



Assessment of Code of Practice for Plantation Forestry: Victoria

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Prepared for Australian Government Department of Agriculture, Fisheries and Forestry

May 2012

Cover Photo: A view of several land uses in the Strzelecki Ranges, Victoria, including agriculture, pine and eucalypt plantations, and native vegetation in streamside buffers.

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1. SUMMARY

The Victorian code of practice for plantations and inter-related aspects of the forest practices system, including its implementation, were assessed for their effectiveness in meeting the ‘Forest Practices Related to Wood Production in Plantations: National Principles’¹.

‘The Code of Practice for Timber Production 2007’ (the Code) was produced by the Department of Sustainability and Environment (DSE). Local government is responsible for its implementation. The Code focuses on achieving a broad set of environmental goals and is not prescriptive as to how these can be achieved. Victoria’s plantation estate is almost entirely privately owned and managed by large companies. In general, achievement of the environmental goals relies on synergies between these companies and local government during the planning and compliance audit phases, and on internal company systems of forest management. These companies are certified to meet international standards of environmental care, and are supported by plantation company expertise aimed at achieving positive environmental outcomes. During our review we found a generally positive and participatory attitude towards the Code and implementation by all stakeholders including DSE, DPI, plantation companies, and local government.

When we checked with bodies where complaints about plantations practices are received, we were told that there was no major environmental degradation resulting from plantation forestry activities. However, the Victorian system does not achieve consistent coverage of compliance audit across the State, and lacks a method for capturing and summarising learnings from application of the Code that could form a basis for continuous improvement of the Code itself and its implementation. There is also limited availability of clear and consistent guidelines to support the Code, especially for complex areas such as the protection of soil and water values.

We conclude that the Code and its implementation in Victoria are generally achieving the national principles of environmental care, but that further improvements are highly desirable.

The main areas for improvement are listed below, the first three of which are particularly important to building a more reliable forest practices system in Victoria:

- Provide clear guidelines for achieving the goals stated in the Code and its companion documents, especially for the benefit of local government and small-scale growers. The current code may be deficient in guiding some growers on how to achieve the desired environmental outcomes.
- Facilitate ongoing improvement by establishing a mechanism for the systematic capture of experience and information from audits at a state or regional level, and for use of this information to improve the Code and its implementation. This is especially important in dealing with regional-scale issues including water availability, and the potential cumulative impacts of many small-scale plantings on the local environment.
- Strengthen the skill base of local government, including the resources available to key staff, to minimise the level of unevenness across the state in Code application and compliance auditing.

¹ <http://www.daff.gov.au/forestry/plantation-farm-forestry/principles>

- Require plantation managers to consider the risks to future plantation productivity if harvest systems are used that remove branch and foliage residues from the site.
- Increase effort to control the escape of pine ‘wildlings’ from plantations into some adjacent native forests in western Victoria.

2. BACKGROUND

Codes of forest practice are integral to developing and managing forest plantations in Australia. Their development and implementation are a responsibility of State and Territory governments. The Commonwealth Government has a role in sustainable forest management at the national level, which is implemented through various Acts, regulations and policies (Plantations2020 2007). These include:

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Export Control Act 1982*
- Export Control (Unprocessed Wood) Regulations 1986
- Export Control (Hardwood Wood Chip) Regulations 1996
- Export Control (Regional Forest Agreements) Regulations 1997
- National Forest Policy Statement
- *Quarantine Act 1908*
- *Regional Forest Agreements Act 2002*
- Renewable Energy (Electricity) Regulations 2001

The Export Control (Unprocessed Wood) Regulations 1986 (section 4) requires the Federal Minister for Agriculture, Fisheries and Forestry to take into account the outcomes of a scientific assessment of a State or Territory code of practice in relation to its effectiveness in meeting the ‘Forest Practices Related to Wood Production in Plantations: National Principles’ (National Principles, Appendix A).

The outcome of this assessment is part of the decision making process by the Minister, if businesses in the State or Territory are to be exempt from requiring export licences for unprocessed wood as chips or logs. This assessment has been conducted in close consultation with the State and Territory agencies responsible for developing and administering the Codes, and with input from other relevant parties including local government, planning authorities, and public and private plantation forest owners or managers. Codes in all States and Territories were previously assessed by CSIRO (Acronyms, Appendix B) during 1996-2002 (Victoria in 1997).

In July 2010, CSIRO was commissioned by the Department of Agriculture, Fisheries and Forestry (DAFF) to undertake a second assessment. In addition, after this assessment, CSIRO was requested by DAFF to comment on the National Principles (Terms of Reference, Appendix C). This report is our assessment of the Victorian Code.

3. METHOD OF ASSESSMENT

3.1 General Approach

The assessment followed a consistent approach across all States and Territories:

- Review of the scientific validity of the goals and guidelines contained in the Code, the way the Code is implemented, and how environmental performance and other aspects of compliance are monitored. The process did not fully evaluate environmental outcomes in the field, but observations at a sample of sites and discussions with stakeholders were used as the basis for assessing the impacts of forest operations on the environment.
- Effectiveness in complying with the National Principles was assessed against eight criteria based on responses to a set of questions exploring each criterion. These were agreed between DAFF, representatives of all States and Territories, and CSIRO at the outset.
- Review of the relevant regulations (e.g. planning) and guidelines applicable to the regional and local contexts that affect risk to environmental values.
- Discussions with key stakeholders.
- Visits to and discussions at representative sites where plantation forestry operations including harvesting could impact on the environment.
- In each State and Territory, we also sought information from organisations not concerned with wood production (e.g. Environment Protection Authority, local government, and one or more Aboriginal organisations) that could advise on potential environmental impacts and provide comments.

Although this assessment is focussed on the Code, it also took into account guidelines, policies and regulations that contributed to overall environmental outcomes, e.g. State-wide environmental plans for biodiversity, catchment management plans, company internal processes, and forest management certification.

3.2 Approach in Victoria

Our work was facilitated by the Victorian Department of Sustainability and Environment (DSE), which is responsible for developing the Code. We gathered information during two visits to Victoria, during which we consulted widely (Organisations consulted, Appendix D). Key documents reviewed include:

- The Code of Practice for Timber Production 2007 (hereafter referred to as the Code)
- A Companion to the Code of Practice for Timber Production 2007, for Chapter 4: Application of the Code – Plantations, Interpretations and guidelines for plantation growers, plantation managers, and Local government bodies (developed by the Department of Primary Industries – DPI).

- Plantation management guidelines used by major plantation companies
- Plantation management plans and compliance reports
- Audit reports.

Field visits and discussions were conducted with local planners and managers to explore how the Code and related regulations were applied to achieve the intent of the National Principles.

A map showing the distribution of plantations in Victoria is provided in Fig. 1. In 2010, Victoria had about 0.43 M hectares of plantations (mainly *Pinus radiata*, *Eucalyptus globulus*, *E. nitens* and *E. regnans*), which is 21% of the national total of 2 M hectares (Gavran and Parsons 2011).

3.3 CSIRO Team

The CSIRO team consisted of Philip Smethurst (Project Leader), John Raison, Sadanandan Nambiar, Alan House, and Bradley Moggridge, which covered all fields of expertise required and it specifically included sustainable plantation management, soils, nutrition, hydrology, biodiversity, conservation, and cultural heritage. Smethurst, Raison, Nambiar and House participated in the field visits. Moggridge conducted a desk-top assessment of cultural heritage values, including contact with relevant stakeholders.

