

Code of Practice for Timber Production 2014



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Code of Practice for Timber Production 2014

Foreword

Native forests are some of the most beautiful natural assets that our State has to offer. They provide sustainable employment and natural timber products, they help to conserve biodiversity, they provide habitat for native plants and wildlife, and attract millions of visitors through our tourism industry each year.



The native forests and plantation timber industry employs over 25,000 people and generates more than \$400 million annually in log production. With this in mind, it goes without saying that we need to get the balance right between conserving biodiversity to sustain our natural assets and meeting the needs of industry.

I am pleased to introduce the *2014 Code of Practice for Timber Production* which provides the framework for regulation of commercial timber harvesting operations on both public and private land.

The code plays a key role in ensuring timber harvesting operations are compatible with the conservation of forests and provides clear direction to deliver sound environmental performance when planning for and conducting harvesting operations.

I'd like to thank those involved in the consultation process who produced this consolidated code. I have no doubt that it will be instrumental in helping our timber industry to grow, thrive and be economically strong. Most importantly, it will ensure Victoria's approach to sustainable forest management remains world standard.

A handwritten signature in black ink, appearing to be 'Ryan Smith', written in a cursive style.

The Hon Ryan Smith MP

Minister for Environment and Climate Change

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Glossary

The first time a word from this glossary appears on each page, it has been highlighted in bold. Unless the context requires otherwise terms used have the following definitions:

'agroforestry' as defined in the Victoria Planning Provisions - 'the simultaneous and substantial production of **forest** and other agricultural products from the same land unit'.

'Allocation Order' means an order made in accordance with Part 3 of the *Sustainable Forests (Timber) Act 2004*.

'approved' unless otherwise stated means a plan or practice that is:

- (a) in the case of **State forest**, approved by the **Minister** or **delegate** under Part 6 of the *Conservation Forests and Lands Act 1987*; or
- (b) in the case of **private land**, approved by the **responsible authority** (usually **local government**) in accordance with a planning scheme or a permit issued under a planning scheme.

'authorised officer' means a person appointed as an authorised officer under the *Conservation Forests and Lands Act 1987* and other relevant Acts (*Forests Act 1958*).

'basal area' means the sum of the cross-sectional areas measured at breast height (1.3m) of the trees in a given **stand** (or plot). Usually expressed as square metres per hectare (m²/ha).

'biodiversity' means the natural diversity of all life: the sum of all our native species of flora and fauna, the genetic variation within them, their habitats, and the ecosystems of which they are an integral part.

'blading-off' means the use of a machine to sweep drifts of loose mud, slush, vegetation or soil from the surface of a road or **coupe infrastructure (landings etc.)**.

'buffer (strip)' means a protective margin of vegetation excluded from any harvesting activity abutting a **waterway** or an area of **rainforest** or other special area, which protects it from potentially detrimental disturbances in the surrounding **forest**. Buffer width is defined as horizontal distance from which various **timber harvesting operations** are excluded.

'cable harvesting' means a hauling system using towers, winches, blocks and cables to extract harvested **timber**.

'canopy' means the uppermost layer of a **forest**, characterized by the crowns of the trees.

'chemical control agent' refer to **pesticide**.

'clearfall' means a silvicultural method of harvesting a **coupe** whereby all merchantable trees, apart from those to be retained for **wildlife** habitat, are removed.

'code' means the Code of Practice for Timber Production 2014.

'coupe' as defined in the *Sustainable Forests (Timber) Act 2004* means a specific area of **State forest** identified for the purposes of a timber harvesting operation in a **timber release plan** or, on **private land** a single area of **forest** or plantation of variable size, shape and orientation from which **timber** is harvested in one operation.

'coupe diary' means the key means of communicating and documenting information relevant to the management of timber harvesting operations and subsequent silvicultural treatment during the life of a **coupe**. The coupe diary forms part of the **Forest Coupe Plan** and entries can be made by the **harvesting entity**, the contractor/logging team leader, or additional contractors working during the life of the **coupe**.

'coupe driveway' means a temporary **coupe** access road established to provide access to a **timber harvesting operation**. For planning purposes, a coupe driveway is less than 500 m long and is located on land managed by DEPI. Coupe driveways are considered part of a **coupe**.

'coupe infrastructure' means log **landings**, log dumps / storage facilities, **snigging** and **forwarding tracks** and boundary trails.

'cultural heritage' means anything with aesthetic, archaeological, architectural, cultural, historical, scientific or social heritage both Aboriginal and non- Aboriginal.

'delegate' means the following employees of DEPI or their equivalent in the event of a department restructure:

- the Executive Director Land Management Policy; and
- Regional Directors.

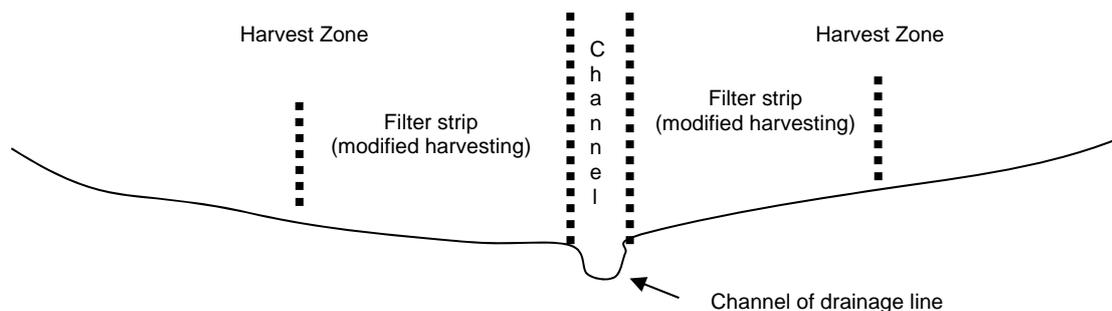
'domestic' in so far as it relates to firewood means firewood that is collected for personal use and is not sold to a third party or used in a commercial enterprise.

'drainage lines' are depressions that have visible evidence of periodically flowing water (including obvious sedimentation or other clear evidence of overland flow) that feed into temporary or **permanent streams**. A defined channel may or may not be present. Visible water flow would be expected after storm events or briefly in the wettest times of the year. Distinctive **riparian vegetation** is not likely to be present.

Artificial **drainage lines** that do not discharge directly into **waterways** are not considered within the above definition.

In **native forests**, **drainage lines** will generally be protected from harvesting by a **filter strip** (Figure 1). Refer to the **Management Standards and Procedures**.

Figure 1 – Drainage Lines in Native Forests¹



'ecologically similar locality' means from a similar elevation, aspect, soil type and/or climate, as close as possible to the harvested area.

'erosion risk' means the likelihood of erosion occurring due to **soil erodibility**, **rainfall erosivity**, slope and soil disturbance.

'exotic' means introduced to Australia, not native.

'extraction' means removing produce from stump to log **landing** or storage area.

¹ diagrams not to scale: zone widths vary according to circumstance.

'exclusion area' means an area within the GMZ or SMZ where **timber harvesting operations** are excluded in accordance with this Code.

'extraction track' means a track along which logs are extracted from the **forest** to the roadside or a **landing**. Also called a **forwarding track** or a **snig track**.

'fauna' means any animal including reptiles, birds, mammals, marsupials and fish.

'fill disposal area' means a site where surplus soil and rock material produced as a by-product of road construction may be stockpiled or disposed of.

'filter strip' means a strip of vegetated ground adjacent to a **waterway** (with merchantable **overstorey** removed) retained to minimise soil compaction and erosion. Trees may be felled from within a filter strip subject to certain conditions, however machinery entry is generally not permitted.

'flora' means any type of plant.

'floristics' means the proportion of species and distribution within a particular area.

'forest' means an area with a high density of trees typically composed of an **overstorey** (canopy or upper tree layer) and an **understorey**.

'Forest Coupe Plan' means a plan that must be prepared for each **timber harvesting operation** in **State forest**, containing a map identifying the area and a schedule incorporating the specifications and conditions under which the **timber harvesting operation** is to be administered and controlled. The **coupe diary** is considered part of the Forest Coupe Plan.

'forest type' means the classification of **forests** according to their life form and height of the tallest trees, projected foliage cover of the tallest trees and the main component species and elevation.

'forwarding' means the movement of logs in a forwarder machine.

'forwarding track' means an **extraction track** along which logs are carried in a forwarder.

'gross coupe area' means the entire coupe area within the coupe boundary including harvesting exclusions.

'habitat tree' means a tree identified and protected from harvesting to provide habitat or future habitat for **wildlife**. A habitat tree may be living or dead, and often contains hollows that are suitable shelter and/or nesting sites for animals such as possums and parrots.

'harvesting entity' means an organisation or person responsible for conducting a timber harvesting operation. In **State forest** the harvesting entity is either **VicForests** or the holder of a licence granted under section 52 of the *Forests Act 1958*.

'harvesting team leader' – on private land, the principal licensee or harvesting contractor, or a person appointed by the principal licensee or harvesting contractor, responsible for supervising and controlling the timber harvesting operation or timber production operation in the forest.

'hollow' means an opening in the trunk or branches of a tree. Hollows often form after a branch dies and falls off a tree.

'landing' means a place where trees or parts of trees are sorted, processed and/or loaded for transport from the **forest**. Areas where there has been no significant soil disturbance associated with landing establishment, and where no further processing takes place, are not regarded as landings. Conversion sites that do not involve earthworks or clearing, or where there has been no significant soil disturbance, are also not regarded as landings.

'landscape sensitivity area' means areas identified as having a high scenic quality and visual sensitivity. They are usually areas that are readily visible from high-usage recreational facilities such as look-outs, walking tracks, tourist roads, or campsites.

'local government' means the **responsible authority**. Note that the term local government has been used throughout this Code for ease of reader use, however it is the responsible authority (which is usually the local government) that administers the operation of the Code on **private land** and for plantations.

'Management Standards and Procedures' means the Management Standards and Procedures for timber harvesting operations in Victoria's State forests 2014.

'managing authority' means the organisation responsible for the management of a timber harvesting operation. DEPI is the managing authority for timber harvesting operations conducted under licences granted under section 52 of the *Forests Act 1958*. VicForests are the managing authority for timber harvesting operations conducted under an **Allocation Order**.

'microclimate' means the climate of a small, localised part of a forest. Vegetation, soil conditions and local topography may create pronounced microclimatic differences.

'Minister' means the Minister for Environment and Climate Change.

'native forest' means an area originally naturally occurring, that is dominated by trees having usually a single stem and a mature or potentially mature **stand** height exceeding two metres and with existing or potential crown cover of **overstorey** strata about equal to or greater than 20 per cent. This definition includes areas of trees that are sometimes described as woodlands, but does not include plantations (which may exhibit the characteristics of a native forest but are established for commercial purposes).

'native vegetation' means plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses.

'net coupe area' means the **gross coupe area** less allowances made for harvesting exclusions.

'net harvested area' means the **net coupe area** less areas that were not harvested.

'new plantation' means a plantation development where the previous land use was not plantation.

'operator' means a person who conducts a **timber harvesting operation**. Typically a machine or chainsaw operator.

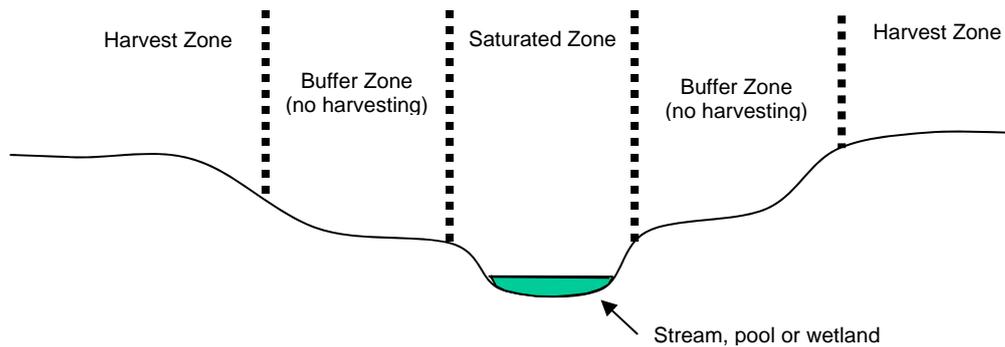
'overstorey' means the larger, taller trees in a **forest**, forming the **canopy**.

'permanent road' means a generally high standard road permanently required for the continuing management of the **forest** including timber harvesting operations.

'permanent stream' means a river or stream that flows throughout the year. Permanent streams may stop flowing or dry out in extremely dry years. Permanent streams will support distinctive **riparian vegetation** (except where previously removed by human activity, and not including *E camaldulensis*), indicative of extended periods of saturation and distinguishable from vegetation communities in surrounding areas. Streams have a well-defined incised permanent channel. See also **pools** and **wetlands**.

In **native forests**, permanent streams, **pools** and **wetlands** are buffered from harvesting (Figure 3). Refer to the **Management Standards and Procedures**.

Figure 2 – Permanent Streams, Pools or Wetlands in Native Forests²



‘pesticide (and/or Chemical control agent)’ means a chemical product that is used to control pest plants or animals. Includes herbicides, insecticides, fungicides, rodenticides and other similar products. Their registration for sale and use is controlled by State and Commonwealth legislation.

‘Planning Standards’ means the Planning Standards for timber harvesting operations in Victoria’s State forests 2014 - Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014.

‘plantation’ means managed **stands** of trees of either native or **exotic** species, planted or sown primarily for **timber production** purposes.

‘Plantation Development Notice’ means a notice that must be prepared and lodged with **local government** before a plantation is established for the first time. The notice must contain the information set out in Section 4.1 of this Code.

‘pool’ means an area of still water of at least 4 metres in diameter within or adjacent to the main channel of a permanent or **temporary stream**. A pool may dry out in extremely dry years. In **native forests**, pools are buffered from harvesting (refer to Table 2).

‘precautionary principle’ means when contemplating decisions that will affect the environment, careful evaluation of management options be undertaken to wherever practical avoid serious or irreversible damage to the environment; and to properly assess the risk-weighted consequences of various options. When dealing with threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

‘private land’ for the purposes of this Code, private land comprises:

- i) land alienated from the Crown;
- ii) unalienated land of the Crown managed and controlled by other than the Minister for Environment and Climate Change, the Minister for Agriculture and Food Security, or the **Secretary**;
- iii) unalienated land of the Crown occupied under a lease from the Crown; or
- iv) land licensed under the *Victorian Plantations Corporation Act 1993*.

‘provenance (of seed)’ means the original geographic source or place from which that seed was obtained.

² diagrams not to scale: zone widths vary according to circumstance.

'public land' means unalienated land of the Crown managed and controlled by the Minister for Environment and Climate Change, the Minister for Agriculture and Food Security, or the **Secretary**, whether or not occupied under a licence or other right (but not including land occupied under a licence under the *Victorian Plantations Corporation Act 1993*).

