Private Native Forestry

Code of Practice for the River Red Gum Forests

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Introduction

The Private Native Forestry Code of Practice (the ‘Code’) supports the long term sustainable management of native forests on private land and Crown land (other than Crown-timber land) for timber production and ecologically sustainable forest management.

The Code applies to forestry operations on land as defined by Part 5B of the Local Land Services Act 2013. This Code is made under section 60ZT in Part 5B of the Local Land Services Act 2013. 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 difference 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.

‘River Red Gum Forests’ means forests dominated by Eucalyptus camaldulensis, being forests that are consistent with the description of Forest Type 199 (River Red Gum) set out in the document called State Forests of NSW, Research Note 17.

The Code

1. Private Native Forestry Plans

(1) Before any forestry operations commence on land to which Part 5B of the Local Land Services Act 2013 applies as described in section 60ZS, a Private Native Forestry Plan (PNF Plan) must be issued by Local Land Services in accordance with section 60ZY of the Local Land Services Act 2013.

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

(3) Local Land Services will provide all relevant digital information on landscape features (as identified in Table A), drainage features (as identified in Table C) and Listed Ecological Prescriptions (as identified in Appendix A) when issuing the PNF Plan and prior to the commencement of any forestry operations to ensure plants, animals and ecological communities listed in the schedules of the Biodiversity Conservation Act 2016 are identified for protection in accordance with the Code.

Note: Section 60S of the Local Land Services Act 2013 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 Forest operation planning and management

2.1 Forest Operation Plans

(1) A Forest Operation Plan must be prepared before forestry operations commence.

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

(3) The landholder and anyone else carrying out forestry operations must read, sign and date the Forest Operation Plan.

(4) A copy of the Forest Operation Plan must be available on site during forestry operations.

(5) A Forest Operation Plan must contain the following:

(a) a map (or maps) showing:
   (i) the location and boundaries of the area in which harvesting or other forestry operations will occur
   (ii) recorded locations of any threatened populations or threatened ecological communities listed under the schedules of the Biodiversity Conservation Act 2016 and species in the Listed Species Ecological Prescriptions set out in Appendix A.
   (iii) the location of landscape features as listed in Table A and drainage features as listed in Table C
   (iv) the indicative location of existing and proposed roads and drainage feature crossings
   (v) the indicative location of log landings and portable mill sites, and

(b) a written component that provides:
   (i) details of ownership 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 required] 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 perennial stream 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 Operation 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).

(6) The landholder may amend the Forest Operation Plan at any time, except for matters referred to in clause 2.1(5)(b)(iii). Any amendments to either the map or the written component must be noted on the Forest Operation Plan.

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

(8) The landholder must provide the Forest Operation Plan, including any amendments, to an officer from Local Land Services and/or an authorised officer from the Environment Protection Authority if requested to do so.
Note: Any research or forest monitoring activities undertaken in PNF Plan areas 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, how landholder confidentiality will be managed.

2.2 Forest Stewardship Plans

(1) A Forest Stewardship Plan must be prepared by an officer from Local Land Services or an accredited expert and be approved by Local Land Services before forestry operations commence.

(2) A Forest Stewardship Plan must be in an approved form.

(3) A Forest Stewardship Plan may vary provisions of this Code if the Chief Executive Officer of Local Land Services and the Chief Executive Officer of the Environment Protection Authority is satisfied that the variation is for a legitimate outcome, is reasonable and will have no significant adverse environmental impacts.

Note: In circumstances where the Chief Executive Officer of Local Land Services and the Chief Executive Officer of the Environment Protection Authority are unable to reach agreement on a proposed minor variation, the Minister administering Part 5B of the Local Land Services Act 2013 and the Minister administering the Biodiversity Conservation Act 2016 may make a determination on the proposed minor variation.

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

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

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

(a) a map (or maps) showing:
   (i) the location and boundaries of the area in which harvesting and/or other forestry operations will occur
   (ii) recorded locations of any threatened populations or threatened ecological communities listed under the schedules of the Biodiversity Conservation Act 2016 and the Listed Species Ecological Prescriptions set out in Appendix A
   (iii) the location of landscape features as listed in Table A and drainage features as listed in Table C
   (iv) the indicative location of existing and proposed roads and drainage feature crossings
   (v) the indicative location of log landings and portable mill sites, and

(b) a written component that provides:
   (i) details of ownership of the land
   (ii) the landholder's forest management objectives
   (iii) details of the conditions and agreed actions consistent with clause 2.2(3) that are the basis of the Forest Stewardship Plan
   (iv) 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 required] and any presence of pests and/or weeds)
   (v) the post-harvest basal area objectives
   (vi) details of forest access, including any necessary construction, upgrading or maintenance of forest roads and drainage feature crossings
   (vii) details of harvesting and/or other proposed forestry operations
   (viii) details of flora and fauna management actions (where applicable)
   (ix) details of tree marking activities (where applicable)
(x) details of activities to promote forest regeneration and post-harvest management
(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 Stewardship Plan at any time, except for matters referred to in clause 2.2(5)(b)(iv). Any amendments to either the map or the written component must be noted on the Forest Stewardship Plan.