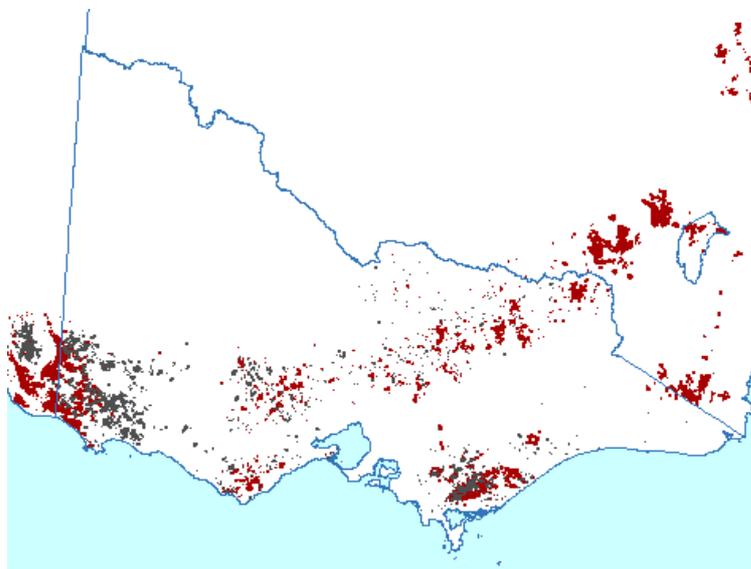


Figure 1. Map showing the location of plantations in Victoria and neighbouring areas in 2005 (from the Plantation Information Network website of the Australian Bureau of Agricultural and Resource Economics and Sciences <http://adl.brs.gov.au/mapserv/plant/index.phtml>). Hardwood plantations (mainly eucalypts) are shaded as grey, and softwoods (mainly pines) as red. Regional maps for 2010 are available in Gavran and Parsons (2011).

3.4 Discussions and Field Visits

The team visited Victoria twice during the assessment for a total of four days (Meetings and field visits, Appendix E). During these visits and follow-up contacts with key stakeholders (Appendix D) we gathered the required information.

4. INTRODUCTORY COMMENTS ON THE VICTORIAN CODE

In Victoria all forest management activities related to timber production are subject to the Code. Several sections of the Code apply to plantations, i.e. Explanatory Notes, Code Principles (Chapter 1), and Plantations (Chapter 4). This Code was an outcome of the 10-yearly review process prescribed in the Code and managed by the Department of Sustainability and Environment. Major changes from the previous version of the Code relevant to this assessment are:

- The current Code sets required environmental outcomes. It is not prescriptive, but it provides broad processes and a guide to regulations. Its application is the responsibility of both the plantation manager and the relevant local government body (i.e. shire or council).
- Plantations are dealt with in a separate section of the Code (Chapter 4); previously plantation provisions were integrated with those of native forests. A draft ‘Code companion’ has been produced to assist in the interpretation and provision of guidelines for the plantation section of the Code (DPI 2009a).

The Code addresses both native forests and plantations on both public and private land. Each section of the Code includes operational goals, mandatory actions, legal requirements, and guidance. All commercial plantations in Victoria are owned and managed privately. Some major plantation companies are certified for forest management to one or both of the internationally recognised forest certification schemes, i.e. Forest Stewardship Council (FSC) or the Australian Forestry Standard (AFS).

Local governments are responsible for overseeing implementation of the Code as part of their land use planning process. All new commercial plantation developments over 5 hectares in the farming zone or rural activity zone must lodge a Plantation Development Notice (*notice*) with local government, unless a planning permit (*permit*) is required. *Notices* do not require approval by local government, but they need to be checked by local government and they must meet the conditions listed in the table of uses for the zone. If they cannot meet these conditions, a *permit* will be required. *Permits* may be also required under a schedule to the zone, but the area specified cannot be less than 40 hectares. *Permits* can also be required where an overlay for other special values applies, e.g. an erosion management overlay. The overlay triggers a permit for the works, but it does not control the land use. If native vegetation is to be cleared during the establishment or harvesting of a plantation, a *permit* is required, as it is for all land users, unless an exemption applies. When harvesting an plantation, a timber harvesting plan must be lodged with local government prior to work commencing, but this plan does not require approval by local government. The Code does not apply to 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 5 hectares or less are also exempt from the Code, as are plantings established for non-commercial purposes.

5. CRITERION 1: COMPLIANCE OF PLANTATION MANAGEMENT WITH RELEVANT PLANNING SCHEMES AND LEGISLATION

5.1 Relevant National Principles and Questions

National Principle: 1.3

1.3	Plantation management should comply with State and regional conservation and catchment management objectives, relevant planning schemes and legislation.
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a) Are the processes adequate to meet this criterion?

5.2 Existing Processes

Plantation developers or those planning to harvest wood from plantations are required as a minimum, to submit prior to commencement of the activity a *notice* of development, or a timber harvesting plan, respectively. Local government verifies the information in the *notice* or harvesting plan against overlays for various attributes that might restrict the activity or require it to proceed according to a particular guideline. In such a case, the applicant needs to prepare a *permit* application that requires additional detail, to be approved by local government. Most plantation developers seem to be able to determine if a *permit* is needed without providing a notice, and if so proceed directly with a *permit* application. Some local government planning schemes require permits for any plantation > 40 ha, even if the land is zoned Farming and Rural Activity (Hirst 2008). Local government is required to conform with state-wide planning guidelines that include zoning for land use, and the need to conform to a wide range of other planning activities, e.g. native vegetation management, and heritage values. In practice, *permits* are rarely required.

Plantation establishment of less than 5 hectares within a farm, or as agro-forestry, are exempt from the Code, but new plantation establishment of any size not classed as agro-forestry requires a *notice* to be placed with local government. However, it was reported to us by one local government body that most agro-forestry growers provide a *notice* voluntarily in order to secure the harvesting rights. Hence, local government is informed of all plantation developments.

Timber harvesting plans should be lodged with local government at least 28 days before harvesting; this time requirement may be waived with the agreement of local government. Approval of a plan is not required by local government, as its purpose (and that of the notice or permit) is to keep local government informed of major plantation activities. Additional permit requirements would only apply to those plantations that require a permit.

When local government requires assistance in administration of the Code, consultants, catchment management authorities (e.g. for water and biodiversity), or State government bodies

(e.g. for biodiversity) are engaged for advice. There is no automatic referral to DSE (i.e. Code author) on any aspect of the Code.

Permits trigger steps to inform neighbours, and in some cases, the nearby community. In some local governments, the receipt of three objections to a *permit* application will trigger a review of an application by local government. If an application is rejected, an applicant can appeal to the Victorian Civil and Administrative Tribunal.

5.3 Comments on Existing Processes

Owners and managers of large scale forest plantations have estates across a range of different local government areas, e.g. up to 15 in at least one case. They encounter a range of issues and processes during the planning *notice* and *permit* phases. For example, cultivation might trigger a ‘works’ overlay in one local government but not in another. An overlay might affect only a small section of a plantation, but a local government might require the total plantation area to be managed to the same level for that value without any obvious justification.

For the major plantation companies, Code conditions are only one set amongst many internal and external planning requirements, but the Code commonly provides support for meeting many of the other requirements such as voluntary forest management certification and internal environmental management systems (AFS, FSC). Plantation companies indicated that the regulation of plantation activities overall was complex, e.g. with water issues involving up to five authorities in some cases.