'rainfall erosivity' means the potential of rainfall to cause soil erosion and is directly related to rainfall amount and rainfall intensity.

'rainforest' means closed (>70 per cent projected foliage cover) broadleaved **forest** vegetation with a more or less continuous rainforest tree **canopy** of variable height, and with a characteristic composition of species and life forms, of at least 0.1 ha in area and 20 metres width. Rainforest includes closed transitional and seral communities, with emergent eucalypts, that are of similar botanical composition to mature rainforests in which eucalypts are absent.

'regeneration' means the renewal or re-establishment of **native forest** flora by natural or artificial means following disturbance such as a timber harvesting operation or fire.

'regional forest agreements' are 20-year agreements between the State of Victoria and the Commonwealth for the conservation and sustainable management of native forests. The Agreements provide certainty for forest-based industries, forest-dependent communities and conservation. They are the result of years of scientific study, consultation and negotiation covering a diverse range of interests.

'rehabilitation' means the restoration of a site of disturbance usually associated with **landings** and other within-**coupe infrastructure**.

'responsible authority' as defined in s.13 of the *Planning and Environment Act 1987*. Generally the **local government** authority responsible for administering the local planning scheme.

'retained trees' means trees retained on a **coupe** during a **timber harvesting operation** because they are unmerchantable, are to serve as **seed trees** or **wildlife habitat trees**, or have been selected to grow on after **thinning**.

'riparian vegetation' means vegetation that requires free or unbound water, or conditions that are noticeably moist along the margins of streams, **drainage lines**, and lakes.

'river health' means an ecologically healthy river where the major natural features, **biodiversity** and/or functions of the river are still present and will continue into the future. Some change from the natural state may have occurred to provide for human use.

'rotation' means the planned number of years between the **regeneration** of a **forest stand** and its final harvesting, taking into account the full range of values and uses the owner wishes to derive from the **forest**.

'salvage harvesting operation' means timber harvesting operations conducted to recover **timber** following wildfire, storms, floods, disease, insect attack or other events that cause significant tree mortality or damage.

'sanctioned' means an action or practice that has been assessed and approved by the **managing authority** unless otherwise stated.

'saturation' associated with waterways, means the area where the soil is muddy or permeated with water attributable to the water body. The saturation zone ends where moisture is no longer visibly present in the soil. This saturation zone is often delineated by **riparian vegetation**.

'Secretary' as defined in the *Sustainable Forests (Timber) Act 2004* means the body corporate established by Part 2 of the *Conservation, Forests and Lands Act 1987* sometimes described as the Secretary to the Department of Environment and Primary Industries

‘**seed tree**’ means a tree retained on harvested **coupes** to provide seed for natural regeneration of that **coupe**. May also be a **habitat tree**.

‘**seed tree harvesting**’ means an even-aged silvicultural system in which all live trees are felled apart from a number of uniformly distributed trees retained to provide seed for regeneration and habitat. **Seed trees** generally comprise 10-15 % of the **basal area** of the original **stand**.

‘**selective harvesting**’ means a silvicultural system used to harvest and regenerate particular **forest types**. Trees are harvested either singly or in small groups at intervals indefinitely. Regeneration is established continually in the gaps produced and an uneven-aged **stand** is maintained.

‘**shelterwood coupes**’ means an area that is harvested using the shelterwood silvicultural method where the original **stand** is removed in two separate timber harvesting operations. Firstly a proportion of the mature trees are cut to allow the establishment of essentially even-aged regeneration under sheltered conditions (this is called Shelterwood 1), followed by a second cut (usually about 10 years later) of the remainder of the mature (seed) trees (this is called Shelterwood 2).

‘**silviculture**’ means the science and practice of managing harvesting, **forest** establishment, composition, and growth, to achieve specified objectives.

‘**site preparation**’ means the preparation of the ground to provide conditions suitable for seedling establishment by either seed or planted seedlings.

‘**snigging**’ means the towing or winching of a log from the stump to the **landing** site, usually along a snig track.

‘**snig track**’ means the track along which a log is snigged.

‘**soil erodibility**’ means the susceptibility of a soil to erosion when exposed and/or disturbed. Classified into low, medium or high according to prescribed techniques.

‘**Special Water Supply Catchment**’ means land declared to be a special water supply catchment area under Division 2 of Part 4 or otherwise listed in Schedule 5 of the *Catchment and Land Protection Act 1994*, subject to any relevant amendments or revocations published in the Government Gazette.

‘**stand**’ means a group of trees in a **forest** that can be distinguished from other groups on the basis of age, species composition, condition, etc. Usually at least 1 ha in size.

‘**State forest**’ for the purpose of this Code is as defined in the *Forests Act 1958* but also includes any other category of **public land** where **timber harvesting operations** are a permitted land use but does not include land occupied under a licence under the *Victorian Plantations Corporation Act 1993*. State forest comprises publicly owned land which is managed for the conservation of flora and fauna; for the protection of water catchments and water quality; for the provision of **timber** and other **forest** products on a sustainable basis; for the protection of landscape, archaeological, historical and other cultural values; and to provide recreational and educational opportunities.

‘**stocking**’ means a measure of density of any given **forest stand**, which can be expressed in a variety of terms, such as the number of trees per hectare, the **basal area** per hectare, and the percentage of stocked plots.

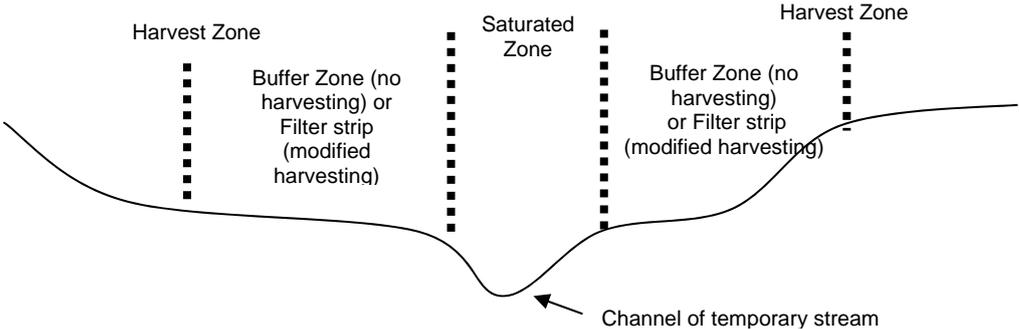
‘**temporary road**’ means a road or track and any associated bridges, crossings and culverts that does not form part of the **permanent road** network. A temporary road is usually constructed for the purpose of accessing a **coupe(s)** (or part thereof) to undertake a timber harvesting operation and will be closed and rehabilitated on the completion of the timber harvesting operation in that **coupe(s)**. A temporary road can include in-coupe roads and **coupe driveways**.

‘**temporary stream**’ means a stream that has a clearly defined continuous channel or streambed and flow during certain seasonal periods of the year, such as following snowmelt, but not throughout the

year. Temporary streams contain distinctive **riparian vegetation** (except where previously removed by human activity, and not including *E camaldulensis*), indicative of periods of saturation and distinguishable from vegetation communities in surrounding areas.

In **native forests**, temporary streams may be protected from harvesting by **buffers** or **filter strips** (Figure 4). Refer to the **Management Standards and Procedures**.

Figure 3 – Temporary Streams in Native Forests³



‘tending’ means the treating of a **forest stand** to protect, maintain, or improve its stand health and/or **timber production** potential. **Thinning** and **selective harvesting** are types of tending.

‘thinning’ means the removal of part of a **forest stand** or crop, with the aims of increasing the growth rate and/or health of **retained trees** and, in commercial thinning, obtaining **timber** from trees that would otherwise eventually die before final harvest. Thinning is a type of **tending**.

‘timber’ is a general term used to describe standing trees or felled logs before processing into wood products. This includes timber from trees or parts of trees which are specified as available for **timber harvesting operations**, but does not include firewood collected for **domestic** use.

‘timber harvesting manager’ in **State forests**, means the **managing authority**. Note that the term timber harvesting manager has been used throughout this Code for ease of reader use, however it is the **managing authority** that manages **timber harvesting operations** in **State forest**. On **private land** the timber harvesting manager is the person or organisation responsible for the management of a timber harvesting operation.

‘timber harvesting operation’ means any of the following kinds of activities carried out by any person or body for the purposes of sale or processing and sale —

- (a) felling or cutting of trees or parts of trees;
 - (b) taking or removing **timber**;
 - (c) delivering timber to a buyer or transporting timber to a place for collection by a buyer or sale to a buyer;
 - (d) any works, including road works, **site preparation**, planting and **regeneration**, ancillary to any of the activities referred to in paragraphs (a) to (c)—
- but does not include—
- (e) the collection or production of firewood for **domestic** use.

³ diagrams not to scale: zone widths vary according to circumstance.

'Timber Harvesting Plan' means a plan prepared under this Code for private **native forests** (section 3.1) and plantations (section 4.5), usually consisting of a map identifying the area(s) to be harvested and a statement of conditions applying to the timber production activity, and lodged with the **responsible authority**. The plan may apply to a single **coupe** or to an area in which a number of coupes are to be harvested.

'timber release plan' as defined in the *Sustainable Forests (Timber) Act 2004* means a plan prepared under section 37, notice of which has been published under section 41.

'timber production' has the same meaning as **timber harvesting operation**.

'understorey' means the layer of vegetation that grows below the **canopy** formed by the tallest trees in a **forest**.

'VicForests' has the same meaning as it has in the *Conservation, Forests and Lands Act 1987*.

'water supply protection area' means a catchment from which water is used for domestic water supply purposes. Water supply protection areas include **Special Water Supply Catchments**, Designated Catchments identified in forest management plans and catchments protected under the statutory planning provisions in the *Planning and Environment Act 1987*.

'waterway' means a **permanent stream, temporary stream, drainage line, pool** or wetland as defined in this Code.

'wetland' means a permanent spring, swampy ground, wetland or other body of standing water. A wetland may dry out seasonally. A wetland will support distinctive **riparian vegetation** (not including *E camaldulensis*), indicative of extended periods of saturation and distinguishable from vegetation communities in surrounding areas.

'wildlife' means wildlife as defined under the *Wildlife Act 1975*.

'wildlife corridor' means a strip of **forest** of varying width reserved from harvesting, to facilitate fauna movement (including gene movement) between patches of forest of varying ages and stages of development.

1 General

1.1 Background

Timber and fibre harvested from Victoria's **native forests** and **plantations** are vital to our way of life, providing a renewable, adaptable resource with a wide variety of uses. **Timber production is** an important component of regional economies across Victoria, creating jobs and wealth that are a cornerstone of the State's prosperity.

Wood products have long been harvested from our native forests. Over the past several decades, other users and uses of **forests**, such as **biodiversity** protection, clean water and recreation opportunities have become increasingly important to the community. An expanded network of National parks and other conservation reserves have been declared in areas that were once available for timber harvesting, and public scrutiny of timber harvesting operations is now acknowledged as integral to the right to use this natural resource.

Plantations are now the largest producer of timber in Victoria. Plantations provide commercial returns while potentially improving the health of catchments, diversifying farm income or providing another productive use for agricultural land.

Victoria has benefited significantly from a long period of scientific research and field based forest management experience. As knowledge of forest ecosystems continues to develop, there will be a corresponding improvement in the management of forests that will ensure activities are undertaken within sound ecological limits to ensure a sustainable long-term path for this industry.

In 1989, the Victorian Parliament ratified the first *Code of Forest Practices for Timber Production*. The Code set out appropriate, responsible standards for timber harvesting operations in **State forests**, to better manage the potential impacts of timber harvesting. The Code was revised in 1996 to take account of new research information, field experience over the previous six years, and the implementation of the Code on **private land** in late 1993.

The Code was further reviewed and published in 2007 to incorporate advances in scientific knowledge, the substantial changes in legislation and regulation governing forest management in Victoria and improvements in timber harvesting operational practices since 1993. This version of the Code builds on the 2007 review by streamlining the environmental regulatory framework for **harvesting managers, harvesting entities** and **operators** conducting and planning timber harvesting operations.

The Code will continue to be reviewed on a regular basis, informed by a comprehensive review of relevant forestry science. The result of the high level of public scrutiny, the extensive field based management experience and the world class reserve system is a well regulated and sustainable industry in Victoria.

1.2 The Code of Practice for Timber Production

1.2.1 Why a Code of Practice for Timber Production?

Maintaining the benefits to society provided by the timber industry depends on balancing community needs and concerns with careful stewardship and responsible management. The effective implementation of a Code of Practice helps to ensure that **timber production is** compatible with the conservation of the wide range of values associated with **forests**, and of any such values associated with land on which commercial **plantation** development is proposed.

1.2.2 Purpose of the Code

The purpose of the Code is to provide direction to **timber harvesting managers, harvesting entities** and **operators** to deliver sound environmental performance when planning for and conducting commercial timber harvesting operations in a way that:

- permits an economically viable, internationally competitive, sustainable timber industry;
- is compatible with the conservation of the wide range of environmental, social and cultural values associated with forests;
- provides for the ecologically sustainable management of **native forests** proposed for cyclical timber harvesting operations; and
- enhances public confidence in the management of timber production in Victoria's forests and plantations.

1.2.3 How is the Code made

The Code is made by the Minister for Environment and Climate Change under Part 5 of the *Conservation Forests and Lands Act 1987*. As the Code is a prescribed legislative instrument under the *Subordinate Legislation (Legislative Instruments) Regulations 2011* the *Subordinate Legislation Act 1994* also applies to the making of the Code.

1.2.4 Scope of the Code

The Code applies to the planning and conducting of all commercial timber production and timber harvesting operations on both public and **private land** in Victoria. Timber harvesting operations are defined in the *Sustainable Forests (Timber) Act 2004* as any felling, cutting, removing and haulage activities carried out for the purposes of sale or processing and sale of **timber**. The Code does not apply to the collection or production of firewood for **domestic** use. Any roading, **tending**, **regeneration** or **rehabilitation** activities conducted in association with a timber harvesting operation are by definition, also a timber harvesting operation.

Timber harvesting in Victoria is governed by a wide range of commonwealth and state legislation, regulations, policies and codes. The Code addresses the legal obligations that timber harvesting managers, harvesting entities and operators must consider in addition to existing relevant law. Therefore the Code does not duplicate the legal obligations of timber harvesting managers, harvesting entities and operators already existing in commonwealth or state legislation including the relevant laws (legislation) listed in the *Conservation, Forests and Lands Act 1987*. Appendix A provides a list of the existing legislation, regulations and policies that apply to timber harvesting operations that are in addition to the Code. Appendix A is not an exhaustive list.

1.2.5 Description of Land to which Code Applies

The Code applies to all land in the State of Victoria that is either being used for or is intended to be used for **timber production** or **timber harvesting operations**.

Compliance with this Code on **public land** (Chapter two) is required under the conditions of licences and authorities issued under the provisions of the *Conservation, Forests and Lands Act 1987*, the *Forests Act 1958* and the *Sustainable Forests (Timber) Act 2004*.

