

Managing a native forest practice

A self-assessable vegetation clearing code

Effective from 8 August 2014

This publication has been compiled by Operations Support – (Vegetation Management) of the State Land Asset Management group, Department of Natural Resources and Mines.

© State of Queensland, 2014.

The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 3.0 Australia (CC BY) licence.



Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms.

You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

For more information on this licence, visit <http://creativecommons.org/licenses/by/3.0/au/deed.en>

The information contained herein is subject to change without notice. The Queensland Government shall not be liable for technical or other errors or omissions contained herein. The reader/user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using this information.

Contents

1. How to use this document	2
2. Introduction	3
2.1 Native forest practice	3
2.2 A self-assessable code	3
2.3 Scope of the code	4
3. Notification and compliance	5
3.1 Notification	5
3.2 Compliance	5
4. Managing a native forest practice	6
4.1 What a native forest practice means	6
4.2 Planning for a native forest practice	7
5. Silvicultural Practices	8
5.1 Sound forest management	8
5.2 Silvicultural regimes	9
5.2.1 <i>Harvesting and thinning in hardwood and cypress pine forests</i>	9
5.2.2 <i>Group selection harvesting</i>	12
5.2.3 <i>Rainforest harvesting</i>	13
5.2.4 <i>Small scale harvesting of specialty timbers and minor forest products</i>	14
6. Protecting the forest area	15
6.1 Avoiding soil degradation	15
6.2 Protecting water features	16
7. Protecting wildlife habitat	19
7.1 Protecting habitat	19
7.2 Protecting habitat trees	19
7.3 Protecting feed, nest and shelter trees	22
8. Providing road and track access	23
9. Silvicultural operations	26
10. Managing planting, fire and weeds	31
10.1 Planting trees	31
10.2 Fire management	31
10.3 Weed control	31
Glossary	31
Appendix 1: Summary of practices	33
Appendix 2: Other legislation	35

1. How to use this document

This code deals with managing a native forest practice in Category B vegetation on freehold land and:

- defines the required outcomes
- specifies mandatory practices. These practices are shaded blue throughout the document and a summary of practices is provided in Appendix 1.
- provides key definitions (in bold), a glossary and guidance for landholders.

Landholders are advised to read the code to determine if they can operate under this code.

To use this code – please consider the following steps.

Step 1	Check that you have Category B vegetation on your property. Obtain a regulated vegetation management map and a vegetation management supporting map for your property. The first map shows areas of Category B vegetation and the second shows the regional ecosystems that occur on your property. The maps are available at www.dnrm.qld.gov.au or a DNRM office.
Step 2	Check that you can use this code. This code applies to: <ul style="list-style-type: none">• hardwood and cypress pine forests – the regional ecosystems listed in Tables 1A, 1B and 1C• rainforest regional ecosystems• small scale harvesting and minor forest products
Step 3	Notify the Department of Natural Resources and Mines (DNRM) Refer to section 3.1. If you are unsure of what to do, please telephone DNRM on 13 74 68.
Step 4	Plan your forestry operations Refer to section 4.2 and identify what you need to do to conduct your forest practice – for example what silvicultural rules will apply.
Step 5	Check the other required practices by reading through the different sections in the code – these are shaded blue in the code and include: <ul style="list-style-type: none">• silvicultural requirements – section 5• soil and watercourse protection – section 6• wildlife protection - section 7• roads and tracks – section 8• silvicultural operations – section 9.
Step 6	Conduct your forest practice in accordance with the practices.
Step 7	Check that you are following the rules by using the self-audit sheet - available on the DNRM website (www.dnrm.qld.gov.au).

2. Introduction

2.1 Native forest practice

Forestry has been a traditional and valuable part of land management on freehold and Indigenous land supplying more than half of the native timbers harvested in Queensland. This activity has not only provided income for landholders but has also resulted in the retention and management of large areas of native forests on freehold and Indigenous land.

Because of its importance, the *Sustainable Planning Act 2009* provides for a native forest practice as an exemption for removing or harvesting vegetation in a Category B area (remnant vegetation) provided the activities comply with the requirements of the *Vegetation Management Act 1999* to notify and conduct activities in accord with a code.

In December 2005, the code ***Applying to a native forest practice on freehold land*** was introduced. This code provided for continuing forestry operations on freehold and Indigenous land within a conservation framework to ensure that any forestry activity is sustainable in the long term and was not used as a means for broad scale clearing.

In 2013 the Queensland Government introduced self-assessable vegetation clearing codes (SACs) for a range of purposes, including native forest practice.

2.2 A self-assessable code

This is a self-assessable vegetation clearing code (code) made in accordance with the *Vegetation Management Act 1999*. It sets out the required outcomes and practices for a native forest practice in Category B vegetation.

Required outcomes

The required outcomes for managing a native forest practice under this code are that the harvesting or removal of vegetation is:

- only for an ongoing forestry business; and
- carried out in a way that allows for timber production whilst ensuring that:
 - the loss of biodiversity is prevented and ecological processes are maintained
 - land and water quality values are maintained
 - clearing for a native forest practice does not cause land degradation
 - the forest structure and species composition is maintained
 - the forest is maintained as remnant vegetation or within 20 years from the cessation of forestry operations the vegetation will meet the definition of remnant vegetation.

Practices

The practices specified in this code are mandatory. The required outcomes will be achieved if you comply with the practices in this code, which are shaded blue throughout the document (and provided in Appendix 1).

Guidance

To assist landholders, the code contains some key definitions and guidance to explain the practices and suggests some options for applying the code.

2.3 Scope of the code

This code applies to managing a native forest practice:

- on freehold or Indigenous land where the State does not hold rights to the timber; and
- in areas of vegetation shown as Category B areas on the Regulated vegetation management map, which is available on the DNRM website (www.dnrm.qld.gov.au); and
- where trees are only felled for the purpose of being sawn into timber or processed into another value-added product other than wood chips for export; and
- where activities are restricted to the planting or silvicultural management of trees, including the felling and removal of standing trees, for an ongoing forestry business; or carrying out limited associated work such as drainage, construction and maintenance of roads and vehicular tracks and other necessary engineering works.
- where the harvesting (felling and removal) is limited to:
 - selective, very low intensity harvesting of rainforest species; and
 - selective harvesting and silvicultural thinning of hardwood species and cypress pine in specified regional ecosystems and may include group selection harvesting in wet sclerophyll forests; and
 - small scale harvesting of speciality timbers and minor forest products from any regional ecosystem.

Activities such as harvesting grass trees, epiphytes, foliage or sandalwood cannot be undertaken under this code. Landholders should consult the Department of Environment and Heritage Protection regarding the requirements under the *Nature Conservation Act 1992*.

Note that for general thinning of thickened vegetation (not as a forest practice), there is a series of self-assessable codes that landholders can use to return thickened woodland to a more natural state.



Figure 1: Split posts – a value added forest product

3. Notification and compliance

3.1 Notification

Practice

Landholders must notify DNRM before commencing a native forest practice.

Guidance

Prior to conducting a native forest practice, you must notify DNRM. Refer to the DNRM website (www.dnrm.qld.gov.au) for options and instructions on how to notify. There is no notification fee. DNRM will give you a receipt of the notification. This single notification will operate for the period that the notifying landholder owns the property.

Note that if you have notified under previous native forest practice codes (those made in 2005 or 2013), it is recommended that you renotify under this code.

If the property is sold, the new landholder must notify DNRM if they wish to undertake a native forest practice.

3.2 Compliance

Practice

Landholders undertaking a native forest practice must comply with the practices in this code.

Guidance

You are required to comply with the practices specified in this code (shaded blue), and summarised in Appendix 1.

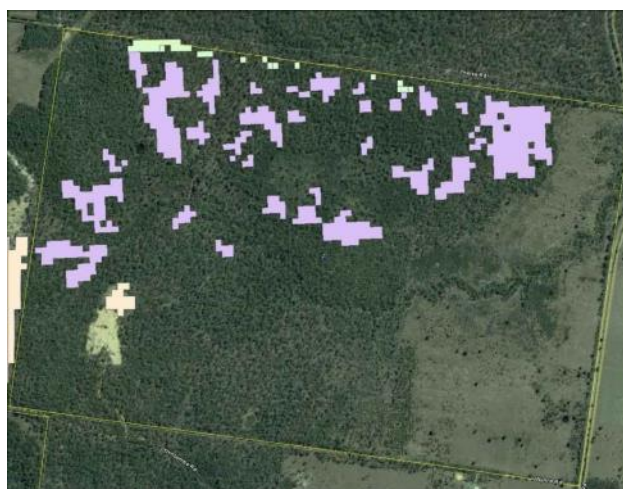
Before conducting a native forest practice, you should consult the DNRM website to ensure you are operating under the current version of the code. Compliance with this code does not exempt you from requirements under other legislation (see Appendix 2).

You should keep a record of any harvesting or silvicultural thinning activity. This could be a diary note of native forest practice operations, supported by before and after photographs from known locations which clearly illustrate what has been done and when this was done. You should also document your instructions to operators and supervise any native forest practice activity undertaken by contractors.

Contractors are advised to sight a copy of the DNRM notification receipt before commencing any native forest practice activity, and then to operate in accordance with code requirements.

The department uses satellite imagery to monitor native forest practice activities and vegetation clearing in general. Furthermore, it will be conducting on-ground audits as both an educational and compliance tool.

Figure 2: Satellite imagery showing areas that have been subject to harvesting as coloured pixels



4. Managing a native forest practice

4.1 What is a native forest practice?

A native forest practice is the sustainable management of a forest area for timber harvesting within a framework that conserves the natural values of the forest.

Practice

A native forest practice must:

- only occur for the purpose of producing value-added forest products
- maintain documented evidence of the sale of products.

Guidance

A native forest practice is defined as planting or managing trees, including felling and removing standing trees, for an ongoing forestry business.

A native forest practice requires that trees are felled for any of the following purposes: thinning, being sawn into timber or processed into another value-added product other than wood chips for export.

An ongoing forestry business means a business that is planned to provide recurring income from harvesting trees over a long time (measured in decades).

Operators undertaking a native forest practice must be able to demonstrate they are managing the forest in a way that will generate income from harvesting on an ongoing, cyclic basis, and that the taking of timber is primarily for sale.

