

Managing fodder harvesting

Mulga Lands Fodder Area Management Plan

This Area Management Plan for managing fodder harvesting has been prepared by the Department of Natural Resources and Mines; and

- is registered as AMP number 2013/003302 under the *Vegetation Management Act 1999*
- was approved on the 14th of June 2013
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Preface

This Area Management Plan (AMP) number 2013/003302 for managing fodder harvesting in the mulga lands of south western Queensland has been prepared to assist landholders needing to harvest fodder.

The AMP was prepared through workshops at Mitchell and Cunnamulla and involved consultation between officers of the Department of Natural Resources and Mines, AgForce, South-west Natural Resource Management group and landholder representatives.

Fodder harvesting under the AMP is intended to provide landholders with a practical and effective set of guidelines for fodder harvesting, which are not only unambiguous, but also achieve good outcomes for landholders and the environment.

This AMP will operate for a period of 10 years from its approval date.

1. Introduction

1.1 Fodder harvesting

Fodder trees and shrubs, particularly mulga, are an important natural resource supporting animal production over a large area of south-western Queensland. This fodder resource is used as a normal part of land management and during droughts.

For generations property owners have used fodder harvesting successfully and sustainably by:

- understanding the nature of the mulga lands
- using and managing fodder species as a normal part of property management
- managing stock numbers before, during and after drought
- having a long term sustainable fodder management plan

In this AMP, fodder harvesting is the cutting, felling, breaking, pushing or pulling of fodder species that is:

- necessary to provide fodder for stock; and
- carried out in a way that –
 - conserves the fodder vegetation in perpetuity; and
 - conserves the regional ecosystem in which the vegetation is situated; and
 - results in the cleared vegetation remaining where it is cleared.

1.2 An Area Management Plan

This AMP sets out management outcomes and conditions for managing fodder harvesting.

The AMP is based on the *State Policy for Vegetation Management* (version 2) and the Regional Vegetation Management Codes for the Western and Brigalow belt bioregions.

Landholders are required to comply with the conditions of this AMP. Compliance with this AMP does not exempt landholders from requirements under any other legislation.

Words underlined in the text of the AMP are defined in the glossary of terms.

1.3 Scope of the AMP

This AMP applies to the harvesting of fodder in the local government areas of the Balonne Shire, Barcoo shire, Bulloo Shire, Barcaldine Shire, Blackall Tambo Regional Council, Longreach Regional Council, Maranoa Regional Council, Diamantina Shire, Goondiwindi Regional Council, Murweh Shire, Paroo Shire, Quilpie Shire, Western Downs Regional Council and Winton Shire.

Before undertaking any fodder harvesting, landholders must consult the **Regional Ecosystem map** to identify areas of mapped remnant vegetation on their property. This map is available on the Department of Natural Resources and Mines (DNRM) website.

This AMP can be used at any time and does not require a drought declaration. This AMP does not apply to stock routes and roads.

Fodder harvesting is not regulated by the *Vegetation Management Act 1999* (VMA) on areas mapped as Category X on a Property Map of Assessable Vegetation, non-remnant vegetation on a Regional Ecosystem Map or where harvesting is done by lopping. In such situations, landholders can undertake fodder harvesting at any time without reference to DNRM.



2 Notification and compliance requirements

Condition

Landholders intending to harvest fodder under this AMP are required to:

- notify the Department of Natural Resources and Mines (DNRM); and
- comply with the requirements of the AMP.

Guidance

Notification

Prior to any fodder harvesting, land owners must notify DNRM using the notification form, which is available from the DNRM website at www.dnrm.qld.gov.au. This will cover all necessary fodder harvesting activities under this AMP for the period of the AMP.

There is no notification fee, and forms may be posted or hand-delivered to any DNRM office.

The department will acknowledge the notification.

If the property is sold, the new land owner must notify DNRM if they wish to harvest fodder under this AMP.

Record keeping

Landholders are advised to keep a record of any fodder harvesting activity. This may simply be a diary note of harvesting operations, supported by before and after photographs from known locations clearly illustrating what has been harvesting and when this was done.

It is further recommended that landholders document their instructions to operators, and supervise any fodder harvesting activity undertaken by contractors.

Contractors are advised to sight a copy of DNRM acknowledgement letter before harvesting and then operate in accord with this AMP.

