NSW GOVERNMENT

Landholder Guide

Guidelines for applying the *Thinning of Native Vegetation* Ministerial Order (thinning self-assessable code)

Cover photo: Determining stem density in a dry sclerophyll forest/Adam Downey, North West Local Land Services.

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1. Introduction

This guide is for NSW landholders who are considering thinning native vegetation on their property.

Together with the *Thinning of Native Vegetation* Ministerial Order, this guide forms a self-assessable code of practice for thinning native vegetation (thinning self-assessable code). The thinning self-assessable code has been created to allow landholders to undertake thinning without requiring a Property Vegetation Plan (PVP).

If you comply with the provisions of the thinning self-assessable code, a PVP is not required; however, in accordance with the thinning self-assessable code, you are required to notify the Local Land Services (LLS) of your intention to clear at least 14 days before that clearing is carried out.

You can notify by:

- using the online Native Vegetation Notification System available at www.environment.nsw.gov.au/vegetation/onlinetools.htm
- using the notification form available at www.environment.nsw.gov.au/resources/nvrtapp/NotificationForm.pdf
- contacting your nearest Local Land Services office, where they will help you with the notification process.

For more information about the notification process, please refer to the fact sheet *The Notification Process.*

How to use the thinning self-assessable code

The *Thinning of Native Vegetation* Ministerial Order sets the rules that you will need to comply with. The Ministerial Order is made under the provisions of clause 40 of the Native Vegetation Regulation 2013.

This guide takes you through the process of identifying and planning to thin native vegetation on your property, in accordance with the Ministerial Order.

The *Thinning of Native Vegetation* Ministerial Order states:

Purpose of these conditions

Thinning of native vegetation has been declared by the Minister for the Environment to be a routine agricultural management activity on specified land. As a result, the thinning of native vegetation will be a routine agricultural management activity if it is carried out in accordance with the *Thinning of native vegetation* Ministerial order and the conditions of the order set out in this schedule.

The intent is to facilitate clearing of native trees and woody shrubs in defined areas of thickened native vegetation. The benchmark stem densities are applied at the Keith vegetation formation level.

A streamlined Property Vegetation Plan (PVP) assessment is available for more complex clearing proposals where threatened species may need to be considered further, or where negotiation concerning the design of the spatial arrangement of the retained stems may be desirable.

Thinning for the purposes of private native forestry, and/or any commercial harvesting, is not permitted under this order and approval will need to be sought through a Private Native Forestry (PNF) PVP – refer to Definitions.

Please note that throughout this guide you will find text extracted from the *Thinning of Native Vegetation* Ministerial Order. Such text is set out in blue breakout boxes, as above. Explanatory text directly follows the blue breakout box to assist your interpretation of the Ministerial Order.

Not all of the text in the Ministerial Order is included in the blue boxes. A full copy of the Ministerial Order is available at www.environment.nsw.gov.au/resources/vegetation/140278ThinningOrder.pdf

A list of definitions for terms used throughout this guide is available in Section 8 of this document.

Other useful information

Online tool

An online information tool has been developed to help you interpret and apply the Thinning of Native Vegetation Ministerial Order. It walks you through the decision-making process to determine if or how the thinning self-assessable code will apply to your situation. It also links to sources of information that will help with self-assessment. The online tool can be used with this guide.

To use the tool go to www.environment.nsw.gov.au/vegetation/onlinetools.htm

Note: When you use the online tool the information is *not* recorded or saved in any way. You can use the tool completely anonymously. This is confirmed in the *Online tools disclaimer* on the website.

Fact sheets

A series of fact sheets are also available that will help you apply aspects of the code.

The relevant fact sheets for thinning are:

1. How to obtain other approvals
2. The notification process
3. Determining distances from water bodies
4. Identifying suitable plant genera in the coastal thinning zone
5. Identifying vegetation formations
6. Identifying threatened ecological communities

These fact sheets are available at your Local Land Services office. They are also available at www.environment.nsw.gov.au/vegetation/selfassess.htm

Further assistance

If you have any questions about using the thinning self-assessable code, or would like assistance using the code to thin native vegetation, contact your Local Land Services.

2. Does the code apply to you?

The flowchart at Figure 1 will help you decide if the thinning self-assessable code is relevant to your situation.