The code requires that evidence of the sale of products is documented and maintained. In general this requirement is for harvested products and not for silvicultural thinning.

While sale for cash is the primary mechanism, this does not preclude some harvesting for business use, trade or barter, payment in kind or a gift. In addition, forest products may be salvaged from trees felled or killed for silvicultural purposes e.g. thinning, which would otherwise go to waste. For example, posts, rails or firewood could be salvaged for sale or personal use.

All use of trees should be documented including receipts of sale or, where there is no sale, records of use. Landholders wishing to source construction timber for their own use should refer to the *Self-assessable code for managing clearing for necessary property infrastructure*.



Figure 3: Skidder



Figure 4: Buzz saw used for splitting posts

Value-added products mean those that attract a market price such as sawn timber, saw log, ply logs, girders, poles, piles, fence posts, sleepers, rails, pit props, landscaping timbers, specialty woods, firewood, materials for handicraft and charcoal. However it does not include wood chips for export.

4.2 Planning for a native forest practice

Landholders should plan their forest practice operations to ensure the forest is protected and the harvesting and thinning regime will be sustainable.

Practice

No more than 5% of the area in which a native forest practice is conducted, may be disturbed by roads, tracks, snig tracks and log landings.

Guidance

The native forest practice area is the area in which any native forest practice activities are conducted, including associated wetland and watercourse buffer zones.

Planning involves the following steps:

- Identify the area on your property where you intend to undertake a native forest practice.
- Exclude areas which should not be operated. These may include steep and unstable areas as well as wetlands and watercourses.
- Determine the silvicultural regime for harvesting or thinning.
- Identify any trees that need to be retained including habitat, nest and feed trees.
- Supervise operations to ensure code compliance.
- Provide access to the forest practice area using existing tracks or constructing new tracks.
- Conduct harvesting or silvicultural thinning operations in accord with all code requirements.
- Stabilize the area at the conclusion of operations with particular attention to the stabilization of temporary crossings and tracks.
- Maintain records to demonstrate that all reasonable efforts have been made to comply with the code.
- Consider using the self-audit sheet - available on the DNRM website (www.dnrm.qld.gov.au) to check if you are compliant.
- Monitor results and apply necessary secondary management for example thinning, periodic controlled burning and weed control - to ensure the area is managed for an ongoing sustainable forestry business.

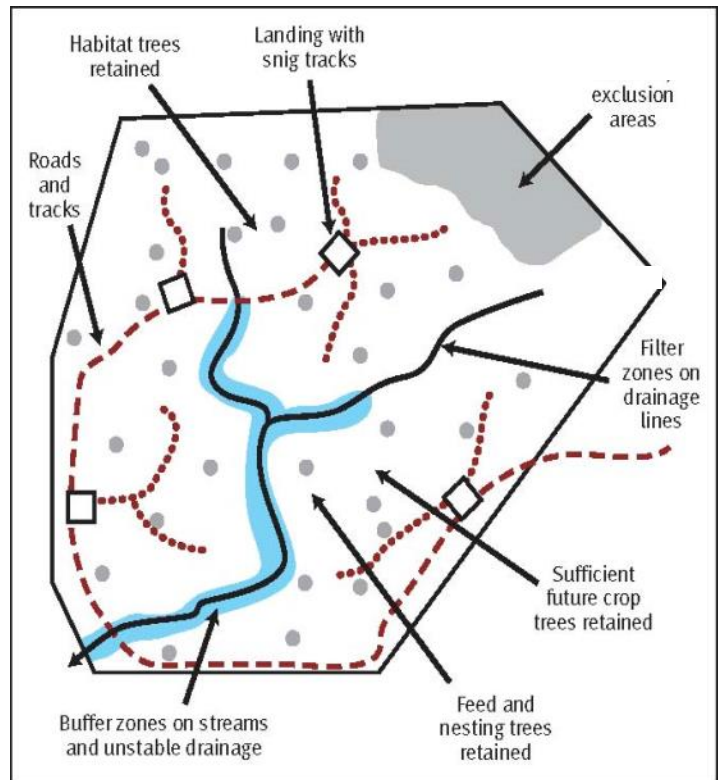


Figure 5: Forest planning

If you are in doubt about what the code means or requires, please contact a DNRM officer by telephoning 13 74 68.

5. Silvicultural practices

5.1 Sound forest management

Silviculture is the science of managing a forest to sustainably produce desired forest products while protecting the soil, water values, wildlife and biodiversity.

In forests in Queensland, silvicultural practice typically involves planned cycles of harvesting and thinning.

The code has two key requirements.

Firstly, it requires that silvicultural operations are only undertaken to encourage the growth of trees and associated forest products. This means that the primary purpose of thinning or harvesting is to produce forest products and to improve the condition of the regional ecosystem, not for any other purpose.

Secondly, following a forest practice operation the code requires that the area either remains in a remnant condition or is capable of being mapped as remnant vegetation within 20 years of the operation. This means that the forest remains or will return to a state where its height, canopy cover, structure and species composition (including the understory and ground cover) is consistent with the “typical state of that regional ecosystem”.

Native forests are often a highly variable mosaic of different types and forms of forest which naturally change over time in terms of structure and species composition. Operators need to carefully consider the forest area, including its condition, and decide on the most appropriate management to achieve their goals within the code requirements. Other important factors to consider include:

Forest type and ecology - what does this forest type need to sustainably regenerate and grow? This may include requirements for light, water and nutrients, the means for regeneration, and the need for, or protection from fire.

Forest condition - what is the growth stage, and/or stocking number (trees per hectare), structure and health of the forest? A dense stand of regeneration may be suppressed and require non-commercial thinning to produce a future crop. A mature stand may require a limited harvest of the older trees to release advanced growth and allow regeneration.

Desired products - what products are intended to be produced? Different silvicultural regimes may be needed to produce different products, remembering the requirement to maintain forest structure and species composition and return the forest to remnant status.

Past disturbance - the forest may have been adversely disturbed by past management. As a result of inappropriate harvesting, fire, soil erosion or grazing, the forest may be highly modified, poor in species composition or suppressed. Specific silvicultural treatment may be needed to rejuvenate the area.

Sound forest management advice is available from a range of forestry organisations and consultants. Some can supply written information while others can assess the forest and recommend best practice to achieve the landholder’s objectives within the code requirements.

Regardless of the forest type, condition or the desired products, a native forest practice must conserve the regional ecosystem and maintain it in a condition that will sustain ongoing timber production and forest values.

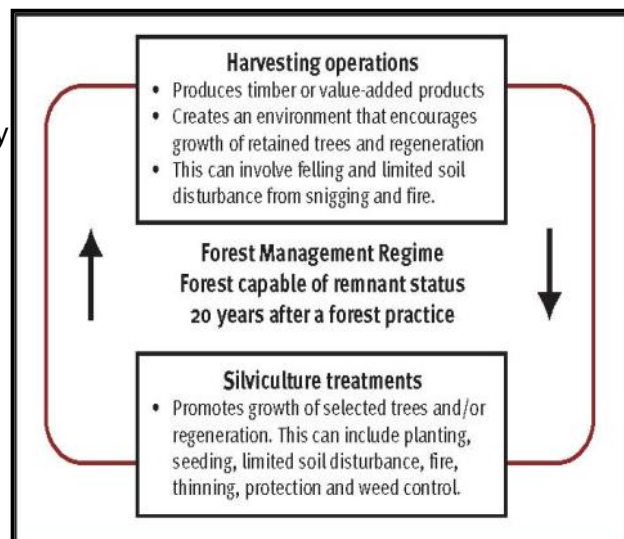


Figure 6: Native forest practice cycle

5.2 Silvicultural regimes

5.2.1 Harvesting and thinning in hardwood and cypress pine forests

Hardwood forests are dominated by Eucalyptus, Corymbia, Lophostemon and Angophora species. Cypress forests are dominated by Callitris species.

Practice

Selective harvesting and thinning must:

- only occur in the regional ecosystems listed in Table 1A, 1B and 1C
- retain the number of habitat and recruitment habitat trees listed in Table 5
- in a cypress pine forest, retain the number of timber trees listed in Table 2 in a range of sizes
- in a hardwood forest, retain the number of timber trees listed in Table 2 in the range of sizes and spacing's listed in Table 3
- retain representatives of all species in a range of sizes in each hectare
- ensure retained trees are spaced across each hectare as evenly as the natural distribution of the trees and the need for growing space allows
- limit ground disturbance to that necessary to harvest or thin an area and not exceed 50% of the ground in any 50 by 50 metre area, with the exception of roads, tracks, snig tracks and landings. Ground disturbance must not involve cultivation
- not create a park like appearance by removing the majority of understorey species.