Because contractors are also required to comply with the Code, plantation companies prefer to retain contractors who they know are Code-aware and operate within the requirements. There is no state-wide standard setting the requirement, but there is merit in the idea of developing a single set of guidelines for contractors.

We studied some plantation development or harvesting plans and templates used by two large plantation companies. These plans were highly detailed in textual content and spatial information (maps), and they ensured that all Code aspects were considered along with other planning details.

An industry representative indicated a need for landscape-level planning processes that included all main land-uses additional to plantations.

Several local government representatives reported that previously they were under-prepared to deal with *notices* and *permits*, but that the situation was improving. There is an opportunity for local governments to better share resources to improve Code implementation, and there was evidence that this was starting to occur in some regions.

One local government with a relatively low level of plantation activity indicated that small plantation growers lacked resources for interacting with local government at the *notice* or *permit* application stages. It appeared to them that sometimes *notices* were not submitted, particularly for small areas, but after several years of such development a large estate could be developed without a *notice* ever being submitted. However, we were later informed by the DPI that not submitting a notice is illegal and council should deal with that in the same way they deal with any breach of the planning scheme. Under the law, it is not possible to cumulatively

establish an estate greater than 5 hectares without notification, as all commercial plantations larger than this must submit a *notice* if no *permit* is required. Hence the comments we received from local government on this occasion probably reflected the lack of clarity some local government officers have on forestry planning.

We were informed that a large proportion of public complaints about plantation forestry are about chemical use (especially herbicides) or harvesting effects on water supply and visual impacts. All complaints are considered by local government and the plantation manager, but few complaints are shown to be due to poor Code content or implementation. Where a breach of the Code is considered serious, restoration may be required and a penalty may be imposed as specified by an appropriate State Act or regulation.

5.4 Scope for Improvement

It would be very useful for some local government bodies to have timber harvesting plans lodged with local governments much earlier than 28 days prior to the operation to facilitate road and drainage infrastructure planning. For example, for large companies, a year-to-year rolling plan of harvesting intentions over the coming 3-5 years would assist planning for roads and drainage. This desire was apparent in a local government where plantation activities were not common and infrastructure was underprepared for episodic timber harvesting with short notice. This type of plan is referred to in the Code as a *scheduling plan* as an option to replace a timber harvesting plan, but it appears that this option is not used in some regions.

Code implementation would be strengthened if local governments up-graded their skills and brought processes to a common standard of implementation across local government areas in the State. Several local governments have made progress in this area, but others do not have enough staff and resources to meet the required standard. It would be more efficient for plantation development if there was greater consistency of process across local governments in Victoria. This need was acknowledged in the Victorian Timber Industry Strategy (DPI 2009b), which led to the DPI contracting Trees Victoria to conduct a study with the aim of developing a plan to address this need. Trees Victoria is an incorporated body of stakeholders in private forestry developments in Victoria, and the study is entitled “Compliance with the Code of Practice” (<http://www.treesvictoria.com.au/compliance.html>). A key stakeholder is Timber Towns Victoria, which is a local government association with the aim of promoting balanced forestry developments (<http://www.timbertownsvictoria.org.au/>). Such efforts to up-skill and coordinate local governments in relation to Code matters should be encouraged to improve the efficiency of Code implementation. The Victorian Timber Industry Strategy (DPI 2009b) was superseded by the Timber Action Plan (DPI 2011).

5.5 Conclusion

Most Victorian plantation developments and their management comply with relevant local government planning scheme and legislative requirements. In those local government areas where plantation activities are common and conducted by large companies, existing processes ensure a high level of attainment of this objective. In other areas, and where only small or agro-forestry activities occur, some local governments are under-skilled and under-resourced. In these latter cases, Code implementation would be facilitated by additional resourcing or sharing of resources to enable the adoption of improved processes.

6. CRITERION 2: PROTECTION OF NATIVE VEGETATION AND ANIMAL COMMUNITIES AND NATURAL LANDSCAPE VALUES

6.1 Relevant National Principles and Questions

National Principles: 1.1, 1.2 and 1.8, except for cultural heritage values, which are considered in Criterion 5

- 1.1 Native forest should not be cleared for plantation establishment where this would compromise regional conservation and catchment management objectives. In some circumstances it may be appropriate to clear forests that have been severely degraded by impacts such as disease, weed invasion, wind and fire so as to enable rehabilitation through replanting.
- 1.2 Values such as intensive recreation, high scenic quality, significant geomorphic, biological, or cultural heritage sites, should be recognised in the planning of plantation forest operations.
- 1.8 Fauna, floristic, and landscape values should be protected by the careful planning of plantation layout establishment operations and the reservation and protection of appropriate areas of native vegetation; such values should be recognised in subsequent plantation management.

- a) Are the processes for managing the clearing of native vegetation adequate to meet the objectives of the National Forest Policy Statement (including the objective of not clearing for plantation establishment where this would compromise regional conservation and catchment management objectives)?
- b) Do these processes take into account the need to achieve adequate conservation of important natural heritage values?
- c) Are there measures and processes in place for the identification of these values in assessing proposed plantation sites and adjacent areas for natural values?
- d) Where values are identified are protection measures taken into account in the planning and future management of plantations?
- e) In the planning of plantation layout and establishment operations, are there measures and processes for managing identified natural heritage values, including the protection of threatened species and communities?

6.2 Existing Processes

Victorian and Commonwealth legislations require that native plant and animal communities receive special management and protection if listed as rare, threatened or endangered. In addition, native vegetation clearing is not permitted for new forest plantations. However, as an exception, removal of some individual trees or small patches of native vegetation for a plantation development can be permitted if appropriate and approved by local government. To assist plantation developers and local government, information in the form of spatial overlays is provided by the state government that alerts an applicant of potential biodiversity risks. This

information includes regional conservation plans and threatened or endangered native plant or animal communities. Depending on the biodiversity risk level, a plantation development *permit* application can be either approved with explicit conditions, or not approved.

The main provisions that operate to protect these values are:

- Compliance with the Victorian *Flora and Fauna Guarantee Act 1988*, and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- Protection of remnant native vegetation
- Vegetation clearing legislation
- Ecological Vegetation Classes (EVCs) maps and assessments of contribution to regional conservation values
- Requirements of local government planning schemes – zoning of land use, provision of development notice, and application for permits
- The Code requirements and Code companion, e.g. requirement to control pest animals and noxious weeds
- Plans for fire management and control to prevent damage to native vegetation.

Methods for management of native species are provided by the state government and are included in plantation development guidelines developed by large plantation growers or local government bodies. Examples include the collaborative work between Hancock Victorian Plantations and the Australian Koala Foundation for koala protection in the Strzelecki Ranges, the Cores and Links Project in Gippsland, and research collaborations between forest growers and the Department of Sustainability and Environment on the value of eucalypt plantations to biodiversity (Loyn et al. 2007). However, we note that plantation forestry remains controversial in respect to potential effects on conservation in the Gippsland and Otway regions.

