Private Native Forestry

Code of Practice for Cypress and Western Hardwood Forests

I, the Minister for Agriculture, make the following *Private Native Forestry Code of Practice for Cypress and Western Hardwood Forests* under section 60ZT of the *Local Land Services Act 2013*.

Dated this 13 day of April 2022 at 10 am.

Dugald Saunders, MP
Minister for Agriculture

I, the Minister for Environment and Heritage, give concurrence to the following *Private Native Forestry Code of Practice for Cypress and Western Hardwood Forests* under section 60ZT of the *Local Land Services Act 2013*.

Dated this 13 day of April 2022 at 10 am.

James Griffin, MP
Minister for Environment and Heritage

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The Code

1. Introduction

(1) This Private Native Forestry Code of Practice (Code) supports the long-term sustainable management of native forests on private land and Crown land (other than land excluded by section 60ZS of the Act for timber production and ecologically sustainable forest management (ESFM).

(2) This Code commences on 2 May 2022.

(3) This Code applies to forestry operations in areas of New South Wales (the State) as defined by Part 5B of the Act that are within Cypress Forests and Western Hardwood Forests. This Code is made under Part 5B, section 60ZT of the Act.

(4) The objects of Part 5B of the Act are:

(a) to authorise the carrying out of private native forestry in accordance with principles of ecologically sustainable forest management, and

(b) to protect biodiversity and water quality (including threatened species, populations and ecological communities under Part 7A of the *Fisheries Management Act 1994*) in connection with private native forestry operations, and

(c) to enable landholders to carry out forestry operations in a sustainable manner in areas of the State to which this Part applies, and

(d) to ensure the differences between private native forestry and native forestry operations in State forests or other Crown-timber land are recognised, including in the application of protocols, codes, standards and other instruments.

(5) 'Cypress Forests' mean forests dominated by white cypress pine (*Callitris glaucophylla*), being forests in which at least 80% of the stand basal area comprises trees of that species.

(6) 'Western Hardwood Forests' mean forests that are consistent with the description of any of the Forest Types 99, 103, 104, 124, 171–178, 180–185, 203–210 and 213 set out in the document called *State Forests of NSW Research Note 17*.

(7) This Code does not authorise the clearing of native vegetation within the meaning of Part 5A of the Act.

(8) For the purposes of Clause 29 (1) of Schedule 6 of the Act, this Code is the Private Native Forestry Code of Practice for Cypress & Western Hardwood Forests and applies instead of the Private Native Forestry Codes of Practice for Cypress & Western Hardwood Forests published in the Gazette on 8 February 2008 referred to in Clause 29(1) of Schedule 6 to the Act.

(9) Notes are provided to assist in understanding and interpretation. They do not otherwise form part of this Code and are not enforceable.

Note 1: Section 60S of the Act and clause 124 of the *Local Land Services Regulation 2014* provide that the clearing of native vegetation is not authorised by a land management (native vegetation) code if the clearing is:

- the carrying out of a forestry operation within the meaning of Part 5B (Private native forestry)
- on land that is subject to a PNF Plan that was approved under Part 5C of the *Forestry Act 2012* before the repeal of that Part
- on land that is subject to a PNF Plan under Part 5B of the Act.

2. Outcomes Statement

(1) This Code supports the implementation of the following long-term outcomes:
   (a) Maintain forest health and regeneration at site and bioregional scales.
   (b) Maintain the productive capacity of the private native forest estate at site and bioregional scales.
   (c) Maintain the persistence of native species at site and bioregional scales.
   (d) Maintain water quality and soil health at site and bioregional scales.
   (e) Build landholder capacity to deliver best practice forest management.
   (f) Support the economic resilience of landholders and regional communities.

(2) The outcomes statement is included to improve interpretation and understanding of the long-term objectives of private native forestry but does not form part of the Private Native Forestry Plan (PNF Plan) approval and is not an enforceable requirement of the this Code or the Act.

3. Private Native Forestry Plans

(1) Before any forestry operations commence in areas of the State to which Part 5B of the Act applies (as described in section 60ZS of the Act), a PNF Plan must be prepared by the landholder(s) or by a person nominated by the landholder(s) and approved by Local Land Services in accordance with sections 60ZX and 60ZY of the Act.

(2) Forestry operations under a PNF Plan must be conducted in accordance with all relevant provisions of this Code.

(3) Local Land Services will provide relevant digital information on landscape features (as identified in Table D) and slope angles (where feasible), mapped drainage features (as identified in Table G) and Listed Species Ecological Prescriptions including areas mapped under the PNF koala prescription map at the time of approval of the PNF Plan.

(4) Prior to the commencement of any harvest operations, the landholder(s) must obtain from Local Land Services any updated information on plants, animals and ecological communities listed in the schedules of the *Biodiversity Conservation Act 2016* so they are identified for protection in accordance with this Code.

(5) PNF Plans must identify the landholder(s) and the land to which the plan applies (including the lot and deposited plan number).

(6) Forestry operations under an approved PNF Plan must not occur until a Forest Management Plan has been approved by Local Land Services under clause 4.1(1) of this Code, except for operations consistent with Clause 5.1.

(7) A copy of the PNF Plan must be available on-site during any forestry operations.

(8) The landholder(s) must provide a copy of the PNF Plan to a person carrying out forestry operations on the landholding.

(9) For the purposes of section 60ZW of the Act, forestry operations are not forestry operations to which a PNF Plan applies if they are not undertaken in accordance with:
   (a) the approved PNF Plan;
   (b) the approved Forest Management Plan (except for operations consistent with Clause 5.1 of this Code); and
   (c) the requirements of this Code.

(10) Local Land Services will maintain a public register of PNF Plans and Forest Management Plans.

Note 2: Section 60ZZ (4) of the Act provides that a private native forestry plan may be varied by Local Land Services on application by the landholder.

4. Forest planning and management

4.1 Forest Management Plans

Introduction

Forest Management Plans outline how individual forestry operations will be undertaken within a PNF Plan area. The Forest Management Plan includes a map and written section describing the forest condition, forestry operations and forest management activities. A Forest Management Plan is to be used when undertaking forestry operations consistent with the standard requirements of this Code.

(1) A Forest Management Plan must be prepared by the landholder(s) or a person nominated by the landholder(s) and approved by Local Land Services before forestry operations commence, other than small scale harvesting operations that are conducted consistent with Clause 5.1.

(2) A Forest Management Plan must be in a form approved by LLS and consistent with the provisions of this Code and the requirements of the Listed Species Ecological Prescriptions set out in Appendix A.

(3) Local Land Services will require a Forest Management Plan to be revised and re-submitted if the Plan it is not in an approved form or is not consistent with the provisions of this Code, including the requirements of the Listed Species Ecological Prescriptions set out in Appendix A.

(4) The landholder(s) and anyone else carrying out forestry operations must read, sign and date the Forest Management Plan and any amendments.

(5) A copy of the Forest Management Plan must be available on-site during forestry operations.

(6) A Forest Management Plan must contain the following:

(a) a map (or maps) showing:

(i) the boundaries of the landholding, and area(s) subject to the plan, including areas in which harvest operations and/or forestry operations will occur

(ii) Within the area subject to the plan:

a. forested areas
b. locations of records of any threatened species, threatened populations and threatened ecological communities
c. areas identified as ‘high koala habitat suitability’ on any PNF koala prescription map
d. the location of landscape features as listed in Table D and protection buffers required
e. mapped drainage features (including riparian exclusion zones as listed in Table G)
f. slope angles (where feasible)
g. the location of silvicultural treatments outlined in clause 4.1 (6)(b)(viii) of this Code
h. the indicative location of existing and proposed roads and drainage feature crossings
i. the indicative location of log landings and portable mill sites.

(iii) Within areas adjacent to the area subject to the plan:
   a. forested areas
   b. recorded locations of any threatened species, threatened populations and threatened ecological communities
   c. areas identified as 'high koala habitat suitability' on any PNF koala prescription map
   d. wetlands and mapped drainage features
   e. areas of outstanding biodiversity value

(b) a written component that provides:

(i) details of ownership of the land, including the name and contact details of the owners of the land
(ii) the landholder's forest management objectives
(iii) a contemporary description of the pre-harvest forest condition (including overstorey species type and composition, known disturbance and harvest history, pre-harvest basal area, stand height (where applicable) and any presence of pests and/or weeds)
(iv) the post-harvest basal area objective
(v) details of forest access, including any necessary construction, upgrading or maintenance of forest roads and drainage feature crossings
(vi) details of harvesting and/or other proposed forestry operations
(vii) details of activities to promote regeneration and post-harvest management
(viii) details of relevant silvicultural treatments that may be carried out as part of the Forest Management Plan
(ix) details of flora and fauna management actions (where applicable)
(x) details of tree marking activities (where applicable)
(xi) details of pest and weed management (where applicable)
(xii) details of fire management (where applicable)
(xiii) details of research or monitoring plots within the PNF Plan area (where applicable).

(7) The Landholder may amend the Forest Management Plan, except for matters referred to in Clause 4.1 (6) (a) (i), Clause 4.1 (6) (a) (ii) (a-f), Clause 4.1 (6) (a) (iii) and Clause 4.1 (6) (b) (i) of this Code. Amendments to Clause 4.1 (6) (a) (i), Clause 4.1 (6) (a) (ii) (a-f), Clause 4.1 (6) (a) (iii) and Clause 4.1 (6) (b) (i) may only occur with the approval of Local Land Services.

(8) Any amendments to the map or the written component of the Forest Management Plan must be noted on the Forest Management Plan and must be consistent with the relevant provision of this Code. The landholder must notify Local Land Services of the amendment within 10 days after the amendment is made.

(9) Forestry operations must be carried out in accordance with the approved Forest Management Plan. To the extent that the Forest Management Plan is inconsistent with the requirements of this Code, this Code prevails.

(10) The landholder must retain a copy of the Forest Management Plan, including any amendments, for the life of the PNF Plan or for five years after completion of the forestry operations for which it was prepared, whichever is the later date.

(11) The landholder(s) or person nominated by the landholder(s) must provide the Forest Management Plan, including a record of any amendments, to an officer from Local Land Services and/or an authorised officer from the Environment Protection Authority if requested to do so.

(12) The landholder(s) must provide the Forest Management Plan, including any amendments to that Plan, to a person carrying out forestry operations on the landholding.

4.2 Reporting

(1) The landholder must notify Local Land Services of the commencement and completion of forestry operations under clauses 5.1 and 5.2 of this Code.

(2) In respect of forestry operations under clauses 5.1 and 5.2 of this Code, notification must be provided to Local Land Services within 30 days prior to commencement of the relevant forestry operations.

(3) In respect of forestry operations under clauses 5.1 and 5.2 of this Code, notification must be provided to Local Land Services within 30 days of the completion of the relevant forestry operations.

(4) The following information must be included in any commencement notification to Local Land Services:

(a) the PNF Plan approval number

(b) the Forest Management Plan approval number where applicable

(c) the proposed commencement date and estimated time it will take to complete the forestry operations

(d) a map showing the location of the proposed forestry operations

(e) name and contact details of the landholder.

Note 3: Local Land Services will provide updated information to the landholder on the locations of plants, animals and ecological communities listed in the schedules of the *Biodiversity Conservation Act 2016* at this time to ensure that the relevant Code requirements are applied to the forestry operation.

(5) The following information must be included in any completion notification to Local Land Services:

(a) the PNF Plan approval number

(b) the Forest Management Plan approval number where applicable

(c) a map showing the location of the forestry operations

(d) the approximate volume of forest products harvested

(e) the approximate number of hectares on which the forestry operations have occurred

(f) the date that the forestry operations were completed

(g) name and contact details of the landholder.

4.3 Monitoring, assessment and adaptive management

(1) A monitoring, evaluation and reporting framework (PNF MER framework) must be jointly approved by the Chief Executive Officer of Local Land Services and the Secretary of the Department of Planning and Environment (DPE).

(2) The PNF MER framework will be proposed and overseen by the NSW Forest Monitoring Steering Committee (or equivalent) and independently chaired by the NSW Natural Resources Commission.

(3) The NSW Forest Monitoring Steering Committee (or equivalent) independently chaired by the NSW Natural Resources Commission will:
   (a) conduct annual checks that the evidence base is up to date (including relevant maps), identify emerging evidence from monitoring and research, and opportunities for improvement
   (b) formally assess the data and evidence from the program (and any other lines of evidence) every five years and advise the Minister administering the *Forestry Act 2012*, the Minister administering the *Local Land Services Act 2013* and the Minister administering the *Biodiversity Conservation Act 2016* whether there is sufficient evidence to warrant a review of the PNF Codes.

(4) Local Land Services can require that forestry operations are rescheduled to help ensure harvest operations are distributed over time and space, to support a mosaic of forest age-classes and forest structures across the landscape. This determination will consider landholder's circumstances and the nature, extent and intensity of forestry operations.

(5) The Minister administering the *Local Land Services Act 2013* can request harvest operations are reviewed where an unforeseen event (such as wildfire, mass dieback or a forest biosecurity event) has caused, or has the potential risk of causing serious or irreversible environmental damage on private land at a bioregional scale. In these circumstances Local Land Services will conduct a site assessment within the impacted bioregion(s) identified by the Minister. The site assessment will occur prior to harvest operations commencing to determine whether site scale environmental risks:
   (a) can be managed within the existing provisions of the Code, or
   (b) cannot be mitigated or managed to avoid serious or irreversible environmental damage. In this event, Local Land Services can require the landholder to suspend or reschedule harvest operations but will agree with the landholder(s) on a timeframe for reassessing the site.

(6) Where an unforeseen event (such as wildfire, mass dieback or a forest biosecurity event) has caused, or has the potential risk of causing serious or irreversible environmental damage on private land at a bioregional scale, the Chief Executive Officer of the Environment Protection Authority can inform the Chief Executive Officer of Local Land Services that a review under Clause 4.3 (5) of this Code may be required.

Note 4: Any research or forest monitoring activities undertaken in PNF Plan areas beyond minimum requirements set out in this Code can only occur with the written consent of the landholder. The written consent must outline the purpose of the research or monitoring, and how the data will be collected, stored and used, including how landholder confidentiality will be managed.

5. Silvicultural operations

5.1 Small scale harvesting

Introduction

Small scale harvesting is a silvicultural system in which single trees of various ages are harvested at a low intensity. This method is suitable for the provision of fence posts, poles and firewood and promoting regeneration of shade-tolerant species, or growth of preferred species or individual trees.

(1) Forestry operations are permitted after a PNF Plan has been approved.

(2) Small scale harvesting is permitted provided no more than 5 trees per hectare are harvested and the harvest area is no more than a total of 5 hectares across the PNF Plan area or the volume harvested is no more than $100m^3$ per year, whichever is smaller.

(3) Small scale harvesting must not reduce the stand basal area below the limits set out in Table A.

