

Channel Country Region Plant Index

Common name	Scientific name	Page
abutilon	<i>Abutilon</i> spp.	CC13
annual saltbush	<i>Atriplex muelleri</i>	CC04
annual verbine	<i>Cullen cinereum</i> (formerly <i>Psoralea cinerea</i>)	CC08
annual yellowtop	<i>Senecio gregorii</i> <i>Pycnosorus pleiocephalus</i> <i>Senecio magnificus</i>	CC12
Athel pine*	<i>Tamarix aphylla</i>	CC04
Australian dropseed	<i>Sporobolus australasicus</i>	CC13
barley Mitchell grass	<i>Astrelba pectinata</i>	CC04, CC05, CC08, CC09, CC10, CC11
bastard mulga	<i>Acacia stowardii</i>	CC06, CC07, CC13
bauhinia	<i>Lysiphyllum</i> spp.	CC07, CC08, CC09, CC12
beefwood	<i>Grevillea striata</i>	CC06, CC07, CC08, CC09, CC12, CC13
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billybuttons	<i>Pyconosorus</i> spp. <i>Craspedia</i> spp. <i>Dichromochlamys</i> spp. <i>Rutidosia</i> spp.	CC07
black roly poly	<i>Sclerolaena muricata</i>	CC01
bladder saltbush	<i>Atriplex vesicaria</i>	CC05, CC08, CC10
bloodwood	<i>Corymbia</i> spp.	CC07
bluebush pea	<i>Crotalaria eremaea</i>	CC12
bluerod	<i>Stemodia glabella</i> , <i>S. florulenta</i>	CC12
bogan flea	<i>Calotis hispidula</i>	CC01, CC02, CC03, CC04,
boggabri	<i>Amaranthus mitchellii</i>	CC01, CC02
boonaree	<i>Alectryon oleifolius</i>	CC08, CC09, CC12
boree	<i>Acacia tephрина</i>	CC05
bottlewasher grasses	<i>Enneapogon</i> spp. (e.g. <i>E. avenaceus</i> , <i>E. polyphyllus</i>)	CC05, CC06, CC07, CC08, CC09, CC10, CC11, CC12
Brown's lovegrass	<i>Eragrostis brownii</i>	CC06
buck spinifex	<i>Triodia mitchellii</i>	CC07
budda pea	<i>Aeschynomene indica</i>	CC01, CC03
buffel grass*	<i>Cenchrus ciliaris</i>	CC04, CC05, CC06, CC07, CC10
bull Mitchell grass	<i>Astrelba squarrosa</i>	CC04

Common name	Scientific name	Page
button grass	<i>Dactyloctenium radulans</i>	CC01, CC02, CC03, CC04, CC05, CC06, CC07, CC08, CC09, CC12
caltrop	<i>Tribulis terrestris</i>	CC07
cassia/s	<i>Senna artemisioides</i>	CC04
	<i>Senna</i> spp.	CC07
caustic bush	<i>Euphorbia tannensis</i>	CC01
caustic weed	<i>Chamaesyce drummondii</i>	CC02
channel millet <i>see also</i> native sorghum	<i>Echinochloa turneriana</i>	
clustered lovegrass	<i>Eragrostis elongata</i>	CC06
cockroach bush	<i>Senna notabilis</i>	CC07
comb windmill grass	<i>Chloris pectinata</i>	CC02, CC04, CC05, CC06, CC08, CC09
comet grass	<i>Perotis rara</i>	CC07
coolibah	<i>Eucalyptus coolabah</i>	CC01, CC02, CC03, CC04, CC12
Cooper clover [#]	<i>Trigonella suavissima</i>	CC01, CC03
copperburrs	<i>Sclerolaena</i> spp.	CC04, CC05, CC08, CC09, CC10, CC11, CC13
cotton panic	<i>Digitaria brownii</i>	CC06, CC07, CC12, CC13
cottonbush	<i>Maireana aphylla</i>	CC12
cow vine [#]	<i>Ipomoea diamantinensis</i>	CC01, CC02, CC03
cudweed	<i>Gomphrena</i> spp.	CC01, CC02, CC03
curly bluegrass	<i>Dichanthium fecundum</i>	CC04
curly Mitchell grass	<i>Astrebla lappacea</i>	CC04, CC05, CC08
daisies	<i>Asteraceae</i> spp.	CC02, CC03
daisy burrs	<i>Calotis</i> spp.	CC01, CC02, CC03, CC04, CC09
dead finish	<i>Acacia tetragonophylla</i>	CC06, CC07, CC13
delicate lovegrass	<i>Eragrostis tenellula</i>	CC01, CC02, CC08
desert bluegrass	<i>Bothriochloa ewartiana</i>	CC07
desert gum	<i>Corymbia aparrerinja</i>	CC08, CC09
desert rice-flower	<i>Pimelea simplex</i>	CC10, CC11
desert spurge <i>see also</i> caustic bush	<i>Euphorbia tannensis</i>	
downs couch	<i>Brachyachne convergens</i>	CC02, CC04, CC05, CC08, CC09
dwarf needlewood	<i>Hakea collina</i>	CC13
eastern dead finish	<i>Archidendropsis basaltica</i>	CC07

