Office of Environment & Heritage

# Code of Practice for the Thinning to Benchmark Stem Densities in the Namoi CMA

## under the *Native Vegetation Act 2003*

## Draft for public consultation

**Note to reader:**

Throughout this public consultation draft of the document we have added 'Notes to reader' in this format.

These are intended to provide some commentary on relevant aspects of this version of the Code of Practice.

The 'Notes to reader' will be removed from the document prior to the making of this Code of Practice as an Order.

**Note to reader:**

This Code of Practice for Namoi Catchment Management Authority (CMA) area is an example of a code of practice that will be created under Clause 36 of the Native Vegetation Regulation 2012.

It is anticipated that a code of practice will be created for each CMA area.



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# Contents

# Definitions

In this document the terms have the same meaning as they do in the *Native Vegetation Act 2003* and the *Native Vegetation Regulation 2012*.

| | |
|---|---|
| **benchmark stem density** | means the number of stems within each stem diameter class for vegetation with relatively little evidence of alteration, disturbance or modification by humans since European settlement (post 1750). Stem densities are defined according to vegetation types or vegetation classes. Stem densities may be expressed as number of stems per hectare or a spacing between stems. |
| **diameter at breast height over bark (DBHOB)** | means the diameter over the bark of the stem at 1.3 metres above the ground. |
| **estuary** | means a semi-enclosed body of water having an open or intermittently open connection with the ocean, in which water levels do not vary with the ocean tide (when closed to the sea) or vary in a predictable, periodic way in response to the ocean tide at the entrance (when open to the sea). |
| **property** | in this code of practice has the same meaning as 'landholding' in the Native Vegetation Regulation 2012.<br>**Note:**<br>Landholding is defined in the regulation as 'a contiguous area of land in the same ownership'. |
| **stem diameter of a multi-stemmed tree** | is the DBHOB of the stem with the largest DBHOB. |
| **stream** | means any river, creek or natural watercourse, whether artificially modified or not, in which water flows, regardless of flow regime, in a defined flow path, bed or channel. |
| **thickened vegetation** | vegetation that has a greater number of stems than the benchmark stem densities for one or more stem diameter classes. |
| **thinning** | has the same meaning as it does in clause 36(3) of the Native Vegetation Regulation 2012. |

**water body** means any streams, creeks, rivers, lagoons or estuaries (regardless of vegetation class), or a wetland that is of any of the Keith vegetation classes listed below.

**Keith vegetation formations and vegetation classes for wetlands within the water body definition.**

| Vegetation formation | Vegetation class |
|---|---|
| Freshwater wetlands | Coastal heath swamps |
| | Montane bogs and fens |
| | Coastal freshwater lagoons |
| | Montane lakes |
| | Inland floodplain swamps |
| | Inland floodplain shrublands |
| Forested wetlands | Coastal swamp forests |
| | Coastal floodplain wetlands |
| | Eastern riverine forests |
| Saline wetlands | Mangrove swamps |
| | Saltmarshes |
| | Seagrass meadows |
| | Inland saline lakes |

**western plains** means the areas in Namoi CMA west of the Newell Highway.

**wetland** includes any shallow body of water (such as a marsh, billabong, swamp or sedgeland) that is:

(a) inundated cyclically, intermittently or permanently with water

(b) vegetated with wetland plant communities.

**Note to reader:**

This code only deals with the thinning of trees. Thinning of trees and shrubs adds a level of complexity that has been left to assessment by the CMA and would require a Thinning to Benchmark Property Vegetation Plan.

The clearing of exotic vegetation and dead native vegetation on state protected land is a complex area. It is intended that following public exhibition provisions will be incorporated into this Thinning code to simplify and clarify the management of exotic vegetation and dead native vegetation on state protected land.

# 1. Purpose of the Code of Practice

This Code of Practice (the code) sets out the circumstances in which landholders may thin vegetation within Namoi Catchment Management Authority (Namoi CMA) under the *Native Vegetation Act 2003* (the Act) without requiring approval from the Namoi CMA.

Clearing permitted under this code is for the purpose of thinning native vegetation to benchmark stem densities. Thinning means the selective removal of individual trees for the purposes of reducing competition between the trees, allowing growth of remaining trees, tree regeneration and groundcover growth and improving or maintaining the structure and composition of native vegetation.