The Code applies to all commercial timber harvesting operations on **private land** and leased Crown land (chapters three and four), as specified in Clause 14.01-3 of the Victoria Planning Provisions (VPPs) and all planning schemes.

The Code does not apply to **domestic** firewood collection or production, **agroforestry**, windbreaks or other amenity plantings, or to the occasional felling of trees for local uses on the same property or by the same landowner or manager. Small **plantations** and woodlots of five hectares or less (total area existing or proposed on contiguous land which is in the same ownership) are also exempt from the Code, as are plantings established for non-commercial purposes. The Code does not apply to revegetation conducted for the purposes of erosion or salinity control.

The Secretary to the Department of Environment and Primary Industries (DEPI) is a referral authority for timber harvesting operations applications as specified in Clause 66 of the VPPs and all planning schemes.

The Code is consistent with the VPPs in recognising that plantations are established primarily for timber harvesting operations. Thus, planning controls concerned with the development of plantations explicitly allow for their subsequent management and harvesting.

1.2.6 Compliance on State forest

Under the *Sustainable Forests (Timber) Act 2004*, compliance with this Code is mandatory for any person planning for or conducting a timber harvesting operation on **State forest**. Penalties for non-compliance may apply if timber harvesting operations on State forest are not in accordance with the Code.

Timber harvesting operations on public land other than State forest are governed by lease and licence conditions which may specify a requirement to comply with this Code.

The Code is a prescribed legislative instrument made and enforced under relevant law listed in the *Conservation, Forests and Lands Act 1987*. For the purposes of each relevant law the **Secretary** is an **authorised officer** and is therefore responsible for ensuring compliance with the Code on State forest. Compliance is also monitored by other authorised officers appointed by the Secretary pursuant to the *Conservation, Forests and Lands Act 1987*.

Certification schemes

In addition, **timber** producers on State forest may choose to adopt independent product accreditation under national and international systems, which have associated performance criteria and auditing requirements that meet or exceed the requirements of this Code.

Incorporated Documents

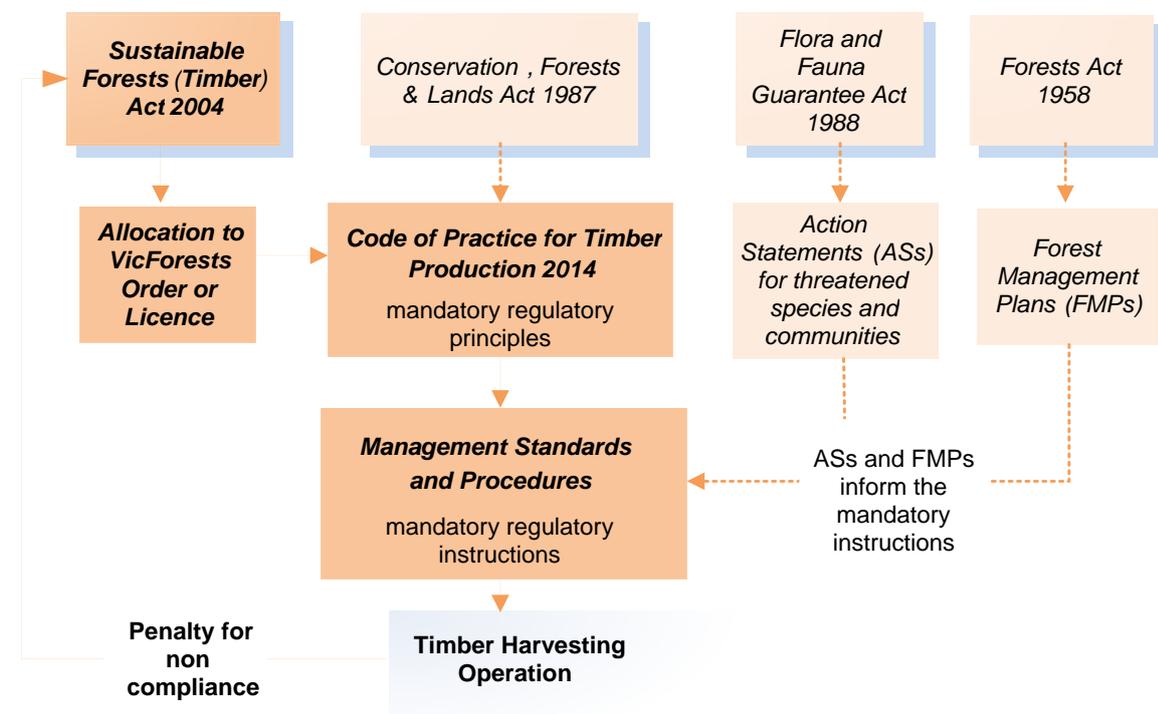
The *Management Standards and Procedures for timber harvesting operations in Victoria's State forests* (Management Standards and Procedures) are incorporated into this Code to provide detailed mandatory operational instructions, including region specific instructions for timber harvesting operations in Victoria's State forests.

The **Management Standards and Procedures** are consistent with the Operational Goals and Mandatory Actions of this Code and must be complied with for **timber harvesting operations** in Victoria's **State forests**.

The Management Standards and Procedures are informed by relevant policy documents including policies relating to specific forest values such as threatened species, guidelines and strategies within forest management plans made under the *Forest Act 1958* and Action Statements made under the *Flora and Fauna Guarantee Act 1988*. The Management Standards and Procedures replace any directions relating to timber harvesting operations contained within these documents.

Figure 4 below depicts the role of the Code and the Management Standards and Procedures in the State forest timber harvesting regulatory framework.

Figure 4 State forest timber harvesting regulatory framework



1.2.7 Compliance on Private Land

Timber production is a defined land use in the VPPs and all planning schemes. Clause 52.18 specifies the provisions relating to timber production and this Code is an incorporated document which must be considered.

Local government is responsible for ensuring compliance with the planning system. The Code must be complied with to the satisfaction of the **responsible authority** (usually local government), whether or not a permit is required.

Certification schemes

In addition, **timber** producers on **private land** may choose to adopt independent product accreditation under national and international systems, which have associated performance criteria and auditing requirements that meet or exceed the requirements of this Code.

Associated Documents

The *Management Guidelines for the Code of Practice for Timber Production on Private Land (native vegetation and plantations) in Victoria* (MGs) aid interpretation of the Code in private **forests** and **plantations**. The MGs are consistent with the Operational Goals and Mandatory Actions of this Code. Variations to the MGs must address the Operational Goals and Mandatory Actions of this Code.

1.2.8 Terminology

The following terms are used in the Code to provide a structure for the Code's intended outcomes and the mechanisms within the Code to achieve these. The glossary provides further definitions.

A Code Principle is a broad outcome that expresses the intent of the Code for each aspect of sustainable forest management.

An Operational Goal states the desired outcome or goal for each of the specific areas of **timber harvesting operations**, to meet the Code Principles.

Mandatory Actions are actions to be conducted in order to achieve each operational goal. **Timber harvesting managers, harvesting entities** and **operators** must undertake all relevant mandatory actions to meet the objectives of the Code. Mandatory Actions are focussed on practices or activities. Failure to undertake a relevant Mandatory Action would result in non-compliance with this Code.

1.3 Code Principles

Timber production on all **native forest** and **plantations** in Victoria are guided by the Code Principles described in Table 1. The Code Principles express the broad outcomes of the intent of the Code for each aspect of sustainable forest management.

The six Code Principles are developed from the internationally recognised Montreal Process criteria, and are consistent with the objectives of the *Sustainability Charter for Victoria's State forests*. Reporting mechanisms such as *Victoria's State of the Forests Report* use the same principles, and demonstrate Victoria's commitment to being an international leader in sustainable forest management.

The six Code principles are that:

1. Biological diversity and the ecological characteristics of native flora and fauna within **forests** are maintained.
2. The ecologically sustainable long-term timber harvesting capacity of **forests** managed for timber harvesting is maintained or enhanced.
3. Forest ecosystem health and vitality is monitored and managed to reduce pest and weed impacts.
4. Soil and water assets within forests are conserved. **River health** is maintained or improved.
5. Cultural heritage values within forests are protected and respected.
6. Planning is conducted in a way that meets all legal obligations and operational requirements.

Timber production must always be planned and conducted according to knowledge developed from research and management experience so as to achieve the intent of the Code Principles. Application of this knowledge will ensure that **timber** can continue to be utilised while ensuring that impacts on soil, water, **biodiversity**, forested landscapes and significant archaeological, historic and other cultural heritage sites are avoided or minimised.

In Table 1, the Operational Goals of the Code are aligned with each Code Principle. These Operational Goals are repeated in the body of the Code, with a variety of Mandatory Actions to achieve each Goal. This framework translates the high level Principles into on-ground action.

Table 1 Relationship between Code Principles and Operational Goals

| Code Principles | Operational Goals | Section |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Biological diversity and ecological characteristics of native flora and fauna within forests is maintained. | Timber harvesting operations in State forests specifically address biodiversity conservation risks and consider relevant scientific knowledge at all stages of planning and implementation. | 2.2.2 and 3.2.2 Conservation of Biodiversity |
| | Timber harvesting operations in private native forests specifically address the conservation of biodiversity, in accordance with relevant legislation and regulations, and considering relevant scientific knowledge at all stages of planning and implementation. | 2.1.1, 2.3.1 and 3.1.1 Forest Planning |
| | Chemicals are only used where appropriate to the site conditions and application is conducted with due care for the maintenance of forest health, water quality, biodiversity and soil values. | 2.2.2 and 3.1.2 Conservation of Biodiversity |
| | Fertiliser and chemicals are only used where appropriate to the site conditions and circumstances and with care for the maintenance and protection of water quality, biodiversity, soil values and neighbouring land uses. | 4.3.2 Chemical Usage |
| | Planning and implementation of timber harvesting operations in plantations address the conservation of biodiversity, including rainforest, in accordance with relevant laws. | 4.2.2 Conservation of Biodiversity |
| | Harvested native forest is managed to ensure that the forest is regenerated and the biodiversity of the native forest is perpetuated. | 2.2.2 and 3.2.2 Conservation of Biodiversity |
| The ecologically sustainable long-term timber production capacity of forests managed for timber harvesting operations is maintained or enhanced. | The natural floristic composition and representative gene pools are maintained when regenerating native forests by using appropriate seed sources and mixes of dominant species. | 2.6.1 and 3.5.1 Regeneration |
| | Timber harvesting operations are planned and conducted to maintain a long-term ecologically sustainable timber resource. | 2.1.1 and 2.3.1 Forest Planning |
| | Harvested native forest is managed to ensure that the forest is regenerated and the biodiversity of the native forest is perpetuated. | 2.6.1 and 3.5.1 Regeneration |
| | Stocking and early seedling growth is monitored and remedial action is taken where necessary to successfully regenerate harvested areas of native forests. | 3.5.2 Stocking Assessment |
| | Timber harvesting operations are recorded in a way that facilitates future public reporting and policy purposes. | 2.3.2 Record Keeping |
| | The productive capacity and other values of the forest are maintained or enhanced by appropriate tending of stands. | 2.6.2 and 3.5.3 Tending |

| Code Principles | Operational Goals | Section |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| | The planning and management of permanent and temporary roads for timber haulage and machinery transport is fit for intended purpose, and protects environmental and cultural values and the safety of all road users. | 2.4 and 3.3 Rooding |
| | The management of all roads that are part of plantation timber harvesting operations takes account of environmental and cultural values, the safety of road users and the intended use of the road. | 4.4 Plantation Rooding |
| | Timber harvesting operations are conducted in a manner appropriate to the site, and manages the impact on soil, water and other values, including biodiversity and cultural heritage. | 2.5 Timber Harvesting |
| | Timber harvesting is conducted in a manner appropriate to the site, to manage the impact on soil, water and other values, including biodiversity and cultural heritage. | 3.4 and 4.5.2 Timber Harvesting |
| Forest ecosystem health and vitality is monitored and managed to reduce pest and weed impacts. | Forest [plantation] health is monitored and maintained by employing appropriate preventative, protective and remedial measures. | 2.2.2 and 3.2.3 Conservation of Biodiversity 4.3.3 Plantation Health |
| Soil and water assets within forests are conserved. River health is maintained or improved. | Water quality and river health are maintained or improved by protecting waterways and aquatic and riparian habitat from disturbance. | 2.1.1 and 2.3.1 Forest Planning |
| | Water pollution is minimised and soil productive capacity is maintained by avoiding harvesting in inappropriate areas or slopes and undertaking necessary preventive measures. | 2.2.1, 3.1.1 and 4.2.1 Water Quality, River Health and Soil Protection |
| | Water quality and river health are maintained or improved in plantations by protecting waterways from disturbance. | |
| | Soil erosion and water pollution are minimised by avoiding timber harvesting operations in plantations in inappropriate areas or slopes and undertaking necessary preventative measures. | |
| | Chemicals are only used where appropriate to the site conditions and is conducted with due care for the maintenance of forest health, water quality, biodiversity and soil values. | 2.2.1, 3.2.1 and 4.2.1 Water Quality, River Health and Soil Protection |
| | Fertiliser and chemicals are only used where appropriate to the site conditions and circumstances and with care for the maintenance and protection of water quality, biodiversity, soil values and neighbouring land uses. | 4.3.2 Chemical Usage |
| | During or following wet weather conditions, timber harvesting operations are modified or where necessary suspended to minimise risks to soil and water quality values. | 2.2.1, 3.1.1 and 4.2.1 Water Quality, River Health and Soil Protection 2.5.3, 3.4.3 and 4.5.4 Timber Harvesting |

| Code Principles | Operational Goals | Section |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| | Site preparation is appropriate to the characteristics of the particular site, and take into account the maintenance of soil and water values as well as site productivity. | 4.3.1 Site Preparation |
| Cultural heritage values within forests are protected and respected. | Long-term forest management planning maintains an ecologically sustainable timber resource that mitigates the impacts on all forest values. Effective and inclusive planning processes are used for timber harvesting operations to meet the requirements of this Code and the Management Standards and Procedures. | 2.1.1 and 2.3.1 Forest Planning |
| | Timber harvesting operations are conducted in a manner appropriate to the site, and manages impacts on soil, water and other values including biodiversity and cultural heritage. | 2.5, 3.4.1 and 4.5.2 Timber Harvesting |
| Planning is conducted in a way that meets all legal obligations and operational requirements. | Long-term forest management planning maintains an ecologically sustainable timber resource that mitigates the impacts on all forest values. Effective and inclusive planning processes are used for timber harvesting operations to meet the requirements of this Code and the Management Standards and Procedures | 2.1.1 and 2.3.1 Forest Planning |
| | Plantations on private land are designed, managed and operated in accordance with this Code. Local government is appropriately informed of new plantation development on private land by the lodgement of either a Plantation Development Notice or a planning permit, in accordance with this Code. | 4.1.1 Plantation planning and design |
| | Approval for timber production in native forests on private land is obtained through the relevant planning scheme. | 3.1 Forest Planning |
| | A Timber Harvesting Plan is prepared in accordance with the requirements of this Code and submitted to the relevant local government prior to the commencement of timber harvesting. | 3.1.1 and 4.5.1 Timber Harvesting Plan |
| | A Forest Coupe Plan which specifies operational requirements is prepared in accordance with this Code prior to the commencement of each timber harvesting operation. | 2.3.1 Forest Planning |

2 Code Application – State Forests

This Chapter applies to the planning, harvesting, roading, **tending** and **regeneration** of **State forests** where **timber harvesting operations** are conducted, including both **native forests** and **plantation forests** that are owned and managed by the State.