Common name	Scientific name	Page
fairy grass	<i>Sporobolus caroli</i>	CC02, CC05, CC12
false sandalwood	<i>Eremophila mitchellii</i>	CC05
feathertop wiregrass	<i>Aristida latifolia</i>	CC04, CC08, CC09, CC10
fire grass	<i>Schizachyrium fragile</i>	CC07
fireweed	<i>Senecio lautis</i>	CC02, CC03
five-minute grass	<i>Tripogon loliiformis</i>	CC04, CC05, CC06, CC07, CC10, CC11, CC12, CC13
flame spider-flower	<i>Grevillea kennedyana</i>	CC06, CC07
flannel weed	<i>Abutilon otocarpum</i>	CC07
Flinders grass	<i>Iseilema macratherum, I. vaginiflorum</i>	CC01, CC02, CC04, CC08, CC09
foxtails	<i>Ptilotus</i> spp.	CC13
galvanised burr	<i>Sclerolaena birchii</i>	CC09
Georgina gidgee	<i>Acacia georginae</i>	CC04, CC05, CC07, CC10, CC11, CC12, CC13
ghost gum <i>see also</i> desert gum	<i>Corymbia aparrerinja</i>	CC13
gidgee	<i>Acacia cambagei</i>	CC04, CC05, CC06, CC09, CC10, CC13
gidgee burrs	<i>Sclerolaena</i> spp. (e.g. <i>S. divaricata</i>)	CC04, CC05, CC08, CC09, CC10
golden beard grass	<i>Chrysopogon fallax</i>	CC04
goodenia [#]	<i>Goodenia trangfordii, G. fascicularis</i>	CC01, CC02, CC03
gooramurra	<i>Eremophila bignoniiflora</i>	CC01, CC03, CC04
grey rattlepod	<i>Crotalaria dissitiflora</i>	CC08
greybeard grass	<i>Amphipogon caricinus</i>	CC06
hard burrs	<i>Sclerolaena</i> spp.	CC13
hoop Mitchell grass	<i>Astrebla elymoides</i>	CC04, CC05, CC08
hopbush	<i>Dodonaea</i> spp.	CC12
ironwood	<i>Acacia excelsa</i>	CC07
jerry-jerry	<i>Ammannia multiflora</i>	CC01, CC03
joyweed	<i>Alternanthera nodiflora</i>	CC01, CC02, CC04
kangaroo grass	<i>Themeda triandra</i>	CC04, CC06, CC13
katoora	<i>Sporobolus actinocladus</i>	CC02, CC04, CC05, CC08, CC09, CC10, CC11, CC12
kerosene grass	<i>Aristida contorta</i>	CC04, CC07, CC10, CC11, CC12, CC13
knottybutt grass	<i>Eragrostis xerophila</i>	CC07, CC10, CC11
lancewood	<i>Acacia shirleyi</i>	CC13
lemon-scented grass	<i>Cymbopogon bombycinus</i>	CC13

