4	5%	10	11%	75	84%
Dandenong	2	2%	9	10%	84	88%
East Gippsland	2	1%	24	17%	119	82%
Tambo	2	5%	8	18%	34	77%
Overall	11	2%	67	14%	399	84%

The level of compliance with audit criteria varied between the main themes in Workbook 5B (Table 8). Full compliance ranged between 73% of applicable audit criteria for chemical contamination and 100% for applicable planning criteria.

Instances of non-compliance were assessed against 12 of the 35 water quality, river health and soil protection audit criteria (Appendix C.2). The most significant area of non-compliance (i.e. with moderate or higher EIA rating) related to a single incident on coupe 30 (also referred to in section 3.3), where a small section of the harvest area transgressed into the extended buffer for a permanent stream in a fire salvage coupe. The EIA rating associated with this incident was major. Detailed comments on all non-compliances and the respective EIA ratings are given in Appendix C.2.

Table 8 Compliance with groups of audit criteria relating to water quality, river health and soil protection prescriptions in the Code and Management Procedures: numbers of audit criteria for which full compliance, non-compliance or partial compliance was assessed for VicForests coupes.

Section of workbook	Full compliance		# and % coupes with environmental impact rating					
	#	% applicable	Negligible	Minor	Moderate	Major	Severe	NA
Planning	12	100%	No non-compliant coupes					
Chemical contamination	96	73%	2 (6%)	0	0	0	0	33 (94%)
Waterways, buffers & filter strips	255	86%	2 (5%)	7 (17%)	0	1 (2%)	0	32 (76%)
Steep slopes	36	97%	0	0	0	0	0	1 (100%)



Riparian buffers located in harvest coupes. In general, unharvested buffers along permanent and temporary streams significantly exceeded the minimum required by the Code.

3.3.3 Biodiversity conservation

Workbook 5C for biodiversity conservation includes 35 compliance elements (Appendix A) relating to the conservation of biodiversity values in harvested areas. The workbook includes specific sections dealing with:

- > Forest health (12 audit criteria);
- > Planning and management of coupe operations for conservation of biodiversity (9 audit criteria);
- > Protection of rainforest areas and values (3 audit criteria);
- > Protection of old growth forest areas and values (5 audit criteria);
- > Protection of giant trees (3 audit criteria; only applicable in East Gippsland and Tambo FMAs);
- > Protection of threatened species (3 audit criteria).

Neither old growth forest values nor giant trees were identified in any of the coupes included in this audit.

The audit found that 93% of applicable audit criteria were fully satisfied (Table 9). Compliance varied somewhat between the five FMAs in which the audit was conducted, with the level of full compliance varying between 86% and 97% of applicable audit criteria for Tambo and East Gippsland FMAs, respectively.

The level of compliance with audit criteria varied between the main themes in Workbook 5C (Table 10). Full compliance with applicable audit criteria was 85% for forest health and between 98 and 100% for planning and management, rainforest and threatened species.

Instances of non-compliance were identified for six of the 35 biodiversity conservation audit criteria (Appendix C.3). Detailed comments on all non-compliances and the respective EIA ratings are given in Appendix C.3.

Table 9 Compliance with audit criteria relating to biodiversity conservation prescriptions in the Code and Management Procedures: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	11	10%	1	1%	99	89%
Central Gippsland	5	7%	0		67	93%
Dandenong	6	5%	0		106	95%
East Gippsland	2	2%	1	1%	98	97%
Tambo	3	14%	0		19	86%
Overall	27	7%	2	1%	389	93%

Table 10 Compliance with groups of audit criteria relating to biodiversity conservation prescriptions in the Code and Management Procedures: numbers of audit criteria for which full compliance, non-compliance or partial compliance was assessed for VicForests coupes

Section of workbook	Full compliance		# and % coupes with environmental impact rating					
	#	% applicable	Negligible	Minor	Moderate	Major	Severe	NA
Forest health	150	85%	8 (31%)	3 (12%)	2 (8%)	0	0	13 (50%)
Planning and management	163	99%	0	0	2 (100%)	0	0	0
Rainforest	45	98%	0	0	0	0	0	1 (100%)
Old growth forest	Not applicable to audited coupes							
Giant trees	Not applicable to audited coupes							
Threatened species	31	100%	0	0	0	0	0	0

There were four instances of non-compliance with audit criteria that were given a moderate or higher EIA rating, as follows:

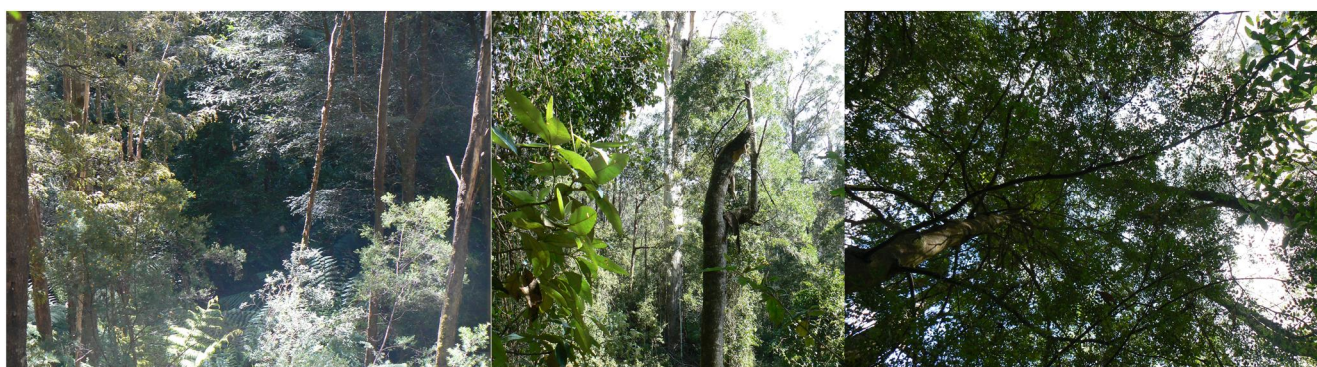
- > Coupes 23 and 31: regeneration burns in these coupes caused unplanned canopy scorch in trees that were growing adjacent to the coupes. Planning for these burns was compliant with the Code and audit criteria, However, notwithstanding the planning, the regeneration burns resulted in unintended damage to adjacent unharvested areas. (EIA: moderate).
- > Coupe 12: where almost the entire Timber Release Plan (TRP) coupe area (or gross coupe area) was harvested and understorey disturbed by rough heaping. The nature of the coupe meant that no exclusion areas were required. Harvesting and rough heaping resulted in no long-lived understorey elements being retained within the gross coupe area. While long-lived understorey elements were present in adjoining unharvested areas, the coupe is considered not to comply with the Code requirement (section 2.2.2) that examples of such elements be retained within the harvestable area. (EIA: moderate).
- > Coupe 09: Planned biodiversity conservation measures for this coupe included the retention of habitat trees at the density required by the East Gippsland Forest Management Plan [8]. As with coupe 12, the nature of the coupe allowed the majority of the TRP area to be harvested. A severe storm following harvesting resulted in many of the retained habitat trees being blown over, resulting in the coupe not having sufficient standing habitat trees to achieve the target set in the coupe plan. While this was not the intended outcome, the coupe is nonetheless considered to not comply with this audit criterion. (EIA rating: moderate).

Recommendation 3.6

That VicForests review its regeneration burning planning and practices to identify further opportunities to prevent unintended damage to trees in adjacent coupes.

Recommendation 3.7

That VicForests ensure during coupe marking that adequate provision is made to meet planned biodiversity conservation measures, including retention and continuity of long-lived understorey elements and habitat trees within the harvestable area. This may include making provision for windthrow of retained habitat trees, the risk of which is exacerbated by harvesting.



Retained rainforest and undisturbed vegetation within harvest coupes

3.3.4 Operational provisions

Workbook 5D for operational provisions includes 18 compliance elements (Appendix A) relating to the management of harvesting operations. The audit of VicForests' coupes found that 97% of applicable audit criteria were fully satisfied and that a further 1% of applicable audit criteria were partly satisfied (Table 11). The level of compliance with audit criteria was consistently high in all five FMAs in which the audit was conducted.

Table 11 Compliance with audit criteria relating to operational provisions prescriptions in the Code and Management Procedures: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	1	2%	0		56	98%
Central Gippsland	0		1	3%	37	97%
Dandenong	0		1	2%	50	98%
East Gippsland	3	5%	0		64	96%
Tambo	1	7%	0		13	93%
Overall	5	2%	2	1%	220	97%

Instances of non-compliance were assessed against four of the 18 operational provisions audit criteria (Table 12) and were evident in six of the 35 audited coupes. Non-compliances with three audit criteria (3, 6 and 8) were assessed using the EIA rating tool. The main non-compliance issues related to:

- > Coupe 11: post-harvest vehicle traffic during wet weather, presumably in connection with domestic firewood collection, caused rutting on the coupe and damaged soil conditions. (EIA rating: moderate for criteria 3 and 6).
- > Coupe 21: despite efforts to rehabilitate the landing, it remained compacted and unsuited to regeneration and hence did not comply with criterion 8. (EIA rating: moderate).

- > Coupe 33: the road into this coupe from an adjoining coupe drains directly into a permanent water course, without filtering by vegetation, silt traps or similar structures. Sand and gravel from the coupe have been washed into the stream. This breaches some Code prescriptions for roading and led to non-compliance being assessed for criterion 6.

While coupe 33 does not comply with criterion 6, there is no evidence that the operations breached the relevant Code prescription (section 2.5.3). The Code requires that “*timber harvesting must be suspended when water begins to flow along tracks*”. The flow of sediment into the watercourse was most likely due to the failure to divert drainage from the road and not from harvesting traffic during wet weather.

Further detailed comments on all non-compliances and the respective EIA ratings are given in Appendix C.4

Table 12 Assessed environmental impact resulting from instances of non-compliance with audit criteria for operational provision: percentage of instances of non-compliance assessed to have a particular environmental impact rating or for which the EIA tool was not considered to be applicable.

FMA	Environmental impact rating					
	Negligible	Minor	Moderate	Major	Severe	EIA not applicable
Central	0	0	0	1 (100%)	0	0
Central Gippsland	0	1 (100%)	0	0	0	0
Dandenong	0	0	1 (100%)	0	0	0
East Gippsland	0	1 (33%)	2 (67%)	0	0	0
Tambo	0	0	0	0	0	1 (100%)
Overall	0	2 (29%)	3 (43%)	1 (14%)	0	1 (14%)

3.3.5 Roading

Workbook 5E has been developed to audit against roading prescriptions contained in the Code and MPs. It includes 84 individual compliance elements (Appendix A) that address:

- > Road planning (13 audit criteria);
- > Road design (16 audit criteria);
- > Road construction (36 audit criteria);
- > Road maintenance (5 audit criteria);
- > Temporary, seasonal and permanent road closure (11 audit criteria)
- > Traffic control (3 audit criteria).

Road planning, design and construction compliance elements were generally only considered where a road had been constructed to access the audited harvest coupe (or a group of coupes, one of which was the audited coupe). These elements were not considered where the coupe was accessed via the existing (former DSE-managed) forest road network or where the road was constructed in a roadline coupe.

The audit found that 95% of applicable audit criteria were fully satisfied (Table 13). The level of full compliance with audit criteria was 90% or greater in all five FMAs in which the audit was conducted.

The level of compliance with audit criteria varied between the main themes in Workbook 5E (Table 14). Full compliance was assessed to be less than 90% of applicable audit criteria for road design and traffic control and over 90% for the remaining themes (road planning, road construction, road maintenance and road closure).

Instances of non-compliance were identified for 18 of the 84 roading audit criteria (Appendix C.5). Comments on instances of non-compliance and the level of assessed environmental impact are given in Appendix C.5.

Table 13 Compliance with audit criteria relating to roading prescriptions in the Code and Management Procedures: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	6	2%	4	2%	237	96%
Central Gippsland	1	1%	0		87	99%
Dandenong	4	3%	1	1%	117	96%
East Gippsland	17	9%	2	1%	162	90%
Tambo	4	6%	0		67	94%
Overall	32	5%	7	1%	670	95%

Table 14 Compliance with groups of audit criteria relating to roading prescriptions in the Code and Management Procedures: numbers of audit criteria for which compliance, non-compliance or partial compliance was assessed for VicForests coupes

Section of workbook	Full compliance		# and % coupes with environmental impact rating					
	#	% applicable	Negligible	Minor	Moderate	Major	Severe	NA
Road planning	117	99%	0	0	0	0	0	1 (100%)
Road design	64	85%	1 (9%)	2 (18%)	1 (9%)	7 (64%)	0	0
Road construction	217	97%	0	1 (17%)	3 (50%)	2 (33%)	0	0
Road maintenance	112	92%	0	7 (70%)	3 (30%)	0	0	0
Road closure	122	95%	1 (17%)	0	2 (33%)	1 (17%)	0	2 (33%)
Traffic control	38	88%	0	0	0	0	0	5 (100%)

Recommendation 3.8

That when VicForests constructs temporary or permanent roads into new coupes, it ensures that the prescribed measures are taken to ensure that roads in the vicinity of streams are drained correctly and that risks of stream crossings to water quality are minimised.

Nine instances of moderate EIA ratings and 10 instances of major EIA ratings were recorded for non-compliances with audit criteria. All but one of the major EIA ratings applied to a single issue each on two coupes (25 and 33). A further major EIA rating applied to an instance of non-compliance with an audit criterion on coupe 27. Moderate EIA ratings related to single issues on a further two coupes (09 and 11). An overview of the main non-compliance issues is given below.

- > Coupe 09: much of the road leading into this coupe was observed to be in poor condition, with drainage and maintenance that did not comply with six audit criteria. As a result, the road was rutted and water ponded at places where it could not drain away. The clearing width for the road was also wider than prescribed by the MPs. This road was to be closed once the coupe was regenerated and would be expected to be properly cross-drained and stabilised at this time. There appeared to be no material risk of sediment generated by the road from entering a water course. (EIA rating: moderate).
- > Coupe 11: post-harvest vehicle traffic, presumably domestic firewood collectors, had accessed this coupe during wet weather and damaged roads and some other coupe infrastructure. This has contributed to rutting and soil damage and had impaired the function of the cross drains in a closed section of road. Non compliance was reported against 3 roading and two operational infrastructure criteria. (EIA rating: moderate).
- > Coupe 25: this coupe was accessed by a roadline coupe that did not have structures or diversions to prevent the direct entry of road drainage into an adjacent waterway. Non-compliance was consequently

assessed against three audit criteria. The soil on the road batter appeared stable and no sediment was observed in the stream. (EIA rating: major).

- > Coupe 27: the fill batter along a section of road constructed to access the two landings on this coupe covered the base of a small number of trees in an exclusion area on the edge of the coupe. (EIA rating: major).
- > Coupe 33: this coupe was similar to coupe 25, in that drainage from a road entering the coupe directly entered a stream, without any filtering or diversion structures. Unlike coupe 25, soil and gravel were present adjacent to and along a section of the stream. Non-compliance was assessed in relation to six audit criteria. (EIA rating: major).

3.3.6 Coupe infrastructure

Workbook 5F for coupe infrastructure includes 28 compliance elements (Appendix A) relating to planning for and the management and rehabilitation of coupe infrastructure such as log landings, log dumps and snig or forwarding tracks. The workbook includes four main themes:

- > Planning (8 audit criteria);
- > Landings and log dumps (4 audit criteria);
- > Snig tracks and forwarding tracks (3 audit criteria);
- > Rehabilitation (12 audit criteria);

The audit found that 95% of applicable audit criteria were fully satisfied and that a further 3% of applicable criteria were partly satisfied (Table 15). The level of full compliance with audit criteria exceeded 90% in all FMAs, apart from Tambo.

The level of full compliance with audit criteria varied between the main sections in Workbook 5F (Table 16). Full compliance was assessed for 87% of applicable audit criteria for snig and forwarding tracks and over 90% for the remaining workbook themes (planning, log landings and log dumps and rehabilitation). All instances of non-compliance with audit criteria were considered to pose a risk of harm to the environment (Table 16) and EIA ratings were applied.

Instances of non-compliance were assessed against 12 of the 28 coupe infrastructure audit criteria. Comments on instances of non-compliance and the level of assessed environmental impact are given in Appendix C.6.

Table 15 Compliance with audit criteria relating to coupe infrastructure prescriptions in the Code and Management Procedures: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	4	3%	5	4%	118	93%
Central Gippsland	1	1%	3	3%	89	96%
Dandenong	0		2	2%	114	98%
East Gippsland	4	3%	3	2%	140	95%
Tambo	2	4%	4	9%	39	87%
Overall	11	2%	17	3%	500	95%

There were four instances of non-compliance with audit criteria leading to a moderate EIA rating on three coupes, as follows:

- > Coupe 06: this coupe was a fire salvage clearfell operation, with harvesting performed by thinning machinery. Bark was placed on snig or forwarding tracks on parts of this coupe. This is not consistent with the MPs (section 1.3.4), which only allow bark to be placed on snig or forwarding tracks in thinning operations.

- > Coupe 12: while boundary tracks appeared to have been drained in compliance with the Code on the completion of harvesting, almost all cross drains were removed during preparations for regeneration burning. The coupe ultimately regenerated without burning, however at the time of the audit, boundary track cross-drainage had not been reinstated.
- > Coupe 21: despite efforts to rehabilitate the landing on coupe 21, it did not provide suitable conditions for regeneration and regrowth at the time of the audit. Non-compliance was assessed for two relevant audit criteria.

Table 16 Compliance with groups of audit criteria relating to coupe infrastructure prescriptions in the Code and Management Procedures: numbers of audit criteria for which compliance, non-compliance or partial compliance was assessed for VicForests coupes

Section of workbook	Full compliance		# and % coupes with environmental impact rating					
	#	% applicable	Negligible	Minor	Moderate	Major	Severe	NA
Planning	204	93%	3 (20%)	11 (73%)	1 (7%)	0	0	0
Landings and log dumps	72	100%	No non-compliances					
Snig tracks and forwarding tracks	32	87%	3 (60%)	1 (20%)	1 (20%)	0	0	0
Rehabilitation	192	96%	3 (38%)	3 (38%)	2 (25%)	0	0	0



Coupe infrastructure: snig tracks are cross-drained progressively as harvesting proceed; active and rehabilitated log landings.

Recommendation 3.9

That VicForests strengthen communication between its silviculture and harvesting personnel to ensure that cross drainage on coupe infrastructure is quickly reinstated when damaged or disturbed during regeneration operations.

3.3.7 Fire salvage harvesting

Workbook 5G for fire salvage harvesting includes 15 elements (Appendix A) relating to the application of the FSHPs. The workbook has six sections, as follows:

- > Coupe size and aggregation (1 audit criterion);
- > Habitat retention (3 audit criteria);
- > Water quality (5 audit criteria);
- > Field determined values (2 audit criteria);
- > Ash exclusion (3 audit criteria);
- > Barred Galaxias (1 audit criterion).

Just five of the 35 audited coupes were fire salvage coupes to which the FSHPs were applicable. These were located in Central FMA and East Gippsland FMA. Since none of the fire salvage coupes were located in Barred

Galaxia habitat areas and Ash exclusion area prescriptions did not apply, these workbook themes were not audited against.

The audit found that planning and operations fully satisfied 90% of applicable audit criteria and partly satisfied the remaining 10% of applicable criteria (Table 17).

Table 17 Compliance with audit criteria relating to application of the FSHPs: numbers of audit criteria for which full, partial and non-compliance were assessed for VicForests coupes.

FMA	Non-compliance		Partial compliance		Full compliance	
	No.	% applicable	No.	% applicable	No.	% applicable
Central	0		1	5%	19	95%
East Gippsland	0		2	18%	9	82%
Overall	0		3	10%	28	90%

The level of full compliance with audit criteria varied between the main sections in Workbook 5G (Table 18). Partial compliances were assessed for water quality and field determined values on three of the five coupes to which the FSHPs applied and for two audit criteria. The main instance of non-compliance related to coupe 30, where a small section of riparian buffer on a permanent water course did not meet the prescribed 30 m width. The EIA rating for this non-compliance (also noted for Water quality, river health and soil protection criterion 17) was major.

Comments on instances of non-compliance and the level of assessed environmental impact are given in Appendix C.7.

Table 18 Compliance with groups of audit criteria relating to the FSHPs: numbers of audit criteria for which compliance, non-compliance or partial compliance was assessed for VicForests coupes

Section of workbook	Full compliance		# and % coupes with environmental impact rating					
	#	% applicable	Negligible	Minor	Moderate	Major	Severe	NA
Coupe size and aggregation	5	100%			No non-compliances			
Habitat retention	15	100%			No non-compliances			
Water quality	8	89%	0	0	0	1 (100%)	0	0
Field determined values	0		0	0	0	0	0	2 (100%)
Ash exclusion areas				Not applicable				
Barred Galaxias				Not applicable				

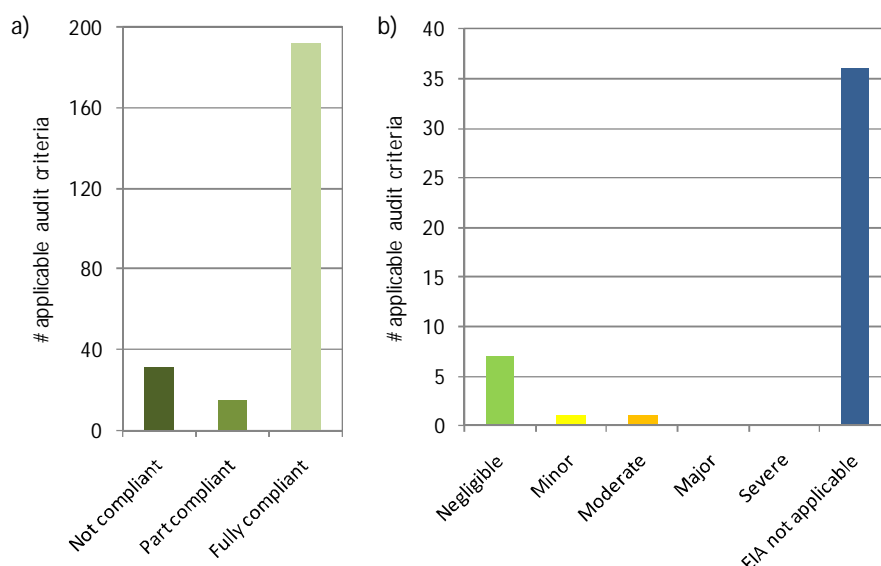
4. Harvest coupes managed by the former DPI

4.1 Overview of findings

Five harvest coupes that were managed by the former DPI¹⁵ were selected for audit. These coupes are located in Bendigo, Horsham, Midlands and Otways FMAs and included multiple forest types, silvicultural systems and environmental risk contexts. As with the audits of VicForests' operations, these audits of the former DPI's operations were conducted using revised workbooks (5A-5F) for FAP module 5¹⁶. The EIA rating tool was applied where partial or non-compliance with audit criteria was identified and this had potential to directly affect the environment¹⁷.

4.1.1 Compliance with audit criteria

Overall, DPI coupes were assessed to fully comply with almost 80% of applicable audit criteria (Figure 8). Of the 10 instances where the EIA rating tool was applied, only one was assessed to have moderate or higher potential environmental impact. No major or severe EIA ratings were given. Non compliances were recorded for 26 of the 244 criteria used in the audit.



Note: No severe EIA ratings were given.

Figure 8 Overview of harvesting and closure audit outcomes for coupes managed by DPI. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings were applied or were not applicable. Multiple non-compliances against audit criteria were sometimes recorded for individual incidents.

4.1.2 Compliance with audit criteria for the six workbook themes

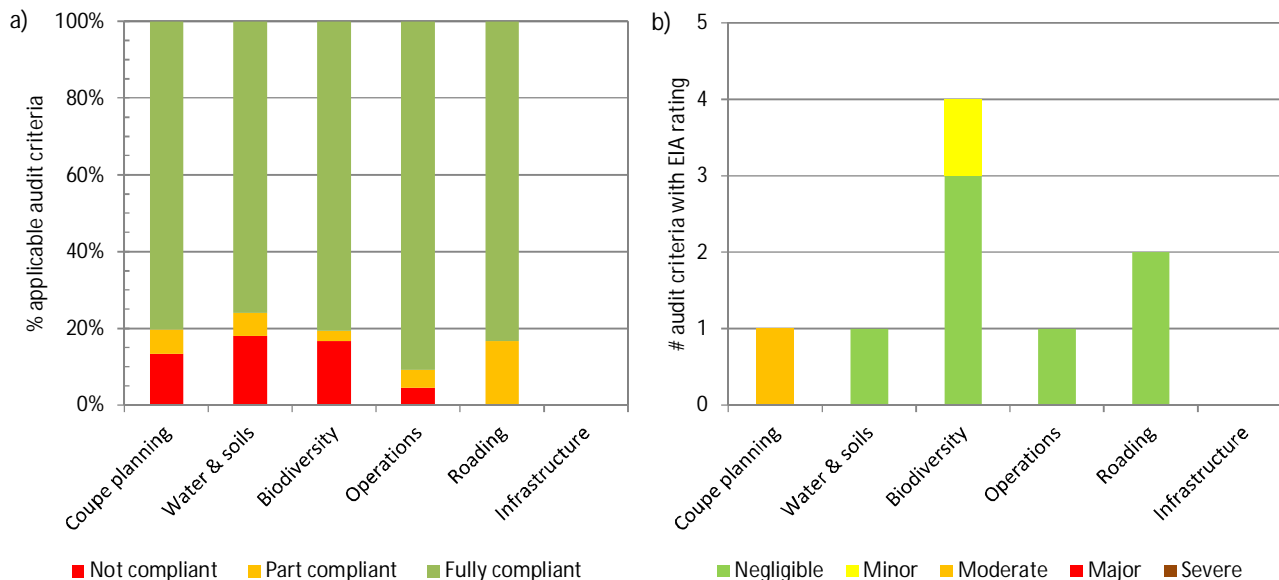
The level of full compliance with audit criteria varied between 76% for workbook 5B (Water quality, river health and soil protection) and 91% for workbook 5D (Operational provisions; Figure 9). The lack of formal infrastructure on all five audited coupes meant that workbook 5E (Coupe infrastructure) was not applicable.

¹⁵ Operations in each of the coupes were initially under the former DSE's control. Machinery of government changes in 2012 resulted in management responsibilities for timber production operations in western Victoria being transferred from DSE to DPI. Both organisations are now part of DEPI.

¹⁶ No fire salvage coupes were included in the set of DPI coupes that were audited.

¹⁷ Non-compliances that pertained to planning activities or the audit criterion requirement to provide evidence of some form were not assessed to lead directly to some form of potential environmental impact.

Most instances of non or partial compliance to which EIA ratings were applied (Figure 9) were in relation to workbooks 5C (Biodiversity) and 5E (Roding). Only one instance on non-compliance was identified where the EIA rating was moderate or greater (for 5A Forest coupe planning).