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

(9) The landholder must provide a copy of the Forest Stewardship Plan, including any amendments, to an officer from Local Land Services and/or an authorised officer from the Environment Protection Authority if requested to do so.

Note: Any research or forest monitoring activities undertaken in PNF Plan areas 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, how landholder confidentiality will be managed.

2.3 Reporting

(1) The landholder must notify Local Land Services of the commencement and completion of forestry operations under clauses 3.1 to 3.3 of the Code.

(2) In respect of forestry operations under clauses 3.1 to 3.3 of the Code, notification must be provided to Local Land Services within 21 days prior to commencement of the relevant forestry operations.

(3) In respect of forestry operations under Parts 3.1 to 3.3 of the Code, notification must be provided to Local Land Services within 21 days of the completion of the relevant operations.

(4) The following information must be included in any commencement notification to Local Land Services:
   (a) The PNF Plan approval number
   (b) the proposed commencement date and estimated time it will take to complete the forestry operations
   (c) a map showing the location of the proposed forestry operations
   (d) name and contact details of the landholder.

Note: 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) a map showing the location of the forestry operations
   (c) the approximate volume of forest products harvested
   (d) the approximate number of hectares on which forestry operations occurred
   (e) the date the forestry operations were completed
   (f) name and contact details of the landholder.
3 Silvicultural operations

3.1 Small scale harvesting
(1) Harvesting is 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 5 hectares or the volume is no more than 50m³ per year, whichever is smaller.
(3) Small scale harvesting must not reduce the stand basal area below 12m²/ha.
(4) For the purposes of clause 3.1 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.

3.2 Single tree selection and thinning
(1) Forestry operations are permitted after the preparation of a Forest Operation Plan or after the approval of a Forest Stewardship Plan by Local Land Services and the Environment Protection Authority.
(2) Single tree selection and thinning operations must not reduce the stand basal area below 12 m²/hectare across the harvested area of the Forest Operation Plan or Forest Stewardship Plan area. Ideally, single tree selection and thinning should aim to space trees according to the formula ¼ diameter at breast height over bark (cm)²*100.
(3) For the purposes of clause 3.2 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.

3.3 Australian Group Selection
(1) Forestry operations are permitted after the preparation of a Forest Operation Plan or after the approval of a Forest Stewardship Plan by Local Land Services and the Environment Protection Authority.
(2) Harvest operations that result in canopy openings must conform with the following requirements:
   (a) the sum of canopy openings must at no time exceed 20% of the net harvestable area
   (b) the minimum distance between canopy openings must be equal to or greater than twice the stand height
   (c) the maximum width of a canopy opening must be equal to or less than twice the stand height.
(3) A canopy opening is an area greater than 0.1 hectares in size, measured between canopy perimeters, where any vegetation remaining within the opening is less than one-half of the stand height.
(4) A canopy opening can be an irregular shape to maximise light penetration (including the boundary to area ratio), forest regeneration and account for existing landscape features provided it does not exceed the width or area prescriptions in clause 3.3 (2).

3.4 Forest regeneration
(1) As determined by the percentage of stocked plots, a minimum stand stocking of 60%, within canopy openings and 70% elsewhere in the forest must be achieved within 36 months of a regeneration event.
(2) In this clause, regeneration event is the second period of inundation following a harvesting or thinning operation.
(3) A harvesting operation must not occur in a previously harvested area until stocking levels meet the minimum stocked plot requirements in clause 3.4(1).

(4) For the purposes of clause 3.4, forest regeneration must be measured in accordance with [insert name of method, publisher and year].

**Note:** the supporting document for measuring forest regeneration will be finalised before the release of final PNF Codes of Practice.

(5) The landowner must comply with any 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.

### 4. Pest and weed management

**Note:** 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.

### 5. Fire management

**Note:** 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.
6. Protection of the environment

6.1 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 A.

(2) Old growth 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 A: Requirements for protecting landscape features

<table>
<thead>
<tr>
<th>Landscape feature</th>
<th>Operational conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threatened ecological communities listed in the Biodiversity Conservation Act 2016</td>
<td>Forestry operations may not occur in threatened ecological communities, except that existing roads may be maintained.</td>
</tr>
<tr>
<td>Threatened populations listed in the Biodiversity Conservation Act 2016</td>
<td>Forestry operations must not result in any harm to an animal that is part of a threatened population or result in the picking of any plant that is part of a threatened population, except that existing roads may be maintained.</td>
</tr>
<tr>
<td>Old growth forest</td>
<td>Forestry operations must not occur within old growth forest, except that existing roads may be maintained.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Forestry operations must not occur in any wetland other than wetlands that comprise a River Red Gum broad forest type or within 20 metres of any wetland, except that existing roads may be maintained.</td>
</tr>
<tr>
<td>Disused mineshafts (excluding open pits less than 3 metres deep)</td>
<td>Forestry operations must not occur within 10 metres of disused mineshafts, except that existing roads may be maintained.</td>
</tr>
</tbody>
</table>
| Aboriginal object or 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 place (this requirement does not apply to Aboriginal objects or places that may lawfully be destroyed). |
| 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. |

6.2 Protection of habitat and biodiversity

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

(2) For the purposes of clause 6.2 and Table B, habitat tree retention must be measured in accordance with [insert name of method, publisher and year].