Table A: Minimum stand basal areas for small scale harvesting

Broad forest type	Basal Area
Cypress	6 m^2/ha
Western Hardwood	8 m^2/ha

(4) For the purposes of clause 5.1 of this Code the minimum stand basal area will be calculated in accordance with Appendix B. The average can only be calculated within contiguous forest areas and must not include isolated patches of forest.

(5) The landholder must keep a record of the number of trees harvested and the approximate area harvested for the life of the PNF Plan or for five years after completion of forestry operations, whichever is the later date.

5.2 Single tree selection and thinning

Introduction

Single tree selection and thinning is a silvicultural system in which single trees or small groups of trees of various ages are harvested. This method is suitable for promoting regeneration of shade-tolerant species, or growth of preferred species or individual trees

(1) Forestry operations are permitted after the approval of a Forest Management Plan.

(2) Single tree selection and thinning operations must not reduce the stand basal area below the limits set out in Table B across the net harvestable area of the Forest Management Plan.

Table B: Minimum stand basal areas for single tree selection and thinning operations

Broad forest type	Basal Area
Cypress	6 m^2/ha
Western Hardwood	8 m^2/ha

(3) For the purposes of clause 5.2 of this Code the minimum stand basal area will be calculated in accordance with Appendix B. The average can only be calculated within contiguous forest areas and must not include isolated patches of forest.

5.2.1 Non-commercial thinning

(1) Non-commercial thinning may be applied to Cypress forest regrowth which is usually about 4–6 metres tall. It is essential to free regeneration that is in a state of 'lock-up'. Stands should be thinned to a spacing of about 6 metres x 6 metres (280 stems/hectare).

(2) The stems to be retained should be:

- the largest and tallest stems
- the straightest stems
- stems with smaller limbs
- stems without double leaders or bends in the upper crown
- stems that have not been damaged.

5.2.2 Oldest age class harvest (release operation)

(1) Final harvesting of the largest age class in Cypress forests may be undertaken when there is a regenerating age class about 4–6 metres high beneath the overstorey.

(2) All trees in the older age class not required for habitat retention may be removed.

(3) Damage to the younger age class should be minimised as far as practicable.

5.3 Forest regeneration

(1) The minimum stand stocking (as determined by the percentage of stocked plots specified in Table C) must be achieved within 3 years of a regeneration event.

(2) In this clause, **regeneration event** is:

(a) a harvesting or thinning operation for Western Hardwoods, or

(b) the second successive wet summer following a harvesting or thinning operation for Cypress Pine Forests.

(3) A harvesting operation must not occur in a previously harvested area until stocking levels meet the minimum stocked plot requirements in Table C.

Table C: Minimum percentage of stocked plots

Broad forest type	Minimum percentage of stocked plots
Cypress	80%
Western Hardwood	55%

(4) For the purposes of this clause 5.3 and Table C, forest regeneration will be calculated in accordance with Appendix C.

(5) The landholder must comply with any reasonable requirements of the Environment Protection Authority for the purpose of regenerating or re-establishing the forest, if the minimum percentage of stocked plots has not been reached within a period of 24 months following a regeneration event.

(6) Landholders must monitor forest regeneration, composition, and condition at 2, 6 and 10 years after a regeneration event.

(7) Where the identified forested area is not regenerating along a trajectory that maintains (or improves on) preharvest forest conditions, landholders must implement regeneration management actions.

6. Pest and weed management

Note 5: The landholder may manage pest plants and animals on land to which a PNF Plan applies. Any such management is to be carried out in accordance with all applicable legal requirements. Local Land Services and the relevant local council can provide advice on management of pest plants and animals.

7. Fire management

Note 6: The landholder may carry out burning activities, fire management, bush fire hazard reduction and bush fire recovery and response activities on land to which a PNF Plan applies. However, any such activities may only be carried out in accordance with all applicable legal requirements and any necessary approvals must be obtained. Advice should be sought from the Rural Fire Service and the relevant local council before carrying out any of these activities.

(1) Fire management should be consistent with the following:

- (a) flame heights should average one metres, but may be higher in patches of heavy or elevated fuels
- (b) scorch heights should average less than five metres, but may be higher in patches of heavy or elevated fuels
- (c) the fire should spread at a slow walking pace.

(2) Fire management under this part is not permitted:

- (a) On land that contains peat soils, or
- (b) On land that is mapped or described as a fire exclusion zone in a bush fire risk management plan, or
- (c) if it is prohibited under *the Bush Fire Environmental Assessment Code for New South* Wales.

Note 7: Fire management under this part must be conducted in accordance with the *NSW Rural Fire Service Standards for Low Intensity Bush Fire Hazard Reduction Burning* (for private landholders) and the *Bush Fire Environmental Assessment Code for New South Wales,* as updated from time to time.

8. Protection of the environment

8.1 Protection of landscape features of environmental and cultural significance

(1) Forestry operations in and adjacent to specified landscape features must comply with the requirements in Table D.

(2) For the purposes of this Code, old growth forests will be identified according to the protocol approved by the relevant Ministers and available at https://www.lls.nsw.gov.au/__data/assets/pdf_file/0003/807420/Protocol-for-re-evaluating-old-growth-forest-on-private-property.pdf.

Table D: Requirements for protecting landscape features

Landscape feature	Operational conditions
Threatened ecological communities	Forestry operations must not occur in threatened ecological communities. However, existing roads may be maintained.
Threatened populations	Forestry operations must not result in: (a) any harm to an animal that is part of a threatened population, or (b) the picking of any plant that is part of a threatened population, except that existing roads may be maintained.
Areas of outstanding biodiversity value	Forestry operations must not occur in declared areas of outstanding biodiversity value, except that existing roads may be maintained.
Old growth forest	Forestry operations must not occur within old growth forest, except that existing roads may be maintained.
Wetlands	Forestry operations must not occur in any wetland or within 20 metres of any wetland, except that existing roads may be maintained.
Heathland	Forestry operations must not occur in any heathland or within 20 metres of heathland, except that existing roads may be maintained.
Rocky outcrops	Forestry operations must not occur on any rocky outcrop or within 20 metres of a rocky outcrop, except that: • existing roads may be maintained • existing snig tracks may be used.
Cliffs, caves, tunnels or disused mineshafts (excluding open pits less than 3 metres deep)	Forestry operations must not occur within 10 metres of cliffs, caves, tunnels or disused mineshafts, except that existing roads may be maintained.
Aboriginal object or Aboriginal place as defined in the *National Parks and Wildlife Act 1974*	Forestry operations must not occur within: • 50 metres of a known burial site • 20 metres of an Aboriginal scarred or carved tree • 10 metres of a known Aboriginal object or Aboriginal place (this requirement does not apply to Aboriginal objects or places that may lawfully be destroyed).

Landscape feature	Operational conditions
Areas containing items identified as heritage items in an environmental planning instrument	Forestry operations must not occur within 10 metres of a listed heritage item.
Areas of existing mass movement	Harvesting operations which create canopy openings must not occur within the area of existing mass movement, and harvesting machinery must not enter that area except that existing roads may be maintained. New roads must not be constructed.
Dispersible soils or highly erodible soils	• drainage feature crossings must be armoured with erosion-resistant material • road batters and table drains must be stabilised using erosion-resistant material, ameliorants, vegetation or slash • log landings must be stabilised using erosion-resistant material, vegetation or slash at the completion of forestry operations • measures must be taken to immediately stabilise any erosion of roads or snig tracks Existing roads may be maintained.

8.2 Protection of habitat and biodiversity

(1) Habitat trees must be retained in accordance with Table E.

(2) Hollow bearing trees, recruitment trees, food resource trees, roost trees and nest trees are defined as habitat trees retained for the purposes of this Code.

(3) An individual tree may satisfy more than one condition in the tree retention standards (see Table E) if it has the appropriate characteristics.

(4) Where available:

(a) retained habitat trees must represent the range of species in mature and late mature growth stages

(b) preference must be given to selecting habitat trees that best meet the characteristics of habitat trees as set out in clause 8.2 (5) of this Code

(c) preference must be given to habitat trees that will provide habitat connectivity, build on existing landscape features (Table D), provide additional protections for threatened species, and build on existing habitat islands, refugia and conservation areas adjacent to and within the PNF Plan area

(d) preference must be given to trees with well-developed crowns.

(5) For the purpose of this clause:

(a) a **hollow bearing tree** is a tree 30 cm diameter at breast height over bark (DBHOB) or greater, where the trunk or limbs:

(i) contain visible hollows, holes or cavities (including basal hollows), or

(ii) have inferred hollows as it is an older growth stage tree and has one or more obvious deformities such as a burl, large protuberance or a broken limb

(b) if there are more than the minimum required number of habitat trees, preference must be given to trees with the largest hollows, holes or cavities (this can include basal hollows) and/or greatest number of visible hollows, holes or cavities (this can include basal hollows). Trees that pose a health or safety risk may be removed and substituted with other hollow bearing trees if available, and if not available, by recruitment trees.

(c) a **feed tree** is a tree that provides a source of nectar or other food for wildlife and is listed in Table F

(d) a **recruitment tree** is a large, vigorous tree (30cm or greater in DBHOB) capable of developing hollows to provide habitat for wildlife. Where practical, preference must be given to trees from the next cohort to that of retained hollow bearing trees.

(e) an **Old Grey** is a late-mature/over-mature cypress tree that has regenerated before the 1890s, has bark that is bleached to a characteristic light grey colour, and is weathered to a smoother surface texture than is typical of younger trees

(f) **roost, nest** and **food resource trees** are defined as:

(i) trees with roosts or nests of any species of raptor

(ii) trees that support maternity bat roosts with clear evidence of roosting such as bat guano (faeces)

(iii) trees with recent ‘V’ notch incisions or other incisions made by a glider species. Recent incisions are incisions that have not closed.

Table E: Minimum standards for tree retention

Broad forest types	Trees that must be retained
Cypress	• All Old Greys, and 2 hollow-bearing eucalypt trees per hectare, where available. • One recruitment tree of the same species must be retained for every Old Grey and hollow-bearing tree retained. • Where the total Old Grey and cypress recruitment trees are less than 5 trees per hectare, additional recruitment trees must be retained to bring the number up to 5 per hectare. • Where the total hollow bearing eucalypt and eucalypt recruitment trees are less than 4 trees per hectare, additional recruitment trees must be retained to bring the number up to 4 per hectare. • All roost, nest or food resource trees to be retained. • All trees with large stick nests (50cm or larger) must be retained and protected with a 50 metre radius exclusion zone around the nest
Western Hardwood	• All Old Greys. • 20 mature healthy eucalypt trees, from the oldest age classes per 5 hectares. Preference must be given to hollow bearing trees where available. • One recruitment tree must be retained for every hollow bearing tree retained up to a maximum of 10 recruitment trees per 5 hectares. Retained recruitment trees can be counted towards meeting the 20 mature healthy trees per 5 hectares. • All roost, nest or food resource trees to be retained. • All trees with large stick nests (50cm or larger) must be retained and protected with a 50 metre radius exclusion zone around the nest

Table F: Feed trees

Zones: Nandewar, Brigalow Belt South, Darling Riverine Plains (see Figure 2)	
Forest red gum – Eucalyptus tereticornis	Red stringybark – E. macrorhyncha
Narrow-leaved ironbark – E. crebra	White box – E. albens
Ferguson's ironbark – E. fergusonii	Yellow box – E. melliodora
Caley's ironbark – E. caleyi	Fuzzy box – E. conica
Grey ironbark – E. paniculata	Grey box – E. molucanna
Mugga ironbark – E. sideroxylon	Bloodwood and spotted gum species – Corymbia spp.
Red ironbark - E. fibrosa	Mountain gum - E. dalrympleana
Manna gum - E.viminalis	Black sallee - E. stellulata
Snow gum - E. pauciflora	Eurabbie - E. bicostata
E. agglomerata	E. globoidea
Mountain Grey Gum - E. cypellocarpa	Needlebark stringybark - E. planchoniana
Tyndale stringybark - E. tindaliae	White mahogany - E. acmenoides
E. carnea	E.ophitica
Zones: Cobar Peneplain, Riverina, Mulga Lands, Murray Darling Depression, Channel Country, Broken Hill Complex (see Figure 2)	
Grey ironbark – *E. paniculata*	White stringybark – *E. globoidea*
Eurabbie – *E. bicostata*	Red stringybark – *E. macrorhyncha*
Forest red gum – *E. tereticornis*	Mountain gum - E. dalrympleana
Manna gum - E.viminalis	Black sallee - E. stellulata

Snow gum - E. pauciflora	Yellow box – E. melliodora
E. agglomerata	White box – E. albens
E. muelleriana	Ferguson's ironbark – E. fergusonii
Caley's ironbark – E. caleyi	Narrow-leaved ironbark – E. crebra
Red ironbark - E. fibrosa	Mugga ironbark – E. sideroxylon
River Peppermint - E. elata	Mountain Grey Gum - E. cypellocarpa
Maiden's Gum - E. maidenii	Swamp Gum - E. ovata
Bloodwood and spotted gum species – Corymbia spp.	Fuzzy box – E. conica
Grey box – E. molucanna	

8.3 Minimising damage to protected trees and native vegetation

(1) As far as practicable, forestry operations must not damage or heap debris around protected trees, and post-harvest burns must minimise damage to trunks and foliage of protected trees.

8.4 Drainage feature protection

(1) For the purpose of this Code, riparian exclusion zones are defined as those areas within the distances for the specified drainage feature, as listed in Table G. Stream orders are determined according to the Strahler System (see Figure 1).

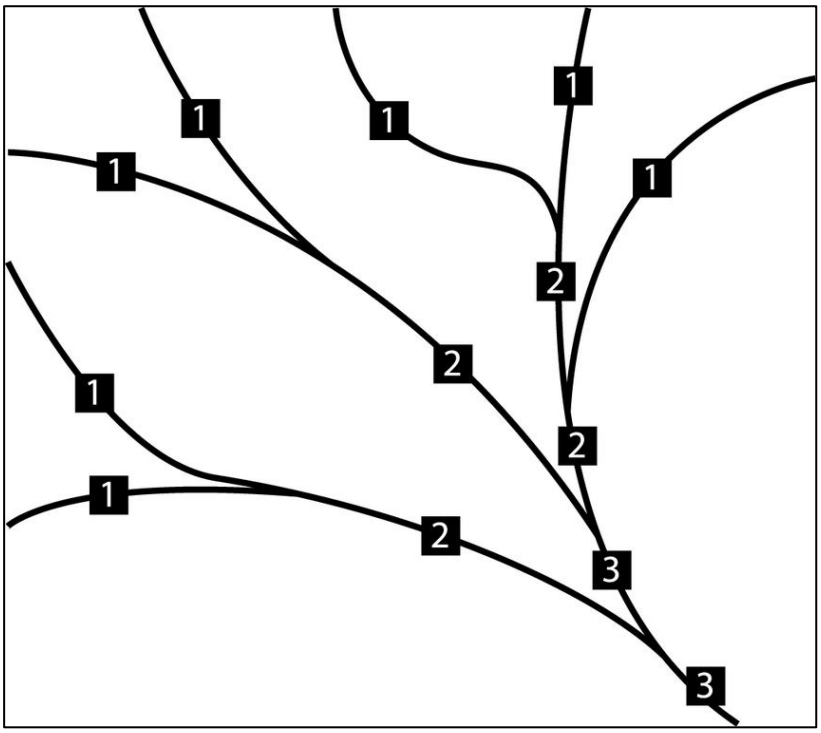

Figure 1: Diagram of stream order (Source: *Water Management (General) Regulation 2018*).

