

Regional ecosystem 11.1.1

Description:	Sporobolus virginicus grassland on Quaternary estuarine deposits. Sporobolus spp. usually dominates pure stands although a wide range of other species may be present as scattered individuals including Fimbristylis ferruginea, Cyperus victoriensis, C. scariosus, and sometimes Eleocharis spiralis, Mnesithea rottboellioides, Marsilea mutica, Vincetoxicum carnosum, Ischaemum australe, Cyperus polystachyos, Ceratopteris thalictroides and Diplachne fusca. Occasional emergent stunted mangroves, usually Avicennia marina or Ceriops australis, may occur as isolated individuals or along small channels. There may also be a minor presence of salt-tolerant forbs such as Suaeda australis, S. arbusculoides, Salicornia quinqueflora subsp. Quinqueflora or Tecticornia australasica. Occurs on supratidal flats which are often only inundated by highest spring tides. Often occurs on the landward side of intertidal flats; seaward margins irregularly inundated with tidal waters and dissected by small tidal channels. Formed from Quaternary estuarine sediments with deep grey or black and grey saline cracking clays with occasional mottling, minor gilgai occasionally present. Intertidal. (BVG1M: 35b).
Short description:	Sporobolus virginicus grassland on marine clay plains
Supplementary descriptions:	Christian et al. (1953), Littoral; Forster and Barton (1995), Broadsound; Speck et al. (1968), Carpentaria (1,2); Bruinsma (2000); Gunn and Nix (1977) LU 141
Subregions:	14, 1, (2), (8.5), (8.6)
Protected areas:	Bowling Green Bay NP, Bowling Green Bay CP, Townsville Town Common CP, Wongaloo CP, Causeway Lake CP, Cape Upstart NP, MacKenzie Island CP, Magnetic Island CP 2, Magnetic Island CP 1, Rundle Range NP, Bolger Bay CP, Magnetic Island NP
Extent in reserves:	Medium
Wetland:	Intertidal
Special values:	11.1.1: Provides estuarine wetland habitat.
Comments:	11.1.1: Specifically protected under the Fisheries Act 1994. Widely distributed across saline coastal flats within BBN, but most extensive within the Gulf of St Lawrence and Bowling Green Bay. Less extensive but still common in areas adjacent to Upstart Bay and the Fitzroy River Delta. Extensive areas previously altered by construction of bundwalls and pondage systems (Bruinsma 2000).
Estimated extent:¹	Pre-clearing 38000 ha; Remnant 2021 32000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.1.2

Description: Samphire forbland or bare mud-flats on Quaternary estuarine deposits. Mainly saltpans and mudflats with clumps of saltbush including one or several of the following species; *Tecticornia* spp. (e.g. *Tecticornia indica* subsp. *julacea*, *Tecticornia indica* subsp. *leiostachya*), *Sesuvium portulacastrum*, *Salicornia quinqueflora* subsp. *quinqueflora*, *Suaeda australis*, *S. arbusculoides*, *Tecticornia australasica*, *Salsola australis*, algal crusts and the grass *Sporobolus virginicus*. Sedges are also common. Occurs on supratidal flats with deep saline clay soils and formed from Quaternary estuarine sediments. Occurs along the landward edge of the intertidal zone in a hypersaline environment that is only inundated by the highest spring tides. Soils are grey mottled clays with a crusting surface, and are highly saline. Intertidal. (BVG1M: 35b).

Vegetation communities in this regional ecosystem include:

11.1.2a: Bare mud flats on Quaternary estuarine deposits, with very isolated individual stunted mangroves such as *Avicennia marina* and/or *Ceriops australis*. May have obvious salt crusts on the soil surface. Geologies mapped include Qhcm (Holocene mud and sandy mud), Qm (Quaternary coastal mud, silt and minor evaporites), Qhe/m (Holocene mud, sandy mud, muddy sand and minor gravel), Qhct (Holocene silt, mud and sand and minor salt) and Qpe (Pleistocene estuarine mud, sand). Intertidal. (BVG1M: 35b).

11.1.2b: Samphire forbland on Quaternary estuarine deposits. Mainly saltpans and mudflats with clumps of saltbush including one or several of the following species; *Tecticornia* spp. (e.g. *Tecticornia indica* subsp. *julacea*, *Tecticornia indica* subsp. *leiostachya*), *Sesuvium portulacastrum*, *Salicornia quinqueflora* subsp. *quinqueflora*, *Suaeda australis*, *S. arbusculoides*, *Tecticornia australasica*, *Scleria ciliaris*, *Marsilea mutica*, *Salsola australis*, algal crusts and the grass *Sporobolus virginicus*. Sedges may be common. Geologies mapped include Qhcm (Holocene mud and sandy mud), Qm (Quaternary coastal mud, silt and minor evaporites), Qhe/m (Holocene mud, sandy mud, muddy sand and minor gravel), Qhct (Holocene silt, mud and sand and minor salt) and Qpe (Pleistocene estuarine mud, sand). Intertidal. (BVG1M: 35b).

Short description:	Samphire forbland on marine clay plains
Supplementary descriptions:	Christian et al. (1953), Littoral; Forster and Barton (1995), Carpentaria; Speck et al. (1968), Carpentaria (3,4); Bruinsma (2000); Byron and Hall (1998); Danaher (1995); Gunn and Nix (1977) LU 140
Subregions:	14, 1, (2), (8.3), (8.5), (8.4)
Protected areas:	Bowling Green Bay NP, Bowling Green Bay CP, Townsville Town Common CP, Wongaloo CP, MacKenzie Island CP, Cape Upstart NP, Broad Sound Islands NP, Shoalwater Bay CP, Keppel Sands CP, Newport CP, Rundle Range NP, Magnetic Island CP 1, Causeway Lake CP, Charon Point CP, Abbot Bay CP, Magnetic Island NP
Extent in reserves:	High
Wetland:	Intertidal
Special values:	11.1.2: Provides estuarine wetland habitat. 11.1.2b: Some areas of this ecosystem form habitat for the Capricorn Yellow Chat (<i>Epthianura crocea macgregori</i>).
Comments:	11.1.2a: Subject to modification/conversion to salt evaporation ponds in the Fitzroy River Delta with about 3000 ha in this locality converted to this use (Bruinsma 2000). More extensive in the hypersaline marine plains around Broomsound and the Fitzroy River Delta, in the south of the BBN bioregion.
Estimated extent:¹	Pre-clearing 117000 ha; Remnant 2021 104000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.1.3

Description: Sedgelands to grasslands on Quaternary estuarine deposits. Sedgeland dominated by a range of sedges and grasses which include *Eleocharis philippinensis*, *Cyperus alopecuroides*, *C. scariosus* and *C. iria* and the grasses *Sporobolus virginicus* and *Paspalum vaginatum*. Other typical species in shallower margins include *Fimbristylis ferruginea*, *Phyla nodiflora* and *Cyperus polystachyos* var. *polystachyos*. Occasional twiners such as *Vincetoxicum carnosum* may be present. Occurs in depressions on Quaternary estuarine deposits which are brackish to saline. These are may be seasonally inundated with fresh water, but dry out completely before the next season's rain. Palustrine. (BVG1M: 34c).

Vegetation communities in this regional ecosystem include:

11.1.3a: *Melaleuca* spp. and/or *Eucalyptus tereticornis* open woodland to woodland. Mangrove trees and shrubs are often present, and there are sometimes scattered shrubs of *Myoporum acuminatum*. There is usually a dense ground layer of *Sporobolus virginicus*, with other species including *Vincetoxicum carnosum*, *Fimbristylis ferruginea*, *Cyperus scariosus*, *C. polystachyos*, *Gymnanthera oblonga*, *Acrostichum speciosum* and *Centella asiatica*. Occurs on transition zone between tidally inundated areas and areas under fresh water influence. Palustrine. (BVG1M: 22a).

Short description: Sedgelands on marine clay plains

Supplementary descriptions: Christian et al. (1953), Littoral; Forster and Barton (1995), Waratah; Cumming (2000); Bean (1992)

Subregions: 1, 14

Protected areas: Wongaloo CP, Bowling Green Bay NP, Bowling Green Bay CP, Cape Upstart NP, Magnetic Island CP 1, Bolger Bay CP, Magnetic Island NP

Extent in reserves: High

Wetland: Palustrine

Special values: 11.1.3: Provides wetland habitat for waders and a range of waterfowl.

Comments: 11.1.3: Includes areas that may be subject to freshwater influence. Usually associated with RE 11.1.1 or RE 11.1.2, and always in close proximity to these ecosystems. In some instances, can be difficult to determine the boundary between tidal saltmarshes and freshwater swamps (Bruinsma 2000). Merges into freshwater sedgelands (11.3.27d). Heavily invaded by weeds in some districts with **Stachytarpheta jamaicensis*, **Mesosphaerum suaveolens*, **Sida* spp. and **Cynodon dactylon* var. *dactylon* prominent in some localities e.g. Alma Beach near Ayr. Occurs along coastal parts in the north and south of the bioregion. Threatened by urban development along coastal lowlands.
11.1.3a: Over storey tree species often dead or dying back due to salt water inundation.

Estimated extent:¹ Pre-clearing 3000 ha; Remnant 2021 2000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.1.4

Description: Mangrove low open forest on Quaternary estuarine deposits. Low open shrubland to closed forest of mangrove species forming a variety of associations, depending on position in relation to salt water inundation. *Avicennia marina* is the most common dominant but also other trees such as *Aegiceras corniculatum*, *Rhizophora* spp. and *Ceriops australis* dominate often in pure stands. There is often a shrub layer consisting of juvenile plants of the above species. Other species such as *Excoecaria agallocha*, *Bruguiera* spp., *Lumnitzera racemosa* and *Alchornea ilicifolia* may also occur. Occurs on intertidal flats which are often dissected by tidal streams. Soils are usually deep saline clays. Intertidal. (BVG1M: 35a).

Vegetation communities in this regional ecosystem include:

11.1.4a: *Rhizophora* spp. open forest on Quaternary estuarine deposits. This may include *Rhizophora stylosa* or *R. apiculata* as dominants, with occasional *Avicennia marina* as emergents, and subdominant *Bruguiera gymnorhiza* and/or *Ceriops australis*. In northern areas, occasional *Xylocarpus moluccensis* may also occur. A shrub layer is usually not present. Occurs on fringing waterways low in intertidal zone, with roots submerged during high tides (Danaher 1995). Intertidal. (BVG1M: 35a).

11.1.4b: *Avicennia marina* low open shrubland to closed forest on Quaternary estuarine deposits. There may be occasional *Ceriops australis*, *Rhizophora* spp., *Bruguiera* spp., *Excoecaria agallocha* or *Lumnitzera* spp. An occasional presence of species such as *Aegialitis annulata* and/or *Aegiceras corniculatum* may occur. Open shrublands of *Avicennia marina* may have a sparse presence of samphires such as *Suaeda* spp., *Tecticornia australasica* and *Salicornia* spp. Occurs in all intertidal environments from the seaward edge (as a pioneer) to accreting banks (as a fringe), to the landward edge adjacent to claypans (Bruinsma 2000; Danaher 1995). Intertidal. (BVG1M: 35a).

11.1.4c: *Ceriops australis*, +/- *Avicennia marina* open forest on Quaternary estuarine deposits. Other mangrove species may be present as occasional individuals including *Rhizophora* spp., *Bruguiera* spp., *Lumnitzera* spp., and *Sonneratia* spp. A shrub layer is not usually present. Occurs on upstream creek edges, and toward the landward edge of the upper intertidal limit. Only inundated by spring tides (Bruinsma 2000). Intertidal. (BVG1M: 35a).

11.1.4d: Dominated by a range of species from genera such as from *Avicennia* sp., *Ceriops* sp., *Rhizophora* sp. and *Bruguiera* sp. which form a low closed forest. A low shrub layer composed of species such as *Acanthus ilicifolius*, *Acrostichum speciosum*, *Crinum pedunculatum* or juvenile canopy species is often present. Epiphytes on the canopy are common. Occurs on the landward edge of the tidal flats and in the upper tidal reaches of creeks and rivers where there is a high freshwater influence. Intertidal. (BVG1M: 35a).

Short description:	Mangrove low open forest and/or woodland on marine clay plains
Supplementary descriptions:	Christian et al. (1953), Littoral; Danaher (1995); Bruinsma (2000); Bruinsma (1999); Speck et al. (1968) Carpentaria (5,6); Byron and Hall (1998), Gunn and Nix (1977) LU 142
Subregions:	14, 1, (2), (18), (8.4), (8.3), (12.10), (7.1)
Protected areas:	Bowling Green Bay NP, Bowling Green Bay CP, Townsville Town Common CP, Cape Upstart NP, Wongaloo CP, Shoalwater Bay CP, Charon Point CP, Broad Sound Islands NP, Newport CP, Causeway Lake CP, Magnetic Island CP 1, MacKenzie Island CP, Abbot Bay CP, Magnetic Island NP, Keppel Sands CP, Rundle Range NP, Capricorn Coast NP, Bolger Bay CP
Extent in reserves:	High
Wetland:	Intertidal
Special values:	11.1.4: Provides estuarine wetland habitat.
Comments:	11.1.4: This regional ecosystem often occurs in close proximity to <i>Sporobolus virginicus</i> grasslands (11.1.1) and salt flats (11.1.2) which occur in areas less subject to tidal inundation. Specifically protected under the Fisheries Act 1994. Some areas within the Burdekin Delta have recorded dense infestations of * <i>Cryptostegia grandiflora</i> (rubber vine) in upper areas of the intertidal zone (Danaher 1995). 11.1.4c: Occurs landward of, and in slightly more elevated situations than <i>Rhizophora</i> spp. communities (RE 11.1.4a). May also occur around salt pans (RE 11.1.2).
Estimated extent:¹	Pre-clearing 84000 ha; Remnant 2021 84000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.2.1

Description: *Corymbia tessellaris* woodland, with occasional *C. clarksoniana* and *Melaleuca viridiflora*. Other associated species include *Acacia crassicarpa*, *Pandanus spiralis* and *Acacia* spp. The ground layer is generally grassy and includes species such as *Heteropogon contortus* and various forbs. Occurs on flat Quaternary coastal dunes. Not a Wetland. (BVG1M: 28b).

Short description: *Corymbia tessellaris* woodland on flat coastal dunes

Supplementary descriptions: Christian et al. (1953), Littoral; Cumming (2000), 29

Subregions: 1, 14, (2)

Protected areas: Shoalwater Bay CP, Magnetic Island CP 1, Broad Sound Islands NP, Magnetic Island NP, Bolger Bay CP, Magnetic Island CP 2, Horseshoe Bay Lagoon CP

Extent in reserves: High

Wetland: Not a Wetland

Special values:

Comments: 11.2.1: Prone to weed invasion particularly by **Cryptostegia grandiflora* (rubber vine) and **Lantana camara*.

Estimated extent:¹ Pre-clearing 600 ha; Remnant 2021 400 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.2.2

Description: *Ipomoea pes-caprae* subsp. *brasiliensis* and *Spinifex sericeus* grassland with areas of *Casuarina equisetifolia* low woodland. *Casuarina equisetifolia* varies from clumps of low open forest, to low woodland, to isolated trees. Other scattered trees or shrubs may be present including *Pandanus tectorius*, *Hibiscus tiliaceus*, *Guilandina bonduc* and *Cupaniopsis anacardioides*. The ground layer includes *Cyperus pedunculatus*, *Bulbostylis barbata*, *Aphyllodium biarticulatum*, *Sporobolus virginicus* and *Eragrostis interrupta*. Several species are prostrate, but the only climbing vine is *Cassytha pubescens*. Occurs on Quaternary coastal fore dunes and beaches. Not a Wetland. (BVG1M: 28a).

Vegetation communities in this regional ecosystem include:

11.2.2a: *Heteropogon triticeus* and *H. contortus* tussock grassland, various other grasses and herbaceous spp. Includes narrow prostrate strandline vegetation. Occurs on Quaternary coastal fore dunes and beaches. Not a Wetland. (BVG1M: 28a).

11.2.2b: Complex of vegetation on Quaternary coastal dunes and beaches. Characterised by *Casuarina equisetifolia*, which varies in structure from clumps of open forest, to woodland, to isolated trees. Other scattered trees may be present including *Pandanus tectorius*, *Hibiscus tiliaceus*, *Terminalia muelleri*, *Alphitonia excelsa*, and *Cupaniopsis anacardioides*. There may be a shrub layer of *Clerodendrum* spp., *Guilandina bonduc*, *Vitex trifolia* and/or *Scaevola taccada*. The ground layer usually includes *Eragrostis interrupta*, *Thuarea involuta*, *Eriachne triodioides*, *Spinifex sericeus*, *Ipomoea pes-caprae* subsp. *brasiliensis*, *Canavalia rosea* and *Cyperus pedunculatus*. There is usually a distinct zonation along the strandline. On gentle to moderately sloping foredunes and immediate swales, usually within 200 m of the high tide mark. Occurs in environments subject to salt-laden winds. Associated with exposed and loose aeolian (wind-transported) pale siliceous sands. Not a Wetland. (BVG1M: 28a).

Short description:	Complex of <i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i> and <i>Spinifex sericeus</i> and <i>Casuarina equisetifolia</i> low woodland and herbland on fore dunes
Supplementary descriptions:	Forster and Barton (1995), Joskeleigh; Christian et al. (1953), Littoral
Subregions:	1, 14, (2), (7.1), (8.4)
Protected areas:	Bowling Green Bay NP, Shoalwater Bay CP, Cape Upstart NP, Townsville Town Common CP, Capricorn Coast NP, MacKenzie Island CP, Abbot Bay CP, Magnetic Island NP, Cape Pallarenda CP, Broad Sound Islands NP, Magnetic Island CP 1, Magnetic Island CP 2, Bowling Green Bay CP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.2.2: Important turtle nesting habitat in some localities.
Comments:	11.2.2: Important protective barrier to extensive mangrove-dominated communities in some locations, e.g. west of Cape Bowling Green. Naturalised species associated with this regional ecosystem include * <i>Tridax procumbens</i> and * <i>Stachytarpheta jamaicensis</i> . 11.2.2a: Found on Herald and Rattlesnake islands, also small areas within Bowling Green Bay NP. 11.2.2b: Many areas too narrow to map at 1:100K scale. Some areas between Bowen and Ayr known to be infested with chinese apple * <i>Ziziphus mauritiana</i> and * <i>Cryptostegia grandiflora</i> (rubber vine). Other areas are being invaded by guinea grass * <i>Megathyrsus maximus</i> var. <i>maximum</i> (e.g. Alma Beach area near Ayr). Other common weeds include * <i>Mesosphaerum suaveolens</i> , * <i>Stachytarpheta jamaicensis</i> and <i>Jatropha gossypifolia</i> . Naturalised species associated with this regional ecosystem include * <i>Tridax procumbens</i> .
Estimated extent:¹	Pre-clearing 3000 ha; Remnant 2021 3000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.2.3

Description: Microphyll/notophyll vineforest to semi-deciduous vine thicket on Quaternary coastal dunes. Commonly consists of several of the following trees: *Pleiogynium timorense*, *Mimusops elengi*, *Cupaniopsis anacardioides*, *Exocarpos latifolius*, *Sersalisia sericea* and *Diospyros geminata*. In dry, exposed and windswept locations, this RE may only reach 4-5 m, and include deciduous emergent species such as *Gyrocarpus americanus* and *Brachychiton australis*. At its best development this formation grows to 15 m and includes further species such as *Ficus virens*, *Aglaia brownii*, *Polyalthia nitidissima*, *Canarium australianum*, *Miliusa brahei* and *Ficus* spp. A shrub layer may be present with *Carissa ovata*, *Capparis sepiaria*, *Eugenia reinwardtiana*, *Drypetes deplanchei* and *Aidia racemosa*. Vines are common, including *Cynanchum viminale* subsp. *australe*, *Jasminum didymum*, *J. simplicifolium*, **Abrus precatorius* and *Cissus* spp. A ground layer is sparse or absent. Occurs on Quaternary coastal dunes and adjacent swales. Best developed on secondary dune swales and areas protected from strong winds. Soils are fine to coarse beach sands possibly enriched by calcareous sediments. Not a Wetland. (BVG1M: 3a).

Short description:	Microphyll vine forest ("beach scrub") on sandy beach ridges and dune swales
Supplementary descriptions:	Forster and Barton (1995), Joskeleigh; Christian et al. (1953), Littoral; Pollock (1995); Lavarack (1991); Cumming (2000); McCarthy (2000)
Subregions:	14, 1, 2, (7.1)
Protected areas:	Shoalwater Bay CP, Cape Upstart NP, Capricorn Coast NP, Broad Sound Islands NP, Abbot Bay CP, Magnetic Island NP, MacKenzie Island CP, Charon Point CP, Magnetic Island CP 2, Keppel Bay Islands NP, Bowling Green Bay NP, Magnetic Island CP 1, Horseshoe Bay Lagoon CP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.2.3: Potential habitat for NCA listed species: <i>Xylosma ovata</i> .
Comments:	11.2.3: Occurs usually as a narrow community immediately adjacent to RE 11.2.2 or RE 11.2.5. Widespread between the Fitzroy River and Townsville, but highly localised. Reaches best development between Station Creek and the Elliot River, S. of Cape Upstart. Prone to weed invasion in some areas, particularly by <i>*Cryptostegia grandiflora</i> (rubber vine), <i>*Ziziphus mauritiana</i> (Chinee apple) and <i>*Acacia nilotica</i> (prickly Acacia), and is subject to clearing for coastal development. Areas within the Bowen district are particularly heavily infested with non-native species.
Estimated extent:¹	Pre-clearing 3000 ha; Remnant 2021 2000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.2.4

Description: Lagoons in coastal swales. May contain or be fringed by *Melaleuca* spp., including *Melaleuca leucadendra*, *Melaleuca viridiflora* or *Melaleuca dealbata* with *Nauclea orientalis* in places. Where trees are not prominent, there may be sedges such as *Eleocharis* spp., *Fimbristylis* spp., or *Cyperus* spp., grasses e.g. *Leersia hexandra*, *Pseudoraphis spinescens*, and forbs including *Glinus oppositifolius*, *Dentella repens* and *Dichondra repens*. Occurs in narrow swales associated with Quaternary coastal dunes and beaches. Associated soils are often pale to dark humic sands or grey clay loams underlying dune systems. Palustrine. (BVG1M: 34c).

Short description: Lagoons in coastal dune swales

Supplementary descriptions: Forster and Barton (1995), Joskeleigh; Christian et al. (1953), Littoral; Cumming (2000), 27;

Subregions: 1, 14

Protected areas: Magnetic Island NP, Magnetic Island CP 1, Magnetic Island CP 2, Horseshoe Bay Lagoon CP

Extent in reserves: Medium

Wetland: Palustrine

Special values: 11.2.4: Provides wetland habitat for a flora and fauna.

Comments: 11.2.4: This RE always occurs within a beach dune landscape, either between two or more series of longitudinal dunes, or as a depression within a dune plain. It is always mappable at 1:100 000 scale, unlike the swale section of RE 11.2.5. Of very limited extent, probably less than 1000 ha in pre-clearing. Some areas have been invaded by annual weeds, such as **Solanum americanum* and **Heliotropium indicum*.

Estimated extent:¹ Pre-clearing 30 ha; Remnant 2021 20 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.2.5

Description: Beach ridge woodland with *Melaleuca dealbata* in swales and *Corymbia tessellaris* woodland on Quaternary dune systems. Ridges: Usually a woodland to open forest of *Corymbia tessellaris* with occasional *Acacia crassicaarpa*, *Cupaniopsis anacardioides*, *Pleiogynium timorense* and *Terminalia muelleri*. A sparse to dense shrub layer may include *Acacia oraria*, *A. crassicaarpa*, *Planchonia careya*, *Alphitonia excelsa*, *Exocarpos latifolius*, *Senna surattensis* and *Dodonaea viscosa*. Ground layer includes *Aphyllodium biarticulatum*, *Themeda triandra*, *Heteropogon contortus*, *Elionurus citreus*, *Aristida holathera* var. *holathera*, *Cymbopogon refractus* and *Perotis rara*. Swales: Open forest of *Melaleuca dealbata*, (sometimes *M. leucadendra* or *M. viridiflora*), *Livistona decora*, with shrubs of *Pandanus spiralis*. Ground layer of *Chrysopogon filipes*, *Imperata cylindrica*, *Sporobolus virginicus* and *Lepturus repens*. In some areas sedges are common, including *Cyperus javanicus*, *Fimbristylis dichotoma*, *F. polytrichoides*. Small vines are commonly present including *Vincetoxicum carnosum*, *Abrus precatorius*, and *Jasminum didymum*. Occurs on Quaternary undulating stabilised dunes with narrow linear depressions. Associated soils are generally well drained siliceous sands, swales with humic hydrosols. Contains Palustrine. (BVG1M: 28b).

Vegetation communities in this regional ecosystem include:

11.2.5a: Woodland to open forest of *Eucalyptus tereticornis* x *platyphylla* with *Corymbia tessellaris* and occasional *Melaleuca viridiflora*. Beach sands of Quaternary Holocene age. Often siliceous or calcareous. Not a Wetland. (BVG1M: 28b).

11.2.5b: Swales: Open forest of *Melaleuca dealbata*, (sometimes *M. leucadendra* or *M. viridiflora*), *Livistona drudei* or *L. decora*, with shrubs of *Pandanus spiralis*. Ground layer of *Chrysopogon filipes*, *Imperata cylindrica*, *Sporobolus virginicus* and *Lepturus repens*. In some areas sedges are common, including *Cyperus javanicus*, *Fimbristylis dichotoma*, *F. polytrichoides*. Small vines are commonly present including *Vincetoxicum carnosum*, *Abrus precatorius* and *Jasminum didymum*. Seasonally inundated humic sands of Quaternary Holocene origin. Palustrine. (BVG1M: 22b).

Short description: *Corymbia*-*Melaleuca* woodland complex of beach ridges and swales

Supplementary descriptions: Christian et al. 1953, Bowling Green, Littoral; Cumming (2000), 28; Pollock (1995); Bean (1992)

Subregions: 1, 14, (2)

Protected areas: Bowling Green Bay NP, Townsville Town Common CP, Bowling Green Bay CP, Cape Upstart NP, Abbot Bay CP, Keppel Sands CP, Broad Sound Islands NP, Causeway Lake CP, Capricorn Coast NP, Cape Pallarenda CP

Extent in reserves: High

Wetland: Contains Palustrine

Special values:

Comments: 11.2.5: The swale portion of this RE is generally not mappable at 1:100 000 scale, and usually occurs as a narrow linear strip between the dune and a saltmarsh/saltpan. RE 11.2.4 always occurs between two or more dune swales, and does not usually abut saline vegetation. Swales have been heavily invaded by **Cryptostegia grandiflora* (rubber vine) in some localities. Mechanical disturbance has facilitated an increase in weeds such as buffel grass **Cenchrus ciliaris* and **Tridax procumbens*. Other common weeds include *Mesosphaerum suaveolens*, *Stachytarpheta jamaicensis* and *Jatropha gossypifolia*, which are associated with high total grazing pressure. Other areas have infestations of giant rats tail *Sporobolus pyramidalis*. The invasive red Natal grass *Melinis repens* has been present in this community since the early 1950's (Christian et al. 1953). Extensively cleared for coastal development. Naturalised species associated with this regional ecosystem include **Passiflora foetida*.
11.2.5b: Naturalised species associated with this regional ecosystem include **Passiflora foetida*.

Estimated extent:¹ Pre-clearing 21000 ha; Remnant 2021 13000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.1

Description: *Acacia harpophylla* and/or *Casuarina cristata* open forest (particularly in southern parts), with or without scattered emergent *Eucalyptus* spp. such as *E. coolabah*, *E. largiflorens*, *E. populnea*, *E. orgadophila*, and *E. woollsiana*. A low tree layer dominated by *Geijera parviflora* and *Eremophila mitchellii* is usually present. The vegetation sometimes occurs as low open forest or woodland. The ground stratum is usually sparse. Associated with Cainozoic alluvial plains which may be occasionally flooded. Landforms range from level to very gently sloping plains, alluvial flats, drainage floors, back-swamps and abandoned channels. Associated soils are predominantly deep to very deep cracking clays, sometimes with gilgai or texture contrast soils with sandy surface (particularly where *Eucalyptus populnea* is present). Not a Wetland. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.3.1a: [RE not in use]²: This vegetation community is now mapped as 11.3.1. *Eucalyptus orgadophila* woodland on alluvium with basaltic influence. Occurs on alluvium with basaltic influence. Not a Wetland. (BVG1M: 25a).

11.3.1b: *Acacia harpophylla* and/or *Casuarina cristata* open forest (particularly in southern parts), generally with scattered emergent *Eucalyptus* spp. such as *E. coolabah*, *E. largiflorens*, *E. populnea*, *E. orgadophila*, and *E. woollsiana*. A low tree layer may be present with species such as *Terminalia* spp., *Eremophila* spp. and *Lysiphyllum* spp. common. The ground layer may be sparse with *Duma florulenta* and a range of sedges prominent in depressions. Associated with closed and drainage depressions on Cainozoic alluvial plains. Characteristic landforms include drainage floors, back-swamps and abandoned channels. Associated soils are predominantly deep to very deep cracking clays, sometimes with gilgai or texture contrast soils with sandy surface (particularly where *Eucalyptus populnea* is present). Palustrine. (BVG1M: 25a).

11.3.1d: *Acacia omalophylla* low open forest +/- *A. harpophylla* fringing or mixed with open areas. Occurs on old lake bed. Palustrine. (BVG1M: 25a).

Short description:	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest on alluvial plains
Supplementary descriptions:	Gunn et al. (1967), Alpha (3), Blackwater (5), Borilla (5), Comet (6, 7), Craven (6), Cungelella (4), Borilla (5), Disney (4), Durrandella (5), Hillalong (4), Hope (4), Islay (5), Lennox (5), Loudon (6), Monteagle (6), Pinehill (4), Portwine (4), Rutland (6), Skye (5), Somerby (6), Tichbourne (5), Ulcanbah (4), Wharton (6), Willows (5); Story et al. (1967), Barwon (4), Comet (3, 5), Connors (6), Funnel (3), Monteagle (6), Somerby (6); Speck et al. (1968), Barwon (4), Coreen (3-6), Dakenba (5-8), Eurombah (10, 11), Ramsay (8); Galloway et al. (1974), LU 50, 70; Gunn and Nix (1977), LU 127, 132; Vandersee (1975), Dalby (4); Neldner (1984), 6 (124); Forster and Barton (1995), Coreen; Burgess (2003) Honeycomb, Tralee, Langley
Subregions:	11, 37, 7, 3, 6, 5, (31), (8), (15), (10), (13), (18), (21), (2), (4), (14), (20), (9), (19), (33), (24), (17), (16), (12), (6.2), (35), (27), (29), (36), (32), (23), (26), (34), (1), (4.4), (9.4), (10.2), (22), (6.1), (10.4), (6.3), (10.3)
Protected areas:	Culgoa Floodplain NP, Dipperu NP (S), Carnarvon NP, Nairana NP, Belmah CP, Taunton NP (S), Epping Forest NP (S), Albinia NP, Narrien Range NP, Junee NP, Mazeppa NP, Mount O'Connell NP, Rundle Range RR, Rundle Range NP, Mount Etna Caves NP, Blackwood NP, Lake Broadwater CP, Nuga Nuga NP, Expedition NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.3.1: Habitat for threatened fauna species including painted honeyeater, <i>Grantiella picta</i> particularly in subregion 35 (Oliver et al. 2003).
Comments:	11.3.1: Regional Ecosystem 11.3.1a has been amalgamated into this RE. Extensively cleared for cropping and pasture. 11.3.1b: Occurs in depressions and abandoned channels on Cainozoic alluvial plains of Brigalow. May grade into <i>Eucalyptus coolabah</i> dominated associations with variation in seasonal flooding regimes. Extensively cleared for cropping and pasture.
Estimated extent:¹	Pre-clearing 785000 ha; Remnant 2021 80000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.3.2

Description: Eucalyptus populnea woodland to open woodland. Occasionally, *E. melanophloia* or *E. crebra* may be present. A secondary tree layer may occur and include species such as *Geijera parviflora*, *Eremophila mitchellii*, *Acacia salicina*, *Cassia brewsteri*, and *Acacia excelsa*. The ground layer is dominated by a range of tussock grasses, including *Chloris* spp., *Enteropogon* spp., and *Aristida* spp. Occurs on Cainozoic alluvial plains with variable soil types including texture contrast, deep uniform clays, massive earths and sometimes cracking clays. Contains Palustrine. (BVG1M: 17a).

Vegetation communities in this regional ecosystem include:

11.3.2a: *Eucalyptus conica* woodland. Occurs on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 17a).

11.3.2b: *Eucalyptus camaldulensis* (sometimes *E. populnea* and/or *E. tereticornis*) woodland in drainage depressions. Ground layer of grasses or sedges. Occurs on seasonally inundated drainage depressions. Palustrine. (BVG1M: 17a).

11.3.2c: [RE not in use]²: This vegetation association is now mapped as RE 11.3.2. *Eucalyptus populnea* woodlands on floodplains. RE is defunct. Not a Wetland. (BVG1M: 17a).

Short description:	Eucalyptus populnea woodland on alluvial plains
Supplementary descriptions:	Dawson (1972), 1, 3, 4, 5; Fensham (1998a); Fensham and Fairfax (1997); Galloway et al. (1974), LU62, LU64, LU68; Gunn et al. (1967), Alpha; Mullins (1980); Tavoy; Neldner (1984), 23b (48), 24 (41); Speck et al. (1968), Wooreoonah; Story et al. (1967); Connors, Funnel; Vandersee (1975); Oakey, Brookstead; Burgess (2003), Parrot, Roper, Stephens
Subregions:	26, 24, 11, 6, 13, 15, (7), (8), (16), (9), (20), (21), (32), (27), (31), (5), (10), (35), (29), (30), (25), (2), (36), (22), (33), (34), (37), (6.4), (18), (14), (12), (23), (4), (17), (4.4), (38), (28), (19), (3), (6.1), (9.4), (10.4), (6.2), (6.3), (13.3), (8.3)
Protected areas:	Carnarvon NP, Homevale NP, Expedition (Limited Depth) NP, Taunton NP (S), Dipperu NP (S), Chesterton Range NP, Expedition NP, Homevale RR, Expedition RR, Tregole NP, Nuga Nuga NP, Wondul Range NP, Blackdown Tableland NP, Isla Gorge NP, Belmah CP, Alton NP, Dawson River CP, Narrien Range NP, Bouldercombe Gorge RR, Lake Murphy CP, Carraba CP, Homevale CP, Epping Forest NP (S), Highworth Bend CP, Lake Broadwater CP, Lake Broadwater RR
Extent in reserves:	Low
Wetland:	Contains Palustrine
Special values:	11.3.2: Habitat for threatened flora species <i>Homopholis belsonii</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
Comments:	11.3.2: There are unmapped patches of low <i>Acacia harpophylla</i> (11.3.1) or grassland (11.3.21) associated with this regional ecosystem in some areas. This regional ecosystems may include small areas dominated by <i>Acacia pendula</i> (Neldner 1984, Association 41). Regional Ecosystem RE 11.3.2c has been amalgamated into this RE. Extensively cleared or modified by grazing.
Estimated extent: ¹	Pre-clearing 1905000 ha; Remnant 2021 499000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.3.3

Description: Eucalyptus coolabah woodland to open woodland. A secondary tree or shrub layer may occur, including *E. populnea*, *Melaleuca bracteata*, *Acacia stenophylla*, *Alectryon oleifolius*, *Terminalia oblongata* (in the north), *Acacia pendula*, *A. cambagei* and *Duma florulenta*. The ground layer is dominated by a range of grass and forb species depending on season. Occurs on Cainozoic alluvial plains or levees with clay or sometimes texture contrast soils. Not a Wetland. (BVG1M: 16c).

Vegetation communities in this regional ecosystem include:

11.3.3a: *Melaleuca bracteata* woodland. On alluvial plains. Riverine. (BVG1M: 21b).

11.3.3b: [RE not in use]²: This vegetation community is now mapped as 11.3.3. Low open shrubland of *Sclerolaena* spp. with scalding and sometimes emergent trees or shrubs including *Eucalyptus coolabah*, *Acacia harpophylla*, *Lysiphyllum hookeri* and *Alectryon oleifolius* and *Eremophila mitchellii*, which are often associated with *Eucalyptus coolabah* woodlands. RE is defunct. Not a Wetland. (BVG1M: 31a).

11.3.3c: *Eucalyptus coolabah* woodland to open woodland (to scattered trees) with a sedge or grass understorey in back swamps and old channels. The ground layer is dominated by a range of sedge or grass species depending on hydrological regime, soil and management conditions. Characteristic ground layer species include *Eleocharis* spp. or *Marsilea* spp. in more frequently inundated sites tending toward a grassy ground layer in less frequently flooded sites. Occurs in flooded back swamps and old channels on Cainozoic alluvial plains or levees. Generally clay or sometimes texture contrast soils. Palustrine. (BVG1M: 16c).

11.3.3x1: *Atriplex* spp. *Sclerolaena* spp. +/- *Astrelba* spp. +/- short grasses. Occurs on scalded Cainozoic alluvial plains. Not a Wetland. (BVG1M: 31a).

Short description:	<i>Eucalyptus coolabah</i> woodland on alluvial plains
Supplementary descriptions:	Forster and Barton (1995), Coolabah; Galloway et al. (1974), LU71 (in part); Gunn et al. (1967), Funnel, Comet; Neldner (1984), 32a, 32b (32); Story et al. (1967), Comet; Speck et al. (1968) Coolibah (6); Burgess (2003), Lindsay, Bluchers; Shields and Williams (1991) Moramana, Jeffray
Subregions:	7, 11, 10, 37, 8, 13, (3), (26), (14), (15), (21), (35), (20), (4), (25), (36), (9), (18), (27), (6), (31), (34), (24), (29), (22), (30), (17), (33), (12), (4.4), (19), (16), (32), (10.2), (6.1), (10.4), (6.4), (38), (23)
Protected areas:	Culgoa Floodplain NP, Nairana NP, Dipperu NP (S), Albinia NP, Epping Forest NP (S), Vandyke Creek CP, Mazeppa NP, Belmah CP, Mount Archer NP, Precipice NP, Palmgrove NP (S), Wilandspey CP, Peak Range NP, Blackwater CP, Minerva Hills NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.3.3: Mature trees provide hollows for fauna especially nesting birds. Associated with a high number fauna species (Dick 1992, Venz et al. 2002). 11.3.3c: Mature trees provide hollows for fauna especially nesting birds. Associated with a high number of fauna species (Dick 1992, Venz et al. 2002).
Comments:	11.3.3: Areas of grassland > 5ha are defined as regional ecosystem 11.3.21, while less extensive areas are treated as a component of 11.3.3. Regional Ecosystem 11.3.3b has been amalgamated into this RE. The ground layer of remnants of this regional ecosystem is often extensively modified by grazing. The structure of the tree canopy has often been modified by past disturbance which has included the removal of many of the larger hollow bearing trees. Naturalised species associated with this regional ecosystem include <i>*Parkinsonia aculeata</i> , <i>*Malvastrum americanum</i> and <i>*Vachellia farnesiana</i> . <i>*Parkinsonia aculeata</i> has invaded some areas. 11.3.3c: Generally shallow drainage features grading into Billabongs (11.3.27b) where deeper definable cut-off channels are evident with a developed 'wetland' understorey. Larger areas (>5ha) of grassland are mapped as regional ecosystem 11.3.21. The ground layer of remnants of this regional ecosystem is often extensively modified by grazing. The structure of the tree canopy has often been modified by past disturbance which has included the removal of many of the larger hollow bearing trees. <i>Parkinsonia</i> (<i>Parkinsonia aculeata</i>) has invaded some areas.
Estimated extent:¹	Pre-clearing 933000 ha; Remnant 2021 271000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.3.4

Description: *Eucalyptus tereticornis* woodland to open forest. Other tree species that may be present include *E. camaldulensis*, *Corymbia tessellaris*, *C. clarksoniana*, *E. melanophloia*, *E. platyphylla* or *Angophora floribunda*. *E. crebra* and *Lophostemon suaveolens* may be locally common. A shrub layer is usually absent, and a grassy ground layer is prominent, and may include any of *Bothriochloa bladhii* subsp. *bladhii*, *Aristida* spp., *Heteropogon contortus*, *Dichanthium* spp. and *Themeda triandra*. Occurs on Cainozoic alluvial plains and terraces. Occurs on variety of soils, including deep cracking clays, medium to fine textured soils, and deep texture-contrast soils. Not a Wetland. (BVG1M: 16c).

Vegetation communities in this regional ecosystem include:

11.3.4a: *Corymbia tessellaris* woodland. On alluvial sandridges to elevated levees and level terraces adjacent to larger stream channels which are irregularly flooded or possibly relict. Occurs on deep, loose neutral to alkaline red or pale uniform sand or non-sodic texture contrast soil. This unit has very low subsoil salinity in all profiles (Burgess 2003). Not a Wetland. (BVG1M: 9e).