6.3 Comments on Existing Processes

Maps showing EVCs and related conservation status and threats, which are used to provide local guidance to management of plant diversity, are a major plank supporting the implementation of the Code. DSE provide advice on identification and management of threatened native habitat. Private consultants are also used for assessments. The degree of access to experts, either as local government staff or as consultants is uneven across the local government bodies, but it is currently being strengthened across the state. Some local government bodies (e.g. in Gippsland) are now working together and with the plantation industry to improve implementation of the Code. In regions with a low population and hence revenue, the amount of resources that the local government body can afford to administer Code implementation and auditing of outcomes is very limited.

Patches of native vegetation within plantations, including single trees, are protected as much as is practical using detailed maps. Grazing is restricted in many instances to promote regeneration

of native vegetation. Weeds are sometimes managed by voluntary groups, but this usually does not achieve satisfactory outcomes. Victoria applies a net-native-vegetation-gain-accounting approach to forest management, using offsets where necessary to compensate for localised removal of native vegetation.

Impacts of forest operations at a catchment scale were monitored in Gippsland using macro-invertebrates in streams (Hill et al. 2001). This activity had been driven by certification requirements, but results of this program are yet to be consolidated and reviewed.

The major plantation companies, which are responsible for most of the plantation area in Victoria, have good internal processes (also required for certification) for the protection of these values, and in many cases implement practices that go beyond the requirements of the Code. They also cooperate with various land management agencies to improve outcomes for their region. For example, cooperation has enabled allocation of areas of native vegetation that are considered important or that can act as a link (corridor) between larger permanent reserves. A specific example was the 'Cores and Links Project' in the Strzelecki Ranges (Hancocks Victorian Plantations 2006).

There is no reported information on how well the Code is achieving the desired outcomes across the state, but no information or evidence came to our attention that its content or implementation was inadequate for protecting native animal and plant communities. Hence, our discussions did not reveal any serious breaches of the Code in relation to this criterion. In some cases, minor breaches of the Code have been noted in internal audit or post-operation reports, e.g. felling of some native forest trees that were not included in the timber harvesting plan, but these breaches had not seriously affected biodiversity.

Small holdings and agro-forestry plantations are exempt from Code provisions, but they are unlikely to have had a significant adverse effect on the protection of native animal and plant communities. Furthermore, such small scale plantings are still subject to native vegetation protection legislation that is independent of the Code. The total area of exempt plantations is very small compared to non-exempt plantations, but in some case the cumulative effect might become significant for some native plant and animal communities in the long-term. From this viewpoint, it would be useful to monitor the trend of small plantings.

For biodiversity, including rare, threatened and endangered species, EVCs, and landscape management, most regulation is to be found not in the Code, but in relevant State and Federal legislation (e.g. Victorian planning scheme clause 52.17, *Flora and Fauna Guarantee Act 1988*, EPBC Act); hence the Code makes few specific operational recommendations, and instead refers to the appropriate authority. Notices (e.g. to harvest, replant etc) may trigger overlays that require specific permits, e.g. for removal of native vegetation. The Code companion states that there is no mandatory component in a plantation development notice for protecting or enhancing biodiversity values, and there are no optional measures suggested. The plantation developer must evaluate biodiversity considerations in order to decide if a notice or a permit is appropriate. Local government would need to check this using biodiversity overlays and other local information, or inappropriate development may occur. Some local government bodies may not be doing this thoroughly because of lack of expertise or other resources. DSE may be called upon to provide advice, which leaves it to the company or landholder to determine, or to engage DSE or consultants to provide advice. Conversely, a timber harvesting plan, which is also a type

of notice, does require measures to be taken to protect biodiversity. It therefore seems odd that there are no requirements when developing a new plantation via a notice, but some requirements when harvesting. Therefore, we identify below some scope for improvement.

6.4 Scope for Improvement

Because the Code is intent- and outcome-focused, rather than prescriptive, interpretation will remain unclear for some users for biodiversity. Therefore, an improvement would result from cross-referencing of the Code to its companion (DPI 2009a) and similar documents that more specifically guide practices.

It would also be desirable to improve the awareness of small and agro-forestry operations that currently are exempt from Code provisions. There might be scope for the cumulative effects of many small operations to have more positive effects for biodiversity and other criteria if managed more strategically, e.g. linked corridors. A scoping study could be conducted to gauge the importance of doing so, and to identify potential methods that would not be onerous for plantation managers or local governments. The cumulative impacts of small-scale plantation operations on broader landscape ecological values could also be investigated, and incorporated into reviews of the effectiveness of the Code.

There appeared to be no specific action for evaluating the effectiveness of the Code applications for flora and fauna. We are not aware of a specific research program targeted at Code improvements for this criterion. Instead, there is an implicit assumption that research reported ad hoc between Code revisions will provide a basis for each revision specific to Victoria. A targeted research program could lead to either Code relaxation or tightening under this criterion.

In relation to the Code, there are complex relationships between various state agencies with some responsibility for plantation management and regulation, particularly for native vegetation: DSE as authors, DPI as source of technical detail, and local governments as implementers, interpreters and auditors. This complexity places much reliance on goodwill of experts in local government, and undermines the desire for clear decision making.

Some additional check boxes and commentary options for native vegetation could be included in the plantation development notice for documenting that this value was checked by the developer and used in determining why a permit was not required.

6.5 Conclusion

Our assessment is that the Code content and processes of implementation are adequate for protecting animal and plant communities, and we were not told of any serious breaches of the Code during our discussions. Suggestions for improvement are:

- a process be developed for assessing Code outcomes across the state (including audit reports) and for the incorporation of these and the results of independent research into new management guidelines that can be used to support the Code.
- the plantation development notice should also include an acknowledgement by the applicant that native vegetation and other special values had been considered.

7. CRITERION 3: PROTECTION OF WATER QUALITY AND, WHERE REQUIRED, MANAGEMENT OF WATER YIELD

7.1 Relevant National Principles and Questions

National Principles: 1.4 and 1.5

- 1.4 Water quality (physical, chemical, or biological) should be protected by measures controlling change resulting from plantation activities
- 1.5 Water yield should be managed as required by careful planning of operations.

- a) Do measures that protect water quality include streams, springs, soaks, swampy ground and bodies of standing water, and minimise sediment and other contaminant input to streams from plantation areas including roads?
- b) What environmentally sound guidance regarding plantation management strategies for the use of nutrients and biocides do the codes of practice provide especially to ensure that changes to water quality are within acceptable limits?
- c) Where the water resource is required to be managed (for example, controlled catchments), do the codes of practice provide effective strategies for managing water yield?

7.2 Existing Processes

Planning to meet this criterion is prompted by the mandatory action in the Code that ‘The entry of soil and other pollutants into waterways must be avoided as far as is practicable.’ A key supporting regulation for this criterion is the Agricultural and Veterinary Chemicals (Control of Use) Regulations 1996. Major plantation companies have internal planning processes that deal with activities that might affect water quality. Water features are identified on maps, along with machinery exclusion zones (i.e. buffers) and other areas of restricted or modified activities. Guidelines in addition to those in the Code have been developed to assist plantation companies and local government to identify risks to water and to select appropriate management options. For example, soil type and slope are considered when assessing erosion risk in an appendix of the Code Companion. Plans also include proposed measures to limit the risk to an acceptable level of sediment, fertilizers and other chemicals entering waterways. For example, machinery activity should be minimized within 20 m of a waterway. Plantation development notices do not require this level of detail, but an applicant is still required to meet Code provisions for water quality. Greater detail addressing this criterion is required for a permit application or in a timber harvesting plan.