(2) Forestry operations must not occur in riparian exclusion zones, except where otherwise allowed by this Code.

(3) The riparian exclusion zone must be measured from the top of the defined bank of the drainage line or stream or where there is no defined bank, from the edge of the channel of the drainage feature for the distance specified in Table G.

Table G: Riparian exclusion zones

Drainage feature	Riparian exclusion zone
Unmapped drainage lines, unmapped and mapped first-order streams, mapped drainage features	10 metres
Mapped second-order streams	20 metres
Mapped third-order or higher streams	30 metres
Prescribed Streams	

(4) Harvesting machinery must not enter riparian exclusion zones, except at designated crossings or where otherwise allowed by this Code.

(5) A tree must not be felled into a riparian exclusion zone, unless it is accidently felled. Where harvesting is occurring in or adjacent to riparian exclusions zones, all tree felling must employ directional felling to minimise disturbance to drainage features.

(6) Where a tree is accidentally felled into a riparian exclusion zone, the tree may only be removed provided:

(a) disturbance to soil, groundcover and native vegetation is limited to the minimum extent necessary, and

(b) harvesting machinery is limited to the outer 5 metres of the riparian exclusion zone, and

(c) harvesting machinery entering the riparian exclusion zone to retrieve the tree or part of the tree, uses walkover techniques, and

(d) following the tree's removal, any soil disturbance or furrows are treated to prevent concentration of water flow or soil movement to help restore the natural pattern of overland flow and protect soil from accelerated erosion, and

(e) the incident must be recorded in the Forest Management Plan within 10 days.

(7) New roads and crossings may be constructed and old roads and crossings re-opened within riparian exclusion zones provided that:

(a) the road or crossing is identified in the Forest Management Plan

(b) the road prism or crossing intersects with the riparian exclusion zone at right angles or as close to right angles as is practicable

(c) clearing and disturbance within the riparian exclusion zone are minimised; and

(d) any other necessary permits have been obtained.

(8) Trees may be felled within unmapped drainage depressions, and machinery may enter, however, disturbance must be minimised by:

(a) machinery not operating when the soil is saturated

(b) using walkover techniques wherever possible

(c) preventing skewing of machinery tracks as much as possible; and

(d) not snigging along drainage depressions.

(9) Where existing measures are not adequately managing soil erosion, sediment movement or water turbidity caused by forestry operations, the landholder must implement further riparian protection measures. These additional measures must be recorded in the Forest Management Plan.

9. Construction and maintenance of forest infrastructure

9.1 Construction and maintenance of roads

(1) Clearing of native vegetation for the purpose of roads, drainage structures, log landings, mill sites, snig tracks or extraction tracks must not occur except in accordance with this Code, and the clearing must be limited to the minimum extent necessary.

(2) Construction of new roads and drainage feature crossings should be minimised as far as practicable, consistent with the requirements for management, harvesting and fire control in the PNF Plan area.

(3) As far as practicable, roads must be located on ridgetops or just off the crest of the ridge to facilitate outfall drainage.

(4) Clearing for road construction must be no more than 3 metres from the outside edges of batters or table drains. If it is necessary to clear a wider area, a minimum of 70% groundcover must be established on all the cleared area beyond the road formation within one month of the date of completed construction.

(5) Trees and other debris must not be placed or stacked in landscape features referred to in Table D or riparian exclusion zones referred to in Table G.

(6) Any cut or fill batter must be stabilised.

(7) Tree stumps or other woody debris must not be used to provide fill for road construction.

(8) New roads must be constructed, upgraded and maintained with a maximum grade of 10 degrees. The maximum grade may be increased to 15 degrees where it would result in an improved environmental outcome (such as to avoid difficult ground conditions or landscape features and/or approach a riparian exclusion zone at right angles). If a new road is constructed or upgraded with a maximum grade above 10 degrees, it must be recorded in the Forest Management Plan.

(9) Roads must be maintained according to Table H.

(10) Roads must be maintained to ensure that road surfaces remain stable and drainage systems and sediment controls remain functional.

(11) Soil exposure on road verges must be kept to a minimum.

(12) Roads that are not required for ongoing property management must be stabilised, drained and allowed to revegetate at the completion of its use.

(13) Haulage must not be undertaken over any section of road where the surface has rutting more than 150 millimetres deep for any distance exceeding 20 metres.

(14) Haulage on natural surface roads must cease when there is runoff from the road surface, except for trucks that have already been loaded or partially loaded. These trucks can travel to their intended destination.

(15) Where existing roads are overgrown and require re-opening, the clearing width must be minimised to the extent required to make the road suitable for traffic.

(16) As far as practicable, grass cover must be maintained and disturbance to existing drainage structures must be minimised.

(17) Blading-off of roads must only be used to the minimum extent necessary to rehabilitate the road surface.

(18) Sections of new road may be constructed on ground slopes exceeding 25 degrees only if:

(a) there is no practical alternate route available,

(b) the sections are designed by a suitably qualified person using currently acceptable engineering standards to ensure stability, and

(c) the section is noted within the Forest Management Plan.

Table H: Maximum distance that water may travel along road surfaces, table drains, snig and extraction tracks

Road grade (degrees)	Maximum distance (metres)
0 to ≤ 3	175
> 3 to ≤ 5	100
> 5 to ≤ 8	80
> 8 to ≤ 10	60
> 10 to ≤ 15	40
> 15 to ≤ 20	25
> 20 to ≤ 25	20

9.1.1 Road drainage

(1) All reasonable steps must be taken to minimise soil erosion from roads. Accordingly, one or more of the following measures must be adopted, where appropriate:
(a) maintain vegetative cover (that is, plant material, living or dead) that protects the road surface from erosion
(b) establish a grass cover on the road surface using a sterile seed or native grass seed
(c) crossfall-drain the road with outfall or infall drainage (preferably with the outward or inward slope being between 4% and 6%) or by shaping the road to a crown so water drains to both of its sides
(d) construct drainage structures on the road surface to convey water away from the road formation (for example, cross drains, mitre drains or relief culverts).

(2) Any drainage structure must be designed to convey the peak flow from a 1-in-5-year storm event.

(3) Drainage structures must be established on a road if concentrated water flow on the road surface or table drains is likely to occur for distances exceeding the relevant spacing, as shown in Table H.

(4) Earth windrows resulting from road construction and upgrading operations must be removed from the shoulders of all roads unless they are specifically constructed to prevent erosion of fill batters or where infall drainage is used.

(5) Earth windrows from road maintenance must be cut through at regular intervals to ensure that water flow on road surfaces does not exceed the distances specified in Table H.

(6) Rollover banks must have a minimum effective bank height of 15 centimetres (consolidated). Spoon drains must have a minimum effective depth of 15 centimetres.

(7) Drainage structures must divert water onto a stable surface and must be kept free of debris that may impede flow of water.

(8) Drainage structures must not be designed to directly divert sediment laden water into drainage features.

(9) A drop-down structure and dissipater must be installed where drainage structures divert water over an exposed fill batter more than 1 metre high.

9.1.2 Roads crossing drainage features

(1) Drainage feature crossings must be stable causeways, culverts or bridges. Existing gully stuffers may be used if they are stable, but new gully stuffers must not be constructed.

(2) Crossings must be designed, constructed and maintained to minimise disturbance to the passage of fish and other aquatic fauna. They must be located and constructed to cause minimum disturbance to stream banks, stream beds and natural flows. The base of the crossing must be made of erosion-resistant material such as rock, concrete or heavy timber and must conform to the natural level of the stream bed.

(3) Crossings must be constructed as close as practicable to right angles to the water flow unless an angled approach reduces soil and ground disturbance.

(4) Disturbance to the bed and banks of the drainage feature during crossing construction or maintenance must be minimised. Disturbed areas must be reshaped and stabilised as soon as possible following crossing construction or maintenance.

(5) The approaches to a crossing over a drainage line must be drained, using a drainage structure, between 5 metres and 40 metres of the crossing. Where this is impracticable, a drainage structure must be constructed as near as practicable to the crossing.

(6) Permanent drainage crossing structures must be designed to convey a 1-in-5-year storm event and withstand a 1-in-10-year storm event. Bridges must be designed and constructed so the natural stream flow is not restricted and erosion is minimised.

(7) The surface of any crossing and the approaches on both sides of it must be made of stable material that is unlikely to be displaced during normal use of the crossing or approach, or by any flood up to and including peak flow of a 1-in-10-year storm event.

(8) Causeways must be constructed of stable, non-soil material such as crushed gravel, rock, bitumen, concrete, logs or other stable material that is unlikely to produce water turbidity.

(9) Construction equipment must minimise disturbance or damage to the watercourse bed and banks.

(10) Fill and construction material must not be placed into watercourses, and surplus fill must be located outside the riparian exclusion zone.

(11) Stream banks and bridge embankments must be protected to minimise erosion.

(12) Soil stabilisation must be undertaken in all areas disturbed by crossing construction, upgrading or maintenance, within 40 metres of either side of the crossing. These areas do not include the road surface, road drainage structures or cut batters.

9.2 Log landings, portable mill sites and snig tracks

(1) Wherever practicable, log landings and portable mill sites must be located on ridge-tops or spurs.

(2) Log landings and portable mill sites must be no larger than the minimum size necessary for efficient operations.

(3) If topsoil is removed, it must be stockpiled and respread at completion of harvesting operations.

(4) Log landings and portable mill sites must be located and constructed as far as practicable to allow effective crossfall drainage during harvesting operations.

(5) The construction of new log landings and portable mill sites must not be located nearer than 40 metres where possible but a least 10 metres from an exclusion zone or riparian exclusion zone.

(6) Existing log landings located within riparian exclusion zones may only be used with the prior written approval of Local Land Services, and provided:

(a) clearing for a new log landing would cause greater environmental harm; and

(b) disturbance to soils and groundcover is minimised, and

(c) erosion and sediment control measures must be in place for the duration of the log landing's use, and upon its completion, and

(d) at least 70% ground cover must be reinstated within one month of the completion of the relevant log landings used for the forestry operations.

(7) Runoff from log landings and portable mill sites must not be directly discharged into a drainage feature.

(8) Log landings must not be used when the log landing soil is saturated.

(9) Vegetation and debris from log landings and portable mill sites must not be deposited in an exclusion zone or riparian exclusion zone.

(10) Woody waste and debris on log landings and portable mill sites must not be stacked against protected trees.

(11) Bark accumulated on log landings, and sawdust on mill sites, must be progressively dispersed away from the site during harvesting operations. Alternatively, bark can be placed in a discrete area on a log landing provided:

(a) Bark heaps are not located adjacent to or under crowns of protected trees, and

(b) Bark heaps are surrounded by a 5-metre earth or mineral break, and

(c) Timber off-cuts are staked at least 5 metres away from any bark heap, and

(d) Upon completion of forestry operations bark heaps are positioned at the centre of the log landing. Bark heaps must be burnt in accordance with all applicable legal requirements and necessary approvals.

(12) On completion of operations, log landings and portable mill sites must be drained and reshaped to disperse runoff onto surrounding vegetation, and topsoil must be respread evenly over the landing.

9.2.1 Snig tracks and extraction tracks

(1) Snig track or extraction track construction must be minimised and, as far as practicable, walkover extraction must be used, and slash retained on snig and extraction tracks.

(2) Soil disturbance and exposure on snig and extraction tracks must be minimised.

(3) As far as practicable, snig tracks from previous operations must be used.

(4) Existing snig tracks or extraction tracks must not be used if they are incised and cannot be drained.

(5) In re-opening existing snig tracks and extraction tracks, the use of blades must be restricted to the removal of obstructions such as understorey vegetation, logs/tree heads and surface rock, and ensuring that the track is adequately drained.

(6) Wherever practicable, snigging and timber extraction must be uphill.

(7) Snig tracks and extraction tracks must be located where they can be drained effectively, and should be located where there is sufficient natural crossfall to remove runoff from the track surface.

(8) Snig tracks and extraction tracks must not encroach on exclusion zones, or riparian exclusion zones except at designated crossings and where permitted by Clause 8.4 (6)-(7) of this Code.

(9) Blading-off of snig tracks and extraction tracks must not occur.

(10) The grade of snig tracks must not exceed 25 degrees, except in the following circumstances:

(a) it will result in a better environmental outcome than construction and/or use of a side cut snig track to access the same area using a snig track of less than 25 degrees, and

(b) the Forest Management Plan is noted, and

(c) the snig track can be effectively drained, and

(d) the maximum grade is 28 degrees, and

(e) the maximum combined length of the snig track exceeding 25 degrees, commencing from the serviced log landing, is not greater than 75 metres.

(11) Where downhill snigging is necessary, snig tracks and extraction tracks must enter the log landing from beside or below. Where this is not possible, a drainage structure must be installed at the entrance to the log landing at the end of each day's operations.

(12) Drainage must be incorporated as soon as possible at the completion of operations on each extraction track or snig track, and in any event within two days, unless the soil is saturated.

(13) Temporary drainage must be installed on any snig or extraction track that will not be used for a period of five days or more.

(14) Track drainage structures must be located, constructed and maintained to divert water onto a stable surface which can handle concentrated water flow, and which provides for efficient sediment trapping. Drainage structures must not be designed to directly divert sediment laden water directly into drainage features.

(15) Snig tracks and extraction tracks must be located and constructed to ensure that water flow on the track surface does not exceed the distances specified in Table H. This could be achieved by one of the following techniques or a combination:

(a) retain the existing groundcover using walkover techniques

(b) retain or cover the track surface with slash and harvesting debris

(c) construct outfall drainage or maintain the track's outfall drainage

(d) construct track drainage structures.

(16) Upon completion of operations, the following measures must be implemented:

(a) where practicable, snig tracks and extraction tracks must be reshaped, all earth windrows, wheel ruts, machinery and log furrows removed, and recoverable topsoil spread back over the track; and

(b) crossfall drainage must be reinstated on snig tracks or, where this is not sufficient to divert runoff from the track, crossbanks must be installed consistent with the spacings in Table H.

(17) Crossbanks must be constructed to have a minimum effective height of 35 centimetres unconsolidated, or 25 centimetres consolidated, and as a guide should not be greater than 50 centimetres in height.

(18) Crossbanks must not be constructed of bark or woody debris.

9.2.2 Snig track and extraction track crossings on drainage features

(1) The location of log landings and snig/extraction tracks must be planned to minimise the number of crossings required.