Short description:	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. woodland on alluvial plains
Supplementary descriptions:	Dawson (1972), 2; Fensham (1998a); Fensham and Fairfax (1997); Forster and Barton (1995), Alligator, Styx, Calliope, Hedlow; Galloway et al. (1974), LU75; Mullins (1980), Tavoy, Lynwood; Neldner (1984), 12a; Speck et al. (1968), Narowie, Mimosa, Kroombit; Vandersee (1975), Allora, Tipton; Burgess (2003) Booroondarra, German; Gunn and Nix (1977) LU 129, LU 126, LU 133
Subregions:	14, 12, 6, 18, 16, 11, 2, (10), (27), (22), (15), (31), (20), (7), (1), (32), (5), (21), (19), (24), (13), (17), (9), (36), (25), (26), (3), (4), (33), (9.4), (28), (13.3), (12.10), (12.6), (8.4), (8.3), (23)
Protected areas:	Homevale NP, Blackdown Tableland NP, Precipice NP, Kroombit Tops NP, Taunton NP (S), Mount Archer NP, Cania Gorge NP, Carnarvon NP, Wondul Range NP, Flat Top Range RR, Minerva Hills NP, Dipperu NP (S), Bowling Green Bay NP, Wongaloo CP, Lake Murphy CP, Bouldercombe Gorge RR, Bell Creek CP, Albinia NP, Rundle Range RR, Mount O'Connell NP, Baga NP, Rundle Range NP, Mount Aberdeen NP, Mount Hopeful CP, Goodedulla NP, Calliope CP, Tolderodden CP, Magnetic Island NP, Bolger Bay CP, Magnetic Island CP 1
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.3.4: Potential habitat for NCA listed species: <i>Acacia pedleyi</i> , <i>Callicarpa thozetii</i> , <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> , <i>Digitaria porrecta</i> , <i>Eriocaulon carsonii</i> subsp. <i>orientale</i> , <i>Livistona nitida</i> , <i>Rhaponticum australe</i> , <i>Samadera bidwillii</i> , <i>Sannantha brachypoda</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
Comments:	11.3.4: This regional ecosystem occurs on alluvial plains compared to 11.3.25 which is restricted to stream banks and channels. Widespread across the bioregion. There are still substantial areas of this ecosystem remaining, although remnants are often degraded by grazing, dieback and associated lack of natural regeneration and weed invasion. While this regional ecosystem is contained within a number of protected areas, the total area reserved is small. There are heavy infestations of <i>Parthenium</i> * <i>Parthenium hysterophorus</i> in some regions on heavy clay soils with this RE. Naturalised species include * <i>Cynodon dactylon</i> var. <i>dactylon</i> . Heavily grazed areas tend to have shorter or annual grasses such as <i>Dactyloctenium radulans</i> or <i>Bothriochloa</i> spp. 11.3.4a: <i>Corymbia tessellaris</i> woodland.
Estimated extent: ¹	Pre-clearing 684000 ha; Remnant 2021 178000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.3.5

Description: *Acacia cambagei* +/- *A. harpophylla* low woodland to open forest (sometimes clumped). *Eucalyptus coolabah*, *E. largiflorens* or *Acacia harpophylla* may occur. A secondary tree or shrub layer, dominated by *Eremophila mitchellii*, commonly occurs. A lower shrub layer may occur, dominated by *Senna artemisioides* or *Acacia cambagei*. The ground layer is often poorly formed except under the canopy where there is usually a very sparse cover of dominants which include *Paspalidium caespitosum*, *Sporobolus actinocladus* and *Brachyachne convergens*. Other graminoids frequently present are *Bothriochloa ewartiana*, *Iseilema vaginiflorum*, *Eragrostis microcarpa* and *Aristida latifolia*. Occurs on levees on alluvial plains which are rarely flooded. Associated soils are often texture contrast with sandy surfaces. Not a Wetland. (BVG1M: 26a).

Short description: *Acacia cambagei* low woodland on alluvial plains
Supplementary descriptions: Gunn et al. (1967), Funnel, Banchory; Galloway et al. (1974), LU73; Gunn and Nix (1977), LU 130, LU 123
Subregions: 7, 37, 8, (3), (4), (13), (10), (26), (10.2), (4.4), (9), (10.4), (5), (6.1), (6.3)
Protected areas: Culgoa Floodplain NP, Nairana NP, Epping Forest NP (S), Mazeppa NP, Narrien Range NP
Extent in reserves: Low
Wetland: Not a Wetland
Special values:
Comments: 11.3.5: Occurs mainly along north-west margins of bioregion, with some areas on the Culgoa River floodplains (subregion 37). Extensively cleared for pasture.
Estimated extent:¹ Pre-clearing 157000 ha; Remnant 2021 47000 ha
VM class: Least concern
Biodiversity status: Of concern
Biodiversity status notes: Extensively cleared recently (2016-2019) in the Belyando subregion

Regional ecosystem 11.3.6

Description: *Eucalyptus melanophloia* woodland to open woodland, generally with a grassy ground layer. Occasional *E. populnea*, *E. crebra*, *Corymbia dallachiana*, *E. tereticornis* may occur in the canopy. A secondary tree or tall shrub layer, including *Callitris glaucophylla*, *Alphitonia excelsa*, *Lysicarpus angustifolius* and *Petalostigma pubescens* may occur. The ground layer is usually dominated by perennial grasses. Occurs on levees and higher Cainozoic alluvial plains. Soils are usually deep red and yellow massive earths with dark brown loamy sand to sandy loam grading to light clay textures or texture contrast soils. In some areas this RE occurs on heavy cracking clay soils. Not a Wetland. (BVG1M: 17b).

Short description: *Eucalyptus melanophloia* woodland on alluvial plains
Supplementary descriptions: Galloway et al. (1974), LU60 in part; Neldner (1984), 24; Speck et al. (1968), Redcliffe, Mimosa, Kroombit; Gunn and Nix (1977) LU 134, 119, 120
Subregions: 15, 26, 23, 24, 13, (10), (11), (20), (21), (18), (8), (7), (9), (16), (19), (22), (10.4)
Protected areas: Carnarvon NP, Belmah CP, Taunton NP (S)
Extent in reserves: Low
Wetland: Not a Wetland
Special values:
Comments: 11.3.6: Subject to clearing or disturbance. Subject to invasion by red Natal grass **Melinis repens* and Sabi grass **Urochloa mosambicensis* in some areas.
Estimated extent:¹ Pre-clearing 66000 ha; Remnant 2021 30000 ha
VM class: Least concern
Biodiversity status: Of concern
Biodiversity status notes: Unknown processes.

Regional ecosystem 11.3.7

Description: *Corymbia clarksoniana*, *C. tessellaris* and *C. dallachiana* woodland to open woodland. There is usually a secondary tree layer, including *Acacia salicina*, *Lysiphyllum hookeri* or *Grevillea striata*. Occurs on levees and plains formed from Quaternary alluvial deposits. Soils are usually deep uniform sands with minor areas of sandy red earths. Not a Wetland. (BVG1M: 9e).

Short description: *Corymbia* spp. open woodland on alluvial plains

Supplementary descriptions: Gunn et al. (1967), Comet; Gunn and Nix (1977), LU 116

Subregions: 1, 2, 7, 6, 11, (3), (8), (10), (15), (4), (9.4), (10.2), (24), (10.4)

Protected areas: Nairana NP, Epping Forest NP (S), Wongaloo CP, Bowling Green Bay NP, Bowling Green Bay CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.7: Habitat of the endangered northern hairy-nosed wombat, *Lasiorhinus krefftii*.

Comments: 11.3.7: Subject to total grazing pressure. Native species have been displaced from the ground layer by the invasion by buffel grass in many areas.

Estimated extent:¹ Pre-clearing 141000 ha; Remnant 2021 61000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Usually highly localised, subject to high cover by perennial non-native grasses.

Regional ecosystem 11.3.8

Description: *Acacia argyrodendron* woodland to low woodland. A secondary tree or shrub layer is usually absent although there can be scattered shrubs including *Eremophila mitchellii*, *Lysiphyllum carronii* and *Atalaya hemiglauc*a. The ground layer is usually very sparse with *Sporobolus actinocladus*, *Astrebla* spp. and *Iseilema vaginiflorum* frequently present or dominant. Other graminoids usually present include *Oxychloris scariosa*, *Enteropogon acicularis*, *Sporobolus* spp., *Dactyloctenium radulans*, *Brachyachne convergens* and *Chloris pectinata*. Forbs commonly present include *Trianthema triquetra*, *Portulaca filifolia* and *Evolvulus alsinoides*. Occurs on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 26a).

Short description: *Acacia argyrodendron* woodland on alluvial plains

Supplementary descriptions: Gunn et al. (1967), Comet, Alpha

Subregions: 3, 7, (4), (10.3)

Protected areas: Nairana NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.3.8: Occurs mainly in the north-western part of bioregion. Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 43000 ha; Remnant 2021 26000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Extensively cleared recently (2016-2019) in the Belyando subregion

Regional ecosystem 11.3.9

Description: Eucalyptus platyphylla with occasional trees of Corymbia clarksoniana, C. intermedia, E. tereticornis or Lophostemon suaveolens woodland to open woodland. A lower tree layer of Melaleuca viridiflora is occasionally present. This association has a grassy ground layer, with species including Heteropogon contortus, Sorghum nitidum, Chrysopogon fallax, Allotrochloa semialata and Aristida holathera, or in some situations with short grasses such as Chloris spp., Fimbristylis dichotoma, Cyperus spp., Schizachyrium fragile and Ectrosia leporina. Occurs on Cainozoic alluvial plains, on sandy surface with clay subsoil. Usually with "wet" influence, either closely adjacent to major river, or undergoes inundation relatively frequently. May occur in wet depressions. Not a Wetland. (BVG1M: 9e).

Vegetation communities in this regional ecosystem include:

11.3.9a: Eucalyptus acmenoides +/- E. drepanophylla, +/- E. platyphylla woodland. Occurs on Cainozoic alluvial plains, on sandy surface with clay subsoil. Not a Wetland. (BVG1M: 18a).

Short description:	Eucalyptus platyphylla, Corymbia spp. woodland on alluvial plains
Supplementary descriptions:	Christian et al. (1953), Manton, Clare; Forster and Barton (1995), Daly
Subregions:	14, 1, 2, (3), (6), (12), (11), (9.4), (4), (8.4), (8.3)
Protected areas:	Shoalwater Bay CP, Bowling Green Bay NP, Baga NP, Magnetic Island NP, Wongaloo CP, Bolger Bay CP, Mount Archer NP, Cape Upstart NP, Horseshoe Lagoon CP, Magnetic Island CP 1, Bowling Green Bay CP, Magnetic Island CP 2
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.3.9: Potential habitat for NCA listed species: Macrozamia serpentina.
Comments:	11.3.9: Trees are usually widely spaced. Distinguished from 11.3.35 by greater frequency of inundation, usually few shrubs/low trees, woodland to open woodland structure. Understorey modified by total grazing pressure. Has undergone invasion by *Cryptostegia grandiflora (rubber vine) and *Ziziphus mauritiana (chinee apple) within the Townsville and Bowen regions.
Estimated extent:¹	Pre-clearing 145000 ha; Remnant 2021 61000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.3.10

Description: Eucalyptus brownii woodland to open woodland. The ground layer is typically tussock grasses, including *Aristida* spp., *Chloris* spp., *Fimbristylis dichotoma*, *Eriachne* spp., *Eragrostis* spp. and *Chrysopogon fallax*. Areas on fertile soils may contain *Heteropogon contortus*, *Bothriochloa bladhii* and *Chrysopogon fallax*. Occurs on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 17a).

Vegetation communities in this regional ecosystem include:

11.3.10a: Eucalyptus brownii woodland on closed depressions. Occurs on closed depressions. Palustrine. (BVG1M: 17a).

11.3.10b: Eucalyptus brownii woodland on floodplains. Occurs on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus brownii woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Manton; Gunn and Nix (1977) LU 118

Subregions: 3, 7, 2, (1), (4), (11), (6), (9.4), (10.2), (5)

Protected areas: Nairana NP, Blackwood NP, Epping Forest NP (S), Wilandspey CP, Mount Abbot NP (S)

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.10: Potential habitat for NCA listed species: *Acacia armitii*.

Comments: 11.3.10: Regional Ecosystem 11.3.10a and 11.3.10b have been amalgamated into this Regional Ecosystem. Understorey modified by total grazing pressure. In some areas extensively invaded by **Bothriochloa pertusa* (Indian cooch) and **Cenchrus ciliaris* (buffel grass).

Estimated extent:¹ Pre-clearing 260000 ha; Remnant 2021 163000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.11

Description: Semi-evergreen vine thicket or semi-deciduous notophyll vine forest, frequently with emergent *Eucalyptus tereticornis* or *E. raveretiana*. Common species include *Diospyros humilis*, *D. geminata*, *Brachychiton australis*, *B. rupestris*, *Geijera salicifolia*, *Lysiphyllum* spp., *Mallotus philippensis* and *Streblus brunonianus*. Occasional shrubs such as *Carissa ovata* may occur. Forbs such as *Nyssanthus* spp. may also be present. Occurs on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 7a).

Vegetation communities in this regional ecosystem include:

11.3.11x1: Semi-evergreen vine thicket. Common tree species include *Canarium australianum*, *Falcataria toona*, *Pleiogynium timorense*, *Cochlospermum gillivraei*, *Terminalia porphyrocarpa*, and *Chionanthus ramiflorus*. *Araucaria cunninghamii* is absent. The understorey / shrub layer is dense with species such as *Memecylon pauciflorum*, *Murraia ovatifoliolata*, *Aidia racemosa*, *Turraea pubescens*, *Mallotus philippensis*, *Ixora timorensis*, *Strychnos psilosperma*, *Pittosporum spinescens* and *Gossia bidwillii*. The ground layer is sparse, and includes *Ancistrachne uncinulata*, *Drynaria sparsisora*, *Adiantum aethiopicum*, *Coleus graveolens* and *Scleria sphacelata*. Vine and epiphytes are common, including *Pachygone ovata*, *Cissus oblonga*, *Bonamia dietrichiana*, *Stephania japonica*, *Jasminum didymum* subsp. *Racemosum*, *Abrus precatorius*, *Pisonia aculeata* and *Secamone elliptica*. Occurs on coastal alluvial plains. Not a Wetland. (BVG1M: 7a).

Short description:	Semi-evergreen vine thicket on alluvial plains
Supplementary descriptions:	Christian et al. (1953), Ayr; Fensham: (1995); Fensham and Streimann (1997); Forster and Barton (1995), Moore; Stanton (1971)
Subregions:	11, 12, 14, 1, (21), (18), (22), (6), (8.4), (19), (17), (12.10)
Protected areas:	Dipperu NP (S), Rundle Range NP, Bowling Green Bay NP, Magnetic Island NP, Magnetic Island CP 2
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.3.11: Potential habitat for NCA listed species: <i>Macropteranthes leiocaulis</i> .
Comments:	11.3.11: Extensively cleared for cropping and grazing. Remnants subject to invasion by weeds such as Guinea grass (<i>*Megathyrsus maximus</i> var. <i>maximum</i>) and trampling by livestock.
Estimated extent:¹	Pre-clearing 18000 ha; Remnant 2021 2000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.3.12

Description: Melaleuca viridiflora woodland to open woodland, occasionally with M. argentea and M. dealbata. Occasional midstratum of Grevillea pteridifolia and Acacia leptocarpa. Ground layer of perennial grasses such as Themeda triandra, Elionurus citreus, Ectrosia leporina, Eriachne rara, Eremochloa bimaculata, Thaumastochloa pubescens, Eragrostis brownii and Ischaemum australe. Occurs on alluvial plains on strongly duplex clay soils with restricted drainage. Contains Palustrine. (BVG1M: 21a).

Vegetation communities in this regional ecosystem include:

11.3.12a: Melaleuca leucadendra and Livistona decora open forest, with occasional Corymbia tessellaris and Nauclea orientalis. The secondary tree or shrub layer is dense, including Atractocarpus fitzalanii, Chionanthus ramiflorus, Carallia brachiata, Macaranga tanarius, Ficus copiosa and Hibiscus tiliaceus. The ground layer is sparse to moderately dense. Scleria polycarpa forms pure stands in swampy parts. Other common species are Ludwigia octovalvis, Crinum pedunculatum, Eclipta prostrata and Basilicum polystachyon. Several vine species are present, such as Entada phaseoloides, and Luffa aegyptiaca. Occurs in depressions on coastal floodplains. Palustrine. (BVG1M: 22c).

Short description: Melaleuca viridiflora, M. argentea +/- M. dealbata woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Manton; Cumming (2000)

Subregions: 1, (2), (9.4), (6), (7.1), (12), (14), (3)

Protected areas: Pinnacles NP, Bowling Green Bay NP, Wongaloo CP, Horseshoe Bay Lagoon CP, Cape Upstart NP, Magnetic Island NP, Magnetic Island CP 2, Bowling Green Bay CP, Magnetic Island CP 1

Extent in reserves: Low

Wetland: Contains Palustrine

Special values:

Comments: 11.3.12: Extensively cleared for cropping and pasture.
11.3.12a: Naturalised species associated with this regional ecosystem include *Asclepias curassavica, *Argyreia nervosa and *Passiflora suberosa, *Crotalaria pallida.

Estimated extent:¹ Pre-clearing 46000 ha; Remnant 2021 28000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.13

Description: *Grevillea striata* open woodland, with *Corymbia tessellaris*, *C. clarksoniana* or *C. dallachiana* occasionally present as isolated emergent trees. A shrub layer may be present, including *Acacia crassicaarpa*, *A. salicina*, *Atalaya hemiglauc*, *Bursaria incana*, *Carissa ovata*, *Pandanus spiralis* or *Psydrax attenuata*. The ground layer is sparse to dense, including *Neptunia gracilis*, *Sphaeromorphaea australis*, *Sida* spp. And *Brunoniella australis* or grasses such as *Themeda triandra*, *Panicum decompositum*, *Dichanthium sericeum* and *Sporobolus* spp. Occurs on Cainozoic alluvial plains on flat coastal lowlands. Not a Wetland. (BVG1M: 27c).

Short description: *Grevillea striata* open woodland on coastal alluvial plains

Supplementary descriptions: Christian et al. (1953), Ayr; Bean (1992); Kutt and Kemp (1998)

Subregions: 1, 2, (9.4)

Protected areas: Bowling Green Bay NP, Horseshoe Lagoon CP, Cape Upstart NP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values:

Comments: 11.3.13: Often occurs in close proximity to *Sporobolus virginicus* grasslands (RE 11.1.1) or brackish channels. Extensively cleared for cropping. The ground layer has been extensively modified by total grazing pressure and weed invasion, particularly **Acacia nilotica* (prickly Acacia) and **Chloris inflata* (purpletop chloris).

Estimated extent:¹ Pre-clearing 9000 ha; Remnant 2021 3000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Highly fragmented due to intensive cultivation in immediately adjacent areas.

Regional ecosystem 11.3.14

Description: *Angophora floribunda*, *A. leiocarpa*, *Eucalyptus tereticornis* and *E. chloroclada* woodland with a secondary tree layer dominated by *Callitris glaucophylla* or *Allocasuarina luehmannii*. A shrub layer may occur, including *Xylomelum cunninghamianum*, *Acacia neriifolia*, *Callitris endlicheri*, *Acacia conferta*, *Jacksonia scoparia*, *Leptospermum polygalifolium*, *Styphelia mutica* and *Melaleuca thymifolia*. Occurs on Cainozoic alluvial plains with sandy soils. Not a Wetland. (BVG1M: 18a).

Short description: *Eucalyptus* spp., *Angophora* spp., *Callitris* spp. woodland on alluvial plains

Supplementary descriptions: Mullins (1980), Minnabilla, Weir; Taylor and Grimshaw (1994-95), Goondiwindi MU10A; Maher (1995), 3b

Subregions: 32, 33, 27, (30), (31), (36)

Protected areas: Wondul Range NP, Bendidee NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.14: Potential habitat for NCA listed species: *Acacia handonis*, *Fimbristylis vagans*.

Comments: 11.3.14: The dominant *Callitris* species is *Callitris glaucophylla* x *C. verrucosa* previously known as *C. preissii* subsp. *verrucosa* (family pine).

Estimated extent:¹ Pre-clearing 106000 ha; Remnant 2021 81000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.15

Description: Eucalyptus coolabah open woodland to low open woodland. There is a dense low shrub layer of Duma florulenta. A sparse Acacia stenophylla and Eremophila bignoniiflora shrublayer is usually present and may form a distinct layer in some areas. Occurs on and adjacent to frequently flooded channels within Cainozoic alluvial floodplains. Soils are deep, grey-brown, heavy cracking clays, which are neutral to mildly alkaline and remain wet for long periods. Contains Palustrine. (BVG1M: 16c).

Vegetation communities in this regional ecosystem include:

11.3.15a: Duma florulenta low shrubland +/- scattered Eucalyptus coolabah trees. Occurs on frequently flooded open depressions and channels within Cainozoic alluvial floodplains. Palustrine. (BVG1M: 34b).

Short description: Eucalyptus coolabah, Acacia stenophylla, Duma florulenta fringing open woodland on alluvial plains
Supplementary descriptions: Galloway et al. (1974), LU74, 76 (in part); Neldner (1984), 32d
Subregions: 37, 36, 35, (38), (34), (19)
Protected areas: Culgoa Floodplain NP
Extent in reserves: Low
Wetland: Contains Palustrine
Special values:
Comments: 11.3.15: This regional ecosystem is differentiated from 11.3.3 by its occurrence on lower lying more frequently flooded areas with heavier clay soils and the occurrence of Duma florulenta, Eremophila bignoniiflora and Acacia stenophylla in the mid-layer. Confined largely to the south-western part of the bioregion. Impacted by total grazing pressure and past disturbance.
Estimated extent:¹ Pre-clearing 90000 ha; Remnant 2021 24000 ha
VM class: Of concern
Biodiversity status: Of concern
Biodiversity status notes:

Regional ecosystem 11.3.16

Description: Eucalyptus largiflorens woodland to low open woodland with occasional Acacia cambagei or Acacia harpophylla. Scattered E. coolabah or E. populnea trees may be present and groves of Acacia cambagei, A. harpophylla or A. omalophylla occasionally occur. Duma florulenta low shrubs are often prominent, and the sparse ground layer is dominated by perennial grasses and locally abundant forbs. Occurs on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 16c).

Short description: Eucalyptus largiflorens +/- Acacia cambagei +/- A. harpophylla woodland on alluvial plains
Supplementary descriptions: Galloway et al. (1974), LU52, LU72; Mullins (1980), Toombilla; Neldner (1984), 16
Subregions: 37, (35), (34), (6.3), (6.1)
Protected areas: Culgoa Floodplain NP
Extent in reserves: High
Wetland: Not a Wetland
Special values:
Comments: 11.3.16: Often occurs with Acacia cambagei in subregion 35. This regional ecosystem represents the northern extent of a community that is more widespread in New South Wales. The ground layer is often highly modified by total grazing pressure. Intergrades into E. coolabah open woodlands (11.3.3) in some areas. Much of the areas in subregion 37 have been extensively cleared and remaining areas are highly fragmented.
Estimated extent:¹ Pre-clearing 33000 ha; Remnant 2021 12000 ha
VM class: Least concern
Biodiversity status: No concern at present
Biodiversity status notes:

Regional ecosystem 11.3.17

Description: Eucalyptus populnea woodland with Casuarina cristata and/or Acacia harpophylla clumps or scattered trees and a low tree layer dominated by Geijera parviflora. A shrub layer usually occurs, including Eremophila mitchellii, Geijera parviflora, Acacia melvillei (Darling Downs), Alectryon oleifolius and Acacia pendula. Localised areas may be dominated by Acacia harpophylla or other understorey species. A lower shrub layer commonly occurs. The ground layer is dominated by tussock grasses, including Bothriochloa decipiens, Aristida ramosa, Enteropogon acicularis and Paspalidium spp. with Chloris ventricosa, Eragrostis lacunaria, Aristida jerichoensis, Paspalidium constrictum, and Tripogon loliiformis on scalded areas. Occurs on back plains, levees and terraces formed on Quaternary alluvial deposits. Soils are generally deep texture contrast with thin sandy surfaces. Not a Wetland. (BVG1M: 25a).

Short description: Eucalyptus populnea woodland with Acacia harpophylla and/or Casuarina cristata on alluvial plains

Supplementary descriptions: Galloway et al. (1974), LU 64; Neldner (1984), 22a, 22b; Fensham and Fairfax (1997), E. populnea shrubby woodland map unit 7.

Subregions: 35, 15, 37, 31, 29, 34, 13, (30), (33), (36), (20), (26), (32), (23), (24), (6.1), (19), (21), (28), (27), (6.3), (38)

Protected areas: Carnarvon NP, Culgoa Floodplain NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.17: Potential habitat for NCA listed species: Homopholis belsonii, Xerothamnella herbacea.

Comments: 11.3.17: Sometimes Acacia harpophylla and/or Casuarina cristata or other understorey Acacia species form small clumps. Where these clumps are > 5 ha they are defined as 11.3.1. This regional ecosystem is restricted to the southern part of bioregion. Extensively cleared or thinned for cropping and pasture.

Estimated extent:¹ Pre-clearing 260000 ha; Remnant 2021 33000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Most of the remaining area is highly fragmented.

Regional ecosystem 11.3.18

Description: Eucalyptus populnea and/or E. melanophloia woodland. Other canopy species include Callitris glaucophylla, E. crebra, E. chloroclada and Angophora leiocarpa. A secondary tree or shrub layer may occur, including Allocasuarina luehmannii, Callitris glaucophylla, Geijera parviflora, Eremophila mitchellii and Alstonia constricta. The ground layer is usually dominated by perennial grasses, including Bothriochloa decipiens, Enteropogon acicularis, Triraphis mollis, Eragrostis lacunaria and Aristida spp. Occurs on levees, higher alluvial plains and terraces associated with drainage lines. The soils are mainly deep, uniform red sands, or deep, texture contrast soils with a sandy, thick surface horizon overlying neutral, blocky to massive subsoil's. Small areas occur on red massive earths and alluvial soils. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus populnea, Callitris glaucophylla, Allocasuarina luehmannii shrubby woodland on alluvium

Supplementary descriptions: Dawson (1987), 12, 15, 18; Galloway et al. (1974), LU63; Mullins (1980), Toombilla, Broadwater; Neldner (1984), 19b (45); Taylor and Grimshaw (1994-95), Goondiwindi MU5A and MU9B

Subregions: 24, 26, 32, (27), (22), (11), (33), (23), (15), (29), (28), (18), (25), (31), (13.3)

Protected areas: Chesterton Range NP, Carnarvon NP, Southwood NP, Lake Broadwater CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.3.18: This regional ecosystem is restricted to the southern part of bioregion.

Estimated extent:¹ Pre-clearing 140000 ha; Remnant 2021 78000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.19

Description: Callitris glaucophylla woodland usually with codominant eucalypts including Corymbia tessellaris, C. clarksoniana that form a well-defined but discontinuous open forest to woodland canopy. Other trees such as Eucalyptus melanophloia, Angophora melanoxylon or E. populnea may also occur as an emergent tree layer. Scattered tall shrubs, such as Acacia excelsa, Alstonia constricta and Callitris glaucophylla are often present. The ground layer is sparse to dense, depending on the tree density, and is dominated by grasses. Common grasses include Heteropogon contortus, Eriachne helmsii, Aristida holathera var. holathera, Aristida calycina var. praealta and Perotis rara. The forb diversity is relatively low but may become seasonally prominent. Occurs on rises associated with the levees and higher alluvial plains and terraces of major river systems. The soils are deep to very deep, earthy sands and associated sandy-surfaced texture contrast soils and siliceous sands. Not a Wetland. (BVG1M: 20a).

Short description: Callitris glaucophylla, Corymbia spp. and/or Eucalyptus melanophloia woodland on Cainozoic alluvial plains

Supplementary descriptions: Galloway et al. (1974), LU60, LU61; Neldner (1984), 11a (64), 11c, 19c (46)

Subregions: 35, 26, 37, 24, (36), (33), (29), (15), (6.1), (25), (18), (34), (4.4), (30), (6.4), (20), (13), (27), (11), (22), (28), (6.2)

Protected areas: Carnarvon NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.19: Potential habitat for NCA listed species: Fimbristylis vagans, Vittadinia decora.

Comments: 11.3.19: Annual grasses may become prominent in the ground layer under heavy total grazing pressure.

Estimated extent:¹ Pre-clearing 226000 ha; Remnant 2021 86000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes: Larger Callitris trees have been killed due to thinning and/or fire in many areas.

Regional ecosystem 11.3.20

Description: Atalaya hemiglauca and other low tree species such as Flindersia maculosa +/- Acacia cambagei and occasionally A. omalophylla low open woodland. Occasionally, where canopy trees are sparse, this may grade into a open forbland or open tussock grassland. Eremophila mitchellii may form a shrub layer. The ground layer is usually sparse and dominated by Sclerolaena spp., other forbs or grasses such as Astrebla lappacea and Aristida spp. Occurs on elevated levees and infrequently flooded alluvial plains formed from Quaternary alluvial deposits. Usually associated with deep solodic soils with thin sandy or loamy surface horizons over strongly alkaline clay subsoils and frequent scalding. Not a Wetland. (BVG1M: 27a).

Short description: Atalaya hemiglauca, Flindersia maculosa, Acacia spp. low open woodland with scattered forb and/or grassland on alluvial plains

Supplementary descriptions: Galloway et al. (1974), LU66; Neldner (1984), 22d (38)

Subregions: 37, 35, (38), (6.1)

Protected areas: Culgoa Floodplain NP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values:

Comments: 11.3.20: This regional ecosystem is restricted to the Culgoa and Narran River floodplains in the south-western part of the bioregion (mainly in subregion 35 and 37). Associated with hard setting soils that are subject to extensive wind and water erosion with scalding and removal of surface soil in some areas (Galloway et al. 1974).

Estimated extent:¹ Pre-clearing 46000 ha; Remnant 2021 25000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Many of the remaining areas have been subjected to wind and water erosion and removal of surface soil.

Regional ecosystem 11.3.21

Description: *Dichanthium sericeum* and/or *Astrebula* spp. (*A. lappacea*, *A. elymoides* and *A. squarrosa*) tussock grassland. Frequently occurring species include the grasses *Aristida leptopoda*, *A. latifolia*, *Bothriochloa bladhii* subsp. *bladhii*, *Brachyachne convergens*, *Heteropogon contortus*, *Panicum decompositum*, *Eriochloa* spp., *Sporobolus mitchellii* and *Thellungia advena* and the forbs *Abelmoschus ficulneus*, *Corchorus trilocularis*, *Commelina ensifolia*, *Euphorbia coghlanii*, *Ipomoea lonchophylla*, *Neptunia gracilis*, *Phyllanthus maderaspatensis*, *Sida trichopoda* and *Trichodesma zeylanicum* var. *latisepaleum*. Scattered emergent trees and shrubs may occur, including *Eucalyptus coolabah*, *E. populnea*, *E. tereticornis* and *Acacia* spp. Occurs on Cainozoic alluvial plains on flats associated with rivers and creeks, including back-plains, terraces, low levees and back-swamps. Associated soils are usually heavy cracking clays. Not a Wetland. (BVG1M: 30a).

Short description: *Dichanthium sericeum* and/or *Astrebula* spp. grassland on alluvial plains. Cracking clay soils

Supplementary descriptions: Gunn et al. (1967), Alpha (4), Comet (2), Funnel (2), Karalee (5), Mantuan (2), Somerby (6), Waterford (2), Wondabah (4); Speck et al. 1967), Kiddell (10), Westwood (7); Story et al. (1967), Funnel (2), Waterford (3); Galloway et al. (1974), LU 69; Dawson (1972), Jimbour; Vandersee (1975), Oakey (3), Jimbour (1-3), Tipton (1, 3); Gunn and Nix (1977), LU 131; Neldner (1984); 70a (140); Fensham and Fairfax (1997), 19, grassland; Fensham (1998) grassland; Fensham (1999), Mitchell grass on alluvium; Hobson (2002), fauna survey; Burgess (2003) Lindsay (VA28)

Subregions: 15, 10, 37, 4.4, 7, 26, (6), (31), (35), (11), (36), (24), (13), (23), (6.4), (4), (12), (21), (8), (22), (20), (29), (6.1), (3), (27)

Protected areas: Carnarvon NP, Belmah CP, Vandyke Creek CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.21: Habitat for threatened flora species including *Thesium australe*, *Picris evae*, *Dichanthium queenslandicum* and the near threatened flora species *Digitaria porrecta* and fauna species including grassland earless dragon *Tympanocryptis pinguicolla*, five-clawed worm skink *Anomalopus mackayi* and grey snake *Hemiaspis damelii*.

Comments: 11.3.21: In some areas e.g. Nebo Shire, this RE occurs within larger areas of RE 11.3.4 along broad alluvial plains that are associated with adjacent or upstream basaltic or andesitic landscapes. Remnant areas may be over-estimated due to mapping scale and difficulty in remotely assessing condition of grasslands. Many of the larger areas have been extensively cultivated for cropping and pasture. Extensive areas are subject to invasion by **Parthenium hysterophorus* in northern parts of the bioregion and to a lesser extent the exotic grass **Cenchrus ciliaris* (Fensham 1999) particularly after periods of heavy grazing or drought. Presence of the dominant grass species varies with grazing and seasonal conditions. In the south-western part of its occurrence, the ground layer of grasses and forbs may be 0.5-1 m high, with a projected foliage cover of 10-40% (Neldner 1984). Grazing may adversely impact on fauna values particularly during periods of drought (Hobson 2002). Naturalised species associated with this regional ecosystem include **Sida spinosa*.

Estimated extent:¹ Pre-clearing 453000 ha; Remnant 2021 58000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Remnant areas may be over-estimated due to mapping scale and difficulty in remotely assessing condition of grasslands.

Regional ecosystem 11.3.22

Description:	Springs. Associated with recent alluvia, but also including those on fine-grained sedimentary rocks (shale), basalt, ancient alluvia and metamorphic rocks. Palustrine. (BVG1M: 34e).
Short description:	Springs associated with recent alluvia, but also including those on fine-grained sedimentary rocks, basalt, ancient alluvia and metamorphic rocks
Supplementary descriptions:	Habermehl (1982); Wilson, (1995); Fensham (1998b); Fensham and Fairfax (2002); Fensham et al. (2004)
Subregions:	25
Protected areas:	
Extent in reserves:	No representation
Wetland:	Palustrine
Special values:	11.3.22: Habitat for threatened plant species including <i>Eriocaulon carsonii</i> , <i>Myriophyllum artesium</i> and <i>Arthraxon hispidus</i> .
Comments:	11.3.22: Some of the springs are within the GAB recharge areas. Includes springs in the Dawson River Valley described as 'boggomosses'. Impacted by excavation, pig rooting, stock and feral horse trampling, artificial extraction, inundation by impoundments and the introduction of ponded pastures.
Estimated extent: ¹	Pre-clearing 10 ha; Remnant 2021 10 ha
VM class:	Of concern
Biodiversity status:	Endangered
Biodiversity status notes:	Springs ecosystem, highly localised and relatively well studied.

Regional ecosystem 11.3.23

Description:	<i>Eucalyptus conica</i> , <i>E. tereticornis</i> , <i>Angophora floribunda</i> or rarely <i>E. melliodora</i> or <i>E. nobilis</i> woodland to open woodland. Occurs on Cainozoic alluvial plains. Contains Riverine. (BVG1M: 15b).
Short description:	<i>Eucalyptus conica</i> , <i>E. nobilis</i> , <i>E. tereticornis</i> , <i>Angophora floribunda</i> woodland on alluvial plains. Basalt derived soils
Supplementary descriptions:	Young and McDonald (1989), 9o 10d
Subregions:	31, (12.1)
Protected areas:	Main Range NP
Extent in reserves:	Low
Wetland:	Contains Riverine
Special values:	11.3.23: <i>Eucalyptus conica</i> and <i>E. nobilis</i> are at the northern limits of their geographical range.
Comments:	11.3.23: The ground layer is often highly modified by total grazing pressure and remaining areas have been highly fragmented.
Estimated extent: ¹	Pre-clearing 2000 ha; Remnant 2021 700 ha
VM class:	Of concern
Biodiversity status:	Endangered
Biodiversity status notes:	Threatening processes other than clearing.

Regional ecosystem 11.3.24

Description: Themeda avenacea +/- Eleocharis pallens tussock grassland sometimes with scattered Duma florulenta shrubs. Occurs on depressions on Cainozoic alluvial plains. Contains Palustrine. (BVG1M: 30a).

Vegetation communities in this regional ecosystem include:

11.3.24a: Grassland +/- Eleocharis pallens grassland sometimes with scattered Duma florulenta shrubs. Occurs on depressions on alluvial plains. Palustrine. (BVG1M: 34c).

Short description: Themeda avenacea grassland on alluvial plains. Basalt derived soils

Supplementary descriptions: Fensham (1998a); Fensham and Fairfax (1997)

Subregions: 31

Protected areas:

Extent in reserves: No representation

Wetland: Contains Palustrine

Special values:

Comments: 11.3.24: Themeda avenacea tends to grow on hummocks and Eleocharis pallens in hollows. Most of the previous extent of this ecosystem has been utilised for intensive cropping.

Estimated extent:¹ Pre-clearing 26000 ha; Remnant 2021 100 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.3.25

Description: *Eucalyptus tereticornis* or *E. camaldulensis* woodland to open forest. Other tree species, including *Casuarina cunninghamiana*, *E. coolabah*, *Melaleuca bracteata*, *Melaleuca viminalis*, *Livistona* spp. (in north), *Melaleuca* spp. and *Angophora floribunda*, may occur. An tall shrub layer may occur, including *Acacia salicina*, *A. stenophylla* and *Lysiphyllum carronii*. Low shrubs are present, but rarely form a conspicuous layer. The ground layer is open to sparse and dominated by perennial grasses, sedges or forbs. Occurs on fringing levees and banks of major rivers and drainage lines of alluvial plains throughout the region. Soils are very deep, alluvial, grey and brown cracking clays with or without some texture contrast. These are usually moderately deep to deep, soft or firm, acid, neutral or alkaline brown sands, loams or black cracking or non-cracking clays, and may be sodic at depth (Burgess 2003). Riverine. (BVG1M: 16a).

Vegetation communities in this regional ecosystem include:

11.3.25a: *Eucalyptus raveretiana* (sometimes emergent), *Eucalyptus tereticornis* and *Melaleuca fluviatilis* woodland. A range of other species may be present including *Melaleuca leucadendra*, *Corymbia clarksoniana*, *Casuarina cunninghamiana*, *Melaleuca viminalis* and *Nauclea orientalis*. There is often a dense low tree layer dominated by species such as *Acacia salicina*, *Geijera salicifolia*, *Diospyros humilis* and *Mallotus philippensis*. Coastal riverine terraces and river channels, of often siliceous sands and loams. Riverine. (BVG1M: 22c).

11.3.25b: *Melaleuca leucadendra* and/or *M. fluviatilis*, *Nauclea orientalis* open forest. A range of other canopy or sub-canopy tree species also occur including *Pandanus tectorius*, *Livistona* spp., *Eucalyptus tereticornis*, *Corymbia tessellaris*, *Millettia pinnata*, *Casuarina cunninghamiana*, *Livistona decora*, *Lophostemon suaveolens* or *L. grandiflorus*, rainforest species and, along drainage lines, *Eucalyptus camaldulensis* or *E. tereticornis*. A ground layer of tall grasses such as *Chionachne cyathopoda*, *Mnesithea rottboellioides* or *Heteropogon triticeus* may be present. Often occurs on coarse sand spits and levees within larger river channels. Riverine. (BVG1M: 22c).

11.3.25c: *Eucalyptus camaldulensis* or *E. tereticornis* open forest to woodland. Occurs fringing drainage lines derived from Serpentine. Riverine. (BVG1M: 16a).

11.3.25d: *Melaleuca bracteata* woodland to open forest. Occurs on fringing alluvial soils or near-channel levees on heavy wet clays. Riverine. (BVG1M: 22c).

11.3.25e: *Eucalyptus camaldulensis*, *E. tereticornis* woodland fringing larger, permanent water courses. A range of other tree species commonly occur including *Melaleuca trichostachya*, *Casuarina cunninghamiana*, and *Melaleuca viminalis*. Ground layer is composed of grasses and forbs. Occurs fringing permanent watercourses. Riverine. (BVG1M: 16a).

11.3.25f: Main river channels. Open water or exposed stream beds and bars. Usually devoid of emergent vegetation although scattered trees and shrubs such as *Melaleuca viminalis* or *Melaleuca* spp. May be present and aquatic species may be abundant particularly in water holes and lagoons. Occurs in river channels. Riverine. (BVG1M: 16d).

11.3.25g: Vegetation is seasonal and may consist of open water and/or a range of mainly aquatic species such as *Nymphaea crenata* or *Hydrilla verticillata*. Often with fringing woodland, commonly *E. camaldulensis* or *E. coolabah* and a ground layer that may include species such as *Pseudoraphis spinescens*, *Marsilea drummondii*, *M. mutica*, *Persicaria subsessilis* and *Eleocharis* spp. Occurs on waterholes in larger drainage lines and rivers. Riverine. (BVG1M: 16d).

11.3.25h: *Melaleuca viminalis* low open forest to low woodland, often in association with *Melaleuca trichostachya*, occasionally with *Cryptocarya triplinervis*, and sometimes with emergent layer of *Eucalyptus tereticornis* or *Casuarina cunninghamiana*. The shrub layer is sparse but includes *Ficus opposita*. The ground layer includes *Lomandra hystrix* and *Oplismenus aemulus*. Occurs fringing drainage lines. Riverine. (BVG1M: 22c).