This code of practice is established as an Order under clause 36 of the Native Vegetation Regulation 2012. This Order specifies the conditions under which the thinning of native vegetation is a routine agricultural management activity (RAMA).

# 2. Area of application of the code

The code applies in the area of operations of the Namoi CMA area as defined in the *Catchment Management Act 2003*, except for areas excluded from operation of the *Native Vegetation Act* (section 5).

# 3. Thinning permitted as a routine agricultural management activity

## 3.1 Thinning of native vegetation that is a RAMA

Thinning carried out in accordance with this code is a RAMA under clause 36 of the Native Vegetation Regulation 2012.

## 3.2 Vegetation types that may be thinned under the code

Trees may only be thinned as a thinning RAMA within the Namoi CMA area of operations if:

(a) they are of a vegetation type listed in Appendix 1

(b) the stem diameter of the tree is less than or equal to 20 centimetres in the diameter at breast height over bark (DBHOB)

(c) the stem density of the vegetation type remains greater than or equal to the benchmark stem density per hectare for 0–20 centimetre stem diameter trees and total trees, as set out in Appendix 1 for that vegetation type.

**Note to reader:**
The Namoi CMA will provide high quality, easy to understand information on identification of the vegetation types listed in Appendix 1, and appropriate extension materials to guide the thinning.

## 3.3 Thinning of native vegetation that is not a RAMA

The following thinning or clearing of native vegetation is *not a RAMA* under clause 36 of the Native Vegetation Regulation 2012.

Any thinning or clearing that:

(a) results in a stem density less than the benchmark stem density per hectare for 0–20 centimetre stem diameter trees and total trees, as set out in Appendix 1 for the vegetation type being cleared

(b) clears any trees that have a stem diameter greater than 20 centimetre DBHOB

(c) clears shrubs or groundcover to any greater extent than the incidental damage to the minimum extent necessary to thin the trees that are in excess of benchmark stem densities

(d) is not in accordance with this code of practice.

# 4. Thinning process

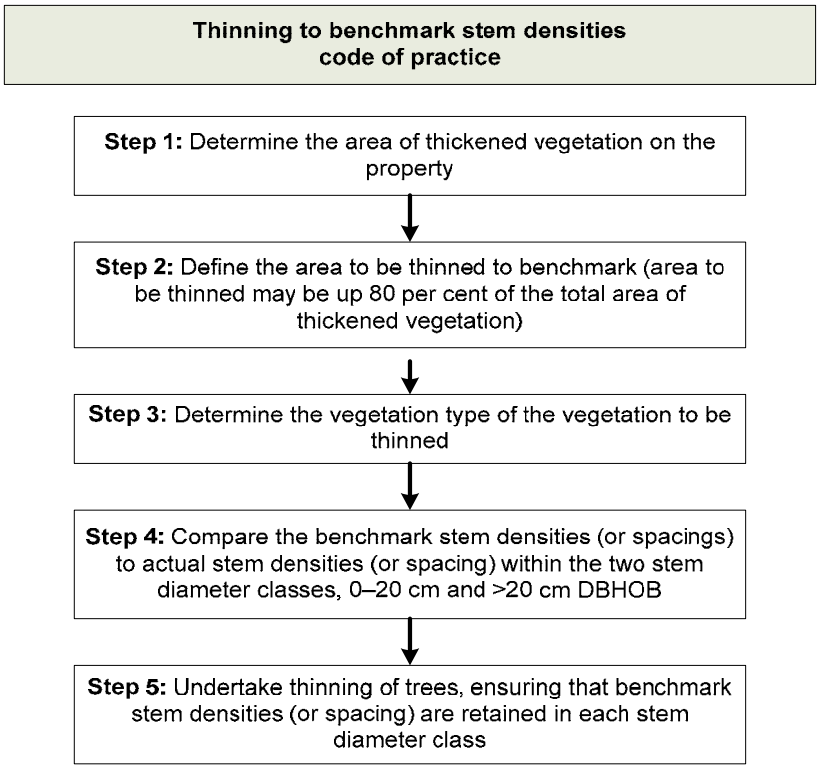


**Figure 1: Thinning to benchmark stem densities process.**

## 4.1 Measuring the stem diameter of individual trees

The stem diameter of an individual tree is the DBHOB. The DBHOB is measured at 1.3 metres above ground level.