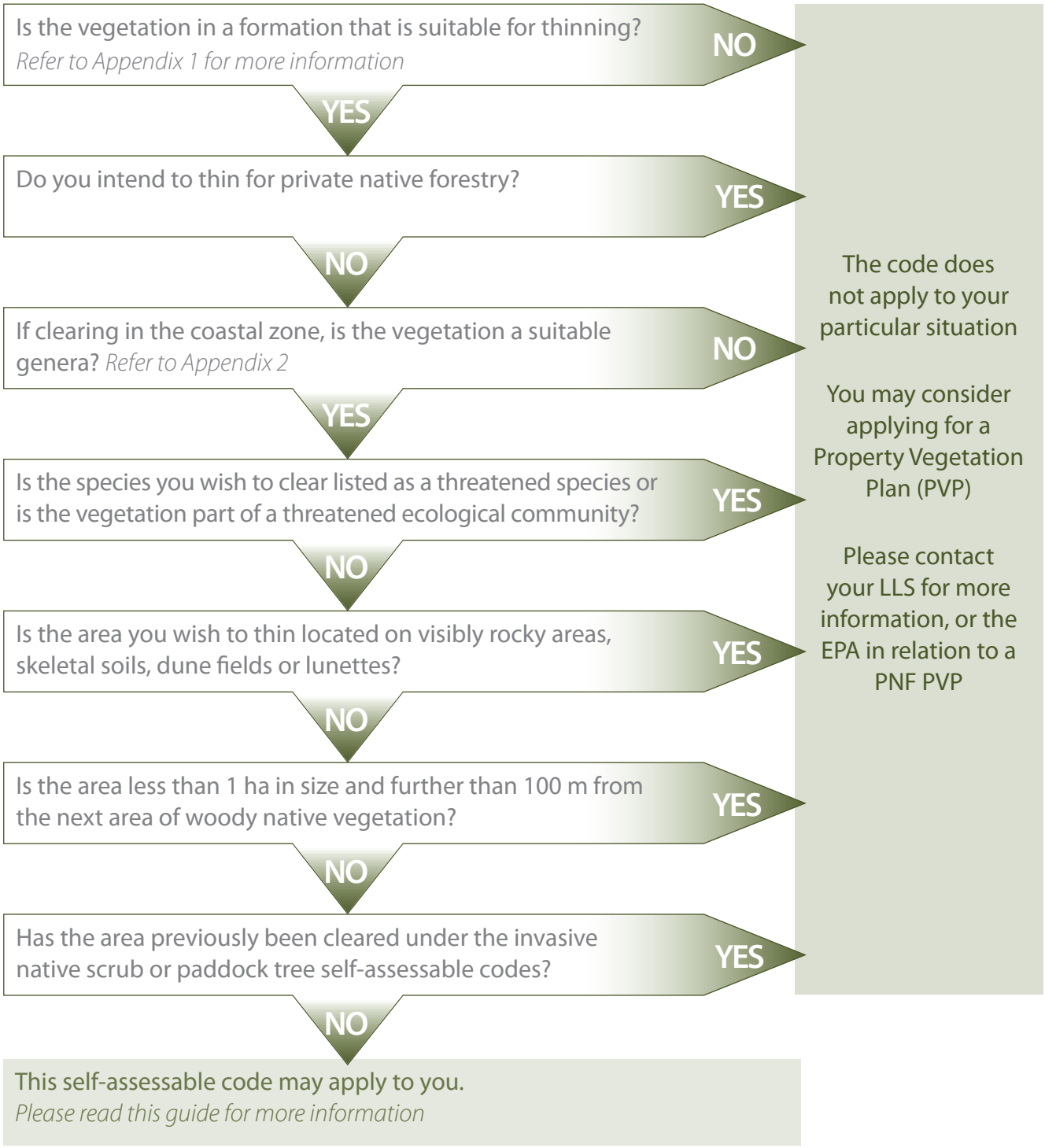

Figure 1: Does the thinning self-assessable code apply to my property?

If your situation does not fit within the thinning self-assessable code, you may need to discuss other options with your Local Land Services.

3. Process for an assessment using the thinning self-assessable code

The flowchart in Figure 2 outlines the broad process for thinning using the thinning self-assessable code.

Figure 2: Process for applying the thinning self-assessable code

4. What can be thinned?

The *Thinning of Native Vegetation* Ministerial Order states:

> **1. What can be thinned?**
>
> 1.1 Only vegetation that meets the following criteria can be thinned:
>
> a. the vegetation must form part of a vegetation formation suitable for thinning as defined in Appendix 1 [of the order], and
>
> b. if the vegetation is located within the coastal thinning zone of NSW it must only be from the following Genera: *Acacia* (wattles), *Allocasuarina* (oak, sheoak), *Angophora* (apples), *Callitris* (cypress pine), *Casuarina* (oak, sheoak), *Corymbia* (bloodwoods, spotted gums), *Eucalyptus* (box, gum, ironbark, stringybark, peppermint), *Leptospermum* (tea-tree), *Melaleuca* (paperbark) or *Syncarpia* (turpentine).

Vegetation formation

Some vegetation formations are suitable for thinning. Appendix 1 lists the formations that are, and are not, allowed to be thinned.

A description of vegetation formations is at Appendix 2 to help you identify what vegetation formation your vegetation belongs to.

Your Local Land Services can assist you to determine what vegetation formation best fits your vegetation.

Coastal thinning zone

The coastal thinning zone, shown in Figure 3, is defined by local government areas. It is defined in the Ministerial Order as:

Coastal thinning zone means the following local government areas: Ballina, Bega Valley, Bellingen, Blue Mountains, Byron, Cessnock, Clarence Valley, Coffs Harbour, Dungog, Eurobodalla, Gloucester, Great Lakes, Greater Taree, Gosford, Kempsey, Kiama, Kyogle, Lake Macquarie, Lismore, Nambucca, Port Macquarie–Hastings, Port Stephens, Richmond Valley, Shellharbour, Shoalhaven, Tweed, Wingecarribee, Wollondilly, Wollongong and Wyong.