(2) Temporary crossings may be constructed if this construction will enable access to a forested area that cannot be practically accessed by other means, and negates the need to construct new roads, snig tracks or extraction tracks which are likely to cause greater environmental harm.

(3) Snig track and extraction track crossings must be stable causeways (including natural surface causeways), culverts or bridges. Existing gully stuffers may only be used if they are stable. New gully stuffers must not be constructed.

(4) Machinery must not cross a drainage feature which is running water or when the soil is saturated, unless by means of a stable crossing.

(5) Approaches to crossings must be as close as possible to right angles to the flow of water.

(6) A crossbank must be installed on each approach, between 5 and 20 metres from the drainage feature crossing. The distance must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel or centre of the depression. The drainage structure must divert water onto a stable surface. If such a surface is not available, sediment control measures must be used to prevent sediment entering the drainage feature. Drainage structures must not be designed to directly divert sediment laden water directly into drainage features.

(7) Disturbance to the bed and banks of the drainage feature must be minimised, and any spoil must be removed from the drainage feature.

(8) All areas disturbed during crossing construction and use, including approaches, must be rehabilitated following completion of use. Rehabilitation includes the reshaping of the crossing to conform as closely as possible to the original ground surface. If groundcover is not likely to recover naturally, sowing with a suitable sterile seed or endemic native seed/fertiliser mix must be undertaken to establish effective groundcover.

9.2.3 Wet weather limitations for snigging, log landing and portable mill operations

(1) Harvesting operations must not occur when:

(a) there is runoff from the snig track surface, or

(b) soils are saturated, or

(c) soil is rutted to a depth of more than 200 millimetres below the track surface over a 20 metre section or longer; and

(d) until the soil has dried and/or rehabilitation has restored the stability of the track surface.

(2) Forwarders, excavators and truck-mounted loaders may be used as stationary loaders when there is runoff from the log landing.

(3) All other machinery on the log landing must remain stationary when there is runoff from the log landing surface, unless the log landing is constructed of gravel or other stable material.

Appendix A: Listed species ecological prescriptions

1. Introduction

(1) These prescriptions in this Appendix must be applied to forestry operations where there is a **record** of a threatened species or in relation to any land mapped as 'high koala habitat suitability' on the PNF Koala Prescription Map.

(2) A **record** is:

(a) A sighting or record of the species in the NSW BioNet (http://www.bionet.nsw.gov.au/) that is less than 20 years old with a reliability level and/or Source Code of 1 to 4 and a coordinate accuracy of 100 metres or less, or

(b) Site evidence, being a sign a species has visited or regularly uses a site, and includes observations of, for example, faecal pellets or scats, chewed seed cones or a nest, or evidence that the site has been used as a latrine.

(3) Exclusion zones and buffer zones requiring additional tree retention requirements must be applied within the PNF Plan area subject to the area of the forestry operation described in the Forest Management Plan.

(4) A list of threatened species under the *Biodiversity Conservation Act 2016* and species profiles for each species can be viewed on the Department of Planning and Environment (DPE) website at https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species

(5) The prescriptions set out below assist in the protection of threatened species, and include:

(a) additional widths to stream exclusion zones

(b) exclusion zones and/or buffer zones around locations of threatened species records

(c) additional tree retention requirements around locations of threatened species records.

(6) Some species prescriptions vary according to the Bioregion in which they occur. Unless otherwise stated, the regions referred to in the prescriptions are based on the Interim Biogeographic Regionalisation of Australia (IBRA) shown in Figure 2.

2. General conditions

(1) For all threatened species prescriptions, the following applies:

(a) where a retained eucalypt tree (as required by these prescriptions) also meets the requirements of a habitat tree, the eucalypt tree may be counted as a habitat tree

(b) where other exclusion zones form part of the habitat area required for threatened species prescriptions, the exclusion zones may count towards the area of habitat required to be retained

(c) where public conservation/reserved land (for example National Parks) falls within buffer or exclusion zone areas required for a threatened species prescription, then the area of public conservation/reserved land may contribute towards the area of habitat required to be retained

(d) buffer and exclusion zones are to be marked in the field where they adjoin the area, subject to forestry operations. This marking has to be visible while forestry operations are occurring.

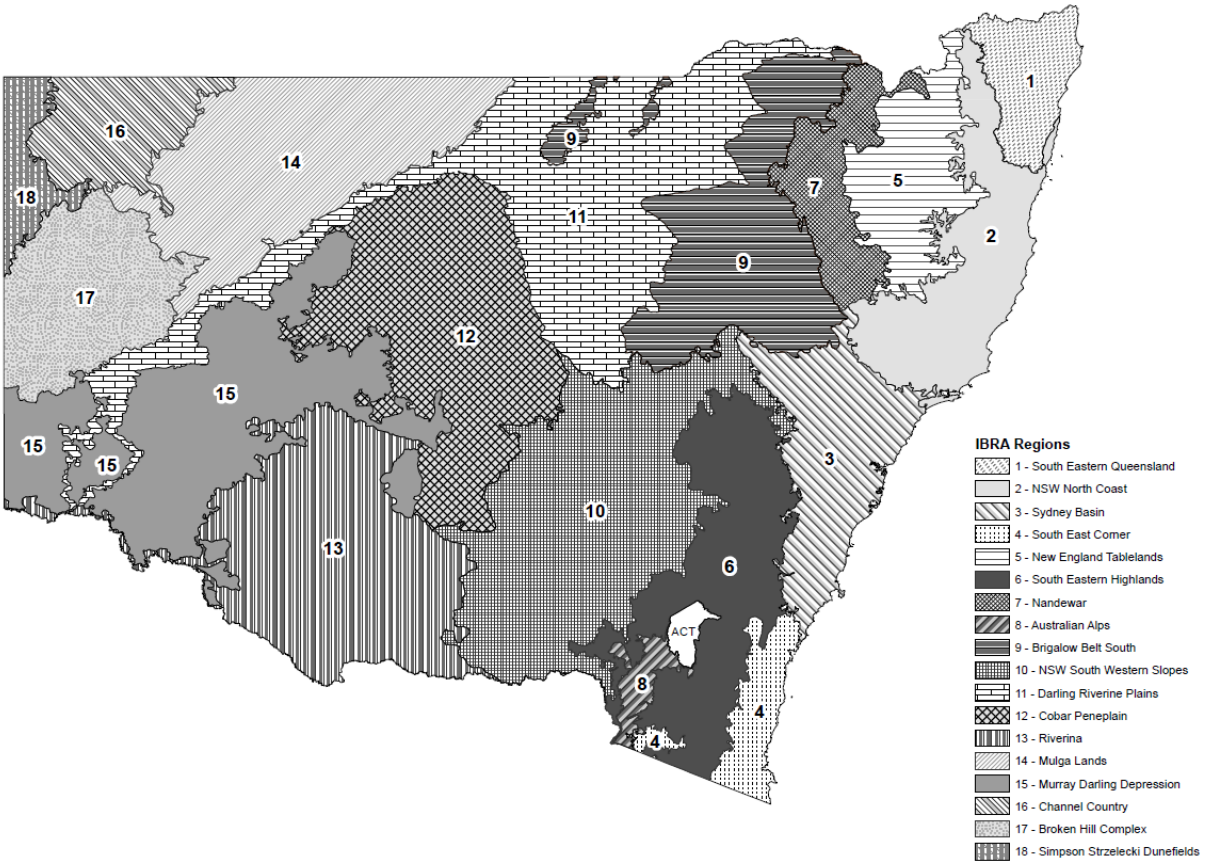

Figure 2: Interim Biogeographic Regionalisation of Australia (IBRA) regions, where prescriptions for some threatened species may vary.

Note 8: Further information about individual threatened species may be sourced from the Environment and Heritage Group of DPE. The DPE website provides species profiles and additional information. Visit https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species.

3. Mammals

3.1 Black-striped wallaby (*Macropus dorsalis*)

Zones for application of prescription

Brigalow Belt South, Nandewar, New England Tablelands, NSW North Coast, South Eastern Queensland

Prescription

Where there is a black-striped wallaby record within the area of forestry operations, the following must apply:

(a) A buffer zone with a 500-metre radius (about 78 hectares) must be identified, centred on the location of the record.

(b) Within this buffer zone, the following additional prescriptions must be implemented:
   (i) Only single-tree selection and thinning operations can occur (i.e. no canopy openings).
   (ii) No post-harvesting burning can occur.
   (iii) Disturbance to understorey trees and shrubs, ground logs, rocks and litter must be minimised.

Additional information
Potential black-striped wallaby habitat is characterised by dense woody or shrubby vegetation within three metres of the ground. This dense vegetation must occur near a more open, grassy area to provide suitable feeding habitat.
Habitat is common on north-west slopes associated with dense vegetation, including brigalow, ooline and semi-evergreen vine thicket.
On the north coast, habitat is often associated with dry rainforest but can also be moist eucalypt forest with a rainforest understorey or a dense shrub layer.

3.2 Brush-tailed phascogale (*Phascogale tapoatafa*)

Zones for application of prescription

New England Tablelands, Nendewar, Brigalow Belt South, Darling Riverine Plains, South Eastern Highlands, NSW South Western Slopes, Riverina

Prescription

Where there is a brush-tailed phascogale record within the area of forestry operations, the following must apply:

(c) A 50 metre exclusion zone must be implemented around den trees, and

(d) coarse woody debris within 200 metres of the record must be retained where practicable.

Additional information
Potential brush-tailed phascogale habitat is dry sclerophyll open forest or woodland with a generally open understorey, preferably containing large trees with rough bark and hollows to provide optimal foraging and denning habitat

3.3 Eastern pygmy-possum (*Cercartetus nanus*)

Zones for application of prescription

Brigalow Belt South, Nandewar, New England Tablelands, NSW South Western Slopes, South Eastern Highlands

Prescription

Where there is an eastern pygmy-possum record within the area of forestry operations, the following must apply:

(a) An exclusion zone with a 50-metre radius (about 0.8 hectares) must be identified, centred on the location of the record, with no forestry operations or removal of understorey plants permitted.

(b) Within a 100-metre radius (about 3.5 hectares) of the exclusion zone, a buffer zone must be identified within which the following additional prescriptions must be implemented:

  (i) Only single-tree selection and thinning operations can occur (i.e. no canopy openings).

  (ii) Single-tree selection and thinning operations must not reduce the stand basal area below 12m^2/hectare

  (iii) A minimum of 26 trees with visible hollows must be retained where available.

  (iv) Disturbance to understorey trees and shrubs (particularly banksias, bottlebrush and acacias), ground logs, rocks and litter must be minimised.

  (v) coarse woody debris must be retained where practicable

Additional information
Potential eastern pygmy-possum habitat is found in a broad range of habitats including rainforest, sclerophyll (including box–ironbark) forest, woodland and heath. In most areas, woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest

3.4 Spotted-tailed quoll (*Dasyurus maculatus*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

Where there is a record of a spotted-tailed quoll den site, maternal den or latrine site within the area of forestry operations, the following must apply:

(a) An exclusion zone with a 200-metre radius (about 12.5 hectares), centred on the location of the record must be implemented around a spotted-tailed quoll maternal den site or latrine site. This exclusion area must be linked to riparian exclusion zones where practicable.

(b) An exclusion zone with a 100-metre radius (about 3.5 hectares), centred on the location of the record must be implemented around spotted-tailed quoll den sites. This exclusion zone must be linked to riparian exclusion zones where practicable.

(c) Areas of riparian exclusion and protection zone must not be counted towards exclusion zones for the spotted-tailed quoll.

3.5 Squirrel glider (*Petaurus norfolcensis*)

Zones for application of prescription

Brigalow Belt South, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

Where there is a squirrel glider record in an area of forestry operations, the following must apply:

(a) A buffer zone with a 250-metre radius (about 20 hectares) must be identified, centred on the location of the record or records.

(b) Within this buffer zone, the following additional prescriptions must be implemented:
  (i) A minimum of 15 trees per 2 hectares with visible hollows must be retained where available.
  (ii) A recruitment tree must be retained for each hollow bearing tree retained. Where the total number of hollow bearing trees and recruitment trees is less than 30 trees per 2 hectares, additional recruitment trees must be retained to bring the number up to 30 trees per 2 hectares.
  (iii) Disturbance to understorey trees and shrubs (particularly banksias and acacias), ground logs, rocks and litter must be minimised.

(c) Where there are records of dens or roosts, these must be contained within buffer zones encompassing suitable habitat.

(d) Where there are more than two squirrel glider records closer than 250 metres apart within the forest operation area, advice on the location of the buffer area must be sought from LLS or the EPA before commencing forestry operations.

Additional information
Squirrel glider habitat is generally dry eucalypt forest and woodland. In coastal areas, potential habitat is blackbutt, bloodwood and ironbark forest with a heathy understorey. In the absence of these forest types, areas of mature or old growth forest must be retained.

3.6 Yellow-bellied glider (*Petaurus australis*)

Zones for application of prescription

Brigalow Belt South, Nandewar, New England Tablelands, NSW South Western Slopes, South Eastern Highlands

Prescription

(a) An exclusion zone with a 50-metre radius must be implemented around yellow-bellied gliders dens.

(b) All yellow-bellied glider sap feed trees must be retained and marked for retention. A sap feed tree is a tree with recent V-notch incisions or other incisions made by a glider. Recent incisions are incisions that have not closed.

(c) The feed trees retained must be of the same species as the identified sap feed tree or identified den tree, or should be trees that shed their bark in long strips, e.g. species from blue, flooded, grey, red and white gum groups.

(d) The retained feed trees must be marked for retention.

Additional information
Yellow-bellied gliders occur in tall mature eucalypt forest, generally in areas with high rainfall and nutrient-rich soils. Forest type preferences vary with latitude and elevation – mixed coastal forests to dry escarpment forests in the north, and moist coastal gullies and creek flats to tall montane forests in the south. The gliders feed primarily on plant and insect exudates, including nectar, sap, honeydew and manna with pollen and insects providing protein. They extract sap by incising or biting into the trunks and branches of favoured food trees, often leaving a distinctive 'V'-shaped scar.

3.7 Greater glider (*Petauroides volans*)

Zones for application of prescription

Australian Alps, New England Tablelands, Nandewar, Brigalow Belt South, NSW South Western Slopes, South Eastern Highlands

Prescription

No forestry operations are permitted within 50 metres of each greater glider den site.

Additional information
Greater gliders occur in woodlands and eucalypt forests along the ranges and coastal plains of NSW, favouring tall, montane, and moist forests with a diversity of eucalypt species, relatively old trees and abundant hollows. They tend to occupy a relatively small home range, between 1 to 4 hectares, though this range becomes larger in lower productivity forests and more open woodlands. Greater gliders shelter during the day in hollows of large trees, which may be lined with leaf matter, and typically use between 2 to 18 hollows in their home range. They are usually solitary, though mated pairs and offspring will share a den during the breeding season and until the young are independent.