2.1 Forest Management Planning

2.1.1 Long-term (Strategic) Forest Management Planning

Sound planning ensures that the full range of **State forest** values are managed sustainably for current and future generations. These values include ecological diversity, cultural heritage, landscape, provision of recreation and educational opportunities as well as a range of renewable **forest** products. It is important to ensure that forest management is responsive to changing community expectations, expanding knowledge of forest ecosystems and techniques to improve planning approaches.

Long-term (strategic) forest management planning is undertaken in accordance with legislation and processes such as **regional forest agreements** and includes outputs such as policies relating to specific forest values such as threatened species and forest management plans.

The Forest Management Zoning Scheme (FMZS) is a long-term planning tool that spatially represents all of the known values that are managed in Victoria's State forests. The FMZS seeks to achieve a balance between a range of value inputs including the timber harvesting rules stated within the **Planning Standards** appendix to the **Management Standards and Procedures**.

The FMZS identifies three management zones within State forest: the Special Protection Zone (SPZ); the Special Management Zone (SMZ); and the General Management Zone (GMZ).

SPZs are managed for particular conservation values, forming a network designed to complement the formal conservation reserve system. **Timber harvesting operations** are excluded from SPZs. SMZs are managed to conserve specific features, while catering for timber harvesting operations under special conditions specified in SMZ plans and the Planning Standards. GMZs are managed for a range of uses and values, but timber harvesting operations will have a high priority.

Operational Goals

Long-term forest management planning maintains an ecologically sustainable timber resource that mitigates the impacts on all forest values.

Effective and inclusive long-term forest management planning processes are used to meet the requirements of this Code and the Management Standards and Procedures.

Mandatory Actions

2.1.1.1 Long-term **forest** management planning must:

- i. meet the requirements of this Code and the Management Standards and Procedures;
- ii. provide for the perpetuation of native **biodiversity**;
- iii. maintain a range of forest age classes and structures;
- iv. identify and mitigate impacts on all cultural heritage values;
- v. minimise impact on water quality and quantity within any particular catchment;
- vi. minimise adverse visual impact in **landscape sensitivity areas**; and
- vii. facilitate effective **regeneration** of harvested forest.

2.2 Environmental Values in State forests

Timber harvesting operations in native forests may have local impacts on environmental values such as water quality and **biodiversity**. Appropriate planning and management through the lifecycle of the timber harvesting operation can minimise these impacts. This section includes requirements that must be observed during planning, roading, harvesting, tending and regeneration of native forests.

2.2.1 Water Quality, River Health and Soil Protection

Operational Goals

Water quality and **river health** are maintained or improved by protecting waterways and aquatic and riparian habitat from disturbance.

Water pollution is minimised and soil productive capacity is maintained by avoiding harvesting in inappropriate areas or slopes and undertaking necessary preventive measures.

Chemicals are only used where appropriate to the site conditions and are applied with due care for the maintenance of forest health, water quality, biodiversity and soil values.

During or following wet weather, timber harvesting operations are modified or where necessary suspended to minimise risks to soil and water quality values.

Mandatory Actions

- 2.2.1.1 Planning and management of timber harvesting operations must comply with relevant water quality, river health and soil protection measures specified within the **Management Standards and Procedures**.
- 2.2.1.2 Management actions to protect waterways, river health and soil must be appropriate to the waterway class, soil category, and potential water quality risk posed by timber harvesting operations at each site.
- 2.2.1.3 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:
 - i. local topography;
 - i. the intensity and magnitude of the timber harvesting operation;
 - ii. events such as wildfire that reduce the effectiveness of protection measures; or
 - iii. the location of the timber harvesting operation in a declared **Special Water Supply Catchment** or any other **water supply protection area**.

Protecting waterways and aquatic and riparian habitat

- 2.2.1.4 Use **buffers** and filters of effective width in **forest** adjacent to aquatic and riparian habitats to protect them from **microclimate** changes, sedimentation and disturbance.
- 2.2.1.5 Where practical exclude roads and **snig tracks** from aquatic and riparian habitats.
- 2.2.1.6 Where crossings are required, minimise the extent of habitat damage, constriction to stream flow and barriers to fish and other aquatic fauna.
- 2.2.1.7 Remove temporary crossings immediately after harvesting or any subsequent **regeneration** work is complete using a technique that minimises soil and habitat disturbance.

Minimising water pollution

- 2.2.1.8 Use drainage, artificial structures, buffers and filters of effective width to slow and disperse surface flows and deposit sediment before reaching **waterways**.
- 2.2.1.9 Locate **coupe infrastructure**, roads and other activities that generate sediment or other potential pollutants in places where risk of entry into waterways is lowest unless otherwise **sanctioned**.
- 2.2.1.10 Minimise the extent and duration of soil disturbance adjacent to or within waterways.
- 2.2.1.11 Use management practices such as modified harvesting techniques, scheduling, wet weather suspensions or progressive **rehabilitation** to minimise the potential for sediments and other pollutants to move into streams.
- 2.2.1.12 Design, construct and maintain roads, crossings, coupe infrastructure and drainage structures to withstand foreseeable rainfall events and traffic conditions, and protect water quality.
- 2.2.1.13 Ensure chemical use is appropriate to the circumstances and takes into account the maintenance of water quality.

Maintaining soil productive capacity

- 2.2.1.14 Minimise potential for soil erosion or mass movement by planning and using operational methods and restrictions appropriate to the assessed soil **erosion risk** and slope.
- 2.2.1.15 Locate coupe infrastructure and roads to minimise soil erosion and degradation.
- 2.2.1.16 Use appropriate equipment, harvesting techniques and operational management to minimise soil rutting, mixing or compaction.
- 2.2.1.17 Limit the area of soil affected by coupe infrastructure and roads to the minimum required to safely complete **timber harvesting operations** to the required standard.
- 2.2.1.18 Employ topsoil conservation techniques in timber harvesting areas affected by coupe infrastructure and roads.
- 2.2.1.19 During timber harvesting operations maintain effective drainage of coupe infrastructure and roads.
- 2.2.1.20 Minimise the time soil is left unvegetated, except at coupe infrastructure sites that are required in the longer term.
- 2.2.1.21 Ensure chemical use is appropriate to the circumstances and takes into account the maintenance of soil productive capacity.

2.2.2 Conservation of Biodiversity

Operational Goal

Timber harvesting operations in **State forests** specifically address **biodiversity** conservation risks and consider relevant scientific knowledge at all stages of planning and management.

Harvested State forest is managed to ensure that the **forest** is regenerated and the biodiversity of the **native forest** is perpetuated.

The natural floristic composition and representative gene **pools** are maintained when regenerating native forests by protecting long-lived **understorey** species and using appropriate seed sources and mixes of dominant species.

Forest health is monitored and maintained by employing appropriate preventative, protective and remedial measures.

Chemicals are only used where appropriate to the site conditions and are conducted with due care for the maintenance of forest health, water quality, biodiversity and soil values.

Mandatory Actions

Addressing biodiversity conservation risks considering scientific knowledge

- 2.2.2.1 Planning and management of timber harvesting operations must comply with relevant biodiversity conservation measures specified within the **Management Standards and Procedures**.
- 2.2.2.2 The **precautionary principle** must be applied to the conservation of biodiversity values. The application of the precautionary principle will be consistent with relevant monitoring and research that has improved the understanding of the effects of forest management on forest ecology and conservation values.
- 2.2.2.3 The advice of relevant experts and relevant research in conservation biology and flora and fauna management must be considered when planning and conducting timber harvesting operations.
- 2.2.2.4 During planning identify biodiversity values listed in the Management Standards and Procedures prior to roading, harvesting, **tending** and **regeneration**. Address risks to these values through management actions consistent with the Management Standards and Procedures such as appropriate location of **coupe infrastructure, buffers, exclusion areas**, modified harvest timing, modified silvicultural techniques or retention of specific structural attributes.
- 2.2.2.5 Protect areas excluded from harvesting from the impacts of timber harvesting operations.
- 2.2.2.6 Ensure chemical use is appropriate to the circumstances and provides for the maintenance of biodiversity.
- 2.2.2.7 **Rainforest** communities must not be harvested.

Perpetuating the biodiversity of harvested native forests

- 2.2.2.8 Long-term (strategic) **forest** management planning must incorporate **wildlife corridors**, comprising appropriate widths of retained forest, to facilitate animal movement between patches of forest of varying ages and stages of development, and contribute to a linked system of reserves.
- 2.2.2.9 Modify **coupe** size and **rotation** periods to maintain a diversity of forest structures throughout the landscape.
- 2.2.2.10 Retain and protect **habitat trees** or habitat patches and long-lived **understorey** species to provide for the continuity and replacement of old hollow-bearing trees and existing vegetation types within each coupe.
- 2.2.2.11 Use silvicultural systems that suit the ecological requirements of the **forest type**.
- 2.2.2.12 Regenerate harvested areas using seed from **overstorey** species with **provenances** native to the area.

Maintaining forest health

- 2.2.2.13 Implement appropriate vehicle and equipment hygiene precautions when moving from areas of known pest plant, pest animal and pathogen infestations.
- 2.2.2.14 Implement appropriate control actions where **timber harvesting operations** have introduced or exacerbated a pathogen or weed.
- 2.2.2.15 Report the suspected introduction of new or unknown **exotic** agents to DEPI's Biosecurity section.
- 2.2.2.16 Where Myrtle Wilt (*Chalara australis*), Cinnamon Fungus (*Phytophthora cinnamomi*) or Root Rot (*Armillaria*) is known to exist, apply appropriate measures to minimise the spread of these pathogens.

2.3 Operational Planning and Record Keeping

2.3.1 Operational Planning

Planning associated with the establishment of **timber harvesting operations** is critical to achieving the environmental outcomes encompassed by the Code. Operational planning includes a requirement for clear documentation of intended measures to protect the environment during proposed timber harvesting operations such as roading, harvesting, **tending**, haulage and regeneration.

Operational Goals

Effective and inclusive planning processes are used for timber harvesting operations to meet the requirements of this Code and the **Management Standards and Procedures**.

A **Forest Coupe Plan** which specifies operational requirements is prepared in accordance with the requirements of this Code prior to the commencement of each timber harvesting operation.

Mandatory Actions

- 2.3.1.1 All timber harvesting operations must be planned to meet the requirements of this Code and the Management Standards and Procedures.
- 2.3.1.2 A Forest Coupe Plan must:
- i. be prepared by the managing authority prior to the commencement of a timber harvesting operation including road construction or upgrades;
 - ii. communicate the intended boundaries, activities and requirements in adequate detail to enable **operators** to complete work to the required standard, comply with the Code and comply with the Management Standards and Procedures for the life of the coupe, and to support the **Secretary** in reviewing compliance;
 - iii. be **sanctioned**;
 - iv. be **approved** and provide evidence of the approval for timber harvesting operations occurring within SPZ or outside the area identified in an **Allocation Order** or licensed to the **harvesting entity**;
 - v. record details of the type of timber harvesting operation; and
 - vi. document all variations to operational requirements and sanctions (such as the removal of trees from **buffers** for safety purposes) until the timber harvesting **coupe** is **approved** as successfully regenerated and rehabilitated.
- 2.3.1.3 Coupes associated with roading, must be approved with adequate time to construct the required standard of access without compromising safety, water quality and other values.
- 2.3.1.4 In addition to the requirements outlined in this code, Forest Coupe Plans for **salvage harvesting operations** must complement any additional recovery strategies and **rehabilitation** plans.

2.3.2 Record Keeping

Timber harvesting operations records are routinely used for operational, policy and public information purposes.

Operational Goals

Timber harvesting operations are recorded in a way that facilitates future compliance checks, public reporting and policy development purposes.

Mandatory Actions

2.3.2.1 The following information must be recorded for all timber harvesting operations in a format that allows for future reference:

- i. harvesting and **tending** location, **silviculture** system and timing;
- ii. **regeneration** location, method, timing, seed source and final **stocking** rate; and
- iii. pre and post-harvest **basal area** in **tending** operations.

2.4 Rooding for Timber Harvesting Operations

This section covers the planning, design, construction, maintenance and use of permanent and **temporary roads** for **timber** haulage and machinery transport. This section does not consider requirements for **snigging** and **forwarding tracks**, which are covered under **coupe infrastructure** (section 2.5.2).

Timber harvesting operation roads have the potential to create significant environmental impacts, particularly on water quality and **river health**. This Code aims to protect a range of environmental values while allowing safe and economic rooding for timber harvesting operations.

Operational Goal

The planning and management of permanent and temporary roads for timber haulage and machinery transport ensures that the roads are fit for purpose, and protect environmental and cultural values and the safety of all road users.

2.4.1 Road Planning

Mandatory Actions

- 2.4.1.1 Planning and management of timber harvesting operations must comply with this Code and relevant road planning measures specified within the **Management Standards and Procedures** unless the road is covered by a formal rooding agreement with DEPI that would supersede this requirement.
- 2.4.1.2 Road planning and design for new and substantially upgraded roads must ensure the road network is safe and adequate for the intended range of uses and users, while ensuring the protection of water quality and conservation values, including river health.
- 2.4.1.3 Road planning must:
 - i. locate roads so as to minimise risks to safety and environmental values, particularly soil, water quality and river health, during both construction and ongoing road use; and
 - ii. ensure that the timing of construction activities minimises risks associated with unsuitable weather conditions and provides for completion to the required standard in advance of timber harvesting operations.
- 2.4.1.4 Existing roads must 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**.
- 2.4.1.5 **Forest Coupe Plans** for roads must be based on field surveys to ensure that all environmentally sensitive locations are identified and appropriate design and construction techniques are adopted.

2.4.2 Road Design

Good road design is vital to minimise construction and maintenance costs, reduce environmental risk such as impacts to water quality, improve efficiency of haulage, and ensure public safety is maintained. It is important when designing a new road or improvements to an existing road that water is moved off the road into undisturbed vegetation to reduce the velocity (and hence erosivity) of water, and to provide the greatest possible infiltration of water into soil to trap sediments before discharge into **waterways**.

Road design includes the consideration of road location, road use, traffic volume, aspect, soil type, slope, topography, surface materials, road shape as well as road drainage and other **coupe infrastructure** including culverts, drains, batters, bridges and fords.