7.3 Comments on Existing Processes

The Code, whilst identifying appropriate goals, does not provide guidance on how these can be achieved, and neither does the Code Companion. The native forest part of the Code provides prescriptions for buffering of water bodies, but a lack of such is a weakness in the plantation part. There is also little systematic checking of water quality compliance or outcomes.

Occasionally, instances of sediment pollution from plantation operations have been reported in Victoria (e.g. Smith et al. 2010). These events coincide with unusually heavy rainfall events that also trigger high sediment inputs from other land uses, which have led to guidelines for mitigating sediment delivery from such events in the future. In general, water quality problems in agricultural landscapes are more serious than those in forested landscapes including forest plantations, and the inclusion of plantations in agricultural landscapes can lead to improvements in water quality (Smethurst and Neary 2010, Smethurst and Petrone 2010).

The Code states that “The Timber Harvesting Plan may consider any objectives of regional River Health Strategies, Sustainable Water Strategies or any Water Quality Plans prepared by the Catchment Management Authority or Melbourne Water.” This statement reflects in the Code an aspiration to manage water yield, but we realise that the knowledge base, decision support tools, and regulatory mechanisms for making such decisions (in conjunction with various other land uses in a catchment) are not yet well established.

7.4 Scope for Improvement

Improved linkage between Code goals and management guidance would enable better outcomes. For protecting water quality, guidelines provided by Smith et al. (2010) could be used. There is also a need to provide prescriptions, either within the Code or in associated management guidelines, for ceasing wet weather operations, and for barring of snig tracks.

7.5 Conclusion

Our assessment is that the Code content and processes of implementation are generally adequate for protecting water values. However, guidance on how to achieve Code goals, and auditing of outcomes, would provide greater certainty for compliance with this criterion. There is a need for better linkages between Code goals and a set of clear management guidelines. Prescriptions for achieving water values that are varied according to risk need to be either in the Code or referenced to in the Code Companion.

8. CRITERION 4: PROTECTION OF SOIL RESOURCES

8.1 Relevant National Principles and Questions

National Principles: 1.6 and 1.7, except cultural heritage values are considered in Criterion 5

- 1.6 Soil stability should be protected by measures, which regulate site disturbance.
- 1.7 Soil, water catchment, cultural and landscape values should be protected by the careful location, construction, and maintenance of roads and tracks, and regulation of their use

- a) Are there measures and processes in place to assess the risks to soil resources? How are differences in soil type, topography and climatic conditions taken into account?
- b) Do the codes of practice provide guidelines for roading, harvesting and site preparation that minimise soil loss or adverse change to soil properties?

8.2 Existing Processes

Soil protection is a central element of the Code, which prompts important risk factors such as slope, erodibility, and disturbance to be considered at all stages of planning and operations. Operations are modified in consideration of these aspects. Broad guidelines have been developed to assist managers, e.g. Appendix 5 of the Code Companion “Soil Erosion Hazard & Soil Permeability Assessment Field Kit” and Smith et al. (2010).

When occasionally poor soil protection outcomes become evident via internal plantation company auditing, public complaint or external audits (e.g. erosion during wet weather), appropriate actions are taken to remedy the situation. For serious breaches, fines can be imposed through the *Environment Protection Act 1970*. Local government can also forward concerns to the Environment Protection Authority, who will deal with the complaint if it is within their remit (e.g. pollution of soils or waterways), but we were told there had been no such notifications. Issues that require adjustments to practices are also considered during operational and Code review processes.

8.3 Comments on Existing Processes

Existing processes are generally adequate for meeting this criterion. Risk assessments for soils, and modification of plans or plantations operations is a complex process. Larger plantation companies have internal expertise to achieve this or can access external assistance. We note two areas where attention is warranted: slash removal, and small growers. There is a low level of recognition amongst some short-rotation-eucalypt-plantation growers of the environmental and productivity risks associated with slash and litter removal systems when these crops are harvested using whole-tree systems, and associated technology options are currently limited. The Code provides minimal guidance for best practice including slash management between plantation rotations. Smaller growers may be less able to deal with soil protection issues, and, because compliance with the Code is not consistently assessed, soil damage may occur and not be detected.

8.4 Scope for Improvement

A more complete explanation of the risks associated with slash removal systems is required in the Code or guidance documents, along with guidance on best practice slash management. Radiata pine growers have recognised this risk and use slash and litter management practices during harvesting and re-establishment that retain fine residues. Similar technologies need to be developed for eucalypt plantation systems and implemented by plantation companies. An arrangement for providing support for small-scale forest growers and local governments on soil protection issues would be valuable. This could be achieved by sharing of regional expertise.

8.5 Conclusion

Existing Code content and implementation processes are adequate for protecting soil resources. Actions for improvement include improving access to soils expertise for local government and small growers, and improving slash management guidance.

9. CRITERION 5: PROTECTION OF CULTURAL HERITAGE VALUES

9.1 Relevant National Principles and Questions

National Principle: NP 1.7 and 1.8, cultural heritage aspects only.

- 1.7 Soil, water catchment, cultural and landscape values should be protected by the careful location, construction, and maintenance of roads and tracks, and regulation of their use
- 1.8 Values such as intensive recreation, high scenic quality, significant geomorphic, biological, or cultural heritage sites, should be recognised in the planning of plantation forest operations.

- a) In the planning of plantation layout, establishment and maintenance operations, are there measures and processes for managing cultural heritage values?

9.2 Existing Processes

The Code describes for plantation managers and regulators their cultural heritage obligations as an operational goal for both Aboriginal and non-Aboriginal values. Mandatory actions, legal requirements and guidance are provided for Aboriginal values, but few details are provided for non-Aboriginal values. Land owners, local government and major plantation managers must check for cultural heritage values on lists and maps of areas planned for plantation activities. They may also seek advice from Aboriginal Affairs, Victoria, about whether the Victorian Aboriginal Heritage Register holds any records relating to the land. Locations are marked on appropriate maps and their management is described in management plans and cultural heritage permits. If further advice is needed, it is sought from Registered Aboriginal Parties (currently nine in Victoria), cultural heritage advisors or Aboriginal Affairs Victoria.

Under the *Aboriginal Heritage Act 2006*, the development of an Aboriginal cultural heritage management plan and cultural heritage permits may be required in specific circumstances to be undertaken in collaboration with the appointed Registered Aboriginal Party, Traditional Owners and other relevant Aboriginal groups. Such circumstances include planned damage to a site or other cultural heritage feature. However, a cultural heritage assessment (desktop or standard – see *Aboriginal Heritage Regulations 2007*) is recommended as good practice. In terms of the *Aboriginal Heritage Act 2006*, where there is a Registered Aboriginal Party, no other consultation is required in terms of cultural heritage. In the event of any Aboriginal object, place or human remains being discovered in the course of works, the person in charge of those works must report the discovery in accordance with this Act.

Plantations2020 (2007) describes the provisions of the *Aboriginal Heritage Act 2006*, and the related *Aboriginal Heritage Regulations 2007*. However, *Plantations2020 (2007, page 16)* states that Section 54 of the Regulations deals with Timber Production. This is incorrect as it should be Section 52.

Although plantation activities less than 5 hectares in area or agro-forestry may be exempt from requiring a plantation development notice or permit, this does not exempt them from complying with the legislated Aboriginal heritage requirements.