Short description: *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines

Supplementary descriptions: Dawson (1972), 1; Dowling and Stephens (1997), 8b; Fensham (1998a); Fensham and Fairfax (1997); Gunn et al. (1967), Funnel; Mullins (1980), Tavoy, Lynwood; Neldner (1984), 18c; Speck et al. (1968), Kroombit; Taylor and Grimshaw (1994-95), Goondiwindi MU9C; Burgess (2003), German, Isaac; Gunn and Nix (1977) LU 122

Subregions: 26, 11, 1, 2, 6, (14), (3), (7), (24), (32), (15), (13), (18), (29), (10), (22), (31), (12), (25), (36), (21), (20), (27), (16), (9), (33), (5), (35), (37), (23), (4), (4.4), (8), (30), (34), (19), (17), (9.4), (28), (6.4), (6.2), (8.3), (8.4), (6.1), (13.3), (10.4), (12.10), (12.5), (12.6), (8.6), (6.3), (7.5)

Protected areas:	Carnarvon NP, Expedition (Limited Depth) NP, Homevale NP, Palmgrove NP (S), Bowling Green Bay NP, Goodedulla NP, Expedition NP, Eungella NP, Nairana NP, Blackdown Tableland NP, Taunton NP (S), Expedition RR, Dipperu NP (S), Homevale RR, Nuga Nuga NP, Lake Murphy CP, Albinia NP, Precipice NP, Mount Archer NP, Auburn River NP, Narrien Range NP, Wongaloo CP, Belmah CP, Princhester CP, Cape Upstart NP, Bell Creek CP, Mount Aberdeen NP, Tregole NP, Cania Gorge NP, Minerva Hills NP, Kroombit Tops NP, Rundle Range RR, Tooloombah Creek CP, Mount Hopeful CP, Bouldercombe Gorge RR, Shoalwater Bay CP, Vandyke Creek CP, Rundle Range NP, Dawson River CP, Tolderodden CP, Magnetic Island NP, Junee NP, Bukkulla CP, Blackwater CP, Mount O'Connell NP, Homevale CP, Mount Abbot NP (S), Highworth Bend CP, Baga NP, Magnetic Island CP 2, Bolger Bay CP, Paluma Range NP, Peak Range NP, Magnetic Island CP 1
Extent in reserves:	Low
Wetland:	Riverine
Special values:	11.3.25: Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle <i>Rheodytes leukops</i> . Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
Comments:	<p>11.3.25: Often associated with regional ecosystems 11.3.2 and 11.3.4 which may occur on adjacent alluvial plains. In highly cleared subregions a narrow fringe of riparian vegetation is often the only surviving woody vegetation. This regional ecosystem includes sandy or rocky banks and beds and water within channel which can be extensive in some of the larger coastal rivers. Widespread throughout the bioregion. Impact by total grazing pressure. Weeds particularly <i>*Cryptostegia grandiflora</i> (rubber vine) (in the north of the bioregion) and <i>*Cenchrus ciliaris</i> (buffel grass) have invaded many areas. Some areas have been modified by weir construction (Eberhard 1999).</p> <p>11.3.25a: As the low tree layer becomes denser, this vegetation community grades into 11.3.11. Occurs fringing drainage lines in northern sub coastal parts (subregion 1, 2 12 and 14) of the bioregion. Naturalised species associated with this regional ecosystem include <i>*Grewia asiatica</i>.</p> <p>11.3.25b: Very frequently disturbed by natural flood events. Occurs north of about Duaringa within the lower Dawson and upper Fitzroy Rivers. Weeds particularly rubber vine <i>Cryptostegia grandiflora</i> (in the north of the bioregion) and <i>Lantana camara</i> have invaded many areas.</p> <p>11.3.25g: Larger waterholes (> 5ha) are included here while smaller ones are included with river channels (11.3.25f).</p> <p>11.3.25h: Occurs in isolated patches across the southern Brigalow Belt. Widely distributed in the Upper Burnett River catchment, including Three Moon Creek and on major streams in the Biloela-Banana areas. Naturalised species associated with this regional ecosystem include <i>*Megathyrsus maximus</i> and <i>*Cynodon dactylon</i>.</p>
Estimated extent: ¹	Pre-clearing 813000 ha; Remnant 2021 531000 ha
VM class:	Least concern
Biodiversity status:	Of concern
Biodiversity status notes:	Threatening processes other than clearing.

Regional ecosystem 11.3.26

Description:	<i>Eucalyptus moluccana</i> or <i>E. woollsiana</i> +/- <i>E. populnea</i> +/- <i>E. melanophloia</i> open forest to woodland +/- <i>Allocasuarina luehmannii</i> low tree layer and a grassy ground layer. In northern subregions, there may be shrub layer of any of <i>Eremophila mitchellii</i> , <i>Flindersia dissosperma</i> , <i>Citrus glauca</i> or <i>Petalostigma pubescens</i> , with a sparse grassy ground layer. Occurs on margins of Cainozoic alluvial plains on deep texture contrast soils. Not a Wetland. (BVG1M: 13d).
Short description:	<i>Eucalyptus moluccana</i> or <i>E. microcarpa</i> woodland to open forest on margins of alluvial plains
Supplementary descriptions:	Forster and Barton (1995), Littlemere, Nulgi; Neldner (1984), 14c; Speck et al. (1968), Boomer, Dingo, Melbadale; Taylor and Grimshaw (1994-95), Chinchilla MU1C and MU4A; Gunn and Nix (1977) LU 128
Subregions:	27, 14, 22, 18, (8.4), (16), (17), (12), (24), (11), (32), (23), (31), (19), (21), (12.10), (28), (30), (13.3), (26)
Protected areas:	Carnarvon NP, Bouldercombe Gorge RR, Rundle Range RR, Cania Gorge NP, Bouldercombe Gorge CP, Goodedulla NP, Rundle Range NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.3.26: Potential habitat for NCA listed species: <i>Sphaeromorphaea major</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
Comments:	11.3.26: Subject to clearing and disturbance.
Estimated extent: ¹	Pre-clearing 121000 ha; Remnant 2021 44000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.3.27

Description: Freshwater wetlands. Vegetation is variable including open water with or without aquatic species and fringing sedgelands and eucalypt woodlands. Occurs in a variety of situations including lakes, billabongs, oxbows and depressions on floodplains. Palustrine. (BVG1M: 34d).

Vegetation communities in this regional ecosystem include:

11.3.27a: Vegetation ranges from open water +/- aquatics and emergents such as *Chara* spp., *Nitella* spp., *Myriophyllum verrucosum*, *Nymphaea violacea*, *Pyrgillus javanicus*, *Potamogeton crispus*, *P. tricarinatus*, *Ottelia ovalifolia*, *Vallisneria caulescens* and *Nymphoides indica*. A narrow fringing woodland commonly dominated by *E. camaldulensis* or *E. coolabah* but also a range of other tree species may be present. In dry seasonal conditions, non-woody vegetation may be completely absent from ephemeral waterbodies, with only bare claypans present. During drying-off periods, herbaceous species such as *Sesbania cannabina*, *Glinus lotoides* and *Cullen* spp. may be present and dominant on drying lake margins. Larger ephemeral - permanent water bodies (lakes). Lacustrine. (BVG1M: 34a).

11.3.27b: Vegetation ranges from open water +/- aquatics and emergents such as *Potamogeton crispus*, *Myriophyllum verrucosum*, *Chara* spp., *Nitella* spp., *Nymphaea violacea*, *Ottelia ovalifolia*, *Nymphoides indica*, *N. crenata*, *Potamogeton tricarinatus*, *Cyperus difformis*, *Vallisneria caulescens* and *Hydrilla verticillata*. Often with fringing woodland, commonly *Eucalyptus camaldulensis* or *E. coolabah* but also a wide range of other species including *Eucalyptus platyphylla*, *E. tereticornis*, *Melaleuca* spp., *Acacia holosericea* or other *Acacia* spp. Occurs on billabongs. Palustrine. (BVG1M: 34d).

11.3.27c: Mixed sedges or grasses with areas of open water +/- aquatic species. Dominated by a range of species including *Eleocharis* spp., *Nymphoides* spp. And sometimes *Phragmites australis*. During drying or drought periods, such ephemeral waterbodies may be dominated by herbaceous species such as *Glinus lotoides*, or exist as bare claypan. Occurs on closed depressions on alluvial plains that are intermittently flooded in inland parts of the bioregion. Palustrine. (BVG1M: 34d).

11.3.27d: *Eucalyptus camaldulensis* and/or *E. tereticornis* woodland. A range of sedges and grasses occur in the ground layer including *Fimbristylis vagans*, *Myriophyllum striatum*, *Nitella pseudoflabellata* and *Pseudoraphis* sp. Occurs fringing large lakes. Palustrine. (BVG1M: 34a).

11.3.27e: Vegetation ranges from open water +/- aquatics sometimes with fringing trees and shrubs. Fringing tree species include *Melaleuca dealbata*, *Nauclea orientalis*, *M. leucadendra*, *Lophostemon suaveolens* and *Corymbia tessellaris*. Shrub layers are usually absent although scattered *Pandanus* spp. may be present. The ground layer is often open water with emergent aquatic species or sedges and grasses including *Leersia hexandra*, *Cyperus dactyloides*, *Cyperus lucidus*, *Nymphaea* spp. and *Gymnanthera oblonga*. Occurs on billabongs and oxbows with permanent to ephemeral water regime. Palustrine. (BVG1M: 34d).

11.3.27f: *Eucalyptus coolabah* and/or *E. tereticornis* open woodland to woodland fringing swamps. Ground layer

and treeless areas range from open water +/- aquatics and emergents such as *Potamogeton crispus*, *Myriophyllum verrucosum*, *Chara* spp., *Eleocharis* spp., *Nitella* spp. *Cyperus difformis*, *Hydrilla verticillata*. In drying periods may exist as bare dry claypans with only sparse woody vegetation present. Occurs on closed depressions on floodplains associated with old drainage courses that are intermittently flooded. Palustrine. (BVG1M: 34d).

11.3.27g: Lakes with or without fringing *Eucalyptus coolabah* low open woodland. Occurs on closed depressions on floodplains associated with old drainage courses. Lacustrine. (BVG1M: 34a).

11.3.27h: Lakes with mainly open water or bare lake bed. May be *Duma florulenta* low shrubland +/- scattered *E. coolabah* trees fringing or scattered across the area. Occurs on floodplains. Seasonally dry. Lacustrine. (BVG1M: 34a).

11.3.27i: *Eucalyptus camaldulensis* or *E. tereticornis* woodland to open woodland with sedgeland ground layer. Other tree species such as *E. coolabah* and *E. largiflorens* may be present or locally dominant. Ground layer dominated by sedges, ferns or herbs such as *Eleocharis* spp., *Juncus* spp. and *Marsilea* spp. In drying seasonal conditions, may exist only as woody trees with a bare claypan ground layer. Occurs in depressions on floodplains. Palustrine. (BVG1M: 34d).

11.3.27j: *Acacia stenophylla* and other shrubby species. Occurs in frequently flooded depression on floodplains. Palustrine. (BVG1M: 34d).

11.3.27x1a: Sedgelands to grasslands on old marine plains. Often occurs as an *Eleocharis* spp. (*E. dulcis*, *E. sphacelata*) sedgeland but a variety of other species dominate in local areas including *Typha orientalis*, *Cyperus alopecuroides*, *Phragmites australis* and *Ludwigia octovalvis*. A range of other sedges, grasses small shrubs and herbs (<40 cm) are abundant, and include *Ammannia multiflora*, *Cyperus polystachyos*, *Sporobolus virginicus*, *Chloris virgata*, *Fimbristylis ferruginea*, *Ceratopteris thalictroides*, *Phyla nodiflora* and *Persicaria attenuata*. The vines *Passiflora foetida* may occur in some areas. Trees and large shrubs are generally absent. Occurs in depressions on Quaternary estuarine deposits which are seasonally inundated with fresh water. Palustrine. (BVG1M: 34c).

11.3.27x1b: Sedgelands to grasslands on Quaternary deposits. Often occurs as an *Eleocharis dulcis* sedgeland but a variety of other species dominate in local areas including *Typha orientalis* and *Phragmites australis*. Trees and large shrubs are generally absent. Occurs on broad drainage depressions situated on old alluvial plains. Palustrine. (BVG1M: 34c).

11.3.27x1c: Sedgelands to grasslands on Quaternary deposits. Sedgeland areas typically dominated by *Schoenoplectus subulatus* although a range of other sedges and grasses may also dominate localised areas. Other dominant species include the sedges *Eleocharis philippinensis*, *Cyperus alopecuroides*, *C. scariosus* and *C. iria* and the grasses *Phragmites australis*, *Sporobolus virginicus* and *Paspalum vaginatum*. Other typical species in shallower margins include *Fimbristylis ferruginea*, *Phyla nodiflora* and *Cyperus polystachyos*. Occasional twiners such as *Vincetoxicum carnosum* may be present. Occurs in depressions on old Quaternary estuarine deposits. These are seasonally inundated with fresh water but become more brackish as they dry out completely before the next season's rain. Palustrine. (BVG1M: 34c).

Short description:	Freshwater wetlands
Supplementary descriptions:	Pollock and Edginton (1999), we-3, wc-3; ANCA (1996); Speck et al. (1968), Palmtree (8); Burgess (2003), (VA21) Thirteenmile, Bluchers; Gunn and Nix (1977) LU 136; Blackman et al. (2002)
Subregions:	1, 14, 20, 11, (25), (36), (26), (27), (35), (24), (6), (7), (30), (32), (37), (15), (13), (2), (29), (21), (18), (31), (3), (16), (5), (33), (23), (4), (8), (34), (19), (38), (12), (9), (22), (6.1), (10), (10.3), (6.4), (4.4), (12.10)
Protected areas:	Lake Murphy CP, Lake Broadwater CP, Townsville Town Common CP, Carnarvon NP, Bowling Green Bay CP, Bowling Green Bay NP, Wongaloo CP, Horseshoe Lagoon CP, Nairana NP, Nuga Nuga NP, Tolderodden CP, Horseshoe Bay Lagoon CP, Kroombit Tops NP, Bolger Bay CP, Magnetic Island CP 1
Extent in reserves:	Low
Wetland:	Palustrine
Special values:	11.3.27: Habitat for a diverse range of fauna species (Venz et al. 2002) particularly birds. 11.3.27a: Provides wetland habitat for a flora and fauna.

Comments:	<p>11.3.27: Many smaller wetlands in the Brigalow Belt bioregion are too small to map at a 1:100 000 scale. Widespread throughout the bioregion.</p> <p>11.3.27a: In some locations, the invasive grass <i>Urochloa mutica</i> threatens some of the biodiversity values of this ecosystem.</p> <p>11.3.27b: This vegetation community is flooded by overland flow in contrast to 11.3.25g occurs within channels. Smaller billabongs (< 8 ha) are classified as palustrine wetlands while areas with more extensive open water are classified as lacustrine wetlands although the latter are often fringed with (palustrine) wetland vegetation. Naturalised species associated with this regional ecosystem include *<i>Egeria densa</i>.</p> <p>11.3.27c: Common in the Taroom area.</p> <p>11.3.27d: Occurs as a narrow fringe around many wetlands although is only mapped on larger lakes and billabongs.</p> <p>11.3.27e: Occurs in the northern coastal parts of the bioregion (subregion 1, 2 and 12). Subject to trampling by domestic and feral animals. Impacted by modification of hydrology due to irrigation and water extraction from the wetland or surrounding catchment. Invaded by <i>Urochloa mutica</i> in many locations.</p> <p>11.3.27f: Similar to old billabongs but not as deep or linear. Mainly in Goondiwindi area. Naturalised species associated with this regional ecosystem include *<i>Egeria densa</i>.</p> <p>11.3.27g: Occur on floodplain surrounding Palm Creek near Taroom and on the Macintyre River near Goondiwindi.</p> <p>11.3.27h: Lake Bockara on Culgoa floodplain.</p> <p>11.3.27i: Confined to the Goondiwindi area.</p> <p>11.3.27x1a: These areas may become brackish as they dry out. <i>E. dulcis</i> is more common in slightly brackish areas while <i>E. sphacelata</i> tends to occur in less salty areas. Includes areas of saline grasslands/sedgeland now removed from tidal influence and dominated by native freshwater grass species (e.g. around St Lawrence). Confined to coastal subregions in the northern parts of the bioregion. Many areas are impacted by and sometimes formed from levees and bunds build to stabilise the encroachment from salt water.</p> <p>11.3.27x1b: Confined to coastal subregions in the northern parts of the bioregion. Many areas are impacted by and sometimes formed from levees and bunds build to stabilise the encroachment from salt water. Generally a palustrine wetland although also some areas have been converted to lacustrine water bodies associated with the construction of bunding and levees.</p> <p>11.3.27x1c: Often associated with modified hydrology caused by levees. Naturalised species include *<i>Cynodon dactylon</i> var. <i>dactylon</i>.</p>
Estimated extent: ¹	Pre-clearing 63000 ha; Remnant 2021 43000 ha
VM class:	Least concern
Biodiversity status:	Of concern
Biodiversity status notes:	Subject to trampling by domestic and feral animals. Impacted by modification of hydrology due to irrigation and water extraction from the wetland or surrounding catchment.

Regional ecosystem 11.3.28

Description: Eucalyptus coolabah woodland to open woodland, commonly with scattered or clumped Casuarina cristata. Scattered tall shrubs or low trees may occur, including Acacia pendula (may be locally dominant), Alectryon oleifolius, Eremophila bignoniiflora, Acacia omalophylla and Atalaya hemiglauc. Duma florulenta may be present as a low shrub in wetter areas. The ground layer is open to moderately dense and usually dominated by grasses. Forbs may be conspicuous after winter rains or flooding. In some areas, Astrebla lappacea and Sclerolaena muricata form zones of dominance in the ground layer. Occurs on alluvial plains and swamps, subject to flooding. Associated with deep (> 150 cm), grey and brown, cracking clay soils. The soils are neutral to slightly alkaline at the surface, becoming strongly alkaline below 60 cm depth. Not a Wetland. (BVG1M: 16c).

Short description: Eucalyptus coolabah +/- Casuarina cristata woodland on alluvial plains
Supplementary descriptions: Galloway et al. (1974), LU71 (in part); Neldner (1984), 32c (33)
Subregions: 35, 37, 36, 26, 29, (34), (6.1), (33), (38)
Protected areas: Culgoa Floodplain NP
Extent in reserves: Low
Wetland: Not a Wetland
Special values:
Comments: 11.3.28: Casuarina cristata has been selectively thinned in some areas leaving an Eucalyptus coolabah open woodland.
Estimated extent:¹ Pre-clearing 462000 ha; Remnant 2021 60000 ha
VM class: Of concern
Biodiversity status: Of concern
Biodiversity status notes:

Regional ecosystem 11.3.29

Description: Eucalyptus crebra, E. exserta, Corymbia dallachiana, C. intermedia woodland usually with a low tree understorey of Melaleuca viridiflora and M. nervosa. Occurs on broad plains and fans formed from Quaternary alluvium. Usually associated with bleached sodic duplex soils. Not a Wetland. (BVG1M: 18b).

Vegetation communities in this regional ecosystem include:

11.3.29a: Eucalyptus crebra +/- Corymbia dallachiana +/- C. erythrophloia, E. moluccana woodland. Occurs on broad plains and fans formed from Quaternary alluvium. Usually associated with bleached sodic duplex soils. Not a Wetland. (BVG1M: 18b).

Short description: Eucalyptus crebra, E. exserta, Melaleuca spp. woodland on alluvial plains
Supplementary descriptions: Forster and Barton (1995), St Lawrence, Linden
Subregions: 14, 2, (1), (12), (12.10), (6), (8.2), (8.4), (8.3)
Protected areas: Cape Upstart NP, Tooloombah Creek CP, Mount O'Connell NP
Extent in reserves: Low
Wetland: Not a Wetland
Special values:
Comments: 11.3.29: Occurs also in drier coastal parts of Central Queensland Coast bioregion.
Estimated extent:¹ Pre-clearing 81000 ha; Remnant 2021 29000 ha
VM class: Least concern
Biodiversity status: No concern at present
Biodiversity status notes:

Regional ecosystem 11.3.30

Description: Eucalyptus crebra or E. paedoglauca and Corymbia dallachiana woodland. Forms an open woodland to open forest in places. Has a grassy ground layer of Heteropogon contortus, Bothriochloa bladhii, Themeda triandra, Sehima nervosum, Enneapogon spp., with forbs such as Indigofera spp., Glycine tabacina, Galactia tenuiflora and Tephrosia juncea common. Occurs on older floodplain complexes on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 18b).

Vegetation communities in this regional ecosystem include:

11.3.30a: Eucalyptus paedoglauca woodland. Occurs on older floodplain complexes on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 18a).

11.3.30b: Eucalyptus drepanophylla/paedoglauca +/- C. dallachiana +/- E. platyphylla woodland. Occurs on older floodplain complexes on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 18a).

11.3.30d: E. drepanophylla/paedoglauca +/- C. dallachiana +/- E. platyphylla woodland. Occurs on older floodplain complexes on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 18b).

Short description: Eucalyptus crebra, Corymbia dallachiana woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Bowen, Northcote, Rocky Ponds, Mookara

Subregions: 1, 2, 6, (8.6), (5), (7.1), (9.4), (3)

Protected areas: Pinnacles NP, Mount Abbot NP (S), Bowling Green Bay NP, Cape Upstart NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.30: Potential habitat for NCA listed species: Eucalyptus paedoglauca.

Comments:

Estimated extent:¹ Pre-clearing 105000 ha; Remnant 2021 69000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.31

Description: *Ophiuros exaltatus* and/or *Dichanthium* spp. tussock grassland. The ground layer has a variable composition, with drier areas dominated by *Ophiuros exaltatus*, *Iseilema membranaceum* or *Dichanthium* spp. or *Brachyachne tenella*. Other common and sometimes dominant grasses include *Themeda triandra*, *Heteropogon contortus*, *Eulalia aurea*, *Imperata cylindrica*, *Eriochloa pseudoacrotricha*, *Bothriochloa* spp., *Panicum decompositum* and *Sporobolus* spp. Other species include *Neptunia* spp., *Rhynchosia minima*, *Crotalaria* spp., *Euphorbia* spp., *Aristida latifolia*, *Sida* spp. and *Desmodium* spp. Trees such as *Eucalyptus platyphylla*, *Grevillea striata*, *Corymbia dallachiana* or *C. erythrophloia* may occur as emergent isolated trees or tall shrubs. Occurs on older floodplain complexes on Cainozoic alluvial plains. Black or dark grey earths or brown clays, in some areas with strong gilgai or debil debil microrelief. Often with self-mulching surface, and alkaline subsoil. Not a Wetland. (BVG1M: 32a).

Vegetation communities in this regional ecosystem include:

11.3.31a: [RE not in use]²: This vegetation community is now mapped as RE 11.3.31. Palustrine wetlands. Often dominated by *Marsilea drummondii*, *Cyperus* spp. and *Ludwigia perennis*, along with grasses such as *Leersia hexandra*, *Elytrophorus spicatus* and *Oryza* spp. Occurs in gilgai and other depressions. Palustrine. (BVG1M: 34f).

Short description: *Ophiuros exaltatus*, *Dichanthium* spp. grassland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Northcote, Rocky Ponds, Woontonvale, Kyburra; Kutt and Kemp (1998); Donnollan et al. (1990), Land Unit 3; Cumming (2000), 30.

Subregions: 1, 2, (6), (14)

Protected areas: Townsville Town Common CP, Bowling Green Bay NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.3.31: Species variability within this RE may reflect seasonal rainfall patterns, as identified for other grassland communities in Queensland. There is also high variability due to local drainage conditions. Small areas within this regional ecosystem, such as depressions with gilgai, may form wetlands dominated by *Marsilea drummondii*, *Cyperus* spp. and *Ludwigia perennis* may occur, along with grasses such as *Leersia hexandra*, *Elytrophorus spicatus* and *Oryza* spp. These are mapped as 11.3.27x1 where large enough. Extensively cleared for cropping or modified by total grazing pressure. Subject to weed invasion by **Bothriochloa pertusa* (Indian couch), **Cenchrus ciliaris* (buffel grass), **Acacia nilotica* (prickly acacia), **Parkinsonia aculeata* (parkinsonia) and **Ziziphus mauritiana* (chinee apple). 11.3.31a: Larger areas are classified as 11.3.27x1a. Generally a palustrine wetland although also some areas have been converted to lacustrine water bodies associated with the construction of bunding and levees.

Estimated extent:¹ Pre-clearing 43000 ha; Remnant 2021 17000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Subject to modification associated with adjacent intensive agriculture.

Regional ecosystem 11.3.32

Description: *Allocasuarina luehmannii* low open woodland. Emergent *Corymbia dallachiana* and *C. erythrophloia* may occur. A shrub layer may occur, typically dominated by *Allocasuarina luehmannii* with occasional *Bursaria incana* and/or *Denhamia cunninghamii*. A thin ground layer of perennial grasses or sedges may occur. Occurs on older floodplain complexes on Cainozoic alluvial plains. Not a Wetland. (BVG1M: 18a).

Short description: *Allocasuarina luehmannii* low open woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Manton; Kutt and Kemp (1998);

Subregions: 2, (1)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.3.32: Extensively cleared for cropping or modified by total grazing pressure. Subject to invasion by **Cryptostegia grandiflora* (rubber vine), **Acacia nilotica* (prickly acacia) and **Ziziphus mauritiana* (chinee apple).

Estimated extent:¹ Pre-clearing 26000 ha; Remnant 2021 16000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.33

Description: *Eremophila mitchellii* low open woodland. Emergent isolated *Grevillea striata* or *Corymbia tessellaris* or *C. dallachiana* may occur. Occasional shrubs of *Vachellia bidwillii*, *Carissa ovata* or *Grevillea striata* may occur. There may be a ground layer of *Enchylaena tomentosa* and *Sporobolus* spp. or *Fimbristylis* spp. Usually the ground layer is sparse or bare. Occasional grasses include *Oxychloris scariosa*, *Eragrostis* spp., and *Aristida* spp. Occurs on older floodplain complexes on Cainozoic alluvial plains. Common soils are yellow podsols and grey clays or sandy loams over heavy clays. Not a Wetland. (BVG1M: 26a).

Short description: *Eremophila mitchellii* open woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Northcote, Rocky Ponds, Kilbogey

Subregions: 2, 1, (4), (3), (7), (8), (13)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.3.33: The ecology of *Eremophila mitchellii* is well studied (Beeston and Webb 1977). This RE appears to be closely related to adjacent *Acacia tephрина* (RE 11.3.34) or *Grevillea striata* (RE 11.3.13) communities, and may grow in close association with them in some locations. Extensively cleared for cropping or modified by total grazing pressure.

Estimated extent:¹ Pre-clearing 4000 ha; Remnant 2021 2000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Heavy weed presence in places, especially *Bothriochloa pertusa* (Indian couch) and *Cryptostegia grandiflora* (rubbervine) in several areas.

Regional ecosystem 11.3.34

Description: *Acacia tephрина* low woodland to low open woodland. Other *Acacia* spp. may occur, including *Acacia oswaldii* and *Acacia salicina*. A low shrub layer of *Eremophila mitchellii*, *Carissa ovata* or *Scaevola spinescens* may occur, with a usually sparse ground layer of *Dactyloctenium radicans*, *Astrebla squarrosa*, *Leptochloa* spp., *Dichanthium* spp., *Paspalidium caespitosum*, *Panicum* spp., *Eragrostis* spp. and *Sporobolus* spp. Occurs on older floodplain complexes on Cainozoic alluvial plains. Associated soils are usually grey calcareous or saline clays with gilgai microrelief. Not a Wetland. (BVG1M: 27a).

Short description: *Acacia tephрина* woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Woontonvale

Subregions: 2, 7, (3), (1)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.3.34: This regional ecosystem represents a coastal population of the tree species *Acacia tephрина* which is disjunct from its more widespread occurrence in western Queensland. Extensively cleared for cropping or modified by total grazing pressure.

Estimated extent:¹ Pre-clearing 17000 ha; Remnant 2021 9000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.3.35

Description: *Eucalyptus platyphylla*, *Corymbia clarksoniana* woodland, occasionally with *Corymbia tessellaris*. A secondary tree layer commonly occurs, including *Planchonia careya*, *Pandanus spiralis*, *Melaleuca viridiflora* or *M. nervosa* and *Petalostigma pubescens*. The ground layer is usually tussock grasses, including *Themeda triandra*, *Heteropogon contortus*, *Mnesithea rottboellioides* and *Bothriochloa decipiens*, together with herbs or forbs such as *Glycine tabacina*, *Galactia tenuiflora* or *Sida hackettiana*. Occurs on Cainozoic alluvial plains. Older floodplain complexes, major stream levees and lighter deltaic deposits. Not a Wetland. (BVG1M: 9e).

Vegetation communities in this regional ecosystem include:

11.3.35a: *Corymbia tessellaris*, *C. clarksoniana* and *Eucalyptus platyphylla* woodland. Occurs on Cainozoic alluvial plains. Older floodplain complexes, major stream levees and lighter deltaic deposits. Not a Wetland. (BVG1M: 9e).

Short description: *Eucalyptus platyphylla*, *Corymbia clarksoniana* woodland on alluvial plains

Supplementary descriptions: Christian et al. (1953), Clare, Milleroo; Cumming (2000)

Subregions:

1, 2, 6, (9.4), (5), (11), (12), (14), (3), (17), (7.5), (7.1), (8.6)

Protected areas: Bowling Green Bay NP, Wongaloo CP, Pinnacles NP, Townsville Town Common CP, Magnetic Island NP, Paluma Range NP, Cape Pallarenda CP, Bolger Bay CP, Magnetic Island CP 1, Cape Upstart NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.3.35: Invaded by **Ziziphus mauritiana* (chinee apple) and **Cryptostegia grandiflora* (rubber vine) in some districts.

Estimated extent:¹ Pre-clearing 182000 ha; Remnant 2021 107000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.36

Description: Eucalyptus crebra and/or E. populnea and/or E. melanophloia woodland with a grassy ground layer. Occurs on Cainozoic alluvial plains. Older floodplain complexes and river terraces. Not a Wetland. (BVG1M: 18b).

Short description: Eucalyptus crebra and/or E. populnea and/or E. melanophloia on alluvial plains. Higher terraces

Supplementary descriptions: Speck et al. (1968), Mimosa, Perch; Story et al. (1967), Connors

Subregions: 14, 2, 6, (11), (22), (8.6)

Protected areas: Homevale NP, Mount O'Connell NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 20000 ha; Remnant 2021 8000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.3.37

Description: Eucalyptus coolabah with Eucalyptus camaldulensis woodland to low woodland. Other scattered trees such as Lysiphyllum gilvum, Melaleuca trichostachya, Melaleuca bracteata and Eucalyptus populnea may occur. The mid layer varies from absent to a tall shrubland dominated by species such as Acacia stenophylla and Acacia salicina. Ground cover is variable composed of grasses and sedges. Includes larger waterholes within the stream channels. Occurs on fringing stream channels, often braided. Soils are bed loads of clay or silt with cobbles and boulders in some areas. Predominantly western sub-regions of the Brigalow Belt, for example the Suttor River and Culgoa catchments. Riverine. (BVG1M: 16a).

Short description: Eucalyptus coolabah fringing woodland on alluvial plains

Supplementary descriptions: Galloway et al. (1974), LU76 (in part); Gunn and Nix (1977) LU 135

Subregions: 7, 13, 37, 10, 15, 36, 11, (35), (8), (5), (4), (21), (9), (3), (6), (26), (6.1), (34)

Protected areas: Mazeppa NP, Nairana NP, Vandyke Creek CP

Extent in reserves: Low

Wetland: Riverine

Special values:

Comments: 11.3.37: Habitat for a diverse range of fauna particularly birds.

Estimated extent:¹ Pre-clearing 52000 ha; Remnant 2021 30000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.38

Description: Eucalyptus tereticornis, Corymbia tessellaris, C. dallachiana +/- E. fibrosa subsp. fibrosa, +/- Melaleuca spp. woodland to open forest. Includes areas dominated by Melaleuca bracteata low woodland. The grassy ground layer includes Arundinella nepalensis and Themeda triandra. Occurs on alluvial plains and broad drainage lines overlying magnetite deposits derived from serpentinite. Not a Wetland. (BVG1M: 16c).

Vegetation communities in this regional ecosystem include:

11.3.38a: Melaleuca bracteata low woodland. Occurs on alluvial plains and broad drainage lines overlying magnetite deposits derived from serpentinite. Usually occurs on heavy clays with some gilgai micro-relief. Riverine. (BVG1M: 22c).

Short description: Eucalyptus tereticornis, Melaleuca viridiflora, Corymbia tessellaris and Eucalyptus fibrosa subsp. fibrosa woodland with a grassy ground layer on alluvial plains and broad drainage lines derived from serpentinite

Supplementary descriptions: Forster and Barton (1995), Kunwarara and Tungamul (in part); Batianoff and Singh (2001)

Subregions: 14

Protected areas: Baga NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.3.38: Habitat for threatened plant species including Bursaria reevesii, Capparis thozetiana and Hakea trineura and the near threatened species Stackhousia tryonii and Pimelea leptospermoides.

Comments: 11.3.38: Mining exploration permits have been issued for most of this area with smaller areas under mining lease. Extensively cleared.
11.3.38a: Extensively cleared. Mining exploration permits have been issued for most of this area with smaller areas under mining lease.

Estimated extent:¹ Pre-clearing 38000 ha; Remnant 2021 9000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.3.39

Description: Eucalyptus melanophloia and/or E. chloroclada woodland to open woodland. Other tree species may also occur, including Angophora floribunda, Callitris glaucophylla, E. populnea, E. populnea x E. crebra hybrids and (towards drainage lines) E. tereticornis. Shrub layers are not usually present in this association. The ground layer is dominated by perennial grasses, and is moderately dense to dense. Occurs on flat to undulating wide valley floors on alluvial or colluvial material derived from surrounding dissected sandstone ranges, generally with deep, loamy or sandy, duplex soils. Not a Wetland. (BVG1M: 17b).

Short description: Eucalyptus melanophloia +/- E. chloroclada open woodland on undulating plains and valleys with sandy soils

Supplementary descriptions: Neldner (1984), 18b (Association 70); Galloway et al. (1974), LU 5; Speck et al. (1968), Carborough

Subregions: 24, 20, 26, (15), (23), (25), (27), (21), (13)

Protected areas: Carnarvon NP, Expedition (Limited Depth) NP, Expedition NP, Chesterton Range NP, Lake Murphy CP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.3.39: Potential habitat for NCA listed species: Corymbia scabrida.

Comments: 11.3.39: This regional ecosystem was described by Sattler and Williams (1999) under land zone 10 (11.10.10) and occupies valleys and adjacent colluvial lower slopes between sandstone ranges (land zone 10) and drainage lines (land zone 3). Often occurs in association with Angophora leiocarpa woodland (11.10.6). Has been thinned in many areas.

Estimated extent:¹ Pre-clearing 189000 ha; Remnant 2021 139000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.3.40

Description: Semi-deciduous notophyll to mesophyll vine forest. Emergents occasionally occur, including *Terminalia sericocarpa*, *Alstonia scholaris*, *Nauclea orientalis* and *Melaleuca leucadendra*. The canopy composition is variable, including *Aphananthe philippinensis*, *Cordia dichotoma*, *Castanospermum australe*, *Carallia brachiata*, *Cryptocarya hypospodia*, *Litsea leefeana* and *Melia azedarach*. *Livistona decora* may be locally abundant in seasonally waterlogged depressions. The most common vines in the canopy are *Cissus oblonga*, *Trophis scandens* and *Flagellaria indica*. There are usually lower tree layers, frequently dominated by *Chionanthus ramiflorus*, *Myristica insipida*, *Mallotus philippensis*, *Cryptocarya triplinervis*, *Arytera divaricata*, *Neolitsea brassii* and *Pittosporum ferrugineum*. There may be a shrub layer of *Mallotus* spp., *Brucea javanica* and *Murraya ovatifoliolata*. The ground layer is usually very sparse and typical species are *Oplismenus* spp., *Lomandra longifolia*, *Cordyline murchisoniae* and *Pseuderanthemum variabile*. Plains and levees (fringing or in vicinity of watercourses) on level alluvial plains to undulating hills of lowlands and foothills. Geology mapped variously as Qa, Qf, Qha and Qf>Pc/v (Quaternary clay, silt, sand, gravel, rubble and soil, semi-consolidated in places; mainly alluvium, some colluvium and residual soil, active stream channels, low terraces, flood-out sheets and small fans). Riverine. (BVG1M: 4b).

Short description: Semi-deciduous notophyll to mesophyll vine forest, fringing or in the vicinity of watercourses, on lowlands (subregion 1).

Supplementary descriptions:

Subregions: 1

Protected areas: Wongaloo CP

Extent in reserves: Low

Wetland: Riverine

Special values:

Comments: 11.3.40: Distinguished from all other vine forest regional ecosystems and vegetation communities in the Brigalow Belt bioregion by its mesic appearance and dominance of species such as *Terminalia sericocarpa*, *Alstonia scholaris*, *Castanospermum australe* and *Carallia brachiata*. Sparsely distributed along coastal watercourses and occasionally alluvial fans throughout subregion 1, from Ayr to Mount Elliot. Lowland rainforest regional ecosystem now mostly cleared for sugar cane. Threatened by fire and weed invasion. Significant weeds include java plum (**Syzygium cumini*), guava (**Psidium guajava*) and african tulip (**Spathodea campanulata*). Others include **Rivina humilis*, **Passiflora suberosa*, **P. pallida* and **Lantana camara*.

Estimated extent:¹ Pre-clearing 600 ha; Remnant 2021 200 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Highly localised, less than 1,000 ha.

Regional ecosystem 11.4.1

Description: Semi-evergreen vine thicket +/- *Casuarina cristata*. May commonly include *Planchonella cotinifolia*, *Lysiphyllum hookeri*, *Capparis* spp. and *Terminalia oblongata*, with lower stratum of *Elaeodendron australe*, *Denhamia oleaster* and *Pittosporum spinescens*. A ground layer of *Ancistrachne uncinulata*, *Cheilanthes* spp., and *Solanum ellipticum* may be present. Occurs on Cainozoic clay plains including extensively weathered Tertiary basalt. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket +/- *Casuarina cristata* on Cainozoic clay plains

Supplementary descriptions: Fensham and Fairfax (1997a); Fensham (1995); Fensham and Streimann (1997); Story et al. (1967), Racecourse

Subregions: 11, 6, 2, 21, (22), (27), (10), (17), (12), (14)

Protected areas: Dipperu NP (S)

Extent in reserves: Medium

Wetland: Not a Wetland

Special values: 11.4.1: Habitat for the near threatened plant species *Macropteranthes leiocaulis*.

Comments: 11.4.1: Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 26000 ha; Remnant 2021 2000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.4.2

Description: *Eucalyptus populnea/brownii* or *E. melanophloia* +/- *Corymbia dallachiana* +/- *C. tessellaris* +/- *E. crebra* +/- *E. platyphylla* woodland. Occurs on Cainozoic clay plains, often on rises or patches of coarser textured material. Cracking clay and texture contrast soils. Not a Wetland. (BVG1M: 17a).

Short description: *Eucalyptus* spp. and/or *Corymbia* spp. grassy or shrubby woodland on Cainozoic clay plains

Supplementary descriptions: Forster and Barton (1995), Plainview; Gunn et al. (1967), Humboldt, Blackwater; Story et al. (1967), Nebo; Gunn and Nix (1977), LU 87, 90, Burgess (2003) (VA7), (VA20), Collawmar, Foxleigh

Subregions: 11, 14, 6, 2, 12, (10), (15), (7), (16), (13), (8), (21), (20), (17), (18), (9), (5), (19), (23)

Protected areas: Homevale NP, Dipperu NP (S), Tooloombah Creek CP, Taunton NP (S), Expedition (Limited Depth) NP, Expedition NP, Expedition RR

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.4.2: Potential habitat for NCA listed species: *Solanum adenophorum*.

Comments: 11.4.2: This regional ecosystem is associated with both fine-textured Cainozoic sediments (land zone 4) and coarser-textured Cainozoic material (land zone 5).

Estimated extent:¹ Pre-clearing 195000 ha; Remnant 2021 34000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.4.3

Description: *Acacia harpophylla* and/or *Casuarina cristata* open forest. *Acacia harpophylla* forms a continuous canopy with varying densities of *Casuarina cristata*, forming part of the canopy or emerging above it. *Casuarina cristata* may be dominant or form pure stands particularly in the south of the bioregion (subregions 33, 36). *Eucalyptus* spp. such as *E. orgadophila*, *E. populnea*, *E. microcarpa*, *Eucalyptus woollsiana*, *E. cambageana* and *E. thozetiana* (on shallower soils and upper slopes) may be scattered through the canopy or occur as emergents. *Brachychiton rupestris* may also be present in places. An open to dense, tall shrub layer is present, and is dominated by *Eremophila mitchellii* and/or *Geijera parviflora*. Low shrubs are often present, occasionally forming a distinct layer dominated by species such as *Carissa ovata* and *Alectryon diversifolius*. *Melaleuca bracteata* may be present in low-lying areas. The ground layer is sparse to open, and composed of grasses and forbs. Occurs on Cainozoic clay plains with cracking clay soils which are often with a weak gilgai microrelief. The plains may be flat to gently undulating. Soils are often cracking clay which are usually deep to very deep, often self-mulching, and sometimes with surface stone. Texture contrast soils and other clays may also be present in places. Contains Palustrine. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.4.3a: *Melaleuca squamophloia* woodland associated with *Acacia harpophylla* communities. May include scattered occurrences of other tree species such as *Eucalyptus tereticornis*, *E. populnea*, *Acacia harpophylla* and *Casuarina cristata*. In some instances *E. tereticornis* dominates with other species restricting to a narrow fringe. There may be an understorey of *Damasonium minus*, *Typha orientalis*, *Cyperus* spp., and other wetland plants associated with ephemeral wetlands. Associated with heavy dark clay soils with very broad and deep gilgai which is seasonally ponded and remain wet for long periods. Palustrine. (BVG1M: 25a).

11.4.3b: *Eucalyptus argophloia*, *Acacia harpophylla* open forest. Associated trees may include *Casuarina cristata*, *Eucalyptus populnea* or *Eucalyptus microcarpa*, with a shrub layer of *Geijera parviflora*. Associated with heavy dark clay soils with very broad and deep gilgai which is seasonally ponded and remain wet for long periods. Not a Wetland. (BVG1M: 25a).