Table 1A: Regional ecosystems containing hardwood species in which native forest practice operations are permitted

2.5.6	3.11.11	7.11.46	8.12.3	11.3.25	11.12.13	12.9-10.21	13.3.3
2.5.7	3.12.14	7.11.47	8.12.4	11.3.38	11.12.19	12.9-10.23	13.3.5
2.5.8	3.12.15	7.12.4	8.12.5	11.5.1	12.2.8	12.11.3	13.3.7
2.9.7	3.12.19	7.12.5	8.12.7	11.5.2	12.3.2	12.11.5	13.11.2
2.10.3	7.2.4	7.12.9	8.12.9	11.5.4	12.3.3	12.11.6	13.11.3
3.2.10	7.3.7	7.12.10	8.12.11	11.5.5	12.3.6	12.11.7	13.11.5
3.3.20	7.3.12	7.12.12	8.12.16	11.5.7	12.3.11	12.11.8	13.11.6
3.3.26	7.3.13	7.12.13	8.12.18	11.5.9	12.5.1	12.11.9	13.11.8
3.3.27	7.3.19	7.12.16	8.12.25	11.5.12	12.5.2	12.11.14	13.12.1
3.3.31	7.3.20	7.12.19	8.12.28	11.5.20	12.5.3	12.11.16	13.12.4
3.5.1	7.3.35	7.12.21	8.12.31	11.5.21	12.5.6	12.11.17	
3.5.2	7.3.40	7.12.22	9.3.1	11.7.6	12.5.7	12.11.18	
3.5.7	7.3.43	7.12.23	9.5.5	11.7.4	12.5.11	12.11.19	
3.5.8	7.3.48	7.12.24	9.5.16	11.7.7	12.7.1	12.11.22	
3.5.9	7.5.1	7.12.25	9.10.1	11.8.1	12.8.1	12.11.23	
3.5.10	7.5.3	7.12.26	9.10.8	11.8.2	12.8.10	12.12.2	
3.5.11	7.8.7	7.12.30	9.11.4	11.8.4	12.8.11	12.12.3	
3.5.12	7.8.8	7.12.34	9.11.10	11.8.8	12.8.12	12.12.4	
3.7.4	7.8.10	7.12.35	9.11.12	11.9.9	12.8.14	12.12.5	
3.7.5	7.8.16	7.12.42	9.11.14	11.10.1	12.8.24	12.12.6	
3.8.1	7.8.17	7.12.46	9.11.29	11.10.2	12.8.25	12.12.7	
3.8.2	7.11.5	7.12.47	9.12.2	11.10.4	12.9-10.1	12.12.8	
3.9.1	7.11.6	7.12.51	9.12.3	11.10.5	12.9-10.2	12.12.9	
3.10.6	7.11.8	7.12.52	9.12.17	11.10.7	12.9-10.3	12.12.11	
3.10.7	7.11.10	7.12.58	9.12.19	11.10.11	12.9-10.5	12.12.12	
3.10.8	7.11.16	7.12.61	9.12.20	11.10.13	12.9.10.7	12.12.15	
3.10.9	7.11.18	8.3.6	9.12.22	11.11.1	12.9-10.11	12.12.20	
3.10.10	7.11.19	8.3.8	9.12.30	11.11.3	12.9-10.12	12.12.22	
3.10.11	7.11.31	8.3.10	10.3.11	11.11.4	12.9-10.14	12.12.23	
3.10.21	7.11.32	8.11.2	11.3.4	11.11.7	12.9-10.17	12.12.24	
3.11.4	7.11.35	8.11.3	11.3.14	11.12.1	12.9-10.18	12.12.25	
3.11.6	7.11.44	8.11.8	11.3.18	11.12.3	12.9-10.19	12.12.28	
3.11.10	7.11.45	8.12.2	11.3.23	11.12.6	12.9-10.20	13.3.2	

Table 1B: Regional ecosystems in which cypress pine is dominant and native forest practice operations are permitted

6.3.16	6.3.17	11.3.19	11.10.9
--------	--------	---------	---------

Table 1C: Regional ecosystems in which group selection or selective harvesting can be undertaken

12.8.8	12.8.9	12.11.2
--------	--------	---------

Table 2: Minimum retention requirements for hardwood and cypress forests

Forest type	Minimum number of timber trees (more than 2 metres in height)	Non-timber trees / species that must be retained
Cypress pine forests in areas with greater than 600 mm of rainfall	An average of 300 timber trees per hectare with no less than 50 trees on any hectare.	<ul style="list-style-type: none"> Habitat trees as per table 5. Representatives of all species and sizes.
Cypress pine forests in areas with less than 600 mm of rainfall	An average of 250 timber trees per hectare with no less than 50 trees on any hectare.	<ul style="list-style-type: none"> Habitat trees as per table 5. Representatives of all species and sizes.
Hardwood forests in areas with greater than 600 mm of rainfall	An average of 150 timber trees per hectare with no less than 50 trees on any hectare.	<ul style="list-style-type: none"> Habitat trees as per table 5. Representatives of all species and sizes.
Hardwood forests in areas with less than 600 mm of rainfall	An average of 125 timber trees per hectare with no less than 50 trees on any hectare.	<ul style="list-style-type: none"> Habitat trees as per table 5. Representatives of all species and sizes.

Guidance

Consult the vegetation management supporting map (available at www.dnrm.qld.gov.au) to identify the regional ecosystems on your property.

A timber tree is a recognized timber species that is more than 2 metres in height.

The objective is to maintain or restore a forest to a multi layered structure with the full range of tree species and sizes that can sustainably produce timber products without changing the area's remnant status.

Please note: If you have retained less than the average number of timber trees required on one hectare, you have to retain additional trees in the surrounding hectares – overall the number of trees retained must average the number listed in Table 2.

For example, if you are conducting a native forest practice in a 10 hectare hardwood forest that receives greater than 600 mm of rainfall annually, you must retain on average 150 timber trees per hectare across the 10 hectare forest. The density of timber trees on one half of the forest is sparser than the other. On the 5 hectares that is sparse, only 100 trees across each hectare can be retained. This means that on each of the other 5 hectares, 200 trees per hectare must be retained to achieve the minimum requirement outlined in Table 2 – an average of 150 timber trees per hectare.

Table 3 outlines the tree retention and spacing requirements for a hardwood forest after harvesting.

Table 3: Minimum timber tree retention and spacing for a hardwood forest by size class

Diameter / size class	5-10cm	11-20cm	21-30cm	30cm +
Number of trees > 600ml annual rainfall	50-100 per hectare	50-100 per hectare	40 per hectare	10 per hectare
Number of trees < 600ml annual rainfall	40-100 per hectare	40-100 per hectare	35 per hectare	10 per hectare
Approx. spacing	10-15m	10-15m	15m	30m
Note: Retention of size classes is dependent on the size class being present in an area. If any size class is not present in an area then transfer the retention requirement to any other size class that is present.				

Where a forest is in poor condition—for example over run with a dense stand of wattle—it may be necessary to heavily thin an area to get regeneration of timber trees. If done in one operation, this may reduce the retention below the level defined in Table 2. Therefore, in such a case the restoration should be done over a period of years to progressively restore the entire area. This progressive approach will ensure the retention requirement of Table 2 is met and allow regeneration of timber trees to occur.

When deciding which trees to harvest or thin you should first consider whether the tallest trees should be retained or removed according the principles below, then progressively consider the smaller understory trees. The aim is to retain and space trees in the understorey at an optimal spacing while ensuring that each tree has a space to grow.

Selective harvesting involves progressively:

- retaining habitat, feed and nest trees
- retaining the very best and most vigorous trees to retain good genetics and to grow on and increase in size and value for a future harvest
- harvesting trees including suppressed and poorly formed commercial trees to give the better trees more room to grow. The different size classes are spaced at distances appropriate to that size of tree to improve growth. Harvesting should provide a growing space for each tree and progressively improve the quality and health of the forest.
- removing defective trees unless they are required as habitat trees
- encouraging regeneration to provide future crops
- maintaining or developing a multilayered structure to provide for future harvests.

Silvicultural thinning may be utilised for:

- **Thinning out and spacing regenerating timber species to improve tree growth** – for example thinning out dense regeneration of spotted gum or cypress pine. This means retaining all crop, habitat and recruitment trees while thinning regeneration to a level that is consistent with the requirements set out in Table 2.
- **Thinning to reduce competition from dense understory species** – for example thinning out a dense (2000+ per hectare) understory of wattle to release regenerating timber species. In this case, thinning should be confined to the area around the tree to be released.
- **Thinning a dense non-timber understorey species to encourage regeneration of timber species.** This thinning should be confined to the area where there is a serious deficiency of timber species and the area managed for regeneration of timber species.

Because of poor past management, some areas may have less than the number of trees specified in Table 2. To achieve appropriate levels of regeneration requires careful management, including the exclusion of fire, and may take several years.



This is **NOT** a forest practice as it has only retained a few trees of the same species and created a park like clearing.



This **IS** a forest practice because it retains a good tree density and a range of species and sizes.

5.2.2 Group selection harvesting

Group selection harvesting operations may occur only in coastal wet sclerophyll forests where this method of harvesting is required to regenerate the forest. In most situations wet sclerophyll forests can be selectively harvested, following which regeneration will occur by seed. However, where these forests are mature and have been invaded by a shrubby understory, a group selection approach may be needed to regenerate species like Blackbutt and Flooded Gum from seed.

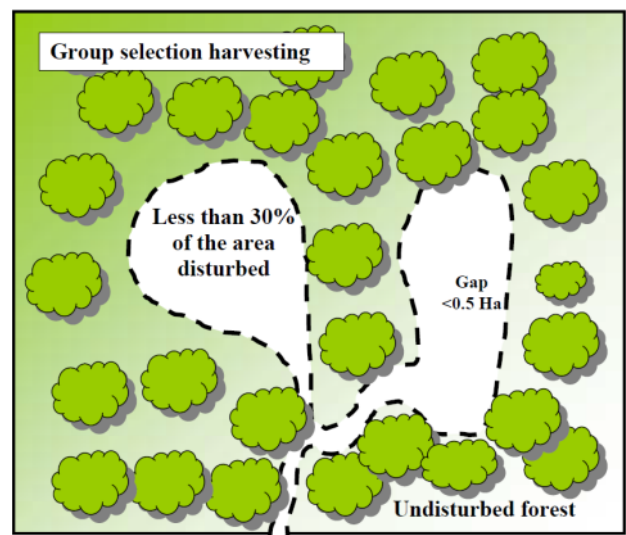


Figure 7: Aerial view of a group selection harvesting operation

Practice

Group selection harvesting must only be used in wet sclerophyll forests which would not otherwise naturally regenerate and must:

- not create individual gaps greater than 0.5 hectares in area
- not create gaps over more than 30% of the wet sclerophyll area
- not involve further group selection or selective harvesting in the adjacent undisturbed area within ten years of the previous group selection harvest
- only occur in regional ecosystems listed in table 1C.

Wet sclerophyll forests are defined as those regional ecosystems described as wet sclerophyll forests in the Regional Ecosystem Description Database—available at www.ehp.qld.gov.au or as shown in Table 1C.

Group selection involves harvesting all of the commercial trees in a group to create a gap smaller than 0.5 hectares (70 x 70 metres). After harvesting, the debris in the gap may be burnt to create an ash bed in which a future crop of shade-intolerant species can regenerate.

Harvesting should be confined to the gaps. The area between the gaps should be left undisturbed to allow time for the gap to regenerate and to provide for wildlife and other values.

