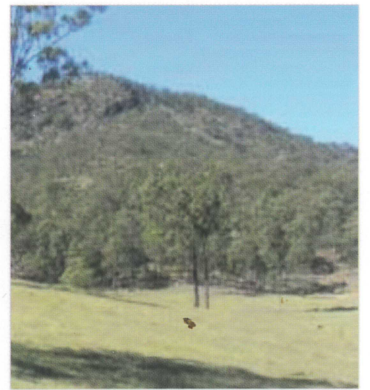
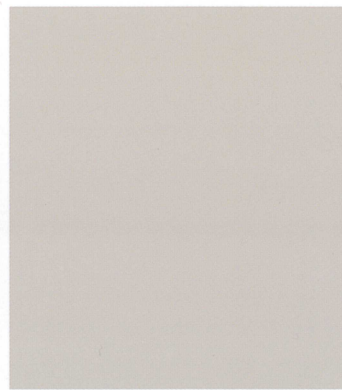


# Grazing land types of the Gympie district

By Graeme Elphinstone, Brad Wedlock & Adam Logan



2020 Edition

## **Grazing land types of the Gympie District**

These grazing land type sheets have been developed by the MRCCC's grazing land management project team in partnership with the Gympie District Beef Liaison Group for the Reef Trust grazing lands project (2008 – 2020). The project objective has been to deliver an extension and implementation program to Beef Industry landholders for implementation of on-ground projects in grazing lands in the Mary River catchment to improve water quality entering the southern Great Barrier Reef.

The area covered by these grazing land type sheets encompasses the Mary River catchment and its sub-catchments including: the Mary Valley tributaries of Amamoor, Kandanga and Yabba creeks; Glastonbury and Widgee creeks to the west; the Noosa hinterland including Skyring, Coles, Blackfellows and Happy Jack creeks; Curra creek in the north; and the upper reaches of the Tinana and Coondoo creeks in the east. It also incorporates several sub-catchments of the Noosa River catchment, including Kin Kin Creek and the Cootharaba Plain.

Each grazing land type represents a combination of vegetation, topography, geology and soils that have distinctive pasture production characteristics. As separate land types may require different management practices, this information can be applied when planning infrastructure, grazing strategies and sown pasture development. The sheets each have a representative land type photograph to aid in landholder recognition.

This publication has been compiled by Graeme Elphinstone, grazing land consultant, Brad Wedlock, MRCCC Operations Manager and Adam Logan, formerly of DEEDI. Multiple sources of information have been accessed including local grazing landholder knowledge plus various land resource references including the *Atlas of Australian Soils*, DNRM *land and soil resource assessments*, and the Noosa and Widgee Shire handbooks. The project team has extensively ground-truthed the land types to ensure the accuracy and usefulness of these sheets to grazing landholders.

A list of references is provided for those wishing to access more in-depth information at the back of this booklet.

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First edition – 2010

Second edition - 2020

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# **Grazing land types of the Gympie district**

by, Graeme Elphinstone, Brad Wedlock and Adam Logan

**Blue gum flats**

**Flooded gum and fringing rainforest  
on creek flats**

**Rainforest on red volcanic soils**

**Blue gum open forest on volcanic hillslopes**

**Gympie messmate and tall open  
forest on phyllitic shales**

**Open forest on shales**

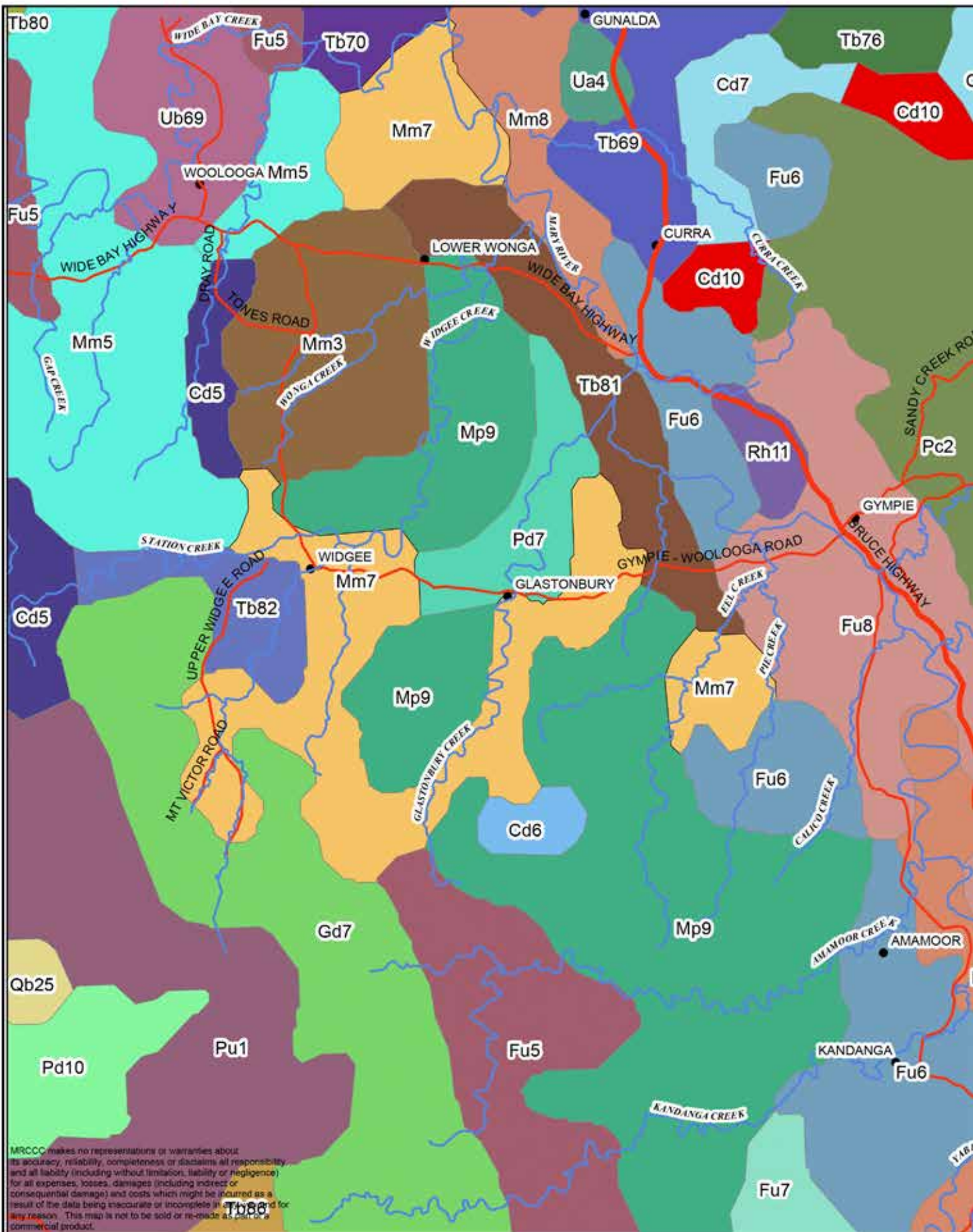
**Open forest on volcanics and  
serpentinites**