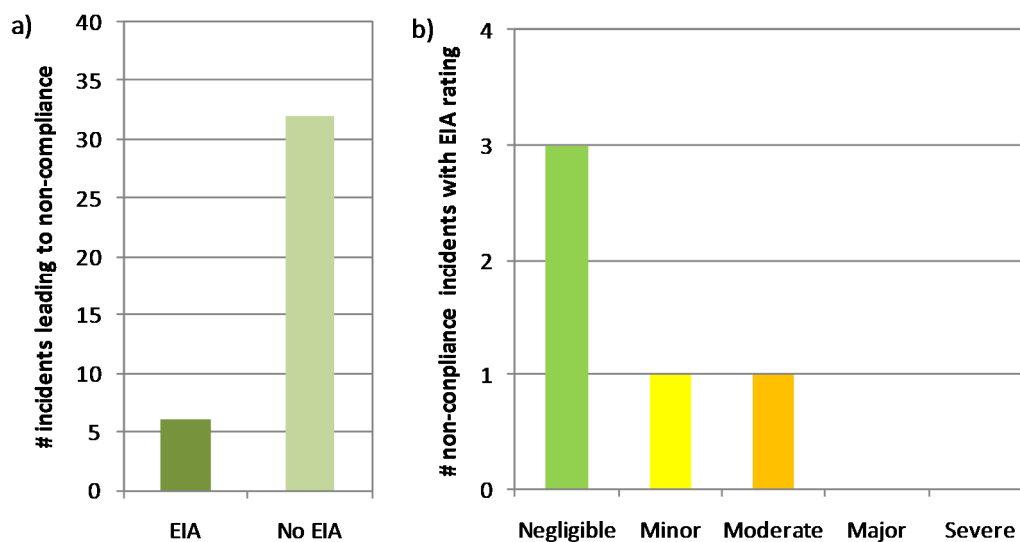
Note: No severe EIA ratings were given.

Figure 9 Harvesting and closure audit outcomes by audit workbook themes. a) Instances of non, partial and full compliance with applicable audit criteria; b) EIA ratings applied to non or partly compliant audit criteria. Multiple non-compliances against audit criteria were sometimes recorded for individual incidents.

4.1.3 Incidents or events leading to non-compliance with audit criteria

Some individual incidents were assessed to result in non-compliances with multiple audit criteria. The EIA rating tool was not applicable to most of these incidents (32 of 38; Note: No severe EIA ratings were given.

Figure 10) and when it was, the rating was mostly negligible. The most significant of such incidents related to coupe D, whose planned harvest area exceeded the prescribed maximum size for the thinning operation that was being conducted.



Note: No severe EIA ratings were given.

Figure 10 Incidents leading to assessments of non or partial compliance with audit criteria. a) Numbers of incidents with and without EIA ratings; b) EIA ratings applied to incidents.

4.1.4 Repeated non-compliances not triggering EIA ratings

Repeated instances of non or partial compliance were recorded with several audit criteria that did not trigger EIA assessments. Most represented specific procedural breaches of the Code¹⁸. The main examples were:

- > *Forest coupe planning criterion 7: FCP includes evidence of consultation and agreement with any adjoining land managers/ owners on coupe boundary:* it did not appear to be routine practice for either the former DPI or former DSE to consult with adjoining private landholders regarding the coupe boundary, as is required by the MPs (section 1.2.3). In only one instance (coupe B) did the former DPI report that it had notified adjoining landholders of the proposed operation.

Recommendation 4.1

That DEPI consult with adjoining landholders regarding coupe boundaries, as prescribed by the MPs.

- > *Forest coupe planning criterion 18: FCP maps the soil erosion hazard class (or classes) and slope of the coupe area and associated operational restrictions:* As was observed in VicForests' coupe planning, none of the former DPI FCPs included maps of soil erosion hazard or other relevant maps (e.g. soil or geology map) that were annotated to indicate the distribution of soil erosion hazard across the coupe. This issue is addressed by recommendation 3.1.
- > *Forest coupe planning criterion 26: Evidence provided that FCP and supporting documents are/were available on-site when operations in progress:* only two of the five audited coupe files included evidence to indicate that the FCP and supporting documents were available on-site when operations were in progress. This and several other procedural prescriptions of the Code and MPs were typically addressed in VicForests' operations through its coupe monitoring records.

Recommendation 4.2

That DEPI develop a standardised coupe monitoring process to enable it to capture information about progress with its harvesting operations and gather evidence to demonstrate compliance with relevant Code and MP prescriptions.

- > *Water quality, river health and soil protection criterion 5: Evidence provided that all wastes removed to approved disposal facility:* similar to VicForests' operations (section 3.1.4), DPI was unable to provide evidence that wastes from the audited coupes had been removed to an approved disposal facility and hence that their operations complied with the relevant Code prescription (section 2.2.1). Recommendation 3.2 addresses this issue.
- > *Water quality, river health and soil protection criterion 13: FCP provides evidence that waterways classified into Code categories (permanent, temporary, drainage line):* again, in common with most of the audited VicForests' coupes, none of the DPI coupe files provided explicit evidence that waterways had been classified into the three Code categories. Waterways within coupes were identified and the requirement for filters and buffers understood by DPI staff, however the files did not demonstrate that the Code (section 2.2.1) had been applied. Recommendation 3.3 addresses this issue.

4.1.5 Positive observations of DPI harvest planning and operations

The DPI timber harvesting operations included in this audit were not intensive, with the result that there was little disturbance to roads (beyond that by the general public using these same State forest areas) or soils and no observable impact on protected values, such as the quality of water generated, rainforests or threatened species.

¹⁸ In some instances, non-compliance with an audit criterion does not strictly breach the Code, MPs or FSHPs. For example, some of the audit criteria were written to assess the effectiveness of prescribed actions: the Code (etc.) is only breached where the prescribed actions were not undertaken and not where the prescribed actions failed to achieve their environmental protection (or other) objective.



Examples of DPI-managed timber production operations. The audited operations were all low intensity operations, with no formal coupe infrastructure, such as landings and snag tracks. Environmental risk factors were generally lower than for VicForests coupes.

4.2 Coupe selection and coupe characteristics

Five harvest coupes were selected for audit that are located in western Victoria and were under the former DPI's operational control (Table 19, Table 20). These were located in Bendigo, Horsham, Midlands and Otways FMAs. The coupes included four different forest types and operations were conducted under three silvicultural systems. Most of the operations were of a very low intensity. All but one of the coupes was active at the time of the audit.

Table 19 Characteristics of harvesting operations on audited DPI coupes

FMA	Area harvested	Forest type (# coupes) ¹				Silvicultural system (# coupes) ²		
		BI	FMS	MA	RRG	Fwd	STS	THB
Bendigo	224 ha							1
Horsham	100 ha					1		
Midlands	260 ha						1	
Otways	15 ha, 384 ha						1	1

Note:

1. Forest type: BI – Box-Ironbark, FMS – Foothill mixed species, MA – Mountain Ash regrowth, RRG – River Red Gum
2. Silvicultural system – Fwd – Firewood, fallen material, STS – single tree selection, THB – Thinning from below

Table 20 Environmental risk factors for audited DPI coupes

FMA	Average slope		Soil erosion hazard ¹		Rainforest present ²	SPZ/SMZ present ³
	<20°	≥20°	High	Low-Medium		
Bendigo	1	0	0	1	0	0
Horsham	1	0	0	1	0	1
Midlands	1	0	0	1	0	0
Otways	2	0	0	2	1	2

Note:

1. Soil erosion hazard: highest assessed hazard for a soil horizon. Information not reported for some coupes.
2. Rainforest stands present in gross coupe area – confirmed by field assessment during coupe reconnaissance.
3. Special Protection Zone (SPZ) or Special Management Zone (SMZ) located within or adjacent to the gross coupe area.

Most coupes were located in landscapes where harvesting posed relatively low risk to soils and water quality values (Table 20), due to low slope and low soil erosion hazard. Rainforest was present within the gross coupe area of one of the coupes in Otways FMA. SPZs or SMZs, which have been established to protect specific forest values, were located on or adjacent to three of the five audited coupes.

The coupe file reviews and field assessments were undertaken in two stages. Work in Bendigo, Midlands and Horsham FMAs was undertaken between 18th and 20th September 2012. Audits in Otways FMA were undertaken on 7th November 2012.

4.3 Audit results

The following sections present and discuss the results of the audits of DPI's operations, organised by workbook. Reference numbers have been allocated to each coupe to enable cross-checking between workbooks and criteria.

4.3.1 Forest coupe planning

Workbook 5A for forest coupe planning includes 44 compliance elements (Appendix A) relating to planning and preparation for harvesting and the extent to which the harvesting operations conform to coupe planning requirements of the Code and MPs. Planning for DPI or (what were originally) DSE coupes was generally less comprehensive and not as well structured as that undertaken by VicForests and was not supported to the same extent by GPS mapping and GIS map products.

While some of the difference in planning is consistent with the lower intensity of these operations, it may have contributed to the higher level of non-compliance with coupe planning and some other procedural audit criteria.

Recommendation 4.3

That DEPI review VicForests' and other models of forest coupe planning to develop a system that strengthens its capacity to demonstrate compliance with the Code and MPs.

The audit found that 80% of applicable audit criteria were fully satisfied and that a further 6% of applicable criteria¹⁹ were partly satisfied (Figure 11). Non-compliance was identified for 10 individual audit criteria.

The EIA tool was not considered to be applicable to almost all incidences of non-compliance with audit criteria (Figure 11). A moderate EIA rating was applied to the one instance of non-compliance for which the EIA tool could be applied. This related to coupe D, in which the planned harvest area exceeds the maximum prescribed by the Code for that silvicultural system.

Detailed comments on all non-compliances and the respective EIA ratings are given in Appendix D.1.

¹⁹ Note that compliance and non-compliance rates in this section are reported against applicable audit criteria. Many of the criteria were not applicable to the planning and operations conducted on individual coupes. This may have reflected that particular values to be protected were not present (e.g. criteria relating to rainforest or old growth forest protection were not applicable in coupes that did not have rainforest and/or old growth forest within the gross coupe boundary) or that the criteria was not applicable to the stage of the coupe in the plan-harvest-rehabilitate-close process (e.g. criteria relating to landing rehabilitation could not be assessed on coupes in which the landing was still being used). Non-compliance is assessed against audit criteria rather than Code or MP prescriptions. There may be several audit criteria that relate to a single Code or MP prescription.

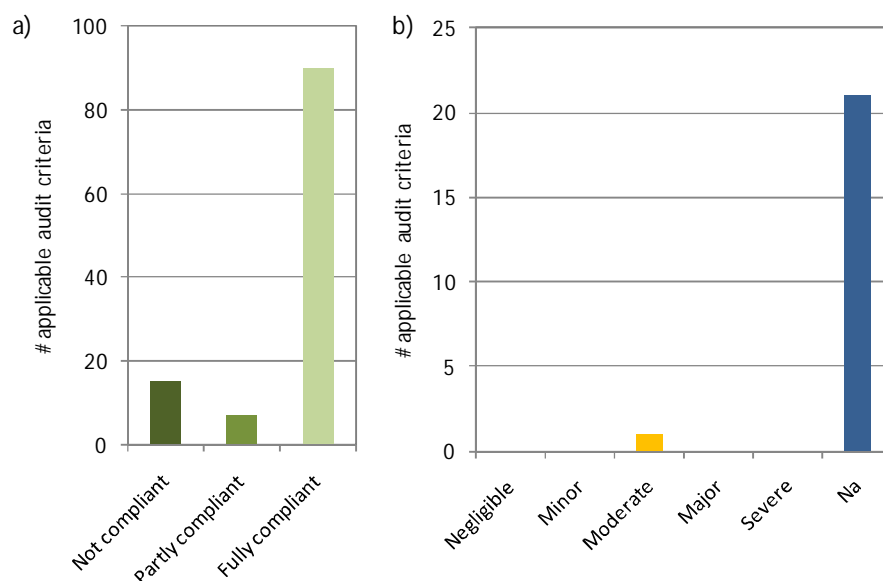


Figure 11 Overview of compliance with forest coupe planning audit criteria for coupes managed by DPI. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings have been applied or were not applicable.

4.3.2 Water quality, river health and soil protection

Workbook 5B for water quality, river health and soil protection includes 35 compliance elements (Appendix A) relating to the maintenance of soil health on the coupe, the protection of water draining from them and in-coupe and downstream river health values. The workbook includes specific sections dealing with:

- > Planning for protection of water quality (2 audit criteria);
- > Mitigation of risks from chemical contamination (7 audit criteria);
- > Protection of waterways, riparian buffers and filter strips (20 audit criteria);
- > Management of harvesting operations on steep slopes (3 audit criteria).

The audit found that 76% of applicable audit criteria were fully satisfied and that a further 6% of applicable criteria were partly satisfied (Figure 12). Non-compliance was assessed for six individual audit criteria.

The EIA tool was only considered to be applicable to a single incidence of non-compliance with audit criteria (Figure 12). The applicable EIA rating was negligible

Detailed comments on this and other non-compliances and the respective EIA ratings are given in Appendix D.2.

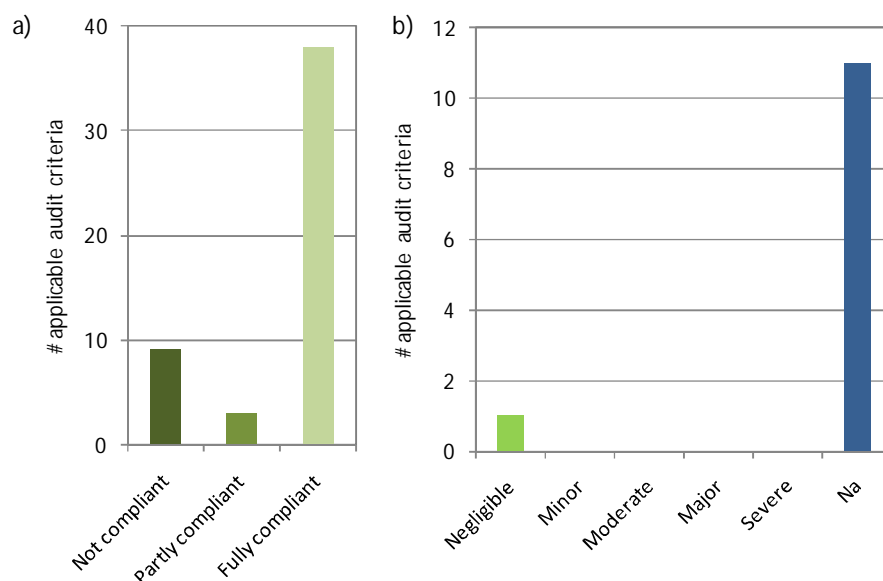


Figure 12 Overview of compliance with water quality, river health and soil protection audit criteria for coupes managed by DPI. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings have been applied or were not applicable.

The extent of compliance with audit criteria varied between themes in the water quality, river health and soil protection workbook (Figure 13). Non-compliance was only recorded for chemical contamination and waterways criteria.



Figure 13 Compliance with main themes for workbook 5B: planning; chemical contamination; waterways, buffers and filters; and steep slopes. Non-compliant includes non and partial compliance with audit criteria.

4.3.3 Biodiversity conservation

Workbook 5C for biodiversity conservation includes 35 compliance elements (Appendix A) relating to the conservation of biodiversity values in harvested areas. The workbook includes specific sections dealing with:

- > Forest health (12 audit criteria);
- > Planning and management of coupe operations for conservation of biodiversity (9 audit criteria);
- > Protection of rainforest areas and values (3 audit criteria);
- > Protection of old growth forest areas and values (5 audit criteria);
- > Protection of giant trees (3 audit criteria; not relevant to the former DPI's operational regions to timber harvesting);

> Protection of threatened species (3 audit criteria).

Old growth forest values were not identified in any of the coupes included in the audit of DPI coupes. Threatened species and rainforest values were only applicable to one of the audited coupes.

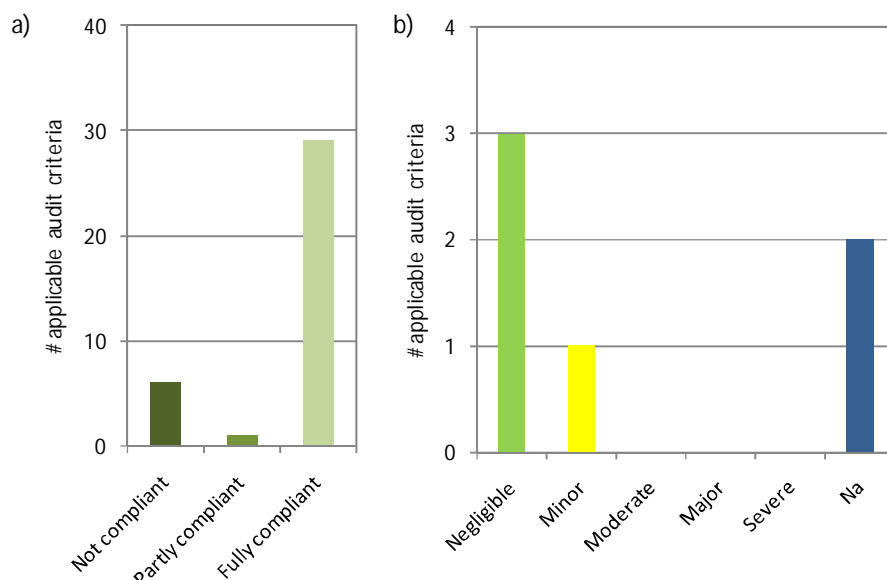


Figure 14 Overview of compliance with biodiversity conservation audit criteria for coupes managed by DPI. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings have been applied or were not applicable.

The audit found that 81% of applicable audit criteria were fully satisfied and that a further 3% of applicable criteria were partly satisfied (Figure 14). Non-compliance was identified for four individual audit criteria. The EIA rating tool was applied to two of these. All four instances of non-compliance were rated as minor or lower (Figure 14). Detailed comments on non-compliances are given in Appendix D.3.

The extent of compliance with audit criteria varied between themes in the biodiversity conservation workbook (Figure 15). Non-compliances were only recorded for forest health and rainforest criteria. EIA ratings were only applicable to non-compliances in relation to forest health criteria (and were minor or negligible; Figure 14).

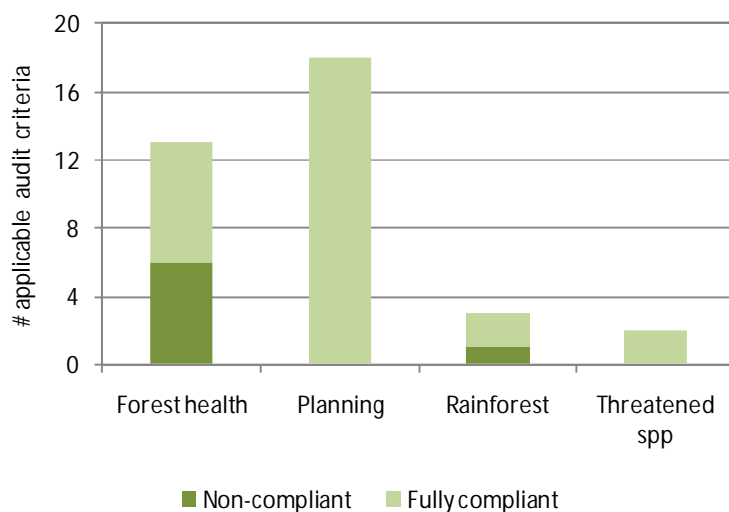


Figure 15 Compliance with main themes for workbook 5C: forest health; planning and management; rainforest; and threatened species. Non-compliant includes non and partial compliance with audit criteria.

4.3.4 Operational provisions

Workbook 5D for operational provisions includes 18 compliance elements (Appendix A) relating to the management of harvesting operations. The audit found that 87% of applicable audit criteria were fully satisfied and that a further 9% of applicable audit criteria were partly satisfied (Figure 16).

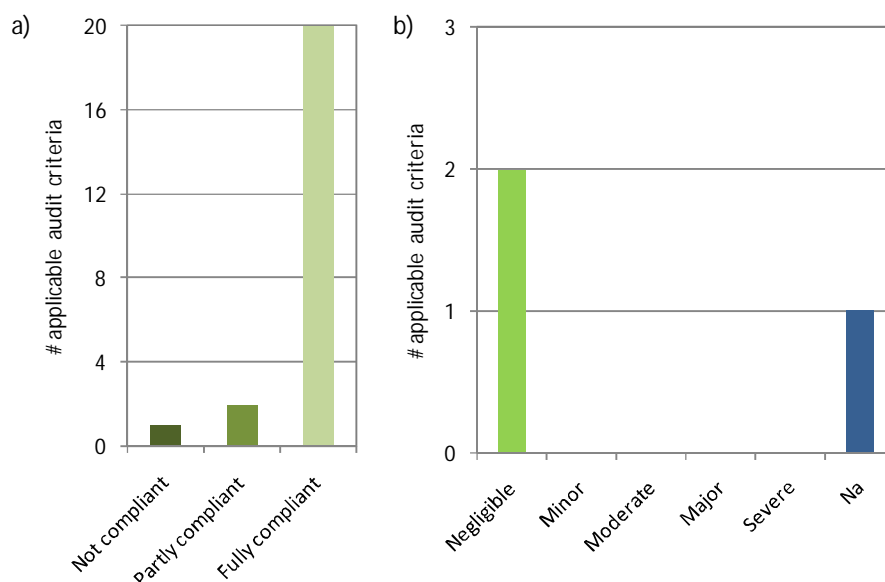


Figure 16 Overview of compliance with operational provisions audit criteria for coupes managed by DPI. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings have been applied or were not applicable.

Non-compliance was identified for three individual audit criteria. The EIA rating tool was applied to two of these and was negligible in both instances of non-compliance (Figure 16). Detailed comments on non-compliances are given in Appendix D.4.

4.3.5 Roding

Workbook 5E has been developed to audit against roding prescriptions contained in the Code and MPs. It includes 84 individual compliance elements (Appendix A) that address:

- > Road planning (13 audit criteria);
- > Road design (16 audit criteria);
- > Road construction (36 audit criteria);
- > Road maintenance (5 audit criteria);
- > Temporary, seasonal and permanent road closure (11 audit criteria)
- > Traffic control (3 audit criteria).

Road planning, design and construction compliance elements were generally only considered where a road had been constructed to access the audited harvest coupe (or a group of coupes, one of which was the audited coupe). The location and low intensity of operations in all five of the audited coupes meant that they were accessed by the existing forest road network and tracks located within the coupes. The majority of the audit criteria (75 of 84) were not considered to be applicable to the audited coupes. Non-compliance was recorded against just three criteria.

The audit found that 80% of applicable audit criteria were fully satisfied and that a further 7% were partly satisfied (Figure 17). EIA ratings were applicable to two of the three criteria for which non-compliance was assessed. EIA ratings were negligible in both instances. Detailed comments on non-compliances are given in Appendix D.5.

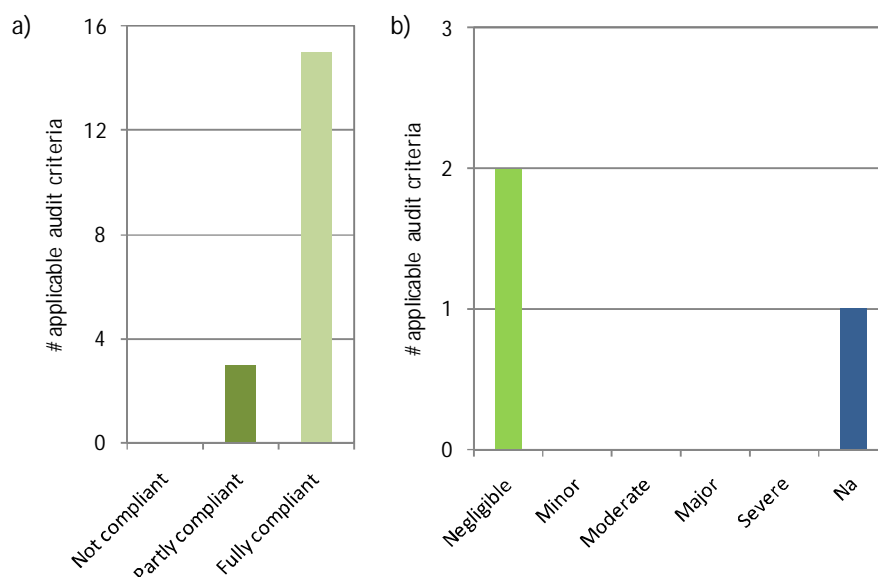


Figure 17 Overview of compliance with roading audit criteria for coupes managed by DPI. a) Instances of non, partial and full compliance with applicable audit criteria; b) Number of non or partly compliant audit criteria to which EIA ratings have been applied or were not applicable.

The extent of compliance with audit criteria varied between themes in the roading workbook (Figure 18). Non-compliances were only recorded for three criteria, one in the construction theme and the other in the maintenance theme. None of the road design criteria were applicable to the audited coupes.

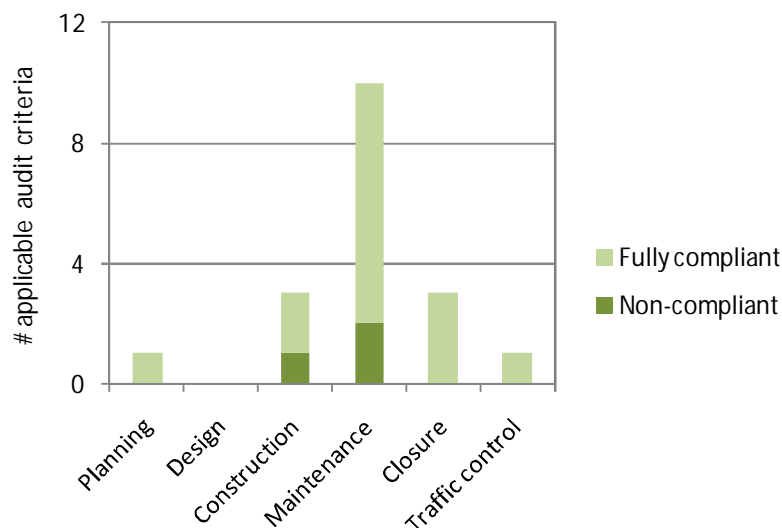


Figure 18 Compliance with main themes for workbook 5E: road planning, design, construction, maintenance and closure and traffic control. Non-compliant includes non and partial compliance with audit criteria.

4.3.6 Coupe infrastructure

Logging operations in all five audited coupes were conducted by means of existing forest tracks. Trees were felled by hand and processed nearby. There was no snigging of logs and landings were not required. Wood was removed in light trucks. Since none of the audited coupes possessed formal coupe infrastructure, none of the audit criteria for workbook 5F were applicable to the audit of DPI operations.

5. Discussion

5.1 Risk of harm to the environment

The EIA rating tool provides one indication of the risk of harm to the environment from instances of non-compliance with audit criteria and the underpinning management prescriptions. Material risks, interpreted as non-compliances with EIA ratings of moderate or greater, were identified for 15 incidents on VicForests' coupes and one incident on a DPI-DSE coupe.

A further risk assessment was undertaken for each of these incidents using the former DSE's Risk Management Framework (Appendix B.2). This second assessment was undertaken to place the environmental risk resulting from non-compliance with management prescriptions and the required management response in the context of other risks faced by DSE. Details of the assessment are provided in Appendices E.1 for VicForests' operations and E.2 for the former DPI's operations. The results are summarised in Figure 19. Risk was assessed to range between low and high. Ten of the 16 incidents were rated as moderate risk. The two incidents assessed to be in the high risk category (Figure 19) were:

- > Coupe 12: where almost the entire gross coupe area was harvested. When combined with disturbance from follow up burning and rough heaping to assist in regeneration, the coupe retained no long-lived understorey elements within the harvestable area, as is required by the Code. A moderate EIA rating was assigned to this incident. This issue is addressed by recommendation 3.7
- > Coupe 33: where part of the road into the coupe drained back into a permanent stream, without opportunity for drainage water to be diverted into and filtered through natural vegetation or constructed features. Sediment and gravel from the road was observed to have been deposited in the stream, although not in large quantities. A major EIA rating was assigned to this incident. This issue is addressed by recommendations 3.8 and 5.1.