Short description:	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> shrubby open forest on Cainozoic clay plains
Supplementary descriptions:	Speck et al. (1968), Wandoan (10); Dawson (1972), Tara, Hopelands, Humbug; Galloway et al. (1974), LU 38, 58; Vandersee (1975), Dalby (4); Mullins (1980), Tara, Sedgley; Neldner (1984), 6 (124); Fensham and Fairfax (1997), 3
Subregions:	33, 26, 30, 34, 29, 4.4, (32), (31), (28), (24), (27), (6.4), (10), (11), (35), (22), (16), (18), (15), (36), (19), (21), (17), (6.2), (20)
Protected areas:	Southwood NP, Erringibba NP, Bendidee NP, Bunya Mountains NP, Lake Broadwater CP
Extent in reserves:	Low
Wetland:	Contains Palustrine
Special values:	11.4.3: Specific habitat for threatened flora species including <i>Xerothamnella herbacea</i> (Endangered) and <i>Eucalyptus argophloia</i> (Vulnerable) and <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008). Larger gilgai may provide ephemeral wetland habitat. 11.4.3a: Provides important wetland habitat. 11.4.3b: Larger gilgai may provide ephemeral wetland habitat.
Comments:	11.4.3: Areas of this regional ecosystem that occur on texture contrast and/or sodic soils often have lower (12 metres) canopy and sparse to absent mid-layer. Widespread in the southern half of the bioregion. Extensively cleared for cropping and pasture. Naturalised species associated with this regional ecosystem include <i>*Malvastrum americanum</i> . 11.4.3a: Occurs at Bellevue swamp and other scattered locations within a much larger area of <i>Acacia harpophylla</i> +/- <i>Casuarina cristata</i> (RE 11.4.3). Mainly occurs scattered across brigalow clay plains in subregions 27, 30 and 31. 11.4.3b: Confined to a small area to the west of Durong, N. of Chinchilla. This regional ecosystem has been almost completely cleared, and exists primarily as regrowth or isolated paddock trees of <i>Eucalyptus argophloia</i> .
Estimated extent:¹	Pre-clearing 1647000 ha; Remnant 2021 83000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.4.4

Description: *Dichanthium* spp. +/- *Astrebla* spp. tussock grassland (mainly *A. lappacea* and *A. pectinata*). Other grasses frequently present include *Thellungia advena*, *Panicum* spp. and *Aristida* spp. Forbs and annual grasses may become common with seasonal rains. Occasional shrubs and trees may be present in places. Occurs on flat to gently undulating clay plains formed from Cainozoic or weathered basalt unconsolidated sediments. Soils are generally moderate to deep to very deep dark grey self-mulching cracking clays with linear gilgai. Gravel or stone may be present in some areas. Not a Wetland. (BVG1M: 30b).

Short description: *Dichanthium* spp., *Astrebla* spp. grassland on Cainozoic clay plains

Supplementary descriptions: Gunn et al. (1967), Avon (1), Kinsale (5), Moray (3), Wondabah (1); Speck et al. (1978), Highworth (4); Gunn and Nix (1977), LU 43, 102, 109; Fensham (1999), Mitchell grass on alluvium (in part); Burgess (2003) (VA28), Carfax

Subregions: 7, 2, 4.4, 11, (10), (26), (15), (6), (21), (6.4), (13), (5), (20), (23)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.4.4: Habitat for threatened plant species including *Dichanthium queenslandicum*. Often occurs adjacent to lower lying areas dominated by regional ecosystems 11.4.11 and 11.3.3.

Comments: 11.4.4: Subject to invasion by *Parthenium hysterophorus* particularly in association with high total grazing pressure or periods of drought. The presence of dominant grass species varies with grazing and seasonal conditions.

Estimated extent:¹ Pre-clearing 74000 ha; Remnant 2021 28000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Threatening processes other than clearing. Under review.

Regional ecosystem 11.4.5

Description: *Acacia argyrodendron* woodland to open woodland. There are usually scattered small trees present including *A. argyrodendron*, *Terminalia oblongata*, *Owenia acidula*, *Lysiphyllum carronii* and *Eremophila mitchellii*. Grasses usually dominate the very sparse to mid-dense ground layer, including *Dichanthium sericeum*, *Panicum decompositum* and *Aristida latifolia*. Occurs on flat to gently undulating plains formed from unconsolidated Cainozoic deposits. Not a Wetland. (BVG1M: 26a).

Short description: *Acacia argyrodendron* woodland on Cainozoic clay plains

Supplementary descriptions: Gunn et al. (1967), Blackwater, Somerby, Disney; Burgess (2003) (VA 37) Turon, Warwick; Gunn and Nix (1977) LU 40, LU 36; Burgess (2003) (VA37), (VA4), Warwick, Turon

Subregions: 7, (3), (5), (11), (4), (10.2), (6)

Protected areas: Nairana NP, Wilandspey CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.4.5: Extensively cleared for pasture. The exotic species **Cenchrus ciliaris* often dominates the ground layer.

Estimated extent:¹ Pre-clearing 101000 ha; Remnant 2021 12000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Extensively cleared recently (2016-2019) in the Belyando subregion

Regional ecosystem 11.4.6

Description: *Acacia cambagei* woodland to open forest. A secondary tree layer commonly occurs, including *Lysiphyllum carronii*, *Geijera parviflora*, *Acacia harpophylla*, *A. argyrodendron*, *Terminalia oblongata* and *Eremophila mitchellii*. A shrub layer may occur, including *Carissa ovata*, *Capparis lasiantha*, *Eremophila deserti*, *Capparis anomala* and *Alectryon diversifolius*. The ground layer is sparse to open and dominated by tussock grasses. Occurs on gently undulating plains formed from Cainozoic sediments. Associated soils are texture contrast with thin sandy or loamy surface horizons and strongly alkaline clay subsoils. Not a Wetland. (BVG1M: 26a).

Short description: *Acacia cambagei* woodland on Cainozoic clay plains

Supplementary descriptions: Gunn et al. (1967), Islay, Pine Hill, Ulcanbah; Gunn and Nix (1977), LU 35, LU 39

Subregions: 7, 3, 4.4, 8, 10, (13), (26), (6.4), (10.2), (6), (4), (10.4), (5)

Protected areas: Wilandspey CP, Mazeppa NP, Nairana NP, Epping Forest NP (S), Narrien Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.4.6: Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 352000 ha; Remnant 2021 39000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes: Under review

Regional ecosystem 11.4.7

Description: *Eucalyptus populnea* and *Acacia harpophylla* and/or *Casuarina cristata* open forest. The secondary tree layer is typically *Acacia harpophylla* and/or *Casuarina cristata*. A tall shrub layer commonly occurs, and is dominated by *Eremophila mitchellii* and *Geijera parviflora*. Other tall shrubs, such as *Ventilago viminalis* and *Heliodendron basalticum*, and lower shrubs such as *Carissa ovata* and *Alectryon oleifolius* may occur. The ground layer is often sparse. Usually associated with flat or lower, middle and upper slopes of gently undulating Cainozoic clay plains. Soils are usually texture contrast, but gilgai microrelief with cracking clays and earths may also be present. Not a Wetland. (BVG1M: 25a).

Short description: *Eucalyptus populnea* with *Acacia harpophylla* and/or *Casuarina cristata* open forest to woodland on Cainozoic clay plains

Supplementary descriptions: Gunn et al. (1967), Humboldt (2), Lennox (4), Monteagle (5), Pine Hill (2), Playfair (4); Speck et al. (1968), Thomby (9), Wandoan (11); Story et al. (1967); Somerby (1); Galloway et al. (1974), LU 53, 55; Gunn and Nix (1977), LU 22, 23, 97; Neldner (1984), 22a, b

Subregions: 29, 34, 26, (33), (8), (15), (30), (11), (28), (13), (6.1), (35), (21), (23), (36), (10), (6.2), (24)

Protected areas: Erringibba NP, Humboldt NP, Alton NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.4.7: Potential habitat for NCA listed species: *Rutidosia lanata*, *Solanum stenopterum*.

Comments: 11.4.7: Sometimes the *Acacia harpophylla* and/or *Casuarina cristata* forms small clumps. Where these clumps are > 5 ha they are defined as 11.4.3. Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 205000 ha; Remnant 2021 18000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.4.8

Description: Eucalyptus cambageana and Acacia harpophylla woodland to open forest. Acacia harpophylla may be replaced by A. argyrodendron in northern areas. E. thozetiana may occur on shallower soils. A secondary tree layer of Eremophila mitchellii and a low shrub layer of Carissa ovata and Geijera parviflora commonly occur. Occurs on level to gently undulating plains formed from Cainozoic deposits. Associated soils are usually deep texture contrast with thin loamy or sandy surface horizons overlying strongly alkaline clay subsoils. Surface or subsurface gravel is common. Contains Palustrine. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.4.8a: Gilgai and small depressions on clay plains usually associated with Acacia harpophylla ecosystems. Generally support a range of sedges, grasses and, when wet, aquatic species. Occurs on level to gently undulating plains formed from Cainozoic deposits. Seasonally inundated, dry and often bare otherwise. Palustrine. (BVG1M: 34f).

Short description:	Eucalyptus cambageana woodland to open forest with Acacia harpophylla or A. argyrodendron on Cainozoic clay plains
Supplementary descriptions:	Gunn et al. (1967), Blackwater (2,3), Borilla (4), Disney (3), Durrandella (4), Humboldt (3), Islay (2), Pinehill (3), Playfair (4), Portwine (3), Ulcanbah (2), Willows (3); Story et al. (1967), Connors (6), Somerby (2); Speck et al. (1968), Highworth (2), Kiddell (4), Ramsay (1), Thomby (3); Gunn and Nix (1977), LU 34, 124; Burgess (2003), (VA4) Turon, Warwick, (VA5) Racetrack, Pomegranate
Subregions:	7, 11, 8, (6), (13), (9), (3), (21), (10), (5), (15), (12), (16), (20), (4), (24), (10.2), (19)
Protected areas:	Dipperu NP (S), Belmah CP, Taunton NP (S), Nairana NP, Junee NP, Humboldt NP, Narrien Range NP, Wilandspey CP, Roundstone CP, Zamia Creek CP
Extent in reserves:	Low
Wetland:	Contains Palustrine
Special values:	11.4.8a: Larger gilgai provides ephemeral wetland habitat.
Comments:	11.4.8: Extensively cleared for pasture.
Estimated extent:¹	Pre-clearing 728000 ha; Remnant 2021 67000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.4.9

Description: *Acacia harpophylla* woodland to open forest, usually with a low tree mid-storey of *Terminalia oblongata* and *Eremophila mitchellii*. *Casuarina cristata* sometimes replaces *Acacia harpophylla* in the overstorey and *Lysiphyllum cunninghamii* sometimes co-dominates. Other low tree or shrub species such as *Alectryon diversifolius*, *Carissa ovata*, *Pittosporum spinescens*, *Ehretia membranifolia*, *Geijera parviflora* and *Flindersia dissosperma* may occur in the mid-storey or low shrub layer. Occurs on level to gently undulating Cainozoic plains, including weathered basalt. Associated soils are predominantly moderately deep to deep cracking clays that may be brown, red-brown or grey-brown, and with much surface gravel in some areas. Contains Palustrine. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.4.9a: *Acacia harpophylla*, *Lysiphyllum carronii* +/- *Casuarina cristata* open forest to woodland. Occurs on level to gently undulating Cainozoic plains, including weathered basalt. Associated soils are predominantly moderately deep to deep cracking clays that may be brown, red-brown or grey-brown, and with much surface gravel in some areas. Not a Wetland. (BVG1M: 25a).

11.4.9b: *Acacia harpophylla*, *Eucalyptus thozetiana* (sometimes *E. cambageana*) open forest to woodland. Occurs on level to gently undulating Cainozoic plains, including weathered basalt. Associated soils are predominantly moderately deep to deep cracking clays that may be brown, red-brown or grey-brown, and with much surface gravel in some areas. Not a Wetland. (BVG1M: 25a).

Short description:	<i>Acacia harpophylla</i> shrubby woodland with <i>Terminalia oblongata</i> on Cainozoic clay plains
Supplementary descriptions:	Gunn et al. (1967), Avon (2), Blackwater (2, 3, 4), Cungelella (3), Disney (3), Durrandella (4), Humboldt (4, 5), Islay (2), Kareela (3), Kinsale (1,3,4), Loudon (5), Monteagle (5), Peak Vale (3), Playfair (4), Somerby (2,3,4), Ulcanbah (3), Waterford (2), Willows (3,4), Wondabah (2, 5); Story et al. (1967), Blackwater (2, 3, 4), Humboldt (5,6), Monteagle (5), Moorooloo (3), Racecourse (2), Somerby (4,5); Speck et al. (1968), Dakenba (2-4), Doonkuna (8), Highworth (3,6,8), Juandah (3), Kiddell (4,7), Ramsay (7), Thomby (5,7), Wandoan (8, 10), Westwood (6), Woleebree (4,9); Gunn and Nix (1977), LU 34, 37, 38, 40, 41, 46, 50, 51, 52, 53, 72, 93, 100, 101, 127; Forster and Barton (1995), Somerby, Blackwater; Burgess (2003) (VA1), (VA8) Pomegranate, Racetrack, Turon, Warwick
Subregions:	7, 11, 10, 6, (23), (5), (13), (21), (8), (14), (9), (15), (17), (12), (19), (16), (18), (24), (4), (2), (20), (10.2)
Protected areas:	Carnarvon NP, Junee NP, Dipperu NP (S), Nairana NP, Taunton NP (S), Peak Range NP, Belmah CP, Zamia Creek CP, Mazeppa NP, Humboldt NP, Roundstone CP, Albinia NP, Albinia CP, Blackwater CP, Tooloombah Creek CP, Narrien Range NP
Extent in reserves:	Low
Wetland:	Contains Palustrine
Special values:	11.4.9: Potential habitat for NCA listed species: <i>Cadellia pentastylis</i> , <i>Solanum adenophorum</i> , <i>Solanum dissectum</i> , <i>Solanum elachophyllum</i> , <i>Solanum johnsonianum</i> , <i>Xerothamnella herbacea</i> .
Comments:	11.4.9: The presence of <i>Terminalia oblongata</i> often distinguishes this regional ecosystem from <i>Acacia harpophylla</i> on clay plains in southern Queensland (11.4.3). Areas mapped as 11.4.9b have been re-classified as 11.4.8a (<i>Acacia harpophylla</i> , <i>Eucalyptus cambageana</i> open forest to woodland). Extensively cleared for cropping and pasture.
Estimated extent:¹	Pre-clearing 989000 ha; Remnant 2021 89000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.4.10

Description:	Eucalyptus populnea and/or E. woollsiana or sometimes E. moluccana (or the closely related E. microcarpa) open forest to woodland with an understorey of Acacia harpophylla or Casuarina cristata. Associated with the edges of Cainozoic clay plains, on the lower parts of the plain around its dissecting edges and on natural discharge areas where the clay plains meet higher landforms. Occurs on deep, texture contrast soils. Not a Wetland. (BVG1M: 25a).
Short description:	Eucalyptus populnea or E. woollsiana, Acacia harpophylla, Casuarina cristata open forest to woodland on margins of Cainozoic clay plains
Supplementary descriptions:	Mullins (1980), Remeura
Subregions:	33, 32, (30), (36), (27), (29), (31), (13.3)
Protected areas:	Southwood NP, Bendidee NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.4.10: Potential habitat for NCA listed species: Xerothamnella herbacea.
Comments:	11.4.10: This regional ecosystem occurs on the lower parts of the clay plain around its dissecting edges and on natural discharge areas where the clay plains meet higher landforms (such as land zone 7 and 5). Restricted to southern part of bioregion. Extensively cleared for cropping and pasture.
Estimated extent:¹	Pre-clearing 64000 ha; Remnant 2021 7000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.4.11

Description:	Dichanthium sericeum and Astrebla spp. tussock grassland with patches of low Acacia harpophylla or Eucalyptus coolabah. Grassland dominated by Dichanthium sericeum and forms a mosaic with clumps of Acacia harpophylla, Lysiphyllum hookeri and L. carronii. A wide range of other grass and forb species are usually present, depending on seasonal conditions and management regime. Frequently occurring species include the grasses Aristida leptopoda, A. latifolia, Astrebla lappacea, Bothriochloa erianthoides, Digitaria brownii, D. divaricatissima, Eriochloa crebra, Panicum decompositum, P. queenslandicum, Paspalidium globoideum and the forbs Abelmoschus ficulneus, Boerhavia dominii, Corchorus trilocularis, Cyperus bifax, Glycine latifolia, Hibiscus verdcourtii, Ipomoea lonchophylla, Phyllanthus maderaspatensis, Tribulus micrococcus and Rhynchosia minima. Occurs in shallow open valleys and poorly drained Cainozoic clay plains with deep cracking clay soils. Not a Wetland. (BVG1M: 30b).
Short description:	Dichanthium sericeum and Astrebla spp. grassland with patchy Acacia harpophylla or Eucalyptus coolabah on Cainozoic clay plains
Supplementary descriptions:	Gunn et al. (1967), Avon (3); Fensham (1999), Mitchell Grass on alluvium; Gunn and Nix (1977) LU43, LU 44
Subregions:	7, (6), (10), (5), (10.2)
Protected areas:	Mazeppa NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	
Comments:	11.4.11: This regional ecosystem may include low lying areas that occur on alluvium (land zone 3) and is often associated with similar regional ecosystems on gently undulating clay plains (11.4.4) and more low lying areas (11.3.3 and 11.3.21). Subject to very heavy infestation by the exotic species Parthenium hysterophorus which dominates the ground layer in many areas. Naturalised species associated with this regional ecosystem include *Malvastrum americanum.
Estimated extent:¹	Pre-clearing 74000 ha; Remnant 2021 24000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	Threatening processes other than clearing. Under review.

Regional ecosystem 11.4.12

Description: Eucalyptus populnea woodland. Scattered other Eucalyptus spp. may occur. Scattered trees such as Callitris glaucophylla and Acacia excelsa may occur and occasionally form a secondary tree layer. A tall shrub layer of Eremophila mitchellii, Acacia pendula and Geijera parviflora commonly occurs. A low shrub layer may occur, particularly on upper slopes. The ground layer is typically perennial grasses, including Aristida spp. and Eragrostis spp., and forbs are conspicuous. Occurs on eroding edge of Tertiary clay plains. Not a Wetland. (BVG1M: 17a).

Vegetation communities in this regional ecosystem include:

11.4.12a: Acacia maranoensis +/- Eucalyptus populnea woodland. Occurs on eroding edge of Tertiary clay plains. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus populnea woodland on Cainozoic clay plains
Supplementary descriptions: Dawson (1972), 13; Neldner (1984), 23b
Subregions: 30, 34, 31, 29, 33, 32, 26, (15), (27), (6.2)
Protected areas:
Extent in reserves: No representation
Wetland: Not a Wetland
Special values: 11.4.12: Potential habitat for NCA listed species: Rutidosis lanata.
Comments: 11.4.12: Extensively cleared for pasture or modified by total grazing pressure.
Estimated extent:¹ Pre-clearing 70000 ha; Remnant 2021 7000 ha
VM class: Endangered
Biodiversity status: Endangered
Biodiversity status notes:

Regional ecosystem 11.4.13

Description: Eucalyptus orgadophila open woodland. Other canopy species include Corymbia dallachiana and C. erythrophloia. Scattered shrubs and low trees may occur, including Alectryon diversifolius, Vachellia bidwillii, Cassia brewsteri and Atalaya hemiglauc. The ground layer is dominated by tussock grasses, including Dichanthium sericeum, Bothriochloa ewartiana, Heteropogon contortus, Panicum queenslandicum and Themeda triandra. Occurs on Cainozoic clay plains. The soils associated with this regional ecosystem are often derived from weathered basalt. Not a Wetland. (BVG1M: 11a).

Short description: Eucalyptus orgadophila open woodland on Cainozoic clay plains
Supplementary descriptions: Burgess (2003) (VA19), Carfax
Subregions: 6, 11, (12)
Protected areas:
Extent in reserves: No representation
Wetland: Not a Wetland
Special values:
Comments: 11.4.13: This unit may sometimes show surface soils with linear gilgai, a feature seen on related basaltic ecosystems (Burgess 2003). The ground layer invaded by exotic weed species such as *Cenchrus ciliaris and *Parthenium hysterophorus.
Estimated extent:¹ Pre-clearing 23000 ha; Remnant 2021 11000 ha
VM class: Least concern
Biodiversity status: Of concern
Biodiversity status notes: The ground layer invaded by exotic weed species such as *Cenchrus ciliaris and *Parthenium hysterophorus

Regional ecosystem 11.5.1

Description: Eucalyptus crebra and/or E. populnea +/- Angophora leiocarpa +/- E. woollsiana (in south of bioregion) woodland to open woodland. A low tree layer dominated by Allocasuarina luehmannii +/- Melaleuca decora +/- Callitris glaucophylla +/- C. endlicheri is usually present. In some areas Allocasuarina luehmannii low woodland is the dominant layer. The ground cover is usually sparse and dominated by perennial tussock grasses. Occurs on flat to gently undulating plains formed from weathered sandstones. Duplex soils with sandy surfaces. Not a Wetland. (BVG1M: 18b).

Vegetation communities in this regional ecosystem include:

11.5.1a: Eucalyptus populnea woodland with Allocasuarina luehmannii low tree layer. Occurs on flat to gently undulating plains formed from weathered sandstones. Duplex soils with sandy surfaces. Not a Wetland. (BVG1M: 17a).

Short description:	Eucalyptus crebra and/or E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii woodland on Cainozoic sand plains and/or remnant surfaces
Supplementary descriptions:	Dawson (1972), 15-18; Galloway et al. (1974), LU25, LU30 (in part), LU 31; Mullins (1980), Broadwater, Crowder, Booroondoo; Neldner (1984), 14a; Speck et al. (1968), Wooroonah, Redcliffe; Taylor and Grimshaw (1994-95), Goondiwindi MU11A, MU9A, MU16A, Dalby MU1A, MU13A, Chinchilla MU1B, MU16A; Maher (1995), 10a, 10b, 9a, 9b
Subregions:	32, 27, 26, (22), (33), (28), (31), (29), (16), (9), (11), (30), (34), (25), (18), (12.6), (36)
Protected areas:	Wondul Range NP, Stones Country RR, Lake Broadwater CP, Bendidee NP, Lake Broadwater RR
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.5.1: Habitat for threatened plant species including Acacia handonis and Acacia argyrotricha.
Comments:	11.5.1: Often intermixes with E. woollsiana/E. moluccana dominated vegetation (regional ecosystem 11.5.20) sometimes merging into alluvial areas (regional ecosystem 11.3.18 or 11.3.26). Small unmapped areas of Melaleuca nodosa with scattered shrubs including Xanthorrhoea sp. and a Triodia scariosa ground layers (Isbell 1957) occur in association with this regional ecosystem.
Estimated extent:¹	Pre-clearing 775000 ha; Remnant 2021 477000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.5.2

Description: Eucalyptus crebra +/- Corymbia clarksoniana +/- C. citriodora +/- E. moluccana woodland. Sparse ground layer and sparse to mid-dense shrub/low tree layer. On duplex soils, Allocasuarina luehmannii low tree layer is often present and can be the dominant layer in some areas. Other canopy or sub-canopy trees that may be present include Lysicarpus angustifolius, Acacia rhodoxylon, Eucalyptus exserta, E. tenuipes and Corymbia tessellaris. Occurs on Cainozoic sandplains which are often below hills and ranges. Not a Wetland. (BVG1M: 18b).

Vegetation communities in this regional ecosystem include:

11.5.2a: Allocasuarina luehmannii low tree layer with or without emergent woodland. Occurs on Cainozoic sandplains which are often below hills and ranges. Not a Wetland. (BVG1M: 24a).

Short description: Eucalyptus crebra, Corymbia spp., with E. moluccana woodland on lower slopes of Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Dowling and Stephens (1997), 2, 3, 9; Speck et al. (1968), Melbadale; Gunn and Nix (1977) LU 16

Subregions: 16, 11, (5), (21), (6), (22), (3), (31), (17), (14), (20), (12), (10), (8), (27), (7), (13), (18), (12.10), (9.4)

Protected areas: Humboldt NP, Blackdown Tableland NP, Taunton NP (S), Goodedulla NP, Palmgrove NP (S), Junee NP, Reinke Scrub CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.5.2: Potential habitat for NCA listed species: Acacia storyi.

Comments:

Estimated extent:¹ Pre-clearing 361000 ha; Remnant 2021 189000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.5.3

Description: *Eucalyptus populnea* +/- *E. melanophloia* +/- *Corymbia clarksoniana* +/- *C. dallachiana* and occasionally *E. cambageana* or *E. brownii* woodland. Localised areas may be dominated by *E. melanophloia*, occasionally *E. crebra* and other canopy species. There is typically a secondary tree layer, including *Eremophila mitchellii*, *Geijera parviflora*, *Heliodendron basalticum*, *Erythroxylum australe*, *Cassia brewsteri*, *Ventilago viminalis*, *Allocasuarina luehmannii* and *Callitris glaucophylla*. A low shrub layer of *Carissa ovata*, *Erythroxylum australe*, *Capparis lasiantha* commonly occurs. Occurs on flat to gently undulating plains formed from Cainozoic sediments. Associated soils are generally deep texture contrast with thick sandy surface horizons with some deep red earths. Not a Wetland. (BVG1M: 17a).

Vegetation communities in this regional ecosystem include:

11.5.3a: [RE not in use]²: This vegetation community is now mapped as 11.5.3. *Eucalyptus melanophloia* +/- *Corymbia clarksoniana* +/- *C. dallachiana* dominate the tree layer (14m median height and 11-15m range) woodland. There is generally a low tree layer (8, 6-11m high) present. RE is defunct. Not a Wetland. (BVG1M: 17b).

11.5.3b: *Eucalyptus populnea* woodland on closed depressions. Occurs on closed depressions in sandplains. Palustrine. (BVG1M: 17a).

11.5.3x1: *Eucalyptus persistens* and *E. populnea* +/- *E. crebra* +/- *E. melanophloia* +/- *Corymbia clarksoniana* +/- *C. dallachiana* and occasionally *E. cambageana* or *E. brownii* woodland. Localised areas may be dominated by *E. melanophloia*, occasionally *E. crebra* and other canopy species. There is typically a secondary tree layer, including *Eremophila mitchellii*, *Geijera parviflora*, *Heliodendron basalticum*, *Erythroxylum australe*, *Flindersia dissosperma*, *Alectryon oleifolius*, *Cassia brewsteri*, *Ventilago viminalis*, *Allocasuarina luehmannii* and *Callitris glaucophylla*. A low shrub layer of *Carissa ovata*, *Erythroxylum australe*, *Capparis lasiantha* commonly occurs. Occurs on flat to gently undulating plains and low rises formed from Cainozoic sediments adjacent to hills and ranges in the inland northern part of the bioregion (e.g. Associated soils are generally moderately-deep to deep texture contrast soils with sandy surface horizons and some red earths. Not a Wetland. (BVG1M: 17a).

Short description:	<i>Eucalyptus populnea</i> +/- <i>E. melanophloia</i> +/- <i>Corymbia clarksoniana</i> woodland on Cainozoic sand plains and/or remnant surfaces
Supplementary descriptions:	Gunn et al. (1967), Pine Hill, Humboldt, Islay, Lennox, Monteagle (1,4), Tichbourne; Story et al. (1967), Monteagle; Gunn and Nix (1977), LU 23
Subregions:	7, 6, 11, 5, (8), (13), (9), (15), (3), (12), (26), (10), (2), (24), (4.4), (16), (20), (4), (10.4), (9.4), (22), (10.2), (10.3)
Protected areas:	Dipperu NP (S), Humboldt NP, Belmah CP, Taunton NP (S), Narrien Range NP, Wilandspey CP, Carnarvon NP, Nairana NP, Junee NP, Mazeppa NP, Albinia NP, Epping Forest NP (S)
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.5.3: Potential habitat for NCA listed species: <i>Sannantha brachypoda</i> . 11.5.3x1: Potential habitat for NCA listed species: <i>Sannantha brachypoda</i> .
Comments:	11.5.3: Regional Ecosystem 11.5.3a has been amalgamated into this RE. Extensively cleared for pasture or modified by total grazing pressure and invasion by the exotic pasture species <i>*Cenchrus ciliaris</i> . Management priorities or bird habitat protection are cessation of broad scale clearing, management of regrowth, maintenance of fallen woody debris increased fire frequency and reduction in grazing and exotic pasture grass (Hannah et al 2007). 11.5.3x1: Regional Ecosystem 11.5.3a has been amalgamated into this RE. Extensively cleared for pasture or modified by total grazing pressure and invasion by the exotic pasture species <i>*Cenchrus ciliaris</i> . Management priorities or bird habitat protection are cessation of broad scale clearing, management of regrowth, maintenance of fallen woody debris increased fire frequency and reduction in grazing and exotic pasture grass (Hannah et al 2007).
Estimated extent: ¹	Pre-clearing 975000 ha; Remnant 2021 366000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.5.4

Description: Eucalyptus chloroclada, Callitris glaucophylla, Angophora leiocarpa woodland. Occasional canopy species may include A. floribunda and E. crebra or E. rhombica. A low tree layer is usually present that includes species such as Allocasuarina luehmannii, A. inophloia and Callitris endlicheri. Occurs on Cainozoic plains with deep sandy soils. Not a Wetland. (BVG1M: 18b).

Vegetation communities in this regional ecosystem include:

11.5.4a: Callitris glaucophylla +/- Eucalyptus spp. and Corymbia spp. woodland. Occurs on Cainozoic plains with deep sandy soils. Not a Wetland. (BVG1M: 20a).

Short description: Eucalyptus chloroclada, Callitris glaucophylla, C. endlicheri, Angophora leiocarpa woodland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Mullins (1980), 9-12; Taylor and Grimshaw (1994-95), Goondiwindi MU11B, MU23A, MU7B, MU7C(pt), Dalby MU1B, MU1C(pt), MU10A, MU10C, Chinchilla MU1A

Subregions: 32, 27, 33, 34, 26, (18), (30), (31), (29), (25), (13.3), (36)

Protected areas: Wondul Range NP, Southwood NP, Bendidee NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.5.4: Potential habitat for NCA listed species: Macrozamia machinii.

Comments: 11.5.4: Occurs in southern part of the bioregion.

Estimated extent:¹ Pre-clearing 142000 ha; Remnant 2021 108000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.5.5

Description: Eucalyptus melanophloia woodland, sometimes in association with E. populnea which may dominate localised areas. Scattered other Eucalyptus spp. may be present such as E. chloroclada (in south), Corymbia tessellaris (in north) and sometimes E. crebra. Callitris glaucophylla dominates the lower tree layer, with occasional Acacia spp. and Allocasuarina luehmannii trees. The shrub layer is often absent or sparse but may be prominent and dominated by tall shrubs such as Geijera parviflora and Eremophila mitchellii and scattered low shrubs, especially in disturbed areas. The ground layer is sparse to open, and dominated by perennial grasses such as Aristida spp., Bothriochloa decipiens and Eragrostis spp. Occurs on undulating plains and rises formed on Cainozoic deposits. Associated soils are usually deep texture contrast soils, with thick, sandy surface horizons overlying yellow, mottled clay subsoil's. Not a Wetland. (BVG1M: 17b).

Vegetation communities in this regional ecosystem include:

11.5.5a: Eucalyptus melanophloia, Callitris glaucophylla +/- E. populnea woodland. Occurs on undulating plains and rises formed on Cainozoic deposits. Associated soils are usually deep texture contrast soils, with thick, sandy surface horizons overlying yellow, mottled clay subsoil's. Not a Wetland. (BVG1M: 17b).

11.5.5b: Callitris glaucophylla, Eucalyptus melanophloia, Eucalyptus populnea +/- Corymbia tessellaris woodlands. Occurs on undulating plains and rises formed on Cainozoic deposits. Associated soils are usually deep texture contrast soils, with thick, sandy surface horizons overlying yellow, mottled clay subsoil's. Not a Wetland. (BVG1M: 20a).

11.5.5c: Eucalyptus melanophloia, and/or Eucalyptus populnea +/- Callitris glaucophylla +/- Allocasuarina luehmannii woodland sometimes E. conica is present in the overstorey. Occurs on undulating plains and rises formed on Cainozoic deposits. Associated soils are usually deep texture contrast soils, with thick, sandy surface horizons overlying yellow, mottled clay subsoil's. Not a Wetland. (BVG1M: 17b).

Short description:	Eucalyptus melanophloia, Callitris glaucophylla woodland on Cainozoic sand plains and/or remnant surfaces. Deep red sands
Supplementary descriptions:	Galloway et al. (1974)LU 25, LU48; Isbell (1957), 1957 MU12; Neldner (1984), 19b (54); Gunn and Nix (1977), LU 21
Subregions:	26, 16, 29, (24), (33), (8), (11), (15), (34), (10.4), (30), (6.1), (6.2), (35), (28), (13), (6.4), (36)
Protected areas:	Alton NP, Humboldt NP, Morven CP, Narrien Range NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.5.5: Potential habitat for NCA listed species: Vincetoxicum forsteri.
Comments:	11.5.5: Extends into adjacent parts of the Mulga Lands bioregion. 11.5.5a: Occurs in northern parts of the bioregion. 11.5.5c: Occurs in northern parts of the bioregion.
Estimated extent:¹	Pre-clearing 395000 ha; Remnant 2021 138000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.5.6

Description: *Triodia* spp. hummock grassland +/- shrubs and scattered low trees. *Eucalyptus melanophloia* is a common emergent tree, along with occasional *Corymbia clarksoniana* or *C. terminalis*. A shrub layer commonly occurs, its density and composition highly variable and affected by the frequency of fires. Scattered tussock grasses and seasonally prominent forbs occur between the hummock grass layer. Occurs on Cainozoic sandplains. Not a Wetland. (BVG1M: 33b).

Short description: *Triodia* spp. hummock grassland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Isbell (1957), MU12; Neldner (1984), 65 (147)

Subregions: 34, (33)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.5.6: Can be floristically diverse but requires appropriate burning to maintain species composition.

Estimated extent:¹ Pre-clearing 3000 ha; Remnant 2021 3000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.5.7

Description: *Eucalyptus acmenoides* and *Angophora leiocarpa* open forest. A secondary tree or tall shrub layer may occur, including *Lysicarpus angustifolius*, *Alphitonia excelsa* and *Petalostigma pubescens*. Occurs on flat to gently undulating plains formed from Cainozoic deposits. Associated soils are generally deep texture contrast with thick soft sandy surface horizons over acid mottled massive clayey subsoils. Not a Wetland. (BVG1M: 18a).

Short description: *Eucalyptus acmenoides*, *Angophora leiocarpa* open forest on Cainozoic sand plains and/or remnants

Supplementary descriptions: Speck et al. (1968), Wooroonah (4); Gunn and Nix (1977), LU 31

Subregions: 16, (21)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.5.7: Potential habitat for NCA listed species: *Macrozamia platyrhachis*.

Comments:

Estimated extent:¹ Pre-clearing 32000 ha; Remnant 2021 29000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes: Under review

Regional ecosystem 11.5.8

Description: Mosaic of *Melaleuca viridiflora* and/or *M. nervosa* woodland and *Eucalyptus crebra*, *Corymbia intermedia*, *E. latisinensis* and *Lophostemon suaveolens* woodland. Occurs on gently undulating plains and rises formed from unconsolidated coarse and medium textured Cainozoic sediments. Associated soils are yellow and brown duplex or yellow and red gradational. Not a Wetland. (BVG1M: 21a).

Vegetation communities in this regional ecosystem include:

11.5.8a: *Eucalyptus platyphylla*, *Corymbia intermedia*, *Lophostemon suaveolens* +/- *Eucalyptus tereticornis* woodland. Occurs on rises and low hills. Not a Wetland. (BVG1M: 9b).

11.5.8b: *Corymbia clarksoniana*, *Eucalyptus exserta*, *E. crebra*, *E. tereticornis*, *E. platyphylla* woodland often with a low tree layer dominated by *Melaleuca viridiflora*, *M. nervosa*, *Allocasuarina littoralis*, *Grevillea banksii*, *Acacia flavescens* or *Acacia leiocalyx*. Occurs on gently undulating plains and rises formed from unconsolidated coarse and medium textured Cainozoic sediments. Associated soils are yellow and brown duplex or yellow and red gradational. Not a Wetland. (BVG1M: 9e).

11.5.8c: *Eucalyptus platyphylla* woodland on white-yellow weathered sands, with grassy ground layer. Occurs on Quaternary sediments. Not a Wetland. (BVG1M: 18a).

Short description: *Melaleuca* spp., *Eucalyptus crebra*, *Corymbia intermedia* woodland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Forster and Barton (1995), Banksia, Couti Outi

Subregions: 14, (6), (12), (17), (11), (8.4), (2)

Protected areas: Broad Sound Islands NP, Shoalwater Bay CP, Charon Point CP, Homevale NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 76000 ha; Remnant 2021 64000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.5.9

Description: Eucalyptus crebra and/or Eucalyptus melanophloia woodland. Other tree species that may be present and locally dominant include Corymbia citriodora or C. clarksoniana sometimes in association with C. intermedia, C. dallachiana, C. lamprophylla, E. tenuipes, E. exserta, E. cloeziana, E. acmenoides. The mid layer ranges from absent to a sparse to dense shrubland typically dominated by Acacia spp. (such as A. excelsa, A. leiocalyx), Petalostigma pubescens, Lysicarpus angustifolius, Alphitonia excelsa and occasionally Melaleuca nervosa. Occurs on Cainozoic sandplains formed on plateaus and broad crests of hills and ranges. Soils are generally deep red earths. Not a Wetland. (BVG1M: 18b).

Vegetation communities in this regional ecosystem include:

11.5.9a: Eucalyptus melanophloia woodland. Occurs on Cainozoic sandplains formed on plateaus and broad crests of hills and ranges. Soils are generally deep red earths. Not a Wetland. (BVG1M: 17b).

11.5.9b: Eucalyptus crebra, E. tenuipes, Lysicarpus angustifolius +/- Corymbia spp. woodland. Occurs on Cainozoic sandplains formed on plateaus and broad crests of hills and ranges. Soils are generally deep red earths. Not a Wetland. (BVG1M: 18b).

11.5.9c: Eucalyptus crebra +/- Corymbia intermedia +/- E. moluccana +/- C. dallachiana woodland. Occurs on Cainozoic sandplains formed on plateaus and broad crests of hills and ranges. Soils are generally deep red earths. Not a Wetland. (BVG1M: 18b).

11.5.9d: Corymbia citriodora and/or E. crebra woodland. Occurs on Cainozoic sandplains formed on plateaus and broad crests of hills and ranges. Soils are generally deep red earths. Not a Wetland. (BVG1M: 10a).

Short description:	Eucalyptus crebra and other Eucalyptus spp. and Corymbia spp. woodland on Cainozoic sand plains and/or remnant surfaces
Supplementary descriptions:	Dowling and Stephens (1997), 2, 9; Forster and Barton (1995), Woodstock; Galloway et al. (1974), LU20; Gunn et al. (1967), Tichbourne; Speck et al. (1968), Melbadale, Perch, Duaringa; Story et al. (1967), Junee; Gunn and Nix (1977), LU 25
Subregions:	11, 6, 5, 16, 3, 14, (25), (7), (1), (26), (15), (19), (22), (21), (13), (9.4), (10), (24), (6.4), (20), (17), (4.4), (8), (4), (10.3)
Protected areas:	Blackdown Tableland NP, Junee NP, Nairana NP, Taunton NP (S)
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.5.9: Potential habitat for NCA listed species: Cerbera dumicola, Cossinia australiana, Cycas ophiolitica, Solanum elachophyllum.
Comments:	11.5.9: Eucalyptus moluccana is sometimes locally common especially on lower slopes where it merges into regional ecosystem 11.5.2. Acacia shirleyi may be present on rises where it merges into regional ecosystem 11.7.2. Variation in structure and floristic composition of the understorey may be associated with fire history.
Estimated extent:¹	Pre-clearing 366000 ha; Remnant 2021 238000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.5.10

Description: *Melaleuca tamariscina* tall open shrubland to low woodland with occasional emergent trees of *Eucalyptus persistens* or *Corymbia dallachiana*. A ground layer of *Triodia* spp. is usually present. Occurs on Cainozoic sandplains often on tops of mesas or ranges. Soils are generally shallow to moderately shallow, with ironstone gravel on the surface and overlying a hard pan. Not a Wetland. (BVG1M: 21b).

Short description: *Melaleuca tamariscina* tall open shrubland to low woodland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Gunn et al. (1967), Lennox, Tichbourne; Gunn and Nix (1977) LU 3 (in part)

Subregions: 3, 5, 7, (13), (26), (15), (11), (4), (10.4)

Protected areas: Blackwood NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.5.10: Subject to frequent fires in some locations.

Estimated extent:¹ Pre-clearing 11000 ha; Remnant 2021 10000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.5.11

Description: *Acacia leptostachya* shrubland. Occurs on Cainozoic sandplains. Not a Wetland. (BVG1M: 24a).

Short description: *Acacia leptostachya* shrubland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Gunn et al. (1967), Lennox, Tichbourne

Subregions: 1, (9.4)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 5000 ha; Remnant 2021 4000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.5.12

Description: *Corymbia clarksoniana* and *C. dallachiana* +/- *C. lamprophylla* +/- *Callitris glaucophylla* +/- *Corymbia tessellaris* woodland. A low tree layer comprising species such as *Lysicarpus angustifolius*, *Acacia leiocalyx* and sometimes *Melaleuca nervosa* is often present. The ground layer is dominated by grasses such as *Aristida* spp., *Themeda triandra* *Heteropogon contortus* and occasionally *Triodia pungens*. Occurs on colluvial lower slopes of Cainozoic sandplains. Not a Wetland. (BVG1M: 9e).