**Open forest on coastal sandstones**

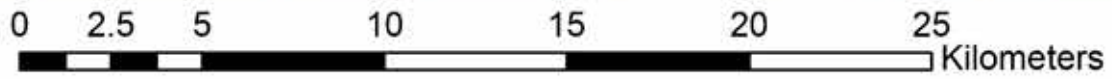
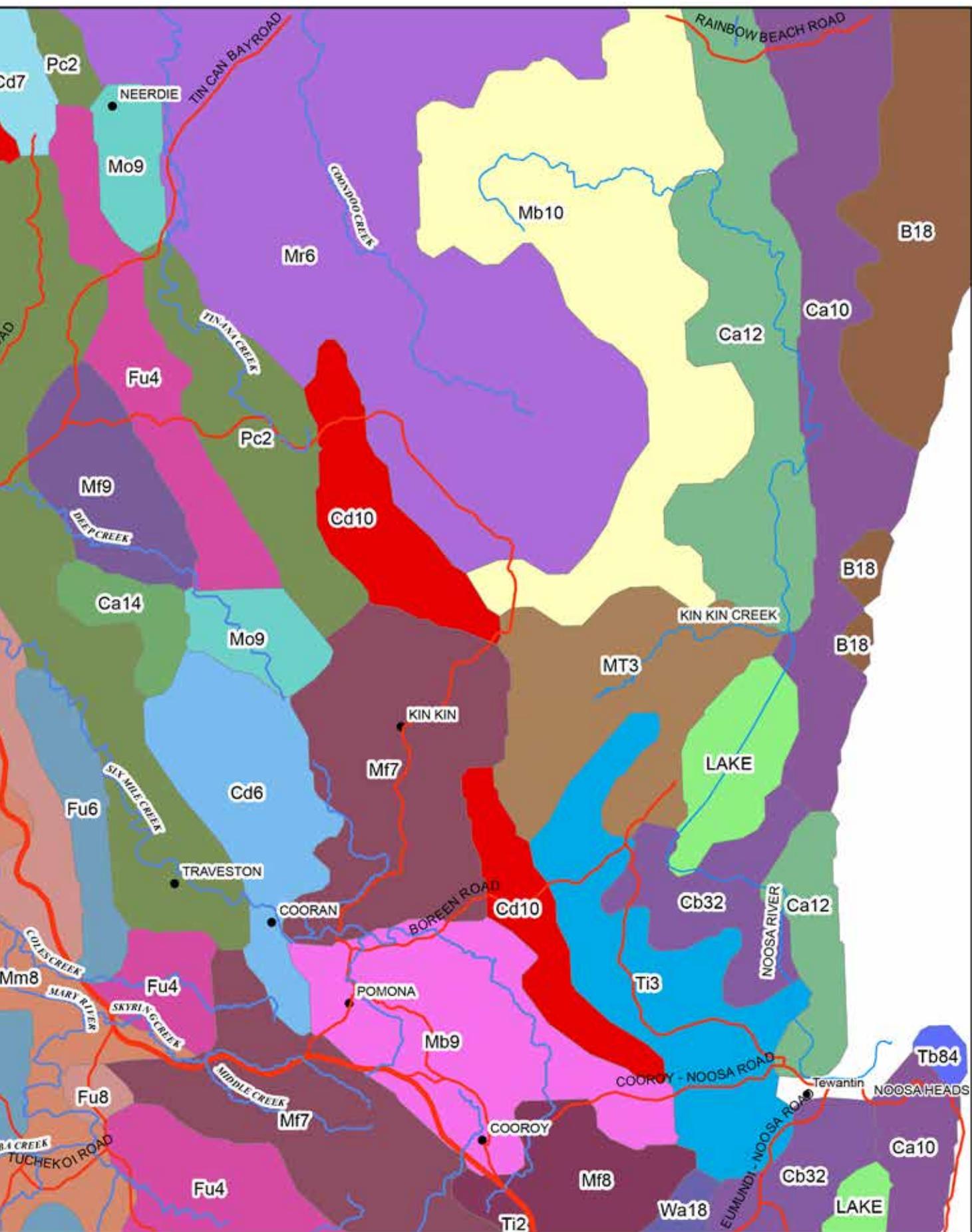
**Sandy coastal plains**