Recommendation 5.1

That VicForests undertake an audit of existing stream crossings along coupe driveways, roadline coupes and other coupe access roads it has constructed to assess the compliance of road design and construction with Code and MP prescriptions aimed at protecting water quality from road drainage. Any non-compliant road drainage should be rectified where this is practicable and will not adversely affect water quality.

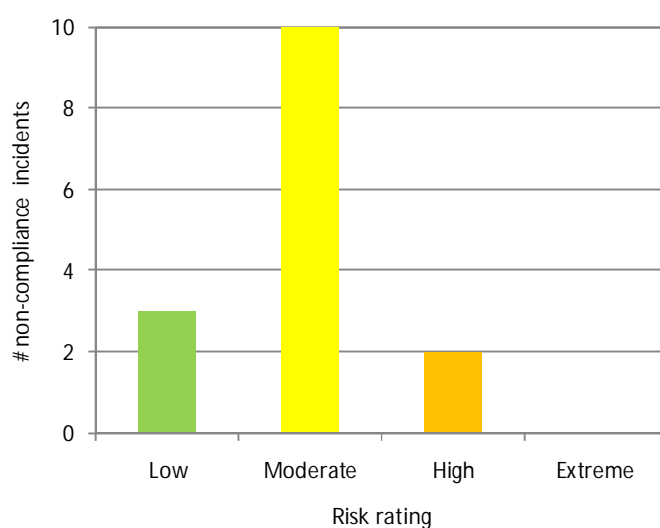


Figure 19 Summary of assessment of risk of harm to the environment assessed using the former DSE's Risk Management Framework. Only incidents leading to non-compliance with audit criteria and EIA ratings of moderate or major were included in the risk assessment.

Details of other incidents included in the analysis are provided in Appendices E.1 and E.2 and can be cross-referenced with detailed descriptions in sections 3 and 4. The two low risk incidents received major and moderate EIA ratings (coupes 27 and D, respectively). Incidents in the moderate risk category received either moderate (8 incidents) or major (8 incidents) EIA ratings.

5.2 Findings of the previous Module 5 audit of harvesting and coupe closure

The results of this audit are not directly comparable with those of the previous FAP Module 5 audit of harvesting and coupe closure [9], particularly in terms of the numbers of compliances or non-compliances with audit criteria. This reflects the modifications made to the Module 5 workbooks prior to the commencement of this audit, particularly the removal of audit criteria based on guidance elements of the Code and MPs.

However, it is useful to reflect on the major non-compliance issues from the previous audit and compare them and any recommendations with the outcomes from the current audit. Table 21 provides a summary of the main non-compliance issues and recommendations from the previous audit and includes reflections on these from the current audit.

Table 21 Summary of key findings from 2010-11 FAP Module 5 audit of harvesting and coupe closure and their relevance to the current audit.

2010-11 Module 5 audit findings	Reflections from 2012-13 Module 5 audit
Non-compliance issues with major EIA rating in 2010-11 audit	
Machine entry into rainforest buffers and associated rainforest, despite their being marked and buffered appropriately.	Not observed in the 2012-13 audit. Rainforest areas were all well buffered and no machine access was identified. One instance was observed of machine entry into unharvested forest adjoining a coupe, most likely during preparation of a fire trail for regeneration burning
Non-compliance issues with moderate and minor EIA rating in 2010-11 audit	
Topsoil respreading and retention of bark at landings	No significant issues with respreading of soil on landings were identified in this audit. Management of bark was identified as a compliance issue on some coupes. On some corded and matted landings, bark piles exceeded the prescribed size and in one case were located too close to the edge of the coupe. Instances were observed where bark (from landings and other locations) was spread onto snig tracks in breach of prescriptions. Most of the observed bark management issues remained within the bounds of compliance with audit criteria or were rated with negligible or minor EIA ratings.
Noxious weed assessments and control	Weed assessments were found to be routine components of the coupe reconnaissance and established seedling surveys. VicForests standard procedures [10] for weed and disease management guide responses where they are required. As most of the weed issues related to regionally controlled species (e.g. Blackberry), there was limited need for specific action.
Inadequate or inappropriate drainage of sections of roads, snig tracks and boundary tracks	Similar issues were identified in the current audit. Most issues were relatively minor and related to inadequate construction of cross drains. Several material issues were identified, including a poorly constructed and drained road into one coupe and two instances where road drainage was not diverted into vegetation or structures designed to intercept sediment. On many of the audited VicForests' coupes, the frequency of cross drains constructed on snig tracks and boundary tracks far exceeded the minimum requirements specified in the MPs. This typically allowed the tracks to meet drainage prescriptions, even where some cross-drains did not operate effectively.
Management of cut and fill on roads	No specific issues were identified in this audit.
Road construction on steep slopes	No specific issues were identified in this audit.
Crossing of drainage lines without approval	No specific issues were identified in this audit.

2010-11 Module 5 audit findings	Reflections from 2012-13 Module 5 audit
Instances of debris pushed or rolled into exclusion zones	No specific issues were identified in this audit.
Trees felled into buffers and pulled out without adequate documentation	VicForests' coupe records (especially the coupe diaries) highlight multiple instances where trees were felled into exclusion zones. While these incidents and authorisation to extract the trees were properly documented, the felling itself has typically accidental not therefore did not have the required prior authorisation.
Soil stockpiled near a rainforest buffer	Not observed in this audit.
Failure to classify streams adjacent to coupes	With the exception of coupes in Dandenong FMA, coupe files did not generally demonstrate that streams had been classified using the Code waterway categories. This is addressed in a recommendation from this audit.
Recommendations	
That DSE and VicForests ensure that pre- and post-harvest weed assessment results are documented and triggers for subsequent control activities are incorporated into their management systems.	As noted above, pre and post-harvest weed assessments are routinely undertaken and recorded in the coupe file. Where weed issues pre-date the harvesting operation, they are not VicForests' management responsibility and so management would not be recorded in coupe files or on its coupe information management system.
That the FSHPs requirement to "Clean soil from all harvesting machinery (excluding trucks and passenger vehicles) before floating to or from a salvage coupe" be changed to a requirement that can be more easily recorded or tracked, such as "Clean soil from all harvesting machinery (excluding trucks and passenger vehicles) before floating to and from a salvage coupe"; or devise processes to record centrally the cleaning of harvesting machinery.	FSHPs remain unchanged. In general, the concept of wording prescriptions on forest health to require the recording of actions taken is supported. Compliance with these prescriptions can be difficult to audit against due to the lack of specific documentary evidence.
That VicForests and DSE review their respective systems to manage the closure of roads to ensure that roads no longer required are permanently closed, as required by the Code.	Failure to prevent access to several of the closed audit coupes was observed to result in disturbance to soil and failure of cross drainage on coupe infrastructure. The recommendation is supported, although the difficulty in actually preventing access to a coupe (as noted in the 2010-11 audit) is also acknowledged.
That VicForests builds into its systems a process for ensuring that excess bark is not retained around landings in the absence of regeneration burning.	Management of bark was identified as an issue on some coupes, particularly those with corded and matted landings. Bark piles were not necessarily burned effectively during regeneration burns. This appears to remain a management issue for VicForests, although its priority (from a risk of harm to the environment perspective) is lower than some of the other non-compliance issues observed in this audit. The recommendation is supported.

Comparison of the results of the current audit with the 2011-12 Module 5 audit suggests that improvements have been made in the surveying and recording of weed issues on VicForests' coupes. Bark management on landings and recording the classification of waterways remain issues that should be addressed.

5.3 Auditees comments on draft audit report

VicForests and the former DPI were provided with a version of the draft audit report and invited by the former DSE to provide comment on matters of fact contained in the report. DPI did not offer any specific comments. VicForests' substantive comments included:

- VicForests considers the major EIA rating applied to the non-conformance regarding the coupe buffer on salvage coupe 30 and batter fill surrounding the base of several trees on coupe 27 to overstate the potential environmental impact experienced.

The auditor agrees with this assessment. It was noted in section 2.3 that the EIA tool sometimes overstates the real level of environmental risk or impact, particularly when the risk of harm is to the environment outside the coupe boundary.

- VicForests considers that the EIA tool should be reviewed.

The auditor agrees with this perspective. One reason for including the (former) DSE's Risk framework in this audit was to address limitations in the EIA tool.

- VicForests does not consider that non-compliance should be recorded against it for coupe 11, where damage to the road was caused by a third party accessing the coupe following closure of the access road.

The auditor notes VicForests' point. However, as the coupe was assessed not to comply with relevant audit criteria, this had to be reported. The fact that third parties accessed the coupe following closure demonstrates that (as required by the Code – section 2.4.6) the coupe was not permanently closed. However it is conceded that "permanent closure" may be difficult to achieve in practice.

- VicForests considers that Recommendation 3.2 is impractical. VicForests agree that no evidence was provided of disposal of rubbish generated on the coupe to an approved facility, although it considers that this does not imply correct disposal did not occur. VicForests noted that contractors may store rubbish at their own depot for a period of time before sending it to a waste station. In this situation there would be no practical way to link disposal to a specific coupe.

VicForests' perspective is noted. However the audit process requires that those engaged in timber production activities in State forests be able to demonstrate compliance with the relevant Code prescription (section 2.2.1). Since the only wastes that are controlled are prescribed wastes, this recommendation is the only feasible means of demonstrating compliance. Receipts for disposal of prescribed wastes could be annotated by references to the coupes the contractor had been working on and a copy stored in each coupe file. The process is open to falsification, but it at least communicates to contractors the requirement to properly dispose of prescribed wastes.

- VicForests considers that the reporting of instances of non-compliance against individual audit criteria overstates the level of non-compliance. In common with previous Module 5 audits, reporting should relate to incidents that lead to non-compliance with audit criteria.

VicForests comment is noted. The audit reports on instances of non-compliance (i.e. non-compliance with individual audit criteria) and incidents of non-compliance (i.e. the event leading to one or more non-compliances with audit criteria). It also notes that compliance percentages are not comparable with previous audits due to the removal of guidance criteria and the restructuring of Audit work books.

6. Conclusions and recommendations

6.1 Audit scope

The former DSE (now DEPI) commissioned this 2012-13 Module 5 audit of harvesting and coupe closure as part of its Forest Audit Program. The audit concerned timber harvesting operations in State forest areas throughout Victoria, specifically:

- > Pre-harvest coupe planning and coupe marking;
- > Harvesting operations;
- > Roding that is directly related to harvesting operations;
- > Rehabilitation of coupe infrastructure and closure of coupes following the completion of harvesting.

The audit considered 40 coupes located across eight Victorian FMAs. The coupes were either under VicForests' or the former DPI's operational control at the time of the audit. The former DSE had previously planned and managed harvesting on some of the DPI coupes.

The audit was conducted against criteria derived from the *Code of Practice for Timber Production 2007*, *Management procedures for timber harvesting, roding and regeneration in Victoria's State forests 2009* and *Fire salvage harvesting prescriptions 2009*.

6.2 Assessment of compliance with audit criteria: VicForests' operations

Thirty-five coupes under VicForests' operational control were included in the audit. They were distributed across the Central, Central Gippsland, Dandenong, East Gippsland and Tambo FMAs and included a wide range of forest types, silvicultural systems and environmental risk contexts.

Overall, the audit found that coupes fully complied with almost 93% of applicable criteria. Instances of non-compliance were recorded for 63 of the 267 individual audit criteria. Compliance with workbook criteria varied between audit themes, as follows:

- > Forest coupe planning: full compliance with 93% of applicable audit criteria;
- > Water quality, river health and soil protection: full compliance with 84% of applicable audit criteria;
- > Biodiversity conservation: full compliance with 93% of applicable audit criteria;
- > Operational provisions: full compliance with 97% of applicable audit criteria;
- > Roding: full compliance with 94% of applicable audit criteria;
- > Coupe infrastructure: full compliance with 95% of applicable audit criteria;
- > Fire salvage harvesting: full compliance with 90% of applicable audit criteria.

The FAP's environmental impact rating tool was used where non-compliance could directly lead to adverse environmental outcomes for the coupe or its environs. Of the 114 instances where the EIA rating tool was applied, 77 (68%) were assessed to have negligible or minor potential environmental impact. Sixteen instances of non-compliance were assessed as having major EIA ratings. These related to single incidents on five coupes. No severe EIA ratings were determined.

The most significant incidents that led to non-compliance with audit criteria included:

- > Two coupes where the road leading into an audited coupe crossed a permanent water course, but did not have the prescribed measures in place to protect the stream and water quality from sediment entrained in road run-off. For one of these coupes, gravel and sediments from the road was observed to have entered the stream.
- > One fire salvage coupe that did not provide a sufficient buffer along a permanent water course. A short section was identified where the prescribed buffer width of 30 m was not provided and harvesting came to within about 25 m of the stream. There was no evidence of sediment movement from the harvest area to the inadequately buffered stream was observed at the time of the audit.

- > The batter of a road leading into one coupe covered the base of several trees that were located adjacent to the road. At the time of the audit, there was no evidence that the trees had been adversely affected by this incident.
- > The mapped harvest boundary of a coupe extended by about 10-20 m beyond the mapped gross coupe boundary (defined under the TRP). While the MPs allow for coupe boundaries to be varied by up to 50 m from the TRP boundary without prior approval, they do so where they are mapped to geographic features that either do not exist or are not mapped correctly. That exception did not apply for this coupe.

Other, less significant, compliance issues that were identified included:

- > Regeneration burns that damaged trees outside the planned burn boundary;
- > Ineffective rehabilitation of a log landing;
- > Failure to retain long-lived understorey elements or for continuity of habitat trees in coupes where the harvest area approximated the entire TRP area and there were no substantive areas of undisturbed vegetation within the gross coupe area;
- > Non reinstatement of snig track and/or boundary track cross drains following damage caused by preparation for regeneration burning and/or rough-heaping;
- > Placement of bark on uncorded snig tracks in clearfell harvest coupes;
- > Unauthorised machine entry into an unharvested adjoining forest area, causing damage to understorey vegetation;
- > Damage to a closed in-coupe road and other coupe infrastructure resulting from unauthorised access by members of the public during wet weather;
- > A poorly constructed road used to access a coupe. The cleared width exceeded prescriptions and the road drainage was poorly constructed and maintained, leading to damage to the road surface and adjoining areas.

6.3 Assessment of compliance with audit criteria: DPI operations

Five coupes under the former DPI's operational control were included in the audit. They were located in the Bendigo, Horsham, Midlands and Otways FMAs and included a range of forest types, silvicultural systems and environmental risk contexts. Harvesting operations undertaken in these coupes are much less intensive than those undertaken in the audited VicForests coupes and the landscape settings less demanding. For these reasons the results of the audit of DPI coupes are not directly comparable with those from the VicForests coupes.

Overall, DPI operations were assessed to fully comply with almost 81% of applicable audit criteria, with partial compliance assessed on a further 6% of applicable criteria. Instances of non-compliance were observed for 26 of the 244 individual audit criteria used. Compliance with workbook criteria varied between audit themes, as follows:

- > Forest coupe planning: full compliance with 80% of applicable audit criteria;
- > Water quality, river health and soil protection: full compliance with 76% of applicable audit criteria;
- > Biodiversity conservation: full compliance with 81% of applicable audit criteria;
- > Operational provisions: full compliance with 91% of applicable audit criteria;
- > Roading: full compliance with 97% of applicable audit criteria;

None of the audited coupes had formal infrastructure, such as snig tracks, landings or boundary tracks and so coupe infrastructure prescriptions were not applicable. No DPI coupe was harvested under fire salvage prescriptions.

The FAP's environmental impact rating tool was used where non-compliance could directly lead to adverse environmental outcomes for the coupe or its environs. There were only nine instances of non-compliance where the EIA rating tool was applied: seven were assessed as negligible and the remaining two were either minor or moderate. No major or severe EIA ratings were given.

The most significant incident that led to non-compliance with audit criteria was a coupe whose planned harvest area exceeded the maximum prescribed for the intended silvicultural system. The harvested area for this coupe

has not yet exceeded the prescribed maximum area. No other incident was assessed to have a moderate or higher EIA rating.

6.4 Risk of harm to the environment

DSE's Risk Management Framework was applied to all incidents contributing to non-compliances with audit criteria that recorded EIA ratings of moderate or higher. This both provides an additional assessment of the risk of harm to the environment of timber harvesting activities beyond that provided by the FAP EIA rating tool and is complementary with the outcomes of other DSE risk assessments.

The risk assessment considered 16 separate non-compliance incidents on 13 different coupes. Two of these were assessed to have a high risk rating. These incidents related to:

- > A coupe where almost the entire gross coupe area was harvested. Disturbance from harvesting, regeneration burning and rough heaping meant that no long-lived understorey elements were retained within the harvestable area as required by the Code (section 2.2.2).
- > A coupe that was accessed by a road that drained back into a permanent stream, without opportunity for drainage water to be diverted into and filtered through natural vegetation or constructed features. Sediment and gravel from the road was observed to have been deposited in the stream, although not in large quantities.

The first incident is expected to be rectified as the coupe regenerates. No specific intervention is warranted at this stage. The second incident can be addressed by constructing drainage that complies with Code and MP prescriptions.

While there are locally significant issues with some individual timber harvesting operations in State forests, they are not generally considered to pose an unacceptable risk of harm to the beneficial uses of those areas.

6.5 Recommendations

Recommendations arising from this audit of harvesting and coupe closure include the following:

#	Recommendation	Rationale
3.1	That VicForests and DEPI either include a specific soil erosion hazard class map in all coupe files or annotate the geology or other map to indicate the distribution of soil erosion hazard class(es) across the coupe.	The Code (section 2.1.3) explicitly requires the FCP to include a map of soil erosion hazard class. This was absent from the files of all audited coupes.
3.2	That VicForests and DEPI collect and retain evidence of appropriate disposal of any prescribed industrial wastes generated on the coupe (e.g. oil drums, used engine oil, oil filters, oily rags). That evidence may take the form of a waste transport certificate or other relevant document from an Environment Protection Authority (EPA) licensed waste transporter or receiver.	The Code (section 2.2.1) requires that wastes from the coupe be removed to an approved disposal facility. This is not auditable for wastes that can be disposed of correctly via domestic waste collections. However, for prescribed industrial wastes that cannot be disposed with municipal wastes, evidence can be obtained of correct disposal (e.g. waste transport certificate) and used to verify compliance with the Code.
3.3	That VicForests and DEPI include maps in coupe files that annotate the Code waterway class that is applicable to every waterway located within or adjacent to the coupe.	Most coupe files were unable to demonstrate that Code waterway classifications (section 2.2.1) had been applied. Inclusion of this kind of annotated map would verify that the Code has been complied with.
3.4	That VicForests include develop a standard procedure for demonstrating that risks from Myrtle Wilt have been considered and managed consistently with the Code and MPs on each coupe which has Myrtle Beech trees present	A standard procedure of this kind will help to raise awareness of the risk posed by Myrtle Wilt and provide evidence that prescribed risk controls (Code: section 2.3.4; MPs: section 1.3.10) have been considered.

#	Recommendation	Rationale
3.5	The Code provides for the coupe to extend up to 50 m beyond the mapped TRP boundary where the coupe boundary is a feature that is either not present or not mapped correctly. Where this situation does not apply, it is recommended that the coupe boundary be remarked and/or remapped where it is found to extend more than 10 m beyond the TRP boundary.	The Code (section 2.1.3) provides only limited flexibility in varying boundaries from that defined in the TRP. In instances where these flexibility provisions do not apply, the boundary must be followed within the bounds of uncertainty for GPS surveys.
3.6	That VicForests review its regeneration burning planning and practices to identify further opportunities to prevent unintended damage to trees in adjacent coupes.	While regeneration burns not intended to affect adjoining exclusion areas, this sometimes happens. Planning and operational practice for regeneration burns should be reviewed to identify any further opportunities to ensure that all practicable measures are taken to protect all areas excluded from harvesting from the impacts of unplanned fire (Code: section 2.2.2).
3.7	That VicForests ensure during coupe marking that adequate provision is made to meet planned biodiversity conservation measures, including retention and continuity of long-lived understorey elements and habitat trees within the harvestable area. This may include making provision for windthrow of retained habitat trees, the risk of which is exacerbated by harvesting.	The Code (section 2.2.2) requires provision to be made for the continuity of long-lived understorey elements and habitat trees within the harvestable area. This requirement may not be met on coupes that have no or very small exclusion areas. Coupe planning and marking may need to be amended to ensure this prescription can be met.
3.8	That when VicForests constructs temporary or permanent roads into new coupes, it ensures that the prescribed measures are taken to ensure that roads in the vicinity of streams are drained correctly and that risks of stream crossings to water quality are minimised.	Roads are potentially a major source of sediment in catchments in which harvesting takes place. Code provisions regarding drainage near stream crossings (section 2.4.2, 2.4.3) are designed to minimise the threats posed by road drainage to water quality and must be adhered to.
3.9	That VicForests strengthen communication between its silviculture and harvesting personnel to ensure that cross drainage on coupe infrastructure is quickly reinstated when damaged or disturbed during regeneration operations.	Two examples were observed in this audit where boundary tracks were correctly drained prior to coupe closure, but were made ineffective by damage following silvicultural works. Communication between these teams is required to ensure drainage of boundary tracks, intact snig tracks or in-coupe roads is reinstated on completion of silvicultural works.
4.1	That DEPI consult with adjoining landholders regarding coupe boundaries, as prescribed by the Code.	This requirement of the MPs (section 1.2.3 c) does not appear to be routinely followed in the former DPI (or DSE) operations.
4.2	That DEPI develop a standardised coupe monitoring process to enable it to capture information about progress with its harvesting operations and gather evidence to demonstrate compliance with relevant Code and MP prescriptions.	Coupe monitoring by VicForests provides an excellent resource to demonstrate compliance with the Code and MPs and helps to ensure the management of environmental risks from harvesting. A similar system of monitoring would assist DEPI in doing likewise.
4.3	That DEPI review VicForests' and other models of forest coupe planning to develop a system that strengthens its capacity to demonstrate compliance with the Code and MPs	DEPI's compliance with coupe planning provisions of the Code (section 2.1.3) was significantly lower than VicForests'. While its operations are less intensive, it still needs to comply with the Code. Strengthening its planning processes would help DEPI operations to improve compliance with the Code.

#	Recommendation	Rationale
5.1	That VicForests undertake an audit of existing stream crossings along coupe driveways, roadline coupes and other coupe access roads it has constructed to assess the compliance of road design and construction with Code and MP prescriptions aimed at protecting water quality from road drainage. Any non-compliant road drainage should be rectified where this is practicable and will not adversely affect water quality.	<p>Two of the 35 audited VicForests coupes were found to be constructed without the water quality protection measures specified in the Code (sections 2.4.2 and 2.4.3). Both incidents received a major EIA rating and one was assessed to pose a high risk under DSE's Risk Management Framework.</p> <p>The incidence of such non-compliance issues in the sample of audited coupes, not all of which had stream crossings, suggests that there may be other coupe access roads with these deficiencies. An audit or similar investigation is required to identify other instances of non-compliance and address potentially significant risks of harm to the environment.</p>

7. References

1. Department of Sustainability and Environment 2007. Code of practice for timber production.
2. DSE 2009. Management procedures for timber harvesting, roading and regeneration in Victoria's State forests.
3. DSE 2009. Fire salvage harvesting prescriptions.
4. DSE 2010. Forest Audit Program Toolbox Module 5. Harvesting and closure.
5. DSE 2010. Forest Audit Program Toolbox Module 2. Audit process
6. Standards Australia 2009. AS/NZS ISO 31000:2009 Risk management: principles and guidelines. Standards Australia.
7. DSE 2012. Risk management guidelines.
8. Department of Natural Resources and Environment 1997. East Gippsland Forest Management Plan.
9. URS 2011. Report. Environmental audit – Forest Audit Program. Module 5 – Harvesting and closure. Report to the Department of Sustainability and Environment. 42807504.

Appendix A. Revised FAP Module 5 workbooks

The following include the full set of seven workbooks used to conduct the 2012-13 FAP audit of harvesting and coupe closure. The workbooks were only used where they were relevant to the specific conditions found on the coupe.

**ENVIRONMENTAL AUDIT
FOREST AUDIT PROGRAM
TIMBER PRODUCTION IN STATE FORESTS**

FMA

COUPE:

Module 5 Harvesting and Closure

Summary Page

Positive Observations:		Non-compliances identified and acted on by DSE / VicForests in their supervisor capacity (include contractor penalties allocated)
•		•
Elements of Non-Compliance:		
Compliance Sub-element	Finding	EIA
Areas for Improvement:		Further evidence required:

•	•
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Previous Key Audit Findings

<p>What key findings were observed during the previous environmental audit?</p>
<p>The auditor will require an understanding of previous key findings in order to provide commentary on current practices and improvements over time.</p> <p>Comments:</p>

Forest Audit – Coupe Information

Coupe number:		Coupe name:							
District:		Coupe area:	(planned).						
Elevation (m): ASL:		Stand Description / Vol:							
General aspect:		Forest type:	Foothills mixed species						
Supervisor (FO):		Endorsement Categories:	Flora & Fauna	Catchment	Parks	Forest Mgt	Forestry Victoria	Fire Mgt	DSE Region
Contractor:				x					
Silvicultural system:		SEH topsoil / subsoil:							
Machinery used:		Soil Permeability:							
Coupe Operation:		Grid Reference:							
Comments:		Absolute Risk Rating:							
		Selection Values: Slope Class – Soil Erosion Hazard – Silvicultural System, Property Restrictions							
Special (salvage) plan?		Slope (°) Low-High:							
Are there SPZ / SMZs?		Season of operation:							
People Present:	Auditor and Audit Team: EPA representative: District / other staff (name): Observer(s):		Audit date:						

AA = Alpine Ash, BG = Blue Gum, CT = Cut Tail, CY = Mountain Grey Gum, DA = Mountain Gum, MA = Mountain Ash, MM = Messmate, OS = Other Species, PM = Peppermint Spp, SG = Shinning Gum, ST = Silvertop Ash, VM = Manna Gum, WS = White Stringybark

Forest Audit – Coupe Map

Include coupe map from harvest plan, note on map:

- Location and identification of roads, buffers, landings and skid tracks audited
- Any other relevant information

General comments and observations on the coupe

This workbook applies to all coupes included in the audit.

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

Origin	Section	Prescription	Audit Criteria Green – field audit Blue – desk top audit Orange – field and desk top audit	Compliance	Environmental Impact Assessment				Auditor Comments
					Extent (E)	Duration (t)	Asset Value (z)	Impact	
<i>Code of Practice for Timber Production 2007 (Code)</i>	2.1.3 Forest Coupe Plans	A Forest Coupe Plan (FCP) must be prepared in accordance with the Code of Practice, the relevant Forest Management Plan and any other relevant prescriptions or procedures, prior to the commencement of a timber harvesting operation.	Not specifically audited. Remaining criteria indicated whether this requirement has been satisfied.						
<i>Code Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009 (MP)</i>	Code: 2.1.3 Forest Coupe Plans MPs: 1.2.1 Coupe size, shape & distribution	Code: The size of clear-felled, seed tree or shelterwood one coupes must not exceed 40 ha net harvested area. Where appropriate, such coupes may be aggregated up to 120 ha net harvested area over a period of up to 5y. Aggregated coupes must not be contiguous (forming a coupe greater than 120 ha within a 5 y period). A thinning coupe must not exceed 120 ha net harvested area. Single tree selection coupes may be of any size, where landscape or environmental values are not affected. Salvage coupes harvested under special salvage plans may exceed standard area limits. MP: Partially stocked or unstocked areas in adjacent coupes may be incorporated	1. The size of individual and any aggregated coupes is consistent with Code &/or MP requirements for the silvicultural system.						
			2. For single tree selection coupes, evidence available in FCP to demonstrate that landscape or environmental values are not affected by size of coupe.						