Mandatory Actions

- 2.4.2.1 Planning and management of **timber harvesting operations** must comply with this Code and relevant road design measures specified within the **Management Standards and Procedures** unless the road is covered by a formal roading agreement with DEPI that would supersede this requirement
- 2.4.2.2 New or upgraded roads must be designed to a standard capable of carrying anticipated traffic with reasonable safety, and ensure the protection of water quality and **river health**, and **biodiversity** conservation values.
- 2.4.2.3 All **fill disposal areas** and embankments must be planned and designed to minimise soil erosion, mass soil movement, and potential water quality deterioration.
- 2.4.2.4 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.
- 2.4.2.5 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.
- 2.4.2.6 Energy dissipating structures or silt traps must be used where necessary to reduce water velocity and trap sediments.
- 2.4.2.7 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.
- 2.4.2.8 Drainage must be prevented from discharging directly onto any road.
- 2.4.2.9 Before entering a waterway road drainage must discharge onto vegetation or through a structure that effectively dissipates the velocity of drainage flows.
- 2.4.2.10 Materials or techniques with low sediment generating potential must be applied to the road area on bridge approaches and on unsurfaced bridges or culverts, when crossing permanent or **temporary streams**.

2.4.3 Road Construction

Mandatory Actions

- 2.4.3.1 Planning and management of **timber harvesting operations** must comply with this Code and relevant road construction measures specified within the **Management Standards and Procedures** unless the road is covered by a formal roading agreement with DEPI that would supersede this requirement.
- 2.4.3.2 Road construction must be conducted in a manner consistent with plans and designs.
- 2.4.3.3 All **fill disposal areas** and embankments must be appropriately stabilised. Where revegetation is used to stabilise fills or embankments, the species must be suitable for the site and where possible indigenous to the area.
- 2.4.3.4 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.
- 2.4.3.5 Quarry materials known to be infected with any pest plant or pathogen must not be used.
- 2.4.3.6 Road construction must ensure that:
 - i. disturbance to stream beds and banks is kept to a minimum;
 - ii. soil and rock fill is not pushed into **waterways**, nor placed into a position where there is a risk that it can erode into a waterway; and
 - iii. cement, raw concrete, soil fill and other road making materials are not spilt or disposed of into waterways during road construction.

2.4.4 Road Maintenance

Mandatory Actions

- 2.4.4.1 Planning and management of timber harvesting operations must comply with this Code and relevant road maintenance measures specified within the Management Standards and Procedures unless the road is covered by a formal roading agreement with DEPI that would supersede this requirement.
- 2.4.4.2 Roads used for **timber** haulage must be maintained in a manner that minimises erosion and protects water quality and other environmental values.
- 2.4.4.3 Road drainage systems must be maintained at sufficient frequency to minimise erosion and the discharge of sediment into waterways.
- 2.4.4.4 **Blading-off** of roads must be sanctioned and recorded in the **coupe diary** and is only permitted where measures are in place to prevent potential adverse impacts on water quality and where effective side drainage can be maintained.

2.4.5 Suspension of Haulage

Haulage on **forest** roads when wet weather or other adverse conditions such as excessive dust affect the road surface and drainage and can compromise water quality and public safety. Haulage may need to cease for a period where this is the case.

Mandatory Actions

- 2.4.5.1 Planning and management of **timber harvesting operations** must comply with relevant suspension of haulage measures specified within the **Management Standards and Procedures** unless the road is covered by a formal roading agreement with DEPI that would supersede this requirement.
- 2.4.5.2 Heavy vehicle traffic associated with timber harvesting operations must not use roads in **State forests** when persistent wet weather or road stability compromise road drainage and water quality.
- 2.4.5.3 Heavy vehicle traffic associated with timber harvesting operations must not use roads in State forests when persistent dry weather causes the surface materials to disintegrate 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.

2.4.6 Road Closure

Mandatory Actions

- 2.4.6.1 Planning and management of timber harvesting operations must comply with relevant road closure measures specified within the Management Standards and Procedures unless the road is covered by a formal roading agreement with DEPI that would supersede this requirement.
- 2.4.6.2 Roads no longer required for timber harvesting operations or other forest management purposes, must be permanently closed to vehicle traffic and effectively drained following completion of the timber harvesting operation.

2.5 Timber Harvesting

Timber harvesting operations in **State forest** are conducted in accordance with a **Forest Coupe Plan** (section 2.3.1).

Operational Goal

Timber harvesting operations are conducted in a manner appropriate to the site, and manages impacts on soil, water and other values including **biodiversity** and cultural heritage.

Timber harvesting operations are conducted in a manner that mass soil movements do not occur.

2.5.1 Coupe Management

Mandatory Actions

- 2.5.1.1 Planning and management of timber harvesting operations must comply with relevant **coupe** management measures specified in the **Management Standards and Procedures**.
- 2.5.1.2 Timber harvesting operations must be conducted in accordance with the Forest Coupe Plan and all applicable Special Management Zone plans.
- 2.5.1.3 The location of coupe boundaries, Special Protection Zones, **buffers**, filters, **exclusion areas**, areas where special management applies and **habitat trees** must be easily distinguishable in the field.
- 2.5.1.4 Timber harvesting operations must only be undertaken within established **coupe** boundaries as indicated on the Forest Coupe Plan and where required marked in the field, unless the timber harvesting operation is specifically **sanctioned** or exempted in accordance with this Code.

Timber harvesting operations within areas that are not available for harvesting

- 2.5.1.5 Timber harvesting operations (excluding haulage on existing or **approved** roads) are not permitted in special protection zones, buffers, or other exclusion areas identified on the Forest Coupe Plan, except where:
 - i. the removal of a limited number of trees is necessary for the construction and use of stream crossings or for **river health**; or
 - ii. the **operator** has been **sanctioned** to remove a limited number of trees to protect public or worker safety or for **forest** health.
- 2.5.1.6 Areas outside the coupe boundary or within special protection zones, buffers and other exclusion areas must be protected from damage caused by trees felled in adjacent areas. Trees accidentally felled into these areas may be removed only where **sanctioned**. Sanction will only be given if significant damage and disturbance of soil and vegetation outside the harvestable area can be avoided.

Timber harvesting operations within filter strips

- 2.5.1.7 Disturbance to soil and **understorey** vegetation from timber harvesting operations in **filter strips** must be minimised.
- 2.5.1.8 Trees may be felled from within filter strips where machinery does not enter the filter strip. The felling of trees into filter strips must be avoided where possible.

Timber harvesting operations on steep slopes

- 2.5.1.9 Timber harvesting operations must not occur on slopes where they cannot be conducted safely, or they threaten the stability of the soil or have high potential for adverse off-site effects. The potential for mass soil movement must be assessed by the managing authority and necessary preventative actions undertaken.
- 2.5.1.10 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**.

2.5.2 Coupe Infrastructure

Coupe infrastructure includes log **landings**, log storage facilities, **snigging** and **forwarding tracks**, and boundary trails.

Mandatory Actions

- 2.5.2.1 Planning and management of timber harvesting operations must comply with relevant coupe infrastructure measures specified within the **Management Standards and Procedures**.
- 2.5.2.2 Log landings and log storage facilities must not be located in areas excluded from harvesting unless **approved** and noted on the **Forest Coupe Plan**.
- 2.5.2.3 Coupe infrastructure must be rehabilitated on completion of timber harvesting operations, where not required for future timber harvesting operations or an **approved** purpose for which **native vegetation** is not compatible. **Rehabilitation** techniques must ensure that suitable soil conditions are provided for the **regeneration** and growth of vegetation existing on the site prior to harvesting (refer to section 2.6). Progressive rehabilitation of coupe infrastructure during timber harvesting operations must be undertaken where operationally possible.
- 2.5.2.4 **Snigging** and **forwarding tracks** must be placed at the greatest practicable distance from **waterways** without compromising **operator** safety.
- 2.5.2.5 Tracks must have effective drainage to prevent soil erosion. Cross-drains, where used, must be spaced and angled as appropriate to the soil erosion hazard, to disperse surface run-off and prevent discharge of turbid water into streams or **drainage lines**.
- 2.5.2.6 Snigging and forwarding tracks and boundary trails must not be bladed off where this would result in an adverse impact on water quality or the loss of topsoil from the site. Any blading off of coupe infrastructure must be **sanctioned** and recorded in the **coupe diary**.
- 2.5.2.7 Rehabilitation of coupe infrastructure must be assessed within three years of initial treatment and, where found inadequate, remedial action must be taken.

2.5.3 Operational Restrictions

Operational Goal

During or following wet weather, **timber harvesting operations** are modified or suspended as necessary to minimise risks to soil and water quality values.

Mandatory Actions

- 2.5.3.1 Planning and management of timber harvesting operations must comply with relevant operational restrictions specified within the **Management Standards and Procedures**.
- 2.5.3.2 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.
- 2.5.3.3 Timber harvesting operations that involve machine traffic must be suspended when significant rutting would be caused by such traffic, unless actions are taken to actively manage that risk.
- 2.5.3.4 Timber harvesting operations conducted on **landings** must be suspended when continuation would result in significant deterioration of the landing surface causing increased levels of compaction or mixing of bark through soil on the landing surface.
- 2.5.3.5 **Snigging** and use of heavy machinery must not increase water quality risks from roading.

2.6 Forest Regeneration and Management

This section covers the **regeneration** of **State forests** and the subsequent management of such **forest stands**. Unless required for another **approved** purpose, all State forest areas subject to **timber harvesting operations** will be regenerated to standards that approximate the original **forest** composition.

2.6.1 Regeneration

Operational Goals

Harvested areas of **native forest** are successfully regenerated.

The natural floristic composition and representative gene **pools** are maintained when regenerating native forests by using appropriate seed sources and mixes of dominant overstorey species.

Mandatory Actions

- 2.6.1.1 Planning and management of timber harvesting operations must comply with relevant regeneration measures specified within the **Management Standards and Procedures**.
- 2.6.1.2 State forest available for timber harvesting operations must not be cleared to provide land for the establishment of plantations.
- 2.6.1.3 Action must be taken by the managing authority to ensure the successful regeneration of a harvested **coupe**, except where:
 - i. the land is to be used for an **approved** purpose for which **native vegetation** is not compatible (for example services, public infrastructure and structures); or
 - ii. **timber** has been harvested by **thinning**; or
 - iii. the naturally occurring regrowth is assessed as sufficient.
- 2.6.1.4 Following timber harvesting operations, **State forest** must be regenerated with overstorey species native to the area, wherever possible using the same **provenances**, or if not available, from an **ecologically similar locality**.
- 2.6.1.5 Regeneration must aim to achieve the approximate **canopy floristics** that were common to the coupe prior to harvesting, if known.
- 2.6.1.6 Silvicultural methods for regeneration must suit the ecological requirements of the **forest type**, taking into consideration the requirements of sensitive **understorey** species and local conditions.
- 2.6.1.7 Harvested coupes must be regenerated as soon as practical, including follow up or remedial action in the event of regeneration failure.
- 2.6.1.8 All practical measures must be taken to protect areas excluded from harvesting from the impacts of burns and other regeneration activities.
- 2.6.1.9 Where mechanical disturbance is used, it must be undertaken with due consideration of **erosion risks** and the proximity of **waterways** (refer to Section 2.2).

2.6.2 Tending

Appropriate action may be taken to tend **native forest stands** where such actions are consistent with environmental safeguards and offsite impacts can be minimised. Examples of such action include **stand** improvement (such as selective overwood or underwood removal or reduction), **thinning**, fertilising and other silvicultural practices to promote stand health and **timber production**.

Operational Goal

The productive capacity and other values of the **forest** are maintained or enhanced by appropriate **tending** of **stands**.

Mandatory Actions

- 2.6.2.1 Planning and management of **timber harvesting operations** must comply with relevant tending measures specified within the **Management Standards and Procedures**.
- 2.6.2.2 Tending must comply with all relevant mandatory actions for timber harvesting operations.
- 2.6.2.3 Tending must:
 - i. enhance the ecologically sustainable long-term timber production capacity of the thinned stand;
 - ii. minimise impacts on **understorey** species, particularly long-lived elements; and
 - iii. avoid construction of roads, **landings** and associated **coupe infrastructure** that will not be required for subsequent timber harvesting operations.

3 Code Application – Private Native Forests

This Chapter applies to all **timber production** (including planning, harvesting, roading, **tending** and **regeneration**) for **native forests** on **private land**. Private native forest landowners need to consider potential impacts on soil and water quality, aquatic habitat, and **biodiversity**, Aboriginal and other cultural heritage places and visual amenity when managing native forest for timber production.

3.1 Forest Planning

Proper planning is critical to achieving **timber production** requirements and the environmental outcomes encompassed by the Code. Forest management planning provides clear documentation of intended reservation of areas, measures to protect the environment and proposed timber production operations.

Under the requirements of planning schemes, timber production on **private land** must comply with the Code. **Local government** (the **responsible authority**) is required to consider the Operational Goals and Mandatory Actions in this Code when issuing permits for timber production.

Private native forest harvesting must be in accordance with 'Permitted clearing of native vegetation – Biodiversity assessment guidelines (2013)', an incorporated document in the Victoria Planning Provisions and all planning schemes.

Operational Goals

Approval for timber production in **native forest** on **private land** is obtained through the relevant planning scheme.

3.1.1 Timber Harvesting Plan

A Timber Harvesting Plan is the basic record of the forest manager's intended activities in an area of **forest**. It applies to a single **coupe**, a number of coupes or to an area in which a number of coupes are to be harvested. It assists **timber harvesting managers**, **harvesting entities** and **operators** and local government in understanding and assessing:

- area to be harvested and operational requirements;
- compliance with the operational goals and mandatory actions of this Code;
- compliance with the planning scheme requirements; and
- compliance with relevant legislation.

Operational Goal

A Timber Harvesting Plan is prepared in accordance with the requirements of this Code and submitted to the relevant local government prior to the commencement of timber production.

Mandatory Actions

- 3.1.1.1 A Timber Harvesting Plan must be submitted to local government not less than 28 days before the commencement of any timber production operations. The 28 day minimum lodgement time may be waived with the agreement of the local government.
- 3.1.1.2 A Timber Harvesting Plan is current for 24 months following lodgement with the local government.
- 3.1.1.3 When preparing a Timber Harvesting Plan, the following issues must be addressed:
- i. methods to minimise impacts on **biodiversity**, water quality and **river health** from timber production including associated roads;
 - ii. ways to minimise impacts on significant visual landscape values; and
 - iii. ways to minimise impacts on cultural heritage values.
- 3.1.1.4 The **Timber Harvesting Plan** must include:
- i. Landowners name and address;
 - ii. estimated **timber** volumes to be harvested;
 - iii. the proposed haulage route;
 - iv. a map showing:
 - the **coupe** location(s);
 - the area(s) to be harvested;
 - **areas excluded from harvesting** within the coupe boundary, including areas reserved or specifically managed for **biodiversity** conservation, **waterway** protection (including any **buffers** or **filter strips**), or protection of cultural heritage values;
 - power lines;
 - new or upgraded roads and **coupe infrastructure** within the property
 - v. conditions applying to the **timber production** operation;
 - vi. fire protection measures;
 - vii. the period during which timber production is to occur; and
 - viii. a **regeneration** program to follow harvesting, where required.
- 3.1.1.5 The size of **clearfall**, **seed tree harvesting** or **shelterwood coupes** should generally not exceed 40 hectares net harvested area. Coupes may be aggregated but not exceed 120 hectares net harvested area over a period of up to five years. Aggregated coupes must not be contiguous (forming a **coupe** greater than 120 hectares within a five year period).
- 3.1.1.6 **Thinning coupes** must not exceed 120 hectares net harvested area. Single tree selection coupes may be of any size, where landscape or environmental values are not affected.
- 3.1.1.7 Coupe boundaries must take advantage of topographic and/or artificial features (such as roads and property boundaries) where they exist, with due regard to safety, operational requirements, landscape values and environmental values. Where coupe boundaries do not follow obvious natural or artificial features, they must be clearly marked on site.