**Gum-topped box and spotted gum  
on duplex soils**

**Spotted gum ridges**



# Atlas of Australian Soils Landscape Units of the Gympie District



Geographic Coordinate System:  
GCS\_GDA\_1994\_Zone 56



# Blue gum flats

## Grazing land types – Gympie district

<b>Vegetation</b>	Blue gum, rough bark apple, river oak, swamp box, tea tree, figs, weeping lilly pilly, bottlebrush and mat rush Includes fringing riparian rainforest species
<b>Land form</b>	Floodplains, relict terraces, creek flats and freshwater wetlands
<b>Soil description</b>	Well structured alluvial soil Light to medium clays Variable depending on parent material  <b>Moisture holding capacity:</b> high  <b>Internal drainage:</b> usually good, waterlogging may be a problem in flood events  <b>Inherent soil fertility:</b> high  <b>pH:</b> slightly acid to neutral
<b>Land use</b>	Extensively cleared for dairying and cropping Predominant grazing enterprises are beef breeding and fattening and dairying
<b>Native/ *naturalised pastures</b>	<b>3P:</b> kangaroo grass, forest bluegrass, *paspalum, *kikuyu, *pioneer Rhodes, *green panic  <b>2P:</b> scented-top, Queensland blue couch  <b>1P:</b> *matgrass, blady grass, *bahia grass, pitted bluegrass, wiregrasses  <b>Legumes:</b> *white clover
<b>Sown grass/ legume pastures</b>	<b>3P:</b> paspalum, kikuyu, pangola, Callide Rhodes  <b>Legumes:</b> white clover, wynn cassia
<b>Current weed problems</b>	Camphor laurel, Chinese elm, castor oil bush, lantana, wild tobacco tree, cats-claw creeper, madeira vine, bracken fern, noogoora burr, annual ragweed, giant rats tail grass, giant Parramatta grass.

<b>Estimated production</b> <i>(based on 'A' land condition and Gympie's 1126 mm average annual rainfall)</i>	<b>Stocking rates</b> <b>Native/naturalised:</b> 1.5–2 ha/AE  <b>Sown grass/legume:</b> 0.8–1.5 ha/AE <i>1 AE = 450 kg live weight animal</i>  <b>Pasture dry matter production:</b> 6000 to 8000 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 40%
<b>Erosion hazard</b>	<b>Pastures:</b> low  <b>Cultivated land:</b> high risk from flooding  <b>Stream banks:</b> susceptible to scouring and slumping during flood events
<b>Inherent salinity/sodicity</b>	Low salinity, non-sodic

### Land resource reference

Atlas of Australian Soils: Landscape unit Mm8

Land Resources Bulletin: Lowlands–Curra to Imbil–Soils on alluvial plains

### Soil classification

Australian Soil Classification: dermosols and brown ferrosols

Great Soil Groups: prairie soils

### Regional ecosystems

12.3.1 – Gallery rainforest (notophyll vine forest) on alluvial plains (endangered)

12.3.2 – Flooded gum tall open forest on alluvial plains (of concern)

12.3.7 – Blue gum, red bottlebrush, river sheoak fringing forest (not of concern)

12.3.11 – Blue gum, grey ironbark, pink bloodwood open forest on alluvial plains (of concern)

### Conservation features

Riparian zone is habitat for several threatened aquatic species including the Mary River cod, Mary River turtle and Queensland lungfish. This grazing land type provides essential habitat for the following threatened species: Coxen's fig parrot, giant-barred frog and cascade tree frog.



*Location—occurs along the Mary River and its tributaries throughout the Gympie district*

# Flooded gum and fringing rainforest on creek flats

Grazing land types – Gympie district

<b>Vegetation</b>	Flooded gum, weeping lillypilly, Francis' water gum, brush box, blue gum, turpentine, figs, grey and white handlewoods, piccabeen and cabbage palms, mat rush and rainforest shrubs
<b>Land form</b>	Narrow creek flats and low terraces; includes freshwater wetlands
<b>Soil description</b>	Alluvial loams, silty loams and silty clay loams  <b>Moisture holding capacity:</b> high  <b>Internal drainage:</b> medium to poor (frequently waterlogged)  <b>Inherent soil fertility:</b> moderate to high  <b>pH:</b> moderately acid
<b>Land use</b>	Extensively cleared for dairying Predominant grazing enterprises are beef breeding and fattening, dairying
<b>Native/ *naturalised pastures</b>	<b>3P:</b> *paspalum, *pioneer Rhodes, kangaroo grass, *kikuyu  <b>2P:</b> scented top, Queensland blue couch, *para grass, *signal grass  <b>1P:</b> blady grass, *matgrass, *sour paspalum, *tall paspalum, *bahia grass, *Russell River paspalum  <b>Legumes</b> – *white clover, *Korean clover
<b>Sown grass/legume pastures</b>	<b>3P:</b> kikuyu, paspalum, setaria (Nandi and Narok), katambora and Callide Rhodes, Bisset bluegrass, pangola  <b>Legumes:</b> Shaw vigna, villo mix, white clover, lotononis, maku lotus
<b>Current weed problems</b>	Camphor laurel, Chinese elm, broad-leafed pepperina, lantana, groundsel bush, wild tobacco tree, cats-claw creeper, madeira vine, bracken fern, Singapore daisy, fireweed, giant rats tail grass, broadleaf paspalum

<b>Estimated production</b> <i>(based on 'A' land condition and Kin Kin's 1498 mm average annual rainfall)</i>	<b>Stocking rates</b> <b>Native/naturalised:</b> 1.5 ha/AE  <b>Sown grass/legume:</b> 0.8 ha/AE <i>1 AE = 450 kg live weight animal</i>  <b>Pasture dry matter production:</b> 8000 to 9000 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 40%
<b>Erosion hazard</b>	<b>Pastures:</b> low  <b>Cultivated land:</b> high risk from flooding  <b>Stream banks:</b> susceptible to scouring and slumping during flood events
<b>Inherent salinity/sodicity</b>	Low salinity, may be sodic

## Land resource reference

Land Resources Bulletin: Lowlands Curra to Imbil – soils on alluvial plains

## Soil classification

Australian Soil Classification: brown, yellow or grey dermosols

Great Soil Groups: alluvial soils

## Regional ecosystems

12.3.1 – Gallery rainforest (notophyll vine forest) on alluvial plains (endangered)

12.3.2 – Flooded gum tall open forest on alluvial plains (of concern)

12.9-10.1 – Shrubby open forest often with red stringybark, flooded gum, swamp mahogany and pink bloodwood on sedimentary rocks (of concern)

## Conservation features

Riparian zone is habitat for the endangered Mary River cod (Mary Catchment only). This grazing land type provides essential habitat for the following threatened species: Coxen's fig parrot, giant-barred frog and cascade tree frog.