5.2.3 Rainforest harvesting

In rainforests, harvesting involves a very selective process that mimics the natural process of tree fall and regeneration. Individual trees are felled to create a very small gap in which regeneration can naturally occur. Only a few trees are harvested from any hectare – it is a very selective process.

Practice

Harvesting in rainforest must:

- not create a canopy gap greater than the width of two mature tree canopies
- not harvest on average more than five trees per hectare in any ten hectares
- only occur in regional ecosystems listed in table 1D.

Rainforests are regional ecosystems that are described as closed forest, rainforest, scrubs, and vine forest in the Regional Ecosystem Description Database—available at www.ehp.qld.gov.au or as shown in Table 1D

Table 1D: Rainforest regional ecosystems in which a native forest practice is permitted

3.2.1	7.3.3	7.11.3	7.12.6	12.8.22	12.12.17
3.2.12	7.3.23	7.11.7	7.12.7	12.9-10.16	12.12.18
3.2.13	7.3.38	7.11.14	12.3.1	12.11.10	
3.2.28	7.3.42	7.11.23	12.5.13	12.11.11	
3.11.3	7.8.4	7.11.25	12.8.4	12.11.12	
3.12.3	7.8.14	7.11.29	12.8.13	12.11.13	
7.2.2	7.8.15	7.12.1	12.8.21	12.12.16	

5.2.4 Small scale harvesting of specialty timbers and minor forest products

Practice

A native forest practice can occur in any regional ecosystem for:

- small scale harvesting of specialty timbers provided no more than 5 trees per hectare on average in any 10 hectares are removed
- harvesting minor forest products provided at least 200 timber trees are retained per hectare.

Small scale harvesting of specialty timber refers to the very low intensity harvesting of species such as Brigalow, Gidgee or other specialty timbers.

Minor forest products are products such as posts, rails, firewood, pit props, wood pieces for handicraft and charcoal.



Figure 8: Dozer equipped with winch for harvesting in steep areas

6. Protecting the forest

6.1 Avoiding soil degradation

Forest operations will generally involve some degree of soil disturbance from roads, felling and the extraction of logs. The objective is to conduct silvicultural activities without initiating processes that accelerate soil erosion, cause watercourse instability, or land slips.

Practice

Except for roads, tracks, snig tracks and landings, the native forest practice must maintain at least 50% of the ground surface in any 50 by 50 metre area either:

- undisturbed or
- with a vegetative ground cover (dead or alive).

A native forest practice must not occur:

- on an area where the majority slope is greater than 45 percent or 25 degrees
- within 20 metres of an unstable area or an area vulnerable to mass movement.

Guidance

Operators are advised to seek advice or use their knowledge to 'read' and evaluate the soil and soil erosion hazard. A high potential for soil erosion may be indicated by:

- bare soil areas displaying sheet erosion
- extensive rilling of the soil surface
- active gullying and wash-outs.

Where these characteristics are present, operators are advised to take extra care and where possible avoid the area. Extra care should also be taken on highly erodible or texture contrast soils.

You are advised to look for signs of mass movement (e.g. land slips, cracks, hummocky ground, leaning trees) and exercise caution if areas show signs of instability.

Before undertaking an operation, you should:

- Assess the environmental hazard of operation. Where the hazard is high, unacceptable or unmanageable, the site should be excluded from the operation.
- Where acceptable, determine the required operational conditions (e.g. timing in relation to weather and techniques) to minimise the potential for damage.
- Operate with due care to minimise the potential for causing land degradation.
- Promptly repair inadvertent damage by smoothing and surface stabilisation (e.g. cover with litter/debris) to restore the natural pattern of overland flow and protect the soil from accelerated erosion, without worsening the situation.



Figure 9: Land degradation as a result of a poorly sited watercourse crossing

6.2 Protecting water features

Wetlands, watercourses and adjacent vegetation should be protected to maintain bank stability, water quality, aquatic habitat and wildlife habitat.

Wetlands and watercourses are shown on the Vegetation management supporting map — available at www.dnrm.qld.gov.au.

Practice

A native forest practice, other than the establishment of a crossing, must not occur within a buffer zone of a wetland or watercourse as specified in Table 4.

Table 4: Buffer and filter zone requirements around wetlands and watercourses

Water feature	Buffer zone width – metres			Filter zone width – metres
	Stable water features <i>(refer note)</i>	Unstable water features		
Wetlands				
	20m	20m		20m
Watercourses				
Stream order 1 or 2	0m	5m	Apply the instability provision or a distance equivalent to 3 times the height of the instability whichever is greater.	15m
Stream order 3 or 4	5m	5m		25m
Stream order 5 or more	10m	10m		50m

Note: Buffer distances are measured from the defining bank of the wetland or watercourse.

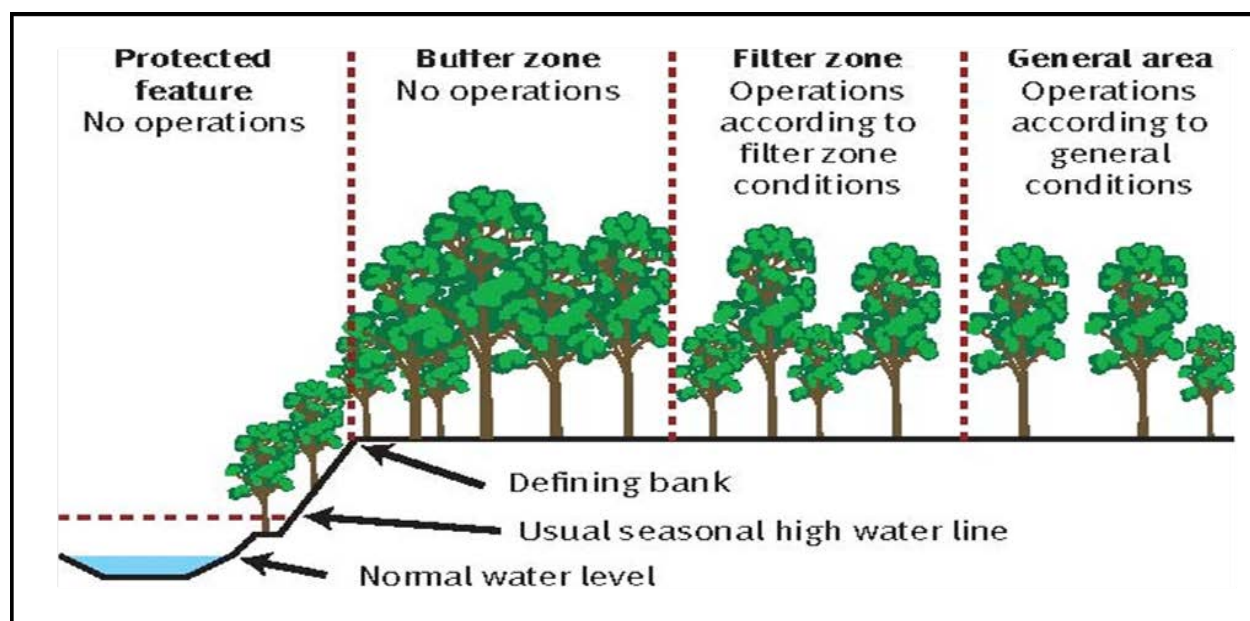


Figure 10: Cross section of watercourse, buffer and filter zones

Guidance

Wetlands are defined as an area of land that supports plants or is associated with plants that are adapted to and dependent on living in wet conditions for at least part of their life cycle. Wetlands that must be protected under this code are shown on the vegetation management supporting map (available at www.dnrm.qld.gov.au).

Watercourses are defined as natural rivers, creeks or channels shown on the vegetation management supporting map (available www.dnrm.qld.gov.au). If in the field a watercourse is comprised of multiple channels or anabranches, each channel associated with the watercourse must be protected.

Wetland and watercourse protection involves applying buffer and filter zones.

A **buffer zone** is defined as the zone measured from the defining bank, which must not be physically disturbed; and where trees cannot be felled either into the water feature, within the buffer zone, or from outside the buffer zone into the buffer zone. Where there is instability, apply you should apply whichever is greater of the standard buffer distance or a distance equivalent to 3 times the height of the instability.

A **defining bank** is the bank which confines the seasonal flows but which may be inundated by flooding from time to time. This can be either:

- the bank or terrace that confines the water before the point of flooding; or
- where there is no bank, the seasonal high waterline (the point of flooding).

A **filter zone** is defined as an area that may be periodically harvested but must be managed in a way that avoids soil erosion and maintains its capacity to filter runoff. Trees cannot be felled in the filter zone if it may cause stream bank instability.

You should inspect watercourses and drainage features to assess the degree of stability. Exercise caution if banks or beds show signs of instability.

An **unstable section** is defined as a section of a watercourse or a drainage feature having a bank or edge (including slumps, overhangs and recently eroded faces) that is unstable, and the instability has a vertical height of 50 cm or greater.

Where an unstable section occurs, the width of the buffer zone measured from the defining bank is either the prescribed width (outlined in Table 5); or three times the height of the instability, whichever is greater.

Apply the extended buffer zone (of three times the height of the instability) for a distance of three times the height of the instability in both upstream and downstream directions from the instability. The extension of the width of the buffer zone applies only to the side of the stream or drainage line with the instability.

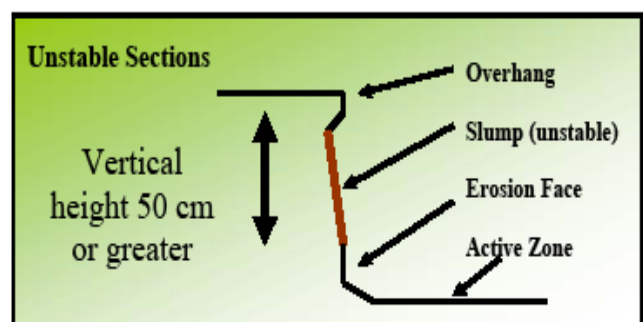


Figure 11: Unstable section of watercourse

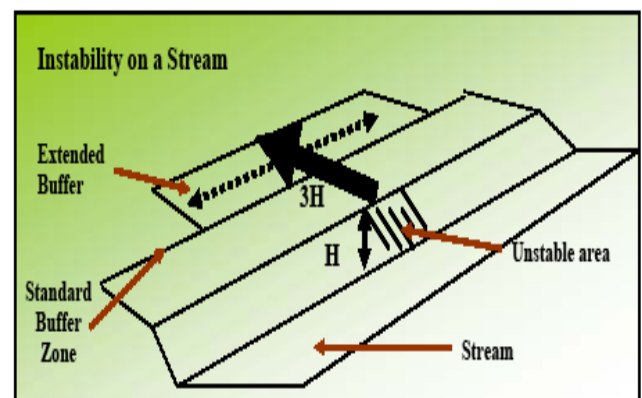


Figure 12: Extended buffer zones on unstable sections

7. Protecting wildlife habitat

7.1 Protecting habitat

The wildlife habitat values of the forest are maintained by retaining habitat, feed and nest trees, retaining trees in buffer zones, around wetlands and across the forest practice area.