The self-assessable code limits the genera that can be thinned in the coastal thinning zone. Only the following genera can be thinned in the coastal thinning zone:

- *Acacia* (wattles)
- *Allocasuarina* (oak, sheoak)
- *Angophora* (apples)
- *Callitris* (cypress pine)
- *Casuarina* (oak, sheoak)
- *Corymbia* (bloodwoods, spotted gums)

- *Eucalyptus* (box, gum, ironbark, stringybark, peppermint)
- *Leptospermum* (tea-tree)
- *Melaleuca* (paperbark)
- *Syncarpia* (turpentine).

Further information on the vegetation that can be thinned in the coastal thinning zone is available in the fact sheet *Identifying suitable plant genera in the coastal thinning zone*.

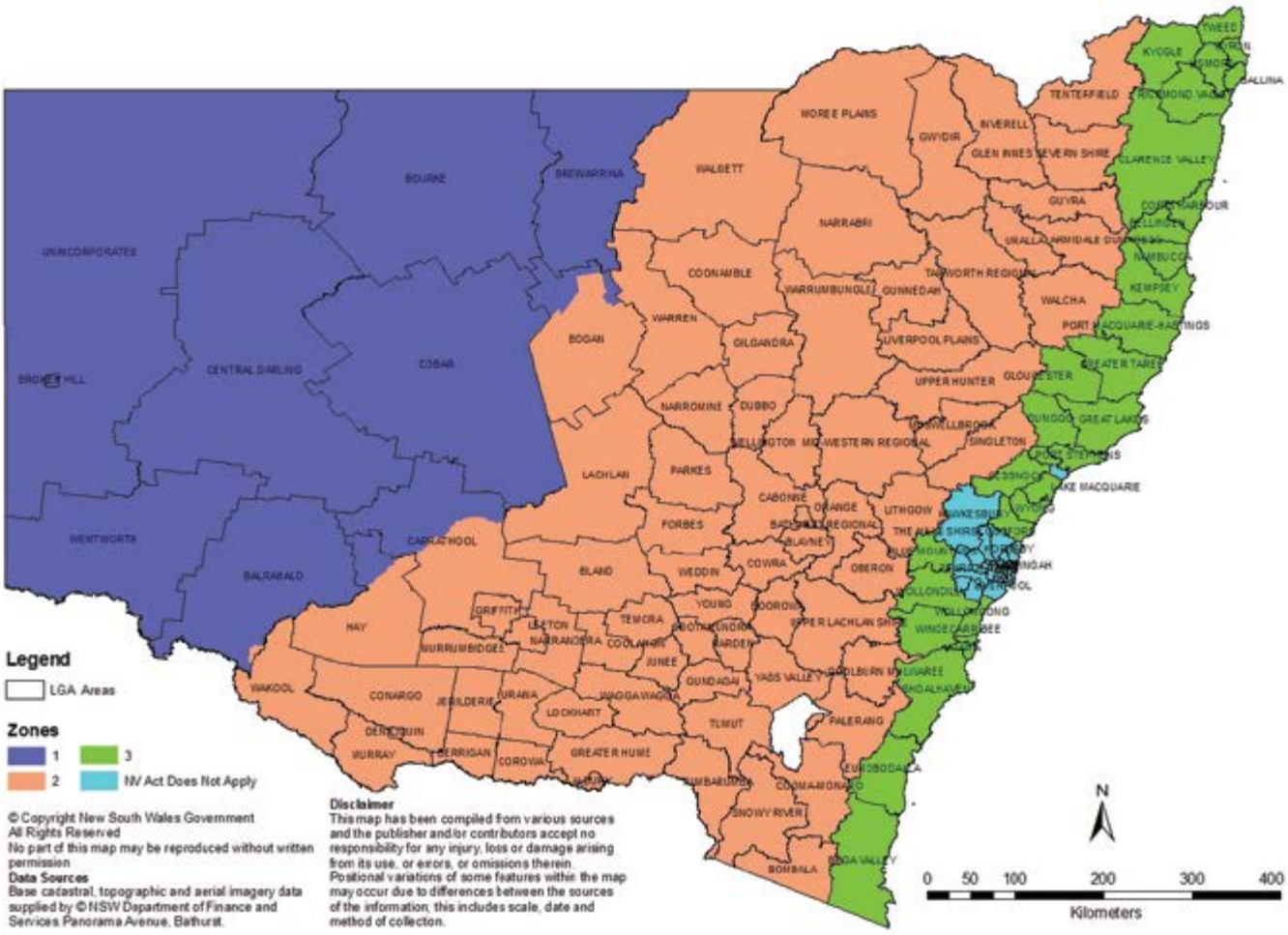

Figure 3: Map showing coastal thinning zone in green

5. What cannot be thinned?

The *Thinning of Native Vegetation* Ministerial Order states:

> **2. What cannot be thinned?**
>
> 2.1 Native trees and woody shrubs must not be cleared if:
>
> a. the vegetation is of a vegetation formation not suitable for thinning as defined in Appendix 1 [of the order], or
>
> b. it is a species listed as a threatened species or is vegetation that is, or is part of, a threatened ecological community listed under Schedules 1A, 1 or 2 of the *Threatened Species Conservation Act 1995*, or
>
> c. it is located in a forested wetland within the coastal thinning zone, or
>
> d. it is a genera not listed in 1.1(b) [of the order] and is located within the coastal thinning zone, or
>
> e. it is located on visibly rocky areas, skeletal soils, dune fields or lunettes.