3. Regional ecosystems where fodder can be harvested

Management outcome

Fodder harvesting is limited to specified regional ecosystems and species.

Conditions

3.1 Fodder harvesting regional ecosystems

Fodder harvesting is limited to the regional ecosystems listed in table 1 and 2. Within these, harvesting is limited to specified harvesting methods based on the dominance of the fodder species.

Regional ecosystems in which fodder species are dominant

Fodder species tend to naturally dominate in the regional ecosystems listed in table 1. These regional ecosystems can be harvested by selective, breaking, block or strip harvesting.

Table 1: Regional ecosystems in which fodder species are dominant

4.5.1	5.5.2	5.7.14	6.5.8	6.5.14	6.7.9	6.7.17
4.5.2	5.5.4	6.3.21	6.5.9	6.5.15	6.7.10	
4.5.3	5.5.6	6.5.1	6.5.10	6.5.16	6.7.11	
4.5.4	5.6.4	6.5.6	6.5.11	6.5.18	6.7.12	
5.5.1	5.7.5	6.5.7	6.5.13	6.6.1	6.7.13	

Regional ecosystems in which fodder species are not dominant

Fodder species do not dominate in the regional ecosystems listed in table 2 and harvesting in these areas is limited to selective harvesting only.

Table 2: Regional ecosystems in which fodder species are not dominant

5.5.3	6.3.16	6.3.18	6.3.24	6.5.2
6.5.17	6.7.6	6.7.14	6.7.15	6.7.16

3.2 Fodder species

Fodder species are listed in Table 3.

Table 3: Fodder species

Common name	Scientific name
Mulga	<i>Acacia aneura</i>
Ironwood	<i>Acacia excelsa</i>
Myall	<i>Acacia pendula</i>
Red Ash	<i>Alphitonia excelsa</i>
Leopardwood	<i>Flindersia maculosa</i>
Wilga, Tree Wilga	<i>Geijera parviflora</i> or <i>Geijera salicifolia</i>
Umbrella Mulga	<i>Acacia cibaria</i> (<i>Acacia brachystachya</i>)
Bastard (Turpentine) Mulga	<i>Acacia stowardii</i>

3.4 Identifying fodder regional ecosystems

Fodder harvesting regional ecosystems can be identified from a [Regional Ecosystem Map](#).

The regional ecosystem map is a guide and some “fodder” regional ecosystems may be combined with other regional ecosystems.

To check if the regional ecosystem map is correct or to separate fodder regional ecosystems from other regional ecosystems, landholders should consider the full description of the regional ecosystem in the Regional Ecosystems Descriptions Database available on the DNRM website.

A key to fodder regional ecosystems is attached as Appendix 1.

The Regional Ecosystem map is only a guide. If the vegetation on the ground is quite different to that marked on the Regional Ecosystem map, identify the Regional Ecosystem that actually exists on the ground. Keep records such as photographs and GPS points to verify identification and manage accordingly.

4. Harvesting practices

Management outcome

Fodder harvesting is done in a way that will:

- sustainably supply necessary fodder vegetation to stock while either maintaining selectively harvested fodder in a near remnant state or leaving the area strip or block harvested in a state that will regenerate; and
- not cause land degradation; and
- protect wetland and stream banks, the water quality and habitat.

Conditions

4.1 General

Fodder harvesting is an essential part of daily land management in the mulga lands and of special significance during droughts.

Fodder harvesting must be planned on a whole of property basis to best manage the fodder resource by creating a mosaic of fodder density, age and tree/shrub/grass ratios. During droughts the level and location of the fodder harvesting must be related to the availability of useful fodder areas, proximity to water and stock needs.

Effective management involves integration of fodder harvesting, regeneration of harvested areas and stock management to best develop a sustainable fodder resource.

Fodder harvesting can be done in a number of ways including selective, breaking, strip and block harvesting.

4.2 Harvesting limit

Fodder harvesting must be conducted in a sustainable manner to encourage fodder species to develop to maturity and to provide a more palatable fodder resource.