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

Origin	Section	Prescription	Audit Criteria Green – field audit Blue – desk top audit Orange – field and desk top audit	Compliance	Environmental Impact Assessment				Auditor Comments
					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		in the coupe for regeneration activities provided that the net harvested area does not exceed the maximum prescribed by the Code. Shelterwood Two coupes may exceed 40ha net harvested area if adequately stocked with eucalypts that are 5 or more years old							
Code MP	Code: 2.1.3 Forest Coupe Plans MP: 1.2.3 Identification of coupe boundaries & exclusion areas 3.2.2 Identification of coupe boundaries and exclusion areas	Code: Coupe boundaries must take advantage of topographic and artificial features where possible, with due regard to safety, operational requirements, landscape and environmental values. Where coupe boundaries do not follow obvious natural or artificial features, they must be clearly marked on site. Where the coupe boundary is determined by buffers to protect environmental values, such as waterways or rainforests, these must be marked on the plan and on-site. MP 1.2.3: The managing authority must consult with any adjoining land managers/land owners and agree on the location of the mapped coupe boundary in the	3. Where possible, coupe boundaries take advantage of topographic and artificial features.						
			4. Coupe boundaries are clearly marked onsite where they do not obviously follow natural or artificial features.						
			5. Buffers to protect environmental features are marked on coupe plan.						
			6. Buffers to protect environmental features are marked on-site						
			7. FCP includes evidence of consultation and agreement with any adjoining land managers/ owners on coupe boundary.						
			8. FCP documents that coupe boundary determined by						

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

Origin	Section	Prescription	Audit Criteria Green – field audit Blue – desk top audit Orange – field and desk top audit	Compliance	Environmental Impact Assessment				Auditor Comments
					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		field. MP 3.2.2 Where the mapped coupe boundary is a physical feature that is not readily identifiable in the field or where the mapped coupe boundary relates to a modelled value the field location of the coupe boundary must be located using a GPS and must be marked in the field. The standard required for GPS data capture is described in SOP 3.4– Verification of Logging History. Where a GPS reading is not possible other means, such as a hip chain and compass, must be used to establish the coupe boundary in the field. In the Bendigo FMA, the coupe boundaries for all sawlog harvesting operations must not be varied from that specified on the FCP map	non-readily defined features is marked in field using GPS following SOP3.4. or that this was not possible and non-GPS survey techniques were used.						
			9. For coupes in Bendigo FMA coupe boundary for sawlog operations has not been varied from FCP map.						
Code	Code: 2.1.3 Forest Coupe Plans	Exclusion areas must be protected from timber harvesting operations and associated activities in accordance with relevant Flora and Fauna Guarantee Act Action Statements, the relevant Forest Management Plan and relevant legislation. <i>See Schedule A of this workbook for specific details from the MP regarding exclusion areas.</i>	10. Exclusion areas are protected from timber harvesting and associated activities as required by relevant regulations, plans and management procedures.						

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

Origin	Section	Prescription	Audit Criteria Green – field audit Blue – desk top audit Orange – field and desk top audit	Compliance	Environmental Impact Assessment				Auditor Comments
					Extent (E)	Duration (t)	Asset Value (z)	Impact	
Code	2.1.3 Forest Coupe Plans	The FCP must: <ul style="list-style-type: none"> include a map on which the area to be harvested and adjacent exclusion zones are shown and labelled; identify conditions applying to operations on the coupe; show the coupe location and cutting area boundaries; document any authorisations, such as the removal of tree(s) from buffers for safety purposes; state the area that is planned to be harvested; state the period during which operations are to occur; identify the silvicultural systems to be employed; map the soil erosion hazard class (or classes) and slope of the coupe area and associated operational restrictions; identify requirements for the location, design, construction, maintenance and closure of temporary roads; identify requirements for the design, siting, construction, use, and rehabilitation of log landings 	11. FCP includes map of area to be harvested.						
			12. FCP includes map showing harvest areas and any exclusion areas and detailing special conditions or prescriptions appropriate to protecting those sites.						<i>Exclusion area conditions:</i> <i>Comments</i>
			13. FCP identifies conditions applying to operations on the coupe.						
			14. FCP documents any approval of harvesting in or felling into exclusion areas. Approval provided by person with authority under MPs.						<i>Authorisation is for:</i> <ul style="list-style-type: none"> <i>Comments:</i>
			15. FCP states area that is planned to be harvested.						
			16. FCP states the period during which operations are to occur.						
			17. FCP identifies the silvicultural system(s) to be employed.						
			18. FCP maps the soil erosion hazard class (or classes) and slope of the coupe area and associated operational restrictions						

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

Origin	Section	Prescription	Audit Criteria Green – field audit Blue – desk top audit Orange – field and desk top audit	Compliance	Environmental Impact Assessment				Auditor Comments
					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		and dumps and, where necessary, siting and rehabilitation measures for major snig tracks; ■ describe regeneration procedures to be applied; ■ map areas within a coupe that are to be excluded from harvesting, or to which special prescriptions apply (including biodiversity protection or habitat enhancement, water quality and aquatic habitat protection, landscape protection, or cultural heritage sites and places), detailing any special conditions or prescriptions appropriate to protecting those sites; ■ describe any particular measures employed to protect biodiversity (such as habitat tree retention); ■ describe measures to be employed to protect and rehabilitate soils and to maintain water quality <i>See Schedule A of this workbook for specific details from the MP regarding exclusion areas.</i>	19. FCP identifies any requirements for the location, design, construction, maintenance and closure of temporary roads						
			20. FCP identifies requirements for the design, siting, construction, use, and rehabilitation of log landings and dumps and, where necessary, siting and rehabilitation measures for major snig tracks						
			21. Where necessary, FCP identifies siting and rehabilitation measures for major snig tracks.						<i>Measures are:</i> ■ <i>Comments:</i>
			22. FCP describes planned regeneration procedures.						
			23. FCP describes any particular measures employed to protect biodiversity						<i>Measures are:</i> ■ <i>Comments:</i>
			24. FCP describes any planned measures to protect and rehabilitate soils and to maintain water quality.					NA	<i>Measures are:</i> ■ <i>Comments:</i>
<i>Code</i>	2.1.3 Forest	A copy of the Forest Coupe Plan and	25. Evidence provided which						

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

Origin	Section	Prescription	Audit Criteria Green – field audit Blue – desk top audit Orange – field and desk top audit	Compliance	Environmental Impact Assessment				Auditor Comments
					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	Coupe Plans	any supporting prescriptions must be provided to the Harvesting Team Leader (HTL). The Plan's implementation, including specific prescriptions to be applied to the coupe, must be discussed with him/her. The Plan and supporting documents must be available on site while operations are in progress.	shows that FCP has been provided to and discussed with the HTL.						
			26. Evidence provided that FCP and supporting documents are/were available on-site when operations in progress.						
Code	2.1.3 Forest Coupe Plans	Boundaries and exclusion areas must be identified in the field through ground observation and specified on the Forest Coupe Plan. Where there is a potential for timber harvesting operations to affect adjacent exclusion areas, these exclusion areas must be shown on coupe plans. <i>See Schedule A of this workbook for specific details from the MP regarding exclusion areas.</i>	27. Evidence provided that boundaries and exclusion areas have been identified in the field and that this information has been translated to the FCP. Also see criteria #11,12.						
Code	2.5.1 Coupe Planning	Timber must only be felled from within the designated boundaries of an approved coupe as indicated on the FCP and (where required) marked in the field. The FCP will indicate the areas within the coupe that are not available for harvesting where this is applicable. <i>See Schedule A of this workbook for</i>	28. Trees are only harvested from within designated boundaries of an approved coupe as specified in the FCP, unless specific authorisation to fell trees in an exclusion area is provided and documented (criterion #14). Also see criterion #12						

Forest Coupe Plans

Note:

- Prescriptions from the *Management Procedures for timber harvesting, roading and regeneration in Victoria's State forests, 2009* (MP) are only referred to in this table where they provide new or additional elements to audit criteria provided by the *Code of Practice for Timber Production 2007* (Code).
- FCP (Forest Coupe Plan) is used generically to refer to all coupe activity records, including the FCP, Coupe file, Coupe diary and digital records of coupe activities in VicForests or other information management systems.

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		<i>specific details from the MP regarding exclusion areas.</i>							
Code	2.5.1 Coupe Planning	Timber must not be directed to fall outside the coupe boundary unless the operator is specifically authorised otherwise and the reason for authorisation is documented. <i>See Schedule A of this workbook for specific details from the MP regarding exclusion areas.</i>	29. Trees are only felled into areas outside the designated coupe boundary where there is specific and documented authorisation to do so. See criterion #14						
Code	2.5.1 Coupe Planning	Timber harvesting operations are not permitted in special protection zones (buffers, habitat protection etc.) or other excluded areas identified on the coupe plan unless harvesting has been authorised and documented for: <ul style="list-style-type: none"> protection of public and worker safety or forest health; or the construction of roads or stream crossings. <i>See Schedule A of this workbook for specific details from the MP regarding exclusion areas.</i>	30. Felling or extraction of fallen trees from exclusion areas has a valid reason, based on safety, road construction or stream crossing construction. Also see criterion #14						

Forest Coupe Plans

Note:

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<i>Code</i>	2.5.1 Coupe Planning	Known Aboriginal cultural heritage places must be properly identified in the field and appropriately marked and buffered from disturbance, in accordance with any cultural heritage management plans prepared under the <i>Aboriginal Heritage Act 2006</i> .	31. Known Aboriginal cultural heritage places are properly identified in the field, marked and buffered in accordance with any cultural heritage management plan.						
<i>Code</i>	2.5.1 Coupe Planning	In the event of any Aboriginal object, place or human remains being discovered in the course of works, the person in charge of those works must report the discovery in accordance with the <i>Aboriginal Heritage Act 2006</i> .	32. A reporting procedure is documented and in place for stated for Aboriginal heritage finds.						
			33. If there is an Aboriginal heritage find on the coupe, notification has been carried out in accordance with the Act.						
<i>MP</i>	1.2.1 Coupe size, shape & distribution	The harvesting of trees for timber production purposes must only be undertaken in coupes specified in a TRP or WUP, whichever applies.	34. The coupe is specified in a TRP or WUP.						
<i>MP</i>	1.3.8 Public safety zones	Coupes in which commercial timber harvesting operations are planned to occur in the 12 month period commencing 1 July must be nominated for declaration as a Public Safety Zone	35. If the coupe was a commercial timber harvesting coupe, it was nominated for declaration as a Public Safety Zone prior to operations commencing.						
<i>MP</i>	1.3.8 Public safety zones	Coupes in which trees are to be felled for the purpose of producing domestic firewood in the 12 month period	36. If the coupe was a domestic firewood harvesting coupe, it was either nominated for						

Forest Coupe Plans

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		commencing 1 July must be nominated for declaration as a Public Safety Zone where there is a risk to public safety that cannot be managed via alternative means (for example road closure). Where it is determined that public safety in domestic firewood coupes may be addressed via alternative means to that specified in 1.3.8(b) of these Procedures the reason for the decision and alternative risk control means must be documented on a registry file.	declaration as a Public Safety Zone prior to operations commencing or there is appropriate documentary evidence that an alternative method for managing public safety was used.						
MPs	1.4.11 Historic/cultural heritage sites	Unrecorded historic sites identified at any stage of coupe planning, harvesting or regeneration must be reported to the Forest Management Officer (FMO). For any unrecorded site other than tramways and water races, the Forest Management Officer must:	37. FCP contains evidence of reporting of finding to FMO.						
		i) complete the Site Recording Form in accordance with Schedule 14 of these Procedures and immediately submit a copy to DSE's Historic Places Group	38. Where the unrecorded site is not a tramway or water race, FCP provides evidence that site recording form has been completed and submitted to DSE.						
		ii) seek advice from Historic Places Group as to the level of protection	39. Where the unrecorded site is not a tramway or water race, FCP provides evidence that DSE Historic Places advice on protection of site has been followed in coupe planning.						

Forest Coupe Plans

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		required for the site. For all unrecorded tramways and water races provide the specified protection (1.4.11(d)).	40. Where unrecorded site is tramway or water race, evidence provided in FCP that a filter strip is established and the protections specified in the MP are established.						
MP	2.1.6 identification of coupe boundaries and exclusion areas	VicForests must ensure that the coupe boundary identified in the field is the mapped coupe boundary on the approved TRP Where the TRP coupe boundary is mapped to a geographic feature and that geographic feature does not exist in the field (or its location does not match the mapped location), the coupe boundary may be moved a maximum of 50m from the mapped boundary to align with the actual location of the intended boundary feature. If the coupe boundary must be moved more than 50m from the mapped TRP boundary to align with the actual location of the intended boundary features, then a TRP change is required. VicForests must obtain the approval of the Area Manager to convert an exclusion area based on a modelled value to GMZ where that modelled value is determined not to exist in the	41. FCP contains evidence that the coupe boundary identified in the field is confirmed as the mapped boundary on the approved TRP or that there are valid reasons for adjustment.						
			42. Where the coupe boundary has been adjusted for valid reasons from the TRP boundary by more than 50 m, there is evidence that the TRP has been modified.						
			43. Where an exclusion area based on modelling is found not to be valid, the FCP has evidence of approval from Area Manager to convert to GMZ.						

Forest Coupe Plans

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		field.							
MPs	2.3.5 Camp sites	Camp sites and shower units in State forests that are associated with timber harvesting operations and associated activities must be located: i). within a coupe on the approved TRP if it is safe to do so and requires no unnecessary tree clearance; or ii) in another location approved by the Area Manager.	44. Any camp site or shower unit is located within coupe on approved TRP or in another location documented as being approved by the Area Manager.						

Forest Coupe Plans

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Comments:									

Water Quality, River Health and Soil Protection

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Planning									
Code	2.2.1 Water quality, river health and soil protection	Measures to reduce the impact of timber harvesting on water quality and river health must take account of other requirements set out in Special Area Plans (SAP) made under the <i>Catchment and Land Protection Act 1994</i> .	1. If coupe is located in an area covered by a SAP, the FCP provides evidence that coupe planning reflects any prescribed measures to reduce the impact of timber harvesting on water quality.						
MP	1.4.1 Slope limitations 1.4.2 Streams and catchments	Slope limits additional to those prescribed by the Code are specified in some FMPs. Where these are specified, the greater slope limit shall be applied. Special Water Supply Catchment (SWSC) requirements are detailed in Schedule C of this workbook. These apply to timber harvesting operations and associated roading and regeneration. Designated Catchment requirements are detailed in FMPs. These apply to timber harvesting operations and associated roading and regeneration. <i>Slope, buffer and filter limits are provided in Schedule C of this workbook.</i>	2. Timber harvesting operations in water supply catchments comply with MP requirements.						
Chemical contamination									
Code	2.2.1 Water	Storage, use and disposal of	3. Refuelling and maintenance						

Water Quality, River Health and Soil Protection

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	quality, river health and soil protection	petroleum products and machinery servicing must not pollute the environment or result in littering. Waste oil, all empty drums, discarded machinery parts and other waste must be removed from the forest and taken to an approved disposal facility. Toilet wastes must not be allowed to enter a waterway.	not carried out close to sensitive areas. Toilets also located away from sensitive areas.						
			4. No evidence of environmental contamination from refuelling or maintenance activities, littering or discharge of toilet wastes.						
			5. Evidence provided that all wastes removed to approved disposal facility.						
Code	2.3.4 Forest health	Chemical use must be appropriate to the circumstances and take into account the maintenance of biodiversity, water and soil quality.	6. Where chemicals used on coupe, there is evidence in FCP of planning to minimise impacts on biodiversity, water and soil values.						
			7. No evidence of adverse environmental impact of any chemical use on coupe.						
Code	2.3.4 Forest health	When applying chemicals in a declared Special Water Supply Catchment Area, the relevant Water Authority must be notified prior to application.	8. Evidence in FCP that relevant Water Authority notified prior to any application of chemicals within a Special Water Supply Catchment Area.						
Code	2.3.4 Forest health	The use of chemicals for control of pests and pathogens must be in accordance with relevant	9. Any chemical use on coupes for control of pests and pathogens or other purposes						

Water Quality, River Health and Soil Protection

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		Commonwealth and State legislation, regulations and statutory codes of practice. Instructions printed on product labels or any off-label permits issued must be followed. In particular, chemical use must comply with the relevant provisions of the <i>Catchment and Land Protection Act 1994</i> , the <i>Agricultural and Veterinary Chemical (Control of Use) Act 1992</i> and associated regulations.	complies with relevant legislation, codes of practice and regulations.						
Waterways, buffers and filter strips									
Code	2.2.1 Water quality, river health and soil protection	Crossing of waterways must be minimised. Approved crossings must be shown on the Forest Coupe Plan. Where crossings involve the use of log culverts, these must be removed when harvesting (including any regeneration activities) is completed. When removing crossings, techniques that minimises soil disturbance must be used.	10. No avoidable duplication of waterway crossings evident.						
			11. Any log culverts removed at completion of harvesting.						
			12. Minimal soil disturbance evident following removal of waterway crossings.						
Code	2.2.1 Water quality, river health and soil protection	Waterways within and immediately adjacent to each coupe must be classified using the waterway classification system. The classification is based on characteristics prior to harvesting. <i>See Schedule A of this workbook for definitions.</i>	13. FCP provides evidence that waterways classified into Code categories (permanent, temporary, drainage line).						
			14. Waterway classification appears to be accurate.						

Water Quality, River Health and Soil Protection

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Code MP	Code: 2.2.1 Water quality, river health and soil protection MP: 1.4.2 Streams and catchments	Code: The potential risk to water quality is determined through consideration of: <ul style="list-style-type: none"> soil erodibility; soil permeability; rainfall erosivity; topography; and location of coupe infrastructure. Outcomes of risk assessments, buffers and filter strips must be specified on the basis of field assessments, and subsequently identified on the Forest Coupe Plan. The location of buffers and filter strips must be easily distinguishable in the field, either through the use of geographic features or marking. MP: Waterway buffer and filter widths required by the Code are determined according to water quality risk. Water quality risk is to be determined in accordance with Schedule 5 of these Procedures. <i>See Schedule D of this workbook.</i>	15. Risks to water quality assessed in field using Code criteria and MP procedures. Outcome documented in FCP.						
			16. Buffers and filter strips are identified in the field using geographical features or marking						
Code	2.2.1 Water quality, river health and soil protection	Water quality and river health must be protected by maintaining buffers and/or filter strips (to each side of the waterway) of not less than the widths specified in Table 2.	17. Buffers and filter strips meet minimum requirements of Code.						

Water Quality, River Health and Soil Protection

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		Width of buffers and filter strips must be measured in the horizontal plane from the edge of the saturated zone (at the time of harvesting) or channel (whichever is greater) on both sides of the waterway. <i>See Schedule A and B of this workbook.</i>							
Code	2.2.1 Water quality, river health and soil protection	Additional measures to protect water quality and aquatic habitat (including widening buffers or filter strips) must be adopted within coupes where there is a high local risk due to: <ul style="list-style-type: none"> local topography; the intensity and magnitude of the harvesting operation; or the location of the operation in a declared Special Water Supply Catchment area or water supply protection area. 	18. For coupes with identified high water quality risk, additional measures to protect water quality are specified in FCP.						
			19. Evidence available that any additional water quality protection measures required were implemented on site.						
Code	2.2.1 Water quality, river health and soil protection	Trees must not be felled from within buffer areas unless the selective removal of trees for safety is approved by an authorised officer and documented in the Forest Coupe Plan.	20. No trees have been felled from buffer areas, except where removal of trees for safety is approved by authorised officer and documented in FCP.						
Code	2.2.1 Water quality, river health and soil protection	Buffers must be protected from damage caused by trees felled in adjacent areas. Trees accidentally felled into buffers may be removed	21. Evidence in FCP that removal of any trees accidentally felled into buffers is appropriately authorised.						

Water Quality, River Health and Soil Protection

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		only where authorised and only if significant damage and disturbance of soil and vegetation within the buffer can be avoided. Removals must be noted on the Forest Coupe Plan.	22. Any tree removal from buffer has caused minimal damage to soil and vegetation in buffer.						
Code	2.2.1 Water quality, river health and soil protection	Machinery must not enter a buffer area except for the construction and use of stream crossings as specified in the approved Forest Coupe Plan. Pushing of fill or harvesting debris into a buffer or construction of drain structures within a buffer is not permitted except for the construction of an approved stream crossing.	23. Buffer remains intact, except at locations where approved stream crossing is constructed.						
Code	2.2.1 Water quality, river health and soil protection	Trees may be felled from within filter strips. The felling of trees into filter strips must be avoided where possible	24. Trees have not been felled into filter strips.						
Code	2.2.1 Water quality, river health and soil protection	Disturbance to soil and understorey vegetation from harvesting operations in filter strips must be minimised.	25. Soil and vegetation in filter strips remain largely undisturbed as a result of any harvesting.						
Code	2.2.1 Water quality, river health and soil protection	Machinery must not enter a filter strip, except at stream crossings as specified in the approved Forest Coupe Plan. Pushing of fill or harvesting debris into a filter strip is not permitted except for the construction of an	26. Filter strip remains undisturbed by machinery, fill or harvest debris apart from where required at approved stream crossings.						

Water Quality, River Health and Soil Protection

Note:

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		approved stream crossing.							
MP	1.4.2 Streams and catchments	In the Bendigo FMA: i) drainage lines have banks and/or eroded sections greater than 30cm deep and greater than 10m long. Distinctive riparian vegetation such as River Red Gum will generally be absent. Where sections meeting these criteria occur within 50m, the interconnecting depression must be treated as part of the drainage line; and ii) machinery movement in the immediate vicinity of depressions occurring above drainage lines must be along the contour.	27. Operations in Bendigo FMA comply with MP requirements.						
MP	1.4.2 Streams and catchments	In the Mid Murray FMA: i). minimum buffer and filter strip width in floodplain forests are specified in Table 4.1 of the Mid-Murray FMP; and ii). temporary effluent and/or confluent streams that require a 10m buffer rather than a 10m filter are identified in the Mid-Murray FMP.	28. Operations in Mid-Murray FMA comply with MP requirements.						
MP	1.4.2 Streams and catchments	In the East Gippsland FMA, a 100m buffer applies along Brown Mountain Creek (in the area bounded by 655004 and 5873083 in the south-western corner and 657978 and	29. Operations in East Gippsland FMA comply with MP requirements.						

Water Quality, River Health and Soil Protection

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		5876371 in the north eastern corner (GDA1994 and coordinate system VICGRID))							
MP	1.4.4 Protection of excluded areas.	Unless 1.4.4(b) of these Procedures applies, timber harvesting operations are not permitted: iv). within 40m from the high bank of the Gunbower, Parnee-Milloo and Walpolla Creeks and the Ovens River; v). within 60m of the high bank of the Murray River;	30. Timber production operations are not conducted within the prescribed distance of the named rivers and creeks, except were approved under provisions of MP 1.4.4(b).						
MP	1.4.4 Protection of excluded areas.	Rough heaping or windrow construction must not damage excluded areas or filter strips. Windrows must be located more than three metres from excluded areas if burning of windrows is to occur.	31. Rough heap or windrows that are to be burnt are at least 3 m from excluded areas.						
			32. Any rough heaping or windrow formation does not damage excluded areas.						
Steep slopes									
Code	2.2.1 Water quality, river health and soil protection	Timber harvesting must not occur on slopes where the operation cannot be conducted safely, threatens the stability of the soil or has high potential for adverse off-site effects. The potential for mass soil movement must be assessed and necessary	33. Evidence that potential for mass movement on any steep slope areas has been assessed and preventative actions have been planned and undertaken to protect soils and streams.						

Water Quality, River Health and Soil Protection

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		preventative actions undertaken. On slopes with a high soil erosion hazard or where there is an assessed risk of mass soil movement, additional measures must be taken to avoid movement of soil into streams, such as modification to harvesting methods or increasing of the widths of buffers and filter strips.	34. Timber harvesting in higher slope areas has not contributed to mass movement or other soil instability issues or adverse effects on waterways or water quality.						
Code	2.2.1 Water quality, river health and soil protection	Harvesting operations must be excluded from slopes greater than 30°. The exception to this is where there are small areas within coupes (not greater than 10% of the net harvestable area within one coupe) that are greater than the maximum slope limit and may be harvested where the land is assessed as capable of supporting harvesting activities without risk of mass soil movement.	35. Harvesting is excluded from areas with >30° slope, except where Code exceptions apply. Criterion #33 applies						

Comments:

Biodiversity Conservation

Note:

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Forest health									
Code	2.2.2 Conservation of biodiversity	Where fire is used in timber production operations, all practicable measures must be taken to protect all areas excluded from harvesting from the impacts of unplanned fire.	1. FCP provides evidence of planning to protect areas excluded from harvesting from impact of unplanned fire.						
			2. Unplanned fire has not affected excluded areas.						
Code	2.3.4 Forest health	Chemical use must be appropriate to the circumstances and take into account the maintenance of biodiversity, water and soil quality.	See Workbook 5B, criteria #6 and 7.						
Code	2.3.4 Forest health	If the introduction of a new or unknown exotic agent is suspected, Biosecurity Victoria must be informed.	3. FCP provides evidence that Biosecurity Victoria (or other relevant agency) advised if new or unknown exotic agent is suspected or detected.						
Code MP	Code: 2.3.4 Forest health MP: 1.3.9 Weed control	Code: The <i>Catchment and Land Protection Act</i> 1994 requires all landholders to control pest animals and noxious weeds on their property. Precautions must be taken to avoid the transport of any pest animal, pest plant or pathogen into or from a State	4. FCP identifies any noxious weeds and established pest animals on gross coupe area and, where present, demonstrates that action has been taken for control and eradication						<i>Pests present on coupe:</i> ■ <i>Control measures:</i> ■ <i>Comments:</i>
			5. FCP provides evidence that						<i>Pests:</i>

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	1.3.10 Forest hygiene	forest, or from one place to another within a State forest. Any relevant procedures or guidelines must be followed. Where there is a known risk of introducing or spreading pest plants, pest animals and pathogens to the forest (for example, but not limited to <i>Armillaria</i> or <i>Phytophthora</i>), precautions must be taken and the risk minimised through appropriate treatment of equipment when moving from known infested areas. Where Myrtle Wilt fungus (<i>Chalara australis</i>) is known to exist, precautionary measures must be applied to minimise the spread of this pathogen. MP: Where timber harvesting operations have introduced a noxious weed to a coupe, or increased the likelihood of the spread of an existing noxious weed infestation on a coupe, the managing authority must take appropriate steps to control the infestation. Assessment of noxious weeds must be undertaken by the managing authority as follows:	risk of transporting any pest animal, pest plant or pathogen has been assessed (as per MP requirements) and appropriate precautionary measures are put in place.						<ul style="list-style-type: none"> Precautionary measures: Comments:
			6. Evidence provided that harvesting equipment is treated appropriately when being moved from known pest or disease infestation areas.						<ul style="list-style-type: none"> Treatment measures: Comments:
			7. Evidence of post harvest weed assessment available in FCP.						
			8. A weed management plan has been produced where harvesting operations have introduced weeds as required by MP.						
			9. The FCP has evidence that the weed management plan has been implemented	NA					
			10. Noxious weeds and established pest animals not observed on coupe.	No	<10%	Med	Gen	Neg	One thistle plant observed. Weed incidence is very minor.
			11. Where Myrtle Beech present on gross coupe area, FCP	NA					

Biodiversity Conservation

Note:

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		i). a pre-harvest weed assessment to determine the type and extent of weeds on the coupe and on associated access roads; and ii). post-harvest assessments to determine type and extent of weeds on the coupe and associated access roads must be undertaken the first spring after completion of site preparation and establishment and during the stocking survey. Where the management authority has introduced weeds in accordance with 1.3.9(b) of the MPs and identified these weeds in accordance with 1.3.9(c) of the MPS, the managing authority must prepare a weed management plan and implement a weed control program. The weed management plan should be prepared in consultation with the Forest Management Officer. Where noxious weed management / control measures are required: i). the areas to be treated with herbicide must be recorded on a map and should be marked in the field prior to treatment; ii). only accredited Farm Chemical Users must carry out herbicide	provides evidence that MP Myrtle Wilt hygiene requirements (section 1.3.10(c) of the MP) have been followed.						
			12. Field observation confirms that Myrtle Wilt treatment measures implemented.						