Vegetation communities in this regional ecosystem include:

11.5.12a: *Eucalyptus exserta* and/or *Corymbia clarksoniana* and/or *Eucalyptus crebra* and/or *Corymbia trachyphloia* and/or *C. citriodora* woodland. Occurs on colluvial lower slopes of Cainozoic sandplains. Not a Wetland. (BVG1M: 18a).

Short description: *Corymbia clarksoniana* woodland and other *Corymbia* spp. and *Eucalyptus* spp. on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Gunn et al. (1967), Lennox, Tichbourne; Speck et al. (1968), Wooroonah; Gunn and Nix (1977), LU 7, 8

Subregions: 3, 1, 14, 5, 7, (6), (11), (10.3), (9.4), (24), (8), (15), (26), (10.4)

Protected areas: Nairana NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 66000 ha; Remnant 2021 54000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.5.13

Description: *Eucalyptus populnea* predominates forming a distinct but discontinuous canopy (14-20m high). *E. melanophloia* may be present, and may codominate or dominate localised areas. A low tree layer (8-10m high) may be present and dominated by a range of species such as *Callitris glaucophylla* with scattered *Acacia excelsa* and *A. aneura* (western parts of subregion 29). There is generally a low tree/tall shrub layer (4-8m high) dominated by *Eremophila mitchellii* and *Geijera parviflora*. Shrubs are absent or very sparse. The ground cover is moderately dense to dense, and dominated by perennial grasses. *Bothriochloa decipiens*, *Themeda triandra*, *Aristida ramosa* and *Enteropogon acicularis* are the most frequent dominant grasses. Occurs on gently undulating plains formed from unconsolidated Cainozoic deposits. Usually associated with shallow to moderately deep, loamy duplex soils or shallow to moderately deep, uniform, clay loam to deep red earth soils. Not a Wetland. (BVG1M: 17a).

Short description: *Eucalyptus populnea* +/- *Acacia aneura* +/- *E. melanophloia* woodland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Galloway et al. (1974), LU26; Neldner (1984), 23, 24 (43), 19d

Subregions: 29, 34, 26, (35), (33), (38), (22), (6.2), (6.4), (37), (4.4), (36)

Protected areas: Alton NP, Chesterton Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.5.13: Areas of *E. melanophloia* woodland that are larger than 5 ha are classified as 11.5.5. Mainly occurs on south-western margins of bioregion.

Estimated extent:¹ Pre-clearing 584000 ha; Remnant 2021 100000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.5.14

Description: *Triodia* sp. open hummock grassland with scattered low trees and shrubs. *Triodia scariosa* open hummock grassland with scattered trees and shrubs or patches of shrubland to low open woodland of *Allocasuarina luehmannii* with *Melaleuca densispicata*, *Eremophila mitchellii*, *Santalum lanceolatum* +/- emergent *Eucalyptus woollsiana*, and occasional *E. populnea*. *E. camaldulensis* occurs along the drainage lines. Scattered short grasses and forbs such as *Chloris divaricata*, *C. truncata* and *Sclerolaena tricuspidata* and *Salsola australis* also occur. Occurs on Cainozoic sandplains with highly alkaline soils. Not a Wetland. (BVG1M: 33b).

Vegetation communities in this regional ecosystem include:

11.5.14a: *Eucalyptus crebra* and *Allocasuarina luehmannii* woodland with a ground layer of *Triodia vella*. Occurs on Cainozoic sandplains with highly alkaline soils. Not a Wetland. (BVG1M: 18b).

Short description: *Triodia* sp. open hummock grassland with emergent trees on Cainozoic sand plains and/or remnant surfaces. Highly alkaline soils

Supplementary descriptions: Isbell (1957), MU15; Biggs et al. (2007)

Subregions: 33, 32, (36)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.5.14: Potential habitat for NCA listed species: *Acacia argyrotricha*.

Comments: 11.5.14: This regional ecosystem includes the area known as the "Yelarbon Desert" which is a natural saline discharge area (Biggs et al. 2007). Some cleared areas have suffered top soil loss and require rehabilitation. Much of the area presents with a scalded clay pan like appearance due to erosion. These scalded areas are distinctive on remote aerial imagery.

Estimated extent:¹ Pre-clearing 4000 ha; Remnant 2021 4000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.5.15

Description: Semi-evergreen vine thicket. Canopy species include *Flindersia australis*, *Flindersia collina*, *Alstonia constricta*, *Excoecaria dallachyana*, *Geijera parviflora*, *Notelaea* spp., *Planchonella cotinifolia* var. *pubescens*, *Diospyros humilis* and *Denhamia oleaster*, with emergent *Brachychiton rupestris* or *Flindersia australis*. A dense shrub layer of *Psydrax odorata* and *Acalypha eremorum* commonly occurs. May contain emergent *Eucalyptus decorticans* or *Eucalyptus melanoleuca* in some southern locations. Occurs on remnant Tertiary surfaces. Deep red and yellow earths. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Fensham (1995); Fensham and Streimann (1997); Kent (1987), Cz1; Story et al. (1967), June; Gunn and Nix (1977) LU 14, LU 30

Subregions: 9.4, 3, 6, 18, 27, (11), (22), (14), (16), (9), (5), (21), (12.10), (12.5)

Protected areas: Bania NP, Gurgeena CP, Reinke Scrub CP, Newport CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.5.15: Habitat for threatened plant species including *Fontainea fugax*, *Pomaderris clivicola* and *Cadellia pentastylis* and the near threatened species *Macropteranthes leiocaulis*; a wide range of flora and fauna species with disjunct distributions.

Comments: 11.5.15: Mapped areas sometimes include small areas eroded scarp slopes or areas of duricrust (land zone 7). If these areas are large enough (> 5ha) they are mapped as 11.7.1x1. Cleared for pasture.

Estimated extent:¹ Pre-clearing 44000 ha; Remnant 2021 15000 ha

VM class: Least concern

Biodiversity status: Endangered

Biodiversity status notes: Vine thicket/vine forest ecosystem, subject to some weed invasion, esp. *Rivina humilis* (coral berry).

Regional ecosystem 11.5.16

Description: *Casuarina cristata* and/or *Acacia harpophylla* open forest. Occurs in depressions on Cainozoic sandplains. Associated with gilgai with 1 m local relief and 5-6 m in diameter. Palustrine. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.5.16a: [RE not in use]²: This vegetation community is now mapped as 11.5.16. *Acacia harpophylla* open forest with softwood scrub species. Occurs on sandy loam outwash (apron / piedmont slope) from sandstone ranges, on Wietalaba. Not a Wetland. (BVG1M: 25a).

Short description: *Acacia harpophylla* and/or *Casuarina cristata* open forest in depressions on Cainozoic sand plains and remnant surfaces

Supplementary descriptions: Fensham (pers comm)

Subregions: 6, 11, 16, (5)

Protected areas: June NP

Extent in reserves: Low

Wetland: Palustrine

Special values: 11.5.16: Potential habitat for NCA listed species: *Solanum elaeagnifolium*.

Comments: 11.5.16: Occurs as small patches in depressions of alluvial origin (land zone 3) across intact Tertiary surfaces. Habitat for water snails and other wetland fauna. RE 11.5.16a was amalgamated into this RE. Mainly occurs in the Nebo-Comet part of the bioregion.

Estimated extent:¹ Pre-clearing 15000 ha; Remnant 2021 4000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.5.17

Description: *Eucalyptus tereticornis* +/- *Lophostemon suaveolens* and sometime *E. populnea* woodland. The upper stratum ranges in height from 10-20 m. Wetland species such as *Juncus* spp., *Cyperus* spp. *Marsilea* sp. and annual grasses may be present in the ground layer. In some areas, *Lophostemon suaveolens* is dominant, and *Eucalyptus tereticornis* occurs as an emergent. Larger depressions are treeless with a fringing woodland. The margins may be fringed by dense stands of *Melaleuca nervosa* or *M. viridiflora*. Occurs in, or fringing, closed depressions that occur on Cainozoic sandplains. Associated soils vary from deep cracking clays to skeletal soils, but always with ironstone concretions on the surface or at depth, and with sandy soils fringing. Palustrine. (BVG1M: 34d).

Short description: *Eucalyptus tereticornis* woodland in depressions on Cainozoic sand plains and remnant surfaces

Supplementary descriptions: Gunn and Nix (1977) LU 10; Burgess (2003) (VA21, VA49) Thirteen mile

Subregions: 16, 11, 18, (19), (7), (10)

Protected areas:

Extent in reserves: No representation

Wetland: Palustrine

Special values: 11.5.17: Provides wetland habitat for a flora and fauna.

Comments: 11.5.17: Occurs on small patches in depressions, of alluvial origin (land zone 3), on the intact Tertiary surface. Similar regional ecosystem (10.3.15) extends into adjacent Desert Uplands bioregion.

Estimated extent:¹ Pre-clearing 5000 ha; Remnant 2021 1000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.5.18

Description: Variable open shrubland of species including *Acacia* spp. (e.g. *A. julifera* subsp. *curvinervia*) *Micromyrtus capricornia*, *Calytrix* spp., *Hakea* spp. and *Melaleuca* spp. typically with an emergent tree/open woodland layer dominated by species such as *Eucalyptus exserta*, *E. melanophloia*, *E. crebra*, *Corymbia trachyphloia*, *C. clarksoniana* or *Melaleuca nervosa*. Often distinguished by prominent understorey of *Micromyrtus capricornia* to 1-2 m. Occurs on Cainozoic sandplains and remnant surfaces. Restricted in occurrence to intact lateritic surfaces, usually tertiary plateau margins or gently dissected residuals. Often associated with hard setting uniform or gradational loamy or clay loam surfaced brown earths over ferricrete or petroreticulite. Not a Wetland. (BVG1M: 29b).

Short description: *Micromyrtus capricornia* open shrubland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions: Burgess (2003) (VA14) Bul Bul

Subregions: 11, 6

Protected areas: Humboldt NP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values:

Comments: 11.5.18: In some areas, this RE may be quarried for road gravels. Most common around Dysart, Middlemount, Comet; with minor occurrences east of Mount Coolon and south of Blackwater.

Estimated extent:¹ Pre-clearing 7000 ha; Remnant 2021 3000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.5.20

Description: *Eucalyptus moluccana* or *E. microcarpa* or *E. woollsiana* woodland to open forest. Species such as *Allocasuarina luehmannii* and *Callitris glaucophylla* often form a secondary tree layer. Occurs on flat to gently undulating plains formed from Cainozoic/Quaternary sediments. Soils are mainly texture contrast with sandy surfaces. Not a Wetland. (BVG1M: 13d).

Short description: *Eucalyptus moluccana* and/or *E. microcarpa* and/or *E. woollsiana* +/- *E. crebra* woodland on Cainozoic sand plains

Supplementary descriptions: Mullins (1980), Booroondoo, Crowder; Neldner (1984), 14c (Association 19); Speck et al. (1968), Wooroonah; Taylor and Grimshaw (1994?5), Goondiwindi MU6A, Dalby MU10B

Subregions: 32, 22, 27, 2, 24, (31), (16), (29), (18), (33), (21), (13.3), (11), (28), (12.6), (12.10), (36)

Protected areas: Lake Broadwater CP, Wondul Range NP, Beeron NP, Carnarvon NP, Humboldt NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.5.20: Potential habitat for NCA listed species: *Acacia handonis*, *Macrozamia machinii*, *Macrozamia platyrhachis*.

Comments:

Estimated extent:¹ Pre-clearing 232000 ha; Remnant 2021 152000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.5.21

Description: *Corymbia bloxsomei* or *Angophora leiocarpa* woodland, occasionally with *Callitris glaucophylla* and *Eucalyptus crebra*. There is typically a secondary tree layer dominated by *Allocasuarina luehmannii* and/or *Callitris glaucophylla* and a low shrub layer dominated by species from plant families such as *Ericaceae* and *Mimosaceae*. Occurs on deep Cainozoic sandplains/remnant surfaces. Not a Wetland. (BVG1M: 18a).

Short description: *Corymbia bloxsomei* +/- *Callitris glaucophylla* +/- *Eucalyptus crebra* +/- *Angophora leiocarpa* woodland on Cainozoic sand plains and/or remnant surfaces

Supplementary descriptions:

Subregions: 27, (26), (22), (31), (25)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.5.21: Habitat for threatened plant species *Homoranthus decumbens*. Habitat for localised *Acacia johnsonii*.

Comments:

Estimated extent:¹ Pre-clearing 76000 ha; Remnant 2021 71000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.7.1

Description: Eucalyptus thozetiana predominates forming a distinct but discontinuous canopy (13-21m high) although localised areas may be dominated by a wide range of species. Occasionally scattered E. microcarpa or Casuarina cristata or Acacia harpophylla and sometimes E. cambageana (12-13m emergents) are present in the canopy or locally dominant. On the deeper soils of the lower slopes, there is a moderately dense low tree layer of C. cristata and/or Acacia harpophylla. Acacia catenulata and A. microsperma may be present towards crests. Cadellia pentastylis is sometimes present and may be locally dominant. A tall shrub layer of Geijera parviflora and less frequently, Eremophila mitchellii is usually developed, and a low shrub layer is often developed. The ground layer is sparse and usually dominated by forbs. Occurs on the slopes and scarps of rocky residual ranges with Cainozoic lateritic duricrust. The soils are shallow, gravelly, acidic loams and clays on the upper slopes, with deep (70-105 cm deep), uniform, brown clays with surface gravel on the lower slopes. Not a Wetland. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.7.1x1: Semi-evergreen vine thicket. The following species are commonly present in the tree layer: Flindersia australis, Flindersia collina, Alstonia constricta, Excoecaria dallachyana, Geijera parviflora, Notelaea spp., Planchonella cotinifolia var. pubescens, Diospyros humilis and Denhamia oleaster, with emergent Brachychiton rupestris or Flindersia australis. A dense shrub layer of Psydrax odorata and Acalypha eremorum is often present. May contain emergent Eucalyptus decorticans or Eucalyptus melanoleuca in some southern locations. Occurs on the slopes and scarps of rocky residual ranges with Cainozoic lateritic duricrust. Not a Wetland. (BVG1M: 7a).

Short description:	Acacia harpophylla and/or Casuarina cristata and Eucalyptus thozetiana or E. microcarpa woodland on lower scarp slopes on Cainozoic lateritic duricrust
Supplementary descriptions:	Galloway et al. (1974), LU28, 35, 36; Neldner (1984), 27a, 27b; Gunn and Nix (1977) LU 19
Subregions:	26, 11, 3, 5, 29, (15), (13), (6), (16), (34), (7), (28), (19), (33), (8), (24), (4), (4.4), (6.2), (21), (6.4), (10.4), (6.3), (32)
Protected areas:	Tregole NP, Junee NP, Taunton NP (S), Narrien Range NP, Blackwood NP, Stones Country RR, Chesterton Range NP, Blackdown Tableland NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.7.1: Habitat for threatened plant species including Cadellia pentastylis.
Comments:	11.7.1: Upper slopes often merge into Acacia catenulata dominated regional ecosystems (11.7.2) while lower slopes may merge into Acacia harpophylla dominated regional ecosystems (11.9.1 or 11.9.5). Lower slopes of this regional ecosystem, which are a natural saline discharge area, have often been heavily cleared.
Estimated extent:¹	Pre-clearing 196000 ha; Remnant 2021 76000 ha
VM class:	Least concern
Biodiversity status:	Of concern
Biodiversity status notes:	Unknown processes.

Regional ecosystem 11.7.2

Description: Monospecific stands of *Acacia* spp. forest/woodland on Cainozoic lateritic duricrusts. *Acacia shirleyi* and/or *Acacia catenulata* usually predominate the woodland to low woodland to low open forest tree canopy (7-12m high). Other *Acacia* spp. That commonly occur and occasionally dominate the tree layer include *A. rhodoxylon*, *A. burrowii*, *A. sparsiflora*, *A. crassa* and *A. blakei*. Emergent eucalypt species such as *Eucalyptus thozetiana*, *E. crebra*, *E. decorticans* and *E. exserta* may be present. A low shrub layer is sometimes present and dominated by species such as *Acalypha eremorum*, *Croton phebaloides* and *Carissa ovata*. The ground layer is extremely sparse and dominated by grasses such as *Aristida caput-medusae*, *Paspalidium rarum*, *Urochloa foliosa*. Forbs are usually rare although *Sida* sp. (Musselbrook M.B.Thomas+ MRS437) may be conspicuous. Occurs on scarps and adjacent tops and slopes of dissected tablelands, mesas and buttes formed from chemically altered sediments and duricrusts. The soils are shallow to very shallow lithosols with surface stone and boulders. The vegetation is often growing in pockets of shallow lithosol soil between bare rock. Not a Wetland. (BVG1M: 24a).

Short description:	<i>Acacia</i> spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone
Supplementary descriptions:	Dawson (1972), 19, 23, 25; Galloway et al. (1974), LU22; Gunn et al. (1967), Tichbourne; Neldner (1984), 5a, 15d, 35; Speck et al. (1968), Duaringa; Story et al. (1967), Junee; Taylor and Grimshaw (1994-95), Goondiwindi MU8A, 19D, Dalby MU6B; Gunn and Nix (1977) LU 17
Subregions:	29, 11, 5, 16, 26, 3, 6, (7), (15), (13), (14), (21), (27), (34), (9.4), (24), (22), (19), (18), (4), (17), (28), (20), (12.10), (31), (25), (10), (12), (9), (8), (32), (10.4), (6.2), (6.4), (4.4)
Protected areas:	Taunton NP (S), Junee NP, Humboldt NP, Blackdown Tableland NP, Narrien Range NP, Goodedulla NP, Blackwood NP, Stones Country RR
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.7.2: Habitat for threatened plant species including <i>Acacia wardellii</i> .
Comments:	11.7.2: This regional ecosystem may include adjacent areas which extend onto adjacent plateaus and plains with deeper soils (land zone 5). Have been subject to clearing.
Estimated extent:¹	Pre-clearing 549000 ha; Remnant 2021 358000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.7.3

Description: *Eucalyptus persiciens* low open woodland often with a *Triodia mitchellii* ground layer. Other scattered eucalypts such as *Corymbia leichhardtii* or *Eucalyptus melanophloia* may also occur. Understorey species are usually very sparse. Occurs on the stripped margins of ranges and plateaus. Soils are usually shallow loamy red earths overlying a hard pan. Not a Wetland. (BVG1M: 19d).

Short description:	<i>Eucalyptus persiciens</i> , <i>Triodia mitchellii</i> open woodland on stripped margins of Cainozoic lateritic duricrust
Supplementary descriptions:	Gunn et al. (1967), Tichbourne; Gunn and Nix (1977) LU 20
Subregions:	3, 5, (7), (6), (4), (27), (11), (9.4), (10.3)
Protected areas:	Nairana NP, Blackwood NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.7.3: Potential habitat for NCA listed species: <i>Marsdenia pumila</i> .
Comments:	11.7.3: <i>Eucalyptus persiciens</i> occurs in this RE with a characteristic clumped, multi-stemmed or mallee-like habit.
Estimated extent:¹	Pre-clearing 105000 ha; Remnant 2021 92000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.7.4

Description: Mixed *Eucalyptus* spp. woodland on Cainozoic lateritic duricrusts. Species can include *Eucalyptus crebra*, *E. decorticans*, *Corymbia trachyphloia*, *E. tenuipes*, *C. watsoniana* and *Callitris glaucophylla*. There is usually a distinct low tree to tall shrub layer comprising species including *Lysicarpus angustifolius* or *Acacia* spp. Occurs on low hills and ranges with shallow soils. Not a Wetland. (BVG1M: 12a).

Vegetation communities in this regional ecosystem include:

11.7.4c: *Eucalyptus decorticans* +/- *Eucalyptus* spp. +/- *Acacia* spp. Occurs on low hills and ranges with shallow soils. Not a Wetland. (BVG1M: 12a).

Short description:	<i>Eucalyptus decorticans</i> and/or <i>Eucalyptus</i> spp., <i>Corymbia</i> spp., <i>Acacia</i> spp., <i>Lysicarpus angustifolius</i> woodland on Cainozoic lateritic duricrust
Supplementary descriptions:	Galloway et al. (1974), LU20; Kent (1987), CZ1; Gunn and Nix (1977) LU 12
Subregions:	32, 27, 26, 11, (29), (22), (18), (33), (31), (30), (16), (28), (3), (19), (6), (34), (12.10), (5), (21), (25), (12.5)
Protected areas:	Wondul Range NP, Beeron NP, Junee NP, Stones Country RR, Taunton NP (S), Gurgeena CP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.7.4: Potential habitat for NCA listed species: <i>Acacia calantha</i> , <i>Acacia handonis</i> , <i>Acacia islana</i> , <i>Acacia rubricola</i> , <i>Acacia wardellii</i> , <i>Bertya pedicellata</i> , <i>Calytrix gurlumundensis</i> , <i>Denhamia parvifolia</i> , <i>Eucalyptus beaniana</i> , <i>Eucalyptus curtisii</i> , <i>Eucalyptus pachycalyx</i> subsp. <i>waajensis</i> , <i>Grevillea hockingsii</i> , <i>Macrozamia crassifolia</i> , <i>Macrozamia machinii</i> , <i>Melaleuca formosa</i> , <i>Micromyrtus carinata</i> , <i>Ochrosperma obovatum</i> , <i>Phebalium distans</i> , <i>Philotheca sporadica</i> , <i>Pomaderris coomingalensis</i> , <i>Solanum elachophyllum</i> , <i>Solanum lythrocarpum</i> , <i>Zieria inexpectata</i> .
Comments:	11.7.4: Many areas have been subject to past logging which has resulted in a decrease in the number of trees in the larger size classes including many important habitat trees.
Estimated extent: ¹	Pre-clearing 352000 ha; Remnant 2021 228000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.7.5

Description: Shrubland +/- emergent eucalypts. Characteristic genera include *Calytrix* spp., *Hakea* spp., *Kunzea* spp., *Micromyrtus* spp., *Acacia* spp., *Melaleuca* spp. and (in the ground layer) *Triodia* spp. Often scattered or fringing emergent tree species are present, including *Eucalyptus exserta*, *E. panda*, *E. curtisii*, *Corymbia trachyphloia* and *Acacia blakei*. Occurs on shallow soils often associated with natural scalds on Cainozoic lateritic duricrusts and sometimes lithosols derived from quartzose sandstone. Not a Wetland. (BVG1M: 29b).

Vegetation communities in this regional ecosystem include:

11.7.5a: Shrublands. Occurs on lithosols derived from lateritic surfaces. Not a Wetland. (BVG1M: 29b).

11.7.5b: *Acacia aprepta* shrubland. Occurs on lithosols derived from lateritic surfaces. Not a Wetland. (BVG1M: 29b).

Short description: Shrubland on natural scalds on deeply weathered coarse-grained sedimentary rocks

Supplementary descriptions: Taylor and Grimshaw (1994-95), Chinchilla MU2D, MU15, MU16D, MU17C, MU17D

Subregions: 32, 27, 26, 31, 22, (18), (15), (24), (6), (29), (5), (33), (13.3), (4), (19), (21), (30), (28)

Protected areas: Wondul Range NP, Isla Gorge NP, Chesterton Range NP, Coolmunda CP, Gurgeena CP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values: 11.7.5: Habitat of threatened plant species including *Eucalyptus broviniensis*, *Micromyrtus carinata*, *Micromyrtus patula*, *Acacia curranii*, *Calytrix gurumundensis* and *Homoranthus decumbens*.

Comments: 11.7.5: Edge of hard pans may be associated with soak with soft spongy soil and liverworts, mosses and sedges during wet periods.

Estimated extent:¹ Pre-clearing 74000 ha; Remnant 2021 63000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.7.6

Description: *Corymbia citriodora* and/or *Eucalyptus crebra* woodland. On adjacent footslopes, scattered *E. crebra*, *C. clarksoniana* and *C. tessellaris* may occur. There is usually a distinct tall shrub layer often dominated by *Acacia* spp. The ground layer varies from sparse to moderately dense and is dominated by perennial grasses. Occurs on Cainozoic lateritic duricrust. Not a Wetland. (BVG1M: 10a).

Short description: *Corymbia citriodora* or *Eucalyptus crebra* woodland on Cainozoic lateritic duricrust

Supplementary descriptions: Galloway et al. (1974), LU21

Subregions: 27, 22, 18, (26), (32), (28), (12.10), (19), (31), (25), (24), (12.6)

Protected areas: Beeron NP, Cania Gorge NP, Gurgeena CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.7.6: Potential habitat for NCA listed species: *Acacia calantha*, *Acacia handonis*, *Acacia rubricola*, *Boronia grimshawii*, *Eucalyptus taurina*, *Grevillea hockingsii*, *Macrozamia crassifolia*, *Melaleuca formosa*, *Rutidosia glandulosa*, *Zieria inexpectata*, *Zieria vagans*.

Comments: 11.7.6: This regional ecosystem has been extensively logged which has resulted in a decrease in the number of trees in the larger size classes including many important habitat trees.

Estimated extent:¹ Pre-clearing 442000 ha; Remnant 2021 362000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.7.7

Description: *Eucalyptus fibrosa* subsp. *nubilis* predominates and forms a distinct but discontinuous open forest to woodland canopy (22-25m high). *E. crebra* often co dominates or be locally dominant, particularly on lower slopes. Also includes areas with *Corymbia citriodora* as a codominant. Other frequently occurring sub-dominant tree species include *Corymbia trachyphloia*, *E. apothalassica*, *E. sideroxylon*, *Acacia shirleyi* and *Callitris glaucophylla*. There is usually a low woodland mid layer dominated by *Acacia* spp. or sometimes *Allocasuarina luehmannii* and *Callitris endlicheri*. Scattered tall shrubs may occur, but rarely form a prominent layer. There is usually a moderately dense, low shrub layer developed with a variable floristic composition. The ground layer is open to moderately dense and dominated by grasses. Occurs on low hills and ranges formed from deeply weathered sediments. Soils are usually shallow (< 30cm deep) uniform sands with stone or rocks covering much of the ground surface. Not a Wetland. (BVG1M: 12a).

Short description: *Eucalyptus fibrosa* subsp. *nubilis* +/- *Corymbia* spp. +/- *Eucalyptus* spp. woodland on Cainozoic lateritic duricrust

Supplementary descriptions: Dawson (1972), 19-25; Taylor and Grimshaw (1994-95), Chinchilla MU15A

Subregions: 32, 27, (22), (26), (28), (18), (31), (25), (13.3), (33), (30), (24)

Protected areas: Wondul Range NP, Beeron NP, Stones Country RR, Coolmunda CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.7.7: Potential habitat for NCA listed species: *Acacia handonis*, *Acacia lauta*, *Acacia wardellii*, *Boronia grimshawii*, *Commersonia ingelewoodensis*, *Eucalyptus curtisii*, *Eucalyptus virens*, *Leucopogon* sp. (Coolmunda D.Halford Q1635), *Macrozamia conferta*, *Macrozamia machinii*, *Micromyrtus carinata*, *Ochrosperma obovatum*, *Philotheca sporadica*, *Pomaderris coomingalensis*, *Rutidosia glandulosa*, *Zieria inexpectata*.

Comments: 11.7.7: Many areas have been subject to past logging causing a decreased proportion of trees in the larger size classes which includes many important habitat trees.

Estimated extent:¹ Pre-clearing 200000 ha; Remnant 2021 171000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.8.1

Description: Eucalyptus laevopinea tall open forest to open forest. A diffuse low tree layer is composed of juvenile E. laevopinea and mature Macrozamia moorei trees. Scattered low shrubs such as Allocasuarina torulosa occur, rarely forming a well-defined layer. The ground cover is dense and dominated by the grasses Themeda triandra and Imperata cylindrica. Restricted to the tops of high basalt plateaus within the Consuelo Tableland and the Great Dividing Range. It occurs on moderately deep to deep, slightly acidic, humic massive earths. The surface is a weakly structured, dark brown, humic clay-loam which grades into a reddish-brown, light to medium clay with moderately deep to deep humic massive earth soils. Not a Wetland. (BVG1M: 8a).

Short description: Eucalyptus laevopinea tall open forest on Cainozoic igneous rocks. Elevated plateaus

Supplementary descriptions: Galloway et al. (1974), LU15; Neldner (1984), 2; Gunn and Nix (1977) LU 103

Subregions: 23, 24

Protected areas: Carnarvon NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.8.1: Habitat of a disjunct population of Eucalyptus laevopinea which is widespread on the coastal mountain ranges of northern NSW.

Comments: 11.8.1: Restricted to high (> 300m) plateaus on the Consuelo Tableland and adjacent parts of the Great Dividing Range. Almost all mapped areas are within Carnarvon National Park.

Estimated extent:¹ Pre-clearing 16000 ha; Remnant 2021 16000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.8.2

Description: Eucalyptus tereticornis predominates and together with other tree species forms a distinct but discontinuous canopy (14-23m high). Eucalyptus melliodora is usually present in the canopy and often is codominant. Scattered E. longirostrata, E. saligna or E. grisea may be present on wetter sites while Angophora floribunda and occasional E. microcarpa occur on the less, well-drained depressions and flat areas. Scattered tall and lower shrubs are usually present, but rarely form conspicuous layers. The ground layer is dense and dominated by perennial grasses. Occurs on steep slopes of hills and mountains (subregion 23) formed from basalt. The soils are generally shallow (< 60 cm deep), brown to grey-brown, gradational, clay-loams and clays. Basalt stones and boulders can occur on the surface. Not a Wetland. (BVG1M: 11a).

Vegetation communities in this regional ecosystem include:

11.8.2a: Eucalyptus tereticornis and E. melliodora woodland occurring on low hills. Occurs on low hills (subregion 31 and 32) formed from basalt. The soils are generally shallow (< 60 cm deep), brown to grey-brown, gradational, clay-loams and clays. Basalt stones and boulders can occur on the surface. Not a Wetland. (BVG1M: 11a).

Short description: Eucalyptus tereticornis, E. melliodora woodland on Cainozoic igneous rocks

Supplementary descriptions: Fensham (1998a); Fensham and Fairfax (1997), 11; Galloway et al. (1974), LU16; Neldner (1984), 26a

Subregions: 23, 24, 31, (18), (32), (26), (12.6), (12.1), (20)

Protected areas: Carnarvon NP, Bunya Mountains NP, Main Range NP, Cania Gorge NP, Mount Dumaesq CP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.8.2: Potential habitat for NCA listed species: Discaria pubescens, Homopholis belsonii, Picris evae, Prasophyllum incompositum, Thesium australe.
11.8.2a: This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).

Comments: 11.8.2: The vegetation community 11.8.2a is contiguous with a similar SEQ regional ecosystem (12.8.16) and subject to review.
11.8.2a: Occurs in subregion 31.

Estimated extent:¹ Pre-clearing 53000 ha; Remnant 2021 36000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.8.3

Description: Semi-evergreen vine thicket which may have emergent *Acacia harpophylla*, *Casuarina cristata* and *Eucalyptus* spp. Occurs on Cainozoic igneous rocks. Generally restricted to steeper, rocky hillsides. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket on Cainozoic igneous rocks

Supplementary descriptions: Fensham: (1995); Fensham and Fairfax (1997); Fensham and Streimann (1997); Neldner (1984), 1; Speck et al. (1968), Lawgi, Grevillea; Story et al. (1967), Britton; Vandersee (1975), Westbrook; Galloway et al. (1974), LU9;

Subregions: 31, 10, 15, 26, 6, 23, (24), (9), (19), (22), (2), (21), (12), (32), (18), (20), (12.6), (13), (5), (11), (25), (27), (12.1)

Protected areas: Bunya Mountains NP, Peak Range NP, Carnarvon NP, Mount Leura CP, Mount Dumaesq CP, Minerva Hills NP, Homevale NP, Main Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.8.3: Habitat for threatened plant species *Croton magneticus*.

Comments: 11.8.3: Areas in subregion 31 are contiguous with similar vegetation in the South East Queensland bioregion. Areas across the bioregion. Many remaining areas in coastal parts of the region have been invaded by the exotic *Lantana camara* and pasture grasses. These exotic weed species provide increased fuel loads which leads to increased wildfire and associated damage to the tree layer. Semi-evergreen vine thicket may invade adjacent regional ecosystems, particularly brigalow-belah in the absence of fire.

Estimated extent:¹ Pre-clearing 81000 ha; Remnant 2021 25000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes: Threatening processes other than clearing.

Regional ecosystem 11.8.4

Description: Eucalyptus melanophloia and/or E. crebra +/- E. orgadophila +/- Corymbia erythrophloia woodland to open woodland. Macrozamia moorei is a conspicuous element of the mid layer in the Central Highlands. Localised patches of Corymbia citriodora occur on volcanic plugs such as Minerva Hills. Generally occurs on slopes of mountains and hills formed from Cainozoic igneous rocks usually with shallow stony soils and extensive outcropping. Not a Wetland. (BVG1M: 11a).

Vegetation communities in this regional ecosystem include:

11.8.4a: Corymbia citriodora woodland. Generally occurs on slopes of mountains and hills formed from Cainozoic igneous rocks usually with shallow stony soils and extensive outcropping. Not a Wetland. (BVG1M: 10a).

Short description:	Eucalyptus melanophloia woodland to open woodland on Cainozoic igneous rocks.
Supplementary descriptions:	Forster and Barton (1995), Barmoya; Galloway et al. (1974), LU18; Speck et al. (1968), Lawgi, Westwood; Story et al. (1967), Britton, Moorooloo, Percy; Gunn and Nix (1977) LU 104, 105
Subregions:	23, 10, 24, (20), (8), (15), (31), (19), (18), (26), (22), (21), (6), (2), (16), (11), (13), (12), (27), (12.10)
Protected areas:	Carnarvon NP, Expedition NP, Minerva Hills NP, Homevale NP, Kroombit Tops NP, Peak Range NP, Expedition RR
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.8.4: Potential habitat for NCA listed species: Acacia arbiana, Acacia islama, Bertya pedicellata, Grevillea hockingsii, Haloragis exalata subsp. velutina, Marsdenia brevifolia, Sannantha brachypoda. This ecosystem is also known to provide suitable habitat for koalas (Phascolarctos cinereus).
Comments:	11.8.4: This regional ecosystem occurs on steeper slopes and shallower soils compared to 11.8.5 which occurs on undulating plains and low hills with deeper soils.
Estimated extent:¹	Pre-clearing 217000 ha; Remnant 2021 151000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.8.5

Description: Eucalyptus orgadophila open woodland. Eucalyptus orgadophila predominates and forms a distinct but discontinuous canopy sometimes with other sub-dominant species such as Corymbia erythrophloia, E. melanophloia and occasionally E. crebra. Shrubs are usually scarce and scattered although a well-defined shrubby layer does develop in some areas. On the lower slopes at better sites, softwood scrub species may form tall and low shrub layers under the canopy of Eucalyptus orgadophila. The ground layer is moderately dense to dense, and dominated by species that include the grasses Aristida lazardis, A. ramosa, Bothriochloa ewartiana, Dichanthium sericeum, Chrysopogon fallax, Heteropogon contortus, Enneapogon gracilis, Themeda triandra and Tragus australis and the herbs Brunoniella australis, Evolvulus alsinoides, Galactia tenuiflora and Indigofera linnaei. Occurs on undulating plains, rises, low hills or sometimes flat tablelands on top of mountains, formed from basalt. Generally soils are shallow to moderately shallow, often rocky or stony clays. Not a Wetland. (BVG1M: 11a).

Vegetation communities in this regional ecosystem include:

11.8.5a: Eucalyptus orgadophila woodland with a dense understorey of low trees species including Geijera parviflora, Callitris glaucophylla, Pittosporum angustifolium, Casuarina cristata, Alectryon oleifolius, Psydrax odorata and Notelaea microcarpa. Occurs on undulating plains, rises, low hills or sometimes flat tablelands on top of mountains, formed from basalt. Generally soils are shallow to moderately shallow, often rocky or stony clays. Not a Wetland. (BVG1M: 11a).

Short description:	Eucalyptus orgadophila open woodland on Cainozoic igneous rocks
Supplementary descriptions:	Fensham (1998a); Fensham and Fairfax (1997); Fensham (1999), mountain coolabah woodland on basalt; Galloway et al. (1974), LU18; Neldner (1984), 33; Vandersee (1975), Westbrook; Story et al. (1967), Waterford; Gunn et al. (1968), Peak Vale (2); Young and McDonald (1989), 10h; Gunn and Nix (1977) LU 107,108
Subregions:	10, 31, 23, 6, (26), (24), (2), (15), (11), (9), (20), (21), (13), (16), (5), (7), (12.2), (12.6)
Protected areas:	Carnarvon NP, Albinia NP, Peak Range NP, Homevale NP, Bunya Mountains NP, Minerva Hills NP, Mount Leura CP, Albinia CP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.8.5: In southern part of bioregion, habitat for a number of threatened plant species including Picris evae and Thesium australe and near threatened species Digitaria porrecta and Discaria pubescens. This ecosystem is also known to provide suitable habitat for koalas (Phascolarctos cinereus). 11.8.5a: This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).
Comments:	11.8.5: Areas of open woodland to grassland that occur on footslopes of basalt hills are included as 11.8.5 in situations where they represent a narrow (< 75m wide) ecotone adjacent to the alluvial land zone. Extensively thinned, cleared or cultivated in many areas. Some areas in central Queensland are subject to invasion by *Parthenium hysterophorus (Fensham 1999) associated with periods of low summer rainfall combined with high or moderate grazing pressure (Fensham et al. 1999). The occurrence of Parthenium may be reversible with appropriate management and season in the medium term (Fensham 1999). Naturalised species associated with this regional ecosystem include *Sida spinosa. 11.8.5a: Generally occurs in subregion 31.
Estimated extent:¹	Pre-clearing 631000 ha; Remnant 2021 344000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.8.6

Description: *Macropteranthes leichhardtii* thicket. Usually forms a dense community of *Macropteranthes leichhardtii* with occasional or subdominant *Geijera parviflora*, *Croton insularis* and *Acacia fasciculifera* with an emergent layer of *Brachychiton rupestris* or *B. australis* or *Acacia harpophylla*. A dense shrub layer may include *Capparis anomala*, *Ehretia membranifolia*, *Croton phebalioides*, *Erythroxylum australe* or *Carissa ovata*. Occurs on steep hills on Cainozoic igneous rocks, on skeletal soils and shallow brown to black loams, often with large boulders at the soil surface. Not a Wetland. (BVG1M: 7a).

Short description: *Macropteranthes leichhardtii* thicket on Cainozoic igneous rocks

Supplementary descriptions: Gunn et al. (1967), Kareela; Gunn and Nix (1977), LU 48

Subregions: 23, 10, 15, (13), (20), (24)

Protected areas: Carnarvon NP

Extent in reserves: High

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 29000 ha; Remnant 2021 16000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Vine thicket/vine forest ecosystem, subject to some weed invasion, esp. *Megathyrsus maximus* (green panic).

Regional ecosystem 11.8.7

Description: Shrubland, closed scrubland, low woodland to low open forest on Cainozoic igneous rocks. Common species include *Acacia aprepta*, *A. julifera* subsp. *curvinervia*, *Corymbia trachyphloia*, *Eucalyptus exserta*, *Acacia arbiana*, *Leptospermum lamellatum* and *Xanthorrhoea johnsonii*. A ground stratum of *Cleistochloa subjuncea*, *Scleria sphacelata* or *Triodia pungens* may be present. Occurs on rocky outcrops on Cainozoic igneous rocks. Not a Wetland. (BVG1M: 29b).

Short description: Shrubland to low open forest on Cainozoic igneous rocks

Supplementary descriptions: Butler and Fensham (2008)

Subregions: 10

Protected areas: Minerva Hills NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.8.7: Potential habitat for NCA listed species: *Eucalyptus sicilifolia*.

Comments: 11.8.7: Upper slopes or crests of Tertiary trachytic or rhyolitic peaks of the Peak Range.

Estimated extent:¹ Pre-clearing 2000 ha; Remnant 2021 2000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.8.8

Description: Woodland usually dominated by either *Eucalyptus albens* or *E. crebra*. *Eucalyptus tereticornis* is an associated species that becomes locally dominant on creek lines. Other tree species that may be present include *Callitris baileyi*, *Angophora subvelutina*, *Brachychiton populneus*, *E. melliodora*, *E. orgadophila*, *Angophora floribunda*, *E. moluccana*, *E. microcarpa*, *E. biturbinata*, *E. melanophloia* and *Corymbia clarksoniana*. There is often a sparse low tree layer dominated by similar species to the canopy. The shrub layer is absent or sparse and consisting of species such as *Cassinia laevis*, *Olearia elliptica*, *Acacia implexa*, *Xanthorrhoea glauca* or *Jacksonia scoparia*. The ground layer is usually dominated by grasses of variable composition. Common species include *Themeda triandra*, *Bothriochloa decipiens*, *Dichanthium sericeum*, *Cymbopogon refractus*, *Aristida* spp. Fords or sedges such as *Gahnia aspera*, *Asperula conferta* or *Desmodium varians* frequently occur. Occurs on hilltops and sides formed from Cainozoic basaltic rocks. Not a Wetland. (BVG1M: 11a).

Short description: *Eucalyptus albens*, *E. crebra* woodland on Cainozoic igneous rocks

Supplementary descriptions: Fensham (1998a); Fensham and Fairfax (1997), 9; Young and McDonald (1989), 10g

Subregions: 31, (22), (12.6), (12.11), (12.1), (12.2)

Protected areas: Mount Dumaresq CP, Main Range NP, Bunya Mountains NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.8.8: Potential habitat for NCA listed species: *Diuris parvipetala*, *Picris barbarorum*, *Picris evae*, *Pomaderris crassifolia*, *Thesium australe*. This ecosystem is also known to provide suitable habitat for koalas (*Phascolarctos cinereus*).