The stem diameter of a multi-stemmed tree is the DBHOB of the stem with the largest DBHOB.

### 4.2 Stem diameter classes

The stem diameter classes subject to the provisions of this code are:

(a) 0–20 cm DBHOB

(b) >20 cm DBHOB.

**Note:** Thinning of native vegetation is not permitted in the >20 cm stem diameter class.

## 5. Other conditions on thinning native vegetation

The following conditions also apply to the thinning of native vegetation under this code:

1. Any tree with a stem diameter greater than >20 centimetre DBHOB must not be thinned.
2. The area over which thinning takes place must be no more than 80 per cent of the area of thickened vegetation on the landholding. That is, a minimum of 20 per cent of the area of the thickened vegetation must be retained un-thinned.
3. The stems retained must be a mixture of the tree species being cleared in approximately equal proportions.
4. Thinning must only be undertaken by clearing individual trees with nil or minimal disturbance to native groundcover, soil and non-target plants (e.g. by means such as chemical treatment of individual plants, ringbarking or grubbing), except as set out in condition 5 below.
5. When within 30 metres of a water body, thinning must only be undertaken by removing individual trees with no disturbance at all to native groundcover, soil and non-target plants.
6. Thinning must not be undertaken in patches of less than one hectare in area that are not linked to adjoining vegetation (linked means within 100 metres of other native vegetation).
7. The un-thinned vegetation must be distributed throughout the area being thinned to assist in achieving a mosaic of vegetation densities across the property. Un-thinned vegetation may include native vegetation in riparian areas.
8. The area thinned must not exceed:
   (a) on the western plains – 100 hectares per landholding in any two-year period
   (b) in all other areas – 50 hectares per landholding in any two-year period.

## 6. Clearing not to exceed minimum extent necessary

Thinning to benchmark provided for in this code is the maximum thinning that can be undertaken as a RAMA under clause 36 of the Native Vegetation Regulation 2012. It does not affect the operation of section 22 of the *Native Vegetation Act 2003* which provides that clearing for RAMAs is not authorised if it exceeds the minimum extent necessary for carrying out the activity.

## 7. Regrowth is protected

Following clearing under this code all native vegetation that is present on the site and that which re-grows following the clearing including trees, shrubs and ground cover is protected regrowth under clause 53(1)(b) of the Native Vegetation Regulation 2012.

Protected regrowth can be cleared using this (Thinning of native vegetation) RAMA or any other RAMA, however it can not be cleared as regrowth under section 19 of the *Native Vegetation Act 2003.*

# 8. Record keeping

The landholder must keep diary records of the thinning for a period of seven years.

**Note to reader:**

## Alternative method

This draft code suggests one method of thinning. There are other methods which could be used. For example, a spacing formula based on the diameter of the trees could be used.

***Formula*:**

Spacing = # × DBHOB × 100 cm

# = set number based on vegetation type

DBHOB = diameter at breast height over bark

***Worked example*:**

where # = 0.25 for the vegetation type and DBHOB = 20 cm

Spacing = 0.25 x 20 cm x 100 cm

= 500 cm

= 5 metres

This approach has been used in thinning for forestry.

It has a long history but is mainly used for production purposes rather than thinning for environmental purposes.

This method would also have to protect dominate canopy trees and any trees with hollows.

The # criteria would need to be determined for each of the relevant vegetation types for environmental purposes.

In cases where the trees are different diameters, the diameters of the two trees is averaged for the formula.