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		application; iii). NFSG #6 provides guidance on chemical selection, application rates and methods; and iv). chemical use must comply with the product label.							
Code	2.3.4 Forest health	The use of chemicals for control of pests and pathogens must be in accordance with relevant Commonwealth and State legislation, regulations and statutory codes of practice. Instructions printed on product labels or any off-label permits issued must be followed. In particular, chemical use must comply with the relevant provisions of the <i>Catchment and Land Protection Act 1994</i> , the <i>Agricultural and Veterinary Chemical (Control of Use) Act 1992</i> and associated regulations.	See Workbook 5B, criteria #9.						
Planning and management									
Code	2.2.2 Conservation of biodiversity	Forestry operations must comply with measures specified in relevant Flora and Fauna Guarantee Action Statements and Flora and Fauna Guarantee Orders.	13. Operations comply with all relevant requirements.						
Code	2.2.2 Conservation	To facilitate the protection of biodiversity values, the following matters must be addressed when	14. FCP provides evidence that relevant expertise, research and monitoring were						

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	of biodiversity	developing and reviewing plans and must be adhered to during operations:	considered during planning stages.						
		<ul style="list-style-type: none"> application of the precautionary principle to the conservation of biodiversity values, consistent with monitoring and research to improve understanding of the effects of forest management on forest ecology and conservation values; consideration of the advice of relevant experts and relevant research in conservation biology and flora and fauna management at all stages of planning and operations; use of wildlife corridors, comprising appropriate widths of retained forest, to facilitate animal movement between patches of forest of varying ages and stages of development, and contributing to a linked system of reserves; providing appropriate undisturbed buffer areas around significant habitats; maintaining forest health and ecosystem resilience by managing pest plants, pest animals and 	15. Wildlife corridors of appropriate widths and connectivity are provided in harvesting exclusion areas						
			Refer to criteria #5-12, 16-17						

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		pathogens; and ■ modifying coupe size and dispersal in the landscape, and rotation periods, as appropriate.							
Code MP	Code: 2.2.2 Conservation of Biodiversity MP: 1.4.5 Habitat retention	Code: At the coupe planning and harvesting level, the retention of habitat trees or patches and long-lived understorey elements in appropriate numbers and configurations, and provision for the continuity and replacement of old hollow-bearing trees within the harvestable area, must be allowed for. MP: Habitat trees must be retained in accordance with Schedule A of this workbook Trees in buffers or other exclusion areas that have been extended beyond the minimum requirements of the Code can contribute to habitat tree retention requirements. Where this occurs the FCP must specify that buffers or other exclusion areas have been extended for the purpose of habitat retention. In the Otway FMA, where located on or adjacent to a coupe boundary, habitat patches must not be included	16. FCP provides evidence that biodiversity conservation requirements of Code and MP have been met in coupe planning, including for habitat trees and patches, understorey and hollow bearing trees.						<i>Planned measures:</i> <i>Comments</i>
			17. Planned biodiversity conservation measures from FCP have been fully implemented.						

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		in the net harvest area of adjoining coupes. <i>1.4.5.1-1.4.5.8 have further details of prescriptions relating to habitat retention in each FMA.</i> <i>Also see Schedule A in this work book for habitat tree prescriptions.</i>							
Code	2.2.2 Conservation of biodiversity	The <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) includes provisions to protect matters of national environmental significance, including listed threatened species and endangered ecological communities. The <i>Wildlife Act 1975</i> contains provisions to protect wildlife and includes requirements relating to control of wildlife species causing damage. The <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act) includes provisions relating to the handling of protected flora, the determination of Critical Habitat and the making of Interim Conservation Orders.	18. FCP provides evidence that any EPBC Act, Wildlife Act and FFG Act requirements for protective management areas are noted in FCP and applied in harvest area planning.						<i>List any actions:</i> ■ <i>Comments</i>
			19. Evidence provided that all required actions under the three Acts have been complied with.						
			20. Any control of wildlife causing damage has followed <i>Wildlife Act</i> provisions.						

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
MP	1.4.4 Protection of exclusion areas	Unless 1.4.4(b) of the MP applies, timber harvesting operations are not permitted: vii). in any White Cypress Pine, Buloke, Grey Box, Yellow Box and Grey Box vegetation communities in the Mid-Murray FMA and Mildura FMA; <i>Requirements regarding recording of exclusion areas and any authorised timber harvesting are considered in Workbook 5A, criteria #29-32</i>	21. No unauthorised timber production operations have been conducted in these vegetation communities.						
Rainforest									
Code MP	Code: 2.2.2 Conservation of biodiversity MP: 1.4.6 Rainforest	Code: Rainforest communities in Victoria must not be harvested. Rainforest communities must be protected from the impacts of harvesting through the use of appropriate buffers to maintain microclimatic conditions and protect from disease and other disturbance. MP: Rainforest is defined ecologically as closed (greater than 70% projective foliage cover) broad-leaved forest vegetation with a continuous rainforest tree canopy of variable height, and with a characteristic diversity of species and life forms.	22. FCP identifies any rainforest areas and rainforest buffers within gross coupe area. Evidence that required approach to delineation of rainforest boundaries (from MP) has been applied.						
			23. Where rainforest is present, rainforest buffer boundaries are marked in the field or readily identified by physical features.						
			24. No harvesting has taken place within rainforest or buffer areas.						

Biodiversity Conservation

Note:

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		Timber harvesting operations are not permitted in a rainforest or rainforest buffer. The Differential species approach' (as described in A field guide to rainforest identification in Victoria: differential species keys for the delineation of rainforest boundaries (DSE 2009)) is used to identify rainforest boundaries							
Old growth forest									
MP	1.4.7 Old growth forest	Old growth forest (OGF) is defined as "...forest which contains significant amounts of its oldest growth stage in the upper stratum – usually senescing trees – and has not been subjected to any disturbance, and if so the effect of which is now negligible..." (from Woodgate et al 1994). Where old growth forest is protected within a SPZ, the construction of new roads must be excluded from the mapped old growth within the SPZ.	25. FCP identifies all OGF SPZs present in gross coupe area.						
			26. Where OGF SPZ present, SPZ boundaries are marked in field or readily identified by physical features.						
			27. Where OGF present, no harvesting has taken place within OGF SPZs or trees felled into OGF SPZs, except where permitted under MP 1.4.1(b) and authorised under MP1.4.1(c), (d) and (f).						
			28. Where permitted harvest activities have taken place in OGF, this is noted in FCP.						
			29. Where OGF present, no new roads have been constructed						

Biodiversity Conservation

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Origin	Section	Prescription	Audit Criteria	Compliance	Environmental Impact Assessment				Auditor Comments	
			Green – field audit Blue – desk top audit Orange – field and desk top audit		Extent (E)	Duration (t)	Asset Value (z)	Impact		
			in mapped OGF within SPZ.							
Giant trees										
MP	1.4.8 Protection of giant trees	In East Gippsland and Tambo FMAs, all living trees equal to or greater than 4m DBHOB: i). must be protected from the direct effects of timber harvesting operations and regeneration burning; and ii). should not be isolated within the coupe. If possible they should be incorporated into retained habitat patches; and iii). should be included on the Gippsland Giant Tree Register maintained by DSE.	30. In East Gippsland and Tambo FMAs, FCP identifies any giant trees present on coupe and protective measures to be adopted.							
			31. Any giant trees protective measures are implemented effectively such that trees are not damaged by timber harvesting operations or regeneration burning.							
			32. Evidence that giant trees present on coupe (in East Gippsland and Tambo FMAs) have been included in Gippsland Giant Tree Register, if not previously registered.							
Threatened species										
Code MP	Code: 2.2.2 Conservation of biodiversity MP:	Code: Forestry operations must comply with measures specified in relevant Flora and Fauna Guarantee Action Statements and Flora and Fauna	33. FCP must identify exclusion areas and other management actions required (as per MP 1.4.9) under relevant Action Statements and Guarantee orders.						<i>Relevant exclusion areas and management actions:</i> ■ <i>Comments:</i>	

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	1.4.9 Threatened species protection	<p>Guarantee Orders. MP: Prescriptions for threatened species management are those stated in the most recent approved Action Statement or FMP.</p> <p>Where an Action Statement or FMP requires an amendment to the FMZ scheme, this must be:</p> <p>i). actioned by a DSE officer with appropriate expertise in biodiversity management nominated by the Area Manager</p> <p>ii). undertaken in accordance with 3.2.4 of the MPs; and</p> <p>iii). endorsed by the Director, Biodiversity Policy and Programs.</p> <p>Where an Action Statement or FMP requires the creation of a timber harvesting exclusion area, the timber harvesting exclusion area must be approved by the Director, Forests and endorsed by the Director, Biodiversity Policy and Programs.</p> <p>Where draft prescriptions for threatened species management are in place this will be implemented only by negotiation with relevant stakeholders and must be approved</p>	<p>34. Operations comply with all relevant requirements, apart from exceptions that are permitted and approved by authorised officer (e.g. MP 1.4.1(b))</p> <p>35. Any exemptions to relevant requirements are documented in FCP.</p>						

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		by the Director, Forests and endorsed by the Director, Biodiversity Policy and Programs. (e) Where a new record of threatened species or communities is claimed subsequent to the approval of a TRP or WUP, the Director, Forests in consultation with the Director, Biodiversity Policy and Programs will determine if the required protection will be applied as an interim measure until the record can be confirmed or otherwise by a DSE staff member with appropriate expertise in biodiversity management.							

Biodiversity Conservation

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
Comments:									

Operational Provisions

Note:

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
Code	2.5.3 Operation restrictions	Timber harvesting operations that involve machine traffic must be suspended when significant rutting is likely to be caused by machine traffic, unless actions are taken to reduce that risk.	1. If conditions likely to cause rutting have developed, evidence in FCP that operations have been suspended or actions taken to mitigate risk of rutting taken.						<i>Alternative actions to suspension of logging:</i> ■ <i>Comments</i>
			2. If alternative actions are taken to mitigate rutting risk, actions are recorded in FCP.						
			3. No rutting evident on coupe.						
Code	2.5.3 Operational restrictions	Timber harvesting operations must be suspended when water begins to flow along tracks, threatening stream water quality or soil values, unless appropriate remedial actions are taken to protect those values.	4. If during harvest rain causes water to flow along tracks, evidence in FCP that operations have been suspended or actions taken to mitigate risk to soil or water quality values.						<i>Alternative actions to suspension of logging:</i> ■ <i>Comments</i>
			5. If alternative actions are taken to mitigate risk to soil or water quality values, actions are recorded in FCP.						
			6. No evidence of impact on soil or water quality values from water flow along roads.						
Code	2.5.3 Operational	Landing operations must be suspended when continuation would	7. FCP records any instances where landing operations						

Operational Provisions

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	restrictions	result in significant deterioration of the landing surface such as soil mixing and compaction.	were suspended to prevent deterioration of landing surface.						
			8. Landing surface shows no sign of soil mixing or excessive compaction.						
Code	2.5.3 Operational restrictions	Timber harvesting must be suspended when requested to do so by an Authorised Officer	9. The FCP holds records of any request from an authorised officer to suspend coupe operations.						
			10. The FCP records that closure of coupe operations complied with authorised officer's request.						
MP	1.2.4 Seasonal closures	Timber harvesting operations and associated roading and regeneration must not take place during closure periods in water supply catchments as specified in Schedule 6 of these Procedures. Timber harvesting operations and associated roading and regeneration must not take place during seasonal closures specified in the relevant FMP. In Midlands FMA, snagging must not take place in GMZ and SMZ from 31 July to 31 October (in Designated Catchments additional seasonal closures may apply, refer to Schedule	11. FCP records that any seasonal closure requirements in the MP or FMP were complied with. <i>See also Workbook 5B, criteria #2</i>						

Operational Provisions

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		6 of the MP). In the Enfield, Linten, Creswick, Canadian, Ross Creek, Lal Lal and Mt Doran State Forests, domestic firewood collection must not take place during the months of July, August, January and February. In the Portland FMA, domestic firewood collection must not take place during the months of June, July, August and September. In the Woohlpooer and Cherrypool State forests, timber harvesting operations must not take place during the months of June, July, August and September.							
MP	1.3.1 Tree felling	Where tree felling is planned to occur across any road, or within 2 tree lengths of any road: i). the road must be temporarily closed in accordance with 1.6.6.1 of the MP; or ii). traffic control measures must be implemented in accordance with 1.6.6.3 of the MP.	12. Where tree felling results in the need for temporary road closure or traffic control measures, FCP records that these were implemented consistently with MP 1.6.6.1 or 1.6.6.3, respectively. <i>See Workbook 5E criteria #82, 92, 93</i>						
MP	1.3.5 Temporary closures to timber	Timber harvesting operations must be suspended: i). where it is likely that continuation of timber harvesting operations will	13. FCP records that harvesting operations were suspended due to any flooding events in the area being harvested.						

Operational Provisions

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	harvesting operations	cause a breach of the Sustainable Forests (Timber Harvesting) Regulations 2006; or ii). when flooding is present in the area that is being harvested.	See criteria #1-11						
Code MP	Code: 2.4.5 Suspension of cartage MP: 1.3.5 Temporary closures to timber harvesting operations	Code: Roads must be temporarily closed to heavy timber harvesting traffic when persistent wet weather or road stability compromise road drainage and water quality. MP: Roads must be temporarily closed to heavy timber harvesting traffic when persistent dry weather causes the surface materials to unravel to a degree that poses a threat to water quality, in the absence of suitable preventative or remedial actions to manage the risk to water quality. MP: Carting must be suspended when: i). snow is lying on any road used to access or exit the coupe; ii). water is flowing down any unsealed road or track; iii). truck movement will deposit mud on a gravelled or sealed road; iv). there is a risk of damage to road structure; or	14. FCP records any instances where carting has been suspended to comply with Code and MP requirements.						
			15. No evidence that carting in vicinity of coupe has caused damage to road structure or threatens water quality.						

Operational Provisions

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		v). there is a risk that carting may cause stream turbidity.							
MP	1.3.7 Harvesting of minor forest produce	Minor forest produce may be harvested in GMZ and in SMZ if it is compatible with FMP or SMZ plan objectives. Felling of trees for minor forest produce (excluding apiary and grazing) is permitted if sawlog productivity and forest health are not compromised and for the following purposes only: i). silvicultural or ecological requirements; ii). safety requirements; or iii). fence line clearance or road/track construction/maintenance.	16. If minor forest produce harvested from coupe, FCP demonstrates that this is considered to be compatible with FMP or SMZ objectives and consistent with MP limitations.						
		Ferns (including Tree Ferns) may be harvested where they are likely to be killed or destroyed by timber harvesting operations, roading and regeneration, subject to: i). harvesting being authorised by the issue of a Permit under S48 of the Flora and Fauna Guarantee Act 1988 and a Forest Produce Licence; and ii). all ferns that are removed being tagged.	17. Where ferns are to be or have been harvested from the coupe, the FCP contains evidence that the harvest has been appropriately authorised and licensed and that any removed ferns are tagged.						

Operational Provisions

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MP	1.4.4 Protection of excluded areas	Unless 1.4.4(b) of these Procedures applies, timber harvesting operations are not permitted: i). in SPZs; ii). in SMZs (where timber harvesting is excluded); vi). within 40m of developed recreation facilities such as barbeques, major walking tracks and picnic tables; ix). within 50m of a Silvicultural System Project treatment site and sites at which long term ecological monitoring is being conducted by Professor David Lindenmayer in the Central FMA. <i>Requirements regarding recording of exclusion areas and any authorised timber harvesting are considered in Workbook 5A, criteria #29-32</i>	18. No unauthorised timber production operations have been conducted in these areas.						
Comments:									

Roading

Note:

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Road planning									
This section applies only to planning of any new temporary road that leads directly to the coupe to be audited from the main permanent road network.									
Code	2.4.1 Road planning	Road planning and design for new and substantially upgraded roads must ensure the road network is adequate for the intended range of uses and users, while ensuring the protection of water quality and conservation values, including river health.	Prescription not audited as applies to main forest road network and not to roads within the scope of this section						
Code	2.4.1 Road planning	Road planning must: <ul style="list-style-type: none">locate roads so as to minimise risks to environmental values, particularly soil, water quality and river health, during both construction and ongoing road use;locate roads so as to avoid and mitigate impacts on known Aboriginal cultural heritage places;ensure that the timing of construction activities minimises risks associated with unsuitable weather conditions Road planning must ensure protection of taxa and communities listed under the <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act) and avoidance or mitigation of listed potentially	1. Evidence provided that any new or upgraded roads have been located to comply with FFG and other relevant Acts or regulations and minimises or mitigates risks to environmental values.						
			2. Aboriginal cultural heritage assessment consistent with <i>Aboriginal Heritage Act 2006</i> undertaken where sites and places of significant suspected in or near road route.						
			3. Any new or upgraded roads located to avoid and mitigate impacts on known Aboriginal cultural heritage places.						

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		threatening processes. Threatened species may be protected under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) or the subject of an Interim Conservation Order under the FFG Act.	4. Evidence available to demonstrate that timing of road construction minimised risks from unsuitable weather.						
Code	2.4.1 Road planning	Existing roads must, where practicable, be used for access to a coupe or work site and to haul timber, except where it can be clearly demonstrated that a new or relocated road further minimises or removes existing threats to soil, water quality or biodiversity.	Not audited as not consistent with scope of this section.						
Code	2.4.1 Road planning	Roads must avoid areas declared under the <i>Reference Areas Act 1978</i> .	5. Any new or significantly upgraded road does not pass through areas declared under the <i>Reference Areas Act 1978</i>						
Code	2.4.1 Road planning	Plans for the construction of permanent roads must be approved in advance of harvesting operations to enable the roads to be located on alignments and grades that provide the required standard of access without compromising safety, water quality and other environmental values.	Not audited as this section does not apply to main forest road network.						
Code	2.4.1 Road planning	Plans for roads must be based on field surveys to ensure that all environmentally sensitive locations	6. Evidence available to demonstrate that environmental field						

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		are identified and appropriate design and construction techniques are adopted.	assessments undertaken prior to design and construction.						
			7. Evidence is available to show that design and construction of any new or substantially upgraded road influenced by results from field assessments. <i>Also see criterion #1</i>						
Code	2.4.1 Road planning	New road construction and significant improvement works on the existing road network must be identified in the Wood Utilisation Plan or Timber Release Plan.	Not audited as not consistent with scope of this section.						
Code	2.4.1 Road planning	Roads in State forest must be managed in accordance with the <i>Road Management Act 2004</i> by the designated authority.	Not audited as not consistent with scope of this section.						
MP	1.6.1 Responsibility and management	Where snagging forest produce or moving heavy machinery along or across any road or vehicle route (including that on an approved TRP or designated as a VicForests Section under the Road Management Agreement), VicForests must verbally notify the District Manager at least 48 hours prior to the event. Where environmental risk is determined to be significant, VicForests must obtain	8. FCP contains evidence of at least 48 h prior notice being provided before any snagging of forest produce or moving of heavy machinery along or across any road or vehicle route takes place.						
			9. FCP contains evidence of environmental risk of any such activity having been assessed beforehand and,						

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		written approval from the Roding Officer at least 48 hours prior to the event. In addition, the snagging forest produce or moving heavy machinery must minimise:	where material risks are identified, prior written approval is provided by Area Manager.						
		i). the risk to machine operators and other road users; ii). deterioration of the road surface and water quality; iii). the total distance that machines will be travelling along or across the road network; and iv). load point issues associated with walking a machine on a constructed crossing.	10. Where such activities take place, there is no evidence of adverse impact on road surface or water quality						
MP	1.6.2 Planning	A FCP must be prepared by the managing authority for timber harvesting operations associated with a road construction operation or significant road improvement operation.	Not audited as not consistent with scope of this section.						
MP	1.6.2 Planning	A Site Plan must be prepared by the managing authority for a road construction operation or significant road improvement operation and must identify: i). the class of road to be constructed / improved; ii). maximum clearing width; iii). sections of the road subject to	Not audited as not consistent with scope of this section.						

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		narrowed or increased easements; iv). The FMZs impacted upon; v). the period of construction; vi). methods and location of proposed crossings and drainage structures; vii). any cultural heritage values and appropriate control measures; viii). any biodiversity values and appropriate control measures; and ix). environmental risks and appropriate control measures for the site.							
MP	2.3.6 Planning for road construction and improvement operations	All road construction, significant road improvement operations, minor road improvement operations and road maintenance operations must be in accordance with the Road Management Agreement.	11. Evidence provided that road construction, improvement and maintenance operations have considered and are consistent with the Road Management Agreement.						
MP	2.3.6 Planning for road construction and improvement operations	All road construction and road improvement operations must be specified in an approved TRP.	12. Any road construction and improvement operations undertaken to enable logging in the coupe are specified in an approved TRP.						
MP	2.3.6 Planning for road construction and improvement	At completion of road construction operations, VicForests must notify the Roding Officer of the location of the road (so that the road may be included on the DSE Road Register).	13. Evidence provided that Roding Officer has been advised of location of road on completion of construction.						

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	operations								
Road design <i>This section applies only to the design of any new temporary road that leads directly to the coupe to be audited from the main permanent road network.</i>									
Code MP	Code: 2.4.2 Road design MP: 1.6.4 Stream and drainage line crossing	Code: Stream crossings must be designed according to traffic requirements and the nature, size and period of flow (both pre and anticipated post harvest) and characteristics of the bed and banks of the stream. MP: Bridges must: i). be designed in accordance with the DSE Bridge Policy 2007; ii). be designed to prevent constriction of any clearly defined channel;	14. Evidence can demonstrate any stream crossings are designed to meet traffic requirements, flow requirements of stream and characteristics of its bed and banks and comply with MP requirements.						
			15. No evidence of stream crossing being overtopped, contributing to adverse impact on stream morphology or to adverse water quality conditions.						
Code MP	Code: 2.4.2 Road design MP: 1.6.3.9 Road drainage	Code: Appropriate drainage must be provided. Spacing of drainage outlets along a road must take into account the soil erodibility, rainfall frequency and intensity, and the proximity of the road to streams. MP: Table drains must allow water to flow	16. Evidence that drain spacing accounts for soil and rainfall characteristics and proximity to streams.						
			17. No evidence that inadequate drain spacing contributing to ponding or other adverse road impact or to adverse drainage on streams and						

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		without ponding. <i>MP recommended distances between drainage structures provided in Schedule A.</i>	water quality.						
Code MP	Code: 2.4.2 Road design MP: 1.6.3.9 Road drainage	Code: Energy dissipating structures or silt traps must be used where necessary to reduce water velocity and trap sediment. MP: Road drainage must discharge onto: i). a strip of undisturbed vegetation at least 20m wide; ii). a rock spill; or iii). some other structure that dissipates the velocity of drainage flows.	18. Energy dissipating structures, silt traps or other protective measures used as required in new or substantially modified roads.						
			19. No evidence of adverse water quality impacts resulting from use of these or other drainage structures.						
Code	2.4.2 Road design	Drainage onto exposed erodible soil or over fill slopes must be avoided where possible. Structures and earthworks required to avoid such discharges are to be identified during planning and construction as required.	20. Evidence that road design incorporated plans to avoid discharge onto fill slopes or exposed erodible soil.						
			21. Drainage from roads is not avoidably discharged onto fill slopes or exposed erodible soil.						
Code	2.4.2 Road design	Stream crossings must be appropriately designed to minimise barriers to the passage of fish and other aquatic fauna	22. No evidence that any new stream crossings significantly impede fish passage.						

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Code	2.4.2 Road design	Adequate drainage structures must be placed approximately 20 m from permanent or temporary streams, to allow discharge onto undisturbed vegetation and to maximise the flow distance between the drainage outlet and the waterway. Within 20 m of a permanent or temporary stream, a road must wherever possible be drained into undisturbed vegetation using crowning or cross fall techniques. Where this is not possible, drainage must not enter directly into a permanent or temporary stream without passing through an appropriate sediment control structure such as a sediment pond or silt trap	23. Roads within 20 m of streams use crowning or other techniques to ensure satisfactory drainage.						
			24. Adequate drainage structures are located about 20 m from permanent or temporary streams for any new or substantially upgraded roads.						
			25. Structures ensure drainage discharges are to undisturbed vegetation and that flow distances to waterway are maximised or that silt traps or other structures are used to minimise impacts on waterways. Also see criterion #19						
Code	2.4.2 Road design	Gravel surfacing with a low sediment generating potential must be applied to the road area on bridge approaches (within 20 m) and on unsurfaced bridges or culverts, when crossing permanent or temporary streams.	26. Roads use gravel surfacing on approaches to bridges or culverts over permanent or temporary streams.						
MP	1.6.3.6 Road alignments	Engineering advice must be sought for road alignments traversing cross slopes of 30° or greater or 25° and greater in areas of high soil erodibility.	27. Evidence can be provided that engineering advice was sought for roads in these types of landscape.						