Harvesting is limited to the extent necessary to supply fodder to stock and:

- Harvesting only occurs when stock are in the immediate vicinity and have sufficient water to utilize harvested fodder; and
- The area felled, pushed or pulled is no more than that reasonably necessary to supply the amount of fodder required for the number of stock in the area; and
- Over a 10 year period, the average, annual area actually subject to harvesting will not exceed 10% of the total area of fodder Regional Ecosystems on a lot. The area actually subject to harvesting does not include areas of vegetation that has to be retained when strip or block harvesting.

4.3 Lopping

Lopping for fodder harvesting may be done at any time. The use of lopping is not regulated by this AMP.

Lopping a tree means cutting or pruning its branches but does not include:

- Removing its trunk; and
- Cutting or pruning so severely that it is likely to die.

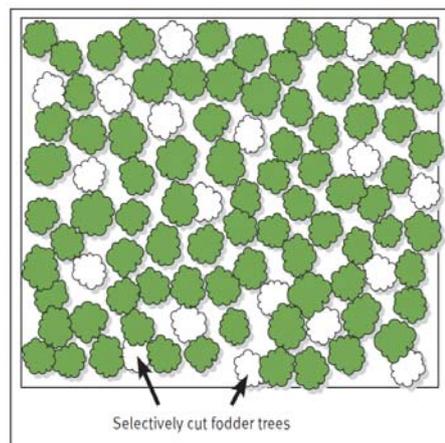
Sufficient lateral branches should be retained to ensure survival and regrowth of the tree.

4.4 Selective harvesting

Selective harvesting involves the harvesting of individual fodder trees in regional ecosystems identified in table 1 or 2 while retaining at least 50% of the fodder trees in the harvesting area. Selective harvesting includes use of:

- Chainsaws to fell individual trees; or
- Selective pushing using a tractor or dozer.

Harvesting is to be done with minimum damage to other vegetation. Typically, the tractor path may be 2-3 metres wide and no other destruction for 5-10 metres on either side of the tractor path.



Selective harvesting will not:

- Harvest more than 5 in 10 of the fodder trees in any area; or
- Remove non-fodder species beyond that needed to provide access for harvesting; or
- Re-harvest a selectively harvested area in less than 10 years from the previous harvest.

Selective harvesting of the fodder vegetation provides some canopy opening and will encourage the regeneration of native shrubs and groundcovers while maintaining connectivity. This allows smaller fodder trees to mature and grow into a more palatable size.

4.5 Breaker harvesting

Single tractors equipped with a breaker bar can be used to push down and break off the top or branches of fodder trees. This brings the living leaf to a height which can be browsed and does not generally kill more than 10% of the broken trees. Typically the breaker would move in a random fashion leaving at least 50% of the area undisturbed.

Breakers can also be used to “hedge” an area to bring the mature leaf to a height that can be browsed. A hedged area may be re-hedged as needed to maintain the leaf within browse height.

4.6 Strip harvesting

Strip harvesting refers to harvesting fodder in a strip aligned across the slope and retaining undisturbed fodder vegetation along both sides of the strip. This may involve using a dozer to push or two tractors with a chain to pull fodder vegetation.

Strip harvesting:

- Is only permitted in the regional ecosystems listed in Table 1; and
- Is limited to areas that have not been harvested in the past 10 years and must retain non-fodder species with height of 4 metres or more; and
- Is not permitted in:
 - An area of less than 10 hectares; and
 - Narrow strips less than 500 metres wide.

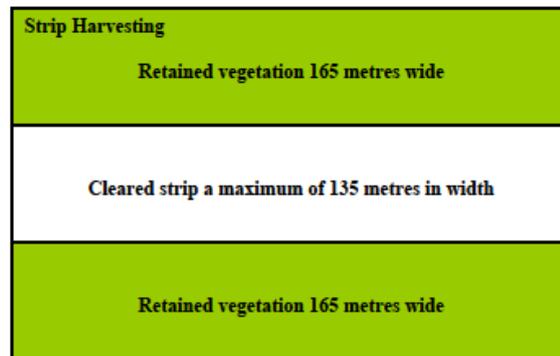
Selective harvesting can be used in areas that do not qualify for strip harvesting.

Harvesting should retain sufficient representatives of all non-fodder species and leave the cleared strip in a condition that will allow the fodder species to regenerate. Strip harvesting tends to break connectivity and additional retention areas may be needed to maintain connection between regional ecosystems.

Fodder harvesting may be done in wide or narrow strips.