Vegetation formation

Some vegetation formations are not suitable for thinning. Appendix 1 lists the formations that are, and are not, allowed to be thinned.

Forested wetlands are not suitable for thinning under the self-assessable code in the coastal thinning zone but are allowed to be thinned elsewhere in the state.

Threatened species and threatened ecological communities

Thinning of threatened species or threatened ecological communities is not permitted under the thinning self-assessable code.

To determine if a species is listed as a threatened species under the *Threatened Species Conservation Act 1995* you will need to refer to the OEH threatened species website at www.environment.nsw.gov.au/threatenedspecies.

To determine if vegetation is a threatened ecological community, refer to the fact sheet *Identifying threatened ecological communities*.

Visibly rocky areas, skeletal soils, dune fields and lunettes

Visibly rocky areas, skeletal soils, dune fields and lunettes are particularly prone to soil erosion. Thinning in these areas is not permitted under the thinning self-assessable code.

These areas are defined in the Ministerial Order as follows:

Dunefields means an area of land that comprises a hill or ridge of wind-blown sand.

Lunettes means an area that occurs mainly in the inland plains and is an elongated, gently recurved, low ridge consisting of sand or pelletised silt and clay which has been built up by wind action on the north-eastern or eastern margin of an ephemeral freshwater or saline lake or closed depression. A lunette typically has a wave-modified slope towards the lake or depression.

Rocky areas means areas of land with >30% visible surface rock or rock outcrop.

Skeletal soils means soils that contain coarse fragments including gravels (2–75 millimetres), stones (75–300 millimetres), or boulders (>300 millimetres).

6. How much can be thinned?

The *Thinning of Native Vegetation* Ministerial Order states:

3. How much can be thinned?

3.1 All thinned vegetation must retain a stem density for each hectare not less than 75 per cent of the benchmark stem density as specified in Appendix 1 [of the order].

3.2 The retained stems must include the largest stems present on each hectare prior to thinning.

3.3 Thinning must result in an approximately even spacing between retained trees.

3.4 Thinning must not result in retained stems forming any type of narrow or linear configuration (i.e. strip or alley thinning).

3.5 Thinning must not result in the clearing of a structural layer of vegetation (i.e. underscrubbing to remove the shrub layer).

3.6 Where an individual tree or shrub retained in accordance with Section 3.1 above has multiple stems then that tree or shrub is counted as one stem for the purposes of calculating the retention requirements.

Retention of 75 per cent of benchmark number of stems

The self-assessable code allows thinning of native vegetation down to 75 per cent of the benchmark number of stems. The number of stems that you have to retain varies depending on the vegetation formation. The number of stems that have to be retained for each vegetation formation is set out in Appendix 1.

Where a tree or shrub has multiple stems it is counted as one stem for the purpose of the thinning self-assessable code.

Appendix 3 provides further guidance on determining the number of stems and how to identify which stems to retain.

Retention of the largest stems

Ensure the largest trees are retained in the number that you retain in each hectare. These trees often provide the basic structure of the vegetation community before the vegetation becomes thicker.

Spacing of retained trees

The retained trees must be approximately evenly spaced. Appendix 1 shows what the approximate spacing of the retained trees should be to ensure you achieve the required amount of trees after the thinning.

Thinning must not result in alley ways of thick vegetation with strips or large cleared areas with no trees retained.

7. What other conditions apply?

The *Thinning of Native Vegetation Ministerial Order* states:

4. What other conditions apply?

4.1 Thinning carried out under the order must not result in a change in land use from a grazing system to a cropping system.

4.2 Thinning using the order must not be undertaken for the purposes of private native forestry and/ or any commercial harvesting including forestry undertaken under a Private Native Forestry Property Vegetation Plan.

4.3 Thinning must not occur with the use of chaining or roping methods.

4.4 Thinning within 30 metres of an estuary, wetland, or incised watercourse must only be undertaken by clearing individual trees and woody shrubs with no disturbance to soil and groundcover.

4.5 Thinning on steep and highly erodible, and special category vulnerable land, must only be undertaken by clearing individual trees and woody shrubs with no disturbance to soil and groundcover.

4.6 In all other areas, thinning must only be undertaken with minimal disturbance to soil and groundcover.

4.7 Incidental damage of non-target plants must be minimised.

4.8 Thinning must not occur on areas of woody native vegetation less than one hectare in size that are further than 100 metres from the next area of woody native vegetation.

4.9 Thinning must not result in cut stems or debris being stacked around or against retained mature trees or woody shrubs.

4.10 Clearing using this order is not permitted in areas where either the *Clearing Of Invasive Native Species* Ministerial Order or *Clearing Of Paddock Trees* Ministerial Order has been used.