Comments: 11.8.8: Northern limit of temperate ecosystem which extends to Victoria. Extensively cleared through its geographic range. Naturalised species associated with this regional ecosystem include **Zinnia peruviana*.

Estimated extent:¹ Pre-clearing 80000 ha; Remnant 2021 35000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.8.9

Description: *Callitris glaucophylla* and/or *C. baileyi* +/- vine thicket species woodland. Occurs on hills formed from Cainozoic basaltic rocks. Hills. Not a Wetland. (BVG1M: 20a).

Short description: *Callitris* spp. +/- vine thicket woodland on Cainozoic igneous rocks

Supplementary descriptions: Fensham and Fairfax (1997)

Subregions: 31, 15, (10), (19)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.8.9: Habitat for near threatened plant species *Callitris baileyi*.

Comments: 11.8.9: Hot wildfires have killed the overstorey *Callitris* trees in some areas.

Estimated extent:¹ Pre-clearing 400 ha; Remnant 2021 200 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Rare ecosystem < 1000ha pre-clearing extent and subject to inappropriate fire regimes and agriculture expansion.

Regional ecosystem 11.8.10

Description: Themeda triandra tussock grassland, with a range of other associated tussock grasses including Heteropogon contortus, Aristida queenslandica var. dissimilis, Bothriochloa ewartiana and Cymbopogon oblectus. Forbs and sedges are also common including Brunoniella australis, Evolvulus alsinoides, Fimbristylis dichotoma and Phyllanthus virgatus. Isolated to scattered trees of Eucalyptus exserta may be present. Occurs on Cainozoic igneous rocks (trachyte). Not a Wetland. (BVG1M: 32b).

Short description: Themeda triandra grassland on Cainozoic igneous rocks

Supplementary descriptions: Fensham and Holman (1998a)

Subregions: 10

Protected areas: Peak Range NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.8.10: Never grazed by cattle, due to the inaccessibility of the landform.

Comments: 11.8.10: This regional ecosystem is restricted to the plateau surface of Lord's Table Mountain, which is a Tertiary basalt mesa that has been protected from weathering because of its resistant trachytic lava cap (Galloway, 1967). Lord's Table Mountain. Naturalised species associated with this regional ecosystem include *Melinis repens.

Estimated extent:¹ Pre-clearing 40 ha; Remnant 2021 40 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.8.11

Description: Grassland dominated by *Dichanthium sericeum*, *Aristida* spp., *Astrebula* spp. and *Panicum decompositum* with or without trees such as *Eucalyptus orgadophila*, *E. melanophloia*, *Corymbia erythrophloia* and *Acacia salicina*. However, dominance and cover may vary with seasonal and other environmental conditions. Frequently occurring and sometimes locally dominant, species include the grasses *Aristida lazardis*, *A. ramosa*, *Bothriochloa ewartiana*, *Dichanthium sericeum*, *Chrysopogon fallax*, *Heteropogon contortus*, *Enneapogon gracilis*, *Themeda triandra* and *Tragus australis* and the herbs *Brunoniella australis*, *Evolvulus alsinoides*, *Galactia tenuiflora* and *Indigofera linnaei*. Isolated emergent trees (tree height 12+/-4 m - species including *Eucalyptus orgadophila*, *E. melanophloia* and *Corymbia erythrophloia*) or small areas of open woodland may also be present. Occurs on Cainozoic igneous rocks, particularly fresh basalt, and is generally associated with undulating to gently undulating rises. It usually occurs on the crests and middle and upper slopes (slopes 2-6%), although also present on lower slopes and flat areas (slopes 0-2%). Associated soils are moderately shallow to deep cracking clay soils, dark brown to reddish brown in colour, often self-mulching, and with gravel, stone or linear gilgai sometimes present. Surface stone 10-15 cm diameter is present in the south-western remnants. Not a Wetland. (BVG1M: 30b).

Vegetation communities in this regional ecosystem include:

11.8.11a: [RE not in use]²: This vegetation community is now mapped as 11.3.25d. *Melaleuca bracteata* woodland drainage depressions. Occurs in drainage depressions. Not a Wetland. (BVG1M: 21b).

Short description:	Dichanthium sericeum grassland on Cainozoic igneous rocks
Supplementary descriptions:	Gunn et al. (1967), Kinsale (5), Oxford (1-3), Waterford (1); Story et al. (1967), Moorooloo (2), Oxford (1-3), Racecourse (3), Waterford (1, 2); Speck et al. (1968), Westwood (1, 2, 4), Grevillea (2, 3); Galloway et al. (1974), LU 19; Gunn and Nix (1977), LU 47, 107, 108, 109, 110; Fensham et al. 1999), grasslands on basaltic substrate; Fensham 1999, blue grass on basalt; Burgess (2003) (VA28) May
Subregions:	10, 6, (26), (11), (8), (23), (31), (15), (24), (13), (20), (16), (21), (9), (7), (5)
Protected areas:	Albinia NP, Peak Range NP, Carnarvon NP, Albinia CP, Albinia RR, Minerva Hills NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.8.11: Habitat for threatened plant species including <i>Trioncinia retroflexa</i> and <i>Dichanthium queenslandicum</i> . <i>T. retroflexa</i> is currently known from three small populations.
Comments:	11.8.11: Areas of woodland/open woodland larger than 5 ha are defined as 11.8.5, while less extensive trees areas are treated as a component of 11.8.11. Extensively utilised for cropping, and rapid decline is predicted on current trends. Large areas remaining have lost perennial grass cover which may be replaced by annuals including the exotic herb <i>*Parthenium hysterophorus</i> . These changes may be associated with periods of low summer rainfall combined with high or moderate grazing pressure (Fensham et al. 1999). The occurrence of <i>Parthenium</i> may be reversible with appropriate management and season in the medium term (Fensham 1999). Species such as <i>Dichanthium sericeum</i> and <i>D. queenslandicum</i> are likely to have been more dominant in the absence of high or moderate grazing pressure (Fensham 1999). At the end of the wet season, the biomass of the vegetation may range from 5 to 10 t/ha, but may be negligible after the wet season under extreme grazing pressure (Fensham et al. 2002). Naturalised species associated with this regional ecosystem include <i>*Sida spinosa</i> .
Estimated extent:¹	Pre-clearing 601000 ha; Remnant 2021 169000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.8.12

Description: Eucalyptus microcarpa and E. exserta low forest. Occurs on Cainozoic igneous rocks (trachyte). Not a Wetland. (BVG1M: 13d).

Short description: Eucalyptus microcarpa, E. exserta woodland on Cainozoic igneous rocks

Supplementary descriptions: Fensham and Holman (1998a)

Subregions: 10

Protected areas: Peak Range NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.8.12: Never grazed by cattle, due to the inaccessibility of the landform. The population of Eucalyptus microcarpa is isolated from the main occurrence of this species in southern Queensland.

Comments: 11.8.12: This type is restricted to the plateau surface of Lord's Table Mountain, which is a Tertiary basalt mesa that has been protected from weathering because of its resistant trachytic lava cap (Galloway 1967).

Estimated extent:¹ Pre-clearing 60 ha; Remnant 2021 60 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.8.13

Description: Semi-evergreen vine thicket and microphyll/notophyll rainforest. In drier or rockier habitats, Casuarina cristata or Acacia harpophylla may dominate the tree layer. A dense shrub layer of Acalypha eremorum, Diospyros humilis and Planchonella cotinifolia is always present. In a few localities, emergent Eucalyptus orgadophila or Corymbia erythrophloia may persist after invasion by "vine-thicket" species. Occurs on gently undulating plains, rises and low hills on Cainozoic igneous rocks. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket and microphyll vine forest on Cainozoic igneous rocks

Supplementary descriptions: Forster and Barton (1995), Barmoya, Rossmoya; Speck et al. (1968), Grevillea;

Subregions: 6, 19, 22, 11, (2), (18), (12), (27), (14), (5)

Protected areas: Homevale NP, Mount Scoria CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.8.13: Habitat for threatened plant species Croton magneticus.

Comments: 11.8.13: May invade areas of adjacent woodlands, such as RE 11.8.5.

Estimated extent:¹ Pre-clearing 50000 ha; Remnant 2021 6000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.8.14

Description: Eucalyptus crebra and Corymbia dallachiana grassy woodland. Occurs on Cainozoic igneous rocks. Lowlands. Not a Wetland. (BVG1M: 11a).

Short description: Eucalyptus crebra, Corymbia dallachiana woodland on Cainozoic igneous rocks

Supplementary descriptions: Christian et al. (1953), Strathmore

Subregions: 6

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 1000 ha; Remnant 2021 500 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.8.15

Description: Eucalyptus brownii (subregion 2) or E. populnea (subregion 31) grassy woodland to open woodland. A dense shrubby layer may be present. Occurs on flat to gently undulating plains to low hills, formed from Cainozoic igneous rocks. Reddish brown to brown clay or clay loam soils. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus brownii or Eucalyptus populnea woodland on Cainozoic igneous rocks

Supplementary descriptions: Christian et al. (1953), Strathmore; Harris et al. (1998), 7b

Subregions: 31, 10, 15, (6), (22)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.8.15: Potential habitat for NCA listed species: Homopholis belsonii.

Comments:

Estimated extent:¹ Pre-clearing 12000 ha; Remnant 2021 1000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.9.1

Description: Eucalyptus cambageana or E. thozetiana and Acacia harpophylla woodland to open forest. Eucalyptus cambageana is commonly codominant with Acacia harpophylla in the open forest, or the open forest may be dominated by A. harpophylla and have scattered emergent Eucalyptus cambageana or E. thozetiana trees. The community has a lower tree/tall shrub layer dominated by species such as Eremophila mitchellii, Carissa ovata and Geijera parviflora, with Terminalia oblongata often present in the north. The ground layer is frequently sparse. Associated with slopes and crests of undulating plains and below low ridges and escarpments formed from Cainozoic to Proterozoic consolidated, fine-grained sediments. Texture contrast soils predominate, often with surface stone or gravel in sub-surface horizons, but other soils such as clays, sandy clay loams and cracking clays may also be present. Not a Wetland. (BVG1M: 25a).

Short description: Acacia harpophylla-Eucalyptus cambageana woodland to open forest on fine-grained sedimentary rocks

Supplementary descriptions: Gunn et al. (1967), Hillalong (3), Humboldt (3), Rutland (5), Skye (4) Wharton (3); Speck et al. (1968), Eurombah (6), Wandoan (5), Womblebank (4); Story et al. (1967), Arcadia (2), Daunia (3,4); Gunn and Nix (1977), LU 34, 46; Turner (1978), Highlands (28, 29, 30); Burgess (2003) (VA5), (VA10), Stateschool, Burradoo

Subregions: 15, 11, 10, 6, 16, 26, (21), (19), (20), (24), (27), (25), (10.4), (23), (12), (5), (22), (2), (18), (4.4), (13)

Protected areas: Taunton NP (S), Blackdown Tableland NP, Carnarvon NP, Palmgrove NP (S), Humboldt NP, Blackwater CP, Isla Gorge NP, Homevale NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.9.1: Potential habitat for NCA listed species: Solanum adenophorum, Solanum dissectum, Solanum elachophyllum, Solanum johnsonianum, Xerothamnella herbacea.

Comments: 11.9.1: Includes areas of A. harpophylla/E. mitchellii scattered trees with much bare ground and severe sheet or gully erosion (Gunn et al. 1967, Wharton land unit 5), Turner et al 1978, land unit 28, 29). Extensively cleared for cropping and pasture. This regional ecosystem has been subject to periodic canopy dieback due to drought in parts of central Queensland.

Estimated extent:¹ Pre-clearing 564000 ha; Remnant 2021 53000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.9.2

Description: Eucalyptus melanophloia and/or E. orgadophila woodland to open woodland. Other tree species occasionally present as subdominants include Corymbia erythrophloia, Eucalyptus populnea or Corymbia dallachiana. Occurs on rises on undulating plains with cracking clay or texture contrast soils. Not a Wetland. (BVG1M: 17b).

Vegetation communities in this regional ecosystem include:

11.9.2a: [RE not in use]²: This vegetation community is now mapped as 11.9.2. Eucalyptus melanophloia shrubby woodland and/or E. orgadophila grassy woodland. Shrub and low tree species include Acacia spp., Heliodendron basalticum and Carissa ovata. RE is defunct. Not a Wetland. (BVG1M: 10a).

Short description:	Eucalyptus melanophloia +/- E. orgadophila woodland to open woodland on fine-grained sedimentary rocks
Supplementary descriptions:	Galloway et al. (1974), LU12, LU13; Neldner (1984), 31b; Gunn et al. (1967), Girrah (in part); Speck et al. (1968), Woleebee, Wandoan; Gunn and Nix (1977) LU 94; Burgess (2003) (VA19), (VA17), Mt Stuart, Red-one
Subregions:	6, 15, 23, 11, 26, 24, (27), (21), (20), (2), (31), (29), (22), (16), (10), (6.4), (18), (19), (12), (5), (7), (12.6), (10.4)
Protected areas:	Carnarvon NP, Homevale NP, Taunton NP (S), Palmgrove NP (S), Bunya Mountains NP, Highworth Bend CP, Blackwater CP, Homevale RR
Extent in reserves:	Medium
Wetland:	Not a Wetland
Special values:	11.9.2: Potential habitat for NCA listed species: Solanum elaeagnifolium.
Comments:	11.9.2: Intergrades with grasslands (11.9.3) in many areas. Was previously mapped as 11.9.2a. This regional ecosystem has been subject to periodic canopy dieback due to drought in parts of central Queensland. 11.9.2a: This regional ecosystem has been subject to periodic canopy dieback due to drought in parts of central Queensland.
Estimated extent: ¹	Pre-clearing 377000 ha; Remnant 2021 141000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.9.3

Description: *Dichanthium sericeum* and/or *Astrebula* spp. (*A. lappacea*, *A. elymoides* and *A. squarrosa*) tussock grassland. May contain high cover of short-lived perennial grasses, annual grasses and annual forbs, depending on seasonal conditions. Other frequently occurring species may include the grasses *Aristida leptopoda*, *A. latifolia*, *Bothriochloa erianthoides*, *Digitaria brownii*, *D. divaricatissima*, *Enneapogon* spp., *Eriochloa crebra*, *Heteropogon contortus*, *Panicum decompositum*, *P. queenslandicum*, *Paspalidium globoideum*, *Themeda triandra* and *Thellungia advena* and the forbs *Abelmoschus ficulneus*, *Boerhavia dominii*, *Corchorus trilocularis*, *Cyperus bifax*, *Glycine latifolia*, *Ipomoea lonchophylla*, *Phyllanthus maderaspatensis*, *Tribulus micrococcus* and *Rhynchosia minima*. Isolated low shrubs and trees and open woodland occur in some areas. Typical species include *Eucalyptus melanophloia*, *E. orgadophila*, *Corymbia erythrophloia*, *Lysiphyllum carronii*, *Atalaya hemiglaucula*, *Acacia pendula*, *A. omalophylla* and *Geijera parviflora*. Occurs on gently undulating to undulating plains and rises with cracking clay soils derived from fine-grained sediments. Not a Wetland. (BVG1M: 30b).

Vegetation communities in this regional ecosystem include:

11.9.3a: *Eucalyptus* spp., and/or *Acacia* spp. open woodland. Typical species include *Eucalyptus melanophloia*, *E. populnea*, *E. orgadophila*, *Corymbia erythrophloia*, *Lysiphyllum carronii*, *Atalaya hemiglaucula*, *Acacia pendula*, *A. omalophylla* and *Geijera parviflora*. The ground layer is dominated by a similar range of species listed under 11.9.3. Occurs on gently undulating to undulating plains and rises with cracking clay soils derived from fine-grained sediments. Not a Wetland. (BVG1M: 30b).

Short description:	<i>Dichanthium</i> spp., <i>Astrebula</i> spp. grassland on fine-grained sedimentary rocks
Supplementary descriptions:	Galloway et al. (1974), LU14; Neldner (1984), 66, 67; Speck et al. (1968), Kiddell; Fensham (1999), bluegrass on sediments
Subregions:	26, 15, 29, 6, (11), (6.4), (23), (10), (24), (21)
Protected areas:	Tregole NP, Carnarvon NP, Chesterton Range NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.9.3: Potential habitat for NCA listed species: <i>Cymbonotus maidenii</i> , <i>Swainsona murrayana</i> .
Comments:	11.9.3: This regional ecosystem is known locally as 'downs'. Areas with mixed species open woodland, which often occur on rises and referred to locally as wooded downs, are mapped as 11.9.3a. Presence of dominant grass species varies with grazing and seasonal conditions. Includes areas on lightly folded older sediments in western parts of bioregion (e.g. Mantuan Downs area). Extensively cultivated and converted to pasture or cropping lands or modified by total grazing. Subject to invasion by the exotic species <i>*Cenchrus ciliaris</i> across its range and, in northern parts, <i>Parthenium hysterophorus</i> . Naturalised species associated with this regional ecosystem include <i>*Hibiscus tridactylites</i> and <i>*Malvastrum americanum</i> .
Estimated extent:¹	Pre-clearing 269000 ha; Remnant 2021 152000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.9.4

Description: Semi-evergreen vine thicket. Occurs on crests, mid-slopes, undulating plains and rises formed from fine-grained sediments. Not a Wetland. (BVG1M: 7a).

Vegetation communities in this regional ecosystem include:

11.9.4a: Semi-evergreen vine thicket, generally dominated by a low tree layer (5-10m high) which is floristically diverse and variable. Common codominant species include *Croton insularis*, *Denhamia oleaster*. There is also a tall and low shrub layer (2-6m high) dominated by species such as *Ehretia membranifolia*, *Capparis anomala*, *Geijera parviflora*, *Capparis* spp., *Croton phebaloides*, *Erythroxylum australe*, *Alectryon diversifolius* and *Carissa ovata*. Emergents (16-25m high) are usually present including species such as *Cadellia pentastylis* and *Brachychiton* spp. Usually on better sites, and *Eucalyptus orgadophila* and *Casuarina cristata* on drier, poorer sites. Vines are frequent. The ground layer is very sparse, and is most frequently composed of *Ancistrachne uncinulata* and *Eragrostis megalosperma*. Occurs on steep upper and middle slopes where heavy clay soils have formed from sediments. It may grade into *Acacia harpophylla*, softwood spp. (11.9.5a) on the lower slopes. It is prominent on the steep slopes of sandstone ranges, where shale has been exposed, and aspect, rainfall and runoff provide sufficient available water for its development. The soils are generally shallow, brown or grey-brown loams or light clays grading into medium or heavy clays. The soil reaction may become strongly acidic or alkaline at depth, depending on the acidity of parent material. May also occur on deep texture contrast soils, where a thin sandy colluvium overlies the clay subsoil. Loose fragments of sandstone may be present over the soil surface. Not a Wetland. (BVG1M: 7a).

11.9.4c: Semi-evergreen vine thicket with emergent *Eucalyptus crebra* on hill sides. *E. crebra* may occur as an open woodland in same areas. Common species include *Notelaea microcarpa*, *Geijera salicifolia*, *Bursaria spinosa* subsp. *spinosa* and *Pandorea pandorana*. Occurs on hillsides in the Warwick area. Not a Wetland. (BVG1M: 7a).

Short description:	Semi-evergreen vine thicket or <i>Acacia harpophylla</i> with a semi-evergreen vine thicket understorey on fine-grained sedimentary rocks
Supplementary descriptions:	Neldner (1984), 1; Speck et al. (1968), Wandoan, Eurombah; Story et al. (1967), Arcadia; Vandersee (1975), Emu Vale; Galloway et al. (1974), LU9; Gunn and Nix (1977) LU 101
Subregions:	24, 26, 20, 21, 27, 6, (31), (11), (2), (22), (19), (25), (15), (18), (10), (12.11), (12.6), (12), (12.1), (16)
Protected areas:	Expedition (Limited Depth) NP, Palmgrove NP (S), Carnarvon NP, Expedition RR, Isla Gorge NP, Homevale NP, Main Range NP, Highworth Bend CP, Precipice NP, Bunya Mountains NP, Stones Country RR, Mount Scoria CP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.9.4: Habitat for threatened plant species including <i>Cadellia pentastylis</i> .
Comments:	11.9.4: Distinguished from RE 11.9.8 by absence of <i>Macropteranthes leichhardtii</i> . 11.9.4b is distinguished from 11.9.5 by dense softwood scrub understorey. In places the vine thicket is associated with areas that have been subject to basalt enrichment. Extensively cleared for cropping and pasture.
Estimated extent:¹	Pre-clearing 189000 ha; Remnant 2021 33000 ha
VM class:	Of concern
Biodiversity status:	Endangered
Biodiversity status notes:	Vine thicket/vine forest ecosystem, subject to some weed invasion, esp. <i>Megathyrsus maximus</i> (green panic).

Regional ecosystem 11.9.5

Description: *Acacia harpophylla* and/or *Casuarina cristata* or *Acacia harpophylla* open forest to woodland. *Casuarina cristata* is more common in southern parts of the bioregion. A prominent low tree or tall shrub layer dominated by species such as *Geijera parviflora* and *Eremophila mitchellii*, and occasionally with semi-evergreen vine thicket species is often present. The latter include *Flindersia dissosperma*, *Brachychiton rupestris*, *Excoecaria dallachyana*, *Macropteranthes leichhardtii* and *Acalypha eremorum* in eastern areas, and species such as *Carissa ovata*, *Owenia acidula*, *Croton insularis*, *Denhamia oleaster* and *Notelaea microcarpa* in south-western areas. *Melaleuca bracteata* may be present along watercourses. Occurs on fine-grained sediments. The topography includes gently undulating plains, valley floors and undulating footslopes and rarely on low hills. The soils are generally deep texture-contrast and cracking clays. The cracking clays are usually black or grey to brown or reddish-brown in colour, often self-mulching and sometimes with gilgai microrelief in flatter areas. Some texture contrast soils are shallow to only moderately deep. Not a Wetland. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.9.5a: *Acacia harpophylla* predominates and forms a fairly continuous canopy (10-18m high). Other tree species such as *Eucalyptus populnea*, *Casuarina cristata*, *Cadellia pentastylis* and *Brachychiton* spp. may also be present in some areas and form part of the canopy or emerge above it. Scattered *Eucalyptus orgadophila* may occur, especially on upper slopes and crests. A dense tall shrub layer dominated by a range of species is usually present, while a more open low shrub layer often occurs. Common species in these layers include *Croton insularis*, *Denhamia oleaster*, *Capparis anomala*, *Croton phebaloides*, *Alectryon diversifolius* and *Carissa ovata*. The ground layer is sparse, most frequently composed of *Ancistrachne uncinulata* and *Eragrostis megalosperma* and varies with the density of the shrub layers. Occurs on undulating plains and rises formed mainly on shales. The soils are predominantly cracking clay soils, which are strongly alkaline at or near the surface and acidic beneath, or dark brown and grey-brown gradational soils, with a coarse-textured surface grading into an alkaline, clayey subsoil. Not a Wetland. (BVG1M: 25a).

Short description:	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest to woodland on fine-grained sedimentary rocks
Supplementary descriptions:	Dawson (1972), Ulimaroa (1-3); Galloway et al. (1974), LU 38, 40, (41), 43, 44; Gunn and Nix (1977), LU 34, 37, 38, 41, 46, 50, 53, 72, 75, 93, 100, 101; Gunn et al. (1967), Craven (4), Cungelella (1,3), Hillalong (3), Kareela (4), Rutland (4), Skye (4), Wharton (4); Story et al. (1967), Arcadia (2), Daunia (4), Rewan (3); Speck et al. (1968), Eurombah (8,10), Ramsay (5), Surprise (7), Wandoan (7), Womblebank (6); Vandersee (1975), Moola (1,3,4); Mullins (1980), Bringalilly, Burnt Creek, Greys Gate; Neldner (1984), 5, 6, 7, 9 (123, 124, 131); Young and McDonald (1989) 9h, 12a; Burgess (2003) (VA1), (VA8) Stateschool, Ternallum, Tiny, Burradoo, Farlane
Subregions:	26, 15, 25, 20, 21, 27, 6, (24), (33), (32), (31), (11), (29), (23), (10), (28), (22), (19), (2), (34), (6.2), (16), (6.1), (12), (18), (9), (7)
Protected areas:	Carnarvon NP, Palmgrove NP (S), Expedition (Limited Depth) NP, Tregole NP, Chesterton Range NP, Isla Gorge NP, Homevale NP, Precipice NP, Roundstone CP, Taunton NP (S), Lake Murphy CP, Nuga Nuga NP, Carraba CP, Irongate CP, Expedition NP, Bunya Mountains NP, Expedition RR
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.9.5: Habitat for threatened fauna species including <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008).
Comments:	11.9.5: Extensively cleared for cropping and pasture. 11.9.5a: Common in the Arcadia Valley and Taroom area.
Estimated extent: ¹	Pre-clearing 2276000 ha; Remnant 2021 161000 ha
VM class:	Endangered
Biodiversity status:	Endangered
Biodiversity status notes:	

Regional ecosystem 11.9.6

Description: Open forest dominated by *Acacia melvillei* with or without *Acacia harpophylla*, and with or without *Eucalyptus populnea*. Ground cover may be sparse. Occurs on Cainozoic to Proterozoic consolidated fine-grained sediments on gently undulating landscapes on more or less horizontally bedded fine grained sedimentary rocks. It may include some areas occurring on clay plains. Not a Wetland. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.9.6a: [RE not in use]²: This vegetation is now mapped as 11.9.6. *Acacia melvillei* open forest. Occurs on Cainozoic clay plains. Not a Wetland. (BVG1M: 25a).

Short description: *Acacia melvillei* +/- *A. harpophylla* open forest on fine-grained sedimentary rocks

Supplementary descriptions: Fensham and Fairfax: (1997)

Subregions: 25, 31, (27), (26)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values: 11.9.6: Potential habitat for NCA listed species: *Homopholis belsonii*.

Comments: 11.9.6: Was previously mapped as 11.9.6a. Cleared for cropping.

Estimated extent:¹ Pre-clearing 15000 ha; Remnant 2021 300 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.9.7

Description: *Eucalyptus populnea* predominates forming a distinct but discontinuous canopy (10-20 m tall). Occasionally *E. melanophloia* is present in the canopy. Lower trees are absent or infrequent. An open to dense, tall shrub layer is always present, with *Eremophila mitchellii* often dominant. A patchy low shrub layer of varying density may be formed, where the tall shrub layer is more than 6 m tall. The ground layer is dominated by perennial grasses and varies from sparse to dense, depending on the shrub and tree density. *Bothriochloa decipiens*, *Enteropogon acicularis*, *Aristida ramosa* and *Aristida jerichoensis* are the most common dominants in the east with *Aristida calycina* var. *praealta*, *Aristida jerichoensis*, *Eragrostis* spp. and *Chloris pectinata* dominant further west. Forbs are seasonally abundant. Occurs on the lower and middle slopes of gently undulating lowlands and plains formed from Cainozoic to Proterozoic consolidated, fine-grained sediments. Associated soils are predominantly deep loamy red earths with sparse superficial ferruginous gravel, or deep texture contrast soils with thin sandy or loamy surfaces over strongly alkaline subsoils. Not a Wetland. (BVG1M: 17a).

Vegetation communities in this regional ecosystem include:

11.9.7a: *Eucalyptus populnea* predominates forming a distinct but discontinuous canopy (10-15 m high). Other trees may be scattered throughout the canopy. There is generally a dense, tall shrub layer (4-6 m high) dominated by a range of species including *Eremophila mitchellii*, *Heliodendron basalticum*, *Acacia excelsa*, *Geijera parviflora*, *Alectryon oleifolius* and *Lysiphyllum carronii*. A low shrub layer is usually present. The ground layer is variable and composed mainly of annual grasses. Occurs on gently undulating to sloping plains. In southern part of bioregion associated with Jurassic Hooray Sandstone. Associated soils are generally moderately deep, hard-setting, solodized solonetz and solodic soils. Brown clays may be present also. Not a Wetland. (BVG1M: 17a).

Short description:	<i>Eucalyptus populnea</i> , <i>Eremophila mitchellii</i> shrubby woodland on fine-grained sedimentary rocks
Supplementary descriptions:	Dawson (1972), 11; Galloway et al. (1974), LU10, LU11; Speck et al. (1968), Montana; Mullins (1980), Greys Gate; Neldner (1984), 23b, 24, 34b (43, 41); Vandersee (1975), Emu Vale; Gunn et al. (1967), Girrah (in part), Skye (3); Turner (1978), E5 (45); Burgess (2003) (VA20), (VA7), Adeline, Emoh
Subregions:	26, 6, 20, 15, 27, (24), (11), (31), (4.4), (21), (32), (25), (29), (22), (12), (10.4), (33), (10), (28), (19), (6.4), (16), (14), (23)
Protected areas:	Carnarvon NP, Taunton NP (S), Homevale NP, Precipice NP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	
Comments:	11.9.7: Extensively cleared for cropping and pasture.
Estimated extent:¹	Pre-clearing 506000 ha; Remnant 2021 103000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.9.8

Description: *Macropteranthes leichhardtii* thicket. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. Lowlands. Not a Wetland. (BVG1M: 7a).

Short description: *Macropteranthes leichhardtii* thicket on fine-grained sedimentary rocks

Supplementary descriptions: Gunn et al. (1967), Wharton, Cungelella; Story et al. (1967), Bedourie

Subregions: 15, 23, 21, (20), (16), (24), (13), (10)

Protected areas: Carnarvon NP, Palmgrove NP (S), Nuga Nuga NP, Albinia NP, Albinia CP

Extent in reserves: High

Wetland: Not a Wetland

Special values:

Comments: 11.9.8: *Macropteranthes leichhardtii* achieves high levels of dominance in this regional ecosystem. Extensively cleared for cropping and pasture.

Estimated extent:¹ Pre-clearing 36000 ha; Remnant 2021 12000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Vine thicket/vine forest ecosystem, subject to some weed invasion, esp. *Megathyrsus maximus* (green panic).

Regional ecosystem 11.9.9

Description: *Eucalyptus crebra* grassy woodland. *Eucalyptus moluccana* sometimes conspicuous on lower slopes. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.9.9a: *Eucalyptus albens* +/- *E. crebra* +/- *E. tereticornis* +/- *Callitris baileyi* woodland. Occurs in southern part of bioregion. Not a Wetland. (BVG1M: 15a).

11.9.9b: [RE not in use]²: This vegetation community is now included within RE 11.9.9. *Eucalyptus crebra* +/- *E. exserta* +/- *Corymbia* spp. woodland. RE is defunct. Not a Wetland. (BVG1M: 13c).

Short description: *Eucalyptus crebra* woodland on fine-grained sedimentary rocks

Supplementary descriptions: Story et al. (1967), Rewan; Young and McDonald (1989), 10e

Subregions: 6, 32, 31, 20, 2, (19), (22), (23), (15), (18), (21), (11), (27), (14), (17), (5), (13.3), (7), (10), (12.11), (16), (9), (12), (24), (8.3)

Protected areas: Homevale NP, Homevale RR, Carnarvon NP, Morgan Park CP, Taunton NP (S), Homevale CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.9.9: Potential habitat for NCA listed species: *Capparis humistrata*, *Leucopogon* sp. (Coolmunda D.Halford Q1635), *Omphalea celata*. This ecosystem is also known to provide suitable habitat for koalas (*Phascolarctos cinereus*).

Comments: 11.9.9: Regional Ecosystem RE 11.9.9b has been amalgamated into this RE. Extensively cleared or thinned for pasture.

Estimated extent:¹ Pre-clearing 257000 ha; Remnant 2021 126000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.9.10

Description: Eucalyptus populnea open forest forming a distinct but discontinuous canopy. Acacia harpophylla and sometimes Casuarina cristata usually form a secondary tree layer which occasionally becomes the dominant layer. A layer of shrubs is usually present and dominated by Eremophila mitchellii and Geijera parviflora with Acacia excelsa, Atalaya hemiglauc, Psydrax oleifolia, Alectryon oleifolius frequent. Scattered low shrubs such as Carissa ovata and Eremophila deserti are frequently present. The ground cover is usually sparse, and dominated by the grasses Aristida ramosa, Enteropogon acicularis, Bothriochloa decipiens and Paspalidium spp. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. Occurs on lower parts of undulating plains often with deep texture-contrast soils. Occurs on sodic and saline soils which may act as a discharge area if adjacent to alluvium. Not a Wetland. (BVG1M: 25a).

Short description: Eucalyptus populnea open forest with a secondary tree layer of Acacia harpophylla and sometimes Casuarina cristata on fine-grained sedimentary rocks

Supplementary descriptions: Galloway et al. (1974), LU37, LU39; Neldner (1984), 22a (44); Speck et al. (1968), Woleebee; Story et al. (1967), Arcadia

Subregions: 26, 15, 6, 2, (29), (7), (6.2), (25), (31), (28), (24), (27), (34), (6.1), (23), (32), (21), (5), (20), (6.4), (4.4), (6.3)

Protected areas: Carnarvon NP, Tregole NP, Chesterton Range NP, Homevale NP, Morven CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.9.10: Potential habitat for NCA listed species: Homopholis belsonii.

Comments: 11.9.10: Sometimes the Acacia harpophylla and/or Casuarina cristata forms small clumps. Where these clumps are > 5 ha they are defined as 11.9.5. Extensively cleared for cropping and pasture.

Estimated extent:¹ Pre-clearing 484000 ha; Remnant 2021 78000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Threatening processes other than clearing.

Regional ecosystem 11.9.11

Description: Acacia harpophylla predominates forming a distinct but discontinuous canopy (4-6m high). A well-developed tall shrub/low tree layer dominated by species such as Eremophila mitchellii, Lysiphyllum carronii and Geijera parviflora is present and some emergent Eucalyptus spp. (10-12m high) may occur. Scattered low shrubs are usually present and may form a distinct layer. The ground layer is variable and composed of grasses and some forbs. Includes open areas with sparse to little vegetation on scalded stony areas. Occurs on gently undulating plains formed from Cainozoic to Proterozoic consolidated, fine-grained sediments. Soils are moderately deep to deep, medium to heavy, brown and grey cracking clays with thin surface crusts. Not a Wetland. (BVG1M: 25a).

Short description: Acacia harpophylla shrubland on fine-grained sedimentary rocks

Supplementary descriptions: Neldner (1984), 50; Turner (1978), B1 (18), B2 (22)

Subregions: 26, (4.4), (15), (10.4), (6.2), (24), (6.4), (6.3)

Protected areas: Tregole NP, Chesterton Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.9.11: Potential habitat for NCA listed species: Cadellia pentastylis.

Comments: 11.9.11: This regional ecosystem is distinguished from A. harpophylla open forest (11.9.5) by its low canopy height (< 12m often 4-6m high). Shrubland areas may be associated with widespread wildfires that occurred in the 1950's. Occurs in south-western part of bioregion. Cleared for pasture or impacted by total grazing pressure.

Estimated extent:¹ Pre-clearing 224000 ha; Remnant 2021 49000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.9.12

Description: *Dichanthium sericeum* tussock grassland in mosaic with clumps of *Acacia harpophylla*, *Lysiphyllum hookeri* and *L. carronii*. However, a wide range of other grass and forb species are usually present and may dominant depending on seasonal conditions and management regime. Frequently occurring species include the grasses *Aristida leptopoda*, *A. latifolia*, *Astrebla lappacea*, *Bothriochloa erianthoides*, *Digitaria brownii*, *D. divaricatissima*, *Eriochloa crebra*, *Panicum decompositum*, *P. queenslandicum*, *Paspalidium globoideum* and the forbs *Abelmoschus ficulneus*, *Boerhavia dominii*, *Corchorus trilocularis*, *Cyperus bifax*, *Glycine latifolia*, *Ipomoea lonchophylla*, *Phyllanthus maderaspatensis*, *Tribulus micrococcus* and *Rhynchosia minima*. Occurs on undulating plains and rises, on Cainozoic to Proterozoic consolidated, fine-grained sediments. It is frequently associated with shale. Associated soils are shallow to deep cracking clays that may be self-mulching, with linear gilgai present in places. Not a Wetland. (BVG1M: 30b).

Short description: *Dichanthium sericeum* grassland with clumps of *Acacia harpophylla* on fine-grained sedimentary rocks

Supplementary descriptions: Gunn et al. (1967), Portwine (3); Story et al. (1967), Arcadia (4); Speck et al. (1968), Kiddell (6); Gunn and Nix (1977), LU 74, 102; Neldner (1984), 28 (127)

Subregions: 2, 27, 21, (6), (20), (15), (23), (10), (22)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.9.12: Extensively utilised for cropping and improved pastures. Usually occurs in close association with RE 11.9.5. This regional ecosystem forms a distinct image-pattern on historical remote aerial imagery. Previously widespread in the Taroom-Theodore districts. Naturalised species associated with this regional ecosystem include **Malvastrum americanum* and **Hibiscus tridactylites*.

Estimated extent:¹ Pre-clearing 24000 ha; Remnant 2021 4000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.9.13

Description: *Eucalyptus moluccana* or *E. microcarpa* or *E. woollsiana* (restricted to south of bioregion) open forest. *Allocasuarina luehmannii* can be present in understorey. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. Lower slopes. Not a Wetland. (BVG1M: 13d).

Short description: *Eucalyptus moluccana* or *E. microcarpa* open forest on fine grained sedimentary rocks

Supplementary descriptions: Young and McDonald (1989), 10d

Subregions: 27, 32, 6, 31, 19, (24), (2), (20), (12.11), (13.3), (23), (22), (18), (12.1), (21), (15)

Protected areas: Homevale NP, Carnarvon NP, Main Range NP, Morgan Park CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.9.13: Habitat for uncommon mallee eucalypt species including *Eucalyptus bakeri* and *E. viridis* in the Inglewood-Warwick area.

Comments: 11.9.13: The three eucalypt species that define this regional ecosystem intergrade.

Estimated extent:¹ Pre-clearing 64000 ha; Remnant 2021 19000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.9.14

Description: *Atalaya hemiglauca* predominates and together with *Lysiphyllum carronii*, (which may be codominant), forms a distinct but discontinuous open woodland to scattered trees canopy. Scattered *Acacia excelsa* and *Eucalyptus melanophloia*, *Acacia harpophylla* (in places), *Acacia victoriae* (in places) and *Eremophila mitchellii* low trees may form part of the canopy. Shrubs are not frequently present. The ground cover is open to moderately dense, and dominated by perennial grasses and forbs. Occurs on the undulating margins, and crests and upper slopes of undulating plains form on fine grained sediments. The soils are usually deep, uniform, brown to grey-brown, cracking clays with strongly alkaline subsoil's. Not a Wetland. (BVG1M: 27a).

Short description: *Lysiphyllum carronii*, *Atalaya hemiglauca* +/- *Eucalyptus melanophloia* +/- *Acacia excelsa* open woodland

Supplementary descriptions: Neldner (1984), 22c; Galloway et al. (1974), LU 41 (in part)

Subregions: 29, (26)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.9.14: Naturally restricted regional ecosystem confined to Surat and Roma area. Extensively cleared and cultivated.

Estimated extent:¹ Pre-clearing 21000 ha; Remnant 2021 8000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Many remaining areas are highly fragmented which is associated with severe degradation of ground layer.

Regional ecosystem 11.10.1

Description: *Corymbia citriodora* predominates and forms a distinct but discontinuous woodland to open forest. On rocky slopes, *Eucalyptus crebra* and *C. hendersonii* may be scattered throughout the canopy or locally abundant. On flats and footslopes, scattered *E. crebra*, *C. clarksoniana* and *C. tessellaris* may occur. *Corymbia trachyphloia* and *E. cloeziana* often occur on crests and plateaus while *E. apothalassica* and *E. longirostrata* sometimes occur in moister microhabitats. Scattered tall to low shrubs, such as *Acacia leiocalyx*, *Acacia* spp., *Bursaria spinosa* subsp. *spinosa*, *Persoonia falcata*, *Alphitonia excelsa*, *Petalostigma pubescens* and *Xanthorrhoea johnsonii* are usually present and sometimes form a conspicuous layer. The ground layer varies from sparse to moderately dense (depending on the rockiness) and is dominated by perennial grasses. Occurs on hills and ranges, particularly on colluvial lower slopes, formed from medium to coarse-grained sediments (usually sandstone). Associated soils are often texture contrast with a thin sandy or loamy surface horizon and some uniform sandy and lithosol soils. Not a Wetland. (BVG1M: 10a).

Vegetation communities in this regional ecosystem include:

11.10.1a: *Corymbia watsoniana* +/- *C. citriodora*, +/- *C. trachyphloia* +/- *C. hendersonii* woodland. Occurs on hills and ranges, particularly on colluvial lower slopes, formed from medium to coarse-grained sediments (usually sandstone). Associated soils are often texture contrast with a thin sandy or loamy surface horizon and some uniform sandy and lithosol soils. Not a Wetland. (BVG1M: 12a).

11.10.1b: [RE not in use]²: This vegetation community is now mapped as 11.10.1. *Eucalyptus mediocris* woodland. Occurs on hills and ranges, particularly on colluvial lower slopes, formed from medium to coarse-grained sediments (usually sandstone). Associated soils are often texture contrast with a thin sandy or loamy surface horizon and some uniform sandy and lithosol soils. Not a Wetland. (BVG1M: 12a).

11.10.1c: [RE not in use]²: This vegetation is now mapped as 11.10.1. *Eucalyptus fibrosa*, *Eucalyptus* spp. woodland. Occurs on hills and ranges, particularly on colluvial lower slopes, formed from medium to coarse-grained sediments (usually sandstone). Associated soils are often texture contrast with a thin sandy or loamy surface horizon and some uniform sandy and lithosol soils. Not a Wetland. (BVG1M: 12a).

11.10.1d: *Eucalyptus crebra* woodland. Occurs on hills and ranges, particularly on colluvial lower slopes, formed from medium to coarse-grained sediments (usually sandstone). Associated soils are often texture contrast with a thin sandy or loamy surface horizon and some uniform sandy and lithosol soils. Not a Wetland. (BVG1M: 12a).