Note: the supporting document for measuring habitat tree retention will be finalised before the release of final PNF Codes of Practice.

(3) 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.

(4) An individual tree may satisfy more than one condition in the tree retention standards (see Table B), if it has the appropriate characteristics.
(5) 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 6.2(6)
   (c) preference should be given to habitat trees that will provide habitat connectivity,
       build on existing landscape features (Table A), provide additional protections for
       threatened species, build on existing habitat islands, and/or national parks and
       other conservation areas adjacent to the PNF Plan area
   (d) preference must be given to trees with well-developed spreading crowns.

(6) For the purpose of this clause:
   (a) a **hollow bearing tree** is a dominant or co-dominant tree, where the trunk or
       limbs:
       (i) contain 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 the largest (measured at DBHOB). Trees that pose a health or
       safety risk may be removed and, where possible, substituted with other hollow
       bearing trees if available, and if not available, by recruitment trees
   (c) a **recruitment tree** is a large, vigorous tree capable of developing hollows to
       provide habitat for wildlife. Preference must be given to trees from the next cohort
       to that of retained hollow bearing trees or the largest cohort
   (d) **roost, nest** and **food resource trees** are defined as:
       (i) trees with large stick nests or roosts of any species of raptor
       (ii) trees that support active 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
       (iv) River Red Gum broad forest type trees with a diameter at breast height
           over bark of 125 centimetres or larger
       (v) trees containing active nests of colonial-nesting water birds (groups of
           stick-nests).

**Table B: Minimum standards for tree retention**

<table>
<thead>
<tr>
<th>Trees that must be retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 5 hollow bearing trees per hectare, within 20–50 metres of any permanent watercourse, water bodies or major wetlands, must be retained.</td>
</tr>
<tr>
<td>● 2 hollow bearing trees per hectare in all other areas must be retained.</td>
</tr>
<tr>
<td>● One recruitment tree representing the range of species in the forest before forestry operations commenced must be retained for every hollow bearing tree.</td>
</tr>
<tr>
<td>● Where the total number of hollow bearing trees is less than 5 trees per hectare within 20–50 metres of any permanent water course, water bodies or major wetlands or 2 per hectare elsewhere, additional recruitment trees must be retained to bring the total number of trees retained up to 10 and 4 per hectare, respectively.</td>
</tr>
<tr>
<td>● All roost, nest or food resource trees must be retained.</td>
</tr>
<tr>
<td>● Clumps of habitat trees must be retained in River Red Gum broad forests where they constitute rookeries for water bird species such as herons, cormorants, spoonbills and egrets.</td>
</tr>
</tbody>
</table>
6.3 Minimising damage to retained trees and native vegetation

(1) As far as practicable, forestry operations must not damage protected trees or heap debris around protected trees.

(2) In this clause protected trees are defined as:

(a) trees required to be retained under clause 6.2

(b) plants of the genus Xanthorrhoea (grass trees), genus Allocasuarina (forest oak) (except bull oak [Allocasuarina luehmannii]), and genus Banksia

(c) Acacia salicina (Cooba), Exocarpos strictus (dwarf cherry) and Eucalyptus microcarpa (grey box)

(d) other trees that are required to be retained by this Code.

6.4 Drainage feature protection

(1) Forestry operations, including machinery entry, must not occur in riparian exclusion zones.

(2) A riparian exclusion zone is the area of vegetation located within 5 metres of a mapped first order or higher stream or within 20 metres of a prescribed stream, except where otherwise allowed by this Code.

(3) Riparian exclusion zones must be measured from the top of the defined bank of the stream, or where there is no defined bank, from the edge of the channel of the stream.

(4) For the purposes of this Code, a stream is defined as an incised watercourse with a defined channel, bed and banks and determined according to the Strahler System (see Figure 1).

Figure 1: Schematic diagram of stream order (After Strahler, AN 1964, ‘Quantitative geomorphology of drainage basins and channel networks’ in Chow, VT (ed.) Handbook of Applied Hydrology, New York, MacGraw-Hill, section 4-11).
Table C: Riparian buffer zones

<table>
<thead>
<tr>
<th>Drainage feature</th>
<th>Riparian buffer zone distances (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any drainage feature with an incised channel</td>
<td>Nil</td>
</tr>
<tr>
<td>Prescribed Streams</td>
<td>25</td>
</tr>
</tbody>
</table>

(5) Riparian buffer zones must be applied to each riparian exclusion zone. They must extend from the boundary of the riparian exclusion zone outwards away from the drainage feature for the distance specified in Table C. Forestry operations may occur within riparian buffer zones subject to the following limitations:

(a) machinery using walkover techniques may extract logs from any area within a riparian buffer zone with minimal disturbance to soil and groundcover

(b) all hollow bearing trees must be retained

(c) only 30% of the pre-harvest basal area can be removed in any ten year period and the minimum basal area must be maintained within the riparian buffer zone

(d) felling must be directed away from the stream/riparian exclusion zone

(e) any furrows resulting from machinery or log removal must be treated to prevent concentration of water flow or soil movement

(f) clearing and disturbance within the riparian buffer zone must be minimised.