Wide strips - Fodder can be harvested in wide strips provided:

- The harvested strip is 70-135 metres in width and retains a minimum of 165 metres wide strip of retained vegetation on either side of the cleared strip; and
- In every kilometre of strip leave a 200 metre wide section of the strip uncleared to provide for connectivity across a number of strips – refer to connectivity section 4.12; and
- Retained vegetation must not be harvested within 10 years of harvesting of the adjacent strip.



Narrow strips - Fodder can be harvested in narrow strips provided the harvested strip is 20 to 50 metres in width and has retained vegetation on either side of the strip with a width at least equal to the width of the harvested strip. Retained vegetation must not be harvested within 10 years of harvesting of the adjacent strip.

4.7 Block harvesting

Fodder can be harvested in blocks by pushing or pulling provided:

- The area is a regional ecosystem listed in Table 1; and
- Is limited to areas that have not been harvested in the past 10 years and will retain non-fodder species with height of 4 metres or more; and
- The maximum size of a block is and the minimum width of retained vegetation around the block is consistent with Table 4; and
- Must not harvest the retained area within 10 years of harvesting the adjacent block; and
- The width of connecting tracks between blocks must not exceed 5 metres (single tractor) or 10 metres (two tractors and chain).

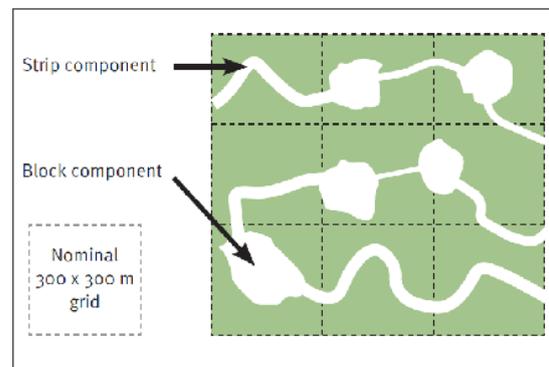


Table 4 – Block harvesting

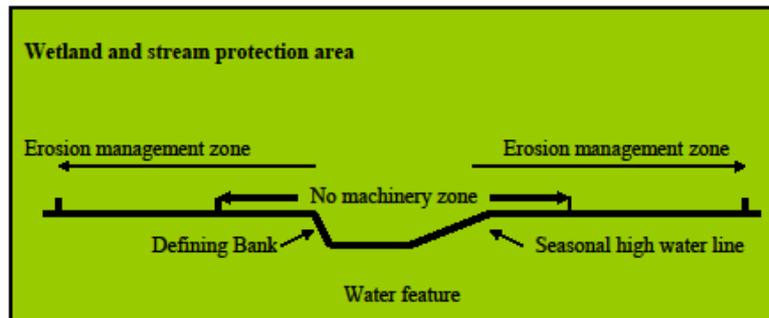
Block area	Minimum width of retained vegetation
1- 4 ha (100x 100 m – 200 x 200m)	100 metres
0.5 ha (75 x75m)	50 metres
0.25 Ha (50x50 m)	25 metres

4.8 Managing fodder harvesting around wetlands and streams

Fodder harvesting must be managed to protect wetland and watercourse environments in terms of bank stability, water quality and habitat.

Wetlands are natural water features that are represented on the Vegetation management wetlands map. A copy of this map can be obtained from a DNRM office.

Streams are natural rivers, creeks or channels represented on the *Vegetation management watercourse map*. In the field, the stream includes multiple channels or anabranches that may occur in that area. This map is available from the DNRM website.



Management of wetlands and streams is based (Table 5) in a:

- No machinery zone to physically protect the bed and banks of the wetland or stream;
- Erosion management zone to manage accelerated erosion and filter overland flow.

Table 5 Protection areas

Feature	No machinery zone	Erosion management zone
Stream of order 1 or 2	10 metres	50 metres
Stream of order 3 or 4	15 metres	100 metres
Stream of order 5 or more	20 metres	200 metres
Wetlands	10 Metres	100 metres

No machinery and Erosion management zone distances are measured from the *defining bank* or where there is no obvious defining bank the *usual seasonal high water line*.

The stream order is shown on the Vegetation Management Watercourse Maps available from the DNRM website

It is best practice to also protect other wetlands, watercourses or gullies that may be discovered during the process of fodder harvesting – particularly unstable gullies.