3.8 Koala (*Phascolarctos cinereus*)

Prescription

(1)

(a) Where there is a record of a koala within the area of forestry operations, or within 500 metres of an area of forestry operations, or where 10 or more koala scats (or one or more koala scats in the Central and Southern Tablelands Koala Management Area, or South Coast Koala Management Area, as shown in Figure 5) are found beneath the canopy of a primary koala feed tree or secondary koala feed tree during pre-harvest surveys or harvest operations, or the area of forestry operations on any land mapped as 'high koala habitat suitability' on any PNF koala prescription map, the following must be complied with:

(i) A minimum of 15 primary koala feed trees and 5 secondary koala feed trees must be retained per hectare in the forestry operations area (not including other exclusion or buffer zones), where available.

(ii) Where possible, preference should be given to trees that provide habitat connectivity and/or build on existing landscape features (Table D), existing habitat islands, refugia and conservation areas adjacent to and within the PNF Plan area, have leafy, broad crowns and be in a range of size classes with a minimum of 20 centimetres diameter at breast height over bark.

(iii) Damage to retained koala feed trees must be minimised by directional felling techniques.

(iv) Post-harvest burns must minimise damage to the trunks and foliage of trees required to be retained under Clause 3.8 of this Appendix.

(v) Each tree must be visually assessed for koalas immediately prior to it being felled. The person that carries out the visual assessment must make a record each day that the visual assessment is carried out and keep it for the life of the PNF Plan or for five years after completion of the forestry operations for which it was made, whichever is the later date.

(vi) Where 20 koala feed trees per hectare are present in areas mapped as 'high koala habitat suitability' under the PNF koala prescription map but either 15 primary or 5 secondary feed trees for the relevant Koala Management Area cannot be met, then the landholder must retain as many koala feed trees as are available, including substituting primary feed trees for secondary (or vice versa) up to a maximum of 20 koala feed trees per hectare. Primary feed trees must be prioritised for retention over secondary feed trees.

(vii) Where there are not 20 koala feed trees per hectare present in areas mapped as 'high koala habitat suitability' under the PNF koala prescription map then:

i. The landholder(s) must retain as many koala feed trees as are available; and

ii. Clause 3.8(1)(a)(i) of this Appendix does not apply.

iii. Clause 3.8(1)(a)(ii)-(iv) and (a)(vi) of this Appendix do not apply except if in the course of harvest operations 10 or more koala scats are found beneath the canopy of a koala feed tree (or one or more koala scats in Central and Southern Tablelands Koala Management Area, or South Coast Koala Management Area, as shown in Figure 5) or where the presence of a koala is clearly identifiable by recent scratches.

(viii) Where the landholder considers the PNF koala prescription map is inaccurate on their property, including where the required number of koala feed trees cannot be found (as per clause 3.8(1)(a)(vi)-(vii) of this Appendix), the landholder may

request that the area(s) is verified by a suitably qualified expert(s) as described in Clause 3.8(2)-(9) of this Appendix.

(b) In the Far West, Riverina, Darling Riverine Plains, Northwest Slopes and Central and Southern Tablelands Koala Management Areas as shown in Figure 5, any tree containing a koala, or any tree beneath which one or more koala scats are found, or where the presence of a koala is clearly identifiable by recent scratches must be retained, and an exclusion zone of 50 metres must be implemented around each tree required to be retained under clause 3.8 of this Appendix.

(c) Where signs of koala presence outlined in clause 3.8 (1) (b) of this Appendix are identified during pre-harvest surveys, those trees must be visually assessed for koala presence during harvest operations.

Note 9: Landholders will be provided with the PNF koala prescription map held by the NSW Government as part of their PNF Plan approval. However, landholders should check the SEED and data.NSW portals for any updates to the PNF koala prescription map. Updates to this map will be overseen by the NSW Forest Monitoring Steering Committee (or equivalent) independently chaired by the NSW Natural Resources Commission. The PNF koala prescription map must only be updated with the joint approval of the Minister administering the Act and the Minister administering the *Biodiversity Conservation Act 2016.* Notwithstanding this the PNF koala prescription map may be updated at a property scale consistent with clause 3.8(2)-(9) of this Appendix.

Verifying areas mapped as high koala habitat suitability on private land

(2) Where the landholder(s) considers the PNF Koala Prescription Map is inaccurate on their property because it is not high koala habitat suitability, and/or where the required number of koala feed trees cannot be found (as per clause 3.8(1)(a)(vi) of this Appendix), the landholder may commission a review be undertaken by a suitably qualified expert(s).

(3) The koala habitat suitability of the area must be reassessed based on an on-ground high koala habitat suitability verification survey conducted by a suitably qualified expert(s). The landholder(s) will need to identify the disputed area and provide their written permission for a habitat verification survey to be conducted.

(4) The survey must be conducted in accordance with the protocol for verifying high koala habitat suitability that is approved, and updated, by Local Land Services and available at www.lls.nsw.gov.au/pnforestry.

(5) Depending on the results of the assessment, Local Land Services will:
(a) provide the landholder(s) and persons nominated by the landholder(s) with an amended map to show any revised areas of high koala habitat suitability. That amended map is then taken to be the 'PNF koala prescription map' for the purpose of clause 3.8 of this Appendix for the land to which the amended map applies and for clause 4.1 of this Code, or
(b) require the PNF Koala Prescription map to be used.

(6) Local Land Services must provide a copy of any updated PNF Koala Prescription Map to the landholder.

(7) The landholder must provide a person carrying out forestry operations on the landholding with a copy of:
   (a) the amended map referred to in clause 3.8 (5)(a) of the Appendix;
   (b) any information or documents provided by Local Land Services to the landholder under clause 3.8 (8)-(9) of this Appendix; and
   (c) any updated PNF Koala Prescription Map provided by Local Land Services to the Landholder

(8) Where the survey has determined that the disputed area is not high koala habitat suitability, Local Land Services will approve an amendment to the Private Native Forestry Plan and an amended Forest Management Plan to apply the revised PNF Koala Prescription Map.

(9) Trees with koalas present, or site evidence of koalas, that are identified during surveys must be marked and this information provided to the landholder(s) by Local Land Services prior to forestry operations commencing.

Additional information
For further information on the identification of koala scats, contact DPE or refer to the DPE website – https://www.environment.nsw.gov.au/

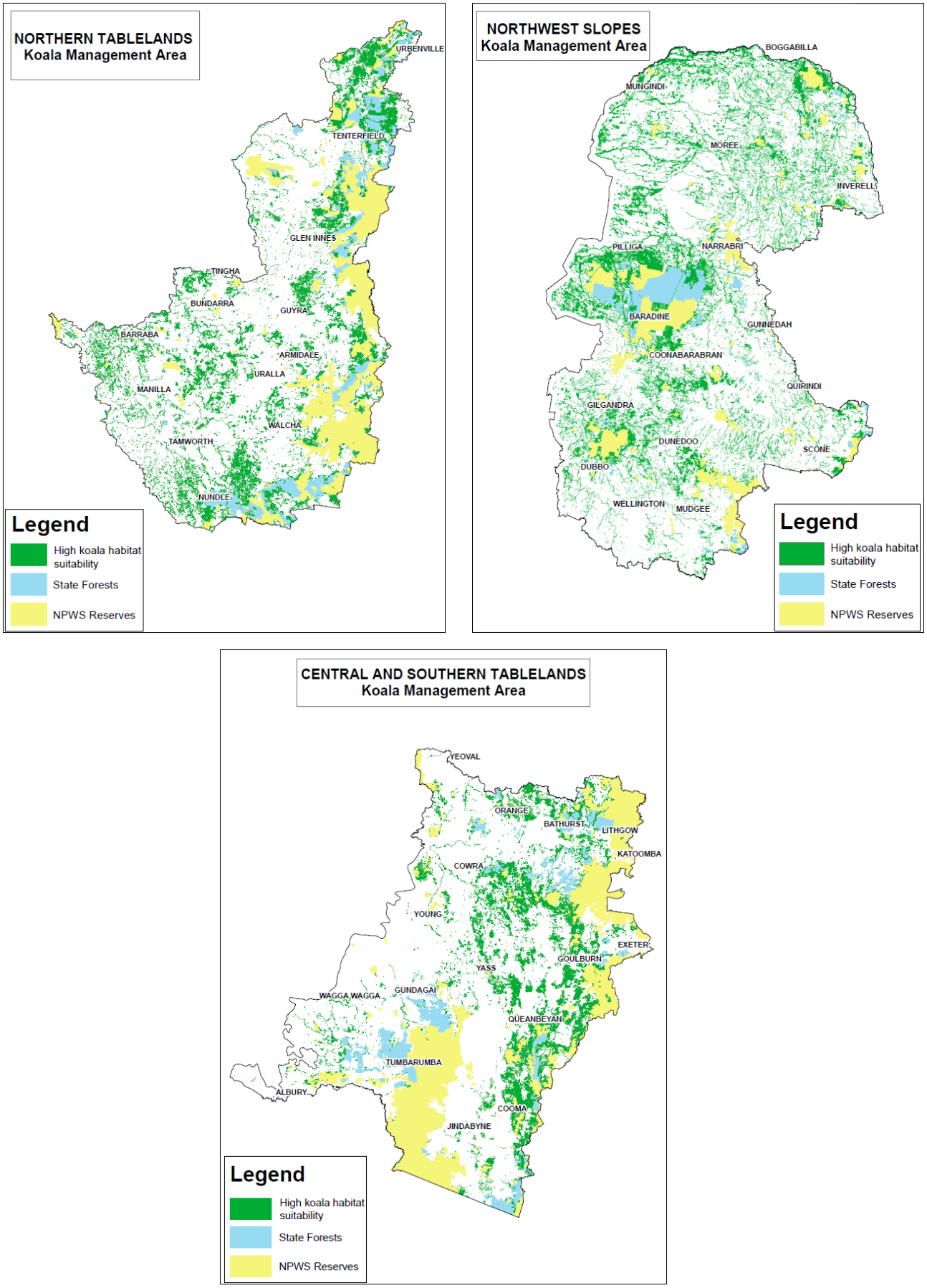

Figure 3: Areas mapped as high koala habitat suitability under the PNF koala prescription map (green) in Northern Tablelands (top left), Northwest Slopes (top right) and Central and Southern Tablelands (bottom) Koala Management Areas.

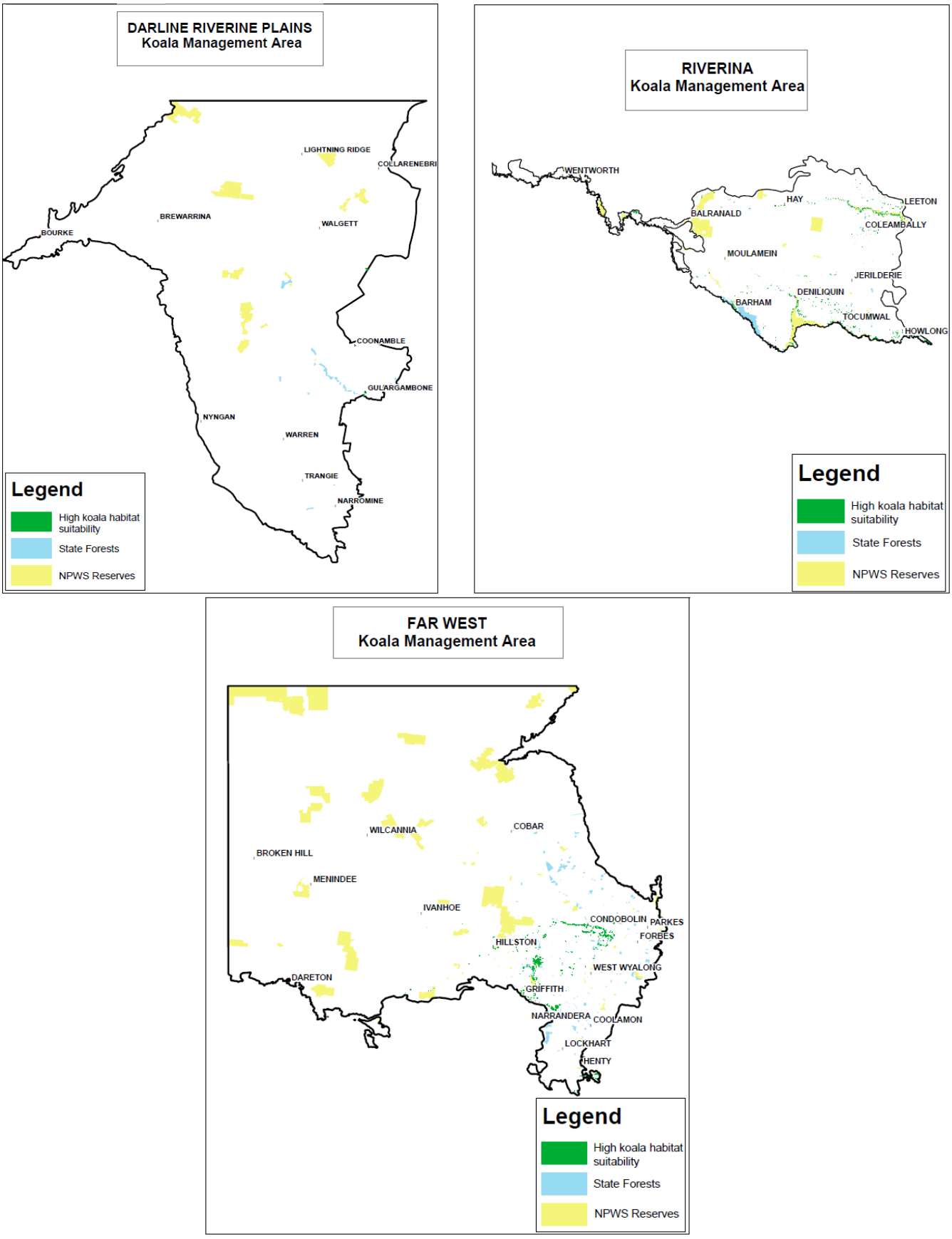

Figure 4: Areas mapped as high koala habitat suitability under the PNF koala prescription map (green) in Darling Riverine Plains (top left), Riverina (top right) and Far West (bottom) Koala Management Areas.