(6) Where harvesting is occurring adjacent to riparian buffer zones, all tree felling must employ directional felling to minimise as far as practicable disturbance to vegetation and soils within the riparian buffer zone.

(7) Where a tree is accidently felled into the riparian exclusion zone, the tree may be removed provided:

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

(b) Machinery does not enter the riparian exclusion zone to retrieve the tree, or part of the tree, and

(c) Following the tree’s removal, any soil disturbance or furrows are treated to prevent concentration of water flow or soil movement, and

(d) The accident must be recorded in the Forest Operations Plan or Forest Stewardship Plan, as soon as possible.

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

(a) the road is identified on the Forest Operation Plan or Forest Stewardship Plan

(b) the road prism crosses the riparian exclusion zone and riparian buffer zones at right angles or as close to right angles as is practicable

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

(d) any other necessary permits have been obtained.

(9) Machinery exclusion zones must be applied to all unmapped drainage lines. For the purposes of this clause, machinery exclusion zones are areas within 10 metres of the top edge of the bank of any drainage line.

(10) Machinery using walkover techniques may operate in machinery exclusion zones. All other machinery must not enter machinery exclusion zones unless otherwise allowed by this Code.
(11) Trees may be felled within unmapped drainage depressions, and machinery may enter unmapped drainage depressions. Disturbance must be minimised by:
(a) using walkover techniques wherever possible
(b) preventing skewing of machinery tracks as much as possible
(c) operating with the blade up at all times (except during crossing construction)
(d) not snigging along drainage depressions.

(12) Machinery must not operate in drainage depressions or flood runners when the soil is saturated.

(13) Australian Group Selection logging systems must not be used within:
(a) any riparian exclusion zone
(b) any riparian buffer zone.

Note: If before, or during forestry activities, it becomes apparent that the conditions of the Code are not capable of preventing the pollution of waters, additional measures must be implemented to prevent water pollution. These measures must be recorded in the Forest Operation Plan.

7. Construction and maintenance of forest infrastructure

7.1 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 to facilitate outfall drainage.

(4) Clearing for road construction is 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 construction.

(5) Trees and other debris must not be stacked in landscape features referred to in Table A or riparian exclusion zones or riparian buffer zones referred to in Table C.

(6) Roads must be maintained according to Table D.

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

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

(9) Roads that are not required for ongoing property management must be stabilised and allowed to revegetate.

(10) 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.

(11) 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.

(12) 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.

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

(14) Blading-off of roads must not occur.
### Table D: Maximum distance that water may travel along road surfaces, table drains and snig tracks

<table>
<thead>
<tr>
<th>Road or snig track grade (degrees)</th>
<th>Maximum distance (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to ≤ 1</td>
<td>250</td>
</tr>
<tr>
<td>&gt; 1 to ≤ 2</td>
<td>200</td>
</tr>
<tr>
<td>&gt; 2 to ≤ 3</td>
<td>150</td>
</tr>
<tr>
<td>&gt; 3 to ≤ 4</td>
<td>125</td>
</tr>
<tr>
<td>&gt; 4 to ≤ 5</td>
<td>100</td>
</tr>
<tr>
<td>&gt; 5 to ≤ 6</td>
<td>90</td>
</tr>
<tr>
<td>&gt; 6 to ≤ 7</td>
<td>80</td>
</tr>
<tr>
<td>&gt; 7 to ≤ 8</td>
<td>70</td>
</tr>
<tr>
<td>&gt; 8 to ≤ 9</td>
<td>65</td>
</tr>
<tr>
<td>&gt; 9 to ≤ 10</td>
<td>60</td>
</tr>
</tbody>
</table>

### 7.1.1 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 D.

(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 D.

(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 kept free of debris that may impede flow of water.

(8) Drainage structures must not be designed to directly divert sediment laden water into streams.
7.1.2 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 stream must be drained, using a drainage structure, between 5 metres and 30 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.

(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 stream bed and banks.

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

7.2 Log landings, portable mill sites and snig tracks

(1) Wherever practicable, log landings and portable mill sites must not be located in flood runners or drainage depressions.

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

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

(4) The construction of new log landings and portable mill sites must not be located nearer than 10 metres to an exclusion zone, riparian exclusion zone or riparian buffer zone.
(5) Existing log landings located within riparian buffer 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 landings 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.

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

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

(8) Vegetation and debris from log landings and portable mill sites must not be deposited in an exclusion zone, riparian exclusion zone, riparian buffer zone or flood runner.