## Flooded gum and fringing rainforest on creek flats

Grazing land types – Gympie district



*Location—occurs along creeks in the high rainfall (>1400 mm) zone east of the Mary River e.g. Pomona, Kin Kin, Goomboorian, Cedar Pocket districts*

# Rainforest on red volcanic soils

## Grazing land types – Gympie district

<b>Vegetation</b>	Tall closed forest—brush box, crows and bumpy ash, hoop and bunya pine, white and red cedar, flooded gum, lignum-vitae, figs, tulip oaks, giant stinging tree, macaranga, vines and tree-ferns No grassy understorey
<b>Land form</b>	Mountains, hills and valleys
<b>Soil description</b>	Deep, red, friable clay loam overlying a red clay subsoil Derived from volcanic rocks <b>Moisture holding capacity:</b> low to moderate <b>Internal drainage:</b> well drained permeable soils <b>Inherent soil fertility:</b> high <b>pH:</b> moderately to strongly acid
<b>Land use</b>	Extensively cleared for dairying, horticultural cropping and hoop pine plantation forestry Predominant grazing enterprises are beef breeding and fattening, dairying
<b>Native/ *naturalised pastures</b>	<b>3P:</b> kangaroo grass, *paspalum, *kikuyu, *pioneer Rhodes, *green panic, forest bluegrass <b>2P:</b> *molasses grass, *hamil guinea <b>1P:</b> *matgrass, *sour paspalum, blady grass <b>Legumes:</b> *white clover, *glycine
<b>Sown grass/ legume pastures</b>	<b>3P:</b> paspalum, kikuyu, Callide Rhodes, green and Gatton panic <b>Legumes:</b> white clover, Shaw vigna, glycine

<b>Current weed problems</b>	Camphor laurel, lantana, groundsel bush, wild tobacco tree, bracken fern, blue morning glory, cats-claw creeper, madeira vine, broadleaf paspalum
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<b>Estimated production</b> (based on 'A' land condition and Gympie's 1126 mm average annual rainfall)	<b>Stocking rates</b> <b>Native/naturalised:</b> 1.5–2 ha/AE <b>Sown grass/legume:</b> 0.5–1 ha/AE 1 AE = 450 kg live weight animal <b>Pasture dry matter production:</b> 7000 to 9000 kgDM/ha/year
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	<b>Safe pasture utilisation rate:</b> 35%
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<b>Erosion hazard</b>	<b>Pastures:</b> low
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	<b>Cultivated land:</b> very high
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	<b>Steeper slopes:</b> prone to land slips
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<b>Inherent salinity/ sodicity</b>	Very low salinity, non-sodic
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### Land resource reference

Atlas of Australian Soils: Landscape units Mp9 and Mo9

### Soil classification

Australian Soil Classification: red ferrosols

Great Soil Groups: krasnozems

### Regional ecosystems

12.11.10 — Notophyll vine forest ± hoop pine on metamorphics ± interbedded volcanics (not of concern)

12.8.8 – Flooded gum tall open forest on Cainozoic igneous rocks (of concern)

12.8.13 – Hoop pine complex microphyll vine forest on Cainozoic igneous rocks (of concern)

### Conservation features

This grazing land type is habitat for the following threatened fauna species: Black breasted button quail and Richmond birdwing butterfly; and a number of threatened rainforest species including two species of macadamia.



*Location—Amamoor north to Glastonbury. Pockets east of Gympie occur at Upper Deep Creek, Goomboorian, Wolvi and Mothar Mountains*

# Blue gum open forest on volcanic hillslopes

## Grazing land types – Gympie district

<b>Vegetation</b>	Blue gum, Narrow-leaved Ironbark, Pink bloodwood, Forest Oak, grassy woodland; includes patches of vinescrub.
<b>Land form</b>	Open valleys with undulating to steep hilly terrain with some significant creekflats
<b>Soil description</b>	<p>Prairie soils Gn3 friable earths – dark brown, brown and red brown soils</p> <p><b>Soil Moisture Holding Capacity:</b> moderate to high</p> <p><b>Soil drainage:</b> well drained</p> <p><b>Inherent soil fertility:</b> moderate</p> <p><b>pH:</b> slightly acid to neutral</p>
<b>Land use</b>	Extensively cleared for grazing and horticultural cropping, e.g green beans. # Many hillslope pastures have been degraded to C condition by past intensive cropping practices with the resultant loss of the A topsoil horizon to erosion.
<b>Native/ *naturalised pastures</b>	<p><b>3P:</b> Kangaroo grass, Black speargrass, Forest bluegrass, Tambookie, *Paspalum, *Pioneer rhodes, *Green panic, *common guinea grass, *Siratro, *Glycine and native legumes</p> <p><b>2P:</b> Qld blue couch grass, native panic, scented top, *Angleton grass, *Hamil guinea</p> <p><b>1P:</b> Pitted blue, blady grass, * bahia grass, *mat grass, native rats tail grasses, native love grasses</p>
<b>Sown grass/ legume pastures</b>	<p><b>3P:</b> Katambora rhodes, Bisset creeping bluegrass, Paspalum, Green panic</p> <p><b>Legumes:</b> V8 stylo, Seca stylo, Wynn cassia, Shaw creeping vigna, white clover (on flats)</p>
<b>Current weed problems</b>	Significant weeds include lantana, giant rats tail grass and cats claw vine.