No change of land use

The thinning self-assessable code is designed to facilitate the thinning of woody vegetation to 75 per cent of benchmark densities. This will provide for an improvement in the structure and composition of very thick vegetation and will also provide some production benefit through allowing additional pasture growth.

The thinning self-assessable code does not allow the clearing of vegetation to facilitate a change from a grazing system to a cropping system.

Thinning self-assessable code is not for commercial harvesting of timber

The self-assessable code does not allow the thinning of vegetation for the primary purpose of timber harvesting, including private native forestry. If you wish to harvest timber for commercial purposes you should obtain a private native forestry property vegetation plan (PNF PVP). PNF PVPs are administered by the NSW Environmental Protection Authority (EPA). Further information about obtaining a PNF PVP is available from the EPA website at www.epa.nsw.gov.au/pnf.

Method of thinning

Thinning must only be undertaken by a method that allows the selective removal of trees and shrubs so that an approximately even distribution of retained trees and shrubs can be achieved.

Thinning must also only cause minimal disturbance to soil and groundcover. Minimal disturbance allows for up to 30 per cent of the soil surface to be disturbed; this might be the result of trees being uprooted. It does not allow the clearing or cultivation of the ground.

Thinning by using chaining or roping methods is excluded under the thinning self-assessable code.

Thinning near water bodies

The land adjacent to water bodies is particularly sensitive to erosion. As such, thinning within 30 metres of an estuary, wetland or watercourse must be undertaken without disturbing the soil or groundcover. Clearing methods including poisoning, ringbarking and cutting, and leaving the stems lying on the ground do not cause soil disturbance.

'Watercourse' means a stream of Strahler stream order 3 or larger with a visible channel.

The fact sheet *Determining distances from water bodies* provides more information on what stream order means and how to determine the distance from water bodies.

Thinning on vulnerable land

Vulnerable land is considered particularly sensitive to erosion. Vulnerable land is designated by the Minister. There are three kinds of land listed as vulnerable land:

1. steep or highly erodible land (typically land over 18 degrees slope)
2. protected riparian land being within 20 metres of specified watercourses
3. special category land.

You can use the Thinning Online Information Tool to see if any vulnerable land exists on your property or you can contact your Local Land Services. Further information about vulnerable land and a statewide map is available online at www.environment.nsw.gov.au/vegetation/vulnerable.htm.

Thinning on steep and highly erodible and special category land must be undertaken without disturbing the soil or groundcover. Clearing methods including poisoning, ringbarking and cutting, and leaving the stems lying on the ground do not cause soil disturbance.

Stacking of cleared timber around existing trees is not permitted

To protect the soil and provide protection for regenerating grass and herb plants it is preferable to leave the thinned trees and shrubs lying on the ground where they are felled.

You can remove them if you wish but you must not stack them around existing trees and shrubs.

8. Definitions

In this guide terms have the same meaning as in the *Native Vegetation Act 2003*, and the Native Vegetation Regulation 2013 and the *Thinning of Native Vegetation* Ministerial Order unless otherwise defined below.

Coastal thinning zone means the following local government areas: Ballina, Bega Valley, Bellingen, Blue Mountains, Byron, Cessnock, Clarence Valley, Coffs Harbour, Dungog, Eurobodalla, Gloucester, Great Lakes, Greater Taree, Gosford, Kempsey, Kiama, Kyogle, Lake Macquarie, Lismore, Nambucca, Port Macquarie–Hastings, Port Stephens, Richmond Valley, Shellharbour, Shoalhaven, Tweed, Wingecarribee, Wollondilly, Wollongong and Wyong.

Density or densities means the number of plants per hectare.

Diameter at breast height over bark (DBHOB) means the diameter over the bark of the stem at 1.3 metres above the ground. If there are multiple stems on a tree the diameter is measured on the largest stem.

Dunefields means an area of land that comprises a hill or ridge of wind-blown sand.

Groundcover means any type of herbaceous vegetation, native and non-native, living or dead.

Keith vegetation formation means the top level of hierarchy in the classification structure comprising broad groups based on structure and physiognomic features. The formations are described in *Ocean Shores to Desert Dunes: The native vegetation of New South Wales and the ACT* by David Keith (2004).

Lunettes means an area that occurs mainly in the inland plains and is an elongated, gently recurved, low ridge consisting of sand or pelletised silt and clay which has been built up by wind action on the north-eastern or eastern margin of an ephemeral freshwater or saline lake or closed depression. A lunette typically has a wave-modified slope towards the lake or depression.

Minimal disturbance means no more than 30 per cent of the soil surface and existing groundcover (total area) has been disturbed as a result of the clearing.

No disturbance means no more than 5 per cent of the soil surface and existing groundcover (total area) has been disturbed as a result of the clearing.

Private Native Forestry means the management of native vegetation on privately owned land or Crown land that is not Crown-timber land within the meaning of the *Forestry Act 2012* for the purpose of obtaining, on a sustainable basis, timber products (including sawlogs, veneer logs, poles, girders, piles and pulp logs).