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			28. Evidence can be provided that any such engineering advice was followed in road design.						
MP	1.6.4 Stream and drainage line crossings	Where used, culverts must: i). be a minimum 375mm in diameter for permanent roads; ii). a minimum 300mm in diameter for temporary roads; iii). be designed to withstand a 1 in 10 year rainfall event;	29. Any culverts used meet MP requirements.						
Road construction									
<i>This section applies only to the construction of any new temporary road that leads directly to the coupe to be audited from the main permanent road network.</i>									
Code	2.4.3 Road construction	Road construction must be conducted in a manner consistent with plans and designed to ensure fitness for use, public safety, the protection of water quality and river health, Aboriginal and other significant cultural heritage and biodiversity conservation values.	30. Any new road is constructed in a manner consistent with plans and to meet safety, environmental and heritage requirements and objectives.						
Code	2.4.3 Road construction	All fill disposal areas and embankments must be planned and designed to minimise soil erosion, mass soil movement, and potential water quality deterioration. They must be appropriately stabilised. Where revegetation is used to stabilise fills or embankments, the species must be suitable for the site and where	31. Evidence provided that any new fill disposal areas and embankments are planned and designed to minimise soil movement and water quality deterioration.						
			32. No evidence that any new fill disposal areas and embankments have not been						

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		possible indigenous to the area.	stabilised successfully.						
			33. Any vegetation used to stabilise fills or embankments is suitable for use and indigenous to area.						
Code	2.4.3 Road construction	Erosion and sediment control must be an ongoing activity over the duration of the construction activity, integrated with the works schedule. Road construction sites must have erosion mitigation measures in place and appropriate temporary drainage to ensure that the site is left protected between construction activities	34. Evidence is available to demonstrate that erosion mitigation measures are/were in place through road construction.						
			35. No evidence of adverse water quality impacts from construction or modification to roads.						
Code	2.4.3 Road construction	Quarry materials infected with <i>Phytophthora cinnamomi</i> must not be used.	36. Evidence is available to demonstrate that any quarry materials used in new roads have been assessed <i>Phytophthora</i> transmission risk and that no at risk materials were used.						
Code MP	Code: 2.4.3 Road construction MP: 1.6.4 Stream and drainage line crossings	Code: Road construction operations must ensure that: <ul style="list-style-type: none"> disturbance to stream beds and banks is kept to a minimum; soil and rock fill is not pushed into streams, nor placed into a position where there is a risk that it can 	37. Evidence is available that construction of any new bridges complies with MP requirements.						
			38. No evidence that road construction resulted in stream bed or bank disturbance, disturbance to						

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		erode into a stream; and ■ cement, raw concrete, soil fill and other road making materials are not spilt into watercourses during any construction. MP: Bridges must: iii). not utilise earth borrow from a stream or wetland buffer; iv). cause the least possible disturbance to soil under or adjacent to any stream, wetland or drainage line; v). ensure that excavations, sills, abutments, stringers and girders are made or placed above the high watermark of the stream, wetland or drainage line; and vi). include protection from erosion by use of natural groundcover, a retaining wall, a bulkhead or a rock surface.	nearby wetlands, placement of soil, rock fill or concrete in the water course or allows soil or rock fill to erode into a stream.						
Code	2.4.3 Road construction	In the event of any Aboriginal object, place or human remains being discovered in the course of works, the person in charge of those works must report the discovery in accordance with the <i>Aboriginal Heritage Act 2006</i> .	39. Any discovery of Aboriginal objects, places or human remains is notified consistent with the <i>Aboriginal Heritage Act 2006</i> .						
MP	1.6.3.1 Standards	All roads must be constructed and maintained in accordance with the Review of Road Classifications,	40. Evidence is available to show that any road construction was undertaken according to						

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		Geometric Designs and Maintenance Standards (ARRB 2001) and the MP.	the MP and these criteria.						
			41. Evidence is available to show that roads are maintained according to these standards.						
MP	1.6.3.2 Construction of permanent roads.	Clearing of the road site must: i). not commence until the road alignment has been approved by the Area Manager (noting that approval may be given during the approval of the WUP or at the completion of the Land and Fire Services review of a proposed TRP or change or modification to an approved TRP); ii). be at least for the relevant width (horizontal distance specified in Schedule A of this workbook), but for no greater distance than any maximum clearing width specified in the Site Plan; and iii). not bury stumps, logs or other debris in the formed width of a road; and iv). remove all debris from the formed width of the road. Clearing widths on permanent roads must: i). at road junctions be the minimum formation width plus additional width required for the construction of batters; and	42. Any clearing for new or substantially upgraded roads has prior approval of Area Manager.						
	1.6.3.5 Clearing widths		43. Logs, stumps and other debris from any road construction are not buried in and retained on the formed width or road						
			Cleared width for permanent roads is not within the scope of this section.						

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		ii). where a slashed verge is necessary, be sufficiently wide to enable efficient control of unwanted regrowth. Width of cleared easements must: i). be kept to the minimum necessary; and ii). be marked on the ground if varied from the standards specified in Schedule A of this workbook. <i>Maximum clearing widths required for typical road construction (from MP) are provided in Schedule A of this workbook.</i>							
MP	1.6.3.2 Construction of permanent roads.	When adjoining an excluded area, any proposed road site must: i). not exceed the width specified in Schedule A of this workbook, plus any additional width required to construct batters, as specified in the Site Plan; and ii). not be disturbed until marked on the ground and approved by the relevant supervising officer. <i>Recommended clearing widths are given in Schedule A to this workbook.</i>	44. Any new or substantially upgraded road constructed near an excluded area meets these MP requirements.						
MP	1.6.3.3 Construction of temporary roads	Temporary roads must be located in GMZ where practicable. Approval must be obtained prior to commencing construction of a	45. Any new temporary roads constructed are located on GMZ, unless appropriate authorisation provided for						

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		temporary road in SMZ or SPZ in the field. This may be obtained through: i). an approved WUP for temporary roads associated with DSE managed coupes; or ii). an approved TRP for temporary roads and coupe driveways associated with VicForests managed coupes; or iii). a Site Plan approved by the Area Manager for temporary road construction not associated with timber harvesting. Earthworks must be minimised in the construction of temporary roads and any material removed from the site must not be placed where there is a risk of it entering a stream or wetland.	construction in SPZ or SMZ.						
			46. Minimal earthworks undertaken for construction of any temporary road.						
MP	1.6.3.4 Timing of construction	Road construction must not occur during the seasonal closure periods specified in 1.2.4 and Schedule C of workbook 5B.	47. Evidence is provided that any construction or upgrade of a road took place outside the prescribed seasonal closure period.						
		Road construction must be undertaken when rainfall and soil conditions minimise the risk of erosion and impact on water quality, but when soil moisture is adequate to achieve compaction and stabilisation of the sub-grade. <i>Seasonal closure periods are provided in Schedule C of Workbook 5B.</i>	48. Evidence is provided to confirm that road construction was halted when conditions were unsuitable and resulted in significant risk of erosion and water quality impact.						

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MP	1.6.3.6 Road alignments	Road alignments must be cleared prior to road formation. All merchantable timber removed during road alignments should be utilised.	49. Evidence is provided that any clearing for new road alignments is completed prior to road formation.						
			50. Evidence is provided that any merchantable timber removed during road alignment clearing is utilised.						
MP	1.6.3.7 Fill batter construction	Fill batters must not cover the base of live trees. Topsoil should be stockpiled and utilised in the rehabilitation of batter slopes. Mulch used in rehabilitation works must be clean and weed free. Disposal of excess fill must be in a manner that does not have an adverse long-term effect on the environment and water quality. Engineer approved methods of mechanical consolidation of fill batters must be used.	51. No evidence of any new fill batters covering the base of live trees.						
			52. Evidence is provided that topsoil from construction of any new roads is stockpiled and then used in rehabilitation of batter slopes.						
			53. Evidence that any mulch used to stabilise batter slopes has been assessed to be clean and weed free.						
			54. No evidence that any new batter has weed infestation relating to use of contaminated mulch.						
			55. Evidence provided that disposal of any excess fill had						

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			no adverse long-term effect on the environment and water quality.						
			56. Evidence that method used to consolidate fill batters was advised by an engineer.						
MP	1.6.3.8 Road surfacing	Pavement material must not be placed on unconsolidated sub-grades. Base course material must be consolidated and levelled prior to the placement of wearing course material. Road formation should be boxed to contain both base and wearing course material. On multiple use forest roads surfacing materials must be appropriate for non-harvesting related uses.	57. Surfacing materials for new or upgraded roads are consistent with MP requirements.						
MP	1.6.3.9 Road drainage	Cross-drains must be constructed at an angle sufficient to discharge any water from the surface of the road.	58. No evidence that cross drainage on any new or substantially upgraded road is impeded by drainage angle.						
MP	1.6.3.9 Road drainage	On soils of high erosion hazard, temporary sediment traps to prevent erosion must be used during road construction.	59. Evidence provided to demonstrate that sediment traps were used to prevent erosion and stream sedimentation during any road construction activities on high erosion risk soils.						

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
MP	1.6.3.9 Road drainage	Table drains must: i). allow water to flow, without ponding; ii). be created by extending the road when it is formed, and not by subsequent excavation; iii). include run-offs of sufficient length to allow the table drain and run-offs to be cleaned; iv). be supported by rock or otherwise stabilised in soils of a high erosion hazard; and v). have silt traps constructed at the end if discharging directly into a stream or wetland buffer.	60. Any new table drains meet MP requirements.						
MP	1.6.4 Stream and drainage line crossings	Where used, culverts must: iv). where used in a catchment area that exceeds 100ha, be constructed in accordance with engineering advice; v). be held in place and protected from erosion by either sandbags, timber, concrete or rock, placed at the head of and at the point of discharge from, the culvert; vi). on a Class 5C and higher roads, be constructed to include a road sump; vii). if constructed of concrete, have a minimum cover of 600mm as measured from the road surface to the top of the pipe and a maximum cover	61. Where any culverts are installed in a catchment >100 ha in area, there is evidence that engineering construction advice has been followed.						
			62. Construction requirements for culverts are met.						

Roading

Note:

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		as specified in the Installation of Steel-Reinforced Concrete Drainage Pipelines, Concrete Pipe Association of Australasia; viii). if constructed of a material other than concrete, have a minimum cover as recommended in the manufacturers specifications; ix). on permanent streams, include a fish ladder if the diameter of the culvert is greater than 750mm; x). on any fill face upstream or downstream be protected in a way that prevents erosion; xi). not project above the bed of a stream, wetland or drainage line in a way which may prevent the passage of aquatic fauna; xii). where construction diverts water from its natural course, returns water to its natural course over a flume, rock spill, or other hard surface; and xiii). ensure that any fill face upstream or downstream from a culvert, is protected in a way that prevents erosion.							
MP	1.6.4 Stream and drainage line crossings	Temporary crossings to carry machinery during bridge construction must:	63. Evidence provided that construction of any temporary crossings to assist in bridge construction						

Roading

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		i). be constructed only if the bed of the stream, wetland or drainage line is capable of bearing the weight of that machinery without being damaged; ii). include a corduroy crossing of logs; iii). have adequate drainage, including any access tracks, when construction is complete; and iv). be removed and rehabilitated on completion of works.	complies with MP requirements.						
			64. Any temporary stream crossings for bridge construction are satisfactorily rehabilitated.						
MP	1.6.4 Stream and drainage line crossings	Fords must: i). have a base and entry points constructed of rock, concrete, heavy timber or other erosion-resistant material; ii). be as wide as the crossing place will allow; and iii). not project above the bed of the stream or wetland in a way that may prevent the passage of aquatic fauna.	65. Construction of any ford meets MP requirements.						
Road maintenance This section considers the maintenance of roads leading to the audited coupe, including permanent and temporary roads within ~500 m of the coupe									
Code	2.4.4 Road maintenance	Road maintenance must be undertaken to minimise erosion and to protect water quality. Road drainage systems must be maintained to minimise erosion and the discharge of sediment into waterways.	66. Road used to access coupe and their drainage systems are well maintained with minimal evidence of soil erosion or adverse water quality impacts from road.						

Roading

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
Code	2.4.4 Road maintenance	Blading-off is only permitted where measures are in place to prevent potential adverse impacts on water quality and where effective side drainage can be maintained.	67. Road used to access coupe are not bladed off unless measures are in place to maintain side drainage and protect water quality.						
			68. Any blading off of road used to access coupe noted in FCP and received prior approval from Area Manager.						
MP	1.6.5 Road maintenance	Roads and tracks must be maintained so that: i). discharge of turbid water into streams or wetlands is minimised; ii). any soil windrow erected on the outside of a road is breached at regular intervals, except where the windrow protects a fill; and iii). drainage is kept free of debris.	69. Evidence provided of planned maintenance regime to achieve MP requirements.						
			70. Maintenance of roads and tracks achieves MP requirements.						
Road closure – temporary, seasonal and permanent									
Code MP	Code: 2.4.5 Suspension of cartage MP: 1.6.6.1	Code: Roads must be temporarily closed to heavy timber harvesting traffic when persistent wet weather or road stability compromise road drainage and water quality. Roads must be temporarily closed to	71. Evidence provided in FCP of road closures effected due to snow on ground or during high risk persistent wet or dry periods or that preventative measures or remedial actions put in place.						

Roading

Note:

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	Seasonal and temporary road closures	heavy timber harvesting traffic when persistent dry weather causes the surface materials to unravel to a degree that poses a threat to water quality, in the absence of suitable preventative or remedial actions to manage the risk to water quality. MP: All roads must be temporarily closed to the carting of timber resources and forest produce during wet weather, including when snow is lying on the ground, or dry periods if there is a significant chance that: i). the road surface will deteriorate; or ii). watercourses will be polluted.	72. No evidence that sediment mobilised from roads is contributing to poor water quality.						
Code	2.4.6 Road closure	Roads no longer required for timber harvesting or other purposes, such as fire management, must be permanently closed and effectively drained.	73. Any roads to coupe that are no longer required are permanently closed and effectively drained.						
Code MP	Code: 2.4.6 Road closure MP: 1.6.6.1 Seasonal and temporary	Code: Seasonal, temporary and permanent road closures must be implemented in accordance with Section 21a of the <i>Forest Act 1958</i> and the <i>Country Fire Authority Act 1958</i> as applicable. MP:	74. Evidence is provided that any road closures have been undertaken in a manner that is consistent with relevant legislation and Code of Practice, including that approval has been provided by a designated person.						

Roading

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	road closures	Seasonal and temporary closures of permanent roads must: i). comply with, and be by a delegated person (under S21(1)(ea) of the Forests Act 1958) or a Forest Officer authorised by a delegated person (under S21(1A) of the Forests Act 1958); ii). be recorded in accordance with the standards specified in Worksite Traffic Management AS 1742.3 and Code of Practice for Worksite Safety - Traffic Management, issued under the <i>Road Management Act 2004</i> ; and iii). for seasonal closures be gazetted annually.	75. Evidence that seasonal closure of roads has been gazetted appropriately.						
MP	1.6.6.1 Seasonal and temporary road closures	Where VicForests requires a permanent road to be temporarily closed (including erection of bunting barriers), VicForests must submit a completed Road Closure Plan (refer to Schedule 9 of the MP) to the Area Manager for approval.	76. Evidence is provided that a road closure plan consistent with MP is prepared and approved by Area Manager prior to temporary closure.						
MP	1.6.6.1 Seasonal and temporary road closures	All roads must be temporarily closed to general traffic, or have traffic control measures implemented in accordance with 1.6.6.3 of the Management Procedures, when timber harvesting operations and associated activities or prescribed burning conducted on or near a road	77. Evidence provided that temporary closure and/or traffic control measures are put in place as per MP requirements.						

Roading

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		presents a risk to road users.							
MP	1.6.6.2 Permanent road closures	Except where the Area Manager has determined that a temporary road will become part of the permanent road network, a temporary road must be closed and rehabilitated by the managing authority (including removal of all bridges crossings and culverts) as soon as possible after the coupe(s) (or part therefore) for which the road was constructed to access has been harvested and regenerated. The approach to any bridge, culvert or log fill crossing that has been removed must be adequately drained to restrict soil movement into a stream or waterway. When timber harvesting operations in a coupe are complete, all temporary roads must be drained to ensure that soil movement is restricted	78. Any temporary roads, bridges, culverts and log fill crossings that are no longer required are closed and rehabilitated as required by the MP.						
			79. There is no evidence of soil movement into stream or waterway from vicinity of removed bridge, culvert or log fill crossing.						
MP	1.6.6.2 Permanent road closures	Temporary roads that will not be used to access a coupe for a period of 12 months or more must be closed to all vehicles by an effective barrier.	80. For temporary roads that will not be used for ≥12 months and effective barrier is in place to prevent use of road.						
MP	1.6.6.2 Permanent road closures	Temporary roads that are to remain open after completion of timber harvesting operations and associated	81. Any temporary roads that are to remain open are listed on						

Roading

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		activities (for the purposes of accessing another coupe or to become part of the permanent State forest road network) must be identified on the FCP or Site Plan	FCP or Site Plan						
Traffic control									
MP	1.6.6.3 Traffic control	Control of traffic may be required for safety reasons during timber harvesting and associated activities or prescribed burning. Any planned traffic control must: i). have a Traffic Management Plan prepared in accordance with the <i>Road Management Act 2004</i> Worksite Safety Traffic Management Code of Practice. ii). be in accordance with a Traffic Management Plan (a template is provided in Schedule 10 of the MP); and iii). be carried out by an accredited traffic controller, in accordance with Worksite Traffic Management AS 1742, and Code of Practice for 'Worksite Safety - Traffic management, issued under the <i>Road Management Act 2004</i> . Where VicForests undertakes traffic control, a Traffic Management Plan in accordance with 1.6.6.3(a) of the MP	82. In coupe harvesting operations where traffic control is required, a traffic management plan is prepared in accordance with the MP template and other requirements.						
			83. Evidence provided to demonstrate that traffic management plan provided to Forest Management Officer at least one week prior to implementation.						

Roading

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		must be provided to the Forest Management Officer one week prior to implementation of the plan							
MP	1.6.6.4 Carting out of hours	Unless approved by an Authorised Officer and endorsed by the Area Manager, the removal of forest produce from the State forest is not permitted: i). after sunset and before sunrise on Monday to Saturday inclusive; and ii). at any time between midnight on Saturday and midnight on Sunday. (b) In addition to the information required on the Approval Request Form, a request for approval for carting out of hours must also specify the: i). destination of produce; ii). all roads that will be used for carting (excluding temporary roads); and iii). when the cartage will occur.	84. FCP provides evidence that any out of hours carting was previously approved by an authorised officer, with approval based on the information specified in the MP.						
Comments:									

Coupe Infrastructure

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
Planning									
Code	2.5.2 Coupe Infrastructure	The area of coupe infrastructure required to meet timber production needs must be minimised without compromising safety. In-coupe infrastructure must be located, constructed and maintained to minimise potential adverse impacts on soil and water quality, and Aboriginal cultural heritage. Snigging and forwarding track location must minimise the potential for adverse impact on soil and water quality and maintain effective drainage to prevent soil erosion. Snigging and forwarding tracks must be placed at the greatest practicable distance from buffers and filter strips, without compromising operator safety. Cross-drains, where used, must be spaced and angled according to local prescriptions (where these exist) for soil erosion hazard class, to prevent surface run-off and subsequent discharge of turbid water into	1. Coupe infrastructure is located away from excluded areas and any known sites with Aboriginal cultural heritage values.						
			2. No evidence that poor infrastructure location contributes to adverse soil and/or water quality impacts from harvesting operations.						
			3. Snig and forwarding tracks are drained effectively.						
			4. There is no evidence that snig or forwarding tracks are contributing sediment to streams.						

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		streams or drainage lines.							
Code	2.5.2 Coupe Infrastructure	Rutting and compaction must be minimised by use of appropriate snigging/forwarding equipment or by appropriate harvesting methods.	5. Harvesting and log extraction has not resulted in significant areas of compacted and/or rutted soils.						
MP	1.3.4 Snig tracks and landings 1.3.11 Log dumps	VicForests landings located outside of approved TRP areas must be authorised by a General Licence. VicForests log dumps located outside of approved TRP areas must be authorised by a General Licence.	6. If any landing or log dump is located outside the approved TRP area, there is evidence of prior authorisation under a General Licence.						
MP	1.3.6 Boundary trails	A boundary trail planned for use in regeneration burning must be located within the coupe boundary specified in an approved TRP or WUP.	7. Any boundary trail to be used in regeneration burning is located within approved TRP or WUP coupe boundary.						
MP	1.3.6 Boundary trails	A boundary trail must: i). have adequate drainage at all times; ii). have the least possible amount of debris outside of the coupe boundary; and iii). not be located in excluded area.	8. Any boundary trail complies with MP requirements.						

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
Log landings and dumps									
Code	2.5.2 Coupe Infrastructure	Log landings and dumps must not be located within areas excluded from harvesting unless approval from an Authorised Officer is received and noted on the FCP.	9. Log landings and dumps are located away from excluded areas, unless approval to locate infrastructure in these areas is received from an Authorised Officer and noted on the FCP.						
Code	2.5.2 Coupe Infrastructure	Landing construction must include stockpiling of any existing topsoil for later use in rehabilitation, unless using suitable soil protection techniques (such as cording and matting).	10. Landing top soil is/was stockpiled for later use unless landing operations were conducted with soil protection measures in place.						
			11. Where soil protection measures are/were used, they have been effective in reducing soil disturbance on landing.						
MP	1.3.11 Log dumps	DSE log dumps must be managed under a log dump plan approved by the Area Manager that addresses: i). the location and extent of the log dump (a map); ii). fire protection of timber resources and timber harvesting plant and equipment; iii). drainage; iv). access, including any road	12. Where DSE log dumps have been created, the FCP has evidence that it has been managed according to an approved log dump plan that meets MP requirements.						

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		construction and improvement; v). rehabilitation; vi). other non-fire related hazards; vii). management arrangements; and viii) legal and other requirements.							
Snig tracks and forwarding tracks									
MP	1.3.4 Snig tracks and landings	Unless corded, bark must not be deliberately placed on snig tracks (outrows in thinning operations are exempted from this requirement). Where cording is used, cording must be placed on snig tracks before machinery causes soil damage.	13. There is no deliberate placement of bark on uncorded snig tracks.						
			14. Where snig tracks are corded, cording has been emplaced before soil damage evident.						
MP	1.6.4 Stream and drainage line crossings	Log fill crossings must: i). only be used on snig tracks (extraction tracks); and ii). be removed before provisional or final clearance of a coupe.	15. Any log fill crossing has only been used for snigging/log extraction.						
			16. Any log fill crossing is removed prior to coupe closure.						
Rehabilitation									
Code MP	Code: 2.5.2 Coupe Infrastructure MP:	Code: Infrastructure must be rehabilitated on completion of operations, where not required for future operations, using techniques that provide	17. Except where required for future operations (as per MP), infrastructure is rehabilitated upon completion of coupe operations.						

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
	1.3.4 Snig tracks and landings	suitable soil conditions for the regeneration and growth of vegetation existing on the site prior to harvesting. Progressive rehabilitation of infrastructure during harvesting operations must be undertaken where operationally possible. MP: Landings must be rehabilitated following completion of timber harvesting, and before the coupe is vacated, unless they are required for: i). future Shelterwood Two operations; or ii). harvesting of adjacent coupes within 3 years All snig tracks must be rehabilitated to prevent: i). unacceptable movement of soil down or from the track surface; and ii). soil movement into streams.	18. Coupe infrastructure provides suitable soil conditions for regeneration and growth of trees and understorey vegetation.						
			19. Coupe infrastructure is progressively rehabilitated unless operations do not permit this. Also see criterion #4.						
Code	2.5.2 Coupe Infrastructure	Snigging and forwarding tracks must not be bladed off where this would result in an adverse impact on water quality or the loss of topsoil from the site. An Authorised Officer must approve any blading off of snigging	20. There is evidence of an Authorised Officer's approval prior to any snig and forwarding tracks being bladed off.						

Coupe Infrastructure

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		and forwarding tracks.							
Code	2.5.2 Coupe Infrastructure	Rehabilitation of coupe infrastructure must be assessed within three years of initial treatment and, where found inadequate, remedial action must be taken.	21. Evidence of coupe infrastructure rehabilitation being assessed within 3 years of initial treatment.						
			22. Remedial action has followed a rehabilitation assessment that showed coupe infrastructure had not been successfully rehabilitated.						
MP	1.3.4 Snig tracks and landings	Landings that do not require rehabilitation must be identified on the FCP.	23. Landings that do not require rehabilitation are identified in FCP.						
			24. FCP includes evidence that need for rehabilitation work on landings has been assessed and that none is required.						
			25. Landing assessed not to require rehabilitation provides suitable conditions for regeneration.						
MP	1.3.4 Snig tracks and landings	Rehabilitation of corded and matted landings must include: i). removal of as much matting as possible from the landing and	26. Any corded and matted landing has been rehabilitated as per MP specification.						
			27. There is evidence that bark and						

Coupe Infrastructure

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	
		spread across the coupe; ii). removal of cording; iii). excess bark distributed to allow a receptive seedbed between the heaps; and iv). ripping/cultivation of any area where machinery has compacted the soil or the landing was benched before cording; and v). topsoil need not be stockpiled and respread on corded and matted landings if cording is placed directly onto the pre-existing ground surface. Corded and matted snig tracks must have material lifted and aerated to allow burning. Where burning is to occur, bark piles must not be placed within 10m of the coupe boundary. Slash and bark piles must not exceed 4 m ² (ground area) and 10 m ³ (total volume).	slash generated by landing rehabilitation is disposed of as per MP specifications.						
			28. Landing provides suitable conditions for regeneration.						
Comments:									

Coupe Infrastructure

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					Extent (E)	Duration (t)	Asset Value (z)	Impact	

Appendix B. Risk assessment methods

B.1 FAP Environmental impact assessment tool

The EIA tool is used to assess the environmental impact of instances of non-compliance with audit workbook criteria. The assessment is based on three factors:

- > Extent of impact or disturbance;
- > Duration of impact; and
- > Environmental asset value.

Extent of impact or disturbance (E)

The extent of the impact is measured as a relative percentage of the sampled area or length and defined as one of the following four categories:

- > 0 – 10%
- > 11 – 25%
- > 26 – 50%
- > >50%

A fifth category is used when the impact or disturbance results in a significant offsite effect where an area outside of the coupe boundary is adversely affected.

Duration of impact or expected time to recover (t)

The duration of the impact is defined as the period in which the area will recover to pre-impacted levels. The impact period is defined by three levels as follows:

- > Short term, 0 – 12 months;
- > Medium term, 12 – 36 months; and
- > Long term, > 3 years

The extent of impact (E) and duration of impact (t) form a risk matrix to determine an Et rating (Table 22).

Table 22 FAP EIA tool: determining the extent-duration rating for the impact

Extent (E)	Duration of impact		
	Short term (<1 year)	Medium term (1-3 years)	Long term (> 3years)
0-10%	A	C	F
11-25%	B	E	H
26-50%	C	F	I
>50%	D	G	J
Off-site	E	H	K

Environmental asset value (z)

The environmental asset value of the impacted area is defined by the relative resilience and resistance of the area affected, and the significance of the environmental value of the area, which may be characterised by its protection status within the Forest Management Zoning system or the Code of Forest Practice.

The environmental asset value is divided into four categories;

- > General environmental value
- > Filter or drainage line
- > Representative SMZ or SPZ, i.e. habitat corridors, landscape buffers and some linear buffers
- > Specific SMZ or SPZ, i.e. for specific flora and fauna, rainforest buffers and riparian or streamside reserve buffers.

The Et rating and environmental asset value (z) are applied in an additional risk matrix (Table 23) to determine an environmental impact assessment level for the non-compliance. The impact is categorised into five nominal levels as follows:

- > Negligible (including areas of no impact) – impacts typically within marked harvest areas with a short duration of impact.
- > Minor – impacts typically within marked harvest areas or filter strip with a short to medium duration of impact
- > Moderate – impacts typically within marked harvest areas with a medium to long term duration of impact or impacts within filter strips, buffers or reserves with a short to medium term impact
- > Major – impacts typically within marked harvest areas leading to a long term offsite impact or impacts within filter strips, buffers or reserves with a medium to long term on-site or off-site impact
- > Severe – impact within buffers or reserves with a long term on-site or off-site impact.