Short description:	<i>Corymbia citriodora</i> woodland on coarse-grained sedimentary rocks
Supplementary descriptions:	Speck et al. (1968), Duaringa, Melbadale; Story et al. (1967), Cotherstone; Gunn and Nix (1977), LU 18, 56; Galloway et al. (1974), LU2; Neldner (1984), 17; Dowling and Stephens (1997), 10a
Subregions:	24, 20, 6, (27), (23), (31), (16), (26), (15), (21), (11), (18), (22), (10), (19), (25), (13), (14), (12.10), (12), (28), (12.5)
Protected areas:	Expedition (Limited Depth) NP, Carnarvon NP, Palmgrove NP (S), Blackdown Tableland NP, Expedition NP, Isla Gorge NP, Nuga Nuga NP, Expedition RR, Snake Range NP, Dawes NP, Chesterton Range NP, Cania Gorge NP, Precipice NP, Humboldt NP, Tooloombah Creek CP, Stones Country RR, Dan Dan NP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.10.1: Potential habitat for NCA listed species: <i>Acacia argentina</i> , <i>Acacia calantha</i> , <i>Acacia handonis</i> , <i>Acacia islana</i> , <i>Acacia pedleyi</i> , <i>Acacia</i> sp. (Ruined Castle Creek P.I.Forster+ PIF17848), <i>Apatophyllum teretifolium</i> , <i>Calytrix islensis</i> , <i>Capparis humistrata</i> , <i>Cerbera dumicola</i> , <i>Cryptandra ciliata</i> , <i>Eucalyptus beaniana</i> , <i>Homoranthus tricolor</i> , <i>Livistona nitida</i> , <i>Macrozamia crassifolia</i> , <i>Melaleuca groveana</i> , <i>Melaleuca irbyana</i> , <i>Micromyrtus rotundifolia</i> , <i>Ozothamnus eriocephalus</i> , <i>Pomaderris coomingalensis</i> , <i>Pseudanthus pauciflorus</i> subsp. <i>arenicola</i> , <i>Rutidosis crispata</i> , <i>Samadera bidwillii</i> , <i>Sannantha brachypoda</i> , <i>Zieria inexpectata</i> .
Comments:	11.10.1: Regional Ecosystem 11.10.1b and 11.10.1c has been amalgamated into this RE. This regional ecosystem has been extensively logged which has resulted in a decrease in the number of trees in the larger size classes which included many important habitat trees.
Estimated extent: ¹	Pre-clearing 984000 ha; Remnant 2021 851000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.10.2

Description: *Eucalyptus saligna*, *Syncarpia glomulifera* subsp. *glomulifera* open forest. *Corymbia citriodora*, *E. major*, *E. acmenoides* and *C. trachyphloia* occur on drier sites. Often a distinct shrub or secondary tree layer dominated by species such as *Livistona* spp. and *Pittosporum undulatum*, particularly in moist habitats, is present. Occurs in sheltered gorges in ranges formed from medium to coarse-grained sediments. Not a Wetland. (BVG1M: 8a).

Vegetation communities in this regional ecosystem include:

11.10.2a: [RE not in use]²: This vegetation community is now mapped as 11.10.2. *Eucalyptus longirostrata*, *E. tereticornis*, *E. laevopinea* and *Angophora floribunda* dominates the open forest canopy (20-25m high). There is usually a dense tall shrub layer of *Macrozamia moorei*, *Exocarpos cupressiformis* and *Acacia* spp. In rocky fire refuges, softwood species, e.g. *Denhamia disperma*, *Breynia oblongifolia*, *Heliobdendron basalticum*, *Brachychiton populneus*, occur forming scrubby patches. RE is defunct. Not a Wetland. (BVG1M: 12a).

Short description: Open forest in sheltered gorges on coarse-grained sedimentary rocks
Supplementary descriptions: Dowling and Stephens (1996), 17; Galloway et al. (1974), LU4 (in part); Neldner (1984), 26b
Subregions: 24, 23, 16, 18, 21, (22), (27)
Protected areas: Carnarvon NP, Blackdown Tableland NP, Precipice NP, Isla Gorge NP
Extent in reserves: High
Wetland: Not a Wetland
Special values: 11.10.2: Habitat for disjunct populations of flora species typical of South East Queensland bioregion.
Comments:
Estimated extent:¹ Pre-clearing 1000 ha; Remnant 2021 1000 ha
VM class: Of concern
Biodiversity status: Of concern
Biodiversity status notes:

Regional ecosystem 11.10.3

Description: *Acacia shirleyi* and/or *A. catenulata* woodland to open forest. Other *Acacia* spp. such as *A. sparsiflora* and *A. rhodoxylon* may form part of the canopy and in places may predominate. Scattered *Eucalyptus* spp. emergents may occur, the most frequent being *E. crebra*, although *Corymbia trachyphloia*, *E. decorticans* and *E. thozetiana* may occur. Scattered tall shrubs may occur. A low shrubby layer is usually conspicuous. The ground layer is usually very sparse and composed of both grasses and forbs. Occurs on crests and ridge tops formed on consolidated, medium to coarse-grained sediments. Not a Wetland. (BVG1M: 24a).

Short description: *Acacia shirleyi* or *A. catenulata* open forest on coarse-grained sedimentary rocks. Crests and scarps
Supplementary descriptions: Gunn et al. (1967), Carborough; Neldner (1984), 5, 13a, 41; Speck et al. (1968), Duaringa
Subregions: 26, 24, 15, 6, 16, (11), (10), (20), (21), (13), (19), (27), (23), (22), (10.4), (18), (6.4), (8)
Protected areas: Carnarvon NP, Chesterton Range NP, Expedition (Limited Depth) NP, Precipice NP, Isla Gorge NP, Snake Range NP, Humboldt NP, Nuga Nuga NP
Extent in reserves: Medium
Wetland: Not a Wetland
Special values: 11.10.3: Habitat for threatened flora species including *Acacia deuteroneura*, *A. wardellii* and *Bertya calycina*.
Comments: 11.10.3: Subject to logging for specialised furniture products.
Estimated extent:¹ Pre-clearing 381000 ha; Remnant 2021 335000 ha
VM class: Least concern
Biodiversity status: No concern at present
Biodiversity status notes:

Regional ecosystem 11.10.4

Description: *Eucalyptus decorticans* predominates forming a distinct but discontinuous canopy (25-30m high). *Eucalyptus decorticans* usually forms pure stands, however other *Eucalyptus* spp. often form part of the canopy and may dominate. Other tree species that may be present and/or dominant include *Acacia shirleyi*, *Angophora leiocarpa*, *Callitris glaucophylla*, *Eucalyptus apothalassica*, *Lysicarpus angustifolius*, *E. exserta*, *E. fibrosa* subsp. *nubilis*, *E. panda*, *E. tenuipes*, *Corymbia trachyphloia*, and *E. virens*. On very rocky shallow soils, *Eucalyptus bakeri*, *E. curtisii* or *E. viridis* may occur. *Acacia shirleyi* is the most frequent tall shrub, although other *Acacia* spp. May be locally dominant. There is usually a low tree or tall shrub layer dominated by species such as *Acacia sparsiflora*, *A. burrowii*, *Callitris endlicheri*, *Allocasuarina inophloia*, *Acacia* spp., *Eucalyptus tenuipes*, *Alphitonia excelsa* and *Petalostigma pubescens*. A low shrub layer is not usually present, however where it occurs *Acacia* spp. And *Dodonaea triangularis* usually predominate. The ground layer is sparse to open, and dominated by perennial grasses, usually *Aristida* spp. Or *Arundinella nepalensis*. Occurs on crests, scarps and upper slopes of ranges formed from medium to coarse-grained sediments with shallow soils. Not a Wetland. (BVG1M: 12a).

Vegetation communities in this regional ecosystem include:

11.10.4a: *Eucalyptus crebra*, *Corymbia aureola*, *C. clarksoniana* and/or *Acacia shirleyi* woodland. Small areas that occur in conjunction with *E. decorticans* woodland. Occurs on crests, scarps and upper slopes of ranges formed from medium to coarse-grained sediments with shallow soils. Not a Wetland. (BVG1M: 12a).

11.10.4b: *Eucalyptus crebra*, *Eucalyptus exserta* woodland. Small areas that occur in conjunction with *E. decorticans* woodland. Occurs on undulating terrain and occasionally on ridgetops. Not a Wetland. (BVG1M: 12a).

11.10.4c: *Eucalyptus crebra*, *Corymbia hendersonii* woodland. Small areas that occur in conjunction with *E. decorticans* woodland. Occurs on undulating terrain and occasionally on ridgetops. Not a Wetland. (BVG1M: 12a).

11.10.4d: *Flindersia collina* +/- *Eucalyptus crebra* woodland. Occurs on steep hills and dissected plateaus. Not a Wetland. (BVG1M: 12a).

Short description:	<i>Eucalyptus decorticans</i> , <i>Lysicarpus angustifolius</i> +/- <i>Eucalyptus</i> spp., <i>Corymbia</i> spp., <i>Acacia</i> spp. woodland on coarse-grained sedimentary rocks
Supplementary descriptions:	Galloway et al. (1974), LU1; Gunn et al. (1967), Carborough; Mullins (1980), Marmadua, Tinkers, Allowee; Neldner (1984), 15
Subregions:	24, 20, 15, 6, (26), (27), (22), (18), (5), (23), (13), (16), (11), (21), (10), (9.4), (14), (10.4), (8), (12.10)
Protected areas:	Carnarvon NP, Expedition (Limited Depth) NP, Expedition NP, Palmgrove NP (S), Nuga Nuga NP, Chesterton Range NP, Beeron NP, Expedition RR, Kroombit Tops NP, Minerva Hills NP, MacKenzie Island CP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.10.4: Habitat for threatened flora species including <i>Acacia islana</i> , <i>Bertya calycina</i> , <i>Calytrix islensis</i> and <i>Eucalyptus beaniana</i> and the near threatened flora species <i>A. pubicosta</i> and <i>Eucalyptus curtisii</i> .
Comments:	11.10.4: Species richness declines in north of bioregion. Many areas have been extensively logged which has resulted in a decrease in the number of trees in the larger size classes which included many important habitat trees.
Estimated extent:¹	Pre-clearing 487000 ha; Remnant 2021 464000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.10.5

Description:	Eucalyptus sphaerocarpa and/or E. mensalis and/or E. saligna open forest to tall open forest on Cainozoic to Proterozoic consolidated, medium to coarse-grained sediments. Occurs on ranges and tablelands often with deep sandy soils and in places red earths (land zone 5). Not a Wetland. (BVG1M: 8a).
Short description:	Eucalyptus sphaerocarpa +/- E. mensalis, E. saligna open forest on coarse-grained sedimentary rocks. Tablelands
Supplementary descriptions:	Dowling and Stephens (1996), 11, 13, 14
Subregions:	16
Protected areas:	Blackdown Tableland NP, Ghungalu CP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.10.5: Potential habitat for NCA listed species: <i>Acacia storyi</i> , <i>Daviesia discolor</i> , <i>Livistona fulva</i> , <i>Macrozamia platyrhachis</i> , <i>Pseudanthus pauciflorus</i> subsp. <i>arenicola</i> , <i>Rutidosis glandulosa</i> .
Comments:	
Estimated extent: ¹	Pre-clearing 27000 ha; Remnant 2021 27000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.10.6

Description:	Angophora leiocarpa and Callitris glaucophylla +/- Lysicarpus angustifolius shrubby woodland to open woodland. Trees such as Corymbia trachyphloia, Eucalyptus melanophloia and E. chloroclada are common components of the canopy layer. There is often a diverse shrubby layer present with species including Acacia conferta, A. macradenia, Aotus subglauc, Xylomelum cunninghamianum. Calytrix longiflora, Cassinia laevis, Dodonaea boroniifolia, Grevillea floribunda and Leucopogon biflorus. There is usually a sparse ground layer composed of grasses such as Aristida holathera var. holathera, A. ingrata, A. jerichoensis, A. muricata, Chrysopogon fallax, Cymbopogon obtectus, Eragrostis lacunaria, Eremochloa bimaculata, Panicum effusum, Themeda triandra and Triodia mitchellii and forbs. In some of the valleys below sandstone slopes Eucalyptus longirostrata and in places, E. erosa are prominent tree layer species and Acacia bancroftiorum, A. leiocalyx, A. longispicata, Alphitonia excelsa and Exocarpos cupressiformis form an open tall shrub layer (2-4 m high). Occurs on uniform sandy soils in wide valleys within sandstone ranges. Associated soils are usually deep, uniform, yellowish-brown to brown sands. Not a Wetland. (BVG1M: 20a).
	Vegetation communities in this regional ecosystem include: 11.10.6a: Xanthorrhoea johnsonii shrubland with Angophora leiocarpa, Callitris glaucophylla open storey on coarse-grained sedimentary rocks. Occurs on deep red sandy loam. Not a Wetland. (BVG1M: 20a).
Short description:	Angophora leiocarpa, Callitris glaucophylla open woodland on coarse-grained sedimentary rocks. Broad valleys
Supplementary descriptions:	Galloway et al. (1974): LU5 and 6; Neldner (1984), 29
Subregions:	24, 26, (15), (20), (23), (13)
Protected areas:	Carnarvon NP, Chesterton Range NP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	
Comments:	11.10.6: Structure and composition of shrub and ground layer varies with fire regime.
Estimated extent: ¹	Pre-clearing 149000 ha; Remnant 2021 144000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.10.7

Description: Eucalyptus crebra and/or E. melanophloia +/- E. populnea shrubby woodland. Eucalyptus melanophloia and/or E. crebra predominate and form a distinct but open canopy. E. populnea is commonly present and may be locally dominant particularly on lower slopes. A low tree to tall shrub layer usually dominated by a range of species including Eremophila mitchellii, Acacia decora, A. longispicata spp. longispicata and A. excelsa is present. A low shrub layer with Petalostigma pubescens and other species is formed in places. The ground layer is variable in cover and composition, but composed mainly of grasses. Occurs on the lower slopes of scarp retreats, associated with dissected tablelands. Associated soils are generally moderately deep, acidic, sandy, yellow earths and sandy-surfaced texture contrast soils formed from medium to coarse-grained sediments. Not a Wetland. (BVG1M: 12a).

Vegetation communities in this regional ecosystem include:

11.10.7a: Eucalyptus crebra +/- Callitris glaucophylla +/- Angophora leiocarpa +/- Eucalyptus spp. woodland. Eucalyptus crebra predominates and forms a distinct but discontinuous canopy (16-20 m high). In places, Angophora leiocarpa forms part of the canopy. The low tree layer (12-16 m high) is dominated by Callitris glaucophylla. Scattered tall and low shrubs may be present. The ground layer is open to dense, and dominated by perennial grasses, usually Aristida spp. or Themeda triandra. Occurs on the lower slopes of scarp retreats, associated with dissected tablelands. Associated soils are generally moderately deep, acidic, sandy, yellow earths and sandy-surfaced texture contrast soils formed from medium to coarse-grained sediments. Not a Wetland. (BVG1M: 12a).

Short description: Eucalyptus crebra woodland on coarse-grained sedimentary rocks

Supplementary descriptions: Forster and Barton (1995), Torilla; Galloway et al. (1974), LU2; Gunn et al. (1967), Carborough (3); Gunn and Nix (1977), LU 24 (in Carborough LS); Neldner (1984), 31a, 14a; Speck et al. (1968), Duaringa

Subregions: 24, 26, 6, 15, (5), (11), (27), (13), (10), (21), (12), (22), (14), (18), (20), (23), (31), (25), (10.4), (8), (6.4)

Protected areas: Chesterton Range NP, Precipice NP, Carnarvon NP, Isla Gorge NP, Expedition RR, Snake Range NP, Expedition NP, Expedition (Limited Depth) NP, Tooloombah Creek CP, Palmgrove NP (S), Cania Gorge NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.10.7: Potential habitat for NCA listed species: Acacia islana, Acacia sp. (Ruined Castle Creek P.I.Forster+ PIF17848), Eucalyptus tereticornis subsp. rotunda, Sannantha brachypoda.

Comments: 11.10.7: The occurrences in subregion 14 are unusual in that they are coastal.

Estimated extent:¹ Pre-clearing 395000 ha; Remnant 2021 287000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.10.8

Description: Semi-evergreen vine thicket and microphyll rainforest. Occurs on medium to coarse-grained sediments that may be subject to local enrichment from adjacent rocks such as basalt as well as seepage. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket in sheltered habitats on medium to coarse-grained sedimentary rocks

Supplementary descriptions: Fensham: (1995); Fensham and Streimann (1997)

Subregions: 6, 21, 24, 11, 18, 5, 22, 15, (13), (27), (10), (20), (14), (9.4), (16), (2)

Protected areas: Palmgrove NP (S), Cania Gorge NP, Snake Range NP, Tooloombah Creek CP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values: 11.10.8: Potential habitat for NCA listed species: *Cerbera dumicola*, *Cossinia australiana*, *Sannantha brachypoda*.

Comments:

Estimated extent:¹ Pre-clearing 13000 ha; Remnant 2021 8000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.10.9

Description: *Callitris glaucophylla* woodland to open forest often associated with *Eucalyptus melanophloia* in the tree canopy and a sparse ground layer. Various other tree species may be present including *Corymbia clarksoniana*, *Eucalyptus populnea*, *C. tessellaris*, *E. chloroclada* and *Angophora leiocarpa* which may form a mono-specific open woodland in places. Low trees such as *Allocasuarina luehmannii*, *Alphitonia excelsa*, *Lysicarpus angustifolius*, *Geijera parviflora* and *Acacia* spp. Sometimes conspicuous in mid low tree to tall shrub layer. The ground layer is often sparse and dominated by grasses such as *Aristida echinata*, *A. jerichoensis*, *A. caput-medusae*, *Bothriochloa decipiens*, *Eriachne mucronata*, *Enneapogon* spp. And sometimes *Triodia mitchellii*. Occurs on deep uniform sandy and deep texture contrast soils on coarse grained sediments. Not a Wetland. (BVG1M: 20a).

Short description: *Callitris glaucophylla* woodland on coarse-grained sedimentary rocks

Supplementary descriptions: Galloway et al. (1974), LU7; Gunn et al. (1967), Playfair; Neldner (1984), 8, 19a

Subregions: 24, 26, 15, (27), (23), (11), (31), (21), (22), (25), (20), (32), (10), (13), (4.4)

Protected areas: Carnarvon NP, Chesterton Range NP, Precipice NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.10.9: Potential habitat for NCA listed species: *Bertya calycina*, *Rutidosia crispata*, *Sannantha brachypoda*.

Comments: 11.10.9: The distribution and abundance of *Callitris glaucophylla* may reflect fire history as regular burning prevents the regeneration of this species.

Estimated extent:¹ Pre-clearing 513000 ha; Remnant 2021 378000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.10.11

Description: Eucalyptus populnea predominates forming a discontinuous canopy (13-18 m high). E. melanophloia is often present in the canopy, and occasionally E. chloroclada trees occur. Eucalyptus moluccana or E. microcarpa may dominate localised areas. Callitris glaucophylla forms a lower tree layer (10-13 m tall) of varying density. Allocasuarina luehmannii is prominent in this layer in places. A tall shrub layer is developed in some stands. Dense patches of low shrubs occur in some stands. The ground cover is usually sparse and dominated by the perennial grasses, Bothriochloa decipiens and Aristida spp. Occurs on undulating to rolling hills. The soils are predominantly deep texture contrast soils with sandy surface horizons (up to 70 cms deep), over strongly alkaline to acidic, yellow clayey subsoils. Not a Wetland. (BVG1M: 17a).

Vegetation communities in this regional ecosystem include:

11.10.11a: Eucalyptus moluccana or E. microcarpa woodland. Occurs on undulating to rolling hills. The soils are predominantly deep texture contrast soils with sandy surface horizons (up to 70 cms deep), over strongly alkaline to acidic, yellow clayey subsoils. Not a Wetland. (BVG1M: 13d).

Short description: Eucalyptus populnea, E. melanophloia +/- Callitris glaucophylla woodland on coarse-grained sedimentary rocks

Supplementary descriptions: Galloway et al. (1974), LU8, LU 29, LU30 (in part); Gunn et al. (1967), Playfair; Neldner (1984), 19b

Subregions: 24, 26, (15), (10), (23), (11), (27), (20), (8), (16), (25), (6.4), (13), (4.4)

Protected areas: Chesterton Range NP, Carnarvon NP, Palmgrove NP (S)

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.10.11: Potential habitat for NCA listed species: Bertya calycina, Lomandra teres.

Comments: 11.10.11: Density of Callitris glaucophylla varies from sparse to dense depending on fire frequency and other management factors.

Estimated extent:¹ Pre-clearing 540000 ha; Remnant 2021 321000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.10.12

Description: Eucalyptus populnea predominates and forms a distinct but discontinuous canopy (8-14 m high). Eremophila mitchellii usually dominates a distinct low tree/ tall shrub layer (2-4 m tall). Scattered low shrubs are often present and in places, Pimelea microcephala forms an open, low shrub layer. The ground layer varies from sparse to moderately dense and is dominated by perennial grasses, although forbs are seasonally abundant. Occurs on lower slopes of low hills with shallow soils formed from Cainozoic to Proterozoic consolidated, medium to coarse-grained sediments. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus populnea woodland on medium to coarse-grained sedimentary rocks

Supplementary descriptions: Galloway et al. (1974), LU3; Gunn et al. (1967), Carborough; Neldner (1984), 34; Speck et al. (1968), Carborough; Story et al. (1967), Cotherstone

Subregions: 6, 10, 15, 11, (24), (13), (20), (5), (23), (16)

Protected areas: Snake Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 96000 ha; Remnant 2021 44000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.10.13

Description: Open forest (to woodland) with a range of canopy species including *Eucalyptus cloeziana*, *E. melanoleuca*, *E. sphaerocarpa*, *Corymbia bunites*, *C. hendersonii*, *C. trachyphloia*, *E. suffulgens*, *C. leichhardtii*, *C. citriodora*, *E. baileyana*. Occurs on sandstone scarps and tablelands with shallow soils formed from medium to coarse-grained sediments. Not a Wetland. (BVG1M: 12a).

Vegetation communities in this regional ecosystem include:

11.10.13a: *Eucalyptus cloeziana* +/- *E. melanoleuca* +/- *Corymbia bunites* +/- *E. sphaerocarpa* woodland to open forest. Occurs on sandstone scarps and tablelands with shallow soils formed from medium to coarse-grained sediments. Not a Wetland. (BVG1M: 12a).

11.10.13b: *Corymbia leichhardtii* woodland. Occurs on sandstone scarps and tablelands with shallow soils formed from medium to coarse-grained sediments. Not a Wetland. (BVG1M: 12a).

Short description: *Eucalyptus* spp. and/or *Corymbia* spp. open forest on scarps and sandstone tablelands

Supplementary descriptions: Dowling and Stephens (1997), 10b, 12, 15, 16

Subregions: 24, 16, 20, (15), (10), (18), (21), (23), (13), (6), (11), (27), (22), (10.4)

Protected areas: Carnarvon NP, Expedition (Limited Depth) NP, Blackdown Tableland NP, Palmgrove NP (S), Precipice NP, Isla Gorge NP, Expedition NP, Snake Range NP, Expedition RR, Humboldt NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.10.13: Habitat for species with restricted and disjunct distributions including *Eucalyptus suffulgens* and *Corymbia bunites*.

Comments: 11.10.13: This regional ecosystem merges into regional ecosystem 11.10.1 which is dominated by *C. citriodora* or *E. crebra*.

Estimated extent:¹ Pre-clearing 403000 ha; Remnant 2021 391000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.10.14

Description: Springs. Associated with quartzose sandstone ranges. Palustrine. (BVG1M: 34e).

Short description: Springs associated with sandstone

Supplementary descriptions: Fensham and Fairfax (2002); Fensham et al. (2004)

Subregions:

Protected areas:

Extent in reserves:

Wetland: Palustrine

Special values: 11.10.14: Habitat for the threatened species including *Arthraxon hispidus* and endemic snails (Ponder and Clarke 1990). Disjunct populations of coastal plant species.

Comments: 11.10.14: All the springs are within Great Artesian Basin recharge areas. Impacted by excavation, pig rooting, stock and feral horse trampling, artificial extraction from the aquifer, inundation by impoundments and the introduction of ponded pastures.

Estimated extent:¹

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Springs ecosystem, highly localised and relatively well studied.

Regional ecosystem 11.11.1

Description: Eucalyptus crebra woodland, often with Acacia rhodoxylon. Other species that may be present include Corymbia citriodora, C. leichhardtii, E. melanophloia, C. erythrophloia, C. clarksoniana, E. fibrosa subsp. fibrosa (subregion 18) and E. moluccana on lower slopes (subregions 14, 17, 18). Macrozamia spp. sometimes present in shrub layer. Lophostemon grandiflorus occurs in gullies within this regional ecosystem in the north of the bioregion. Occurs mainly on sub-coastal hills and ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 13c).

Short description: Eucalyptus crebra +/- Acacia rhodoxylon woodland on old sedimentary rocks with varying degrees of metamorphism and folding

Supplementary descriptions: Forster and Barton (1995), Rosewood, Boomer; Gunn et al. (1967), Copperfield, Borilla; Kent (1987), Ra6, Cd3; Speck et al. (1968), Boomer, Malakoff, Rosewood; Gunn and Nix (1977) LU 62

Subregions: 9, 17, 6, 14, (11), (4), (2), (3), (18), (5), (7), (12), (13), (9.4), (19), (27), (22), (1), (10), (21), (12.10)

Protected areas: Goodedulla NP, Homevale NP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values: 11.11.1: Potential habitat for NCA listed species: Corymbia clandestina, Cycas ophiolitica.

Comments:

Estimated extent:¹ Pre-clearing 242000 ha; Remnant 2021 160000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.2

Description: Acacia shirleyi or A. catenulata woodland to open forest. Eucalypt species may be present as emergent trees including Eucalyptus crebra and Corymbia citriodora. Occurs on hills and ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 24a).

Short description: Acacia shirleyi or A. catenulata woodland to open forest on old sedimentary rocks with varying degrees of metamorphism and folding

Supplementary descriptions: Gunn et al. (1967), Loudon, Hope, Copperfield

Subregions: 3, 9, 13, 7, (4), (11), (6), (5), (9.4), (10), (15), (10.3), (12), (8)

Protected areas: Blackwood NP, Snake Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.11.2: Potential habitat for NCA listed species: Cerbera dumicola.

Comments:

Estimated extent:¹ Pre-clearing 90000 ha; Remnant 2021 74000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.3

Description: *Corymbia citriodora*, *Eucalyptus crebra* and *E. acmenoides* open forest often with a *Allocasuarina torulosa* and whipstick *Lophostemon confertus* and/or *Xanthorrhoea* spp. and *Macrozamia* spp. tall shrub or low tree layer. Generally occurs on sub-coastal hills and ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 10a).

Vegetation communities in this regional ecosystem include:

11.11.3c: *Eucalyptus moluccana* woodland on lower slopes in association with *Eucalyptus crebra* +/- *Corymbia citriodora* +/- *Eucalyptus* spp. Usually occurs on lower slopes or low rises of Devonian-Carboniferous metasediments, on clay soils. Not a Wetland. (BVG1M: 13d).

Short description: *Corymbia citriodora*, *Eucalyptus crebra*, *E. acmenoides* open forest on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges

Supplementary descriptions: Forster and Barton (1995), Berserker; Speck et al. (1968), Gelobera

Subregions: 18, 13, 14, 17, (9), (15), (12.10), (12.5), (22), (21), (27), (11), (7)

Protected areas: Goodedulla NP, Bouldercombe Gorge RR, Bukkulla CP, Bouldercombe Gorge CP, Rundle Range RR, Bania NP, Rundle Range NP, Kroombit Tops NP, Gurgeena CP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values: 11.11.3: Potential habitat for NCA listed species: *Cycas megacarpa*, *Cycas ophiolitica*, *Marsdenia brevifolia*, *Parsonsia larcomensis*, *Zieria actites*.

Comments:

Estimated extent:¹ Pre-clearing 136000 ha; Remnant 2021 98000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.4

Description: Eucalyptus crebra woodland +/- Corymbia citriodora +/- E. tereticornis +/- C. tessellaris +/- Lophostemon suaveolens with Xanthorrhoea spp. and Macrozamia spp. often present in shrub layer. Eucalyptus moluccana often dominates the tree canopy on lower colluvial slopes. Generally occurs on coastal hills and ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.11.4a: Eucalyptus tereticornis dominated woodland. Other tree species listed above may occur as sub or co-dominant species. On undulating hills and low rises of metasediments. Not a Wetland. (BVG1M: 13d).

11.11.4b: Corymbia trachyphloia or Eucalyptus acmenoides, E. crebra woodland +/- Acacia leiocalyx. Occurs on rocky coastal rises and steep hills, on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. Not a Wetland. (BVG1M: 13c).

11.11.4c: Eucalyptus moluccana dominated woodland. Other tree species listed above may occur as sub or co-dominant species. Occurs on undulating rises and low hills, on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. Not a Wetland. (BVG1M: 13d).

11.11.4d: Lophostemon spp. with shrubs including Acacia spp. Alphitonia excelsa and Xanthorrhoea johnsonii. Occurs on coastal rocky short steep hills on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. Not a Wetland. (BVG1M: 28e).

Short description:	Eucalyptus crebra woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges
Supplementary descriptions:	Forster and Barton (1995), Berserker; Speck et al. (1968), Gelobera, Irving
Subregions:	14, 18, (27), (22), (17), (31), (8.5), (12.10), (8.4), (12.6), (12.5)
Protected areas:	Flat Top Range RR, Kroombit Tops NP, Rundle Range RR, Dan Dan NP, Keppel Bay Islands NP, Castle Tower NP, Wietalaba NP, Dawes NP, Bania NP, Capricorn Coast NP, Futter Creek CP, Rundle Range NP, Calliope CP, Reinke Scrub CP, Causeway Lake CP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.11.4: Potential habitat for NCA listed species: Cycas megacarpa, Cycas ophiolitica, Macrozamia serpentina, Marsdenia brevifolia, Parsonsia larcomensis, Rhaponticum australe, Zieria actites, Zieria verrucosa.
Comments:	
Estimated extent:¹	Pre-clearing 141000 ha; Remnant 2021 68000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.11.5

Description: Microphyll rainforest (with or without *Araucaria cunninghamii* emergents) and semi-evergreen vine thicket. Floristics and structure varies with site. There is usually a continuous tree canopy (9 - 15m high) with a wide range of species including *Flindersia australis*, *Backhousia kingii*, *Excoecaria dallachyana*, *Melia azedarach*, *Ficus* spp., *Strychnos psilosperma*, *Macropteranthes leichhardtii* and *Alstonia constricta*. An emergent tree layer (12-20m high) commonly occurs with species including *Brachychiton australis*, *B. rupestris*, *Flindersia australis*, *Ficus* spp. *Araucaria cunninghamii* and sometimes *Eucalyptus* spp. There is a shrub layer (1-3m high) with density depending on canopy cover and frequent species including *Croton* spp., *Abutilon* spp., *Capparis* spp. *Acalypha eremorum* and *Codonocarpus attenuatus*. Ferns, mosses and vines are common. Occurs on hilly terrain. Formed from moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Associated soils are generally shallow loams and clays with minor areas of deeper cover. Not a Wetland. (BVG1M: 7a).

Vegetation communities in this regional ecosystem include:

11.11.5a: Vine thicket, usually with no *Araucaria cunninghamii* emergents. Occurs on hilly terrain with steep slopes. Formed from moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Associated soils are generally shallow loams and clays with minor areas of deeper cover. Not a Wetland. (BVG1M: 7a).

Short description:	Microphyll vine forest +/- <i>Araucaria cunninghamii</i> on old sedimentary rocks with varying degrees of metamorphism and folding
Supplementary descriptions:	Forster and Barton (1995), Moore; Speck et al. (1968), Hillmore (2), Malakoff (1); Gunn and Nix (1977), 106
Subregions:	18, 14, 17, 13, (2), (1), (12), (22), (21), (9.4), (19), (8.4), (11), (6), (12.10)
Protected areas:	Goodedulla NP, Bukkulla CP, Rundle Range NP, Bouldercombe Gorge RR, Mount Etna Caves NP, Dan Dan NP, Flat Top Range RR, Mount Hopeful CP, Kroombit Tops NP, Reinke Scrub CP, Bouldercombe Gorge CP, Keppel Bay Islands NP, Rundle Range RR, Charon Point CP
Extent in reserves:	Medium
Wetland:	Not a Wetland
Special values:	11.11.5: Potential habitat for NCA listed species: <i>Atalaya collina</i> , <i>Corchorus hygrophilus</i> , <i>Dansiea elliptica</i> , <i>Decaspermum struckoileum</i> , <i>Graptophyllum excelsum</i> , <i>Hernandia bivalvis</i> , <i>Macropteranthes leiocaulis</i> , <i>Macrozamia serpentina</i> , <i>Solanum sporadotrichum</i> , <i>Zieria verrucosa</i> .
Comments:	11.11.5: In moist microhabitats such as sheltered gullies, rainforest tends to the notophyll type. The rainforest at higher altitude on topographic isolates such as Mount Aberdeen has close affinities with upland rainforest of Central Queensland Coast bioregion.
Estimated extent:¹	Pre-clearing 81000 ha; Remnant 2021 32000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.11.6

Description: *Corymbia leichhardtii*, *C. clarksoniana* tall shrubby open woodland with *Lophostemon grandiflorus* in gullies. Occurs on inland hills and ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 13c).

Short description: *Corymbia leichhardtii*, *C. clarksoniana* tall open woodland on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Gunn et al. (1967), Borilla, Carborough

Subregions: 13, 3, 5, 7, (15), (8), (6)

Protected areas: Narrien Range NP, Blackwood NP, Snake Range NP

Extent in reserves: High

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 30000 ha; Remnant 2021 29000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.7

Description: Complex of vegetation on serpentinite hills and adjacent undulating colluvial aprons dominated by *Eucalyptus fibrosa* subsp. *fibrosa* +/- *Corymbia xanthope* +/- *Corymbia* spp. A variable shrub layer includes *Acacia leptostachya*, *Hakea trineura*, *Xanthorrhoea* spp. and *Macrozamia serpentina*. Occurs on steep mountains, undulating low hills and rises and colluvial aprons formed from Permian ultramafic rocks (serpentinite) including remnant lateritised surfaces in more elevated areas. Associated soils are shallow to moderately deep dark stony clays to clay loams. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.11.7a: *Eucalyptus fibrosa* subsp. *fibrosa* +/- *Corymbia* spp. +/- *Eucalyptus* spp. woodland with a diverse shrub layer including several endemic species. Occurring on undulating low hills and colluvial aprons. Not a Wetland. (BVG1M: 13c).

11.11.7x1: *Eucalyptus fibrosa* subsp. *fibrosa* +/- *Corymbia* spp. tall woodland with rainforest elements in the understorey. Often steep and rocky near-coastal hills, with abundant surface rock and bare pavement/soil. Not a Wetland. (BVG1M: 13c).

Short description: *Eucalyptus fibrosa* subsp. *fibrosa*, *Corymbia xanthope* woodland on serpentinite

Supplementary descriptions: Batianoff and Specht (1992); Forster and Barton (1995), Marlborough, Tungamull (in part); Batianoff and Singh (2001)

Subregions: 14, (9), (18)

Protected areas: Princhester CP, North Pointer CP, Bukkulla CP, Flat Top Range RR, Mount Etna Caves NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.11.7: Habitat for threatened flora species including *Cycas ophiolitica*, *Capparis humistrata*, *Macrozamia serpentina*, *Corymbia xanthope*, *Hakea trineura*, *Capparis thozetiana*, *Neoroepera buxifolia*, *Pultenaea setulosa*, *Marsdenia brevifolia*, *Bursaria reevesii* and the near threatened species *Pimelea leptospermoides* and *Stackhousia tryonii*.

Comments: 11.11.7a: Vegetation community 11.11.7a is subject to clearing and logging.
11.11.7x1: Areas of 11.11.7x1 are extensively covered by mining leases and are not represented in protected areas. Areas of 11.11.7x1 are extensively covered by mining leases and are not represented in protected areas.

Estimated extent:¹ Pre-clearing 62000 ha; Remnant 2021 51000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Threatening processes include earthworks associated with mineral extraction, presence of perennial non-native grasses.

Regional ecosystem 11.11.8

Description: *Eucalyptus shirleyi* open woodland. Occurs on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Hills and ranges. Not a Wetland. (BVG1M: 13c).

Short description: *Eucalyptus shirleyi* woodland on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Christian et al. (1953), Leichhardt

Subregions: 3, 4, (9.4), (2), (6), (7)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 19000 ha; Remnant 2021 15000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.9

Description: Eucalyptus populnea or E. brownii woodland to open woodland. Occurs on undulating rises and lower slopes of hills formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus populnea or E. brownii woodland on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Gunn et al. (1967), Craven, Hope; Speck et al. (1968), Ohio, Torsdale; Story et al. (1967), Hillalong

Subregions: 3, 13, 8, (7), (10.3), (2), (6), (4), (15), (18), (11), (5), (17), (9.4), (9), (19), (22), (10), (27)

Protected areas: Nairana NP, Narrien Range NP, Blackwood NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 138000 ha; Remnant 2021 54000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.10

Description: Eucalyptus melanophloia +/- E. crebra +/- Corymbia dallachiana +/- C. erythrophloia grassy or occasionally shrubby woodland or low woodland. Occurs on moderately to strongly deformed and metamorphosed sediments and Permian sediments. Not a Wetland. (BVG1M: 17b).

Vegetation communities in this regional ecosystem include:

11.11.10a: Eucalyptus moluccana woodland. Eucalyptus moluccana, E. tereticornis may be prominent components of the tree layer, particularly on lower slopes. Occurs on moderately to strongly deformed and metamorphosed sediments and Permian sediments, usually on deeper clay soils. Not a Wetland. (BVG1M: 13d).

Short description: Eucalyptus melanophloia woodland on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Forster and Barton (1995), Carrara, Macksford (in part); Gunn et al. (1967), Craven, Hope, Rutland; Speck et al. (1968), Ohio, Bannockburn, Boomer, Malakoff

Subregions: 13, 10.3, 3, 17, (5), (18), (12), (14), (9), (15), (4), (6), (9.4), (7), (22), (27), (8), (11), (21), (19), (12.10), (10), (12.5)

Protected areas: Goodedulla NP, Kroombit Tops NP, Charon Point CP, Shoalwater Bay CP, Narrien Range NP, Bania NP, Snake Range NP, Gurgeena CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.11.10: Sometimes aligned in bands along strike belt. This regional ecosystem is subject to periodic canopy dieback due to drought in parts of central Queensland (Fensham and Holman, 1999).

Estimated extent:¹ Pre-clearing 337000 ha; Remnant 2021 103000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.11.11

Description: Eucalyptus orgadophila woodland to open woodland. Occurs on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Lowlands. Not a Wetland. (BVG1M: 11a).

Short description: Eucalyptus orgadophila woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Gunn et al. (1967), Craven, Hope

Subregions: 13, 15, (9), (8), (4), (7), (11)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 48000 ha; Remnant 2021 15000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.11.12

Description: Eucalyptus persistens +/- Corymbia lamprophylla low open woodland. Corymbia lamprophylla may dominate localised areas. Occurs on low hills and undulating rises formed from moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 19d).

Short description: Eucalyptus persistens low woodland on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Gunn et al. (1967), Loudon, Hope

Subregions: 3, 4, (7), (5), (10.3), (9.4), (10.2), (1)

Protected areas: Nairana NP, Blackwood NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 75000 ha; Remnant 2021 60000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.13

Description: Acacia harpophylla shrubby open forest or A. argyrodendron shrubby low open forest or woodland. Terminalia oblongata, Eremophila mitchellii are common components in the understorey. Emergent Eucalyptus spp. may be present, especially E. populnea. Occurs on undulating rises and low hills often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 25a).

Short description: Acacia harpophylla or A. argyrodendron low open forest with a secondary tree layer of Terminalia oblongata on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Gunn et al. (1967), Rutland; Story et al. (1967), Hillalong

Subregions: 3, 13, 10.3, 7, (5), (4), (15), (8), (6), (10), (9), (12), (2), (9.4), (11), (14)

Protected areas: Nairana NP, Narrien Range NP, Blackwood NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 232000 ha; Remnant 2021 55000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.11.14

Description: Acacia harpophylla shrubby open forest with a Geijera parviflora and Eremophila mitchellii low tree layer. Casuarina cristata, semi-evergreen vine thicket species and Eucalyptus spp. emergents (e.g. E. cambageana) sometimes present. Occurs on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Colluvial lower slopes. Not a Wetland. (BVG1M: 25a).

Short description: Acacia harpophylla open forest on deformed and metamorphosed sediments and interbedded volcanics

Supplementary descriptions: Speck et al. (1968), Bannockburn, Malakoff, Banana

Subregions: 17, 12, 14, 18, (13), (22), (21), (19), (27)

Protected areas: Rundle Range NP, Goodedulla NP, Charon Point CP, Rundle Range RR

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.11.14: Potential habitat for NCA listed species: Cadellia pentastylis, Denhamia parvifolia, Macropteranthes leiocaulis.

Comments: 11.11.14: Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 37000 ha; Remnant 2021 4000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.11.15

Description: *Eucalyptus crebra* +/- *Corymbia erythrophloia* +/- *E. populnea* +/- *E. melanophloia* +/- *C. tessellaris* +/- *C. clarksoniana* woodland to open woodland often with a shrubby layer. *Eucalyptus exserta* and *E. platyphylla* present in central coastal part of bioregion. Occurs on undulating rises and low hills, often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.11.15a: *Eucalyptus crebra*, *E. exserta* woodland. Occurs on undulating rises and low hills, often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. Not a Wetland. (BVG1M: 13c).