- 3.1.1.8 Characteristics of coupes for salvage of timber in **forests** damaged by fire, pests, pathogens or other events may differ from undamaged forests. A special (salvage) plan or an amended **Timber Harvesting Plan** must be developed, taking into account:
- i. the need for urgency in timber recovery; and
 - ii. the need to modify prescriptions, as required, to meet environmental care goals and address recovery strategies for other forest values such as fauna.
- 3.1.1.9 **Salvage harvesting operations** must take as much account of environmental care as any other timber production operation.
- 3.1.1.10 A copy of the Timber Harvesting Plan and any supporting prescriptions must be provided to the **harvesting team leader**. The Plan's implementation, including specific prescriptions to be applied to the coupe, must be discussed with him/her. These documents must be available on site while timber production is in progress.
- 3.1.1.11 All amendments and variations to operational requirements (such as the removal of trees from **buffers** or outside the coupe for safety purposes) must be documented in the Timber Harvesting Plan and dated by the harvesting team leader.

3.2 Environmental Values in Private Native Forests

Timber production operations in private native forests may impact on environmental values such as water quality and biodiversity. Appropriate planning and management through the lifecycle of the timber production operation can minimise these impacts.

This section includes requirements that must be observed during planning, tending, roading, harvesting and regeneration of native forests on private land.

3.2.1 Water Quality, River Health and Soil Protection

Operational Goals

Water quality and **river health** are maintained or improved by protecting **waterways** and aquatic and riparian habitat from disturbance.

Water pollution is minimised and soil productive capacity is maintained by avoiding harvesting in inappropriate areas or slopes and undertaking necessary preventative measures.

Chemicals are only used where appropriate to the site conditions and is conducted with due care for the maintenance of **forest** health, water quality, **biodiversity** and soil values.

During or following wet weather conditions, timber production is modified or where necessary suspended to minimise risks to soil and water quality values.

Mandatory Actions

Waterway Classification

- 3.2.1.1 Use the following categories when determining **buffer** and filter widths for waterways within and immediately adjacent to each **coupe**.
- i. **permanent streams, pools and wetlands;**
 - ii. **temporary streams;**
 - iii. **drainage lines.**

Aids to the identification of each class of waterway are provided in the glossary. The classification of a waterway is based on characteristics observed prior to harvesting, noting that stream flow may change following harvesting.

Protecting waterways and aquatic and riparian habitat

- 3.2.1.2 Management actions to protect waterways, river health and soil must be appropriate to the waterway class, soil category, and potential water quality risk posed by timber production at each site.

3.2.1.3 Water quality and river health must be protected by establishing and maintaining **buffers** and/or **filter strips** (to each side of the waterway). Buffers and filter strips must be specified on the basis of field risk assessments, and the outcomes shown in the **Timber Harvesting Plan**. As part of the field risk assessment, the potential risk to water quality is determined through consideration of:

- i. **soil erodibility**;
- ii. soil permeability;
- iii. **rainfall erosivity** (including season of timber production operation);
- iv. topography;
- v. type of timber production operation; and
- vi. location of **coupe infrastructure**.

3.2.1.4 Water quality and river health must be protected from **microclimate** changes, sedimentation and disturbance by maintaining buffers and/or filter strips (to each side of the waterway) of not less than the widths specified below in table 2.

Table 2 Minimum widths in metres for buffers and filter strips applicable to various waterway categories, in relation to water quality risk and slope

| Waterway Class | Sites with low or moderate water quality risk | | Sites with high or very high water quality risk | |
|------------------------------------------|-----------------------------------------------|---------------|-------------------------------------------------|--|
| | Slope 0-30° | Slope 0-20° | Slope 21° - 30° | |
| 1. Pools, permanent streams and wetlands | 20m B | 30m B | 40m B | |
| 2. Temporary streams | 10m F | 10m B + 10m F | 20m B | |
| 3. Drainage lines | 10m F | 10m F | 15m F | |

Notes:

- Slope is the average slope of the **coupe** area in the vicinity of the water body.
- Buffers and filter strips must be applied to each waterway class regardless of the origins of the channelling.
- The width of buffer areas and filter strips must be measured in the horizontal plane, from the edge of the saturated zone (at time of harvesting) or channel (whichever is greater), on each side of the waterway.

3.2.1.5 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:

- i. local topography;
- ii. the intensity and magnitude of the timber production operation; or
- iii. the location of the timber production operation in a declared **Special Water Supply Catchment** or any other **water supply protection area**.

- 3.2.1.6 To the maximum extent possible, exclude roads and **snig tracks** from aquatic and riparian habitats.
- 3.2.1.7 Where crossings are required, minimise the extent of habitat damage, constriction to stream flow and barriers to fish and other aquatic fauna.
- 3.2.1.8 Remove temporary crossings immediately after harvesting or any subsequent **regeneration** is complete using a technique that minimises soil and habitat disturbance.

Minimising water pollution

- 3.2.1.9 Use drainage, artificial structures, **buffers** and filters of effective width to slow and disperse surface flows and deposit sediment before reaching **waterways**.
- 3.2.1.10 Unless otherwise approved on the Timber Harvesting Plan, locate **coupe infrastructure**, roads and other activities that generate sediment and other potential pollutants in places where risk of entry into waterways is lowest.
- 3.2.1.11 Minimise the extent and duration of soil disturbance adjacent and within waterways.
- 3.2.1.12 Use management practices such as modified harvesting techniques, scheduling, wet weather suspensions or progressive **rehabilitation** to minimise potential for sediments and other pollutants to move into streams.
- 3.2.1.13 Design, construct and maintain roads, crossings, coupe infrastructure and drainage structures to withstand anticipated rainfall events and traffic conditions, and protect water quality.
- 3.2.1.14 Ensure chemical use is appropriate to the circumstances and takes into account the maintenance of water quality.

Maintaining soil productive capacity

- 3.2.1.15 Minimise potential for soil erosion and mass movement by planning and using operational methods and restrictions appropriate to the soil **erosion risk** and slope.
- 3.2.1.16 Locate coupe infrastructure and roads to minimise soil erosion and degradation.
- 3.2.1.17 Use appropriate equipment, techniques and operational management to minimise soil rutting, mixing and compaction.
- 3.2.1.18 Limit the area of soil affected by coupe infrastructure to the minimum required to safely complete **timber production** to the required standard.
- 3.2.1.19 Employ topsoil conservation techniques in areas affected by coupe infrastructure.
- 3.2.1.20 Maintain effective drainage of coupe infrastructure and roads.
- 3.2.1.21 Ensure chemical use is appropriate to the circumstances and takes into account the maintenance of soil productive capacity.

3.2.2 Conservation of Biodiversity

Operational Goal

Planning, harvesting, roading and silvicultural treatment in private **native forests** specifically address the conservation of **biodiversity**, in accordance with relevant legislation and regulations, and considering relevant scientific knowledge.

Harvested **native forest** is managed to ensure that the **forest** is regenerated and the **biodiversity** of the native forest is perpetuated.

The natural floristic composition and representative gene pools are maintained when regenerating native forests by using appropriate seed sources and mixes of dominant species.

Mandatory Actions

Addressing biodiversity conservation risks

3.2.2.1 Where fire is used in **timber production**, all practicable measures must be taken to protect all areas excluded from harvesting from the impacts of unplanned fire.

3.2.2.2 **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.

Maintaining natural floristic composition and representative gene pools

3.2.2.3 Use silvicultural systems that suit the ecological requirements of the **forest type**.

3.2.2.4 Regenerate harvested areas using species and **provenances** native to the area.

3.2.3 Forest health

Maintaining forest health is important for ensuring the long-term ecological integrity and productivity of forests. Forest health can be promoted through stand management practices such as fire application, timber harvesting, including salvage felling and thinning and weed, pest and pathogen control. Some activities may require a permit from relevant planning authorities.

Operational Goal

Forest health is monitored and maintained by employing appropriate preventative, protective and remedial measures.

Chemicals are only used where appropriate to the site conditions and are conducted with due care for the maintenance of forest health, water quality, biodiversity and soil values.

Mandatory Actions

- 3.2.3.1 Implement appropriate vehicle and equipment hygiene precautions when moving from areas of known pest plant, pest animal and pathogen infestations.
- 3.2.3.2 Implement appropriate control actions where timber production has introduced or exacerbated a pathogen or weed.
- 3.2.3.3 Report the suspected introduction of new or unknown **exotic** agents to DEPI's Biosecurity section.
- 3.2.3.4 Where Myrtle Wilt fungus (*Chalara australis*), Cinnamon Fungus (*Phytophthora cinnamomi*) or Root Rot (*Armillaria*) is known to exist, apply appropriate measures to minimise the spread of these pathogens.
- 3.2.3.5 Ensure chemical use is appropriate to the circumstances and takes into account the maintenance of biodiversity.

3.3 Roothing for Timber Production

This section covers the planning, design, construction, maintenance and use of permanent and **temporary roads** for haulage and machinery transport. This section does not consider requirements for **snigging** and **forwarding tracks**, which are covered under **coupe infrastructure** (section 3.4.2).

Timber production roads have the potential to create significant environmental impacts, particularly on water quality and **river health**. The aim of this Code of Practice is to protect a range of environmental values while allowing economic roading for timber production, management purposes and other uses.

Operational Goal

The planning and management of permanent and temporary roads for **timber** haulage and machinery transport ensures that the roads are fit for intended purpose, and protect environmental and cultural values and the safety of road users.

3.3.1 Road Planning

Mandatory Actions

3.3.1.1 Road planning and design for new and substantially upgraded roads within the property must ensure the road is adequate for the intended use, while ensuring the protection of water quality and conservation values, including **river health**.

3.3.1.2 Road planning must:

- i. locate roads to minimise risks to environmental values, particularly soil, water quality and river health, during both construction and ongoing road use; and
- ii. time construction activities to minimise risks associated with unsuitable weather conditions.

3.3.1.3 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 minimises or removes existing threats to soil, water quality or **biodiversity**.

3.3.1.4 Plans for roads must be based on field surveys to ensure all environmentally sensitive locations are identified and appropriate design and construction techniques adopted.

3.3.2 Road Design

Good road design is vital to minimise construction and maintenance costs, reduce environmental risk such as impacts to water quality, improve efficiency of haulage, and ensure public safety is maintained. It is important when designing a new road or improvements to an existing road that water is moved off the road into undisturbed vegetation to reduce the velocity (and hence erosivity) of water, and to provide the greatest possible infiltration of water into soil to trap sediments before discharge into **waterways**.

Road design includes the consideration of road location, aspect, shape, traffic frequency, type and volume, slope, topography, surface materials, as well as road infrastructure including culverts, drains, batters, bridges and fords.

Mandatory Actions

- 3.3.2.1 New or upgraded roads must be designed to a standard capable of carrying anticipated traffic with reasonable safety, and ensuring the protection of water quality and **river health**, and **biodiversity** conservation values.
- 3.3.2.2 All **fill disposal areas** and embankments must be planned and designed to minimise soil erosion, mass soil movement, and potential water quality deterioration.
- 3.3.2.3 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.
- 3.3.2.4 Appropriate drainage must be provided. Spacing of drainage outlets along a road must take into account of the **soil erodibility**, the **rainfall erosivity**, and the proximity of the road to streams.
- 3.3.2.5 Energy dissipating structures or silt traps must be used where necessary to reduce water velocity and trap sediments.
- 3.3.2.6 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.

3.3.3 Road Construction

Mandatory Actions

- 3.3.3.1 Road construction must be conducted in a manner consistent with plans and designs.
- 3.3.3.2 All **fill disposal areas** must be stabilised and rehabilitated when no longer required. Where revegetation is used to stabilise fills or embankments, the species must be suitable for the site and task, and where possible indigenous to the area.
- 3.3.3.3 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 not be left unprotected between construction activities, as this constitutes an unacceptable water pollution risk.
- 3.3.3.4 Quarry materials known to be infected with any pest plant or pathogen must not be used.
- 3.3.3.5 Road construction must ensure that:
 - i. disturbance to stream beds and banks is kept to a minimum;
 - ii. soil and rock fill is not pushed into streams, nor placed into a position where there is a risk that it can erode into a stream; and
 - iii. cement, raw concrete, soil fill and other road making materials are not spilt into watercourses during any construction.

3.3.4 Road Maintenance

Mandatory Actions

- 3.3.4.1 Roads used for **timber** haulage must be maintained to minimise erosion and protect water quality and other environmental values.
- 3.3.4.2 Road drainage systems must be maintained to minimise erosion and the discharge of sediment into **waterways**.
- 3.3.4.3 **Blading-off** of roads is only permitted where measures are in place to prevent potential adverse impacts on water quality and where effective side drainage can be maintained.

3.3.5 Suspension of Haulage

Mandatory Actions

- 3.3.5.1 Heavy vehicle traffic must not use roads in private **native forests** when persistent wet weather or road stability compromise road drainage and water quality.
- 3.3.5.2 Heavy vehicle traffic must not use roads in private native forests 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.

3.3.6 Road Closure

Mandatory Action

- 3.3.6.1 Roads no longer required for **timber production** or other management purposes, must be permanently closed and effectively drained.

3.4 Timber Harvesting

3.4.1 Timber Harvesting

Operational Goal

Timber harvesting is conducted in a manner appropriate to the site, to manage the impact on soil, water and other values including **biodiversity** and cultural heritage.

During or following wet weather conditions, timber production operations are modified or where necessary suspended to minimise risks to soil and water quality values.

Mandatory Actions

3.4.1.1 All timber harvesting, including **thinning**, must be consistent with the **Timber Harvesting Plan**.

Coupe boundaries

3.4.1.2 The location of **coupe** boundaries, **buffers**, areas excluded from harvesting and areas where special management applies must be easily distinguishable in the field.

3.4.1.3 Timber harvesting must only occur within the designated boundaries of the coupe as indicated on the Timber Harvesting Plan and where required, marked in the field, unless the timber harvesting is specifically exempted in accordance with this Code.