Table 23 Level of environmental impact

Et value	Environmental asset value			
	General	Filter	rSPZ/LR/LB	sSPZ/RB/RF
A	Negligible	Negligible	Minor	Minor
B	Negligible	Minor	Moderate	Moderate
C	Negligible	Minor	Moderate	Moderate
D	Negligible	Moderate	Moderate	Moderate
E	Minor	Moderate	Moderate	Major
F	Minor	Moderate	Major	Major
G	Moderate	Moderate	Major	Major
H	Moderate	Major	Major	Major
I	Moderate	Major	Major	Severe
J	Moderate	Major	Severe	Severe
K	Major	Major	Severe	Severe

Note:

LR – Linear reserve
RF – Rainforest buffer

LB – Landscape buffer
rSPZ – Representative SPZ

RB – Riparian buffer
sSPZ – Specific SPZ

B.2 DSE Risk Management Framework

DSE's Risk management framework is based on AS/NZS ISO 31000: 2009, the *Australian Standard for Risk Assessment and Management*. Risk is determined from an assessment of the consequence of an impact and its likelihood of occurrence. Consequence and likelihood descriptors are provided in Table 24 and Table 25. The risk table, which determines the overall level of risk from combinations of consequence and likelihood, is given in Table 26. DSE's risk framework does not specify specific interventions required for given risk levels.

Table 24 Consequence table for DSE risk framework

Consequence criteria	Level of harm				
	Negligible	Minor	Moderate	Major	Extreme
Environment: Impact on the surrounding environment, including habitats and species, as well as the broader landscape	No material effect on the environment, contained locally within a single site/area. Environment affected for days.	Limited effect on the environment, restricted to a singled township or locality. Environment affected for weeks.	Moderate effect on the environment, impacting on a municipality or multiple localities. Environment affected for months.	Major effect on the environment, impacting on a region or multiple municipalities. Environment affected for 1-3 years.	Very serious effect on the environment, impacting on the state or multiple regions. Environment affected for >3 years.
Business case: Cost to the State.	Cost impact of up to 2.5% of allocated operational budgets (including capital budget). OR a cost impact of up to \$2.5M.	Cost impact between 5 and 10% of allocated operational budgets (including capital budget). OR a cost impact of up to \$5M.	Cost impact between > 10% of allocated operational budgets (including capital budget). OR a cost impact of up to \$10M.	Cost impact of \$10-50M.	Cost impact of \$>50M.
People: workers, local communities and other stakeholders Safety and well-being	On-site first aid treatment only	Minor injuries/illness requiring medical attention	Significant injury/illness requiring in-patient hospitalisation	Extensive and/or permanent injury/illness	Death or permanent disability/illness
Political/reputational: How media, public and stakeholder perception of State is influenced	Minimal adverse local attention (1 day only).	Adverse localised public attention on a single issue over a short period (up to 1 week).	Adverse localised negative public attention on a single issue over a sustained period (up to 2 months).	Serious adverse public attention on more than one issue over a prolonged period (up to 2 years).	Very serious public outcry over a prolonged period (>2 years), or leading to a formal inquiry, serious investigation or other major political event.
Legal: Legal consequences	Non-compliance with legislation, identified internally and resulting in internal acknowledgment and process review.	Non-compliance with legislation or breach of duty of care, identified externally and either resolved without prosecution of civil action or resulting in prosecution or civil action involving low level of resourcing required to defend, exposure to low level remedies or damages and low level risk of negative precedent.	Non-compliance with legislation or breach of duty of care, resulting in prosecution or civil action with one of high level of resourcing required to defend, exposure to high level remedies or damages and high level risk of negative precedent.	Non-compliance with legislation or breach of duty of care, resulting in prosecution or civil action (with all of high level of resourcing required to defend, exposure to high level remedies or damages and high level risk of negative precedent) or public inquiry..	Non-compliance with legislation or breach of duty of care resulting in prosecution or civil action leading to imprisonment of an officer and/or an uninsured compensation payout.

Note: DSE risk framework consequence criteria that are not relevant to this audit have not been included in this table.

Table 25 Likelihood table for DSE risk framework

Likelihood	Rare	Unlikely	Possible	Likely	Almost certain
Description	Event may occur only in exceptional circumstances	The event could occur at some time	The event might occur	The event will probably occur in most circumstances	The event is expected to occur in most circumstances
Percentage	0-5%	5-20%	20-50%	50-80%	80-100%

Table 26 DSE risk framework, overall risk rating

Likelihood	Consequence				
	Negligible	Minor	Moderate	Major	Extreme
Almost certain	Low	Moderate	High	Extreme	Extreme
Likely	Low	Moderate	High	Extreme	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Low	Moderate	High	Extreme
Rare	Low	Low	Low	Moderate	High

Note: DSE's risk management framework labels the overall risk levels as A (highest) to D (lowest) and does not use the above terms

Appendix C. Detailed comments on instances of non-compliance with audit criteria for coupes managed by VicForests

C.1 Forest coupe planning

Forest coupe planning audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
<p>10. Exclusion areas are protected from timber harvesting and associated activities as required by relevant regulations, plans and management procedures.</p> <p>Coupes with non-compliance: 3 of 35</p>	0	1	1	1	0	<p>Non-compliance was assessed for three quite different incidents:</p> <ul style="list-style-type: none"> Where for a short section of the harvested coupe boundary (coupe 30), the riparian buffer to a permanent stream was narrower than prescribed under the FSHPs (EIA: major). Where trees were accidentally felled into exclusion areas (coupe 16; EIA: minor). Where machinery crossed the coupe boundary (coupe 12), apparently during preparation for the regeneration burn, and damaged several tens of metres of understory. There was no evidence of prior approval in the coupe file (EIA: moderate)
<p>14. FCP documents any approval of harvesting in or felling into exclusion areas. Approval provided by person with authority under MPs.</p> <p>Coupes with non-compliance: 10 of 35</p> <p>Coupe numbers: 08, 12, 14, 16, 17, 20, 19, 27, 33</p>	EIA rating not applicable to this criterion					<p>Non-compliance was assessed in several instances where trees were accidentally felled into exclusion areas. By definition, such activities did not have prior approval. Since this criterion refers to approval of the felling, rather than the actual activity, no environmental impact was assessed.</p> <p>Non-compliance in the case of this criterion was due to the actions of VicForests' contractors. It was only identified because non-compliance was recorded in the coupe file.</p>
<p>16. FCP states the period during which operations are to occur.</p> <p>Coupes with non-compliance: 1 of 35</p>	EIA rating not applicable to this criterion					<p>In one case (coupe 30) the FCP did not record the period during which operations were planned to proceed. Dates of commencement and completion were recorded.</p> <p>Non-compliance with this criterion had no detrimental environmental impact.</p>
<p>18. FCP maps the soil erosion hazard class (or classes) and slope of the coupe area and associated operational restrictions.</p> <p>Coupes with non-compliance: 35 of 35</p>	EIA rating not applicable to this criterion					<p>All of the FCPs included topographic maps from which slope could be determined. Steep slopes were specifically identified on maps in the coupe file for most relevant coupes. In most cases soil erosion hazard (SEH) class was determined and documented in the coupe file. In no case was there any kind</p>

Forest coupe planning audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
						<p>of map that specifically referred to SEH.</p> <p>Non-compliance with this criterion had no direct detrimental environmental impact.</p>
<p>22. FCP describes planned regeneration procedures.</p> <p>Coupes with non-compliance: 3 of 35</p> <p>Coupes: 15, 24, 31</p>						<p>EIA rating not applicable to this criterion</p> <p>VicForests commonly uses a decision tree (or decision support system; DSS) that provides, for the relevant forest type, various regeneration decision and action paths (including seed crop assessment, use of regeneration burning, natural or aerial seeding requirement).</p> <p>For some coupes, the DSS was not present in the coupe file. In general this reflected the stage of the coupe in its plan-harvest-regenerate cycle: in cases where the coupe had yet not proceeded to regeneration, the lack of a DSS sheet was not assessed as non-compliance.</p> <p>Non-compliance with this criterion had no direct detrimental environmental impact as it only refers to the lack of documentary evidence.</p>
<p>28. Trees are only harvested from within designated boundaries of an approved coupe as specified in the FCP, unless specific authorisation to fell trees in an exclusion area is provided and documented (criterion 14).</p> <p>Coupes with non-compliance: 1 of 35</p>	0	0	0	1		<p>Non-compliance was assessed for one coupe (05) in which the harvest boundary extended significantly (10-20 m) beyond the mapped TRP boundary. The MPs allow for coupe boundaries to be varied by up to 50 m from the TRP boundary (without prior approval) where they are mapped to geographic features that either do not exist or are not mapped correctly. This exception did not apply in the case of the non-compliant coupe.</p> <p>VicForests consider that this is within the measurement uncertainty of GPS used to mark the coupe and map the harvested area.</p>
<p>29. Trees are only felled into areas outside the designated coupe boundary where there is specific and documented authorisation to do so.</p> <p>Coupes with non-compliance: 13 of 35</p> <p>Coupes: 01, 08, 12, 14, 16, 17, 20, 21, 26, 27, 31, 32, 33</p>	3	10	0	0	0	<p>This relates to the incidents of accidental felling of trees into exclusion areas recorded as non-compliances against criterion 10. In this case, non-compliance has potential to lead to direct environmental impact. In all cases, this was assessed to be either negligible or minor.</p> <p>Non-compliance in the case of this criterion was due to the actions of VicForests' contractors. It was only identified because non-compliance was recorded in the coupe file.</p>

Forest coupe planning audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
30. Felling or extraction of fallen trees from exclusion areas has a valid reason, based on safety, road construction or stream crossing construction. Coupes with non-compliance: 3 of 35	1	2	0	0	0	This is similar to 29. In some instances trees have been extracted from exclusion areas as a result of accidental felling into these areas. Extraction was approved by VicForests in every case (coupes 01, 31, 34), however accidental felling is not strictly a "valid reason" under section 2.5.1 of the Code and hence non-compliance was assessed. Non-compliance in the case of this criterion was assessed to have minor or negligible impact. It was due to the actions of VicForests' contractors and was only identified because non-compliance was recorded in the coupe file.
41. FCP contains evidence that the coupe boundary identified in the field is confirmed as the mapped boundary on the approved TRP or that there are valid reasons for adjustment. Coupes with non-compliance: 1 of 35	0	0	0	1	0	This assessment relates to the same incident referred to for 28 for coupe 05.. VicForests consider that recording of harvesting beyond the mapped TRP boundary reflects measurement uncertainty of GPS used to mark the coupe and map the harvested area.

C.2 Water quality, river health and soil protection

Water quality, river health and soil protection audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
<p>4. No evidence of environmental contamination from refuelling or maintenance activities, littering or discharge of toilet wastes.</p> <p>Coupes with non-compliance: 2 of 35</p>	2	0	0	0	0	<p>Audited coupe files recorded two instances of small-scale environmental contamination, both of which were assessed to have negligible potential environmental impact: A small spill of hydraulic fluid (coupe 34); and a small oil spill near one of the landings (coupe 15). There was no evidence of any on-going environmental impact associated with these incidents at the time of the field assessment.</p> <p>In both cases, the non-compliance was due to the actions of VicForests' contractors.</p>
<p>5. Evidence provided that all wastes removed to approved disposal facility.</p> <p>Coupes with non-compliance: 33 of 35</p>	EIA rating not applicable to this criterion					<p>Section 2.2.1 of the Code prescribes that wastes are removed to an "approved" disposal facility. VicForests, as part of their routine coupe monitoring, check for the presence of litter and require contractors to remove all wastes on completion of harvesting and rehabilitation. However, they do not require contractors to provide evidence that wastes have been removed to an approved facility.</p> <p>Non-compliance with this criterion (and Code prescription) is not considered to lead directly to any potential environmental impact.</p> <p>Only the two active harvest coupes were assessed not to be non-compliant with this criterion, since harvesting had not yet been completed.</p>
<p>13. FCP provides evidence that waterways classified into Code categories (permanent, temporary, drainage line).</p> <p>Coupes with non-compliance: 25 of 35</p>	EIA rating not applicable to this criterion					<p>Coupe marking activities undertaken by VicForests routinely involve inspections of any waterways within the gross coupe area and assessments the required buffer or filter widths. While the Code classifications inform the buffer and/or filter width applied, the coupe files in most instances did not record this application of Code categories. Only for coupes in Dandenong FMA was the recording of waterway classes on coupe maps found to be common practice.</p> <p>Non-compliance of this criterion was not considered to lead directly to potential environmental impact. Direct assessments of the adequacy of riparian buffers and filters were made and recorded against criterion 17. The</p>

Water quality, river health and soil protection audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
						level of protection provided to waterways through the use of riparian buffers and filters typically significantly exceed the minima prescribed by the Code and FSHPs.
14. Waterway classification appears to be accurate. Coupes with non-compliance: 2 of 35						EIA rating not applicable to this criterion On two coupes (05, 30), single instances were identified where the classification of waterways was considered by the audit team to be inaccurate. In both cases, small sections of waterway were incorrectly defined at drainage lines rather than temporary waterways. For one of these coupes (30), the original classification may have been correct, as harvesting appears to have contributed to the activation of small springs. In both cases, no environmental impact was assessed as the same width of filter was applied to the waterway as it would have, had it been correctly identified.
17. Buffers and filter strips meet minimum requirements of Code. Coupes with non-compliance: 3 of 35	0	0	0	1	0	One coupe (30) was identified in which the minimum riparian buffer and filter widths was found not to have been applied during coupe marking. For this coupe, there was a small length of the harvested boundary that fell within the 30 m riparian buffer prescribed by the Code and FSHPs for a permanent stream in a fire salvage coupe. EIA rating was assessed to be major. The major environmental impact assessed for coupe 30 relates to the same non-compliance event as noted for forest coupe planning criterion 10.
21. Evidence in FCP that removal of any trees accidentally felled into buffers is appropriately authorised. Coupes with non-compliance: 2 of 35						EIA rating not applicable to this criterion In two coupes (08, 16), the coupe file identified that trees were accidentally felled into riparian buffers but provided no evidence of approval to remove them. Given that this criterion refers to evidence of approval and that no adverse environmental impact associated with tree removal from the buffer was observed, an EIA rating was considered to be inappropriate.
23. Buffer remains intact, except at locations where approved stream crossing is constructed. Coupes with non-compliance: 2 of 35	0	2	0	0	0	In two of the coupes (17, 21), VicForests reported that harvesting machines had crossed into riparian buffers (in one case this was due to the machine slipping). EIA rating applying in both instances was minor. Non-compliance in the case of this criterion was due to the actions of VicForests' contractors.

Water quality, river health and soil protection audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
24. Trees have not been felled into filter strips Coupes with non-compliance: 1 of 35	1	0	0	0	0	While the Code allows for trees to be felled into filter strips, it (section 2.2.1) prescribes that this should be avoided where possible. The assessment of one coupe (14) found that it was not uncommon to observe trees having been felled into filter strips. As such, it was considered that the requirement to "avoid [this] where possible" was not observed. Non-compliance in the case of this criterion was due to the actions of VicForests' contractors.
25. Soil and vegetation in filter strips remain largely undisturbed as a result of any harvesting. Coupes with non-compliance: 2 of 35	0	2	0	0	0	In one coupe (19), part of a temporary drainage line was disturbed by harvesting machinery. The drainage line was not originally marked and so no filter strip was applied. This was rectified following the issue being raised by a contractor. In the second case (coupe 07), a snig track was constructed by a contractor across a filter strip. EIA ratings for in both cases were minor.
26. Filter strip remains undisturbed by machinery, fill or harvest debris apart from where required at approved stream crossings. Coupes with non-compliance: 4 of 35	1	3	0	0	0	Four coupes (07, 13, 14, 19) were identified in which the filter strip did not remain undisturbed by machinery. In three of the cases, this resulted from harvest machinery entering the filter. In one case (07; noted in relation to criterion 25), a snig track crossed the filter strip. EIA ratings were either negligible or minor in all cases. Non-compliances in the case of this criterion were due to the actions of VicForests' contractors.
33. Evidence that potential for mass movement on any steep slope areas has been assessed and preventative actions have been planned and undertaken to protect soils and streams. Coupes with non-compliance: 1 of 35	EIA rating not applicable to this criterion					For one of the coupes with steep slopes and the potential for mass movement (coupe 13), there was no record on the coupe file to specifically indicate that the potential for mass movement had been assessed and preventative actions taken to protect soils and streams. Such an assessment is required by the Code (section 2.2.1). Discussions with VicForests staff highlighted that planning and operations had accounted for the steep slopes present on part of the coupe, however, there was no documented evidence of this. Since this criterion refers to evidence of an assessment, rather than the impact of harvesting on mass movement from steep slopes, use of the EIA rating was not considered to be appropriate.

C.3 Biodiversity conservation

Biodiversity conservation audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
2. Unplanned fire has not affected excluded areas. Coupes with non-compliance: 3 of 35	0	1	2	0	0	<p>Regeneration burns in three of the audited coupes (23, 29, 31) were found to have scorched adjacent excluded areas. This was taken to represent non-compliance with this audit criterion, since burn planning sought to avoid such an impact. The EIA rating that was applied in each case varied according to the assessed extent and severity of damage and its persistence over time.</p> <p>In all cases the regeneration burns were the subject of standard burn planning processes and approvals (and were compliant with criterion 1). As the Code prescribes that, <i>"Where fire is used in timber production operations, all practicable measures must be taken to protect all areas excluded from harvesting from the impacts of unplanned fire"</i> (section 2.2.2), the regeneration burn is not considered to have breached the Code.</p>
10. Noxious weeds and establish pest animals not observed on coupe Coupes with non-compliance: 10 of 35 Coupes: 01, 08, 12, 13, 15, 20, 28, 29, 34, 35	8	2	0	0	0	<p>Weeds were observed during the field assessments on 10 coupes. On seven of these (01, 15, 20, 28, 29, 34, 35), weeds were observed during the reconnaissance survey and were confirmed not to have originated following harvesting. Weed management responsibility for these coupes (and hence the non-compliance) sits with DSE. Weeds were not identified in the reconnaissance survey on the remaining coupes (08, 12, 13).</p> <p>The most commonly observed weeds were blackberry thistles.</p>
11. Where Myrtle Beech present on gross coupe area, FCP provides evidence that MP Myrtle Wilt hygiene requirements have been followed. Coupes with non-compliance: 13 of 35 Coupes: 18, 19, 20, 23-27, 29, 30, 33, 34, 35	EIA rating not applicable to this criterion					<p>None of the coupe files for the 13 coupes in which Myrtle Beech was present included evidence that Myrtle Wilt hygiene requirements had been considered. When asked about Myrtle Wilt, VicForests staff typically indicated that it was not a problem in their district and did not suggest that it was an endemic disease.</p> <p>While the coupe file did not indicate any planning to protect Myrtle Beech trees from Myrtle Wilt, the way in which operations were conducted and the typical location of Myrtle Beech trees within the coupes (in deep gullies) meant that harvesting was rarely conducted near Myrtle Beech trees and posed minimal risk to them. The only exceptions were where coupe access roads were constructed across gullies with Myrtle Beech present and on coupe 20,</p>

Biodiversity conservation audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
						which had scattered Myrtle Beech trees present across the coupe (not clustered in a way that meets rainforest definitions. These were not damaged by the harvesting operation.
16. FCP provides evidence that biodiversity conservation requirements of Code and MP have been met in coupe planning, including for habitat trees and patches, understorey and hollow bearing trees. Coupes with non-compliance: 1 of 35	0	0	1	0	0	<p>Non-compliance with this criterion related to a single coupe (12) in which almost the entire TRP area was harvested. Poor initial regeneration resulted in part of the coupe being rough-heaped. As a result of this and the (justified) lack of exclusion areas, the coupe did not retain any observable patches of long-lived understorey, which contravenes the Code.</p> <p>VicForests argued that the TRP or gross coupe area was defined to avoid potential exclusion areas and that the adjacent unharvested forest supports considerable undisturbed areas of long-lived understorey. However, the Code (section 2.2.2) refers to <i>"at the coupe planning and harvesting level, retention of ... long-lived understorey elements ... within the harvestable area, must be allowed for"</i>. It is the auditor's view that this prescription has not been satisfied for this coupe.</p>
17. Planned biodiversity conservation measures from FCP have been fully implemented. Coupes with non-compliance: 1 of 35	0	0	1	0	0	<p>This single non-compliant coupe (09) did not retain sufficient habitat trees with the harvest area. The coupe file and observational evidence indicated that sufficient trees were intended to be retained. However, a severe storm led to many of the retained habitat trees being blown over. Since almost the entire TRP area was harvested, there were insufficient other unharvested trees to provide the average density of habitat trees required.</p> <p>It has been argued by VicForests that they planned to retain the required number of trees and therefore complied with this criterion and the Code. However, the Code states that provision must be made for the <i>"continuity and replacement of old hollow bearing trees ... within the harvestable area"</i>. It is the auditor's view that VicForests operations on this coupe has inadvertently not provided for the continuity of sufficient hollow bearing trees and is therefore not-compliant.</p>

Biodiversity conservation audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
<p>22. FCP identifies any rainforest areas and rainforest buffers within gross coupe area. Evidence that required approach to delineation of rainforest boundaries (from MP) has been applied.</p> <p>Coupes with non-compliance: 1 of 35</p>	EIA rating not applicable to this criterion					<p>One coupe (35) was found in which a small patch of rainforest was identified during the audit, but not marked on the coupe plan. The lack of recording of this rainforest patch in the coupe file does not lead directly to environmental impact <i>per se</i>. In practice, this patch was located in a riparian buffer and was located well away from harvesting activities and faced no material risk from them.</p>

C.4 Operational provisions

Operational provisions audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
3. No rutting evident on coupe. Coupes with non-compliance: 3 of 35	0	2	1	0	0	<p>Rutting of snig and forwarding tracks was observed on three of the audited coupes (04, 11, 19).</p> <p>Soil compaction and rutting were observed along significant lengths of snig track in coupe 19. Effective drainage of the snig track means that this is unlikely to lead to detrimental consequences for water quality. Non-compliance in this case is the responsibility of VicForests' contractor.</p> <p>The observed rutting of forwarding tracks on the remaining two coupes post-dated harvesting activities and appeared to relate to domestic firewood collection. The EIA rating for this on coupe 11 was assessed as moderate.</p> <p>Management of domestic firewood collection and hence these instances of compliance are not considered to be VicForests' responsibility.</p>
6. No evidence of impact on soil or water quality values from water flow along roads. Coupes with non-compliance: 2 of 35	0	0	1	1	0	<p>Damage by post-harvest traffic to in-coupe roads on coupe 11 that resulted in non-compliance to criterion 3 also affected soil values on the coupe, hence the non-compliance on this criterion. As noted previously, this non-compliance issue relates to domestic firewood collection and not VicForests' operations.</p> <p>The other instance of non-compliance with the audit criterion occurred in coupe 33, where a road drained directly into a permanent water course. Sediment and gravel from the road has been deposited in the stream. Non-compliance with road construction prescriptions (section 3.3.5) caused this non-compliance. The potential for off-site impact contributed to the major EIA rating.</p> <p>The non-compliance only relates to water quality values being affected by water flow from roads. The Code prescription (section 2.5.3) to which this audit criterion refers concerns the suspension of harvesting when water flows along roads. There is no evidence that the operation on coupe 33 did not comply with this prescription.</p>

Operational provisions audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
8. Landing surface shows no sign of soil mixing or excessive compaction. Coupes with non-compliance: 1 of 35	0	0	1	0	0	Non-compliance with this criterion was identified for coupe 21. The landing on was found to remain heavily compacted and unsuited to regeneration, despite efforts to rehabilitate it. Non-compliance was due to the actions of VicForests' contractors
12. Where tree felling results in the need for temporary road closure or traffic control measures, FCP records that these were implemented consistently with MP 1.6.6.1 or 1.6.6.3, respectively. Coupes with non-compliance: 1 of 35	EIA rating not applicable to this criterion					The review of the file for coupe 13 identified that tree felling took place within 2 tree heights of a nearby road, but that no traffic management plan had been prepared and approved prior to harvest. There was no potential for direct environmental impact resulting from non-compliance with this audit criterion.

C.5 Roding

Roding audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
9. FCP contains evidence of environmental risk of any such activity (snigging forest produce or moving heavy machinery along or across any road or vehicle route) having been assessed beforehand and, where material risks are identified, prior written approval is provided by Area Manager Coupes with non-compliance: 1 of 35	EIA rating not applicable to this criterion					The diary for coupe 09 reported that heavy machinery had been walked from the coupe. While the action was authorised by a delegated officer, there was no evidence of any environmental risk assessment having been undertaken as required by the Code. As this prescription relates to documented evidence rather than actual impacts, an EIA rating was not applied.
16. Evidence that drain spacing accounts for soil and rainfall characteristics and proximity to streams. Coupes with non-compliance: 4 of 35	1	2	1	0	0	Roads within or leading to four of the audited coupes (04, 09, 28, 35) were found to have cross-drainage that did not comply with MP requirements, either because some cross drains were not function correctly (09) or the spacing between cross drains exceeded the prescribed distance for the particular slope and soil erosion hazard class. A moderate EIA rating was applied for coupe 09, which had over 200 m without effective cross drainage. In none of the cases of non-compliance was there any evidence or likelihood of adverse offsite water quality impact.
18. Energy dissipating structures, silt traps or other protective measures used as required in new or substantially modified roads. Coupes with non-compliance: 2 of 35	0	0	0	2	0	Roads constructed to access two of the audited coupes (25, 33) did not have water quality protective measures that prevented direct drainage of the road into permanent water courses. Sediment could be observed in the part of the water course receiving road drainage from coupe 33. There was no evidence of sediment movement into the stream adjacent to coupe 25. In both cases the EIA rating was major.
19. No evidence of adverse water quality impacts resulting from use of these or other drainage structures. Coupes with non-compliance: 1 of 35	0	0	0	1	0	As noted previously, there was evidence of adverse water quality impacts resulting from non-compliance with criterion 18 for coupe 33. This coupe was also assessed not to comply with criterion 19.