In a wetland or watercourse protection area

- Mechanical harvesting is not permitted in a no machinery zone and fodder can only be harvested by manual means.
- In the erosion management zone,
 - Strip harvesting must not occur; and
 - Machine clearing must not create a furrow or channel that can result in accelerated erosion; and
 - Harvesting debris must be left where it falls.

4.9 Soil protection

While selective harvesting has limited impact, strip harvesting can pose a risk and should minimise the degree and extent of soil disturbance to that necessary to harvest the fodder and maximise the retention of ground cover, including the clearing debris.

Strip harvesting must:

- not occur on a slope that exceeds 5%; and
- be aligned across the slope; and
- leave harvesting debris where it falls.

With strip harvesting, to provide access for mustering, a track no more than 10 metres in width, may be constructed along the perimeter of the strip. This can also serve as a fire management line.

4.10 Harvesting in endangered or of concern region ecosystems

The conservation status of regional ecosystems is shown on the Regional Ecosystem Map as either Endangered (pink), of concern (orange) or of least concern (green).

Harvesting of fodder in *Endangered* Regional Ecosystems is prohibited.

Harvesting of fodder species within *Of Concern* Regional Ecosystems is limited to:

- Regional ecosystems
 - 6.5.3: *Eucalyptus populnea*, *Acacia aneura* +/- *Eremophila mitchelli* woodland within *Acacia aneura* communities
 - 11.5.13: *Eucalyptus populnea* +/- *Acacia aneura* +/- *E. melanophloia* woodland on Cainozoic sand plains/remnant surfaces
- Selective harvesting that does not remove more than 3 in every 10 fodder trees.

4.11 Harvesting in essential habitat

Fodder harvesting in areas of essential habitat is not permitted.

4.12 Maintaining connectivity

Fodder harvesting should maintain connectivity between remnant vegetation across a lot. The pattern of this connection will vary with the spatial distribution of the remnant vegetation that exists on a particular lot.

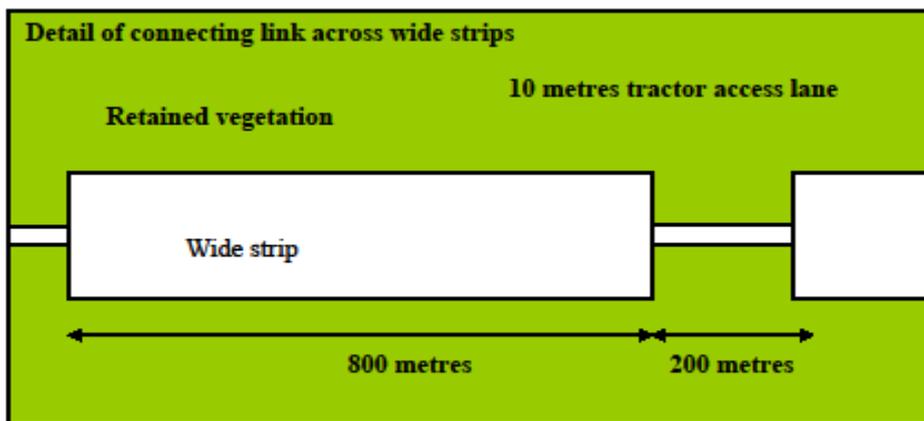
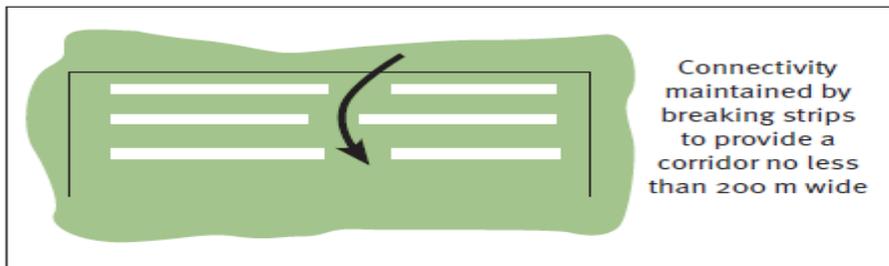
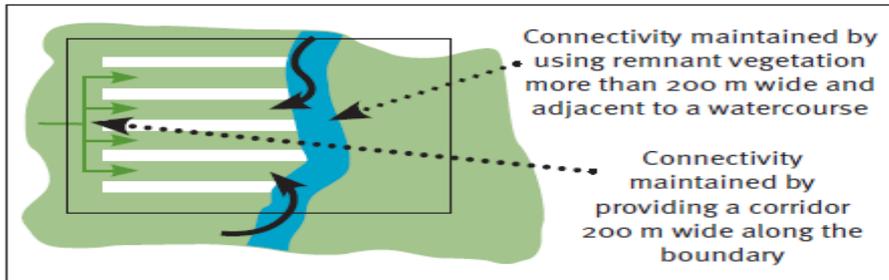
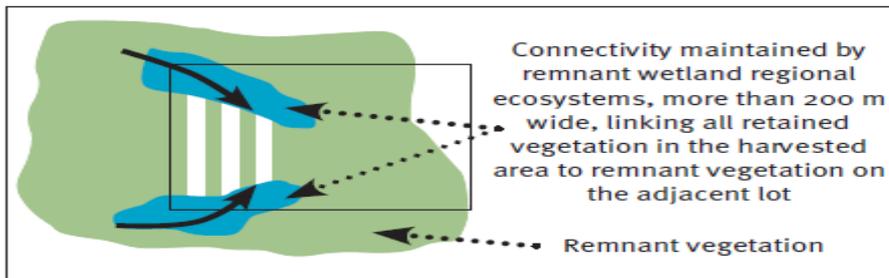
Selective harvesting maintains connectivity between harvested and retained vegetation.