Rocky areas means areas of land with >30 per cent visible surface rock or rock outcrop.

Skeletal soils means soils that contain coarse fragments including gravels (2–75 millimetres), stones (75–300 millimetres), or boulders (>300 millimetres).

Strahler stream order means the stream order of a stream determined by the Strahler system as defined in Schedule 2, Part 1 of the Water Management (General) Regulation 2011. Refer to the fact sheet *Determining distances from water bodies* for more information.

Threatened ecological community means a threatened ecological community or threatened population within the meaning of the *Threatened Species Conservation Act 1995* or a population listed in Schedule 1, 1A or 2 of that Act. Refer to the fact sheet *identifying threatened ecological communities* for more information.

Thinning of native vegetation means the selective removal of individual trees, or parts of trees, for the purposes of reducing competition between trees, allowing growth of remaining trees, tree regeneration and groundcover growth and improving or maintaining the structure and composition of native vegetation

Visible channel means a visible path where water flows, regardless of flow regime, which shows some degree of incision or erosion.

Vulnerable land means land identified as:

a) steep or highly erodible land
b) protected riparian land being within 20 metres of specified watercourses, or
c) special category land

on the map in the *Natural Resource Management Plan – Vulnerable Land* at www.environment.nsw.gov.au/vegetation/vulnerable.htm.

Watercourse means a stream of Strahler stream order 3 or larger with a visible channel.

Woody shrubs means plants greater than 1.3 metres in height and with a measureable woody stem.

Appendix 1 – Vegetation formations suitable and not suitable for thinning using the order, showing the benchmark stem density per hectare

Vegetation formation[1]	Coastal thinning zone	Remaining areas of NSW	Benchmark stem density[2] (number of stems per ha)	75 per cent of benchmark stem density[3]	Average spacing in metres between stems at 75 per cent benchmark
Arid Shrublands (*Acacia* sub-formation)	✓	✓	150	113	9
Dry Sclerophyll Forests	✓	✓	300	225	7
Forested Wetlands	✗	✓	225	169	8
Grassy Woodlands	✓	✓	225	169	8
Semi-arid Woodlands	✓	✓	150	113	9
Wet Sclerophyll Forests (Grassy sub-formation)	✓	✓	300	225	7
Alpine Complex	✗	✗	Thinning not permitted		
Arid Shrublands (Chenopod sub-formation)	✗	✗	Thinning not permitted		
Freshwater Wetlands	✗	✗	Thinning not permitted		
Grasslands	✗	✗	Thinning not permitted		
Heathlands	✗	✗	Thinning not permitted		
Rainforest	✗	✗	Thinning not permitted		
Saline Wetlands	✗	✗	Thinning not permitted		
Wet Sclerophyll Forests (Shrubby sub-formation)	✗	✗	Thinning not permitted		

✓ = suitable for thinning ✗ = not suitable for thinning

[1] Vegetation formations are as described in Appendix 2.

[2] The recommended benchmark for retention of stems per hectare.

[3] 75 per cent of the *benchmark stem density value* listed is the minimum number of stems that must be retained across each hectare of thinning; for example, in Grassy Woodlands a minimum of 169 stems (225 × 75 per cent) must be retained per hectare. The minimum number of stems must include the *largest* stems across each hectare of thinning present prior to thinning.

Appendix 2 – Description of Keith vegetation formations

Formations that can be thinned using the order

Arid Shrublands (Acacia sub-formation)

Vegetation dominated by drought-tolerant shrubs, predominantly acacias (i.e. wattles) in this sub-formation, and other hard-leaved (sclerophyllous) shrubs up to 5 metres tall. Some perennial herbs and abundant ephemeral (i.e. plants with a short life cycle, but with long-lived seed banks that germinate after rain, flooding or fire) grasses and herbs after rain. Widespread on various soils on the western plains where average annual rainfall is less than 500 millimetres. Vegetation sometimes has abundant hummock grasses (i.e. commonly spinifex grasses with dome-shaped structures and spreading leaf blades) in the groundcover.

Dry Sclerophyll Forests

Vegetation dominated by trees, usually occurring as forests or rarely as woodlands (rarely >35 metres tall), with an abundance of hard-leaved (sclerophyllous) shrubs in the understorey, but lacking plants that tolerate inundation or waterlogging. Only rarely dominated by 'box' eucalypts (bark rough and persistent on trunk and larger branches). Groundcover often sparse and typically dominated by sclerophyllous sedges, but may include reasonably continuous swards of grasses. Confined to the coast, tablelands and the western slopes, where average annual rainfall exceeds 500 millimetres, largely on infertile sandy or loamy soils.

Forested Wetlands

Vegetation dominated by trees, usually occurring as forests or woodlands with short to moderately tall trees (rarely >35 metres tall), with an abundance of plant groups in the understorey that are able to tolerate periodic inundation or waterlogging, particularly sedges, rushes or reeds; but lacking in ferns and shrubs with broad, soft leaves. Widespread east and west of the Great Dividing Range, but confined to damp, low-lying parts of the coast, or adjacent to rivers, lakes or swamps in the inland.

Note: This formation must not be thinned in the Coastal thinning zone.