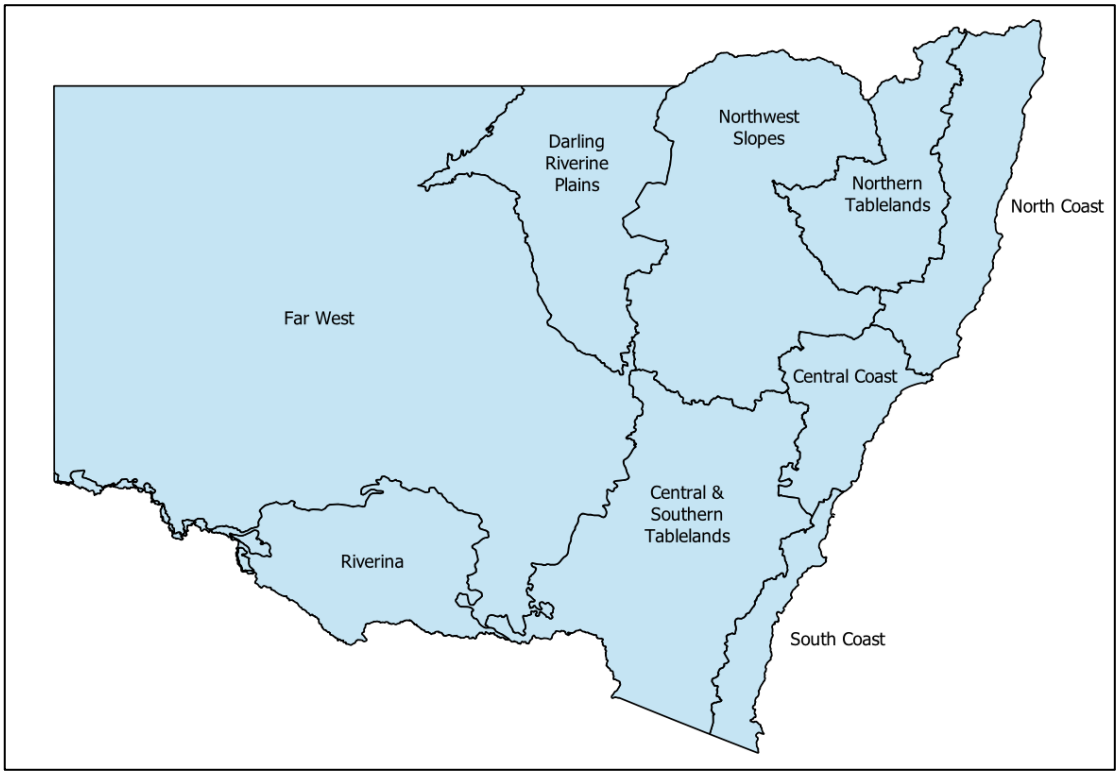

Figure 5: Koala Management Areas in NSW

Table I: Primary and secondary koala feed trees for Koala Management Areas in the Cypress and Western Hardwood forests

Koala feed tree species		Koala Management Area					
Common name	**Scientific name**	**Northern Tablelands**	**Central and Southern Tablelands**	**North West Slopes**	**Darling Riverine Plains**	**Riverina**	**Far West**
Primary tree species							
Blakley's red gum	Eucalyptus blakelyi	X	X	X	X		
River red gum	Eucalyptus camaldulensis	X	X	X	X	X	X
Coolibah	Eucalyptus coolabah			X	X	X	X
Brittle gum	Eucalyptus mannifera		X				
Tallowwood	Eucalyptus microcorys	X					
Grey gum	Eucalyptus punctata		X				
Inland scribbly gum	Eucalyptus rossii		X				
Forest red gum	Eucalyptus tereticornis	X	X				
Ribbon gum	Eucalyptus viminalis	X	X				

Koala feed tree species		Koala Management Area					
Common name	**Scientific name**	**Northern Tablelands**	**Central and Southern Tablelands**	**North West Slopes**	**Darling Riverine Plains**	**Riverina**	**Far West**
Secondary tree species							
Wattle-leaved peppermint	Eucalyptus acaciiformis	X					
White box	Eucalyptus albens	X	X	X	X		
Apple box	Eucalyptus bridgesiana	X					
Mountain blue gum	Eucalyptus brunnea	X					
Broad-leaved stringybark	Eucalyptus caliginosa	X					
Dirty gum	Eucalyptus chloroclada			X	X		
Mountain grey gum	Eucalyptus cypellocarpa		X				
Mountain gum	Eucalyptus dalrympleana	X					
Tumbledown red gum	Eucalyptus dealbata	X		X	X		
Broad-leaved peppermint	Eucalyptus dives		X				
White stringybark	Eucalyptus globoidea		X				
Silver-top stringybark	Eucalyptus laevopinea	X					
Black box	Eucalyptus largiflorens			X	X	X	X
Red stringybark	Eucalyptus macrorhyncha	X	X				
Silver-leafed ironbark	Eucalyptus melanophloia			X	X		
Yellow box	Eucalyptus melliodora	X		X	X	X	X
Western grey box	Eucalyptus microcarpa		X	X	X	X	X
Grey box	Eucalyptus moluccana	X		X			
Narrow-leaved black peppermint	Eucalyptus nicholii	X					
Giant white gum	Eucalyptus nobilis	X					
Snow gum	Eucalyptus pauciflora	X	X	X			
Narrow-leafed grey box	Eucalyptus pilligaensis			X			

Koala feed tree species		Koala Management Area					
Common name	**Scientific name**	**Northern Tablelands**	**Central and Southern Tablelands**	**North West Slopes**	**Darling Riverine Plains**	**Riverina**	**Far West**
Sydney peppermint	Eucalyptus piperita		X				
Bimble box	Eucalyptus populnea			X	X		
Orange gum	Eucalyptus prava	X		X			
Grey gum	Eucalyptus punctata			X			
Narrow-leaved peppermint	Eucalyptus radiata	X					
Hard-leaved scribbly gum	Eucalyptus sclerophylla		X				
Black sally	Eucalyptus stellulata	X					
Youman's stringybark	Eucalyptus youmanii	X					

3.9 Grey-headed flying-fox (*Pteropus poliocephalus*) camps

Zones for application of prescription

New England Tablelands, Nandewar, Brigalow Belt South, Darling Riverine Plains, NSW South Western Slopes, South Eastern Highlands

Prescription
Forestry operations and any associated activities must be excluded within a flying-fox camp, and within a 50-metre exclusion zone around any camp which contains grey-headed flying-foxes.

Additional information
Flying-foxes congregate (roost) in large numbers known as 'camps'. These areas are typically within 20 kilometres of known food sources, and camp localities vary over different seasons, depending on regional food availability. Camps are often located in riparian vegetation such as rainforest remnants, swamp forest (paperbarks) or casuarina forests. They are often used annually. Camps are extremely important for day-time roosting and socialising and are used as maternity sites for rearing young.

3.10 Large-footed myotis (Myotis macropus)

Zones for application of prescription

Nandewar, New England Tablelands, NSW North Coast, South Eastern Highlands, South Eastern Queensland, Sydney Basin

Prescription

Where there is a record of large-footed myotis in an area of forestry operations or within 100 metres of the boundary of the area of forestry operations, the following must apply:

(a) An exclusion zone with a 30-metre radius must be implemented on all dams and permanent water bodies. Permanent water bodies include lakes, lagoons or any other permanent collection of still water that is not impounded by an artificial structure. The exclusion zone must be measured from the top of the high bank of the permanent water body.
(b) An exclusion zone with a 30-metre radius must be implemented on all permanent streams within 100 metres of the location of the record.
(c) The width of exclusion zones must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel

Additional information
Large-footed myotis generally roost in groups of 10–15 close to water in caves, mine shafts, hollow bearing trees, stormwater channels, buildings, under bridges and in dense foliage. They forage over streams and pools, catching insects and small fish by raking their feet across the water's surface.

4. Reptiles

4.1 Broad-headed snake (*Hoplocephalus bungaroides*)

Zones for application of prescription

NSW South Western Slopes, South Eastern Highlands

Prescription

Where there is a broad-headed snake record in the area of forestry operations, the following must apply:

(a) A buffer zone with a 100-metre radius (about 3 hectares) must be identified, centred on the location of the record.

(b) Within this buffer zone, the following additional prescriptions must be implemented:

  (i) A minimum of 26 trees with visible hollows with openings greater than 10 centimetres must be retained where available.

  (ii) Disturbance to understorey trees and shrubs, ground logs and, in particular, rock outcrops and ledges must be minimised.

Additional information
Potential habitat for the broad-headed snake is largely confined to Triassic sandstones, including the Hawkesbury, Narellan and Shoalhaven formations, on the coast and in the ranges in an area within approximately 250 kilometres of Sydney.
The snake shelters in rock crevices and under flat sandstone rocks on exposed cliff edges during autumn, winter and spring, and shelters in hollows in large trees within 200 metres of escarpments in summer.

4.2 Rosenberg's goanna (*Varanus rosenbergi*)

Zones for application of prescription

NSW South Western Slopes, South Eastern Highlands

Prescription

Where there is a Rosenberg's goanna record in the area of forestry operations, the following must apply:

(a) A buffer zone with a 200-metre radius (about 12.5 hectares) must be identified, centred on the location of the record.

(b) Within this buffer zone, the following additional prescriptions must be implemented:

  (i) All termite mounds must be protected from any disturbance.

  (ii) Disturbance to understorey trees and shrubs and, in particular, ground logs and rock outcrops and ledges must be minimised

  (iii) No post-harvest burning is permitted.

Additional information
Rosenberg's goanna occurs on Sydney sandstone in Wollemi National Park north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the south-west slopes near Khancoban and the Tooma River. It is found in heath, open forest and woodland. This species nests in termite mounds, which are a critical component of its habitat.

4.3 Pale-headed snake (*Hoplocephalus bitorquatus*)

Zones for application of prescription

Brigalow Belt South, Darling Riverine Plains, Nandewar, New England Tablelands, NSW South Western Slopes

Prescription

Where there is a record of the pale-headed snake in an area of forestry operations, the following must apply:

(a) An exclusion zone with at least a 100-metre radius must be implemented around the location of the record.

(b) If forestry operations are being conducted during the months of May, June, July, August or September, an additional 200 metre-wide buffer zone must be implemented around the exclusion zone. Within this buffer zone, the following must apply:

  (i) A minimum of 26 trees with visible hollows with openings greater than 10 centimetres must be retained where available.

  (ii) All dead standing trees must be retained where it is safe to do so.

  (iii) During forestry operations, the potential for damage to these trees must be minimised by the use of directional felling techniques.

  (iv) Coarse woody debris must be retained where practicable.

Additional information
Distribution: The snake has a patchy distribution from north-eastern NSW to north Queensland. It is found in NSW on both sides of the Great Dividing Ranges as far south as Tuggerah.
Macrohabitat: The snake is mainly found in dry eucalypt forests and woodlands and occasionally in rainforest or moist eucalypt forest.
Microhabitat: The snake shelters during the day between loose bark and tree trunks, or in hollow trunks and limbs of dead trees, especially near watercourses.

5. Birds

5.1 Powerful owl (*Ninox strenua*), masked owl (*Tyto novaehollandiae*) and barking owl (*Ninox connivens*)

Zones for application of prescription

Australian Alps, Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

Where there is a record within the area of forestry operations for the powerful owl, masked owl or barking owl, the following prescriptions apply:

(a) Nest trees (trees with hollows containing a nest of a powerful, masked or barking owl) must be retained and protected by a 50-metre exclusion zone.

(b) Roost trees (trees where a powerful, masked or barking owl have been observed roosting or signs of roosting are observed) must be retained and protected by a 25-metre exclusion zone.

(c) Within 1000 metres of the record, the following additional prescriptions must be implemented:

(i) a minimum of 15 hollow bearing trees per two hectares must be retained, where available.

(ii) a recruitment tree must be retained for each hollow bearing tree, where available.

(iii) where there are not 15 hollow bearing trees available recruitment trees must be substituted for hollow bearing trees up to a maximum of 30 trees per two hectares, where available.

(iv) Disturbance to the understorey, coarse woody debris and ground cover should be limited to the minimum extent necessary.

Additional information
Potential owl habitat comprises rainforest; wet and dry sclerophyll forest, and woodland.

5.2 Regent honeyeater (*Xanthomyza phrygia*)

Zones for application of prescription

Brigalow Belt South, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

Where there is a record of a regent honeyeater in an area of forestry operations, the following must apply:

(a) At least ten eucalypt feed trees (refer to Table F) must be retained within every two hectares of the net harvest area. These must be marked for retention. Where retained eucalypt feed trees also meet the requirements of habitat or recruitment trees, the retained eucalypt feed trees can be counted as habitat or recruitment trees.

(b) Where a regent honeyeater is observed feeding, the tree in which it is feeding must be retained.

(c) Trees containing regent honeyeater nests must be retained, with a 20-metre radius exclusion zone around them.

Additional information
This species inhabits dry open forest and woodland, particularly box–ironbark woodland and riparian forests of river she-oak. Regent honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have many mature trees and mistletoes and high canopy cover. The bird also forages in winter-flowering coastal swamp mahogany and spotted gum forests on the central coast and the upper north coast. Birds are also occasionally seen on the south coast.

5.3 Swift parrot (*Lathamus discolor*)

Zones for application of prescription

Brigalow Belt South, Murray Darling Depression, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

Where there is a record of a swift parrot in an area of forestry operations, the following must apply:

(a) An exclusion zone of 25 metres applies to all Swift Parrot roost trees

(b) At least ten eucalypt feed trees (refer to Table F) must be retained within every two hectares of the net harvest area. These must be marked for retention. Where retained eucalypt feed trees also meet the requirements of habitat or recruitment trees, the retained eucalypt feed trees can be counted as habitat or recruitment trees.

(c) Where a swift parrot is observed feeding, the tree in which it is feeding must be retained.

Additional information
Swift parrots migrate to the Australian south-east mainland between March and October. On the mainland, they occur where eucalypts are flowering profusely or where there are abundant lerps (from sap-sucking bugs). Favoured feed trees include winter-flowering species such as swamp mahogany (*Eucalyptus robusta*), spotted gum (*Corymbia maculata*), red bloodwood (*C. gummifera*), mugga ironbark (*E. sideroxylon*) and white box (*E. albens*). Commonly used lerp-infested trees include grey box (*E. microcarpa*), grey box (*E. moluccana*) and blackbutt (*E. pilularis*)

5.4 Regent parrot (*Polytelis anthopeplus monarchoides*)

Zones for application of prescription

See Figure 6

Prescription

There should be no harvesting of mallee within the areas shown on Figure 6:

(a) within 20 kilometres of the Lower Wakool River defined as downstream of the junction of the Edward and Wakool Rivers, with the eastern boundary line being drawn perpendicular to the river at that point

(b) within 20 kilometres of the Murray River.

Mallee within this zone can only be harvested by obtaining approval under the *Local Land Services Act 2013*.