Strip harvesting, and particularly with wide strips, may break connectivity within and between retained vegetation.

Landholders should consider their lot and the likely outcome of strip harvesting.

Where connectivity is likely to be broken, landholders must:

- Retain vegetation in sections where connectivity will be broken; and/or
- Use riparian vegetation retained in no machinery and soil protection zones to provide connectivity; and/or
- Break wide strips at intervals to provide connectivity. In each kilometre of strip provide a 200 metre wide connection by tapering in the strip to a width of 10 metres. The tractors can pass through 10 metre wide strip. These connections should be placed across all strips to allow passage of wildlife.



4.13 Salinity

Salinity is generally not an issue where the annual rainfall is less than 600 mm per year.

Fodder harvesting should not occur:

- Within 200 metres of a discharge area; or
- In a location where there are warning signs of salinity.

Appendix 1: Key to fodder regional ecosystems

Progressively considering the following steps:

Step 1 - What is landform - For example Soft red to sandy loam country

Step 2 - What is the dominant fodder species within that landform – for example mulga

Step 3 – What are the secondary species – for example Bloodwood

Step 4 – What is the landscape – from this you should be able to identify the RE

Step 1	Step 2	Step 3	Answer
Predominant Fodder Species	Secondary Species	Landscape Description	RE
Landform Soft Red to Sandy Loam Country			
Mulga	Western Bloodwood, Western Dead Finish, Beefwood, Whitewood, Leopardwood	Low open woodland on sand plains	5.5.6
Mulga	Poplar Box (Bimble Box) , Silver-leaved Ironbark	woodland on Quaternary sediments	6.5.2
Mulga	Poplar Box (Bimble Box), Beefwood, Ironwood, Needle Wood	low woodland on sand plains	6.5.10
Mulga	Poplar Box (Bimble Box),	low woodland on sand plains	6.5.11
Mulga	Poplar Box (Bimble Box), Turpentine Bush	tall open shrubland on sand plains	6.5.15
Mulga	Poplar Box (Bimble Box), False Sandalwood , Silver- leaved Ironbark	low open woodland on plains	6.5.18
Mulga	Poplar Box (Bimble Box) , Silver-leaved Ironbark, Cypress	woodland on sand plains	6.5.17
Mulga or Wilga	Poplar Box (Bimble Box) , Silver-leaved Ironbark, Cypress, False Sandalwood	Woodland on gently undulating plains formed from unconsolidated Cainozoic deposits	11.5.13
Landform Shallow or Hard Setting Red/Sandy Loam Country			
Mulga	Whitewood, Ironwood, Beefwood, Western Bloodwood and Native Poplar	Low woodland on Quaternary deposits	5.5.1
Mulga or Bastard Mulga	Crimson Turkey Bush	Tall shrubland on Quaternary deposits	5.5.2
Mulga	Wanderrie Wattle, Western Bloodwood and Ghost Gum	tall shrubland on Quaternary sand sheets	5.5.3
Mulga or Bastard Mulga	Western Bloodwood	Open shrubland on Quaternary sediments	5.5.4
Mulga	Poplar Box (Bimble Box), Silver-leaved Ironbark,	Open forest on undulating lowlands	6.5.1
Mulga	Poplar Box (Bimble Box) , Silver-leaved Ironbark and Cypress	woodland to open-woodland on middle to lower slopes of gently undulating lowlands and plains, particularly in the east of the bioregion	6.5.3
Mulga	Poplar Box (Bimble Box),	low woodland on run-on plains	6.5.6
Mulga	Poplar Box (Bimble Box), Gum-barked Coolibah	low woodland on run-on areas	6.5.7