3.4.1.4 **Timber** must be directed to fall within the coupe boundary unless unsafe to do so. A decision to fall outside the coupe boundary must be documented on the Timber Harvesting Plan.

Timber harvesting within buffers

3.4.1.5 Timber harvesting is not permitted in buffers (identified on the Timber Harvesting Plan), except where the limited removal of the minimum number of trees is necessary for:

- i. the protection of worker safety; or
- ii. the construction of roads or stream crossings.

Removal of trees from these areas must be noted on the Timber Harvesting Plan.

3.4.1.6 Buffers must be protected from damage caused by trees felled in adjacent areas. Trees accidentally felled into buffers may be removed if significant damage and disturbance of soil and vegetation in the buffer can be avoided.

3.4.1.7 Machinery must not enter a buffer area except for the construction and use of stream crossings specified in the Timber Harvesting Plan.

3.4.1.8 Pushing of fill or harvesting debris into a buffer or construction of drain structures within a buffer is not permitted except for construction of an approved stream crossing.

Timber harvesting within filter strips

3.4.1.9 Trees may be felled from within **filter strips**. The felling of trees into filter strips must be avoided where possible.

3.4.1.10 Disturbance to soil and **understorey** vegetation from timber harvesting in filter strips must be minimised.

- 3.4.1.11 Machinery must not enter a filter strip, except at stream crossings as specified in the Timber Harvesting Plan.
- 3.4.1.12 Pushing of fill or harvesting debris into a filter strip is not permitted except for the construction of an approved stream crossing.

Timber harvesting on steep slopes

- 3.4.1.13 Timber harvesting must not occur on slopes where it 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 preventative actions undertaken.
- 3.4.1.14 Timber harvesting using ground-based machinery must be excluded from slopes greater than 30 degrees. Small areas within coupes (of less than 10 per cent of the net harvested area) that are greater than 30 degrees may be harvested where the land is assessed as capable of supporting activities without risk of soil movement.
- 3.4.1.15 Logging techniques specifically designed for steep slopes (such as cable logging) may be used on all steep slopes (exceeding 30 degrees) where the area is assessed as being capable of supporting harvesting activities without risk of soil movement.
- 3.4.1.16 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**.

3.4.2 Coupe Infrastructure

Coupe infrastructure includes log **landings** and dumps, **snigging** and **forwarding tracks** used as part of **timber production**.

Mandatory Actions

- 3.4.2.1 Log landings and dumps must not be located within areas excluded from harvesting.
- 3.4.2.2 Coupe infrastructure must be rehabilitated on completion of timber production, where not required for future timber production, using **rehabilitation** techniques that provide suitable soil conditions for the **regeneration** and growth of vegetation existing on the site prior to harvesting. Refer to section 3.5 of this Code.
- 3.4.2.3 Snigging and forwarding tracks must be placed at the greatest practicable distance from buffers and filter strips, without compromising **operator** safety.
- 3.4.2.4 Tracks must have effective drainage to prevent soil erosion. Cross-drains, where used, must be spaced and angled according to any prescriptions in planning schemes, conditions of any planning permit or other **approved** plan to prevent surface run-off and subsequent discharge of turbid water into streams or **drainage lines**.
- 3.4.2.5 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.
- 3.4.2.6 Rehabilitation of coupe infrastructure must be assessed within three years of initial treatment and, where found inadequate, remedial action must be taken.

3.4.3 Operational Restrictions

Operational Goal

During or following wet weather conditions, timber production is modified or where necessary suspended to minimise risks to soil and water quality values.

Mandatory Actions

- 3.4.3.1 Snigging and forwarding must be suspended when significant rutting is likely to be caused by machine traffic unless actions are taken to reduce that risk.
- 3.4.3.2 Snigging and forwarding must be suspended when water begins to flow along tracks, threatening stream water quality or soil values, unless appropriate remedial actions have been taken to protect those values.
- 3.4.3.3 Timber production on landings must be suspended when continuation would result in significant deterioration of the landing surface causing increased levels of compaction or mixing of bark through soil on the landing surface.

3.5 Forest Regeneration and Management

This section covers the **regeneration** of private **native forest** and the subsequent management of such **stands**, where required. Unless required for another approved purpose, private native forests in Victoria are to be successfully regenerated to approximate the original **forest** composition.

3.5.1 Regeneration

Regeneration of private native forests must be in accordance with *Permitted clearing of native vegetation – Biodiversity assessment guidelines (2013)* an incorporated document in the VPPs and all planning schemes.

Operational Goals

Harvested native forest is managed to ensure that the forest is regenerated and that the **biodiversity** of the native forest is perpetuated.

The natural floristic composition and representative gene **pools** are maintained when regenerating native forests by using appropriate seed sources and mixes of dominant species.

Mandatory Actions

- 3.5.1.1 Action must be taken to secure the **regeneration** of harvested **coupes**, except where:
- i. the land is to be used for an approved purpose for which **native vegetation** is not compatible (for example, approved services, pre-existing apiary sites and infrastructure, and structures); or
 - ii. **timber** has been harvested by **thinning a stand**; or
 - iii. the **stocking** of seedlings or regrowth is assessed as sufficient through natural **regeneration** processes.
- 3.5.1.2 Silvicultural methods for regeneration must suit the ecological requirements of the **forest type** and local conditions.
- 3.5.1.3 Where fire is used in regeneration, all practicable measures must be taken to protect all areas excluded from harvesting (including **buffers** and **filter strips**).
- 3.5.1.4 Private native forest must be regenerated following **timber harvesting**, with species native to the area, wherever possible using the same **provenances**, or if not available, from an ecologically similar locality. An ecologically similar locality for a species is from a similar elevation, aspect, soil type and/or climate, preferably as close as possible to the harvested area.
- 3.5.1.5 Except where past management practices may have altered species composition, regeneration must aim to approximate the composition and spatial distribution of **canopy** species common to the coupe prior to harvesting, where they can be determined.
- 3.5.1.6 Where mechanical disturbance is used, it must be undertaken with due consideration of **erosion risk** potential and the proximity of **waterways** (refer to Section 3.2).

3.5.2 Stocking Assessment and Remedial Treatment

Operational Goal

Stocking and early seedling growth is monitored and remedial action is taken where necessary to successfully regenerate harvested areas of **native forests**.

Mandatory Actions

- 3.5.2.1 Stocking on harvested **coupes** must be assessed within three years of treatment, to determine whether **regeneration** has been successfully achieved and to ensure that re-treatment occurs where necessary.
- 3.5.2.2 Where stocking, health or early growth is inadequate, remedial work must be conducted as soon as practicable to obtain adequate regeneration. Further assessment must be undertaken following remedial treatment.
- 3.5.2.3 The results of assessment must be recorded for future reference.

3.5.3 Tending

Tending includes **stand** improvement (such as overwood removal or reduction), **thinning**, fertilising and other silvicultural practices to promote stand health and **timber production**. Appropriate action may be taken to tend native forest stands where consistent with environmental safeguards and offsite impacts are minimised.

Operational Goal

The productive capacity and other values of the **forest** are maintained or enhanced by appropriate tending of stands.

Mandatory Actions

Tending must be planned and conducted in a manner that minimises adverse impacts on areas that are excluded from harvesting.

4 Code Application – Plantations

Plantations are managed **stands** of trees of either native or **exotic** species, planted or sown primarily for **timber production** purposes. This Chapter applies to timber production in all plantations, except those managed by the Department of Environment and Primary Industries (which are subject to Chapter Two).

Plantation development is regulated by the Victoria Planning Provisions (VPP) and a permit is generally not required. Refer to your local planning scheme for details. The Code is an incorporated document in the VPP.

4.1 Plantation Planning and Design

4.1.1 Plantation Planning and Design

Operational Goals

Plantations on **private land** are designed, managed and operated in accordance with this Code.

Local government is appropriately informed of **new plantation** development on private land by the lodgement of either a **Plantation Development Notice** or a planning permit, in accordance with this Code.

Mandatory Actions

- 4.1.1.1 Plantation design must take account of environmental values, and be consistent with relevant fire protection requirements.
- 4.1.1.2 For new plantations where a planning permit is not required, a Plantation Development Notice must be lodged with the local government not less than 28 days prior to the commencement of **site preparation**. The 28 day minimum lodgement time may be waived with the agreement of the local government.
- 4.1.1.3 A Plantation Development Notice must include:
 - i. the landowners name and address;
 - ii. the total area to be planted;
 - iii. species to be planted;
 - iv. year of planting;
 - v. a map of the plantation, showing:
 - the location of the plantation;
 - any access roads or tracks;
 - power lines;
 - any retained **native vegetation** within the plantation boundaries.

4.2 Environmental Values in Plantations

Environmental values such as **biodiversity**, carbon sequestration, salinity control and water quality in plantations must be considered at all stages, from planning through to harvesting and re-establishment. Adverse impacts from plantations on environmental values, particularly water quality and **river health**, can be minimised by appropriate planning and management.

4.2.1 Water Quality, River Health and Soil Protection

Waterways include all permanent and **temporary streams, pools, wetlands** and **drainage lines**^{*}. Well managed plantation establishment, **tending**, roading and harvesting near waterways may avoid unacceptable off-site impacts.

Operational Goals

Water quality and river health values are maintained or improved in plantations by protecting waterways from disturbance.

Soil erosion and water pollution are minimised by avoiding timber production in inappropriate areas or slopes and undertaking necessary preventive measures.

Mandatory Actions

Waterways

- 4.2.1.1 The entry of soil and other pollutants into waterways must be avoided as far as is practicable.
- 4.2.1.2 Timber production (including establishment, tending, roading, harvesting and re-establishment) must be planned and conducted in such a manner as to minimise mass movement or sedimentation of waterways.
- 4.2.1.3 Machinery activity within 20 metres of any waterway must be kept to the minimum necessary, to avoid soil disturbance.
- 4.2.1.4 Machinery activity must not occur within five metres of the saturated zone of a permanent or temporary stream (except for the minimum necessary to construct stream crossings), or wetland.
- 4.2.1.5 Crossing of waterways with ground-based machinery must be avoided, except when constructing or using a designated crossing. Where temporary crossings or log culverts are used, they must be removed immediately after harvesting or any subsequent replanting work for which they are required, using a technique that minimises soil disturbance.
- 4.2.1.6 Tree **extraction** must not cause disturbance to the bed or bank of permanent or **temporary streams**. Damage to associated **riparian vegetation** must be minimised.
- 4.2.1.7 Retained native vegetation along a waterway must be protected from damage caused by ground based timber production. Trees accidentally felled into retained vegetation or across a waterway may only be removed with minimal disturbance to vegetation or soil.

^{*} Note that artificial **drainage lines** (ditches) are not considered waterways for the purpose of this Code.

- 4.2.1.8 Additional measures to protect water quality and aquatic habitat, including increasing the zone of minimal machinery activity, must be adopted where there is a high local risk due to:
- i. the erodibility of soils;
 - ii. **rainfall erosivity**;
 - iii. steep slopes;
 - iv. particular riparian habitat values;
 - v. the intensity and magnitude of the timber production operation; and
 - vi. any particular requirements of a water supply off take point.

Steep Slopes

- 4.2.1.9 Timber production (including establishment, **tending**, roading, harvesting and re-establishment) must be planned and conducted in such a manner as to not compromise soil stability or lead to mass movement or sedimentation of waterways.
- 4.2.1.10 Timber production must not occur on slopes where they cannot be conducted safely, or if it 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 preventative actions applied.
- 4.2.1.11 Soil and water values must be protected by the limitation of **site preparation** and timber production on steep slopes or on lesser slopes of unstable soil where erosion hazard is high.
- 4.2.1.12 On slopes greater than 30 degrees with low or medium soil erosion hazard, and slopes less than 30 degrees with a high or very high soil erosion hazard, additional measures must be taken to avoid movement of soil into streams, such as the adoption of **cable harvesting** or the provision of appropriate **buffers** and **filter strips**.

4.2.2 Conservation of Biodiversity

Operational Goal

Timber production planning and implementation in plantations address the conservation of biodiversity, including **rainforest**, in accordance with relevant laws.

Mandatory Actions

- 4.2.2.1 Retained **native vegetation** must be protected from damage caused by timber production.
- 4.2.2.2 Any burning undertaken must be planned and managed to minimise damage to retained **native vegetation** both within and outside the operational area.

4.3 Establishment and Management of Plantations

Establishment activities for plantation development include **site preparation**, chemical usage and processes for maintaining **forest** health.

4.3.1 Site Preparation

Site preparation activities should be appropriate for successful tree establishment and growth, whilst minimising potential adverse environmental impacts.

Operational Goal

Site preparation is appropriate to the characteristics of the particular site, and take into account the maintenance of soil and water values as well as site productivity.

Mandatory Actions

- 4.3.1.1 If waste **timber** and debris are to be burned, then burning must minimise damage to retained **native vegetation** within or outside the operational area.
- 4.3.1.2 Burning must not be conducted under power lines except with approval from the electricity supply and distribution authority.
- 4.3.1.3 Where windrows or heaps are created, soil within them must be kept to a minimum.

4.3.2 Chemical Usage

Fertilisers may be applied at establishment and during the life of the plantation to stimulate growth and correct nutrient deficiencies. Chemicals may also be used to limit competition from grasses and weeds to maximise tree growth or to manage tree diseases or nutrient deficiencies affecting tree health.

Operational Goal

Fertiliser and chemicals are only used where appropriate to the site conditions and circumstances and with care for the maintenance and protection of water quality, **biodiversity**, soil values and neighbouring land uses.

Mandatory Actions

- 4.3.2.1 Chemical use must be appropriate to the circumstance and conducted with due consideration given to the maintenance of water quality, soil and biodiversity. Potential off-site, non-target impacts must be minimised.
- 4.3.2.2 When using herbicides or **pesticides** in a declared **Special Water Supply Catchment**, the relevant Water Authority must be notified prior to application.

4.3.3 Plantation Health

Plantation health may be promoted through management practices such as **thinning**, salvage harvesting, weed, pest and disease control, to ensure the ongoing viability of the **stand** and avoid impacts on nearby landowners.

Operational Goal

Plantation health is monitored and maintained by employing appropriate preventative, protective and remedial measures.

Mandatory Actions

- 4.3.3.1 If the introduction of an **exotic** agent is suspected, DEPI's Biosecurity section must be informed.
- 4.3.3.2 Where there is a known risk of introducing pests and pathogens, the risk must be minimised through appropriate treatment of equipment when moving from known infected areas.
- 4.3.3.3 Trees in the vicinity of power lines that are suffering from damage or disease must be removed where they are at risk of falling and making contact with power lines.

4.4 Plantation Roding

This section covers the planning, design, construction, maintenance and use of plantation roads and stream crossings.

Operational Goal

The management of all roads that are part of **timber production** takes account of environmental and cultural values, the safety of road users and the intended use of the road.