9.3 Comments on Existing Processes

Cultural heritage aspects are dealt with in the Code as goals, with little guidance on how to achieve the desired outcome. Some stakeholders desire more guidance to be included in the Code, including a need to include cultural heritage in strategic planning in consultation with Registered Aboriginal Parties (where appointed), Traditional Owners and relevant Aboriginal groups. However, we did not become aware of any breach in relation to cultural heritage values as a result of poor Code content or its implementation.

Aboriginal Affairs Victoria emphasised the importance of synchronising the Code requirements with the Forest Stewardship Council requirements. Overlap of the Code with other requirements set by local governments and voluntary certification schemes has been pointed out for other aspects of the Code (e.g. for native vegetation, soil and water), and it has led in some regions of Victoria to local government and plantation companies cooperating in the development of combined audits and other processes. Such developments are to be applauded if it reduces the complexity of environmental compliance whilst still achieving the desired environmental outcome.

9.4 Scope for Improvement

The Code or accompanying guidelines should clarify what is meant by “significant ground disturbance” as stated in the *Aboriginal Heritage Regulations 2007* to ensure that plantation managers understand the term and aim for compliance. The current definition is given below:

significant ground disturbance means disturbance of -
(a) the topsoil or surface rock layer of the ground; or
(b) a waterway -
by machinery in the course of grading, excavating, digging, dredging or deep ripping,
but does not include ploughing other than deep ripping;

The *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2007* describe when cultural heritage management plans are mandated. However, as a matter of good practice and risk management, given that plantation forestry can permanently change the landscape, cultural heritage assessments should be done as part of the overall land capability assessment and zoning process, but this is a process external to Code.

9.5 Conclusion

Existing Code content and implementation processes for the protection of cultural heritage are adequate, but could be improved by:

- Enhanced synchronisation with certification schemes, and,
- Consistency with terminology between the Code and guidance, Acts and regulations.

10. CRITERION 6: PROTECTION FROM FIRE, PESTS AND DISEASES

10.1 Relevant National Principles and Questions

National Principle: 1.9

1.9 Plantations and adjacent native forests should be protected from the adverse effects of fire and from the introduction and spread of plant, insect and animal pests and plant diseases.

- a) Do the codes of practice provide for fire management plans for plantations including containment from adjacent native forest?
- b) Do the codes of practice provide guidelines to deal with outbreaks of pest and diseases?

10.2 Existing Processes

The Code stipulates the need for fire management plans that include maintenance of appropriate fire breaks. A fire industry brigade is needed in some cases for plantation areas greater than 500 hectares. Plantation development notices and planning permits alert local government to consider fire protection measures. If the planned plantation development is within an area with a fire overlay, e.g. close to dwellings, it will require special management for fire. Any burning operations conducted as part of site preparation activities must comply with the *Country Fire Authority Act 1958* and any other relevant Acts, regulations and gazetted codes of practice. Many local governments have Municipal Fire Plans that provide direction on the safe conduct of burning operations.

Under the *Catchment and Land Protection Act 1994*, all landholders have a responsibility to control pest animals and noxious weeds on their property. 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. Under the same Act, it is the responsibility of the land owner to control and eradicate all declared noxious weeds, and to prevent the spread of, and as far as possible eradicate, established pest animals.

The Code's guidance is that the movement of machines, seeds, plants or other materials should be assessed for risk of transporting weeds, pests or diseases, and appropriate protection measures taken, e.g. washing of machinery.

The Code indicates that plantation health should be checked regularly. Known risks require a management plan. Where the introduction of an exotic agent is suspected, Biosecurity Victoria needs to be informed and appropriate actions taken. Large plantation companies appear to meet these requirements; the extent to which small growers have effective measures is uncertain.

10.3 Comments on Existing Processes

It is recognised that some fires cannot be controlled under extreme fire and weather circumstances. However, strong efforts are in place to minimise losses to fire. Weeds and pests also cannot be completely controlled or eliminated from plantations due to technical and financial limitations.

We were informed of an increasing problem of ‘pine wildling’ invasion of some native vegetation in western Victoria that is not currently being properly managed. It is not clear how wide-spread this problem is and who is responsible for dealing with it.

10.4 Scope for Improvement

We have no specific comments to offer for this criterion.

10.5 Conclusion

Existing Code content and implementation processes focus on protection against fire, weeds, and other pests within plantations, and are generally adequate. However, there is scope for greater control and protection from weeds in some cases. More effort is needed to control pine wildlings in some parts of the state, e.g. western Victoria.

11. CRITERION 7: TRAINING FOR ENVIRONMENTAL CARE

11.1 Relevant National Principles and Questions

National Principle: 1.10

1.10 Operators will be trained in the principles of environmental care.

a) Are the processes adequate to meet this criterion?

11.2 Existing Processes

The Code does not mention the need for training.

11.3 Comments on Existing Processes

It is essential that staff at all levels are adequately trained to interpret and implement the Code. This is well achieved by large plantation companies. We understand that one large plantation company is developing plans to include contractors in basic training in environmental care, apart from managers and supervisors. However, local government and small growers in many cases have inadequate expertise or resources to implement similar training.

The need for training in relation to the Code was acknowledged in the Victorian Timber Industry Strategy (DPI 2009b). As mentioned previously, this need led to the DPI contracting

Trees Victoria in 2009 to conduct a study with the aim of developing a training plan or strategy, but the Trees Victoria website had not indicated by February 2012 that this report is available. Trees Victoria is an incorporated body of stakeholders in private forestry developments in Victoria, and the study is entitled “Compliance with the Code of Practice” (<http://www.treesvictoria.com.au/compliance.html>).

11.4 Scope for Improvement

Environmental management is complex, including understanding and implementing the Code. Managers and supervisors are often trained to some extent in these aspects, but Code effectiveness is likely to be enhanced if all plantation practitioners have a basic understanding of the key principles and practices of environmental management. This needs to reach to the operational level of machine operators and other contractors. Hence, efforts to up-skill and coordinate Code practitioners warrant more investment and systematic training programs. A co-operative effort by both private sector and public agencies should be considered.

11.5 Conclusion

Training needs of field supervisors and machine operators in environmental management should be more specifically addressed in the Code.

12. OTHER NATIONAL PRINCIPLES

There are a further 23 National Principles (NPs), but many of these overlap extensively with those of Environmental Care dealt with above. In this section each of these additional principles is listed and a ‘*Comment*’ added if it has not already been addressed.

12.1 NP2. SAFETY

2.1 All plantation establishment, management and utilization activities will be conducted to comply with relevant occupational health and safety legislation and policy. In particular, all operators should be trained to designated standards in the safe and efficient use of equipment and machinery, and be responsible for safe working practices.

Comment: This NP restates a provision that also exists under federal and state worker safety legislation. Large plantation companies seem to go beyond the minimum requirements, but we did not explore to what extent small growers and agro-forestry operators provide safe working conditions.

12.2 NP3. PLANNING

3.1 State and Local Governments should, with appropriate public involvement, pursue planning policies that provide secure zoning for commercial planting with the objective that tree planting and subsequent harvesting for commercial wood production should be an “as of right” use.

3.2 State Governments will establish a sound legal basis for separating the forest asset component from the land asset for tree plantings. The Commonwealth Government will consider similar action re taxation, capital valuation etc.

3.3 Plantation strategic planning should be developed in conjunction with regional development plans.

3.4 The environmental, social and economic effects of all plantation operations envisaged for an area will be considered during the planning process.