	(Yellow Jacket)		
Mulga	Poplar Box (Bimble Box), Green Turkey Bush	low woodland on flat to gently undulating plains formed from superficial Quaternary deposits over the Tertiary land surface	6.5.8
Mulga	Poplar Box (Bimble Box), Silver-leaved Ironbark,	shrubby low woodland on Quaternary sediments	6.5.9
Mulga	Poplar Box (Bimble Box), Silver-leaved Ironbark, Kurrajong	low woodland on sand plains	6.5.13
Mulga	Western Bloodwood or Ghost Gum	tall open shrubland on Quaternary sediments	6.5.16
Lateritic Jump-Ups and Scarps (Ironstone Gibber, Scalded Runon and Neverfail Grass country)			
Mulga or Bastard Mulga	Straggley Cork Bark , Rock Fuchsia Bush	Open shrubland on Ordovician sandstones	5.7.14
Mulga	Mountain Napunyah	open woodland on scarps and slopes	6.7.6
Mulga or Bastard Mulga	Crimson Turkey Bush	tall open shrubland on residuals	6.7.9
Mulga	Box (Bimble Box), Western Bloodwood	tall shrubland on residuals	6.7.10
Mulga	Dawson Gum, Mountain Napunyah, Crimson Turkey Bush	tall shrubland on residuals	6.7.11
Mulga	Poplar Box (Bimble Box) , Silver-leaved Ironbark, Green Turkey Bush	tall shrubland on residuals	6.7.12
Bastard Mulga	Eucalypts	open shrubland on crests and tops of residuals	6.7.14
Mulga	Umbrella Mulga	open shrubland on lower slopes of residuals	6.7.15
Bastard Mulga	Queensland Peppermint	open shrubland on colluvials associated with residuals	6.7.16
Mulga	Western Bloodwood	open wooded grassland on plains or flat tops of residuals	6.7.17
Landform Sand Dunes, Sand Ridges and Old alluvial levees			
Mulga or Whitewood	Beefwood	Low woodland on sand plains	4.5.1
Mulga	Spinifex	Tall open shrubland on Quaternary sand sheets	4.5.2
Mulga	Spinifex	Tall open shrubland on Tertiary sand	4.5.3
Mulga	Western Bloodwood and Eastern Dead Finish	Low open woodland on old alluvial sand plains	4.5.4
Mulga, Ironwood or Wilga	Cypress	woodland on alluvial dunes	6.3.16
Mulga or Whitewood	Other Wattles, Western Bloodwood	tall open shrubland on low dunes over alluvium	6.6.1
Landform Alluvial Plains			
Mulga	Poplar Box (Bimble Box), False Sandalwood , Silver- leaved Ironbark	woodland on flat alluvial plains	6.3.18
Mulga	Coolabah, Poplar Box (Bimble Box)	woodland on alluvial plains	6.3.24



Glossary

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

- The bank or terrace that confines the water before the point of flooding; or
- Where there is no bank the seasonal high waterline which represents the point of flooding

Lopping a tree means cutting or pruning its branches but does not include:

- Removing its trunk; and
- Cutting or pruning so severely that it is likely to die

Retained vegetation is areas of a fodder regional ecosystem that has an average canopy height of fodder species that is more than 4 metres

Streams are a natural river, creek or channel represented on a regional ecosystem map. In the field the stream includes multiple channels or anabranches that may occur in that area.

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