4.4.1 Road Planning

Mandatory Actions

4.4.1.1 Road planning for new roads must:

- i. identify and record possible environmental risks and construction difficulties, so that adequate design standards can be used, and so that construction activities can be timed to minimise risks associated with wet weather;
- ii. locate roads to minimise risks to environmental values, particularly soil, water quality and **river health**, during both construction and ongoing road use, while ensuring road user safety;
- iii. minimise the number of stream crossings.

4.4.2 Road Design

Road design includes the consideration of traffic type and volume, surface materials, road shape as well as road infrastructure including culverts, drains, batters, bridges and fords.

Good road design is vital for maintaining water quality. It is important to control the speed (and hence erosivity) of water, and to provide the greatest possible infiltration to trap sediments before discharge into **waterways**.

Mandatory Actions

- 4.4.2.1 Plantation roads must be designed to a standard capable of carrying anticipated traffic with reasonable safety, and meeting Code requirements, particularly water quality.
- 4.4.2.2 All **fill disposal areas** and embankments must be planned and designed to minimise soil erosion, mass soil movement, and potential water quality deterioration.
- 4.4.2.3 Stream crossings must be designed according to the nature, size and period of flow (both pre and anticipated post-harvest) and characteristics of the bed and banks of the stream.
- 4.4.2.4 Appropriate drainage must be provided. Spacing of drainage outlets along a road must take into account soil erodibility, the rainfall erosivity, and the proximity of the road to streams. Energy dissipating structures or silt traps must be used where necessary to reduce water velocity and trap sediments.
- 4.4.2.5 Drainage onto exposed erodible soil or over fill slopes must be avoided where possible. Structures and earthworks required to avoid such discharges must be identified during planning and construction as required.

4.4.2.6 Stream crossings must be appropriately designed to minimise barriers to the passage of fish and other aquatic fauna.

4.4.3 Road Construction

Mandatory Actions

- 4.4.3.1 Road construction must be conducted in a manner consistent with plans and designs.
- 4.4.3.2 All fill disposal areas must be stabilised and rehabilitated when no longer required.
- 4.4.3.3 Adequate temporary stabilisation must be employed to deal with site earthwork drainage and erosion control if road construction is halted or suspended for any reason.
- 4.4.3.4 Quarry materials known to be infected with any pest plant or pathogen must not be used.
- 4.4.3.5 Road construction must ensure that:
 - i. disturbance to stream beds and banks is kept to a minimum;
 - ii. soil and rock fill is not pushed into streams, nor placed into a position where there is a risk that it will erode into a stream; and
 - iii. cement, raw concrete, soil fill and other road making materials are not spilt into watercourses during any construction.

4.4.4 Road Maintenance

Mandatory Actions

- 4.4.4.1 Roads used for **timber** haulage must be maintained to minimise erosion and protect water quality and other environmental values.
- 4.4.4.2 Road drainage systems must be maintained to minimise erosion and the discharge of turbid water into **waterways**.
- 4.4.4.3 Blading off of roads is only permitted where measures are in place to prevent potential adverse impacts on water quality and where effective side drainage can be maintained.

4.4.5 Suspension of Haulage

Mandatory Actions

- 4.4.5.1 Heavy vehicle traffic must not use roads in plantations when persistent wet weather or road stability compromise road drainage and water quality.
- 4.4.5.2 Heavy vehicle traffic must not use roads in plantations 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.

4.4.6 Road Closures

Mandatory Actions

- 4.4.6.1 Roads must be closed (either temporarily or permanently) and effectively rehabilitated where they are no longer required or where their continued use will threaten environmental values.
- 4.4.6.2 Roads that are permanently closed must be adequately drained.

4.5 Timber Harvesting

Timber harvesting is the felling of trees, and includes **thinning** of plantations. Mandatory Actions relevant to **timber production** that are necessary for the protection of environmental values are described in section 4.2.

4.5.1 Timber Harvesting Plan

Operational Goal

A **Timber Harvesting Plan** is prepared in accordance with the requirements of this Code and submitted to the relevant **local government** prior to the commencement of harvesting operations.

Mandatory Action

- 4.5.1.1 A Timber Harvesting Plan must be submitted to local government not less than 28 days before the commencement of any harvesting operations. The 28 day minimum lodgement time may be waived with the agreement of local government.
- 4.5.1.2 When preparing a Timber Harvesting Plan the following issues must be addressed:
 - i. protection of relevant environmental and cultural heritage values;
 - ii. methods to minimise impacts on water quality and **river health** from timber harvesting and associated roads; and
 - iii. any necessary arrangements with the distribution authority for the electrical operational control of power lines during harvesting.
- 4.5.1.3 The Timber Harvesting Plan must include:
 - i. landowners name and address
 - ii. the months during which operations are to occur;
 - iii. estimated timber volumes to be harvested;
 - iv. proposed haulage routes;
 - v. a map showing:
 - the plantation or **coupe** location;
 - significant features within the coupe boundary including **waterways** and any areas reserved or specifically managed for protection of **biodiversity** or cultural heritage values;
 - the area(s) to be harvested;
 - new or upgraded roads;
 - power lines;
 - plantation infrastructure
 - vi. conditions applying to the timber production operation, including any permit conditions where required; and
 - vii. fire protection measures.

- 4.5.1.4 A copy of the **Timber Harvesting Plan** and any supporting prescriptions must be provided to the **harvesting team leader**. The Plan's implementation, including specific prescriptions to be applied to the plantation, must be discussed with him/her. These documents must be available on site while **timber production** is in progress. All amendments and variations to operational requirements (such as the removal of trees from **buffers** for safety purposes) must be documented in the Timber Harvesting Plan and dated by the harvesting team leader.
- 4.5.1.5 A Timber Harvesting Plan is current for 24 months following lodgement with local government.
- 4.5.1.6 A Timber harvesting Plan applies to a single coupe, a number of coupes or to an entire plantation's timber harvesting operations.
- 4.5.1.7 Local government may accept the lodgement of a Timber Harvesting Plan for multiple locations and operations rather than individual Timber Harvesting Plans if it is satisfied that the composite Timber Harvesting Plan adequately covers the information required for all coupes included in the Plan.
- 4.5.1.8 For larger operations covering several coupes over a period of years, a Scheduling Plan may be prepared and submitted (with the agreement of local government), which identifies:
- i. coupe general locations;
 - ii. planned operational periods;
 - iii. Haulage routes; and
 - iv. expected volumes.
- 4.5.1.9 A Scheduling Plan replaces the need to include the information from 4.5.1.8 in a Timber Harvesting Plan. Submitting a Scheduling Plan does not remove the requirement for the remaining items in 4.5.1.3 to be addressed in a Timber Harvesting Plan and submitted at the appropriate time.
- 4.5.1.10 A Scheduling Plan is current for up to five years following lodgement with local government, however any significant variations must be communicated to local government prior to their implementation.

4.5.2 Timber Harvesting

Operational Goal

Timber harvesting is conducted in a manner appropriate to the site, to manage the impact on soil, water and other values, including **biodiversity** and cultural heritage.

Mandatory Action

- 4.5.2.1 All timber harvesting, including **thinning**, must be consistent with the Timber Harvesting Plan.
- 4.5.2.2 The location of boundaries must be easily distinguishable in the field.

4.5.3 Plantation Infrastructure

The operation of a harvesting **coupe** generally requires the development and use of specific infrastructure, including log **landings** and dumps, and **snigging** and **forwarding tracks**. The planning and use of plantation infrastructure must be undertaken in a manner that minimises impacts on environmental values.

Mandatory Actions

- 4.5.3.1 Plantation infrastructure (including tracks) must be designed, located, constructed and maintained to minimise potential adverse impacts on soil and water quality.
- 4.5.3.2 The placement of log landings and dumps must avoid areas that have been excluded from harvesting specifically for the purpose of protecting or managing values such as biodiversity conservation, waterways or cultural heritage.
- 4.5.3.3 The area of log landings and log dumps must be minimised without compromising safety.
- 4.5.3.4 All infrastructure must be stabilised and rehabilitated to minimise **erosion risk** upon completion of **timber production**, where not required for future timber production. All tracks must be effectively rehabilitated to prevent soil erosion.
- 4.5.3.5 **Extraction** and forwarding tracks must be located to minimise potential adverse impact on soil and water quality and maintain effective drainage to prevent soil erosion. They should be placed at the greatest practicable distance from **waterways**, without compromising safety.
- 4.5.3.6 Tracks must have effective drainage to prevent soil erosion. Cross-drains, where used, must be spaced and angled to prevent surface run-off and subsequent discharge of turbid water into streams or **drainage lines**.
- 4.5.3.7 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.

4.5.4 Operational Restrictions

Operational Goal

During or following wet weather conditions, timber production is modified or where necessary suspended to minimise risks to soil and water quality values.

Mandatory Actions

- 4.5.4.1 Harvesting operations must be restricted or stopped where there is a risk to soil and water quality values during or following wet weather conditions.
- 4.5.4.2 Extraction, forwarding and haulage must be suspended when water begins to flow along tracks, except where appropriate preventive actions have been taken to address risks to off-site water quality.

Appendix A

Legislation, Regulations and Policies applying to timber harvesting operations on State forest and private land in Victoria.

Appendix A provides a list of legislation, regulations and policies applying to **timber harvesting operations** that are in addition to the Code. Appendix A is not an exhaustive list.

| Commonwealth Legislation | Public Land | Private Land |
|--------------------------------------------------------------------|--------------------|---------------------|
| Aboriginal and Torres Strait Islander Heritage Protection Act 1984 | ✓ | ✓ |
| Australian Heritage Commission Act 1975 | ✓ | ✓ |
| Environment Protection and Biodiversity Conservation Act 1999 | ✓ | ✓ |
| Export Control Act 1982 | | ✓ |
| National Environment Protection Measures (Implementation) Act 1998 | ✓ | ✓ |
| Native Title Act 1993 | ✓ | ✓ |
| Quarantine Act 1908 | ✓ | ✓ |
| Regional Forests Agreement Act 2002 | ✓ | ✓ |

| State legislation | Public Land | Private Land |
|-----------------------------------------------------------------|--------------------|---------------------|
| Aboriginal Heritage Act 2006 | ✓ | ✓ |
| Accident Compensation Act 1985 | ✓ | ✓ |
| Agricultural and Veterinary Chemicals (Control of Use) Act 1992 | ✓ | ✓ |
| Agricultural and Veterinary Chemicals Act 1994 | ✓ | ✓ |
| Building Act 1993 | ✓ | ✓ |
| Catchment and Land Protection Act 1994 | ✓ | ✓ |
| Climate Change Act 2010 | ✓ | ✓ |
| Conservation, Forests and Lands Act 1987 | ✓ | ✓ |
| Country Fire Authority Act 1958 | ✓ | ✓ |
| Crown Land (Reserves) Act 1978 | ✓ | |
| Dangerous Goods Act 1958 | ✓ | ✓ |
| Electricity Safety Act 1998 | ✓ | ✓ |
| Emergency Management Act 1986 | ✓ | ✓ |
| Environment Protection Act 1970 | ✓ | ✓ |
| Extractive Industries Development Act 1995 | ✓ | ✓ |
| Fences Act 1968 | | ✓ |
| Firearms Act 1996 | ✓ | ✓ |
| Fisheries Act 1995 | ✓ | ✓ |
| Flora and Fauna Guarantee Act 1988 (Vic) | ✓ | ✓ |
| Forests Act 1958 | ✓ | ✓ |
| Forest Rights Act 1996 | | ✓ |
| Heritage Act 1995 | ✓ | ✓ |
| Heritage Rivers Act 1992 | ✓ | ✓ |
| Land Act 1958 | ✓ | ✓ |
| Land Conservation (Vehicle Control) Act 1972 | ✓ | |
| Local Government Act 1989 | | ✓ |

| | | |
|------------------------------------------------------|---|---|
| National Parks Act 1975 | ✓ | |
| Occupational Health and Safety Act 2004 | ✓ | ✓ |
| Planning and Environment Act 1987 (Vic) | ✓ | ✓ |
| Planning and Environment (Planning Schemes) Act 1996 | | ✓ |
| Plant Health and Plant Products Act 1995 | ✓ | ✓ |
| Prevention of Cruelty to Animals Act 1986 | ✓ | ✓ |
| Reference Areas Act 1978 | ✓ | |
| Road Management Act 2004 | ✓ | ✓ |
| Safety on Public Land Act 2004 | ✓ | |
| Summary Offences Act 1966 | ✓ | |
| Sustainable Forests (Timber) Act 2004 | ✓ | |
| Victorian Plantations Corporation Act 1993 | ✓ | ✓ |
| Water Act 1989 | ✓ | ✓ |
| Wildlife Act 1975 | ✓ | ✓ |

| Regulations | Public Land | Private Land |
|-------------------------------------------------------------------------|--------------------|---------------------|
| Agricultural and Veterinary Chemicals (Control of Use) Regulations 2007 | ✓ | ✓ |
| Country Fire Authority Regulations 2004 | | ✓ |
| Dangerous Goods (Explosives) Regulations 2011 | ✓ | ✓ |
| Dangerous Goods (HCGD) Regulations 2005 | ✓ | ✓ |
| Dangerous Goods (Storage and Handling) Regulations 2012 | ✓ | ✓ |
| Electricity Safety (Electric Line Clearance) Regulations 2010 | ✓ | ✓ |
| Electricity Safety (Network Assets) Regulations 1999 | ✓ | ✓ |
| Extractive Industries Development Regulations 2007 | ✓ | ✓ |
| Flora and Fauna Guarantee Regulations 2011 | ✓ | |
| Forests (Fire Protection) Regulations 2004 | ✓ | |
| Forests (Miscellaneous) Regulations 2000 | ✓ | |
| Land Act Regulations 1996 | ✓ | ✓ |
| Land Conservation (Vehicle Control) Regulations 2013 | ✓ | |
| Road Management (General) Regulations 2005 | ✓ | |
| Sustainable Forests (Timber Harvesting) Regulations 2006 | ✓ | |

| Policy | Public Land | Private Land |
|------------------------------------------------------------------------------------------|--------------------|---------------------|
| Code of Practice for Bushfire Management on Public Land 2012 | ✓ | |
| Code of Practice for Safety in Forest Operations (1990) | ✓ | ✓ |
| National Forest Policy Statement (1992) | ✓ | ✓ |
| Victoria's Native Vegetation Management - A Framework for Action (2002). | ✓ | ✓ |
| Our Forests, Our Future (2002) | ✓ | |
| State Environment Protection Policy (Air Quality Management) | ✓ | ✓ |
| State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) | ✓ | ✓ |
| State Environment Protection Policy (Groundwaters of Victoria) | ✓ | ✓ |
| State Environment Protection Policy (Waters of Victoria) | ✓ | ✓ |
| Victorian Pest Management Framework (2002) | | |
| Victorian River Health Strategy (2002) | ✓ | ✓ |
| Victorian Biodiversity Strategy (1997) | ✓ | ✓ |

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