# Appendix 1 Stem Density Benchmark Data Table

| DRAFT ONLY<br>Vegetation type | DRAFT ONLY<br>Benchmark stem density (stems per hectare) | | |
|---|---|---|---|
| | 0–20 cm | >20 cm | Total |
| 1. Bendemeer white gum/Silver-top stringybark grassy open forest; Kaputar and southern tableland edge (Nd 97) | 300 | 70* | 370* |
| 2. Grassy white box woodland | 100 | 10* | 110* |
| 3. Ironbark shrubby woodlands of the Pilliga area, Brigalow Belt South | 180 | 90 | 270 |
| 4. Narrow-leaved ironbark–pine–box woodlands and open forests Brigalow Belt South and Nandewar # | 640 | 200 | 840 |
| 5. Poplar box grassy woodland on alluvial clay soils Brigalow Belt South and Nandewar | 90 | 80 | 170 |
| 6. Rough-barked apple, Silver-top stringybark, Red stringybark grassy open forest, tableland edge | 200 | 70* | 270* |
| 7. White box grassy woodland Brigalow Belt South and Nandewar | 220 | 90 | 310 |
| 8. White box shrubby open forest, Melville Range (Nd 71) | 50 | 20* | 70* |
| 9. White box–stringybark shrubby woodlands, Brigalow Belt South and Nandewar | 350 | 100 | 450 |
| 10. White cypress pine–silver-leaved ironbark grassy woodland, Nandewar # | 950 | 90 | 1040 |
| 11. Coolabah–Black box woodland of the northern riverine plains | 20 | 10* | 30* |
| 12. White cypress pine–bulloak–ironbark woodland of the Pilliga area of the Brigalow Belt South bioregion # | 18 | 38 | 56 |

**Note to reader:**

Figures marked in with an asterisk (*) do not include benchmark values for stems greater than 30 centimetre DBHOB. These were not measured at the time that the benchmarks were collected. As a result the >20 centimetre and total stem densities will be greater than these figures.

The stem densities for vegetation types with cypress pine, marked with a hash (#), will be reviewed.

**Note to reader:**

The stem density in Appendix 1 could be also expressed as:

1. average spacings between stems or
2. density of trees in a 20 m × 20 m square (see next page).

| DRAFT ONLY<br>Vegetation type | DRAFT ONLY<br>Average spacing between stems (metres) | | | DRAFT ONLY<br>Density of trees per 20 m x 20 m square | | |
|---|---|---|---|---|---|---|
| | 0–20 cm | >20 cm | Total | 0–20 cm | >20 cm | Total |
| 1. Bendemeer white gum/silver-top stringybark grassy open forest, Kaputar and southern tableland edge (Nd 97) | 6 | 12* | 5* | 12 | 2.8* | 14.8* |
| 2. Grassy white box woodland | 10 | 32* | 10* | 4 | 0.4* | 4.4* |
| 3. Ironbark shrubby woodlands of the Pilliga area, Brigalow Belt South | 7 | 11 | 6 | 7.2 | 3.6 | 10.8 |
| 4. Narrow-leaved ironbark–pine–box woodlands and open forests Brigalow Belt South and Nandewar # | 4 | 7 | 3 | 25.6 | 8 | 33.6 |
| 5. Poplar box grassy woodland on alluvial clay soils, Brigalow Belt South and Nandewar | 11 | 11 | 8 | 3.6 | 3.2 | 6.8 |
| 6. Rough-barked apple, silver-top stringybark, red stringybark grassy open forest, tableland edge | 7 | 12* | 6* | 8 | 2.8* | 10.8* |
| 7. White box grassy woodland, Brigalow Belt South and Nandewar | 7 | 11 | 6 | 8.8 | 3.6 | 12.4 |
| 8. White box shrubby open forest, Melville Range (Nd 71) | 14 | 22* | 12* | 2 | 0.8* | 2.8* |
| 9. White box–stringybark shrubby woodlands, Brigalow Belt South and Nandewar | 5 | 10 | 5 | 14 | 4 | 18 |
| 10. White cypress pine–silver-leaved ironbark grassy woodland, Nandewar # | 3 | 11 | 3 | 38 | 3.6 | 41.6 |
| 11. Coolabah–black box woodland of the northern riverine plains | 22 | 32* | 18* | 0.8 | 0.4* | 1.2* |
| 12. White cypress pine–bulloak–ironbark woodland of the Pilliga area of the Brigalow Belt South bioregion # | 24 | 16 | 13 | 0.7 | 1.5 | 2.2 |

Figures marked with an asterisk (*) do not include benchmark values for stems greater than 30 centimetres DBHOB. These were not measured at the time that the benchmarks were collected. As a result, the >20 centimetres and total stem densities will be greater than these figures.

The stem densities for vegetation types with cypress pine, marked with a hash (#), will be reviewed.