Grassy Woodlands

Vegetation dominated by trees (typically 15–35 metres tall), usually occurring as woodlands or rarely forests that lack an abundance of hard-leaved (sclerophyllous) shrubs in the understorey. 'Box' eucalypts often dominant in the tree layer. Groundcover is continuous and dominated by perennial tussock grasses and interspersed perennial herbs including orchids and lilies, but few ephemeral herbs and grasses. Shrubs generally sparse and typically not including chenopods (i.e. saltbushes, copperburrs), or other drought-tolerant species. Widespread on various soils west of the Great Dividing Range, but typically on relatively fertile loams and clay loams on the coastal lowlands, the tablelands and the western slopes, where average annual rainfall exceeds 500 millimetres.

Semi-arid Woodlands

Vegetation dominated by trees (typically 15–35 metres tall), usually occurring as woodlands or open woodlands (i.e. widely-spaced tree canopies) that lack an abundance of hard-leaved (sclerophyllous) shrubs in the understorey. 'Box' eucalypts often dominant in the tree layer. Groundcover is sparse to continuous, usually with an abundance of ephemeral herbs and grasses

apparent after rain and a variable cover of tussock grasses. Drought-tolerant shrubs prominent in the understorey, and often including chenopods. Widespread on a variety of soils west of the Great Dividing Range, particularly the western plains where average annual rainfall does not exceed 500 millimetres.

Wet Sclerophyll Forests (Grassy sub-formation)

Vegetation dominated by trees (typically >30 metres tall), usually occurring as tall forests, forests or woodlands and dominated by straight-trunked eucalypts. Understorey is dominated by a more continuous cover of grasses and herbs in this sub-formation rather than by shrubs as per the shrubby sub-formation. Largely confined to moderately fertile soils in sheltered locations on the east coast escarpment, where average annual rainfall exceeds 900 millimetres.

Formations that cannot be thinned using the order

Alpine Complex

Trees are absent or present only as scattered emergent individuals. Vegetation is dominated by plants that tolerate prolonged seasonal burial in snow. The Alpine Complex vegetation formation is restricted to the alpine zone of the southern tableland, above 1600–1800 metres elevation.

Arid Shrublands (Chenopod sub-formation)

Vegetation dominated by drought-tolerant shrubs, predominantly chenopods (such as saltbushes, bluebushes, copperburrs) up to 1.5 metres tall. Some perennial herbs and abundant ephemeral (i.e. plants with a short life cycle, but with long-lived seed banks that germinate after rain, flooding or fire) grasses and herbs after rain. Widespread on various soils on the western plains where average annual rainfall is less than 500 millimetres. Arid Shrublands usually have perennial tussock grasses but never hummock grasses (such as spinifex grasses with dome-shaped structures and spreading leaf blades) in the groundcover.

Freshwater Wetlands

Trees are absent or present only as scattered emergent individuals. Vegetation is dominated by plants that cannot tolerate prolonged seasonal burial in snow and occur in landscapes below 1800 metres elevation. Freshwater Wetlands are dominated by plants that tolerate periodic inundation or waterlogging with fresh water. Vegetation is dominated by emergent sedges, rushes, reeds, grasses or succulent herbs, or in some cases by submerged or floating aquatic herbs. Soils are deep and often black or dark grey with partly decomposed organic matter. Freshwater Wetlands are restricted to swamps with humic or gleyed soils on the coast, tablelands, western slopes and plains.

Grasslands

Trees are absent or present only as scattered emergent individuals. Vegetation is dominated by plants that cannot tolerate prolonged seasonal burial in snow and occur in landscapes below 1800 metres elevation. Grasslands contain few (if any) plants that tolerate periodic inundation. Vegetation is dominated by perennial tussock grasses and herbs. Shrubs rarely present. Sometimes sedges but never submerged or floating aquatic herbs. Generally found on clay soils on flat to undulating terrain on the coast, tablelands, western slopes and plains.

Heathlands

Trees are absent or present only as scattered emergent individuals. Vegetation is dominated by plants that cannot tolerate prolonged seasonal burial in snow and occur in landscapes below 1800 metres elevation. Heathlands contain few (if any) plants that tolerate periodic inundation. Vegetation is dominated by hard-leaved but not drought tolerant shrubs, usually with perennial sedges, herbs and grasses. Perennial tussock grasses are absent or occasional but never dominant. Heathlands are generally restricted to infertile sandy or loamy soils of the coast, tablelands and western plains, where annual rainfall exceeds 800 millimetres per year.

Rainforest

Forests or woodlands not dominated by eucalypts, although these may be present as scattered individuals. Rainforests are dominated by trees with dense canopies touching those of adjacent trees (i.e. a 'closed' canopy), and with horizontally held leaves. Trees and shrubs typically have broad soft leaves. Rainforests primarily occur on the coastal lowlands, islands and escarpments extending to restricted locations on the north-western slopes. Rainforests occur on fertile to moderately fertile soils where average annual rainfall exceeds 1000 millimetres per year.