### Predominant Grazing Enterprises

Beef breeding and fattening

### Stocking Rates (ha/ adult equivalent )

(1 AE = 450 kg live weight animal)

	Stocking Rate
Native/naturalised pastures	3 to 4 (ha/ AE)
Sown grass/ legume pastures	2 to 2.5 (ha/ AE)
# Pastures on degraded soils	4 (ha/ AE)

### Potential Sown Pasture Dry Matter Production

5000 to 6000 kg DM /ha/year

(based on 'A' condition sown pastures & Gympie's 1126 mm AAR)

Safe pasture utilisation rate = 30%

### Erosion hazard

**Pastures:** low to moderate

**Cultivated land:** high risk of sheet erosion on hillslopes

**Steeper slopes:** prone to land slips

### Inherent salinity/sodicity

low to moderate salinity, non-sodic

### Land resource reference

Atlas of Australian Soils Landscape Units–Mm7 (includes margin areas of units Fu6, Mp9, Mm8)

### Soil classification

Australian Soil Classification: dermosols & ferrosols

Great Soil Groups: prairie soils

### Regional ecosystems

12.11.9 – Blue gum open forest on small areas of volcanic rocks (of concern)

12.11.14 – Blue gum, ironbark, pink bloodwood woodland on interbedded volcanics (of concern)

### Conservation features

Important food and shelter for the koala and provides key corridors through the landscape for both resident and dispersing fauna. Also habitat for the black breasted button quail. Original Macadamia nut trees can be found in the Amamoor and neighbouring districts.



*Location - Langshaw, Mooloo, Amamoor, Glastonbury, Widgee.*

# Gympie messmate and tall open forest on phyllites

## Grazing land types – Gympie district

<b>Vegetation</b>	Gympie messmate, grey ironbark, grey gum, pink bloodwood, brush box, tallowood, blue gum, flooded gum, scrubby understorey
<b>Land form</b>	Steep hilly to hilly terrain on convex hills and narrow creek flats
<b>Soil description</b>	<p>Yellow and red friable earths on slopes</p> <p>Loamy red friable earths on fans and lower slopes, yellow and red clay subsoils</p> <p>Derived from phyllitic shales</p> <p><b>Moisture holding capacity:</b> moderate–high</p> <p><b>Internal drainage:</b> medium</p> <p><b>Inherent soil fertility:</b> moderate</p> <p><b>pH:</b> moderately acid</p>
<b>Land use</b>	<p>Extensively cleared for grazing, horticultural row and tree crops, and farm forestry</p> <p>Predominant grazing enterprises are beef breeding and fattening, dairying</p>
<b>Native/ *naturalised pastures</b>	<p><b>3P:</b> kangaroo grass, *paspalum, *pioneer Rhodes</p> <p><b>2P:</b> scented top, Queensland blue couch, *hamil guinea, *signal grass, *kazungula setaria, *molasses grass</p> <p><b>1P:</b> blady grass, pitted blue, native rats tail grasses, *matgrass, *sour paspalum, *tall paspalum</p>
<b>Sown grass/ legume pastures</b>	<p><b>3P:</b> setaria (Nandi and Narok), katambora and Callide Rhodes, green and gatton panic, Bisset bluegrass, kikuyu, pangola</p> <p><b>Legumes:</b> Shaw vigna, villo mix, white clover, stylos, lotononis, glycine, siratro</p>
<b>Current weed problems</b>	Camphor laurel, Chinese celtis, <i>Pinus</i> wildings, broad-leafed pepperina, lantana, groundsel bush, wild tobacco tree, cats-claw creeper, bracken fern, giant rats tail grass, broadleaf paspalum

<b>Estimated production</b> <i>(based on 'A' land condition and Kin Kin's 1498mm average annual rainfall)</i>	<p><b>Stocking rates</b></p> <p><b>Native/naturalised:</b> 2 ha/AE</p> <p><b>Sown grass/legume:</b> 0.8–1 ha/AE 1 AE = 450 kg live weight animal</p> <p><b>Pasture dry matter production:</b> 6000 to 8000 kgDM/ha/year</p> <p><b>Safe pasture utilisation rate:</b> 30%</p>
<b>Erosion hazard</b>	<p><b>Pastures:</b> low</p> <p><b>Cultivated land:</b> high risk</p>
<b>Inherent salinity/sodicity</b>	Very low

### Land resource reference

Atlas of Australian Soils: Landscape units Mf 7, Mf9, M09 and Pc2 (deeper versions)

### Soil classification

Australian Soil Classification: dermosols and brown ferrosols

Great Soil Groups: xanthozems, red and yellow podzolics

### Regional ecosystems

12.11.16 – Tall open forest with Gympie messmate on metamorphics ± interbedded volcanics (endangered)

12.11.5 – Open forest complex with spotted gum, grey ironbark, grey gum on metamorphics ± interbedded volcanics (not of concern)

### Conservation features

Gympie messmate is endemic to the Gympie district. A number of threatened rainforest plant species are associated with this grazing land type.



*Location—occurs extensively in the high rainfall (>1400 mm) zone east of the Mary River around Pomona, Kin Kin, Goomborian and Cedar Pocket districts*

# Open forest on shales

## Grazing land types – Gympie district

<b>Vegetation</b>	Brush box, spotted gum, Moreton Bay ash, grey ironbark, smooth-bark apple, rough-bark apple, blue gum, grey gum, gum-topped box. Shrubby understorey of brush box, forest oak, wattle and <i>Acrotriche</i>
<b>Land form</b>	Low hilly, hilly, to steep hilly terrain
<b>Soil description</b>	Leached loams and red podzolics derived from phyllites and shales Leached loams and hard-setting loamy soils overlying red clayey subsoils (texture contrast soils) Weathered rock throughout profile  <b>Moisture holding capacity:</b> low  <b>Internal drainage:</b> moderate  <b>Inherent soil fertility:</b> low  <b>pH:</b> moderately acid
<b>Land use</b>	Selectively cleared for dairying and pineapples Predominant grazing enterprises are beef breeding and growing
<b>Native/ *naturalised pastures</b>	<b>3P:</b> black speargrass, kangaroo grass, *pioneer Rhodes, *setaria  <b>2P:</b> barbwire grass, signal grass, native panic, *hamil guinea  <b>1P:</b> blady grass, *matgrass, pitted bluegrass, wiregrasses, native rats tail grasses
<b>Sown grass/ legume pastures</b>	<b>3P:</b> katambora Rhodes, Bisset bluegrass, paspalum, pangola  <b>Legumes:</b> lotononis, villo mix, temprano and seca stylos, wynn cassia, white clover
<b>Current weed problems</b>	Wattle regrowth, creeping lantana, groundsel, bracken fern, giant rats tail grass