7.2 Protecting habitat trees

The code requires that a specified number of habitat and recruitment habitat trees be retained.

Practice

A native forest practice must retain the number of habitat and recruitment habitat trees listed in Table 5 and the habitat and recruitment trees must be spaced as evenly across each hectare as their natural distribution permits.

Table 5: Habitat tree requirements

Hardwood forests within the greater glider range		Hardwood forests outside the greater glider range		Cypress forests	
Number of habitat trees available/ha	Number of recruitment habitat trees/ha	Number of habitat trees available/ha	Number of recruitment habitat trees/ha	Number of habitat trees available/ha	Number of recruitment habitat trees/ha
6	2	4	1	2	1
5	4	3	3	1	3
4	5	2	4	0	4
3	7	1	6		
2	8	0	7		
1	10				
0	11				

Guidance

Determine if the native forest practice is in a hardwood or a cypress forest by referring to Table 1A and 1B.

Using Figure 1, determine if your property is within the range of the greater glider (otherwise known as the fluffy glider).

Identify the number of habitat and habitat recruitment trees that must be retained from Table 5.

For example, if you are in a hardwood forest within the range of the greater glider, and you have 2 habitat trees, you would need to retain 8 habitat recruitment trees. If you have 6 habitat trees you would have to retain 2 habitat recruitment trees.

A **habitat tree** is a tree used or potentially used by hollow dwelling fauna. Habitat trees are identified as a living tree with one or more visible hollows of 10cm or more in diameter that are positioned at least 2m above the base of the tree.

You should consider the trees on the area that meet the criteria of a habitat tree. Operators should make a reasonable effort to identify trees with hollows—some hollows will not be visible from the ground. You cannot count trees external to the area (e.g. on an adjoining road).

If you are operating in:

- a hardwood forest in the greater glider range and there are 6 or less habitat trees per hectare, all must be retained
- a hardwood forest outside of the greater glider range, and there are 4 or less habitat trees per hectare, all must be retained.
- a cypress forest, and there are 2 or less habitat trees per hectare, all must be retained.

Where there is more than the required number of habitat trees available (Table 5), retain the largest and best developed habitat trees.

Recruitment habitat trees are necessary to ensure there are sufficient habitat trees available in the future. Where there is presently an insufficient number of habitat trees on an area additional recruitment habitat trees must be retained. The number of recruitment habitat trees required per hectare is listed in Table 5.

When selecting recruitment habitat trees to retain, you should choose the largest and best developed recruitment habitat trees.

A **recruitment habitat tree** is a dominant or co-dominant tree with signs of developing hollows. Signs are damage to branches, damage to stems, existing small hollows, dead stems / limbs, bumps or swellings in the tree bole or termite nests. A recruitment habitat tree is a tree that may develop into a habitat tree.

A **dominant tree** is a tree with a crown within or above the canopy of the forest and a height in excess of adjacent crowns in the canopy.

A **co-dominant tree** is a tree with a crown within the canopy of the forest and height equal to or less than adjacent crowns in the canopy.

Select additional dominant or co-dominant trees. Where insufficient habitat recruitment trees exist to meet the retention requirement, select additional dominant or co-dominant trees spaced across each hectare to meet the minimum number outlined in Table 5.



Figure 13: Recruitment habitat trees

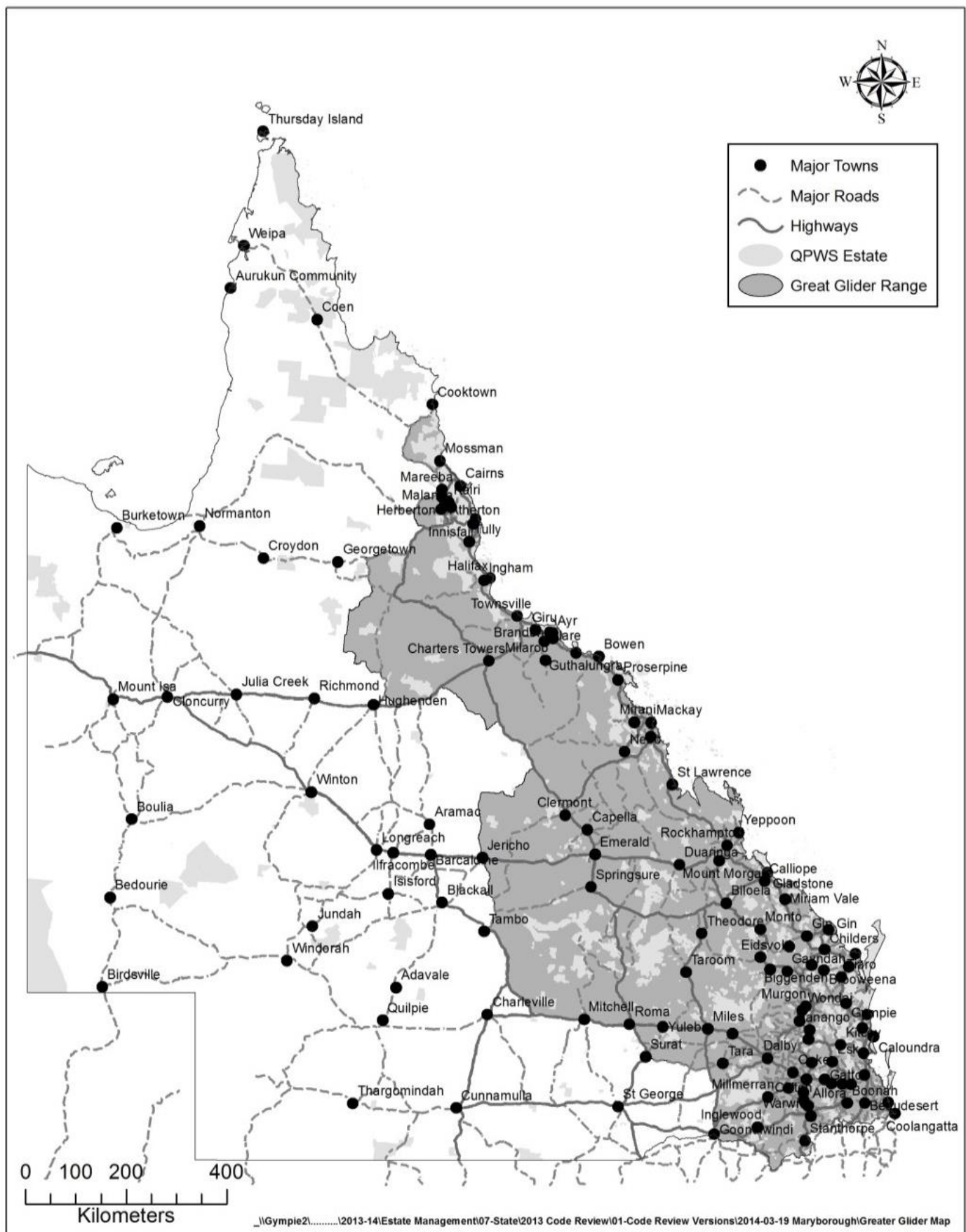


Figure 14: Range of the greater glider

7.3 Protecting feed, nest and shelter trees

All feed, nest and shelter trees need to be retained and protected.

Practice

A native forest practice must retain all feed, nest and shelter trees.

Guidance

Prior to felling, operators should inspect trees and identify the following.

Feed trees are trees having five or more recent bark incisions typically made by yellow-bellied gliders. Feed marks are regarded as recent when the cut edges either have no callusing or when callusing has not healed completely across the cut.

All feed trees must be retained.

Nest trees are trees containing an active bird's nest. An active nest is that of a native species that is complete and contains eggs, sitting birds, nestlings or is under construction. Trees with birds of prey nests, whether in use or not, are also nest trees (birds of prey are known to reuse nests year after year).

Feed and nest trees must be retained and protected from damage by harvesting, silviculture and/or fire. That is, feed and nest trees should not have accumulated debris around the base of the tree. Feed and nest trees may also serve as habitat or recruitment habitat trees if they meet the code requirements.

Shelter trees are trees in which any protected native fauna is visible when undertaking a native forest practice activity. Protected native fauna is listed in the *Nature Conservation Act 1992* and includes common fauna species.

Important: check the koala plan

If you intend to conduct a native forest practice in South East Queensland (stretching from Gladstone to the New South Wales border and west to Toowoomba) you will need to ensure that any clearing complies with the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016* (the koala plan). The koala plan can be viewed on the following website www.ehp.qld.gov.au

If you intend to conduct a native forest practice outside of South East Queensland then the koala plan does not apply.



Figure 15: Habitat tree



Figure 16: Feed tree

8. Road and track access

Harvesting and thinning operations will generally require access for vehicles and machinery. Operational access generally uses a combination of existing and constructed property roads and tracks.

Poorly designed, located or managed roads and tracks are often a major and ongoing cause of significant soil erosion and water pollution.

Practice

Native forest practice roads and tracks must:

- not be used when soils are saturated
- be drained and any water or runoff diverted onto undisturbed areas before the water is able to traverse the maximum permitted distances listed in Table 6
- maintain an effective level of drainage during use and be fully drained on temporary cessation or completion of operations
- where the watercourse is not regulated by the Water Act 2000, not
 - cross an unstable section of a watercourse or
 - be set on the level of the bed or involve excavation or filling of the bed.