Common name	Scientific name	Page
lignum	<i>Muehlenbeckia cunninghamii</i>	CC01, CC02, CC03, CC04, CC12
lovegrass/es	<i>Eragrostis</i> spp.	CC04, CC06, CC08, CC09, CC10, CC12
mesquite*	<i>Prosopis</i> spp.	CC01, CC03
mimosa	<i>Acacia farnesiana</i>	CC08, CC09, CC10, CC11
mineritchie	<i>Acacia cyperophylla</i>	CC04, CC11, CC13
mint bush	<i>Streptoglossa adscendens</i>	CC01, CC03
Mitchell grass	<i>Astrebla</i> spp.	CC02, CC08, CC09
mountain wanderrie	<i>Eriachne mucronata</i>	CC06, CC13
mulga	<i>Acacia aneura</i>	CC04, CC05, CC06, CC07, CC12, CC13
mulga Mitchell grass	<i>Thyridolepis mitchelliana</i>	CC06, CC07, CC13
mulga oats	<i>Monachather paradoxa</i>	CC06, CC07
myall gidgee	<i>Acacia calcicola</i>	CC12
nardoo	<i>Marsilea drumondii</i>	CC01, CC03, CC12
narrow-leaved indigo	<i>Indigostrum parviflorum</i> (formerly <i>Indigofera parviflorum</i>)	CC06
native carrot	<i>Daucus glochidiatus</i>	CC03
native legumes	<i>Indigostrum parviflorum</i> , <i>Sesbania campylocarpa</i>	CC09
native millet see also star grass	<i>Panicum decompositum</i>	
native sorghum	<i>Echinochloa turneriana</i>	CC01, CC03
neat lovegrass	<i>Eragrostis basedowii</i>	CC12
needlewood	<i>Hakea leucoptera</i>	CC12
neverfail	<i>Eragrostis setifolia</i>	CC03, CC07, CC12, CC13
noogoora burr*	<i>Xanthium occidentale</i>	CC01, CC03, CC04
Normanton box	<i>Eucalyptus normantonensis</i>	CC07, CC13
nutgrass#	<i>Cyperus</i> spp.	CC01, CC03
nutheads	<i>Epaltes cunninghamii</i>	CC01, CC03
paper rose	<i>Operculina aequisejala</i>	CC08
parakeelya	<i>Calandrinia polyandra</i>	CC10, CC12
parkinsonia*	<i>Parkinsonia aculeata</i>	CC01, CC03, CC04
parrot pea	<i>Crotalaria cunninghamii</i>	CC12
peabush	<i>Sesbania</i> spp.	CC01, CC02, CC03
pencil caustic bush	<i>Sarcostemma viminale</i> subsp. <i>australe</i>	CC13
pepper grass	<i>Panicum laevinode</i>	CC01, CC02, CC03, CC04, CC05, CC08

Common name	Scientific name	Page
pigweed	<i>Portulaca oleracea</i>	CC01, CC02, CC03, CC06, CC09, CC10, CC11
pimelea	<i>Pimelea elongata</i>	CC02
pink mulla-mulla	<i>Ptilotus exaltatus</i>	CC10, CC11
pituri bush	<i>Duboisia hopwoodii</i>	CC12
pop saltbush	<i>Atriplex spongiosa</i>	CC04
poplar box	<i>Eucalyptus populnea</i>	CC06, CC07
porcupine spinifex	<i>Triodia pungens</i>	CC07
potato bush	<i>Solanum esuriale</i>	CC09, CC10
pussytails	<i>Ptilotus</i> spp.	CC06, CC07
Queensland bluebush#	<i>Chenopodium auricomum</i>	CC01, CC03, CC04
Queensland bluegrass	<i>Dichanthium sericeum</i>	CC01, CC04, CC06, CC08, CC09
rat's tail couch	<i>Sporobolus mitchellii</i>	CC01, CC03, CC04
rattlepod	<i>Crotalaria</i> spp.	CC09
red spinach	<i>Trianthema triquetra</i>	CC02, CC10
red twinleaf	<i>Zygophyllum howittii</i>	CC12
red-stem pigweed see also red spinach	<i>Trianthema triquetra</i>	
regal birdflower	<i>Crotalaria cunninghamii</i>	CC12
river red gum	<i>Eucalyptus camaldulensis</i>	CC01, CC04, CC07
ruby saltbush	<i>Enchylaena tomentosa</i>	CC07
saltbushes	<i>Atriplex</i> spp.	CC01, CC02, CC08, CC09, CC10, CC11
samphire	<i>Tecticornia</i> spp.	CC12
sandhill canegrass	<i>Zygochloa paradoxa</i>	CC12
sandhill grevillea	<i>Grevillea stenobotrya</i>	CC12
sandhill snow see also tangled mulla-mulla	<i>Ptilotus latifolius</i>	CC12
sandplain wattle	<i>Acacia bivenosa</i>	CC12
sedges	<i>Cyprus</i> spp.	CC03
short wiregrasses	<i>Aristida</i> spp.	CC11
sida	<i>Sida</i> spp.	CC02, CC06, CC07, CC08, CC09, CC10, CC11, CC13
silky browntop	<i>Eulalia aurea</i>	CC04, CC06, CC08, CC09
silky copperburr	<i>Sclerolaena</i> spp.	CC10
silky umbrella grass	<i>Digitaria ammophila</i>	CC06, CC07, CC13
silver-leaved ironbark	<i>Eucalyptus melanophloia</i>	CC13
small burr grass	<i>Tragus australianus</i>	CC07
snappy gum	<i>Eucalyptus leucophloia</i>	CC13