3.5 Individual plantation operations will be conducted in accordance with relevant codes of practice.

Comment: Local government planning schemes permit plantations as a land use in land classed as rural, subject to provisions of the Code. The Forestry Rights Act 1996 provides for the ownership of trees to be separated from the land, by means of a Forest Property Agreement. The Code recognizes the general contribution that plantation forestry can make to social and economic values, and it emphasizes the need for economic plantation operations, but no economic guidance is provided, and the only social value considered in detail is cultural heritage. Environmental effects of plantations are considered earlier in this assessment (sections 5-10).

12.3 NP4. ACCESS

4.1 Planning of road systems in plantations will be based on both the economic principle of minimising the combined cost of roading and extraction and on the Principles of Environmental Care.

4.2 Road design will be to standards consistent with the purpose for which the road is to be used, and capable of carrying the anticipated traffic with reasonable safety.

4.3 Construction and maintenance of roads and associated works will be undertaken in a manner, which will ensure compliance with the Principles of Environmental Care.

4.4 Roads will be closed in wet conditions when unacceptable damage would occur or when such other conditions may warrant.

Comment: Roads are recognized in the Code as a major potential environmental risk, and they are dealt with in a major part of the plantation section of the Code. It is also recognized in the code that economic principles apply to roads. In relation to road planning external to the plantation, i.e. those roads provided by local government, some local governments complained to us that they are not given enough notice by the 28 day minimum required in Timber Harvesting Plans. A long term plan would be advantageous to facilitate road planning. Road construction and maintenance within the plantation area can also create pressure on roads provided by local government, because road materials and equipment need to be transported to and from the property. These comments imply that some local governments are not fully utilizing the information on a plantation development notice, which includes an estimated harvest date. Mostly, these concerns are not an environmental concern, but they become so in some instances where drainage problems arise that lead to increased sediment delivery to streams. Suggested improvements and other aspects of these NPs have been discussed earlier in this report (sections 7-8).

12.4 NP5. ESTABLISHMENT AND MAINTENANCE

5.1 Plantation establishment methods should be economically and environmentally appropriate for the particular requirements of the species to be planted and the specific site conditions.

5.2 Establishment of plantations may involve introduction of selected species, provenances or populations to increase productivity or value. However management of these plantations should aim to constrain or prevent the introduction of these species into surrounding areas.

5.3 Intensive management practices, such as site preparation, fertilising, weed control, pest and disease control and other operations will be carried out in accordance with codes of practice, and consistent with the Principles of Environmental Care.

Comment: The potential contribution of plantations to economic values is recognized in the Code, but no guidance is given and it is therefore assumed plantation managers will make only sound economic and species-site decisions. Recent developments in the managed investment scheme sector of the plantation industry in Victoria (and some other states) brings into question the attainment of NP 5.1, but it was beyond the scope of our assessment to analyse this situation in detail. Other aspects of these NPs have been discussed earlier in this report (section 10).

12.5 NP6. TIMBER HARVESTING

6.1 Timber harvesting will be planned and carried out under codes of practice to meet the Principles of Environmental Care.

6.2 The harvesting plan will consider factors such as harvesting unit size, slope and location of harvesting units; design and location of landings and snig tracks; harvesting equipment; areas excluded from logging; and areas specified for protection and reforestation.

6.3 Harvesting operations should not be conducted in a manner which compromises the Principles of Environmental Care, or where the safety of workers is at unacceptable risk.

6.4 Soil and water values should be protected by progressive rehabilitation and drainage of snig tracks, temporary roads, log dumps and any other earthworks associated with harvesting operations.

Comment: The NPs for timber harvesting have been addressed earlier in this report (e.g. section 5).

12.6 NP7. FOREST PROTECTION

7.1 Fire protection planning should be undertaken on a regional basis in co-ordination with relevant land management agencies and with local bush fire control organisations.

7.2 Plantation health surveillance should be undertaken on a regular basis.

7.3 Where weeds, pests or diseases cause significant damage, decline, or deaths of trees, prompt specialist advice should be sought to address the problem.

7.4 Use of chemicals, such as herbicides and pesticides, and other pest control methods in plantation operations will be in accordance with State policies, procedures and approved usage.

Comment: The NPs for forest protection have been addressed earlier in this report (section 10).

12.7 NP8. MONITORING AND REVIEW

8.1 Where practicable, plantation operations should be supervised and monitored by qualified persons and be subject to audit.

8.2 The National Principles should be reviewed and evaluated after three years.

Comment: Compliance with the Code is not uniformly assessed across all local government bodies, and many of them lack adequate expertise to assess plantation proposals, or to assess the adequacy of environmental outcomes. Local government recognises this situation and is attempting to improve its level and uniformity of expertise. In a few local government areas where plantation operations are relatively common, the level of expertise, auditing and compliance is good. This desirable outcome is achieved by cooperation between local government and large plantation companies during the planning and auditing phases, and by the participation of large companies in voluntary certification schemes (AFS, FSC) that provide an additional motivation to achieve high environmental standards based on internal company systems and expertise. Unfortunately, there is no systematic process to capture and synthesise audit information, and to feed it back to the Code authors, so as to be able to support development of a system of continual improvement. Protocols deployed in some regions by some of the plantation companies and local governments should be extended to other regions, and a system developed for the systematic capture and feedback of this information to the Code authors (DSE) and others.

An evaluation of the National Principles will be conducted after all State and Territory Codes have been assessed..

13. ACKNOWLEDGEMENTS

Visit coordination, delivery of relevant documents and other assistance by DSE staff (Stephen Colquitt, Boyd Eggleston, Scott Arnold and Courtney Bertram) were much appreciated. Staff from all organisations consulted (Appendix D) were very helpful in providing information and comments that facilitated this assessment.

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APPENDIX A – NATIONAL PRINCIPLES

FOREST PRACTICES RELATED TO WOOD PRODUCTION IN PLANTATIONS: NATIONAL PRINCIPLES

PREAMBLE

Wood production is an accepted major commercial use of Australia's forests and is the primary purpose for establishing and managing plantations. In addition, plantations can provide a range of commercial, environmental and aesthetic benefits to the community. In pursuing a vision of ecologically sustainable management of Australia's forests, Australian Governments, through the National Forest Policy Statement, have enunciated a national goal for plantations:

“to expand Australia's commercial plantations of softwoods and hardwoods so as to provide an additional, economically viable, reliable and high quality wood resource to industry”.

In this context, the establishment of plantations for wood production should be determined on the basis of economic viability and international competitiveness, and market forces should determine the extent of resource use and the nature of industry operations. In essence, plantations established for wood production should be treated in the same way as any agricultural productions.

To achieve greater investment in plantations, it will be necessary to ensure that the impediments to plantation development are minimal, that clear and consistent policies for resource development are established across all levels of government and that there is security of access to established resources. Provided that social and environmental objectives are met, Governments will keep regulations to a minimum. For example, the Commonwealth will remove controls over the export of unprocessed public and private plantation wood subject to the application of codes of practice to protect environmental values. Furthermore, it is not intended that controls be imposed on the plantation industry that would not apply to other agricultural activities.

In accordance with the National Forest Policy Statement, the Ministerial Council on Forestry, Fisheries and Aquaculture, representing the States and the Commonwealth's forestry authorities, has prepared this statement of national principles to be applied in the management of plantations.