Guidance

A road or track refers to a new or existing vehicular road or track that is constructed, maintained or used for the purpose of a native forest practice. Once operators use any existing track, it becomes subject to the requirements of this code. Therefore, if you elect to use degraded, existing roads you may need to repair wash-outs/ruts that are an ongoing cause of degradation.

Roads and tracks are best located on areas that facilitate drainage and where minimal earthworks are required.

Except for a crossing, roads and tracks must not be located within watercourses, unstable gullies, wetlands and associated buffer zones. Existing roads and tracks in buffer zones may be used provided they are managed to avoid land degradation, according to this code.

New roads and tracks should not be located on unstable areas and should generally avoid side slopes exceeding 20 degrees.

Watercourse crossings can cause significant destabilisation of watercourses and should be carefully planned, constructed and maintained. Crossings include the bed, banks and buffer zone of the watercourse.

The construction of a crossing in certain watercourses may be subject to the *Water Act 2000* or the *Fisheries Act 1994* – refer to www.dnrm.qld.gov.au and www.daff.qld.gov.au for details.

Where watercourse crossings are not regulated by the *Water Act 2000*, the crossing should:

- be located in a relatively straight section of the watercourse or gully in an area with low and stable banks
- be aligned at an approximate right angle to the **water flow**
- be set on the bed level and not involve excavation or filling of the bed
- involve minimal box cutting of the ramp.
- have drainage which diverts the water so it does not flow down the ramp.

Existing crossings may be used provided that their use will not accelerate land degradation.

Effective **road drainage** is essential to maintain road strength and function, and minimise erosion.

On roads and tracks constructed or used for a native forest practice, overland water flows must be drained and diverted onto undisturbed areas before the water is able to traverse the maximum permitted distances outlined in Table 6. Overland flow may be diverted due to a drain or achieved by location, alignment, crossfall or a natural feature.

The objective is effective drainage of the track. Identify points where run-off will or should be diverted. Check the specified maximum distance for overland flow and install additional drainage such as water bars, as necessary.

Drainage discharge must be dispersed into a vegetated area or an area of undisturbed ground cover before entering a filter zone.

Road and track drainage should employ an appropriate combination of location, alignment, crossfall, breaching of edge berms, use of natural drainage points, and dedicated drainage structures such as water bars. Operators should consider whether the road will be temporary or required for ongoing property access and employ structures appropriate to each circumstance.

Construction of road drainage is generally impractical in 'bull dust' conditions. To provide protection until rainfall stabilises the dust and permanent drainage can be constructed, either breach any berms or ruts; or push temporary inverts; or periodically place debris on the surface.

To implement best practice drainage, you should:

- provide at least a basic level of drainage during operations to avoid serious damage that will later require remediation. It is accepted that some drainage structures are impractical because they will be destroyed by road use. Good location, alignment and crossfall with the avoidance of berms, and long deep ruts should provide a basic level of drainage.
- install temporary drainage when operations temporarily cease for a period greater than one month or when seasonal or predicted weather conditions make a significant rainfall event likely.
- ensure that the code drainage requirements are functional upon completion of your operations.

Roads and tracks must not be used when soils are saturated.

Table 6: Maximum distance of overland flow

Slope (degrees)	Slope (percent)	Maximum spacing between drainage points (metres)
<3	5	145
4-5	7	100
6-7	12	65
8-10	17	40
11-14	20	25
>14	25	15

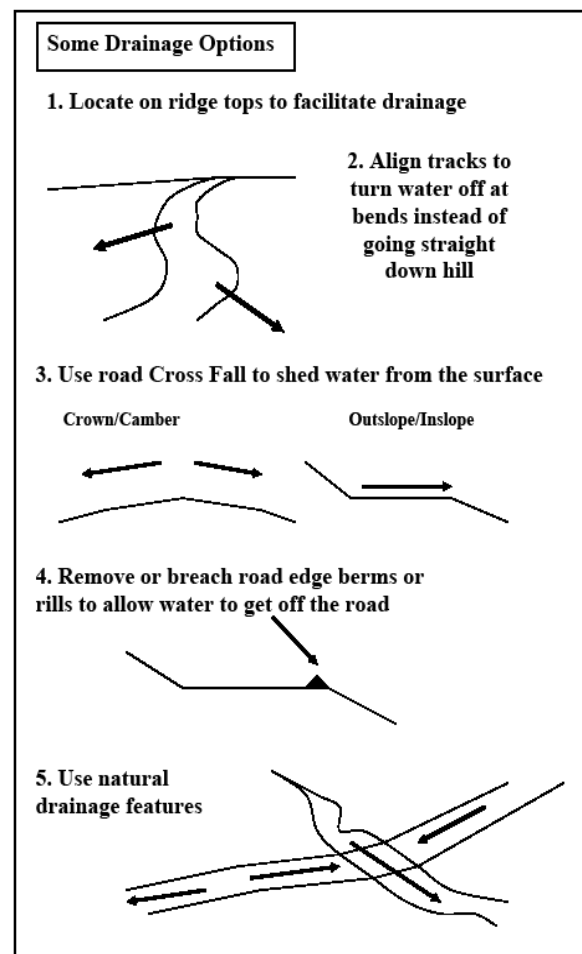


Figure 17: Track and road drainage

Roads and tracks should be maintained during use and stabilised immediately after use ceases. This involves:

- maintaining the road surface to ensure effective drainage by smoothing ruts and removing edge berms
- removing all temporary crossings and stabilising temporary tracks immediately after ceasing use of the crossing or track

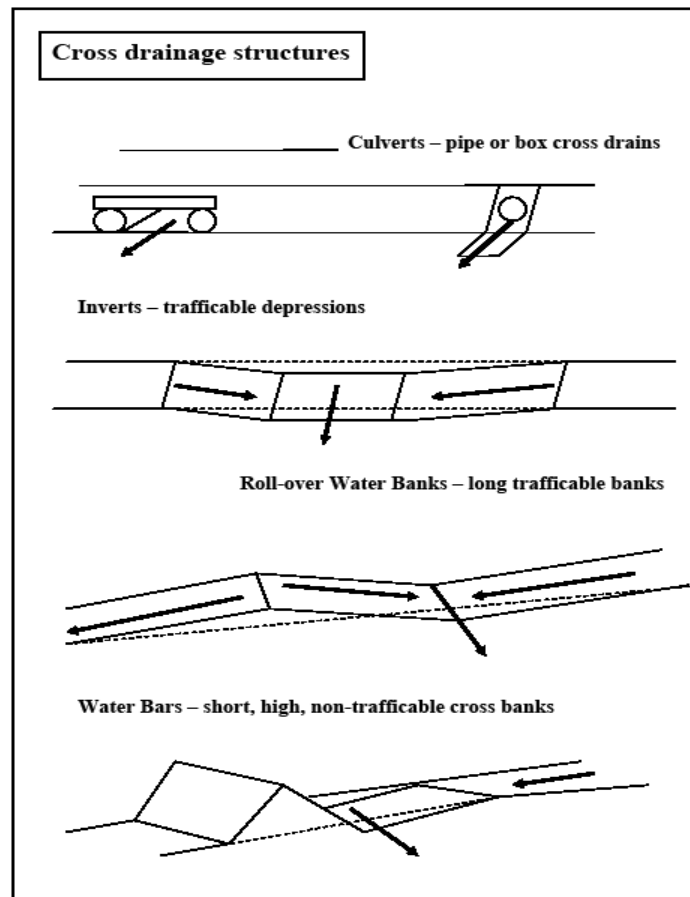


Figure 18: Drainage structures



Figure 19: Water bar with side drain on a snig track

9. Silvicultural operations

Harvesting and silvicultural thinning in native forests must retain a sufficient number of trees to ensure that the forest remains remnant or is capable of returning to a remnant status within 20 years.

Practice

Harvesting and thinning must:

- not occur on any area while the soil is saturated
- not use a chain, chain and ball, or cable linked between two machines
- not involve felling trees into or against future crop or habitat trees
- not involve felling trees into the buffer zone of a watercourse or drainage feature
- not involve felling a tree within the filter zone, if this may cause the formation of an unstable section in a watercourse or drainage feature.

Snig tracks must not:

- be located in a stable drainage feature unless the nature of the drainage feature will ensure that land degradation does not occur as a result; or
- cross an unstable section of a watercourse or gully.

Snigging must not:

- damage or push debris against retained trees
- in a filter zone cause soil disturbance or a groove in the soil surface that could channel water, and cause accelerated soil erosion
- recover a log from a filter zone if this will create a groove in the soil surface that could channel water, and cause accelerated soil erosion.

New landings must be of a size that is proportionate to the size and volume of forest products being handled and must not exceed 0.25 hectares (50x50 metres) in area.

Snig tracks and landings must:

- be drained so that water is regularly diverted onto undisturbed areas in accordance with the maximum permitted distances listed in section 9 - Table 6
- maintain an effective level of drainage during use and be fully drained on temporary cessation and completion of operations.

Woody debris from harvesting and thinning operations must not be:

- left within 2 m of any habitat, recruitment habitat, feed or nest tree; or
- pushed against retained trees in the forest or adjacent to a landing.

Soil disturbance for regeneration must only occur in areas subject to group selection harvesting.

Thinning must not occur by aerial application of herbicides or ground application of soil absorbed, broad spectrum herbicides which kill woody plants.

Guidance

Silvicultural regime

The harvesting and thinning silvicultural regime must be in accordance with section 5, Table 2.

Harvesting will commonly involve:

- felling by chainsaw or machine
- snigging or skidding by rubber-tyred or tracked machines via a network of snig tracks

- storage of logs and, where required, processing of logs on a landing
- loading and haulage by truck.

Thinning operations may be carried out separate to or in association with harvesting. Thinning may occur by felling, chemical injection, mechanical thinning or the use of fire.

Acceptable disturbance

The action of harvesting and thinning will cause some soil disturbance and clearing (pushing over, trampling, breaking off) of some native vegetation, especially understory, as a normal and unavoidable consequence of the operation.

This disturbance is acceptable provided it is limited to a reasonable degree of disturbance and 'clearing', to allow the harvesting and thinning to be practically achieved.