<b>Estimated production</b> (based on 'A' land condition and Gympie's 1126 mm average annual rainfall)	<b>Stocking rates</b> <b>Native/naturalised:</b> 3–6 ha/AE  <b>Sown grass/legume:</b> 1.5–3 ha/AE 1 AE = 450 kg live weight animal  <b>Pasture dry matter production:</b> 3000 to 4500 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 25%
<b>Erosion hazard</b>	<b>Pastures:</b> low  <b>Cultivated land:</b> high risk
<b>Inherent salinity/sodicity</b>	Usually low

### Land resource reference

Atlas of Australian Soils: Landscape units Fu4, Fu5, Fu6, Fu8, Pd7 and Pc2 (shallow versions)

### Soil classification

Australian Soil Classification: chromosols, kurosols, brown ferrosols

Great Soil Groups: leached loams, red podzolics

### Regional ecosystems

12.11.3 – Open forest generally with grey ironbark and grey gum on metamorphics ± interbedded volcanics (not of concern)

12.11.10 – Notophyll vine forest ± hoop pine on metamorphics ± interbedded volcanics (not of concern)





Location—Imbil to Amamoor, McIntosh Creek, North Deep Creek, Hyland Rd–Old Noosa Rd, (Tandur–Woondum district) and Bells Bridge – Curra

# Open forest on volcanics and serpentinites

Grazing land types – Gympie district

<b>Vegetation</b>	Narrow-leaved ironbark, silver-leaved ironbark, blue gum, forest oak, grassy woodland. Includes some vine scrub species Serpentinites are characterised by bloodwood, grasstrees and shrubby understorey
<b>Land form</b>	Undulating to hilly
<b>Soil description</b>	Prairie soils are friable dark brown, red brown and black clay loams to light clays, overlying yellowish brown or grey subsoils Serpentinites are characterised by high magnesium levels Frequent surface rock  <b>Moisture holding capacity:</b> moderate–high  <b>Internal drainage:</b> well drained  <b>Inherent soil fertility:</b> moderate  <b>pH:</b> slightly acid to neutral
<b>Land use</b>	Moderately cleared for grazing and cropping Predominant grazing enterprises are beef breeding and fattening
<b>Native/ *naturalised pastures</b>	<b>3P:</b> kangaroo grass, black speargrass, forest bluegrass, tambookie, *paspalum, *pioneer Rhodes, *green panic. Native legumes include <i>Glycine</i> , <i>Rhynchosia</i> and <i>Zornia spp</i>  <b>2P:</b> native panic, Queensland bluegrass, scented top, *Angleton grass, *hamil guinea  <b>1P:</b> pitted blue, blady grass, *matgrass, native rats tail grasses, native love grasses
<b>Sown grass/ legume pastures</b>	<b>3P:</b> katambora Rhodes, Bisset bluegrass, Floren bluegrass, paspalum, green panic  <b>Legumes:</b> siratro, seca, temprano and fine stem stylos, wynn cassia, white clover, lucerne
<b>Current weed problems</b>	Lantana, creeping lantana, giant rats tail grass

<b>Estimated production</b> (based on 'A' land condition and Gympie's 1126 mm average annual rainfall)	<b>Stocking rates</b> <b>Native/naturalised:</b> 3–4 ha/AE  <b>Sown grass/legume:</b> 1.5–2 ha/AE 1 AE = 450 kg live weight animal  <b>Pasture dry matter production:</b> 4500 to 5500 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 30%
<b>Erosion hazard</b>	<b>Pastures:</b> low  <b>Cultivated land:</b> medium–high risk
<b>Inherent salinity/sodicity</b>	Low–moderate salinity, non-sodic

## Land resource reference

Atlas of Australian Soils: Landscape units Mm3, Mm7, Rh11 and Gd7

## Soil classification

Australian Soil Classification: dermosols

Great Soil Groups: prairie soils

## Regional ecosystems

12.11.3 – Open forest generally with grey ironbark and grey gum on metamorphics ± interbedded volcanics (not of concern)

12.11.15 – Ironbark and blue gum woodland with grasstrees on serpentinite (of concern)

12.11.10 – Notophyll vine forest ± hoop pine on metamorphics ± interbedded volcanics (not of concern)

## Conservation features

Woodland with grasstrees (*Xanthorrhoea johnsonii*) on serpentines



*Location—volcanics are found in the Glastonbury, Langshaw and Chatsworth localities while serpentinites are found in the Upper Amamoor and Kandanga areas*

# Open forest on coastal sandstones (hills)

## Grazing land types – Gympie district

<b>Vegetation</b>	Grey gum, pink bloodwood, brush box, blue gum, forest oak, shrubby understorey
<b>Land form</b>	Rolling terrain, rises and steep hills on sandstones and dissected sandstones
<b>Soil description</b>	Hard setting acid yellow mottled soils on the lower slopes Acid yellow leached earths on hillslopes Shallow leached sands on rocky ridges  <b>Moisture holding capacity:</b> very low <b>Internal drainage:</b> moderate <b>Inherent soil fertility:</b> very low <b>pH:</b> moderately acid to acid
<b>Land use</b>	Moderately cleared for dairying, beef breeding, pasture seed and some horticultural tree crops Predominant grazing enterprise is beef breeding
<b>Native/ *naturalised pastures</b>	<b>3P:</b> kangaroo grass, black speargrass, *pioneer Rhodes, *setaria  <b>2P:</b> barbwire grass, Queensland blue couch, *signal grass, *molasses grass  <b>1P:</b> *matgrass, blady grass, pitted bluegrass
<b>Sown grass/ legume pastures</b>	<b>3P:</b> pangola, katambora Rhodes, Bisset bluegrass, setaria  <b>2P:</b> hamil guinea  <b>Legumes:</b> lotononis, stylos, villo mix, wynn cassia
<b>Current weed problems</b>	Camphor laurel, groundsel bush, bracken fern, African love grass, giant rats tail grass