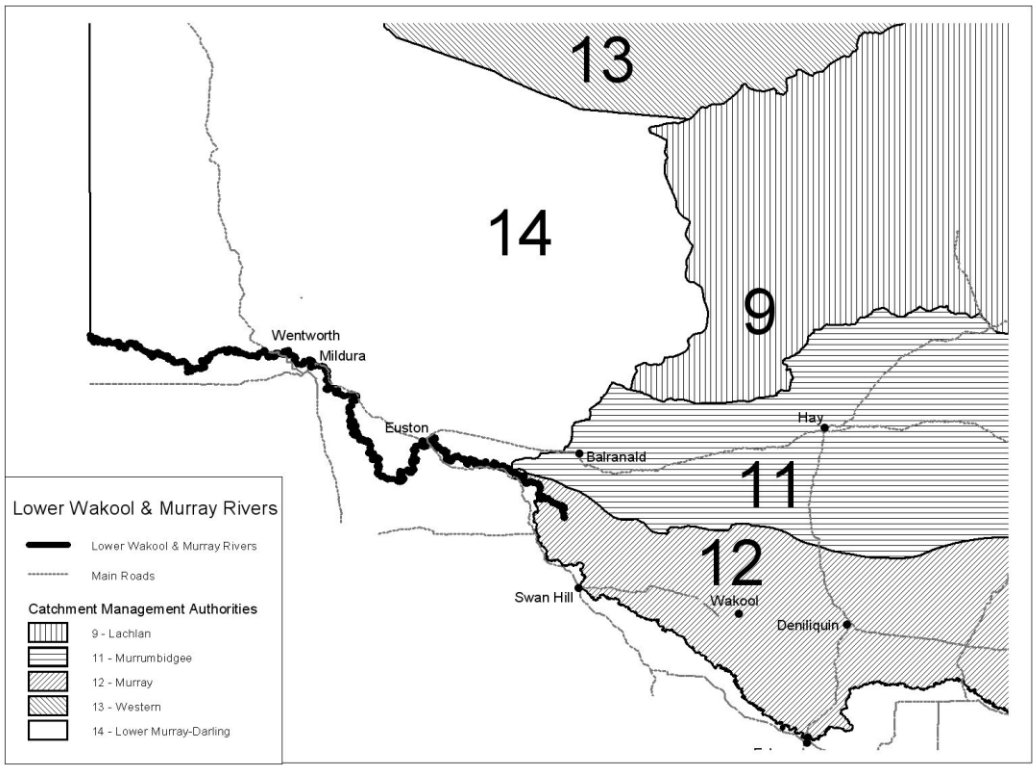

Figure 6: Area of application of regent parrot prescription

5.5 Black-eared miner (*Manorina flavigula melanotis*)

Zones for application of prescription

Murray Darling Depression

Prescription

High conservation value mallee must not be harvested. High conservation mallee is defined as mallee with:

(a) stems higher than 20 centimetres measured 20 centimetres above the ground

(b) stems with hollows, cracks or fissures more than 5 centimetres wide

(c) stems on dune crests.

5.6 Malleefowl (*Leipoa ocellata*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression, NSW South Western Slopes, Riverina

Prescription

There must be no forestry operations within a 100-metre radius exclusion zone around all malleefowl ground nests.

Additional information

Malleefowl nests comprise large mounds of ground litter (dry leaves, twigs and bark) covered with sand and dirt. They may be 2–5 metres wide and up to 1.5 metres high. Egg-laying occurs from September to April. Nest sites can be re-used in consecutive years.

5.7 Bush stone-curlew (*Burhinus grallarius*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

(a) No forestry operations are permitted within a 50-metre radius of all bush stone-curlew ground nests.

(b) coarse woody debris within 200 metres of the nest must be retained where practicable

Additional information

Bush stone-curlew nests are found in areas of dry, grassy open forest or woodland and are a small scrape on bare ground, often near a bush or tree or beside a fallen limb. Nest sites can be re-used in consecutive years. Eggs are stone coloured, blotched dark brown and grey. Nesting season is August through to January.

5.8 Glossy black-cockatoo (*Calyptorhynchus lathami*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Nandewar, New England Tablelands, NSW South Western Slopes, South Eastern Highlands

Prescription

(a) There must be a 50-metre radius exclusion zone around all glossy black-cockatoo nests, within which no forestry operations may occur.

(b) Within a 200-metre radius of any location of a glossy black-cockatoo record, damage to stands of she-oaks (*Allocasuarina* and *Casuarina* spp.) containing trees more than 3 metres in height and seed cones, must be minimised.

(c) Any she-oaks with evidence of foraging by glossy black-cockatoos (i.e. chewed seed cones under the tree) must be protected.

Additional information
Glossy black-cockatoos nest in tree hollows usually in larger, mature trees. Nest locations are indicative of where a glossy black-cockatoo is seen entering a hollow. Nesting season is from March to August.
The presence of she-oaks (*Allocasuarina* and *Casuarina* spp.*)* is a key indicator of likely feeding habitat. Mature trees with hollows are required for nesting.

5.9 Red-tailed black-cockatoo (*Calyptorhynchus banksii*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression

Prescription

No forestry operations are permitted within a 50-metre radius of all red-tailed black-cockatoo nests.

Additional information
Red-tailed black-cockatoos nest in tree hollows usually in larger, mature trees. Nest locations are indicative of where a bird is seen entering a hollow. Nesting season is from March to August.
Red-tailed black-cockatoos are found in a wide variety of habitats. In coastal north-east NSW they have been recorded in dry open forest and areas of mixed rainforest/eucalypt forest.

5.10 Gang-gang cockatoo (*Callocephalon fimbriatum*)

Zones for application of prescription

Australian Alps, Nandewar, NSW South Western Slopes, South Eastern Highlands

Prescription

No forestry operations are permitted within a 25-metre radius of all gang-gang cockatoo nests.

Additional information
The gang-gang cockatoo is generally found in tall mountain forests and woodlands (particularly heavily timbered and mature wet sclerophyll forests) in spring and summer, and moves to lower altitudes in drier, more open eucalypt forests and woodlands (particularly box-gum, box-ironbark and dry coastal areas) in autumn and winter. The species favours old growth forest and woodland for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts.

5.11 Brown treecreeper (*Climacteris picumnus*)

Zones for application of prescription

Australian Alps, Brigalow Belt South, Darling Riverine Plains, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription

No forestry operations are permitted within a 25-metre radius of all brown treecreeper nests between 1 June and 31 January.

Additional information
The brown treecreeper occurs in eucalypt woodlands and dry open forest, mainly inhabiting woodlands dominated by stringybarks or other rough-barked eucalypts. Fallen timber is an important habitat component for foraging. This species depends on hollows in standing dead or live trees for nesting, and are generally present at a site year-round.

5.12 Speckled warbler (*Chthonicola sagittate*)

Zones for application of prescription

All

Prescription

No forestry operations are permitted within a 25-metre radius of all speckled warbler nests between 1 August and 31 January.

Additional information
The speckled warbler occurs in a range of *Eucalyptus* dominated communities that have a grassy understorey. Pairs occupy a breeding territory of about 10 hectares, with a slightly larger home range outside of the breeding season. They nest in a rounded, domed, roughly built nest of dry grass and strips of bark at the base on a low dense plant, often among fallen branches and other litter.

5.13 Diamond firetail (*Stagonopleura guttata*)

Zones for application of prescription

All

Prescription

No forestry operations are permitted within a 25-metre radius of all diamond firetail nests between 1 August and 31 January.

Additional information
The diamond firetail occurs in grassy eucalypt woodlands, but also occurs in open forest, mallee, and grasslands. It is often found in riparian areas, and sometimes in lightly wooded farmland. Nests are globular structures built either in the shrubby understorey or higher up, especially under hawk or raven nests.

5.14 Grey-crowned babbler (*Pomatostomus temporalis*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription
No forestry operations are permitted within a 25-metre radius of all grey-crowned babbler nests.

Additional information
The grey-crowned babbler occurs in open box-gum woodlands on the slopes, box-cypress pine and open box woodlands on alluvial plains, and woodlands on fertile soils in coastal regions. The species builds and maintains several conspicuous, dome-shaped stick nests about the size of a football, which is used as a dormitory for roosting each night. Nests are maintained year-round.

5.15 Flame robin (*Petroica phoenicea*)

Zones for application of prescription

Australian Alps, Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription
No forestry operations are permitted within a 25-metre radius of all flame robin nests between 1 September and 1 March.

Additional information
The flame robin breeds in spring to late summer, in upland tall moist eucalypt forests and woodlands. Breeding habitat has a ground layer dominated by native grasses and a sparse or dense shrub layer. The flame robin builds nests near the ground in sheltered sites such as shallow cavities in trees, stumps or banks. In winter, the species migrates to drier, more open habitat in dry forests, open woodlands, pastures and native grasslands, and is occasionally seen in heathland or other shrubland.

5.16 Scarlet robin (*Petroica boodang*)

Zones for application of prescription

Australian Alps, Brigalow Belt South, Darling Riverine Plains, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription
No forestry operations are permitted within a 25-metre radius of all scarlet robin nests between 1 July and 31 January.

Additional information
The scarlet robin occurs in dry eucalypt forests and woodlands, where logs and fallen timber are important components of its habitat. The species' nest is an open cup made of plant fibres and cobwebs and is built in the fork of a tree more than two metres above the ground.

5.17 Hooded robin (*Melanodryas cucullate*)

Zones for application of prescription

All

Prescription
No forestry operations are permitted within a 25-metre radius of all hooded robin nests between 1 July and 30 November.

Additional information
The scarlet robin prefers lightly wooded areas, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Territories range from around 10 hectares in the breeding season to 30 hectares in the non-breeding season. The species breeds between July and November and often rears several broods. Nest is a small, neat cup of bark and grasses bound with webs, in a tree fork or crevice, from < 1 metre to 5 metres above the ground.

5.18 Dusky woodswallow (*Artamus cyanopterus cyanopterus*)

Zones for application of prescription

All

Prescription
No forestry operations are permitted within a 25-metre radius of all dusky woodswallow nests between 1 September and 1 March.

Additional information
Dusky woodswallows inhabit dry, open eucalypt forests and woodland with an open or sparse understorey, but has also been recorded in shrublands, heathlands and occasionally moist forest or rainforest. This species is also found in farmland, usually at the edges of forest or woodland. Nests are open and cup-shaped and occur in a range of sites.

5.19 Varied sittella (*Daphoenositta chrysoptera*)

Zones for application of prescription

All

Prescription
No forestry operations are permitted within a 25-metre radius of all varied sittella nests.

Additional information
The varied sittella inhabits eucalypt forests and woodlands, especially those containing rough-barked and mature smooth-barked gums with dead branches, mallee and *Acacia* woodland. Builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years.

5.20 Black-chinned honeyeater (*Melithreptus gularis*)

Zones for application of prescription

All

Prescription
No forestry operations are permitted within a 25-metre radius of all black-chinned honeyeater nests between 1 June and 31 December.

Additional information
The black-chinned honeyeater inhabits dry open forests or woodlands dominated by box and ironbark eucalypts, but also forests of smooth-barked gums, stringybarks, ironbarks, richer sheoaks and tea-trees. The species nests high in the crown of a tree in the uppermost lateral branches, hidden by foliage.

5.21 Turquoise parrot (*Neophema pulchella*)

Zones for application of prescription

Brigalow Belt South, Cobar Peneplain, Darling Riverine Plains, Murray Darling Depression, Nandewar, New England Tablelands, NSW South Western Slopes, Riverina, South Eastern Highlands

Prescription
No forestry operations are permitted within a 30-metre radius of all turquoise parrot nests.

Additional information
Turquoise parrots occur mainly west of the escarpment on the tablelands and western slopes, but are occasionally found more widely through most of eastern NSW, in open woodlands, dry sclerophyll forest and adjacent grasslands. Nests range from 1–20 metres above the ground. They are in hollows in small trees, often dead eucalypts, or in holes or stumps, fence posts or even logs lying on the ground. Nesting season is from August to December and from April to May.

Threatened flora – specific prescriptions

Conditions applying to flora species

Table J: Threatened flora: 50 metre exclusion zone, all individuals

Where there is a record of a species to which this condition applies:

(a) an exclusion zone with at least a 50 metre radius must be implemented around all individuals

(b) an exclusion zone at least 50 metres wide must be implemented around all groups of individuals. A group is defined as more than one individual located less than 20 metres apart.

NSW Conservation status*	Scientific name	Common name
VU	*Bertya opponens*	Coolabah bertya
VU	*Cadellia pentastylis*	Ooline

***VU: Vulnerable**

Table K: Threatened and protected flora: 20 metre exclusion zone, all individuals

Where there is a record of a species to which this condition applies:

(a) an exclusion zone with at least a 20 metre radius must be implemented around all individuals

(b) an exclusion zone at least 20 metres wide must be implemented around all groups of individuals. A group is defined as more than one individual located less than 20 metres apart.

NSW Conservation status*	Scientific name	Common name
VU	*Boronia granitica*	Granite boronia
VU	*Eucalyptus caleyi* subsp. *ovendenii*	Ovenden's ironbark
VU	*Picris evae*	Hawkweed
EN	*Pomaderris queenslandica*	Scant pomaderris
VU	*Rutidosis heterogama*	Heath wrinklewort

***EN: Endangered; VU: Vulnerable**

Table L: Exclusion of forestry operations from 100% of individuals and no buffer

Individuals of the threatened species or protected native plants to which this condition applies must not be picked in the course of carrying out forestry operations.

NSW Conservation status*	Scientific name	Common name
-	*Goodenia macbarronii*	McBarron's goodenia
VU	*Thesium australe*	Austral toadflax

***VU: Vulnerable**

Appendix B: Calculating Minimum Stand Basal Area

(1) For compliance purposes, average basal area will be calculated using the following method:

(a) The area assessed only applies to areas where forestry operations may occur and excludes roads, tracks and log landings;

(b) the sample points must be located systematically across the harvested area with a minimum inter-point distance of 60 metres;

(c) samples must be taken using angle count sampling or fixed area plot measurements;

(d) where fixed area plot samples are used, plots must be 50 m x 20 m in size; and

(e) the total number of samples to be taken must be in accordance with Table M below.

Table M: Minimum number of sample points required for harvested areas

Size of harvested area (hectares)	Minimum number of sample points required
0–30	20
31–50	30
51–100	40
101–200	50
201+	60

(2) Further limits:

(a) all forestry operations must have an average basal area equal to or above the average minimum limit for basal area;

(b) the basal area at no more than 25% of sampling points within the harvested area can have a basal area below:

i) 5 m^2/hectare in Cypress Forests

ii) 6 m^2/hectare in Western Hardwoods Forests, and

(c) no more than 50% of sampling points within the harvested area can be below the minimum basal area as specified in Clause 5.2 (2) of this Code (Single Tree Selection and Thinning).

Appendix C: Calculating Forest Regeneration

(1) For compliance purposes, forest regeneration in Single Tree Selection and Thinning harvest areas will be calculated using the following method:

(a) the starting point must be randomly located within the harvest area by selecting it on a map before assessment;

(b) the sample points must be located at 20 metre intervals along a square that is 200 metres on each side (Figure 7);

(c) samples must be taken using fixed area plot measurements with a plot size of approximately 10 m^2;

(d) plots must be circular with a minimum radius of 1.8 m radius; and

(e) each plot is classed as stocked if any part of the plot area:

i. is under the canopy of an existing tree, or

ii. contains at least one viable seedling (including new seedlings establishing from seed or lignotubers), or

iii. contains 'advanced growth' of an upper canopy species that is assessed as having the vigour or capability of reaching a canopy position.