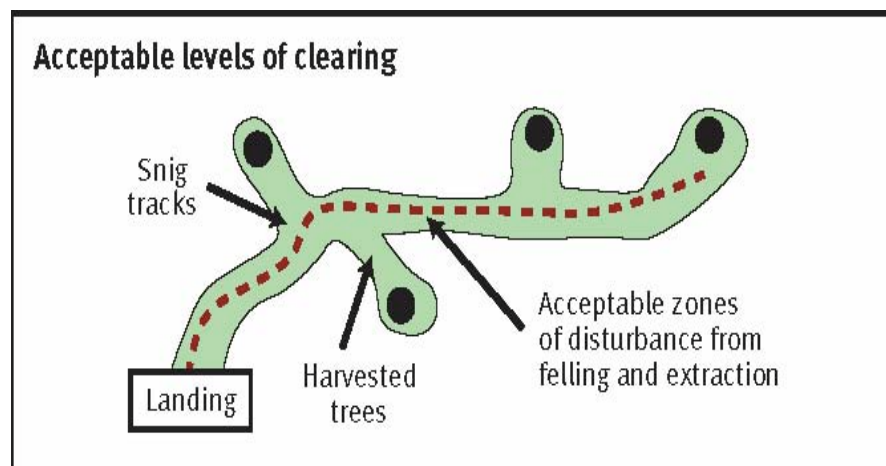


Figure 20: Typical amount of disturbance on a native forest practice area caused by felling and snigging

Weather restriction

Harvesting must not occur on any area while the soil is saturated. Restrict operations as soon as soils become wet.

Supervision

All persons involved in a native forest practice have a responsibility to comply with the code. This means that landowners, workers and contractors need to fully understand the code's requirements and apply them. Brief all persons who may be involved in the native forest practice. Where contractors are used, it is advisable to incorporate code requirements in any contract.

Landholders and operators should ensure, by verbal or written instructions, maps or physical markings that all persons involved know the boundaries, buffer zones and trees to be retained.

Landholders and contractors should inspect and supervise the work of their employees and at an appropriate frequency, ensure that they are complying with the code.

Felling

Felling is defined as the use of a chain saw or felling machine to cut a tree off at the base and leave a stump in the ground. It is not acceptable to pull trees out of the ground. It is not acceptable to pull trees from the ground using an excavator or some other machine.

Felling for harvesting or thinning purposes should be carried out in a manner that facilitates removal of the tree or the extraction and recovery of a log or product while minimising soil disturbance and protecting watercourses and retained trees.

Snigging (or skidding)

Snigging or skidding of logs generally involves a network of snig tracks along which logs are transported to a landing. A snig track is constructed for the purposes of snigging or forwarding logs and other forest products.

Snig tracks and landings should be located and designed to achieve safety and efficiency while optimising drainage and minimising earthworks, soil disturbance and loss of productive area.

Snig tracks must not be constructed in areas vulnerable to mass movement or having majority slopes exceeding 20 degrees as this will lead to land degradation.

Existing snig tracks and landings may be used provided their use will not result in land degradation and they are managed and drained in accordance with this code.

Snig track crossings can cause significant impact and destabilise watercourses. They should be carefully planned, constructed and maintained.

Existing crossings may be used provided their use will not accelerate land degradation.

New crossings on gullies must not be located in an unstable area and should be located in accordance with the requirements and guidance provided in section 8.

Snigging and skidding should:

- avoid damage to trees retained for future harvest or for habitat
- be systematic in the operation of tracks to minimise the number and duration of tracks in use at any one time
- utilise 'walkover' techniques to maximise ground cover retention and minimise soil disturbance
- keep the blade raised while travelling
- utilise reversing or log end lifting to minimise soil disturbance
- utilise winches, where appropriate, to pull logs from stumps where this will reduce log length or soil disturbance
- periodically alter the running track to minimise rutting.

The code requires the following:

- snigging must not occur within streams, unstable drainage lines, wetlands, lakes and springs and associated buffer zones
- snigging should not occur in stable drainage features unless the nature of the drainage feature will ensure that land degradation does not occur as a result
- snigging should not damage retained trees.
- the recovery of any log within a filter zone must not expose the mineral soil surface and / or create a groove in the soil surface that could channel water, and potentially cause accelerated soil erosion. Promptly repair any inadvertent damage by smoothing, drainage and surface stabilisation (e.g. cover with litter / debris) to restore the natural pattern of overland flow and protect the soil from accelerated erosion without exacerbating the situation.

Landings

A log landing is an area, constructed or natural, where timber or forest products are stockpiled and loaded onto a haul truck. Landings may also be used for processing, eg. portable saw milling or fire wood production. The size of a landing should be matched to the size and volume

of forest products that have to be handled but should not exceed 0.25 hectares - 50x50 metres. It is preferable to use existing landings and or openings in the forest.

Waste from the landings including bark and off-cuts from processing must not be pushed against adjacent trees or create a fire hazard.

Drainage of snig tracks and landings

Effective snig track drainage is essential to maintain track strength and function, and minimise accelerated erosion. Overland waterflow on snig tracks and landings must be diverted onto undisturbed areas before traversing the maximum permitted distances (outlined in Table 6).

These distances refer to points where overland flow is diverted whether this is due to a constructed drain or achieved by location, alignment or crossfall.

Table 6: Maximum distance of overland flow		
Slope (degrees)	Slope (percent)	Maximum spacing between drainage points (metres)
<3	5	145
4-5	7	100
6-7	12	65
8-10	17	40
11-14	20	25
>14	25	15

The objective is effective drainage. When planning drainage, identify points where run-off will or should be diverted. Check that specified maximum distance for overland flow has been complied with. Install additional drainage as necessary. Drainage discharge must be dispersed into a vegetated area or an area of undisturbed ground cover before entering a filter zone.

Snig track and landing drainage (Table 6) should employ an appropriate combination of location, alignment, crossfall, breaching of edge berms, use of natural drainage points, and dedicated drainage structures.

Water bars should only be constructed on minor snig tracks if the disturbance is such that it may cause erosion.

Construction of drainage is impractical in 'bull dust'. In areas with bull dust, temporarily stabilise by breaching berms or ruts, pushing temporary inverts or periodically placing debris. Operators must provide at least a basic level of drainage during operations to avoid serious damage that will require remediation.

Drainage structures are impractical because they will be destroyed by snigging. Provide good location, alignment and crossfall, breach road edge lines of soil that impede drainage and smooth ruts.

You should install temporary drainage when operations temporarily cease for a period of greater than one month or when seasonal weather conditions make a significant rainfall event likely.

Ensure that the code drainage requirements are functional upon the completion of operations.

Woody debris from harvesting and thinning operations should be managed to protect regeneration, trees retained for future harvest or habitat, nest or feed trees. Woody debris must not be:

- left within 2m of any habitat, recruitment habitat, feed or nest tree
- pushed against trees retained for future harvest.

Trees and tree heads should generally be left where they have fallen to permit germination and protect regeneration in the area, however they may be burnt. Heads may be lopped to remove flammable material away from habitat trees or to facilitate general property management.

Secondary or excessive pushing, stacking or stick raking of debris to "clean up" an area should not occur because this may damage retained trees, adversely affect regeneration and reduce the ability of the forest to return to remnant status. Such activity is not compliant with this code and may constitute clearing under the *Vegetation Management Act 1999*. It is not the intent of the code to convert forest areas to park-like environments.

Soil disturbance for regeneration is only permitted in wet sclerophyll forest types as a follow on to group selection harvesting. In other forest types, no additional soil disturbance (for regeneration) is to occur.

- Where group selection harvesting is used, soil disturbance for regeneration purposes must not occur within a buffer or filter zone.
- Snig track and landing soil disturbance must not occur in areas having a majority slope exceeding 10 degrees.

Thinning methods can include:

- manual felling with an axe, chainsaw or brush cutter
- herbicide applied by stem injection (axe) or cut stump application (using a brush cutter). Herbicides must be used with caution and in accordance with manufacturer's instructions. The use of persistent, soil residual herbicides that kill woody plants is not acceptable and must not be applied to the ground because of the indiscriminate potential to unintentionally kill trees. Operators should be aware of and avoid 'flashback' as a result of herbicide translocating from an injected tree to a retained tree. This is most likely to occur where dense stands are being thinned. If in doubt seek advice.
- machine felling (i.e. slashers or machines with shears or saws may be used to thin small trees), provided that: the debris is not heaped or raked and any soil disturbance will not cause land degradation
- machine trampling or chopping using a tractor or dozer equipped with front blades or chopper rollers to trample or chop up unwanted small trees provided:
 - the machine size and blade width is suitably small to avoid excessive disturbance and clearing
 - the process utilises a pattern of working that does not trample more than 50% of any hectare
 - vegetation is only pushed down and trampled. The front blades must not be used to push all of the vegetation out of the ground or scalp the soil
 - debris is not heaped or raked
 - soil disturbance caused by the machine will not cause land degradation.



Figure 21: Chopper roller thinning very dense cypress pine

10. Planting, fire and weeds

10.1 Planting trees

Practice

Woody species that are not native to the site must not be planted or seeded in a native forest practice area.

Only the species listed in the appropriate regional ecosystem description must be planted or seeded. Regional ecosystem descriptions are available online in the Regional Ecosystem Description Database at www.ehp.qld.gov.au.

10.2 Fire management

Practice

Burning must be undertaken in accordance with recognised best practice guidelines.

Guidance

Fire management may include:

- Top disposal burning of the felled tree heads shortly after harvesting a hardwood forest.
Note: This is a spot burning operation under mild fire conditions to remove some of the fuel and create an ash bed for regeneration.
- Wildfire management to protect the forest and includes:
 - providing a fire management system including firebreaks and management lines
 - undertaking periodic fuel reduction burns, where this is appropriate to the forest type
 - maintaining a wildfire fighting capability.