These principles et the framework for a consistent and scientific basis for sound plantation management to which all States and Territories subscribe. Codes of practice for plantations, conforming to the national principles, will be developed by the States and Territories taking into account the range of plantation types, conditions and situations applying due to natural and cultural variations. Several States and Territories already have such codes in place.

The principles have been structured into several sections relating to different activities associated with plantation production: The principles apply to both public and private plantations.

1. PRINCIPLES OF ENVIRONMENTAL CARE

1.1 Native forest should not be cleared for plantation establishment where this would compromise regional conservation and catchment management objectives. In some circumstances it may be appropriate to clear forests that have been severely degraded by impacts such as disease, weed invasion, wind and fire so as to enable rehabilitation through replanting.

1.2 Values such as intensive recreation, high scenic quality, significant geomorphic, biological, or cultural heritage sites, should be recognised in the planning of plantation forest operations.

1.3 Plantation management should comply with State and regional conservation and catchment management objectives, relevant planning schemes and legislation.

1.4 Water quality (physical, chemical, or biological) should be protected by measures controlling change resulting from plantation activities

1.5 Water yield should be managed as required by careful planning of operations.

1.6 Soil stability should be protected by measures, which regulate site disturbance.

1.7 Soil, water catchment, cultural and landscape values should be protected by the careful location, construction, and maintenance of roads and tracks, and regulation of their use.

1.8 Fauna, floristic, and landscape values should be protected by the careful planning of plantation layout establishment operations and the reservation and protection of appropriate areas of native vegetation; such values should be recognised in subsequent plantation management. . .

1.9 Plantations and adjacent native forests should be protected from the adverse effects of fire and from the introduction and spread of plant, insect and animal pests and plant diseases.

1.10 Operators will be trained in the principles of environmental care.

2. SAFETY

2.1 All plantation establishment, management and utilisation activities will be conducted to comply with relevant occupational health and safety legislation and policy. In particular, all operators should be trained to designated standards in the safe and efficient use of equipment and machinery, and be responsible for safe working practices.

3. PLANNING

3.1 State and Local Governments should, with appropriate public involvement, pursue planning policies that provide secure zoning for commercial planting with the objective that tree planting and subsequent harvesting for commercial wood production should be an “as of

right” use.

3.2 State Governments will establish a sound legal basis for separating the forest asset component from the land asset for tree plantings. The Commonwealth Government will consider similar action re taxation, capital valuation etc.

3.3 Plantation strategic planning should be developed in conjunction with regional development plans.

3.4 The environmental, social and economic effects of all plantation operations envisaged for an area will be considered during the planning process.

3.5 Individual plantation operations will be conducted in accordance with relevant codes of practice.

4. ACCESS

4.1 Planning of road systems in plantations will be based on both the economic principle of minimising the combined cost of roading and extraction and on the Principles of Environmental Care.

4.2 Road design will be to standards consistent with the purpose for which the road is to be used, and capable of carrying the anticipated traffic with reasonable safety.

4.3 Construction and maintenance of roads and associated works will be undertaken in a manner, which will ensure compliance with the Principles of Environmental Care.

4.4 Roads will be closed in wet conditions when unacceptable damage would occur or when such other conditions may warrant.

5. ESTABLISHMENT AND MAINTENANCE

5.1 Plantation establishment methods should be economically and environmentally appropriate for the particular requirements of the species to be planted and the specific site conditions.

5.2 Establishment of plantations may involve introduction of selected species, provenances or populations to increase productivity or value. However management of these plantations should aim to constrain or prevent the introduction of these species into surrounding areas.

5.3 Intensive management practices, such as site preparation, fertilising, weed control, pest and disease control and other operations will be carried out in accordance with codes of practice, and consistent with the Principles of Environmental Care.

6. TIMBER HARVESTING

6.1 Timber harvesting will be planned and carried out under codes of practice to meet the Principles of Environmental Care.

6.2 The harvesting plan will consider factors such as harvesting unit size, slope and location of harvesting units; design and location of landings and snig tracks; harvesting equipment; areas excluded from logging; and areas specified for protection and reforestation.

6.3 Harvesting operations should not be conducted in a manner which compromises the Principles of Environmental Care, or where the safety of workers is at unacceptable risk.

6.4 Soil and water values should be protected by progressive rehabilitation and drainage of snig tracks, temporary roads, log dumps and any other earthworks associated with harvesting operations.

7. FOREST PROTECTION

7.1 Fire protection planning should be undertaken on a regional basis in co-ordination with relevant land management agencies and with local bush fire control organisations.

7.2 Plantation health surveillance should be undertaken on a regular basis.

7.3 Where weeds, pests or diseases cause significant damage, decline, or deaths of trees, prompt specialist advice should be sought to address the problem.

7.4 Use of chemicals, such as herbicides and pesticides, and other pest control methods in plantation operations will be in accordance With State policies, procedures and approved usage.

8. MONITORING AND REVIEW

8.1 Where practicable, plantation operations should be supervised and monitored by qualified persons and be subject to audit.

8.2 The National Principles should be reviewed and evaluated after three years.

APPENDIX B – ACRONYMS

AFS	Australian Forestry Standard
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
DPI	Department of Primary Industries
DSE	Department of Sustainability and Environment
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVC	Ecological Vegetation Classes
FSC	Forest Stewardship Council
NP	National Principle

APPENDIX C – TERMS OF REFERENCE FOR CSIRO

In undertaking a review of Codes of Practice for the states and territories for assessment against “*Forest Practices Related to Wood Production in Plantations: National Principles*”, (National Principles), the CSIRO will:

1. By 30 June 2011, assess codes of practice for measures and processes for the protection of environmental values. This will include:
 - the scientific quality of the measures
 - their method of implementation
 - adequacy of procedures for auditing, monitoring and securing compliance.
2. Provide a statement on the measures and processes that are in place that address each National Principle.
3. Identify if new measures and processes or modifications are required to adequately address the any National Principle.
4. Prepare draft reports for comment by the Commonwealth and the relevant State/Territory following each assessment.
5. Prepare a final report for the Commonwealth and the relevant State/Territory following revision of the draft reports.
6. Provide assessment of areas to be considered for updating the National Principles following completion of all assessments.

APPENDIX D – ORGANISATIONS CONSULTED

Aboriginal Affairs Victoria

Australian Bluegum Plantations Pty Ltd

Australian Plantation Products and Paper Industry Council (more recently merged with the National Association of Forest Industries to become the Australian Forest Products Association)

Baw Baw Shire Council

Department of Sustainability and Environment

Department of Primary Industries

Elders Forestry

Environment Protection Authority

Glenelg Shire Council

Green Triangle Forest Products

Gunns Limited

Hancocks Victorian Plantations

Latrobe City Council

Midway Limited

Pyrenees Shire Council

Timber Towns Victoria

Trees Victoria

Victorian Association of Forest Industries

APPENDIX E – MEETINGS AND FIELD VISITS

Visit 13th-15th October 2010

In the company of DSE staff

13th October

Meeting at DSE Office, East Melbourne

14th October

Meeting at Hancocks Victorian Plantations, Churchill

Field Visit, Hancocks Victorian Plantations, Strzelecki Ranges

15th October

Meeting at Pyrenees Shire Council

Field Visit, Midway Limited, Beaufort

Visit 7th February 2011

In the company of DSE staff

Meeting at Australian Bluegum Plantations, Hamilton

Field Visit, Australian Bluegum Plantations

Field Visit, Green triangle Forest Products



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