<b>Estimated production</b> <i>(based on 'A' land condition and Kin Kin's 1498 mm average annual rainfall)</i>	<b>Stocking rates</b> <b>Native/naturalised:</b> 3–6 ha/AE  <b>Sown grass/legume:</b> 1.5–2 ha/AE <i>1 AE = 450 kg live weight animal</i>  <b>Pasture dry matter production:</b> 3500 to 4000 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 20–25%
<b>Erosion hazard</b>	<b>Pastures:</b> low risk  <b>Horticulture tree crops:</b> moderate risk
<b>Inherent salinity/sodicity</b>	Salinity low, may be sodic

### Land resource reference

Atlas of Australian Soils: Landscape units Cd10 and Ti3

### Soil classification

Australian Soil Classification: kurosols, podosols

Great Soil Groups: podzolics, earthy sands

### Regional ecosystems

12.9-10.1 – Shrubby open forest often with red stringybark, flooded gum, swamp mahogany, pink bloodwood ± turpentine on sedimentary rocks. Coastal (of concern)

12.9-10.17 – Open forest complex of white mahogany, grey gum, grey ironbark ± pink bloodwood (not of concern)



*Location—the upper catchment area of the Sandy, Coolloothin, Ringtail, Cooroibah and Wooroi Creeks which are all tributaries of the Noosa River*

# Sandy coastal plains

## Grazing land types – Gympie district

<b>Vegetation</b>	Paper-barked tea tree, blue gum, pink bloodwood, scribbly gum, Moreton Bay ash, rough-bark apple, swamp box, cabbage tree palm and wallum understorey species including sword sedge
<b>Land form</b>	Alluvial plains including sand plains and freshwater wetlands Gently to strongly undulating old coastal plains on sandstones
<b>Soil description</b>	Alluvial plains: acidic grey leached earths, leached sands, and acid humic gley soils (on low lying flats) Old coastal plain: acid yellow earths and hard acid yellow mottled soils  <b>Moisture holding capacity:</b> low  <b>Internal drainage:</b> moderate to poor, flats are prone to waterlogging  <b>Inherent soil fertility:</b> very low  <b>pH:</b> strongly acid
<b>Land use</b>	Extensively cleared for grazing, pasture seed, horticulture, field cropping and slash pine plantation forestry Predominant grazing enterprises are beef breeding and growing
<b>Native/ *naturalised pastures</b>	<b>3P:</b> *paspalum, *pioneer Rhodes, kangaroo grass, *para grass, *pangola  <b>2P:</b> barbwire grass, Queensland blue couch, *signal grass, *kazungula setaria  <b>1P:</b> *matgrass, blady grass, *sour paspalum, *tall paspalum, pitted bluegrass
<b>Sown grass/ legume pastures</b>	<b>3P:</b> pangola, setaria (Nandi and Narok), Callide and katambora Rhodes, Bisset bluegrass  <b>Legumes:</b> lotononis, maku lotus, Shaw verna, villo mix, white clover
<b>Current weed problems</b>	<i>Pinus</i> wildings, groundsel bush, bracken fern, giant rats tail grass, African love grass

<b>Estimated production</b> (based on 'A' land condition and Como's 1687 mm average annual rainfall)	<b>Stocking rates</b> <b>Native/naturalised:</b> 4–5 ha/AE  <b>Sown grass/legume:</b> 1–1.5 ha/AE 1 AE = 450 kg live weight animal  <b>Pasture dry matter production:</b> 5000 to 7000 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 25–30%
<b>Erosion hazard</b>	<b>Pastures:</b> low risk  <b>Horticulture:</b> high risk
<b>Inherent salinity/sodicity</b>	Low salinity, may be sodic

### Land resource reference

Atlas of Australian Soils: Landscape units MT<sub>3</sub>, Cb<sub>32</sub>, Mb<sub>10</sub>, Ti<sub>3</sub> and Mr<sub>6</sub>

### Soil classification

Australian Soil Classification: kurosols, podosols, hydrosols

Great Soil Groups: alluvial soils, podzolics, podzols

### Regional ecosystems

12.3.11 – Blue gum, grey ironbark and pink bloodwood open forest to woodland often containing shrubby understorey (of concern).

12.3.6 – Paperbark, blue gum, swamp box ± pink bloodwood open-forest to woodland with a grassy ground layer (not of concern)

12.9-10.4 – Scribbly gum, pink bloodwood, paperbark open forest-woodland (not of concern)

12.5.12 – Scribbly gum, grey gum, paperbark woodland to open forest with heathy understorey (of concern)

### Conservation features

This grazing land type is habitat for the following threatened fauna species: black breasted button quail, wallum froglet, wallum sedgefrog, wallum rocketfrog and Cooloola sedgefrog; and the threatened plant species *Macrozamia pauli-guilielmi*.



*Location—includes the Toolara pine plantations on the coastal plains east of Tinana Creek and extends to the freshwater alluvial plains west and south of Lake Cootharaba*

# Gum-topped box and spotted gum on duplex soils

Grazing land types – Gympie district

<b>Vegetation</b>	Gum-topped box, spotted gum, blue gum, grey ironbark, Moreton Bay ash, peppermint gum, rough-bark apple, wattle, dogwood and grassy understorey
<b>Land form</b>	Low rounded hilly terrain
<b>Soil description</b>	Hard setting/weakly structured texture contrast loams overlying yellow mottled clay subsoils Ironstone gravel often found in the profile Derived from shales, soft sandstones and andesite  <b>Moisture holding capacity:</b> low  <b>Internal drainage:</b> poor due to slowly permeable subsoil  <b>Inherent soil fertility:</b> very low  <b>pH:</b> slightly acid
<b>Land use</b>	Grazing and native hardwood forestry; unsuitable for cropping Predominant grazing enterprise is growing store cattle
<b>Native/ *naturalised pastures</b>	<b>3P:</b> kangaroo grass, black speargrass, *paspalum, *pioneer Rhodes  <b>2P:</b> barbwire grass, Queensland blue couch  <b>1P:</b> native lovegrasses, *matgrass, blady grass, pitted blue, poverty grass, wiregrasses, native rats tail grasses
<b>Sown grass/ legume pastures</b>	Generally unsuitable for intensive pasture development; low-key pasture establishment only  <b>3P:</b> katambora Rhodes, paspalum, pangola, premier digit, Bisset bluegrass and hatch bluegrasses  <b>Legumes:</b> lotononis, wynn cassia, seca and temprano stylos
<b>Current weed problems</b>	Groundsel bush, lantana, mother of millions, fireweed, giant rats tail grass