Fuel reduction burning involves the periodic burning of sections of a forest to systematically reduce the fuel load and manage the forest vegetation. It should:

- not be carried out in rainforest types and be excluded or carefully controlled in cypress pine or other forests that are fire-sensitive
- be used in forest types where fire is an essential part of the regeneration process or to manage existing regeneration
- be at a frequency that permits regeneration to survive. Frequencies of 5-7 years are common and regeneration needs to be in excess of 5m in height to survive a fire
- have a fire intensity matched to the silvicultural need, which generally involves a low fire intensity that leaves sufficient unburnt surface litter to prevent accelerated soil erosion
- be timed to avoid periods of high intensity rainfall that may cause accelerated soil erosion
- should not be used in a manner that will adversely affect the area's ability to be returned to a remnant status within 20 years of a forest practice.

Burning must be undertaken in accordance with recognised best practice guidelines.

Landholders should contact the local fire brigade and obtain all necessary fire permits.

10.3 Weed control

Non native vegetation, such as lantana, may be controlled as part of a native forest practice provided the activity complies with the Self-assessable vegetation clearing code for managing weeds.

Glossary

Commercial harvesting and thinning is where harvesting and or thinning operations are undertaken with some sort of financial or economic gain from the trees harvested or thinned.

Cultivation is where an implement is used to dig, cut and or overturn soil.

Defining bank is the bank which confines the seasonal flows but may be inundated by flooding from time to time. This can be either:

- the bank or terrace that confines the water before the point of flooding; or
- where there is no bank, the seasonal high waterline (the point of flooding).

Diameter refers to the diameter of a tree measured at 1.3 metres above the ground.

Freehold land includes land in a freeholding lease under the *Land Act 1994*.

Indigenous land is land held under a following Act by, or on behalf of or for the benefit of, Aboriginal or Torres Strait Islander inhabitants or purposes-

- (a) the *Aurukun and Mornington Shire Leases Act 1978*
- (b) the *Aboriginal Land Act 1991*
- (c) the *Torres Strait Islander Land Act 1991*
- (d) the *Land Act 1994*.

Majority slope of 20 degrees means an area where 90% of the area is less than 20 degrees.

Minor forest products include posts, rails, firewood, wood pieces for handcraft, charcoal.

Nest trees are trees which contain an active bird's nest or a tree containing the nest of a raptor or other bird which utilises the same nest year after year.

Non-commercial thinning is where harvesting and or thinning operations are undertaken without financial or economic gain from the trees harvested or thinned.

Recognised best practice means operating in accord with guidelines such as:

- the Regional Ecosystem Description Database (REDD)
<http://www.ehp.qld.gov.au/ecosystems/biodiversity/regional-ecosystems/index.php>
- a publication "Using fire in spotted gum – ironbark forests for production and biodiversity outcomes" is available on the DAFF website www.daff.qld.gov.au
- guidelines developed by a natural resource management group such as Fire Management Guidelines – Reef Catchments (Brigalow, Central Queensland, Reef catchments), a fire management plan developed by the Rural Fire Service or another local fire authority.

Remnant vegetation means vegetation, part of which forms the predominant canopy of the vegetation:

- covering more than 50% of the undisturbed predominant canopy, and
- averaging more than 70% of the vegetation's undisturbed height, and
- composed of species characteristic of the vegetation's undisturbed predominant canopy.

Seasonal high water line is a zone which represents the usual peak seasonal flow level and can be identified by deposition, debris or characteristic vegetation zonation. If this is not obvious, project a horizontal line from the seasonal high waterline on the opposite bank.

Unstable area or areas vulnerable to mass movement are areas in which there is obvious evidence of surface erosion, rilling, gullyng or mass movement (land slips, cracks, hummocky ground).

Appendix 1: Summary of practices

Practices	Section	Page
Landholders must notify DNRM before commencing a native forest practice.	3	5
Landholders undertaking a native forest practice must comply with the practices in this code.	3	5
A native forest practice must: <ul style="list-style-type: none"> only occur for the purpose of producing value added forest products maintain documentary evidence of the sale of products. 	4	6
No more than 5% of the area, in which a native forest practice is conducted, may be disturbed by roads, tracks, snig tracks and log landings.	4	7
Selective harvesting and thinning: <ul style="list-style-type: none"> must only occur in the regional ecosystems listed in Table 1A, 1B and 1C must retain the number of habitat and recruitment habitat trees listed in Table 5 in a cypress pine forest, must retain the number of timber trees listed in Table 2 in a range of sizes in a hardwood forest, must retain the number of timber trees listed in Table 2 in the range of sizes and spacing's outlined in Table 3 must retain representatives of all species in a range of sizes in each hectare must ensure retained trees are spaced across each hectare as evenly as the natural distribution of the trees and the need for growing space allows must limit ground disturbance to that necessary to harvest or thin an area and not exceed 50% of the ground in any 50 by 50 metre area, with the exception of roads, tracks, snig tracks and landings. Ground disturbance must not involve cultivation must not create a park like appearance by removing the majority of understorey species. 	5	9
Group selection harvesting must only be used in wet sclerophyll forests which would not otherwise naturally regenerate and must: <ul style="list-style-type: none"> not create individual gaps greater than 0.5 hectares in area not create gaps over more than 30% of the wet sclerophyll area not involve further group selection or selective harvesting in the adjacent undisturbed area within ten years of the previous group selection harvest only occur in regional ecosystems listed in table 1C. 	5	12
Harvesting in rainforest must: <ul style="list-style-type: none"> not create a canopy gap greater than the width of two mature tree canopies not harvest on average more than five trees per hectare in any ten hectares only occur in regional ecosystems listed in table 1D. 	5	13
A native forest practice can occur in any regional ecosystem for: <ul style="list-style-type: none"> small scale harvesting of specialty timbers provided harvesting does not exceed on average 5 trees per hectare in any 10 hectares harvesting of minor forest products provided the retention level is no less than 200 trees per hectare. 	5	13
Except for roads, tracks, snig tracks and landings, a native forest practice will maintain at least 50% of the ground surface in any 50 by 50 metre area either: <ul style="list-style-type: none"> undisturbed; or with a vegetative ground cover (dead or alive). 	6	14
A native forest practice must not occur: <ul style="list-style-type: none"> on an area with a majority slope greater than 45 percent or 25 degrees within 20 metres of an unstable area or area vulnerable to mass movement. 	6	14

Practices	Section	Page
A native forest practice, except for the establishment of a crossing, must not occur within a buffer zone of a wetland or watercourse as specified in Table 4.	6	15
A native forest practice must retain the number of habitat and recruitment habitat trees listed in Table 5 and space these as evenly across each hectare as their natural distribution permits.	7	17
A native forest practice must retain all feed, nest and shelter trees.	7	19
<p>Roads and tracks used for a native forest practice must:</p> <ul style="list-style-type: none"> not be used when soils are saturated be drained and water diverted onto undisturbed areas before the water is able to traverse the maximum permitted distances listed in table 6 maintain an effective level of drainage during use and be fully drained on temporary cessation and completion of operations where the watercourse is not regulated by the <i>Water Act 2000</i>, not <ul style="list-style-type: none"> cross an unstable section of a watercourse be set on the bed level and not involve excavation or filling of the bed. 	8	20
<p>Harvesting and thinning must:</p> <ul style="list-style-type: none"> not occur on any area while the soil is saturated not use a chain, chain and ball, or cable linked between two machines. not involve felling trees into or against trees required as future crop or habitat trees not involve felling trees into the buffer zones of a watercourse or drainage feature not involve felling a tree within the filter zone, if this may cause the formation of an unstable section in a watercourse or drainage feature. <p>Snig tracks must not:</p> <ul style="list-style-type: none"> be located in a stable drainage feature unless the nature of the drainage feature will ensure that land degradation does not occur as a result cross an unstable section of a watercourse or gully. <p>Snigging must not:</p> <ul style="list-style-type: none"> damage or push debris against retained trees in a filter zone cause soil disturbance or a groove in the soil surface within a filter zone that could channel water, and cause accelerated soil erosion recover a log from a filter zone if this will create a groove in the soil surface that could channel water, and cause accelerated soil erosion. <p>New landings must be of a size that is proportionate to the size and volume of forest products that have to be handled and must not exceed 0.25 hectares (50x50 metres) in area.</p> <p>Snig tracks and landings must:</p> <ul style="list-style-type: none"> be drained so that water is regularly diverted onto undisturbed areas in accordance with the maximum permitted distances listed in section 9 - Table 6 maintain an effective level of drainage during use and be fully drained on temporary cessation and completion of operations. <p>Woody debris from harvesting and thinning operations must not be:</p> <ul style="list-style-type: none"> left within 2m of any habitat, recruitment habitat, feed or nest tree pushed against retained trees in the forest or adjacent to a landing. <p>Soil disturbance for regeneration must only occur in areas subject to group selection harvesting. Thinning must not occur by aerial application of herbicides or ground application of soil absorbed, broad spectrum herbicides which kill woody plants.</p>	9	22
Woody species that are not native to the site must not be planted or seeded in a native forest practice area.	10	28
Burning must be undertaken in accordance with recognised best practice guidelines.	10	28

Appendix 2: Other legislation

Other legislation, such as the Acts listed below may affect clearing activities. You should contact the agencies below to determine if your intended clearing activity will be affected. Of particular importance, note that:

All native plants in Queensland are protected under the *Nature Conservation Act 1992*, and you must contact the nature conservation area of the Department of Environment and Heritage Protection on 13 QGOV (13 74 68) before clearing vegetation

Relevant legislation and agency contact details

Legislation	Agency	Contact details
<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Natural Resources and Mines (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dnrm.qld.gov.au
<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs (Queensland Government)	Ph: 13 QGOV (13 74 68) www.datsima.qld.gov.au
<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i> <i>Nature Conservation Act 1992</i>	Department of Environment and Heritage Protection (Queensland Government)	Ph: 13 QGOV (13 74 68) www.ehp.qld.gov.au
<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture, Fisheries and Forestry (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daff.qld.gov.au
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of the Environment, Water, Heritage and the Arts (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
<i>Sustainable Planning Act 2009</i>	Department of State Development and Infrastructure Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdip.qld.gov.au
<i>Local Government Act 1993</i>	Local government	Contact your nearest local government office
<i>Work Health and Safety Act 2011</i> <i>Forest Harvesting Code of Practice 2007</i>	Department of Justice and Attorney-General	Ph: 1300 369 915 www.justice.qld.gov.au