Common name	Scientific name	Page
soda bush	<i>Neobassia proceriflora</i>	CC09, CC10
soft roly poly	<i>Salsola kali</i>	CC02, CC07, CC12, CC13
spinifex^	<i>Triodia basedowii</i> , <i>T. pungens</i> , <i>T. longiceps</i>	CC06, CC07, CC12, CC13
spiny flat sedge#	<i>Eleocharis pallens</i>	CC01, CC03
stargrass see also native millet	<i>Panicum decompositum</i>	CC08, CC09
swamp canegrass^	<i>Eragrostis australasica</i>	CC01, CC03, CC12
swamp pimelea	<i>Pimelea elongata</i>	CC10
tangled mulla-mulla	<i>Ptilotus latifolius</i> var. <i>latifolius</i>	CC12
tarvine#	<i>Boerhavia</i> spp.	CC01, CC02, CC09, CC10
tea tree	<i>Melaleuca</i> spp.	CC13
three-awned wanderrie	<i>Eriachne aristidea</i>	CC06, CC07, C12
turkey bush	<i>Eremophila</i> spp.	CC06, CC07, CC13
verbine	<i>Cullen cinereum</i> , <i>C. australasicum</i>	CC01, CC02, CC03
vine tree	<i>Ventilago viminalis</i>	CC06, CC08, CC09
waddy-wood	<i>Acacia peuce</i>	CC13
wandering jew	<i>Commelina ensifolia</i>	CC01, CC03
wanderrie grass	<i>Eriachne</i> spp.	CC12
western bloodwood	<i>Corymbia terminalis</i>	CC04, CC06, CC07, CC08, CC09, CC12
whitewood	<i>Atalaya hemiglauca</i>	CC06, CC08, CC09, CC12
wild carrot	<i>Daucus glochidiatus</i>	CC09
wild parsnip	<i>Trachymene glaucifolia</i>	CC12
wiregrass	<i>Aristida</i> spp.	CC05, CC06, CC07, CC12
witchetty bush	<i>Acacia kempeana</i>	CC13
woolly copperburr	<i>Sclerolaena</i> sp.	CC06
woollybutt	<i>Eragrostis eriopoda</i>	CC07, CC12, CC13
woollybutt wanderrie	<i>Eriachne helmsii</i>	CC06, CC13
yapunyah	<i>Eucalyptus ochrophloia</i>	CC04

Denotes non-grass species that are important to grazing and land condition values in annually dominated land types.

^ Denotes species that are important to dune stabilisation.

* Denotes non-native species.

Frequently flooded alluvial plains (C1 floodplains)



General description

Open grassland (which can be dominated by annual grasses when in good condition) and ephemeral forbland with bluebush / lignum low open shrubland and low open woodland along channel banks.

Flooding is frequent, generally with deep and fast moving waters in major channels. Often referred to as 'current swept' because of the closeness to main channels.

Landform

Floodplains with major and braided channels.

Woody vegetation

Queensland bluebush[#], lignum, belalie, gooramurra, coolibah, river red gum.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Denotes non-grass species that are important to grazing and land condition values in annually dominated land types.

Preferred

Queensland bluebush[#], Queensland bluegrass (patchy occurrences), Cooper clover[#], cow vine[#]. Preferred annuals include Flinders grass, native sorghum.

Intermediate

Rat's tail couch, swamp canegrass, spiny flat sedge[#], nutgrass[#]. Intermediate annuals include pepper grass, button grass, delicate lovegrass.

Non-preferred

Unpalatable forbs such as black roly poly, caustic bush and boggabri.

Annual grasses

See preferred, intermediate and non-preferred species lists.

Common forbs

Verbine, pea bush, bogan flea, daisy burrs, nardoo, saltbush, budda pea, cudweed, goodenia[#], pigweed, jerry-jerry, joyweed, mint bush, nutheads, wandering jew.

Suitable sown pastures

Not suitable for sown pastures.

Introduced weeds

Noogoora burr, parkinsonia, mesquite.

Soil

Very deep grey cracking clays.