(f) for each square (as per clause 1(b-c), convert the numbers of stocked plots to a simple percentage. Where multiple squares are assessed, the outcomes should be averaged to give an overall assessment of the harvest area.

(g) the total number of samples to be taken must be in accordance with Table N below.

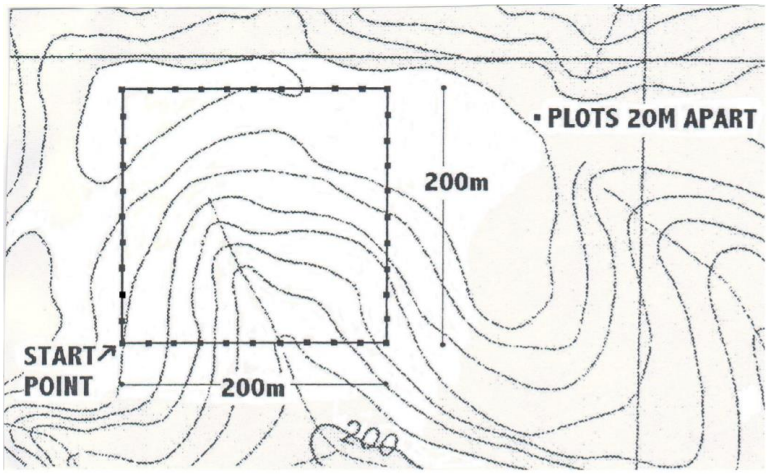

Figure 7: Example of sample point intervals along a square.

Table N: Minimum number of sample points required for harvested areas

Size of harvested area (hectares)	Minimum number of sample points required
0–10	80 (2 squares)
11–50	120 (3 squares)
51–100	200 (5 squares)
101–200	280 (7 squares)
201+	360 (9 squares)

Glossary

Expressions that are defined in the Act and Local Land Services Regulation 2014 have the same meanings in this Code as the meanings given to them in the Act and Regulation, unless they are otherwise defined in this Code (including in this Glossary). All other expressions are defined as in this glossary.

Accidentally felled	A tree is accidentally felled into any area of land only if it is apparent that techniques of directional felling were used in an attempt to fell the tree away from the area. Despite the above, a tree is not accidentally felled into an area if the person responsible knew or could reasonably have been expected to know that the tree would fall into the area.
Act	Means the *Local Land Services Act 2013*.
Area of outstanding biodiversity value	Has the same meaning as 'declared area of outstanding biodiversity value' within the *Biodiversity Conservation Act 2016.*
Armoured	A protective surface that is resistant to erosion or displacement by machinery or vehicles.
Basal area	The sum of cross-sectional area of trees that are greater than 10 centimetres in diameter at breast height (DBH). Basal area is measured at breast height and in square metres per hectare (m2/ha)
Batter	An earth slope formed from fill material (fill batter) or cut into the natural hillside (cut batter) during road construction.
Bioregion	An Interim Biogeographic Regionalisation for Australia (IBRA) region as defined by *Summary Report Revision of the Interim Biogeographic Regionalisation for Australia and Development Version 5.1.*
Blading off	The removal of surface soil from a track or road in wet conditions to expose a drier or firmer surface for use by machinery
Cliff	A rocky slope steeper than 70 degrees, more than three metres high and more than 10 lineal metres.
Coarse woody debris	Dead timber (including a log or a head of a tree) that has fallen on the forest where bark has been completely separated from the sapwood due to decay and: • the smallest end of the dead timber has a minimum diameter of 10 centimetres or greater under bark; and • is greater than three metres long.
Concentrated water flow	The discharge of water from a structure across a surface in a manner, other than a sheet of water, up to the peak discharge from a storm even of less than or equal to the required design specification for that structure. Concentrated water flow is evidenced by rivulets, rills, gullies, or streams of water or the eroded areas where rivulets, rills, gullies or streams of water have flowed.
Crossing	A structure designed to allow the crossing of a drainage feature and is either a track crossing or road crossing.
Dead standing tree	A standing dead tree that has hollows, and: • the bark is fully separated from the sapwood • is greater than 30cm in diameter, and • is over three metres tall.
Debris	Tree head, tree offcuts or bark that have resulted from a forestry operation.

Diameter at breast height over bark (DBHOB)	The diameter of a tree measured at 1.3 metres above the ground. Measurements are made over the bark and horizontal to the trunk.
Directional felling	The felling of a tree so it falls in a pre-determined direction.
Dispersible soil	A structurally unstable soil which readily disperses into its constituent particles (clay, silt, sand) in water.
Drainage depression	A shallow depression with smoothly concaved cross-section that conveys runoff only during or immediately after periods of heavy rainfall.
Drainage feature	A drainage depression, drainage line, stream, river or watercourse.
Drainage line	A channel down which surface water naturally concentrates and flows. Drainage lines exhibit one or more of the following features which distinguish them from drainage depressions: • evidence of active erosion or deposition, e.g. gravel, pebble, rock, sand bed, scour hole or nick point and/or • an incised channel more than 30 centimetres deep with clearly defined bed and banks and/or • a permanent flow. Deposition means the laying down of solid material which has been eroded and transported from a distant part of the land surface
Drainage structure	A structure designed to convey water away from a road, track or area of soil disturbance, for example, cross drains, mitre drains or relief culverts.
Earth windrow	A mound of soil material or gravel on the edge of a road or snig track formed by the spillage from the edge of a blade or similar machine during earthmoving operations.
Erosion	The wearing away of the land or soil by running water, rainfall, wind or geomorphological agent, including but not limited to processes such as detachment, entrainment, suspension, transportation and mass movement at a rate accelerated by forestry operations.
Exclusion zone	An area of land described by this Code where forestry operations are prohibited, unless otherwise allowed under this Code.
Extraction track	A track constructed for use by forwarding machinery.
Food resource trees	Trees with recent V-notch incisions or other incisions made by a glider species. Recent incisions are incisions less than two years old as evidenced by the fact the incision has not closed.
Forest or Forested Area	An area dominated by trees with a mature stand height exceeding 2 metres, overstorey crown cover of greater than 20%.
Forestry operations	Has the same meaning as in Part 5B of the Act
Girders	High quality logs used in a round or flat faced form to support a deck such as a bridge or wharf or as large end section, heart-free, sawn timber suitable for heavy construction.

Groundcover	Natural or artificial material which covers the ground surface and has the effect of reducing erosion.
Gully stuffer	A drainage feature crossing formed by filling the drainage feature with trees, debris, spoil, soil, rock or other material to the level of the road or track.
Habitat tree	A tree retained for habitat purposes under this Code.
Harvesting operations	Harvesting operations include: • timber felling, snigging and extraction • construction and maintenance of log landings, snig tracks and extraction tracks.
Heathland	Areas dominated (covers more than 50% of the area) by shrubs generally less than 2 metres tall at maturity.
Highly erodible soil	A soil where the particles are readily detached and transported by erosive forces. The presence of these soils may be identified by evidence of existing erosion (gully or rill erosion), or by commonly known problem soil types, e.g. some coarse-grained granites.
Incised channel	A channel more than 30 centimetres deep with clearly defined bed and banks.
Inundation	Flooding of the forested area by water overflowing the banks of a river.
Koala feed tree	Means a tree: (a) listed in Table I in the column headed 'Koala feed tree species'; and (b) for which an X is marked in Table I for the relevant Koala Management Area.
Koala Management Area	Means a Koala Management Area depicted in Figure 5 of Appendix A.
Koala Scat	A bullet or peanut shaped scat with a strong eucalyptus odour, fine leaf articles inside and either a moist mucous or hard coating, found either above the leaf litter, or less than 50mm below the leaf litter.
Landholding	A single or several parcels of land (whether held under the same title, different titles or different kinds of titles) that constitute or are worked as a single property and that are contiguous with one another or are separated from one another only by a road, river, creek or other watercourse.
Log landing	An area (usually cleared) where timber products are assembled for processing and sorting before being loaded onto a truck.
Mass movement	The downslope movement of greater than 10 cubic metres of soil, where gravity is the primary force or where no transporting medium such as wind, flowing water or ice is involved.
Net harvestable area	The defined area under the Forest Management Plan where harvesting is permitted in accordance with this Code.
Old grey	A late-mature/over-mature cypress tree that regenerated before the 1890s and which has bark that is bleached to a characteristic light grey colour and that is weathered to a smoother surface texture than is typical of younger trees.

Old growth forests	Ecologically mature forest where the effects of disturbance are now negligible. This includes an area of forest greater than 5 hectares where: • the overstorey is in late to over-mature growth stage with the presence of relatively large old trees (many containing hollows and often with the presence of dieback or dead branches in the crown) • the age (growth) structure of the stand measured as relative crown cover consists of less than 10% of regeneration and advance growth and more than 10% of late to over-mature (senescent) growth • the effects of unnatural disturbance are now negligible. Old growth woodlands west of the Great Dividing Range, while comprising a characteristic canopy of late to over-mature trees (many with hollows), may comprise a woodland structure with less diverse or often shrubby understorey and a groundcover of grasses and herbs.
PNF koala prescription map	Means any of the following: (a) the maps contained in Figures 3 and 4 in this Code; (b) the spatial layer entitled 'PNF koala prescription map' available on a NSW Government website, jointly approved by the Minister administering the Act and the Minister administering the *Biodiversity Conservation Act 2016.* Note: The spatial layer will be made available on the SEED and Data.NSW portals.
PNF plan or private native forestry plan	Has the same meaning as in Part 5B of the *Local Land Services Act 2013*.
Portable mill site	A site where a portable mill (easily movable milling equipment) operates.
Posts	A term generally used to describe posts in round or split form used for fencing.
Prescribed Stream	A stream listed in the Major Rivers database of the Assessment Methodology database available at the DPE webpage.
Primary koala feed tree	Means a tree: (a) listed in Table I under the heading 'Primary tree species'; and (b) for which an X is marked in Table I for the relevant Koala Management Area.
Protected trees	Means: (a) trees required to be retained under clause 8.2 (b) plants of the genus *Xanthorrhoea* (grass trees), genus *Allocasuarina* (forest oak) (except bull oak [*Allocasuarina luehmannii*]), and genus *Banksia* (c) other trees that are required to be retained by this Code.
Pulp logs	Logs cut and prepared primarily to produce wood pulp for the manufacture of reconstituted products including paper and panel board.
Regeneration management actions	Forest management techniques that promote forest regeneration after forestry operations including replanting (including tube-stock), minimising or removing grazing pressure, seeding, weed management, fire management and mechanical soil disturbance.
Riparian exclusion zones	Those areas within the distances specified for 'Drainage feature' as listed in Table G where forestry operations are not permitted, unless otherwise allowed by this Code.

Riparian protection measures	Actions that assist in maintaining and protecting riparian areas including revegetation (including tube-stock, native grasses and seed distribution), the placement of artificial erosion control measures such as matting, mulch or geotextiles, and the removal or minimisation of grazing pressures.
Road	Any route used for vehicular access to, and the transport of logs from, the point of loading (log landing) within the forest area.
Road prism	That part of the road from the inflexion point at the toe of the fill batter to the inflexion point at the top edge of the cut batter. Where there is no cut or fill batter as part of the road, the road prism is to be taken from the outside edge of the table drain on either side of the road.
Rocky outcrops	A 'rocky outcrop' has an area of 0.2 hectares or larger, where 70% or more of the surface is composed of exposed boulders of more than 0.6 of a metre in diameter and accompanied by skeletal soils.
Rollover bank	A crossbank constructed with a smooth cross-section and gentle batters, which is well-compacted to provide permanent vehicular trafficability.
Roost trees	Trees with nests or roosts of bats or raptors as further described in this Code.
Saturated soil	The physical condition of soil where no more moisture can be absorbed or accepted.
Sawlog	Log of a species suitable for processing through a sawmill into solid timber products.
Secondary koala feed tree	Means a tree listed in Table I under the heading 'Secondary tree species' and for which an X is marked in Table I for the relevant Koala Management Area.
Silvicultural operations	The activities associated with the management of trees within a forest for the purpose of meeting sustainable long-term productivity objectives, including thinning, single tree selection and creation of canopy openings.
Single tree selection	A harvesting operation where the trees harvested are either single trees or small groups of trees. For the purposes of this Code, single tree selection operations will not create canopy openings.
Skeletal soils	Thin soils which present a barren, inhospitable surface to vegetation.
Snig track	A track used by snigging or skidding equipment.
Spoon drain	A drain with a semi-circular cross-section, which has no associated ridge of soil. Its capacity is solely defined by the excavated channel dimensions.
Stand basal area	Stand basal area is the sum of the basal area of all trees within a stand expressed in square metres per hectare (m^2/ha).
Stand height	Mean height of the dominant trees in the stand. Measurement of stand height must conform to methods described in approved guidelines.
Stick Nest	A collection of sticks in the branches, fork, trunk and or head of a live or dead tree that, when combined, form a nest that is greater than 50 centimetres in diameter.
Stocking level	A measure of the frequency of occurrence of tree stems assessed as being capable of growing to canopy level. Measurement of stocking levels must conform with methods described in Appendix C.

Stream	A stream, unmapped or mapped, is defined as an incised watercourse with a defined channel, bed and banks and minimum depth of 30 centimetres. Stream orders are determined according to the Strahler System (see Figure 1)
Suitably qualified expert	Suitably qualified expert means a person with a minimum undergraduate qualification in natural sciences, ecology, environmental management, forestry or similar from a university and with a minimum 3 years' experience in environmental assessment.
Temporary crossing	A type of track crossing or crossing structure that is removed at the completion of harvesting operations.
Thinning	A silvicultural practice where some trees are removed in order to increase the growth rates of retained trees.
Threatened ecological community	Has the same meaning as in the *Biodiversity Conservation Act 2016*.
Threatened populations	Population of a particular species listed in Division 3 of Part 1, Division 4 of Part 2 or Division 4 of Part 3 of Schedule 1 to the *Biodiversity Conservation Act 2016* as in force from time to time.
Threatened species	Species that are: (a) Threatened species within the meaning of the *Biodiversity Conservation Act 2016*, and (b) Listed in Appendix A: listed species ecological prescriptions of this Code
Timber products	Commercial timber products removed from or felled within the forest, including but not limited to sawlogs, veneer logs, poles, girders, piles and pulp logs.
Veneer log	High quality logs that are rotary peeled or sliced to produce sheets of veneer.
Walkover techniques	Timber extraction or snigging without removing or unduly disturbing the existing natural groundcover, i.e. where no snig track construction involving soil disturbance is required.
Wet summer	Summer with above average rainfall persisting through the summer period.
Wetland	Includes any shallow body of water (such as a marsh, billabong, swamp or sedgeland) that is: ● inundated cyclically, intermittently or permanently with water, and • vegetated with wetland plant communities.