<b>Estimated production</b> <i>(based on 'A' land condition and Theebine's 978 mm average annual rainfall)</i>	<b>Stocking rates</b> <b>Native/naturalised:</b> 5–7 ha/AE  <b>Sown grass/legume:</b> 2–3 ha/AE <i>1 AE = 450 kg live weight animal</i>  <b>Pasture dry matter production:</b> 3000 to 4000 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 20%
<b>Erosion hazard</b>	Highly susceptible to gully erosion when the dispersive sub-soil is exposed
<b>Inherent salinity/sodicity</b>	Sodic subsoil. Over-clearing may lead to salinity outbreaks on the flats

## Land resource reference

Atlas of Australian Soils: Landscape units Tb69, Tb70 and Ua4

## Soil classification

Australian Soil Classification: brown sodosol

Great Soil Groups: soloths

## Regional ecosystems

12.11.18 – Gum-topped box open forest on metamorphics ± interbedded volcanics (not of concern)

12.11.3 – Open forest generally with grey ironbark, grey gum on metamorphics ± interbedded volcanics including gum-topped box (not of concern)

12.11.5 – Open forest complex with spotted gum, grey ironbark, grey gum on metamorphics ± interbedded volcanics including gum-topped box (not of concern)

## Conservation features

This grazing land type is an important shelter and food source for koalas. These woodlands provide important corridors through the landscape for both resident and dispersing fauna.





*Location—Sexton, Harvey Siding, north of Bells Bridge to Curra, Gunalda and Theebine*

# Spotted gum ridges

## Grazing land types – Gympie district

<b>Vegetation</b>	Eucalypt open forest—spotted gum, brush box, Moreton Bay ash, grey ironbark, forest oaks, wattles, shrubby understorey including dogwood
<b>Land form</b>	Ridges, hillcrests and steep slopes
<b>Soil description</b>	Shallow gravelly loams overlying shales and phyllites Shallow sandy loams on sandstone Exposed rock is common  <b>Moisture holding capacity:</b> very low; very high runoff potential  <b>Internal drainage:</b> well drained  <b>Inherent soil fertility:</b> low; very low organic matter  <b>pH:</b> moderately acid
<b>Land use</b>	Native hardwood forestry and beef grazing Predominant grazing enterprise is growing store cattle
<b>Native/ *naturalised pastures</b>	<b>3P:</b> kangaroo grass, black spear grass  <b>2P:</b> barbwire grass  <b>1P:</b> pitted bluegrass, wiregrasses, native lovegrasses, blady grass, cockatoo grass, native rats tail grasses
<b>Sown grass/ legume pastures</b>	<b>3P:</b> unsuitable for intensive pasture development; low-key legume establishment only  <b>Legumes:</b> seca and temprano stylos, wynn cassia
<b>Current weed problems</b>	Wattle regrowth, lantana, bracken fern, mother of millions, giant rats tail grass

<b>Estimated production</b> <i>(based on 10 m<sup>2</sup> of tree basal area and Gympie's 1126 mm average annual rainfall)</i>	<b>Stocking rates</b> <b>Native/naturalised:</b> 8–10 ha/AE <i>1 AE = 450 kg live weight animal</i>  <b>Pasture dry matter production:</b> up to 1500 kgDM/ha/year  <b>Safe pasture utilisation rate:</b> 10–20%
<b>Erosion hazard</b>	Very high risk of gully erosion
<b>Inherent salinity/ sodicity</b>	Salinity usually low, subsoil may be sodic

### Land resource reference

Atlas of Australian Soils: Landscape units Tb81 and Cd7

Land Resources Bulletin: Lowlands—Curra to Imbil—Soils developed on sedimentary rocks (Tr)

### Soil classification

Australian Soil Classification: kurosols, sodosols, chromosols

Great Soil Groups: soloths

### Regional ecosystems

12.11.3 – Open forest generally with grey ironbark and grey gum on metamorphics ± interbedded volcanics (not of concern)

12.11.5 – Open forest complex with spotted gum, grey ironbark and grey gum (not of concern)

### Conservation features

This grazing land type is an important shelter and food source for koalas. These woodlands provide important corridors through the landscape for both resident and dispersing fauna.

This grazing land type is habitat for threatened plant species including: *Acomis acoma* (daisy), *Marsdenia coronata* (vine) and *Sophora fraseri* (pea flower shrub).



*Location—widespread on ridges throughout the district, e.g. Sexton, North Deep Creek, and in association with several other grazing landtypes*

The following references provide more detailed information regarding geology, soils, weeds, vegetation, water quality, gully erosion, flora, fauna, local endangered species and pastures associated with these *Grazing land types*.

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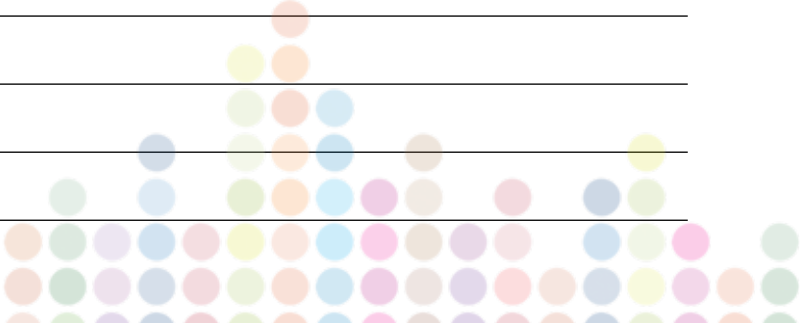
Species profile and threats database, Department of the Environment, Water, Heritage and the Arts.  
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Notes

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