Description

Surface: Self-mulching with some crusting; **Surface texture:** heavy clay; **Subsoil texture:** heavy clay.

Features

Recent alluvial sediments, weak gilgai micro-relief may be present, soils crack widely on drying.

Water availability

Moderate to high.

Rooting depth Can be in excess of 1 m if not limited by sodicity.

Infiltration High initially on a dry soil profile, slowing to moderate levels after 75 mm of rain as cracks close and to low levels after 100 mm of rain. Estimates based on low to moderate intensity storm rain.

Fertility High

Salinity Very low at the surface increasing to very high at depth.

Sodicity Strongly sodic at depth.

pH Neutral to strongly alkaline.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 335 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	100 - 1150	Generally low, <15%	20 - 200
	4 TBA 10 FPC	40 - 400	Generally low, <15%	49 – 488

Enterprise Breeding, backgrounding and finishing.

Land use and management recommendations

- Allow natural spelling of annual plants to occur, to promote seed for future pastures.

Land use limitations

- Limited perennial pasture standover.
- Salinity and sodicity at depth can limit water penetration and access to water by plants.
- Scalding in some areas.

Conservation features and related management

- High fauna diversity especially birds
- Provides important seasonal water bird habitat
- Open lignum swamps are potential habitat for rare and threatened fauna species including freckled duck and grey grass wren.
- Herb fields are potential habitat for rare and threatened fauna species including plains-wanderer and fierce snake (western taipan).
- Habitat for feral pigs and feral cats.
- Weeds in disturbed sandy areas.
- Heavily impacted by total grazing pressure around waterholes.