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

(10) Bark accumulated on log landings, and sawdust on mill sites, must be progressively dispersed away from the site during harvesting operations.

(11) On completion of operations, log landings and portable mill sites must be drained and reshaped to disperse runoff onto surrounding vegetation.

7.2.1 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) Snig tracks and extraction tracks must not encroach on exclusion zones, riparian exclusion zones or riparian buffer zones except at designated crossings and where permitted by clause 6.4 (5).

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

(8) 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 D. This could be achieved by one or a combination of the following techniques:
   (a) retain existing groundcover using walkover techniques
   (b) retain or cover the track surface with slash and harvesting debris
   (c) construct or maintain the track with outfall drainage
   (d) construct track drainage structures.

(9) On 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 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 D.
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.

Crossbanks must not be constructed of bark or woody debris.

### 7.2.2 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 five 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 streams.
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.

### 7.2.3 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 until the soil has dried and 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

Introduction

These prescriptions must be applied within the forestry operations area where there is a known record or site evidence of a threatened species.

1. A known record is a sighting or record of the species in the NSW BioNet that is less than 20 years old and has a reliability level of 1 to 5. Available at http://www.bionet.nsw.gov.au/.

2. Site evidence is 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.

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, Industry and Environment (DPIE) website at www.environment.nsw.gov.au/threatenedspecies/.

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

1. additional widths to stream exclusion zones
2. exclusion zones around locations of threatened species records
3. additional tree retention requirements around locations of threatened species records.

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 Operation Plan or Forest Stewardship Plan.

Some species prescriptions vary according to the region in which they occur. Unless otherwise stated, the regions referred to in the prescriptions are based on the catchments formerly administered by the former Catchment Management Authorities (CMAs) shown in Figure 2.

General conditions

For all threatened species prescriptions, the following applies:

- 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
- 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
- where public conservation/reserved land (for example National Parks) falls within buffer or exclusion zone areas requiring additional tree retention requirements as part of threatened species prescriptions, then the area of public conservation/reserved land may contribute towards the area of habitat required to be retained
- buffer and exclusion zones are to be marked in the field where they adjoin the area, subject to forest operations. This marking has to be visible while forestry operations are occurring.

**Mammals**

**Squirrel glider (Petaurus norfolcensis)**

**Zones for application of prescription**

Border Rivers–Gwydir, Central West, Lachlan, Murray, Murrumbidgee and Namoi

**Prescription**

Where there is a squirrel glider record in an area of forest operations or within 125 metres of the boundary of the area of forest operations (unless specified otherwise in this condition), 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 OEH before commencing forest 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.

Koala (*Phascolarctos cinereus*)

Zones for application of prescription
Border Rivers–Gwydir, Central West, Lachlan, Murray, Murrumbidgee and Namoi

Prescription
(a) Forest operations are not permitted within any area identified as ‘core koala habitat’ within the meaning of *State Environmental Planning Policy No. 44 – Koala Habitat Protection*.
(b) In Koala Management Areas 5, 6 and 7, any tree containing a koala or 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 implemented around each retained tree.
(c) Where there is a record of a koala within an area of forest operations the following must apply:
   (i) A minimum of 10 primary koala food trees and 5 secondary koala food trees must be retained per hectare of net harvesting area (not including other exclusion or buffer zones), where available.
   (ii) These trees should preferably be spread evenly across the net harvesting area, have leafy, broad crowns and be in a range of size classes with a minimum of 30 centimetres diameter at breast height over bark.
   (iii) Damage to retained trees must be minimised by directional felling techniques.
   (iv) Post-harvest burns must minimise damage to the trunks and foliage of retained trees.

Additional information
Generally, koala habitat comprises eucalypt forest and woodland containing primary and secondary food trees (see Table E). Koala droppings (scats) are relatively distinctive, being cylindrical and pit-shaped. Colour varies between green–yellow to yellow–brown. Scats can remain under trees on or within the leaf litter for periods of several weeks to months. For further information on the identification of koala scats, contact DPIE or refer to the DPIE website – [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au).
Table E: Primary and secondary koala food trees for Koala Management Areas in the River Red Gum forests