11.11.15b: *Eucalyptus drepanophylla* and/or *E. platyphylla* woodland +/- vine thicket species. Occurs on undulating rises and low hills, often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. Not a Wetland. (BVG1M: 13c).

11.11.15c: Woodland with *Corymbia setosa* present to dominant, usually with *Corymbia clarksoniana*, *Eucalyptus melanophloia*, *Corymbia dallachiana* and *Eucalyptus crebra*, with occasional shrubs of *Petalostigma pubescens* and *Alphitonia excelsa*. Occurs on rises and hills, often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 13c).

11.11.15d: Woodland with *Corymbia setosa* present to dominant, usually with *Corymbia clarksoniana*, *Eucalyptus melanophloia*, *Corymbia dallachiana* and *Eucalyptus crebra*, with occasional shrubs of *Petalostigma pubescens* and *Alphitonia excelsa*. Occurs on low rises and short hills derived from Devonian-Carboniferous sediments (mainly conglomerates in Beresford Stn). Associated soils are hard gravelly to stony. Not a Wetland. (BVG1M: 13c).

Short description:	<i>Eucalyptus crebra</i> woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics
Supplementary descriptions:	Forster and Barton (1995), Artillery; Speck et al. (1968), Bannockburn
Subregions:	13, 18, 3, 14, 9, (4), (2), (1), (22), (7), (12), (17), (15), (9.4), (19), (10), (10.3), (11), (6), (10.2), (27), (31), (8.4), (8), (12.10), (12.5), (12.6), (21), (8.3)
Protected areas:	Kroombit Tops NP, Narrien Range NP, Nairana NP, Rundle Range NP, Goodedulla NP, Cania Gorge NP, Shoalwater Bay CP, Rundle Range RR, Bouldercombe Gorge RR, Broad Sound Islands NP, Blackwood NP, Gurgeena CP, Bania NP, Mount Etna Caves NP, Bouldercombe Gorge CP, Mount O'Connell NP, Dawes NP, Dan Dan NP, Castle Tower NP, Newport CP, Futter Creek CP
Extent in reserves:	Low
Wetland:	Not a Wetland
Special values:	11.11.15: Potential habitat for NCA listed species: <i>Capparis humistrata</i> , <i>Corymbia clandestina</i> , <i>Corymbia xanthope</i> , <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> .
Comments:	11.11.15: This regional ecosystem has been subject to periodic canopy dieback due to drought in parts of central Queensland (Fensham and Holman, 1999).
Estimated extent: ¹	Pre-clearing 892000 ha; Remnant 2021 519000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.11.16

Description: Eucalyptus cambageana, Acacia harpophylla open forest to woodland. Occurs on gently undulating plains and rises formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 25a).

Short description: Eucalyptus cambageana, Acacia harpophylla open forest to woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands

Supplementary descriptions: Speck et al. (1968), Malakoff, Highworth

Subregions: 13, 10.3, 3, 5, 8, 9, 7, (11), (15), (10), (12), (14), (18), (21), (19), (4), (17), (6)

Protected areas: Narrien Range NP, Snake Range NP, Blackwood NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.11.16: Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 83000 ha; Remnant 2021 21000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.11.17

Description: Dichanthium sericeum tussock grassland with Eucalyptus melanophloia and E. orgadophila scattered trees or low open woodland on rises. Occurs on gently undulating plains and rises formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 30b).

Short description: Dichanthium sericeum tussock grassland on old sedimentary rocks with varying degrees of metamorphism and folding

Supplementary descriptions:

Subregions: 13, 3, (15), (7)

Protected areas:

Extent in reserves: No representation

Wetland: Not a Wetland

Special values:

Comments: 11.11.17: Modified by total grazing pressure and invasion by buffel grass.

Estimated extent:¹ Pre-clearing 2000 ha; Remnant 2021 600 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes: Under review

Regional ecosystem 11.11.18

Description: Semi-evergreen vine thicket. Occurs on undulating plains, rises and gentle slopes of ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket on old sedimentary rocks with varying degrees of metamorphism and folding

Supplementary descriptions: Speck et al. (1968), Boomer (4), Rosewood, Highworth, Banana (1, 2, 4), Malakoff (7); Gunn and Nix (1977), 95

Subregions: 18, 2, 17, 13, (6), (14), (12), (9), (19), (22), (15), (27), (12.10), (10)

Protected areas: Snake Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.11.18: Potential habitat for NCA listed species: *Atalaya collina*, *Brachychiton guymeri*, *Dansiea elliptica*, *Graptophyllum excelsum*, *Hernandia bivalvis*, *Macropteranthes leiocaulis*.

Comments: 11.11.18: This regional ecosystem occurs on more gently slopes than 11.11.5. Extensively cleared for cropping and pasture and subject to fragmentation and associated degradation due to fire and weed invasion.

Estimated extent:¹ Pre-clearing 49000 ha; Remnant 2021 4000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

Regional ecosystem 11.11.19

Description: *Eucalyptus thozetiana*, *Acacia harpophylla* woodland. Occurs on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Lowlands and footslopes. Not a Wetland. (BVG1M: 25a).

Vegetation communities in this regional ecosystem include:

11.11.19a: [RE not in use]²: This vegetation community is mapped as 11.11.19. *Eucalyptus crebra* and/or *Acacia rhodoxylon* +/- *Corymbia dallachiana* +/- *Acacia catenulata* woodland. Occurs on older volcanics (land zone 12). Not a Wetland. (BVG1M: 13c).

Short description: *Eucalyptus thozetiana*, *Acacia harpophylla* woodland on old sedimentary rocks with varying degrees of metamorphism and folding

Supplementary descriptions: Gunn et al. (1967), Loudon

Subregions: 3, 7, 13, 15, (10.3), (9)

Protected areas: Blackwood NP, Narrien Range NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values:

Comments: 11.11.19: Was previously mapped as 11.11.19a. Extensively cleared for pasture.

Estimated extent:¹ Pre-clearing 32000 ha; Remnant 2021 15000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Subject to invasion by non-native perennial grasses, associated inappropriate fire regimes.

Regional ecosystem 11.11.20

Description: Eucalyptus platyphylla and Corymbia clarksoniana or C. intermedia +/- E. tereticornis +/- Lophostemon suaveolens woodland. Occurs on low hills and undulating rises formed on sedimentary and metamorphic rocks. Not a Wetland. (BVG1M: 13c).

Short description: Eucalyptus platyphylla woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands

Supplementary descriptions: Christian et al. (1953), Kilbogie; Forster and Barton (1995), Fanside

Subregions: 14, (8.5), (8.4)

Protected areas: Shoalwater Bay CP, Broad Sound Islands NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.11.20: Potential habitat for NCA listed species: Cycas ophiolitica, Macrozamia serpentina.

Comments: 11.11.20: The extent of this regional ecosystem has not been fully mapped.

Estimated extent:¹ Pre-clearing 19000 ha; Remnant 2021 11000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.11.21

Description: Semi-evergreen vine thicket on serpentinite. Species include Brachychiton rupestris, Gossia bidwillii, Notelaea longifolia, Cupaniopsis wadsworthii, Diospyros spp., Croton insularis, Alyxia ruscifolia, Turraea pubescens, Samadera bidwillii and includes the endemic Neoroepera buxifolia. Occurs on narrow hillcrests, upper slopes, gullies, footslopes and lateritised hills with shallow to moderately deep stony red to brown clay loams and clays formed from moderately weathered or lateritised serpentinite hills and mountains. Not a Wetland. (BVG1M: 7a).

Short description: Semi-evergreen vine thicket on serpentinite

Supplementary descriptions: Forster and Barton (1995), Marlborough, Tungamull (in part); Batianoff and Singh (2001)

Subregions: 14

Protected areas: Princhester CP, Bukkulla CP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.11.21: Habitat for threatened flora species including Samadera bidwillii and Neoroepera buxifolia.

Comments: 11.11.21: A rare ecosystem that occurs in the Marlborough Plains subregion. Some areas have been cleared for mining.

Estimated extent:¹ Pre-clearing 2000 ha; Remnant 2021 2000 ha

VM class: Of concern

Biodiversity status: Endangered

Biodiversity status notes: Highly fragmented in all known locations.

Regional ecosystem 11.12.1

Description: Eucalyptus crebra +/- Corymbia erythrophloia woodland to open woodland. E. melanophloia is rarely present and may be locally dominant. Also includes localised areas may be dominated by E. persiciens. Occurs on ranges on igneous rocks. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.12.1a: Eucalyptus crebra +/- E. exserta woodland. Occurs on undulating rises. Not a Wetland. (BVG1M: 13c).

11.12.1b: Eucalyptus persiciens low woodland. Occurs on acid-volcanic rocks. Not a Wetland. (BVG1M: 19d).

11.12.1c: Dichanthium spp. grassland +/- scattered Eucalyptus crebra, Corymbia erythrophloia. Occurs on mid to lower slopes on granodiorites and felsic granities producing heavy clays soils. Not a Wetland. (BVG1M: 30b).

Short description: Eucalyptus crebra woodland on igneous rocks

Supplementary descriptions: Christian et al. (1953), Heidelberg; Forster and Barton (1995), Glassford; Kent (1987), Pt1; Speck et al. (1968), Hillmore, Irving, Toonda, Ohio, Bouldercombe

Subregions: 2, 22, 5, 12, (18), (1), (14), (4), (27), (7), (9.4), (9), (17), (6), (3), (10), (8.3), (13), (11), (8.4), (10.3), (21), (19), (24), (12.10), (12.6), (12.5), (8.6), (8)

Protected areas: Homevale NP, Eungella NP, Goodedulla NP, Cape Upstart NP, Homevale RR, Mount Aberdeen NP, Bouldercombe Gorge RR, Crediton FR, Kroombit Tops NP, Auburn River NP, Charon Point CP, Tolderodden CP, Mount Hopeful CP, Cania Gorge NP, Mount Abbot NP (S), Abbot Bay CP, Mount Archer NP, Bowling Green Bay NP, Beeron NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.12.1: Potential habitat for NCA listed species: Acacia islana, Capparis humistrata, Corymbia petalophylla, Cycas megacarpa, Cycas ophiolitica, Macrozamia crassifolia, Sannantha brachypoda, Solanum graniticum.

Comments: 11.12.1: Areas of this regional ecosystem within the Bowen district may have a ground stratum of Bothriochloa pertusa (Indian cooch).

Estimated extent:¹ Pre-clearing 1404000 ha; Remnant 2021 837000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.12.2

Description: Eucalyptus melanophloia and Corymbia erythrophloia +/- E. populnea grassy woodland. Eucalyptus moluccana sometimes present on colluvial lower slopes. Occurs on undulating rises and low hills formed from Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 17b).

Vegetation communities in this regional ecosystem include:

11.12.2a: Eucalyptus melanophloia and/or E. orgadophila +/- Corymbia erythrophloia woodland. Occurs on undulating plains. Not a Wetland. (BVG1M: 11a).

11.12.2b: Eucalyptus moluccana woodland. Generally occurs on colluvial slopes on undulating granite country. Not a Wetland. (BVG1M: 13d).

11.12.2c: Dichanthium spp. grassland +/- scattered Eucalyptus melanophloia, E. orgadophila or Corymbia erythrophloia. Occurs on mid to lower slopes on granodiorites and felsic granities producing heavy clays soils. Not a Wetland. (BVG1M: 30b).

Short description: Eucalyptus melanophloia woodland on igneous rocks

Supplementary descriptions: Christian et al. (1953), Leichhardt; Forster and Barton (1995), Macksford (in part), Galloway; Gunn et al. (1967), Peakvale; Speck et al. (1968), Bouldercombe, Irving, Hillmore, Ohio, Orana

Subregions: 9, 5, 12, 22, 2, (18), (13), (17), (1), (14), (9.4), (11), (7), (27), (10.3), (10), (6), (24), (19), (21), (15)

Protected areas: Goodedulla NP, Kroombit Tops NP, Mazeppa NP, Mount Leura CP, Cania Gorge NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.12.2: Potential habitat for NCA listed species: Cycas ophiolitica, Sannantha brachypoda.

Comments:

Estimated extent:¹ Pre-clearing 469000 ha; Remnant 2021 190000 ha

VM class: Least concern

Biodiversity status: No concern at present

Biodiversity status notes:

Regional ecosystem 11.12.3

Description: Eucalyptus crebra, E. tereticornis +/- Angophora leiocarpa and E. melanophloia woodland. Other tree species that may be present include Corymbia clarksoniana, C. tessellaris, C. erythrophloia, C. citriodora and E. exserta. There is usually a low tree layer with species including Alphitonia excelsa and Petalostigma pubescens. Occurs on hills and lower slopes derived from granitic rocks. Not a Wetland. (BVG1M: 13c).

Short description: Eucalyptus crebra, E. tereticornis, Angophora leiocarpa woodland on igneous rocks especially granite

Supplementary descriptions: Kent (1987), Pt1

Subregions: 12, 22, 2, 14, (18), (27), (6), (31), (21), (12.6), (12.5), (8.3), (11)

Protected areas: Mount Archer NP, Bukkulla CP, Beeron NP, Eungella NP, Baga NP, Auburn River NP, Flat Top Range RR

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.12.3: Potential habitat for NCA listed species: Acacia tingoorensis, Callicarpa thozetii, Cycas ophiolitica, Parsonsia larcomensis, Zieria inexpectata.

Comments:

Estimated extent:¹ Pre-clearing 158000 ha; Remnant 2021 56000 ha

VM class: Least concern

Biodiversity status: Of concern

Biodiversity status notes: Threatening processes not currently known.

Regional ecosystem 11.12.4

Description: *Araucaria cunninghamii* is a common emergent from the general canopy layer. Canopy species include *Falcata* *toona*, *Ficus virens*, *Canarium australianum*, *Alstonia scholaris*, *Planchonella pohlmaniana*, *Cleistanthus dallachyanus* and *Backhousia citriodora*. Common shrub or understorey species are *Mackinlaya macrosciadea*, *Baloghia inophylla*, *Polyalthia nitidissima*, *Bosistoa medicinalis* and *Aglaia sapindina*. The sparse ground layer includes species such as *Scleria sphacelata* and *Adiantum hispidulum*. Vines and epiphytes are common and include *Microsorium punctatum*, *Cissus oblonga*, *Smilax australis* and *Pisonia aculeata*. *Eucalyptus moluccana* often associated with lower slopes on sandy sites. Occurs on low hills, ranges and boulder strewn slopes formed from Mesozoic to Proterozoic igneous rocks including granite. Not a Wetland. (BVG1M: 7a).

Vegetation communities in this regional ecosystem include:

11.12.4a: Semi-evergreen vine thicket with open patches of *Acacia fasciculifera*, *Heliodendron thozetianum*, *Pleiogynium timorense* and various other species. Occurs on low hills, ranges and boulder strewn slopes formed from Mesozoic to Proterozoic igneous rocks including granite. Not a Wetland. (BVG1M: 7a).

Short description:	Semi-evergreen vine thicket and microphyll vine forest on igneous rocks
Supplementary descriptions:	Christian et al. (1953), Heidelberg, Leichhardt; Fensham: (1995); Fensham and Streimann (1997); Sandercoe (1990), 13, 14; Speck et al. (1968), Hillmore, Irving, Toonda, Bouldercombe, Kariboe
Subregions:	2, 18, 12, 1, 14, 17, (9.4), (22), (9), (6), (4), (11), (19), (7.1), (13), (12.6), (12.10), (21), (3)
Protected areas:	Bowling Green Bay NP, Goodedulla NP, Mount Archer NP, Homevale NP, Mount Aberdeen NP, Mount O'Connell NP, Mount Hopeful CP, Magnetic Island NP, Eungella NP, Flat Top Range RR, Cape Upstart NP, Mount Abbot NP (S), MacKenzie Island CP, Townsville Town Common CP, Mount Etna Caves NP, Kroombit Tops NP, Baga NP, Abbot Bay CP, Bukkulla CP, Charon Point CP, Wongaloo CP, Gloucester Island NP, Magnetic Island CP 1
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.12.4: Potential habitat for NCA listed species: <i>Backhousia oligantha</i> , <i>Brachychiton guymeri</i> , <i>Corchorus hygrophilus</i> , <i>Cossinia australiana</i> , <i>Croton magneticus</i> , <i>Graptophyllum excelsum</i> , <i>Hernandia bivalvis</i> , <i>Macropteranthes leiocaulis</i> , <i>Sannantha brachypoda</i> , <i>Solanum sporadotrichum</i> .
Comments:	
Estimated extent: ¹	Pre-clearing 100000 ha; Remnant 2021 57000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.12.5

Description: *Corymbia watsoniana*, *Lysicarpus angustifolius*, *C. trachyphloia*, *Eucalyptus crebra* and *E. cloeziana* mixed shrubby open woodland. Other canopy species may be present including *Eucalyptus tenuipes*, *E. dura*, *Corymbia citriodora*, *Angophora leiocarpa*, *E. fibrosa* subsp. *nubilis* and *E. apothalassica*. There is usually a low tree or shrub layer of species including *Acacia* spp., *Callitris endlicheri*, *Grevillea whiteana*, *Petalostigma pubescens*, *Alphitonia excelsa* and *Allocasuarina inophloia*. Occurs on hills formed from Mesozoic to Proterozoic igneous rocks. May include areas that occur on deeply weathered granite (land zone 5 or 7). Not a Wetland. (BVG1M: 9h).

Vegetation communities in this regional ecosystem include:

11.12.5a: [RE not in use]²: This vegetation community is now mapped as Regional Ecosystem 11.12.5. *Corymbia watsoniana*, *Lysicarpus angustifolius*, *C. trachyphloia*, *Eucalyptus crebra* and *E. cloeziana* mixed shrubby open woodland. Other canopy species may be present including *Eucalyptus tenuipes*, *E. dura*, *Corymbia citriodora*, *Angophora leiocarpa*, *E. fibrosa* subsp. *nubilis* and *E. apothalassica*. There is usually a low tree or shrub layer of species including *Acacia* spp., *Callitris endlicheri*, *Grevillea whiteana*, *Petalostigma pubescens*, *Alphitonia excelsa* and *Allocasuarina inophloia*. Occurs on igneous rocks (granite). Not a Wetland. (BVG1M: 20a).

Short description: *Corymbia* spp., *Lysicarpus angustifolius*, *Eucalyptus crebra*, *E. cloeziana* open woodland on igneous rocks (granite)

Supplementary descriptions: Taylor and Grimshaw (1994-95), Chinchilla MU9A

Subregions: 22, 27, (18), (12.10), (12.5)

Protected areas: Beeron NP, Castle Tower NP

Extent in reserves: Medium

Wetland: Not a Wetland

Special values: 11.12.5: Potential habitat for NCA listed species: *Acacia handonis*, *Macrozamia crassifolia*, *Solanum sporadotrichum*.

Comments: 11.12.5: Regional Ecosystem 11.12.5a has been amalgamated into this RE.

Estimated extent:¹ Pre-clearing 6000 ha; Remnant 2021 5000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.6

Description: *Corymbia citriodora*, *Eucalyptus crebra*, *E. microcarpa*/*E. moluccana*, *Angophora leiocarpa* and *E. melanophloia* open forest to woodland. Other tree species that may be present include *E. tereticornis* +/- *C. tessellaris* +/- *C. clarksoniana* and *E. fibrosa*. Can include areas of *E. suffulgens* in the east of the bioregion. There is generally a sparse to moderately dense mid layer dominated by species such as *Alphitonia excelsa*, *Petalostigma pubescens*, *Acacia* spp. and occasionally *Callitris glaucophylla* or *E. exserta*. Occurs on gently undulating lower slopes of hills formed from Mesozoic to Proterozoic igneous rocks (granite). Associated soils are often deep texture contrast with thin sandy or loamy surface horizon over acid mottled subsoil's to shallow sandy or loamy skeletal soils. May include areas that occur on deeply weathered granite (land zone 5 or 7). Not a Wetland. (BVG1M: 10a).

Vegetation communities in this regional ecosystem include:

11.12.6a: *Eucalyptus crebra* +/- *Corymbia citriodora* and/or *E. acmenoides* +/- *Lophostemon suaveolens* woodland to open forest. Occurs on gently undulating lower slopes of hills formed from Mesozoic to Proterozoic igneous rocks (granite). Associated soils are often deep texture contrast with thin sandy or loamy surface horizon over acid mottled subsoil's to shallow sandy or loamy skeletal soils. May include areas that occur on deeply weathered granite (land zone 5 or 7). Not a Wetland. (BVG1M: 10a).

11.12.6b: *Callitris glaucophylla* +/- *Eucalyptus* spp. woodland. Occurs on acid-volcanic and granitic hills on often shallow soils. Not a Wetland. (BVG1M: 20a).

Short description: *Corymbia citriodora* open forest on igneous rocks (granite)
Supplementary descriptions: Taylor and Grimshaw (1994-95), Chinchilla MU9B; Gunn and Nix (1977), LU 32, 33
Subregions: 12, 22, 18, 14, 2, (27), (17), (12.10), (12.6), (19), (8.3)
Protected areas: Homevale NP, Beeron NP, Mount Archer NP, Flat Top Range RR, Eungella NP, Crediton FR, MacKenzie Island CP, Auburn River NP, Bukkulla CP, Kroombit Tops NP, Cania Gorge NP
Extent in reserves: Medium
Wetland: Not a Wetland
Special values: 11.12.6: Potential habitat for NCA listed species: *Acacia tingoorensis*, *Callicarpa thozetii*, *Capparis humistrata*, *Cycas megacarpa*, *Cycas ophiolitica*, *Zieria actites*.
Comments: 11.12.6: Occurs on lower slopes below RE 11.12.21.
11.12.6a: Mainly occurs mainly in subregions 14 and 18.
Estimated extent:¹ Pre-clearing 230000 ha; Remnant 2021 153000 ha
VM class: Least concern
Biodiversity status: No concern at present
Biodiversity status notes:

Regional ecosystem 11.12.7

Description: *Eucalyptus crebra* woodland with patches of semi-evergreen vine thicket. Occurs on boulder strewn hills formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 13c).

Short description: *Eucalyptus crebra* woodland with patches of semi-evergreen vine thicket on igneous rocks (boulder-strewn hillsides)
Supplementary descriptions: Gunn et al. (1967), Peakvale
Subregions: 2, (9), (1), (10), (13), (7), (8.3)
Protected areas: Bowling Green Bay NP
Extent in reserves: Low
Wetland: Not a Wetland
Special values: 11.12.7: Potential habitat for NCA listed species: *Aristida granitica*.
Comments:
Estimated extent:¹ Pre-clearing 91000 ha; Remnant 2021 86000 ha
VM class: Least concern
Biodiversity status: No concern at present
Biodiversity status notes:

Regional ecosystem 11.12.8

Description: Eucalyptus shirleyi +/- Acacia leptostachya +/- Persoonia falcata low woodland with Melaleuca viridiflora along drainage lines. Occurs on ranges formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.12.8a: Corymbia lamprophylla, E. shirleyi, E. exserta +/- Cochlospermum gillivraei woodland. Occurs on ranges formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 13c).

11.12.8b: Corymbia peltata, Eucalyptus drepanophylla +/- E. shirleyi +/- Corymbia dallachiana woodland. Occurs on ranges formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 13c).

Short description: Eucalyptus shirleyi low woodland on igneous rocks

Supplementary descriptions: Christian et al. (1953), Leichhardt

Subregions: 1, 4, 10.3, (3), (7)

Protected areas: Cape Upstart NP

Extent in reserves: High

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹ Pre-clearing 4000 ha; Remnant 2021 4000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.9

Description: Eucalyptus platyphylla, Corymbia dallachiana, C. tessellaris and E. drepanophylla woodland. Corymbia clarksoniana, Eucalyptus drepanophylla and E. platyphylla dominate the woodland canopy. Other species sometimes present are Corymbia erythrophloia, C. dallachiana, Eucalyptus tereticornis, E. exserta and C. tessellaris. On Mt Burrumbush, E. acmenoides is present. The shrub layer is sparse to moderately dense, and may include Acacia leptostachya, Planchonia careya, Flueggea virosa subsp. melanthesoides, Albizia procera, Larsenaikia ochreatea, Dodonaea viscosa, Pandanus spiralis and Coelospermum reticulatum. The ground layer is dominated by grasses up to 2 metres high. Species include Heteropogon triticeus, Heteropogon contortus, Mnesithea rottboellioides, Themeda triandra and Sorghum nitidum. Other ground layer species include Chamaecrista absus var. absus, Cajanus reticulatus and Grewia savannicola. Occurs on lower slopes of Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 9b).

Vegetation communities in this regional ecosystem include:

11.12.9a: Woodland with Eucalyptus drepanophylla, Corymbia peltata +/- C. clarksoniana. Mid-stratum +/- Acacia flavescens. Occurs on lower slopes of Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 13c).

Short description: Eucalyptus platyphylla woodland on igneous rocks
Supplementary descriptions: Christian et al. (1953), Kilbogie; Sandercoe (1990) 7, 9
Subregions: 2, 1, (9.4), (14), (7.1), (7.5), (8.6), (8.3), (8.4)
Protected areas: Bowling Green Bay NP, Mount Abbot NP (S), Townsville Town Common CP, Mount Aberdeen NP, Wongaloo CP, Cape Upstart NP, Magnetic Island NP
Extent in reserves: Medium
Wetland: Not a Wetland
Special values: 11.12.9: Potential habitat for NCA listed species: Bertya sharpeana, Sannantha papillosa.
Comments: 11.12.9: Naturalised species associated with this regional ecosystem include *Ageratum conyzoides subsp. conyzoides.
11.12.9a: Occurs in the Mt Norman area.
Estimated extent:¹ Pre-clearing 113000 ha; Remnant 2021 97000 ha
VM class: Least concern
Biodiversity status: No concern at present
Biodiversity status notes:

Regional ecosystem 11.12.10

Description: Corymbia clarksoniana woodland. Occurs on Mesozoic to Proterozoic igneous rocks. Lower slopes. Not a Wetland. (BVG1M: 9c).

Short description: Corymbia clarksoniana woodland on igneous rocks
Supplementary descriptions: Christian et al. (1953), Heidelberg
Subregions: 1, 2, (9.4)
Protected areas:
Extent in reserves: No representation
Wetland: Not a Wetland
Special values:
Comments:
Estimated extent:¹ Pre-clearing 10000 ha; Remnant 2021 10000 ha
VM class: Of concern
Biodiversity status: Of concern
Biodiversity status notes:

Regional ecosystem 11.12.11

Description: Melaleuca viridiflora, M. dealbata +/- Eucalyptus spp. woodland. Occurs on undulating plains and rises often with impeded drainage and which are formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 21a).

Short description: Melaleuca spp. woodland on igneous rocks. Lowlands

Supplementary descriptions: Christian et al. (1953), Heidelberg

Subregions:

Protected areas:

Extent in reserves:

Wetland: Not a Wetland

Special values:

Comments:

Estimated extent:¹

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.12

Description: Araucaria cunninghamii woodland or open forest. Occurs on coastal hills often with boulder strewn slopes that are formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 5b).

Short description: Araucaria cunninghamii woodland on igneous rocks. Coastal hills

Supplementary descriptions: Sandercoe (1990), 11

Subregions: 8.4, 1

Protected areas: Broad Sound Islands NP, Cape Upstart NP, Magnetic Island NP, Bowling Green Bay NP

Extent in reserves: High

Wetland: Not a Wetland

Special values:

Comments: 11.12.12: This regional ecosystem occurs on rocky headlands and has a sparse understorey compared to other Araucarian dominated ecosystems.

Estimated extent:¹ Pre-clearing 300 ha; Remnant 2021 300 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.13

Description: Eucalyptus crebra, Corymbia erythrophloia, C. dallachiana and C. tessellaris +/- C. intermedia +/- E. acmenoides +/- Canarium australianum mixed woodland or open forest. Occurs on coastal hills formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 13c).

Vegetation communities in this regional ecosystem include:

11.12.13a: Eucalyptus acmenoides, E. drepanophylla +/- E. exserta woodland. Coastal hills and ranges on often rocky acid-volcanic derived soils. Not a Wetland. (BVG1M: 10a).

11.12.13b: Corymbia intermedia, Allocasuarina torulosa, Syncarpia glomulifera subsp. glomulifera and Eucalyptus acmenoides open forest. Coastal hills and ranges, always on loamy soils with abundant surface rock. Occurs consistently at elevations above 300 HASL. Not a Wetland. (BVG1M: 9h).

Short description:	Eucalyptus crebra, Corymbia spp., E. acmenoides woodland on igneous rocks. Coastal hills
Supplementary descriptions:	Sandercoe (1990), 17
Subregions:	1, 2, 12, (7.5), (7.1), (9.4), (8.6)
Protected areas:	Bowling Green Bay NP, Magnetic Island NP, Cape Upstart NP, Paluma Range NP, Mount Aberdeen NP, Mount Abbot NP (S), Wongaloo CP, Bowling Green Bay CP, Bolger Bay CP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.12.13: Potential habitat for NCA listed species: Aristida granitica, Bertya sharpeana, Sannantha papillosa.
Comments:	
Estimated extent: ¹	Pre-clearing 44000 ha; Remnant 2021 41000 ha
VM class:	Least concern
Biodiversity status:	No concern at present
Biodiversity status notes:	

Regional ecosystem 11.12.14

Description: Lophostemon spp. shrubby low closed forest. Associated shrubs include Acacia spp., Alphitonia excelsa and Xanthorrhoea johnsonii. Lophostemon confertus is the most common species in the top canopy layer. Eucalyptus exserta is consistently present, while Acacia simsii is often found. The mid-stratum is represented by Xanthorrhoea johnsonii, Acacia flavescens, Indigofera pratensis and Persoonia falcata. The ground layer includes Cheilanthes sieberi, Aristida superpendens, Themeda triandra, Lomandra longifolia and Cyanthillium cinereum. The only vines present are Eustrephus latifolius, Glycine clandestina and Muehlenbeckia rhyticarya. Occurs on Mesozoic to Proterozoic igneous rocks. Coastal ranges. Not a Wetland. (BVG1M: 28e).

Short description:	Lophostemon spp. low closed forest on igneous rocks. Coastal hills
Supplementary descriptions:	Sandercoe (1990), 20
Subregions:	1, 2, (14), (18)
Protected areas:	Cape Upstart NP, Mount Abbot NP (S), Bowling Green Bay NP, Magnetic Island NP, Wongaloo CP, Bowling Green Bay CP
Extent in reserves:	High
Wetland:	Not a Wetland
Special values:	11.12.14: Potential habitat for NCA listed species: Corchorus hygrophilus, Omphalea celata.
Comments:	11.12.14: Found only on coastal hills above 350 m. The dominant tree present, Lophostemon confertus, occurs as a multi-stemmed tree. Surveyed examples are in good condition.
Estimated extent: ¹	Pre-clearing 3000 ha; Remnant 2021 3000 ha
VM class:	Of concern
Biodiversity status:	Of concern
Biodiversity status notes:	

Regional ecosystem 11.12.15

Description: *Corymbia intermedia* and *Eucalyptus acmenoides* open forest to low woodland, with distinctive lower tree layer of *Allocasuarina torulosa* and *Livistona decora*. Ground to shrub stratum frequently with *Xanthorrhoea johnsonii*. Occurs on coastal ranges formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 27c).

Short description: *Corymbia intermedia* +/- *Eucalyptus acmenoides* open forest to low woodland with lower tree layer of *Allocasuarina torulosa*, *Livistona decora* on igneous rocks. Coastal hills

Supplementary descriptions: Sandercoe (1990), 22

Subregions: 1, 2, (18)

Protected areas: Cape Upstart NP, Magnetic Island NP, Mount Abbot NP (S), Bowling Green Bay NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.12.15: Potential habitat for NCA listed species: *Ozothamnus eriocephalus*, *Parsonsia larcomensis*.

Comments: 11.12.15: Found only on coastal hills and ridgelines above about 350 m. Generally in good condition.

Estimated extent:¹ Pre-clearing 2000 ha; Remnant 2021 2000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.16

Description: Mixed low woodland to shrubland. Canopy species include *Lophostemon grandiflorus*, *Canarium australianum*, *Pleiogynium timorense*, *Acacia leptostachya*, *A. spirorbis* subsp. *solandri*, *Cochlospermum gillivraei* +/- *Eucalyptus drepanophylla* +/- *Eucalyptus portuensis* +/- *Corymbia tessellaris* +/- *C. dallachiana* and semi-evergreen vine thicket species. Ground layer is often dominated by *Triodia stenostachya*. Occurs on coastal ranges formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 24a).

Vegetation communities in this regional ecosystem include:

11.12.16a: *Acacia julifera* shrubland +/- *Eucalyptus drepanophylla*. Occurs on coastal ranges formed on Mesozoic to Proterozoic igneous rocks. Usually rock soils on variable slopes. Not a Wetland. (BVG1M: 24a).

11.12.16d: Grassland with scattered shrubs or trees or very open shrubland / low woodland with *Triodia stenostachya*, *Heteropogon contortus*, *H. triticeus*, *Cymbopogon bombycinus*, *C. ambiguus* +/- *Cochlospermum gillivraei* +/- *Araucaria cunninghamii* +/- *Corymbia dallachiana* +/- *C. tessellaris*. Occurs on coastal low hills of Mesozoic to Proterozoic igneous rocks. Frequently on low, windswept islands, or on exposed windswept locations for larger islands. Not a Wetland. (BVG1M: 29b).

11.12.16x1: Tussock grassland with scattered shrubs to low very open scrub. Various grasses may be dominate: *Heteropogon contortus*, *H. triticeus*, *Themeda triandra*, *Sarga plumosum*, *Cymbopogon bombycinus*, *C. ambiguus*, *Eriachne mucronata* and *Triodia stenostachya*. Occurs on rhyolite or granite hills, headlands and islands. Not a Wetland. (BVG1M: 32b).

Short description: Mixed low woodland to shrubland on igneous rocks. Coastal hills

Supplementary descriptions: Sandercoe (1990), 15, 16, 18

Subregions: 1, 2, 8.6, (7.1), (9.4)

Protected areas: Magnetic Island NP, Townsville Town Common CP, Gloucester Island NP, Mount Abbot NP (S), Bowling Green Bay NP, Pinnacles NP, Cape Pallarenda CP, Bowling Green Bay CP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.12.16: Potential habitat for NCA listed species: *Corchorus hygrophilus*, *Marsdenia brevifolia*, *Solanum graniticum*, *Solanum sporadotrichum*.

Comments: 11.12.16: occurs on Magnetic Island and other coastal hills and ranges.
11.12.16d: Confined mainly to Magnetic Island and occurs with 11.12.16.
11.12.16x1: Restricted to low coastal islands and headlands subject to strong sea breezes. Occurs in small areas in the Rattlesnake Island, Herald Island, Many Peaks Range - Townsville Town Common, and Cape Cleveland areas. Where this regional ecosystem occurs on remote islands, it remains in good condition. Examples on long-settled islands have been often become weed-infested, especially with blue snakeweed (**Stachytarpheta jamaicensis*), *Tridax* (**Tridax procumbens*), red Natal grass (**Melinis repens*) and Indian Couch (**Bothriochloa pertusa*).

Estimated extent:¹ Pre-clearing 4000 ha; Remnant 2021 4000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.17

Description: Eucalyptus populnea woodland with Eremophila mitchellii dominated mid layer. In northern areas, there may be subdominant Corymbia dallachiana or Eucalyptus platyphylla. Occurs on colluvial lower slopes formed on Mesozoic to Proterozoic igneous rocks. Typical soils are deep texture-contrast soils with strongly alkaline subsoils. Not a Wetland. (BVG1M: 17a).

Short description: Eucalyptus populnea woodland on igneous rocks. Colluvial lower slopes
Supplementary descriptions: Speck et al. (1968), Torsdale, Orana, Barfield; Gunn and Nix (1977) LU 87
Subregions: 22, 18, (21), (27), (19)
Protected areas:
Extent in reserves: No representation
Wetland: Not a Wetland
Special values:
Comments: 11.12.17: Particularly prevalent on soils derived from andesites.
Estimated extent:¹ Pre-clearing 59000 ha; Remnant 2021 2000 ha
VM class: Endangered
Biodiversity status: Endangered
Biodiversity status notes:

Regional ecosystem 11.12.18

Description: Montane shrub/heathland. Dominant species include Leptospermum amboinense, L. neglectum, Phebalium glandulosum, Acacia aulacocarpa, Leucopogon cuspidatus, Sannantha collina and Acacia humifusa. Sometimes emergent Eucalyptus exserta tree layer is present which may form a low woodland over localised areas. Occurs on mountain tops formed from Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 29b).

Vegetation communities in this regional ecosystem include:

11.12.18a: Heathland or shrubland dominated by Leptospermum neglectum, Phebalium woombye, Grevillea banksii, Melaleuca hemisticta, sometimes with emergent Lophostemon confertus, Eucalyptus exserta and/or Corymbia intermedia. Occurs on pavements on exposed mountainous areas, formed from Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 29b).

Short description: Montane shrubland on igneous rocks
Supplementary descriptions: Bean (pers comm)
Subregions: 2, 1, 10, (14), (18)
Protected areas: Bowling Green Bay NP, Cape Upstart NP, Mount Abbot NP (S), Mount Aberdeen NP
Extent in reserves: High
Wetland: Not a Wetland
Special values: 11.12.18: Potential habitat for NCA listed species: Dubouzetia saxatilis, Parsonsia larcomensis, Samadera bidwillii, Sannantha papillosa, Zieria actites.
Comments: 11.12.18a: Occurs near Mt Wheeler.
Estimated extent:¹ Pre-clearing 2000 ha; Remnant 2021 2000 ha
VM class: Of concern
Biodiversity status: Of concern
Biodiversity status notes:

Regional ecosystem 11.12.19

Description: Eucalyptus exserta, E. moluccana +/- Corymbia citriodora +/- E. crebra low woodland. Occurs on high altitude, Steep hills and ranges formed on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 10a).

Short description: Eucalyptus exserta, E. moluccana, E. crebra, Corymbia citriodora low woodland on igneous rocks

Supplementary descriptions: Bean (1994)

Subregions: 2, 1

Protected areas: Mount Abbot NP (S), Mount Aberdeen NP, Cape Upstart NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.12.19: Potential habitat for NCA listed species: Eucalyptus paedoglauca.

Comments:

Estimated extent:¹ Pre-clearing 2000 ha; Remnant 2021 2000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.20

Description: Corymbia petalophylla, C. trachyphloia, C. watsoniana, Eucalyptus corynodes, E. baileyana, E. dura and E. exserta woodland to tall shrubland. Dense low shrubby ground layer of xeromorphic shrubs. Grasses are virtually absent in the ground layer. Occurs on Mesozoic to Proterozoic igneous rocks. Upper slopes to mid-slopes of low to moderately elevated granite hills that are steeply sloping in places. Soils are skeletal, grading into extensive rock slabs and pavements. Not a Wetland. (BVG1M: 9h).

Short description: Corymbia spp., Eucalyptus baileyana, E. dura, E. exserta woodland on igneous rocks

Supplementary descriptions: Taylor and Grimshaw (1994-95), Chinchilla MU9C; Forster (1988); Donnollan et al. (1997); Holland and Thomas (1997); Leverington (in prep)

Subregions: 22, (27), (18)

Protected areas: Beeron NP

Extent in reserves: High

Wetland: Not a Wetland

Special values: 11.12.20: Habitat for threatened flora species including Acacia porcata, Eucalyptus pachycalyx subsp. waajensis, A. eremophiloides, Macrozamia crassifolia, Leptospermum venustum, Newcastleia velutina and Corymbia petalophylla.

Comments: 11.12.20: Too-frequent fire may endanger some rare taxa (e.g. Acacia spp.). Road works and powerline construction have disturbed this regional ecosystem's northern occurrence.

Estimated extent:¹ Pre-clearing 5000 ha; Remnant 2021 5000 ha

VM class: Of concern

Biodiversity status: Of concern

Biodiversity status notes:

Regional ecosystem 11.12.21

Description: *Acacia harpophylla* open forest with or without semi-evergreen vine thicket species. A moderately tall dense shrub layer of *Geijera parviflora* and *Eremophila mitchellii* may occur where semi-evergreen vine thicket species are absent. Lower shrubs of *Carissa ovata*, *Alectryon* sp. and *Capparis* spp. may also be present. Occurs on Mesozoic to Proterozoic igneous rocks on colluvial lower slopes of volcanic hills and strongly undulating plains. Soils range from moderately deep cracking clays to clay loams and deep texture contrast soils. Not a Wetland. (BVG1M: 25a).

Short description: *Acacia harpophylla* open forest on igneous rocks. Colluvial lower slopes

Supplementary descriptions: Speck et al. (1968), Orana (5) Toonda (4), Torsdale (6)

Subregions: 22, 2, 12, (18), (14), (5), (27), (21), (13), (19), (17), (15)

Protected areas: Auburn River NP

Extent in reserves: Low

Wetland: Not a Wetland

Special values: 11.12.21: Potential habitat for NCA listed species: *Denhamia parvifolia*.

Comments: 11.12.21: Extensively cleared for cropping and pasture.

Estimated extent:¹ Pre-clearing 75000 ha; Remnant 2021 6000 ha

VM class: Endangered

Biodiversity status: Endangered

Biodiversity status notes:

¹ Estimated extent is from the current released version of the pre-clearing and remnant regional ecosystem mapping. Figures are rounded for simplicity. For more precise estimates, including breakdowns by tenure and other themes see remnant vegetation in Queensland (<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/remnant-vegetation/>)

² Superseded: Revision of the regional ecosystem classification removed this regional ecosystem code from use. It is included in the regional ecosystem description database because the RE code may appear in older versions of RE mapping and the Vegetation Management regulation.