Roading audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
24. Adequate drainage structures are located about 20 m from permanent or temporary streams for any new or substantially upgraded roads. Coupes with non-compliance: 2 of 35	0	0	0	2	0	Non-compliance with this criterion relates to coupes 25 and 33 and refers to the issue described in relation to criterion 18.
25. Structures ensure drainage discharges are to undisturbed vegetation and that flow distances to waterway are maximised or that silt traps or other structures are used to minimise impacts on waterways. Coupes with non-compliance: 2 of 35	0	0	0	2	0	Non-compliance with this criterion relates to coupes 25 and 33 and refers to the issue described in relation to criterion 18.
41. Evidence is available to show that roads are maintained according to these standards. Coupes with non-compliance: 1 of 35	0	0	1	0	0	Non-compliance with this criterion relates to coupe 09 (also see criterion 16) Road maintenance was considered to not be consistent with the standards prescribed by the MPs. Approximately one third of the drainage structures located along the assessed length of road were either damaged or otherwise not operating as intended.
44. Any new or substantially upgraded road constructed near an excluded area meets these MP requirements. Coupes with non-compliance: 1 of 35	0	0	1	0	0	The road into coupe 09 is, for much of its length, wider than prescribed by the MPs for roads of its type on lands with the prevailing slope.
51. No evidence of any new fill batters covering the base of live trees. Coupes with non-compliance: 1 of 35	0	0	0	1	0	Batter material for the road leading into coupe 27 was found to have covered the base of a small number of trees. While the trees appeared, at the time of the audit, to be in good condition, the EIA rating was assessed to be major.
60. Any new table drains meet MP requirements. Coupes with non-compliance: 3 of 35	0	1	1	1	0	Non-compliance with this criterion relates to issues that have previously been identified for each of the three coupes (09, 28, 33) concerned. Table drains along a section of road through coupe 33 (major EIA) drained directly into a permanent water course. This same issue led to non-compliance being assessed for criteria 18, 19, 24 and 25. Damaged and in-effective cross drains that allowed water to pond was the reason that coupe 09 (moderate EIA) was assessed as not complying with this criterion. Non-compliance for this coupe was also recorded against criterion

Roading audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
						<p>16 and 41.</p> <p>A third coupe (28; minor EIA) was assessed not to comply with this criterion because of insufficient cross drainage. This had previously been noted against criterion 16.</p>
<p>66. Road used to access coupe and their drainage systems are well maintained with minimal evidence of soil erosion or adverse water quality impacts from road.</p> <p>Coupes with non-compliance: 7 of 35</p>	0	5	2	0	0	<p>Roads leading to three coupes in East Gippsland (04, 06, 08) had been damaged by earlier rains and had not, as the time of the audit, been repaired. At the time of damage, road maintenance was DSE's responsibility rather than VicForests. EIA ratings: minor.</p> <p>Use of an in-coupe road by the general public following coupe closure by VicForests has resulted in erosion and an assessment of non-compliance (coupe 11). This non-compliance is not directly the responsibility of VicForests. Note that use of forwarding tracks on this coupe by the general public following coupe closure led to non-compliance for operational provisions criteria 3 and 6. EIA rating: moderate.</p> <p>Damage to road drainage previously noted for coupe 09 (criteria 16, 41, 44, 60) has also led to non-compliance being assessed against this audit criterion. EIA rating: moderate.</p> <p>The remaining two coupes (03, 29) resulted from relatively minor maintenance issues with cross drains that resulted in a single section of road having insufficient effective cross-drainage. EIA rating: minor.</p>
<p>70. Maintenance of roads and tracks achieves MP requirements.</p> <p>Coupes with non-compliance: 3 of 35</p>	0	2	1	0	0	<p>Non-compliance with this criterion related to three coupes (03, 04, 09) previously identified to have non-compliance on road maintenance and the effectiveness of drainage. DSE had maintenance responsibility coupe 04 at the time during which damage was sustained. VicForests has management responsibility for the other two coupes.</p>
<p>72. No evidence that sediment mobilised from roads is contributing to poor water quality.</p> <p>Coupes with non-compliance: 1 of 35</p>	0	0	0	1	0	<p>As noted previously (in relation to criteria 18, 19, 20), failure to divert drainage from the road into coupe 33 away from a permanent waterway has contributed to the deposition of sediment. This is assumed to have affected water quality along the upper reaches of this small stream during and after rainfall events.</p>

Roading audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
<p>73. Any roads to coupe that are no longer required are permanently closed and effectively drained.</p> <p>Coupes with non-compliance: 2 of 35</p>	1	0	1	0	0	<p>One section of closed in-coupe road on coupe 23 was identified as not having been drained in compliance with the Code and MPs. EIA was assessed to be negligible.</p> <p>The road into coupe 11 was not closed successfully and members of the general public were able to access the coupe in vehicles, leading to the damage noted as non-compliance in relation to criterion 66.</p>
<p>77. Evidence provided that temporary closure and/or traffic control measures are put in place as per MP requirements.</p> <p>Coupes with non-compliance: 1 of 35</p>	EIA rating not applicable to this criterion					<p>Temporary traffic control measures were required during felling near a road that formed part of the boundary for coupe 13, however the coupe file had no record of a traffic management plan having been prepared and approved. This non-compliance has no direct environmental impact.</p>
<p>80. For temporary roads that will not be used for ≥ 12 months an effective barrier is in place to prevent use of road.</p> <p>Coupes with non-compliance: 1 of 35</p>	0	0	1	0	0	<p>This non-compliance (for coupe 11) relates to the same issue and its consequences as recorded for criteria 66 and 73.</p>
<p>82. In coupe harvesting operations where traffic control is required, a traffic management plan is prepared in accordance with the MP template and other requirements.</p> <p>Coupes with non-compliance: 1 of 35</p>	EIA rating not applicable to this criterion					<p>This same non-compliance issue was identified for coupe 13 under criterion 77. There are no direct environmental implications of non-compliance with this audit criterion.</p>
<p>83. Evidence provided to demonstrate that traffic management plan provided to Forest Management Officer at least one week prior to implementation.</p> <p>Coupes with non-compliance: 4 of 35</p>	EIA rating not applicable to this criterion					<p>Four Coupes were found not to have evidence on file that the Traffic Management Plan had been provided to the relevant Forest Management Officer at least one week prior to commencement. For coupes 05, 12 and 15, there was no evidence on file of the date on which the plans were provided. For coupe 13, there was no evidence that such a plan had been prepared (noted above, criteria 77 and 82).</p> <p>There are no direct environmental implications of non-compliance with this audit criterion</p>

C.6 Coupe infrastructure

Coupe infrastructure audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
1. Coupe infrastructure is located away from excluded areas and any known sites with Aboriginal cultural heritage values. Coupes with non-compliance: 1 of 35	0	1	0	0	0	Coupe 14 was found to have a snig track located within one of the filter strips. The same non-compliance was recorded for criterion 26 for water quality, river health and soil protection.
3. Snig and forwarding tracks are drained effectively. Coupes with non-compliance: 5 of 35	2	3	0	0	0	<p>Five of the audited coupes were assessed to not have effectively drained snig or forwarding tracks. The EIA rating in each case was assessed to be negligible or minor. There was no evidence of non-compliant track drainage leading to adverse impacts on water quality in streams.</p> <p>In two of the five instances (coupes 12 and 15), snig tracks had been properly drained at the completion of harvesting. However machinery traffic during rough heaping operations (following poor initial regeneration) damaged the tracks and had not been rehabilitated at the time of the audit²⁰.</p> <p>In one of the coupes (04), the coupe was harvested (as a fire salvage operation) using thinning machinery. However forwarding tracks were not corded across the entire coupe: some required cross drainage, but did not have it. This non-compliance is VicForests' contractor's responsibility.</p> <p>The remaining coupes assessed not to comply with this audit criterion (09 and 28) had snig tracks that were did not have effective cross drains separated by the prescribed distances for the slope and soil erosion hazard. In most cases this was because cross drains were not effectively breached. These non-compliances were VicForests' contractor's responsibility.</p>
5. Harvesting and log extraction has not resulted in significant areas of compacted and/or rutted soils. Coupes with non-compliance: 1 of 35	0	1	0	0	0	Coupe 19 was found to have areas of rutting and compacted soil along some snig tracks.

²⁰ Note that non-compliance was only assessed where snig tracks remained largely intact (apart from cross drainage) following rough heaping.

Coupe infrastructure audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
<p>8. Any boundary track complies with MP requirements.</p> <p>Coupes with non-compliance: 8 of 35</p>	1	6	1	0	0	<p>Eight of the coupes were found to have boundary tracks that were not fully compliant with the cross drainage requirements of the MPs at the time of the audit. While there was no evidence of off-site environmental impact resulting from this, the EIA rating for one coupe (12) was assessed to be moderate because there was almost no effective drainage along the boundary tracks.</p> <p>Four of the coupes were assessed to be non-compliant with this audit criterion due to cross drains being ineffectively breached, which meant that the lengths of effectively drained trail exceeded the MP requirements (03, 09, 28 and 31). Non-compliance in these instances was VicForests' contractor's responsibility. Boundary tracks in three of the coupes (12, 14 and 15) were damaged during rough heaping and/or preparation for regeneration burning and not reinstated at the time of the audit.</p> <p>Those in coupe 11 were damaged by general public traffic (presumably for firewood cutting) following closure of the coupe. This non-compliance was not VicForests direct responsibility and has been previously noted (e.g. operations criteria 3 and 4; roading criteria 66, 73 and 80).</p>
<p>13. There is no deliberate placement of bark on uncorded snig tracks.</p> <p>Coupes with non-compliance: 3 of 35</p>	2	0	1	0	0	<p>Bark was deliberately placed on snig tracks In three of the audited coupes, even where they were not corded and the operations were not thinning operations and therefore did not conform to MP requirements.</p> <p>One of the non-compliant coupes (06) was a clearfell operation that was undertaken using thinning machinery. However, the Code only allows bark to be placed on snig tracks in thinning operations (and not where thinning machinery is used). The EIA rating for this coupe was moderate.</p> <p>In the remaining two coupes bark was said by VicForests harvesting staff to be placed on the snig tracks to reduce the effect of bark on regeneration in less disturbed parts of the coupe (28) or sediment movement along the snig tracks (05). While these may have been suitable risk management measures, they are not consistent with the MPs.</p>

Coupe infrastructure audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
14. Where snig tracks are corded, cording has been emplaced before soil damage evident. Coupes with non-compliance: 1 of 35	1	0	0	0	0	The coupe diary for coupe 28 noted that some rutting had already taken place before VicForests contractor began cording the snig tracks. The contractor was responsible for this non-compliance.
15. Any log fill crossing has only been used for snigging/log extraction. Coupes with non-compliance: 1 of 35	0	1	0	0	0	A log fill crossing was constructed on a boundary track in coupe 14 as part of preparations for regeneration burning. While this was included in the approved burn plan, it is not consistent with the Code prescription that log fill crossings only be used for snigging or log extraction. The crossing had not been removed at the time of the audit ²¹ .
18. Coupe infrastructure provides suitable soil conditions for regeneration and growth of trees and understorey vegetation. Coupes with non-compliance: 1 of 35	0	0	1	0	0	The landing in coupe 21 did not provide suitable conditions for regeneration and regrowth, despite efforts at rehabilitation.
20. There is evidence of an Authorised Officer's approval prior to any snig and forwarding tracks being bladed off. Coupes with non-compliance: 1 of 35	1	0	0	0	0	The diary for coupe 16 records that the contractor bladed-off a snig track without prior approval by VicForests' harvesting supervisor. There was no obvious evidence of environmental impact resulting from blading off at the time of this coupe's field assessment for the audit. VicForests' contractor is responsible for this non-compliance.
26. Any corded and matted landing has been rehabilitated as per MP specification. Coupes with non-compliance: 1 of 35	1	0	0	0	0	One of the corded and matted landings for coupe 34 did not comply with MP requirements, in that the bark heaps were larger than prescribed and some were placed closer to the coupe boundary than prescribed.
27. There is evidence that bark and slash generated by landing rehabilitation is disposed of as per MP specifications. Coupes with non-compliance: 1 of 35	1	1	0	0	0	One instance of non-compliance for this audit criterion for coupe 34 relates to the bark heaps on the same landing as addressed in criterion 26. The other instance of non-compliance (for coupe 35) relates to bark pile s being larger than the MP requirements.

²¹ The log fill crossing was not actually used, as the coupe regenerated satisfactorily without recourse to burning.

Coupe infrastructure audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
28. Landing provides suitable conditions for regeneration. Coupes with non-compliance: 3 of 35	0	2	1	0	0	<p>The landing on coupe 35 had many poorly burnt bark piles (criterion 27) and was assessed to not provide suitable conditions for regeneration. The landing on coupe 14 had been compacted by general public access post coupe closure and did not provide suitable conditions for regeneration. This non-compliance issue was not VicForests direct responsibility.</p> <p>As noted under criterion 18, coupe 21 had a compacted landing that, despite significant efforts, did not provide suitable conditions for regeneration. The EIA rating associated with this non-compliance was moderate.</p>

C.7 Fire salvage harvesting

Fire salvage harvesting audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
8. Required buffer and filter widths applied to coupe. Coupes with non-compliance: 1 of 5	0	0	0	1	0	Coupe 30 was identified to have a small section of riparian buffer on a permanent water course that did not allow the 30 m required under the FSHPs. This incident was also reported as a non-compliance against water quality, river health and soil protection criterion 17.
10. FCP provides evidence that boundaries of excluded areas defined by SPZ and SMZ were determined using the process in Appendix 2 of FSHP. Coupes with non-compliance: 2 of 5	EIA rating not applicable to this criterion					Coupe files for both of the coupes (04 and 06) to which this prescription was applicable provided no evidence of the formal application of the flow chart for field determination of SPZ and/or SMZ boundaries. Non-compliance with this audit criterion was not considered to have any direct, adverse environmental impact.

Appendix D. Detailed comments on instances of non-compliance with audit criteria for coupes managed by the former DPI

D.1 Forest coupe planning

Forest coupe planning audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
1. The size of individual and any aggregated coupes is consistent with Code &/or MP requirements for the silvicultural system. Coupes with non-compliance: 1 of 5	0	0	1	0	0	The planned harvest area for coupe D exceeds the maximum prescribed by the Code for thinning coupes. The operation is not an intensive one and thinning is expected to continue over many years, so the risk of harm to the environment is likely to be less than suggested by the EIA rating.
5. Buffers to protect environmental features are marked on coupe plan. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					Coupe D includes a buffer along a drainage line. While this is marked in the field, the marking has not been transferred to a map in the coupe file.
7. FCP includes evidence of consultation and agreement with any adjoining land managers/ owners on coupe boundary Coupes with non-compliance: 5 of 5	EIA rating not applicable to this criterion					None of the coupe files provided evidence of consultation with adjoining landholders regarding the planned harvesting operation. Discussions with DPI staff indicated that such consultation were not routinely undertaken, although for coupe B, it was reported that adjoining landholders had been advised of the impending harvesting activities.
12. FCP includes map showing harvest areas and any exclusion areas and detailing special conditions or prescriptions appropriate to protecting those sites. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					As noted to criterion 5, the file for coupe D does not include a map of planned harvest and exclusion areas.
18. FCP maps the soil erosion hazard class (or classes) and slope of the coupe area and associated operational restrictions. Coupes with non-compliance: 5 of 5	EIA rating not applicable to this criterion					Soil erosion hazard was assessed on each of the audited coupes. However, none of them included maps of this property.
25. Evidence provided which shows that FCP has been provided to and discussed with the HTL. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					The file for coupe E did not have evidence that the coupe file had been discussed with the harvesting team leader (HTL).

Forest coupe planning audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
26. Evidence provided that FCP and supporting documents are/were available on-site when operations in progress. Coupes with non-compliance: 3 of 5	EIA rating not applicable to this criterion					The files for coupes A, B and E did not provide evidence that the coupe plan and other relevant documents were available on site when operations were in progress.
27. Evidence provided that boundaries and exclusion areas have been identified in the field and that this information has been translated to the FCP. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					As noted to criteria 5 and 12, the file for coupe D does not include a map of planned harvest and exclusion areas.
35. If the coupe was a commercial timber harvesting coupe, it was nominated for declaration as a Public Safety Zone prior to operations commencing. Coupes with non-compliance: 2 of 5	EIA rating not applicable to this criterion					Coupes A and D are low intensity commercial timber harvesting coupes, however Public Safety Zones were not declared at the commencement of timber harvesting.

D.2 Water quality, river health and soil protection

Water quality, river health and soil protection audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
5. Evidence provided that all wastes removed to approved disposal facility. Coupes with non-compliance: 5 of 5	EIA rating not applicable to this criterion					As noted in Appendix C.2, section 2.2.1 of the Code prescribes that wastes are removed to an “approved” disposal facility. While DPI check for the presence of litter and require contractors to remove all wastes on completion of harvesting and rehabilitation, they do not require them to provide evidence that wastes have been removed to an approved facility. Non-compliance with this criterion (and Code prescription) is not considered to lead directly to any potential environmental impact.
6. Where chemicals used on coupe, there is evidence in FCP of planning to minimise impacts on biodiversity, water and soil values. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					St Johns Wort on coupe E is treated annually. The coupe file has not record of planning to manage the issue or any environmental impact of herbicide use. As this criterion seeks evidence of planning, non-compliance was not deemed to have a potential environmental impact and the EIA rating tool was not applied.
8. Evidence in FCP that relevant Water Authority notified prior to any application of chemicals within a Special Water Supply Catchment Area. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					Coupe E is located in a special water supply catchment area; however there is no evidence in the coupe file that the relevant Water Authority is advised of the annual control program for St Johns Wort (see criterion 6). As this criterion seeks evidence of advice to the Water Authority, the EIA rating tool is not considered to be applicable for instances of non-compliance.
13. FCP provides evidence that waterways classified into Code categories (permanent, temporary, drainage line). Coupes with non-compliance: 5 of 5	EIA rating not applicable to this criterion					While the Code classification for waterways was understood and influenced the size of any riparian buffers or filters, none of the audited coupe files provided specific evidence that the Code classification had been applied. Lack of evidence of application of Code categories <i>per se</i> does not require the application of the EIA rating tool.
14. Waterway classification appears to be accurate. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					Waterways on coupe C were all treated as permanent streams that required buffers. They were not classified as such and hence the coupe was assessed to not comply with this criterion. Since the coupe applied a high standard of protection than required by the Code, the EIA rating tool was not applied.

Water quality, river health and soil protection audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
17. Buffers and filter strips meet minimum requirements of Code. Coupes with non-compliance: 1 of 5	1	0	0	0	0	A small part of the filter marked along the temporary waterway on coupe D was narrower than prescribed by the Code. As harvesting in this area has not yet commenced, this deficiency could be rectified without environmental impact.

D.3 Biodiversity conservation

Biodiversity conservation audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
4. FCP identifies any noxious weeds and established pest animals on gross coupe area and, where present, demonstrates that action has been taken for control and eradication Coupes with non-compliance: 1 of 5	1	0	0	0	0	Pest plants were identified during planning for coupe C, however no specific management actions were recorded in the coupe plan.
7. Evidence of post-harvest weed assessment available in FCP. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					Coupe E was the only coupe for which harvesting had been completed. The coupe file did not provide any evidence of a post-harvest weed assessment.
10. Noxious weeds and established pest animals not observed on coupe. Coupes with non-compliance: 1 of 5	2	1	0	0	0	Weeds were observed on three of the coupes (A, C and E), but did not trigger EIA ratings greater than minor.
23. Where rainforest is present, rainforest buffer boundaries are marked in the field or readily identified by physical features. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					Rainforest was only present in coupe A. Buffers had not been marked at the time of the audit, although harvesting had only recently commenced. Buffers of 60 m will be established if trees are marked for harvest in the vicinity of rainforest patches.

D.4 Operational provisions

Operational provisions audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
3. No rutting evident on coupe. Coupes with non-compliance: 1 of 5	1	0	0	0	0	Isolated instances of rutting were observed on coupe C. This was associated with ponding of water at poorly drained points along the existing forest track network. Rutting was associated with use of the coupe by the general public, rather than harvesting traffic.
4. If during harvest rain causes water to flow along tracks, evidence in FCP that operations have been suspended or actions taken to mitigate risk to soil or water quality values. Coupes with non-compliance: 1 of 5	1	0	0	0	0	Tracks through coupe C are open all year and there are no specific time controls on harvesting, although it would not be expected to take place during wet weather. Harvesting is permitted on the coupe throughout the year despite it being located in a water supply catchment. This is permitted on the basis that no heavy machinery is used in this very low intensity operation. Since the arrangement to not harvest in wet weather is informal and not recorded in the coupe file, coupe C was assessed to not comply with the criterion.
16. If minor forest produce harvested from coupe, FCP demonstrates that this is considered to be compatible with FMP or SMZ objectives and consistent with MP limitations. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					Minor forest produce is harvested as a secondary product from coupe D, however this is not listed on the coupe plan, hence non-compliance was assessed. There are no environmental implications of this non-compliance that warrants application of the EIA rating tool.

D.5 Roding

Roding audit criteria	# coupes with EIA ratings					Comment on non-compliance
	Negligible	Minor	Moderate	Major	Severe	
41. Evidence is available to show that roads are maintained according to these standards. Coupes with non-compliance: 1 of 5	EIA rating not applicable to this criterion					The regional road management plan for coupe C was in preparation at the time of the audit. As a result, it was not possible to demonstrate that the road leading to the coupe met the standards specified in the MPs. Since this criterion concerned evidence of planning, no EIA rating was applied.
66. Road used to access coupe and their drainage systems are well maintained with minimal evidence of soil erosion or adverse water quality impacts from road. Coupes with non-compliance: 1 of 5	1	0	0	0	0	Maintenance of internal forest tracks in coupe C was limited and several small sections were submerged and rutted at the time of the audit. Damage appeared to be mainly associated with use of the coupe by the general public.
70. Maintenance of roads and tracks achieves MP requirements. Coupes with non-compliance: 1 of 5	1	0	0	0	0	As noted above and for operational provisions criterion3, some parts of the tracks within coupe C are rutted and allow water to pond. There did not appear to be any threat to water quality in nearby drainage lines from non-compliant road maintenance.

Appendix E. Risk of harm to the environment from non-compliance with audit criteria

E.1 VicForests' operations

The following table provides a summary of the outcome of the risk assessment applied to particular incidents that have led to non-compliance being assessed against one or more audit criteria and EIA ratings of moderate or higher being applied.

Risk was assessed using the former DSE's Risk Management Framework (Appendix B.2). Consistent with this being an assessment of risk of harm to the environment, the consequence of the non-compliance incident was only assessed using DSE's environment descriptors.

The actual consequence rating applied frequently reflected a trade-off between the geographic scale of potential environmental impact resulting from the incident and the duration of the potential impact. Most incidents affected or had potential to affect either a small part of the coupe or relatively small areas outside it and would therefore be assessed with a consequence rating of negligible or minor. However the effect of some of these is expected to persist for several years, suggesting a major or extreme consequence rating. The final rating applied was typically based on the duration of impact, but was discounted by one or two rating levels to account for the geographic scale of impact.

The table is organised by coupe and incident leading to non-compliance. For some coupes, there was more than one incident leading to a non-compliance to which an EIA rating of moderate or higher was applied. The table also includes the EIA rating that was applied to the incident.

Coupe #	Workbook	Compliance element	Risk		
			Cons	L-hood	Risk
05	5A	28. Trees are only harvested from within designated boundaries of an approved coupe as specified in the FCP, unless specific authorisation to fell trees in an exclusion area is provided and documented (criterion 14). 41. FCP contains evidence that the coupe boundary identified in the field is confirmed as the mapped boundary on the approved TRP or that there are valid reasons for adjustment. EIA: major	Mod	Poss	Mod
06	5F	13. There is no deliberate placement of bark on uncorded snig tracks. EIA: moderate	Min	Unl	Low
09	5C	17. Planned biodiversity conservation measures from FCP have been fully implemented. EIA: moderate	Mod	Poss	Mod
09	5E	16. Evidence that drain spacing accounts for soil and rainfall characteristics and proximity to streams. 41. Evidence is available to show that roads are maintained according to these standards. 44. Any new or substantially upgraded road constructed near an excluded area meets these MP requirements.	Min	Poss	Mod
09	5E	60. Any new table drains meet MP requirements. 66. Road used to access coupe and their drainage systems are well maintained with minimal evidence of soil erosion or adverse water quality impacts from road. 70. Maintenance of roads and tracks achieves MP requirements. EIA: moderate	Min	Poss	Mod

Coupe #	Workbook	Compliance element	Risk		
			Cons	L-hood	Risk
11	5C	3. No rutting evident on coupe. 6. No evidence of impact on soil or water quality values from water flow along roads.	Min	Lik	Mod
	5E	66. Road used to access coupe and their drainage systems are well maintained with minimal evidence of soil erosion or adverse water quality impacts from road. 73. Any roads to coupe that are no longer required are permanently closed and effectively drained. 80. For temporary roads that will not be used for ≥12 months and effective barrier is in place to prevent use of road. EIA: moderate			
12	5A	10. Exclusion areas are protected from timber harvesting and associated activities as required by relevant regulations, plans and management procedures. EIA: moderate	Min	Unl	Low
12	5C	16. FCP provides evidence that biodiversity conservation requirements of Code and MP have been met in coupe planning, including for habitat trees and patches, understorey and hollow bearing trees. EIA: moderate	Mod	Lik	High
12	5F	8. Any boundary track complies with MP requirements. EIA: moderate	Mod	Unl	Mod
21	5D	8. Landing surface shows no sign of soil mixing or excessive compaction.	Mod	Unl	Mod
	5F	18. Coupe infrastructure provides suitable soil conditions for regeneration and growth of trees and understorey vegetation. 28. Landing provides suitable conditions for regeneration. EIA: moderate			
23	5C	2. Unplanned fire has not affected excluded areas. EIA: moderate	Mod	Poss	Mod
25	5E	18. Energy dissipating structures, silt traps or other protective measures used as required in new or substantially modified roads. 24. Adequate drainage structures are located about 20 m from permanent or temporary streams for any new or substantially upgraded roads. 25. Structures ensure drainage discharges are to undisturbed vegetation and that flow distances to waterway are maximised or that silt traps or other structures are used to minimise impacts on waterways. EIA: major	Mod	Unl	Mod
27	5E	51. No evidence of any new fill batters covering the base of live trees. EIA: major	Neg	Unl	Low
30	5A	10. Exclusion areas are protected from timber harvesting and associated activities as required by relevant regulations, plans and management procedures.	Maj	Rar	Mod
	5B	17. Buffers and filter strips meet minimum requirements of Code.			
	5G	8. Required buffer and filter widths applied to coupe. EIA: major			
31	5C	2. Unplanned fire has not affected excluded areas. EIA: moderate	Mod	Poss	Mod

Coupe #	Workbook	Compliance element	Risk		
			Cons	L-hood	Risk
33	5D	6. No evidence of impact on soil or water quality values from water flow along roads.	Maj	Lik	High
	5E	18. Energy dissipating structures, silt traps or other protective measures used as required in new or substantially modified roads. 19. No evidence of adverse water quality impacts resulting from use of these or other drainage structures. 24. Adequate drainage structures are located about 20 m from permanent or temporary streams for any new or substantially upgraded roads. 25. Structures ensure drainage discharges are to undisturbed vegetation and that flow distances to waterway are maximised or that silt traps or other structures are used to minimise impacts on waterways 60. Any new table drains meet MP requirements. 72. No evidence that sediment mobilised from roads is contributing to poor water quality. EIA: major			

Note:

Cons = Consequence. Categories are: Neg-Negligible, Min – Minor, Mod – Moderate, Maj – Major, Ext – Extreme (not applied here)

L-hood = Likelihood. Categories are: Rar – Rare, Unl – Unlikely, Poss – Possible, Lik – Likely, AC – Almost certain (not applied here)

Risk = Risk classes. Categories are: Low, Mod – Moderate, High, Ext - Extreme

E.2 The former DPI's operations

The follow table provides a summary of the outcome of the risk assessment applied to particular incidents that have led to non-compliance being assessed against one or more audit criteria and EIA ratings of moderate or higher being applied.

Risk was assessed using the former DSE's Risk management framework (Appendix B.2). Consistent with this being an assessment of risk of harm to the environment, the consequence of the non-compliance incident was only assessed using DSE's environment descriptors.

The table is organised by coupe and incident leading to non-compliance. For some coupes, there was more than one incident leading to a non-compliance to which an EIA rating of moderate or higher was applied. The table also includes the EIA rating that was applied to the incident.

Coupe #	Workbook	Compliance element	Risk		
			Cons	L-hood	Risk
D	5A	1. The size of individual and any aggregated coupes is consistent with Code &/or MP requirements for the silvicultural system. EIA: moderate	Neg	Unl	Low

Note:

Cons = Consequence. Categories are: Neg-Negligible, Min – Minor, Mod – Moderate, Maj – Major, Ext – Extreme (not applied here)

L-hood = Likelihood. Categories are: Rar – Rare, Unl – Unlikely, Pos – Possible, Lik – Likely, AC – Almost certain (not applied here)

Risk = Risk classes. Categories are: Low, Mod – Moderate, High, Ext - Extreme