<table>
<thead>
<tr>
<th>Koala food free species</th>
<th>Koala Management Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common name</strong></td>
<td><strong>Scientific name</strong></td>
</tr>
<tr>
<td>Primary tree species</td>
<td></td>
</tr>
<tr>
<td>River red gum</td>
<td><em>E. camaldulensis</em></td>
</tr>
<tr>
<td>Coolabah</td>
<td><em>E. coolabah</em></td>
</tr>
<tr>
<td>Ribbon gum</td>
<td><em>E. viminalis</em></td>
</tr>
<tr>
<td>Secondary tree species</td>
<td></td>
</tr>
<tr>
<td>White box</td>
<td><em>E. albens</em></td>
</tr>
<tr>
<td>Eurabbie</td>
<td><em>E. bicostata</em></td>
</tr>
<tr>
<td>Blakely’s red gum</td>
<td><em>E. blakelyi</em></td>
</tr>
<tr>
<td>Apple-topped box</td>
<td><em>E. bridgesiana</em></td>
</tr>
<tr>
<td>Broad-leaved sally</td>
<td><em>E. camphora</em></td>
</tr>
<tr>
<td>Dirty gum</td>
<td><em>E. chlorocladia</em></td>
</tr>
<tr>
<td>Argyle apple</td>
<td><em>E. cinerea</em></td>
</tr>
<tr>
<td>Fuzzy box</td>
<td><em>E. conica</em></td>
</tr>
<tr>
<td>Mountain gum</td>
<td><em>E. dalrympleana</em></td>
</tr>
<tr>
<td>Tumbledown gum</td>
<td><em>E. dealbata</em></td>
</tr>
<tr>
<td>Dwyer’s red gum</td>
<td><em>E. dwyeri</em></td>
</tr>
<tr>
<td>Bundy</td>
<td><em>E. goniocalyx</em></td>
</tr>
<tr>
<td>Black box</td>
<td><em>E. largiflorens</em></td>
</tr>
<tr>
<td>Maiden’s gum</td>
<td><em>E. maidenii</em></td>
</tr>
<tr>
<td>Brittle gum</td>
<td><em>E. mannifera</em></td>
</tr>
<tr>
<td>Yellow box</td>
<td><em>E. melliodora</em></td>
</tr>
<tr>
<td>Western grey box</td>
<td><em>E. microcarpa</em></td>
</tr>
<tr>
<td>Mallee red gum</td>
<td><em>E. nandewarica</em></td>
</tr>
<tr>
<td>Large-flowered bundy</td>
<td><em>E. nortonii</em></td>
</tr>
</tbody>
</table>
**Large-footed myotis (Myotis adversus)**

**Zones for application of prescription**

Border Rivers–Gwydir, Central West, Lachlan, Murray and Murrumbidgee

**Prescription**

Where there is a record of large-footed myotis in an area of forest operations or within 100 metres of the boundary of the area of forest 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.
Birds

Masked owl (*Tyto novaehollandiae*) and barking owl (*Ninox connivens*)

Zones for application of prescription

Border Rivers–Gwydir, Central West, Lachlan, Lower Murray–Darling, Murray, Murrumbidgee and Namoi

Prescription

Nest trees (trees with hollows containing a nest of a masked or barking owl) must be retained and protected by a 60-metre exclusion zone.

Roost trees (trees where a masked or barking owl has been observed roosting or signs of roosting are observed) must be retained and protected by a 50-metre exclusion zone.

Where there is a record within the area of forest operations or within 500 metres of the area of forest operations for the masked owl or 250 metres for the barking owl, the following prescriptions apply:

(a) Buffer zones with a 1000-metre radius (about 300 hectares) for the masked owl and 500-metre radius (about 78 hectares) for the barking owl must be identified centred on the location of the record or records. The radius of the buffer zone must be measured from the location of the record. Where there is more than one record, the radius of the buffer zone must be measured from a point equidistant from most records, where possible.

(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, ground logs, and rocks and litter must be minimised.

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

(d) Where there are more than two owl records consecutively less than 1000 metres apart but collectively spreading over an area greater than 1000 metres in any direction, advice on the location of the buffer area must be sought from OEH.
**Swift parrot (Lathamus discolor)**

**Zones for application of prescription**
Border Rivers–Gwydir, Central West, Lachlan, Lower Murray–Darling, Murray, Murrumbidgee and Namoi

**Prescription**
Where there is a record of a swift parrot in an area of forest operations, the following must apply:
(a) At least ten eucalypt feed trees 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 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. albans). Commonly used lerp-infested trees include grey box (E. microcarpa), grey box (E. moluccana) and blackbutt (E. pilularis).

**Regent parrot (Polytelis anthopeplus monarchoides)**

**Zones for application of prescription**
Lower Murray–Darling and Murray

**Prescription**
There should be no harvesting of mallee within the areas shown on Figure 4:
(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.
**Figure 4: Area of application of regent parrot prescription**

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

**Bush stone-curlew (*Burhinus grallarius*)**

**Zones for application of prescription**

All

**Prescription**

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

**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. Eggs are stone coloured, blotched dark brown and grey. Nesting season is August through to January.

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

**Zones for application of prescription**

Border Rivers–Gwydir, Central West, Lower Murray–Darling, Namoi and Western

**Prescription**

No forest 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.
Osprey (*Pandion haliaetus*)

Zones for application of prescription
All except for Lower Murray–Darling and Western

Prescription
No forest operations are permitted within a 100-metre radius of all osprey nests.

Additional information
Ospreys have a large stick nest (up to 2 metres wide) usually in tall, dead or occasionally live trees, often in an exposed position close to lakes, rivers or the ocean. Nesting season is from June to October.

Square-tailed kite (*Lophoictinia isura*)

Zones for application of prescription
All

Prescription
No forest operations are permitted within a 100-metre radius of all square-tailed kite nests.