There are limited occurrences in dry rocky gorges of the escarpment and dry hills of the north-western slopes. Rainforest trees are not tolerant to tidal inundation. The understorey is usually open to dense, but never non-existent. Vines often occur in the tree canopies or understorey. Understorey typically includes ferns and herbs.

Saline Wetlands

Forests or woodlands not dominated by eucalypts, although these may be present as scattered individuals. Saline Wetlands are dominated by trees with dense canopies touching those of adjacent trees (i.e. a 'closed' canopy), and with horizontally held leaves. Trees and shrubs typically have soft leaves. Saline Wetlands primarily occur on the coast, where average annual rainfall exceeds 1000 millimetres per year. Trees are tolerant of tidal inundation. The understorey is sparse to non-existent. Saline Wetlands are restricted to tidal estuaries along the coast.

Wet Sclerophyll Forests (Shrubby sub-formation)

Vegetation dominated by trees (typically >30 metres tall), usually occurring as tall forests, forests or woodlands and dominated by straight-trunked eucalypts. Understorey is dominated by soft-leaved shrubs but only sparse grass cover. Largely confined to moderately fertile soils in sheltered locations on the east coast escarpment, where average annual rainfall exceeds 900 millimetres.

Appendix 3 – Determining stems to be retained

To use the thinning order the number of stems per hectare must exceed 75 per cent of the benchmark number of stems (refer to Appendix 1).

The recommended method for determining the on-site stem density per hectare is to select a plot and count the number of stems in that plot. This method is outlined below.

The plot sampling method

The *observed stem density* on-site can be determined as follows:

4. Mark out a 0.1 hectare plot (i.e. 50 x 20 metres) within the vegetation to be thinned.
5. Count all stems within the plot.
6. Multiply this counted value by 10 to give an average *observed stem density* per hectare.
7. Compare the *observed stem density value* and *75 per cent of benchmark stem density value* for the relevant vegetation formation. If the observed stem density is greater, thinning may occur.

This process should be repeated several times in the area to be thinned to gain a more accurate assessment.

Note: If the target vegetation is very thick and numerous stems need to be counted per plot, it may be easier to effectively work backwards using this method. Begin with the *75 per cent of benchmark stem density value* per hectare (for the relevant vegetation formation) and divide it by 10 to give you the minimum number of stems required (to be retained) for the 0.1 hectare test plot. Then, only the minimum number of stems needs to be counted to determine whether thinning may occur (i.e. the *observed stem density value* is greater).

Once you have determined the number of stems that can be removed, you need to determine which stems. The thinning order requires the largest stems to be retained and for there to be approximately even spacing between the stems. Appendix 1 provides the number of stems to be retained and the maximum distance or spacing between the retained stems.

The recommended practice is to mark the trees or woody shrubs that are to be retained (i.e. using flagging tape, spray paint). The next step is to remove all the remaining, non-marked stems per hectare. The alternative would be to reverse this process and mark only the trees to be removed, if this provided an easier process.

Appendix 4 – Checklist

The checklist should be used to ensure you consider all the relevant factors when using the thinning self-assessable code. It is recommended you keep the completed checklist on file with any other records relevant to the assessment. It is also very useful to keep photos of the clearing area taken before and after the clearing.

Suitable vegetation	
The area contains vegetation in a suitable formation (refer to Appendix 1).	
If in the coastal thinning zone, the vegetation is in a suitable genera (refer to the fact sheet *Identifying suitable plant genera in the coastal thining zone).*	
What cannot be thinned?	
The vegetation does NOT include threatened plant species (refer to Section 5).	
The vegetation is NOT a threatened ecological community (refer to *Identifying threatened ecological communities* fact sheet).	
If in the coastal thinning zone the vegetation is NOT a forested wetland.	
The area is NOT on visibly rocky areas, skeletal soils, dune fields or lunettes.	
How much can be thinned?	
The stems to be retained have been identified and include the largest stems.	
The retained stems will be approximately evenly spaced.	
Thinning will NOT involve clearing of a single structural layer.	
General conditions	
Clearing will not result in a change of land use from grazing to cropping.	
Thinning will not be undertaken for the purposes of private native forestry (refer to Section 8 Definitions).	
Thinning will not use chaining or roping methods.	
Thinning within 30 metres of a water body will only be undertaken by clearing individual trees and woody shrubs with no disturbance to soil and groundcover (<5 per cent of the total area).	
Thinning on steep and highly erodible, and special category vulnerable land, will only be undertaken by clearing individual trees and woody shrubs with no disturbance to soil and groundcover.	
In all other areas, thinning will only be undertaken with minimal disturbance to soil and groundcover (<30 per cent of the total area).	
Incidental damage of non-target plants will be minimised.	
Thinning will NOT occur on areas of woody native vegetation less than one hectare in size that are further than 100 metres from the next area of woody native vegetation.	
Cut stems or debris will NOT be stacked around or against retained mature trees or woody shrubs.	
The Invasive Native Species or Paddock Tree Ministerial Orders have not been used in the area to be cleared.	
Other approvals	
I have all the other approvals I need (refer to How to obtain other approvals fact sheet).	
Notification	
I have notified 14 days before I want to clear (refer to the fact sheet *The notification process*).	

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