Additional information
Square-tailed kites have a large stick nest usually between 60 and 100 centimetres in diameter, and some 12–26 metres above the ground, generally in a eucalypt. Nesting season is from July to November.

Turquoise parrot (*Neophema pulchella*)

Zones for application of prescription
All except for Lower Murray–Darling and Western

Prescription
No forest 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

Table F: Conditions applying to flora species

<table>
<thead>
<tr>
<th>Condition</th>
<th>Scientific name</th>
<th>Common name</th>
<th>Former Catchment Management Authority (see map page 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td><em>Amphibromus fluitans</em></td>
<td>Floating swamp wallaby-grass</td>
<td>Murray, Murrumbidgee</td>
</tr>
</tbody>
</table>

H. Damage to individuals avoided

Damage to individuals of the species to which this condition applies should be avoided to the greatest extent practicable.
Appendix B: Calculating Minimum Stand Basal Area

(1) For the purpose of calculating average basal area for compliance purposes:

(a) the sample points must be located randomly at multiple spots across the harvested area with a minimum inter-point distance of 60 metres;
(b) samples must be taken using angle count sampling or fixed area plot measurements; and
(c) the total number of samples to be taken must be in accordance with Table G below.

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

<table>
<thead>
<tr>
<th>Size of harvested area (hectares)</th>
<th>Minimum number of sample points required</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–30</td>
<td>20</td>
</tr>
<tr>
<td>31–50</td>
<td>30</td>
</tr>
<tr>
<td>51–100</td>
<td>40</td>
</tr>
<tr>
<td>101–200</td>
<td>50</td>
</tr>
<tr>
<td>201+</td>
<td>60</td>
</tr>
</tbody>
</table>

(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 more than half of the sampling points must be equal to or above the average minimum limit for basal area; and
(c) the basal area at no more than 25% of sampling points within the harvested area can have a basal area below 8 m²/hectare.
Glossary

Expressions that are defined in the Local Land Services Act 2013 and Local Land Services Regulation 2014 have the same meanings in this Code as the meanings given to them in that Act and Regulation, unless they are otherwise defined in this Code. 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.

Australian Group Selection
A silvicultural technique that creates canopy openings for the purpose of stimulating regeneration in certain forest types.

Batter
An earth slope formed from fill material (fill batter) or cut into the natural hillside (cut batter) during road construction.

Canopy opening
An area of forest where there is a gap in the overstorey. Canopy openings may be created by removal of parts of the overstorey to release advance growth or stimulate regeneration of new seedlings.

Cliff
A rocky slope steeper than 70 degrees, more than three metres high and more than 10 lineal metres.

Clumps of habitat trees forming rookeries for waterbirds
A group of adjoining trees, together with a 20-metre surrounding buffer, in which there are multiple stick nests comprising the breeding rookeries of colonial waterbirds such as herons, cormorants, spoonbills or egrets. Nests usually comprise platforms of sticks, often near each other. They are usually found in trees in or near water bodies such as swamps. Such breeding rookeries can contain hundreds of nests and birds, and are often revisited annually.

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.

Drainage depression
A shallow depression with smoothly concave cross-section that conveys runoff only during or immediately after periods of heavy rainfall.

Drainage structure
A structure designed to convey water away from a road, track or area of soil disturbance.

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.

Exclusion zone
An area of land within a specified distance of landscape features identified in Table A where forest operations are prohibited, unless otherwise allowed under this Code.

Extraction track
A track constructed for use by forwarding machinery.

Flood runner
A natural depression that carries the initial flood flows before complete inundation occurs.

Food resource trees
Trees with recent V-notch incisions or other incisions made by a yellow-bellied glider or squirrel glider. Recent incisions are incisions less than two years old as evidenced by the fact the incision has not closed.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>An area dominated by trees with a mature stand height exceeding 2 metres, overstorey crown cover of greater than 20 per cent.</td>
</tr>
<tr>
<td>Forestry operations</td>
<td>All activities associated with logging operations, the harvesting of forest products, ongoing forest management operations and ancillary activities to enable or assist in the above operations such as the provision of roads, snig tracks, waterway crossings and temporary timber storage facilities.</td>
</tr>
<tr>
<td>Girders</td>
<td>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.</td>
</tr>
<tr>
<td>Gully stuffer</td>
<td>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.</td>
</tr>
<tr>
<td>Habitat tree</td>
<td>A tree retained for habitat purposes under this Code.</td>
</tr>
<tr>
<td>Harvesting operations</td>
<td>Harvesting operations include:</td>
</tr>
<tr>
<td></td>
<td>• timber felling, snigging and extraction</td>
</tr>
<tr>
<td></td>
<td>• construction and maintenance of log landings, snig tracks and extraction tracks.</td>
</tr>
<tr>
<td>Incised channel</td>
<td>A channel more than 30 centimetres deep with clearly defined bed and banks.</td>
</tr>
<tr>
<td>Inundation</td>
<td>Flooding of the forested area by water overflowing the banks of a river.</td>
</tr>
<tr>
<td>Log landing</td>
<td>An area (usually cleared) where timber products are assembled for processing and sorting before being loaded onto a truck.</td>
</tr>
<tr>
<td>Net harvestable area</td>
<td>The area under the PNF Plan where harvesting is permitted in accordance with the Code.</td>
</tr>
<tr>
<td>Old growth forests</td>
<td>Ecologically mature forest where the effects of disturbance are now negligible. This includes an area of forest greater than 5 hectares where:</td>
</tr>
<tr>
<td></td>
<td>• 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)</td>
</tr>
<tr>
<td></td>
<td>• 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</td>
</tr>
<tr>
<td></td>
<td>• the effects of unnatural disturbance are now negligible.</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Portable mill site</td>
<td>A site where a portable mill (easily movable milling equipment) operates.</td>
</tr>
<tr>
<td>Posts</td>
<td>Term generally used to describe posts in round or split form used for fencing.</td>
</tr>
<tr>
<td>Prescribed Stream</td>
<td>Stream listed in the Major Rivers database of the Assessment Methodology database available at the DPIE webpage.</td>
</tr>
<tr>
<td>Pulp logs</td>
<td>Logs cut and prepared primarily to produce wood pulp for the manufacture of reconstituted products including paper and panel board.</td>
</tr>
<tr>
<td>Stand basal area</td>
<td>Stand basal area is the sum of the basal area of all trees within a stand expressed in square metres per hectare (m²/hectare).</td>
</tr>
<tr>
<td><strong>Rainfall erosivity</strong></td>
<td>A measure of the ability of rainfall to cause erosion at any location. It is directly related to the likelihood of high intensity storms and can be used to predict times of the year when erosion risk is greatest.</td>
</tr>
<tr>
<td><strong>River Red Gum Forests</strong></td>
<td>A forest dominated by <em>Eucalyptus camaldulensis</em> consistent with description of Forest Type 199 (River Red Gum) in State Forests of NSW, Research Note 17.</td>
</tr>
<tr>
<td><strong>Riparian buffer zone</strong></td>
<td>An area of land which extends from the boundary of the riparian exclusion zone outwards away from the stream for the distance specified in Table C where forestry operations may occur in accordance with clause 6.4(5).</td>
</tr>
<tr>
<td><strong>Riparian exclusion zones</strong></td>
<td>A protected area of vegetation located within 5 metres of each side of a stream or within 20 metres of each side of a prescribed stream measured in accordance with clause 6.4(3).</td>
</tr>
<tr>
<td><strong>Road</strong></td>
<td>Any route used for vehicular access to, and the transport of logs from, the point of loading (log landing) within the forest area.</td>
</tr>
<tr>
<td><strong>Road prism</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Rollover bank</strong></td>
<td>A crossbank constructed with a smooth cross section and gentle batters, which is well-compacted to provide permanent vehicular traffiability.</td>
</tr>
<tr>
<td><strong>Sawlog</strong></td>
<td>Log of a species suitable for processing through a sawmill into solid timber products.</td>
</tr>
<tr>
<td><strong>Silvicultural operations</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Single tree selection</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Snig track</strong></td>
<td>A track used by snigging or skidding equipment.</td>
</tr>
<tr>
<td><strong>Spoon drain</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Stand height</strong></td>
<td>Mean height of the dominant trees in the stand. Measurement of stand height must conform to methods described in approved guidelines.</td>
</tr>
<tr>
<td><strong>Stocking level</strong></td>
<td>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 approved guidelines.</td>
</tr>
<tr>
<td><strong>Thinning</strong></td>
<td>A silvicultural practice where some trees are removed in order to increase the growth rates of retained trees.</td>
</tr>
<tr>
<td><strong>Threatened populations</strong></td>
<td>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 <em>Biodiversity Conservation Act 2016</em> as in force from time to time.</td>
</tr>
<tr>
<td><strong>Threatened species</strong></td>
<td>Threatened species within the meaning of the <em>Biodiversity Conservation Act 2016</em> as in force from time to time that also meets paragraph (d) of the definition of species with the meaning of that Act as in force from time to time.</td>
</tr>
<tr>
<td><strong>Timber products</strong></td>
<td>Commercial timber products removed from or felled within the forest, including sawlogs, veneer logs, poles, girders, piles and pulp logs.</td>
</tr>
<tr>
<td><strong>Veneer log</strong></td>
<td>High quality logs that are rotary peeled or sliced to produce sheets of veneer.</td>
</tr>
<tr>
<td><strong>Walkover techniques</strong></td>
<td>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.</td>
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<tr>
<td><strong>Wetland</strong></td>
<td>Includes any shallow body of water (such as a marsh, billabong, swamp or sedgeland) that is:</td>
</tr>
<tr>
<td></td>
<td>● inundated cyclically, intermittently or permanently with water, and</td>
</tr>
<tr>
<td></td>
<td>● vegetated with wetland plant communities.</td>
</tr>
</tbody>
</table>