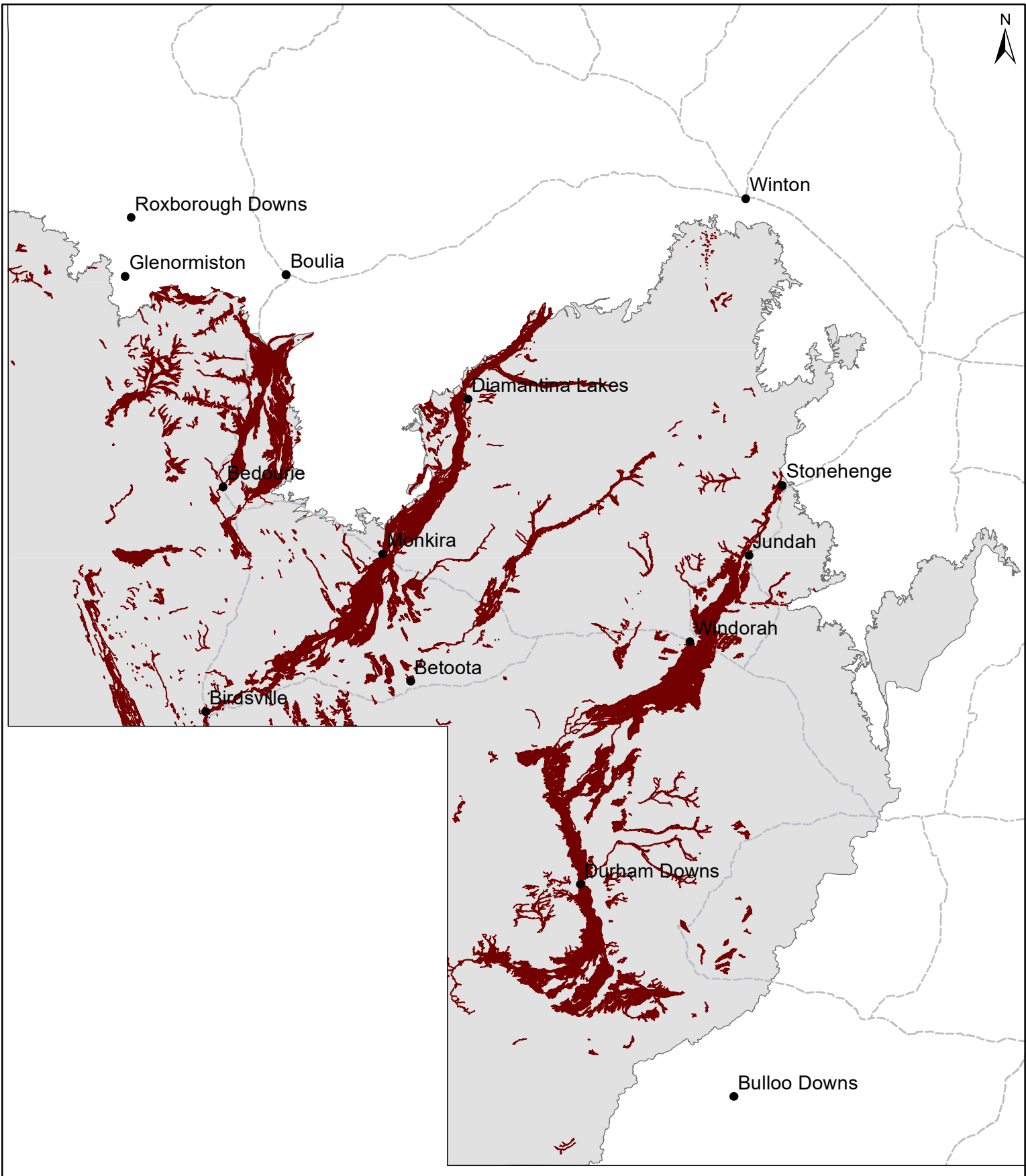
Regional Ecosystems

5.3.18a-b, 5.3.7, 5.3.8a, 5.3.8ax1, 5.3.8b

WARLUS Part Land systems

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C1 (Cooper)	C1 (Cooper)				C1 (Cooper)

CC01 Frequently flooded alluvial plains (C1 floodplains)



Area of land type in region: 8%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 18%
Median FPC: 9%
Median TBA: 4 m²/ha



**Queensland
Government**

Occasionally flooded open plains (C2 floodplains)



General description

Ephemeral open grassland (which can be dominated by annual grasses when in good condition) and forblands with coolibah and lignum along the minor channels.

This land type is the least frequently flooded as it includes higher areas within the floodplains and the areas furthest from the major channels. Floodwater is generally shallow and slow moving.

Landform

Floodplains.

Woody vegetation

Coolibah, lignum.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Denotes non-grass species that are important to grazing and land condition values in annually dominated land types.

Preferred

Cow vine#, tarvine#. Some areas may have Mitchell grass. Preferred annuals include Flinders grass.

Intermediate

Katoora. Intermediate annuals include pepper grass, comb windmill grass, button grass, delicate lovegrass, downs couch, fairy grass.

Non-preferred

Unpalatable forbs, such as soft roly poly, caustic weed, pimelea and boggabri.

Annual grasses

See preferred, intermediate and non-preferred species lists.

Common forbs

Verbine, pea bush, bogan flea, daisy burrs, goodenia#, daisies#, saltbushes, pigweed, cudweed, joyweed, red spinach, fireweed, sida.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Very deep crusted brown and grey clays and alluvial texture contrast soils subject to scalding.

Description

Surface: Crusty or may be weakly self-mulching; **Surface texture:** clay intermixed with silt and sand; **Subsoil texture:** heavy clay with interspersed sand and silt layers.

Features

Recent alluvial sediments, texture contrast soils have originated from wind blown sand overlying the grey clays. Manganese staining is common. Gypsum occurs at depth.

Water availability

Moderate to high, although flooding only occurs during good floods.

Rooting depth

Can be in excess of 1 m if not limited by sodicity.

Infiltration

High initially on a dry soil profile, slowing to moderate levels after 75 mm of rain as cracks close and to low levels after 100 mm of rain. Estimates based on low to moderate intensity storm rain.

Fertility

Moderate

Salinity

Very low at the surface increasing to very high at depth.

Sodicity

Strongly sodic at depth.

pH

Neutral to strongly alkaline.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 283 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	90 - 800	Generally low, <15%	24 - 216
	2 TBA 5 FPC	20 - 360	Generally low, <15%	54 – 974

Enterprise

Breeding, backgrounding and opportunistic finishing.

Land use and management recommendations

- Early wet season spelling of annual plants will promote seed for future pastures.

Land use limitations

- Little perennial pasture available, mainly seasonal forbs and annual grasses.
- Subject to scalding and saline areas.
- Flooded least frequently of floodplain land types, hence pasture is less reliable.
- Salinity and sodicity at depth can limit water penetration and access of water by plants.
- Lack of top feed.

Conservation features and related management

- Severely scalded and saline in some areas.
- Habitat for feral cats and feral pigs.
- Swampy areas are important seasonal water bird habitat.
- Rills on tracks and fence lines may restrict floodwater reaching floodplain extremities.

Regional Ecosystems

5.3.19.

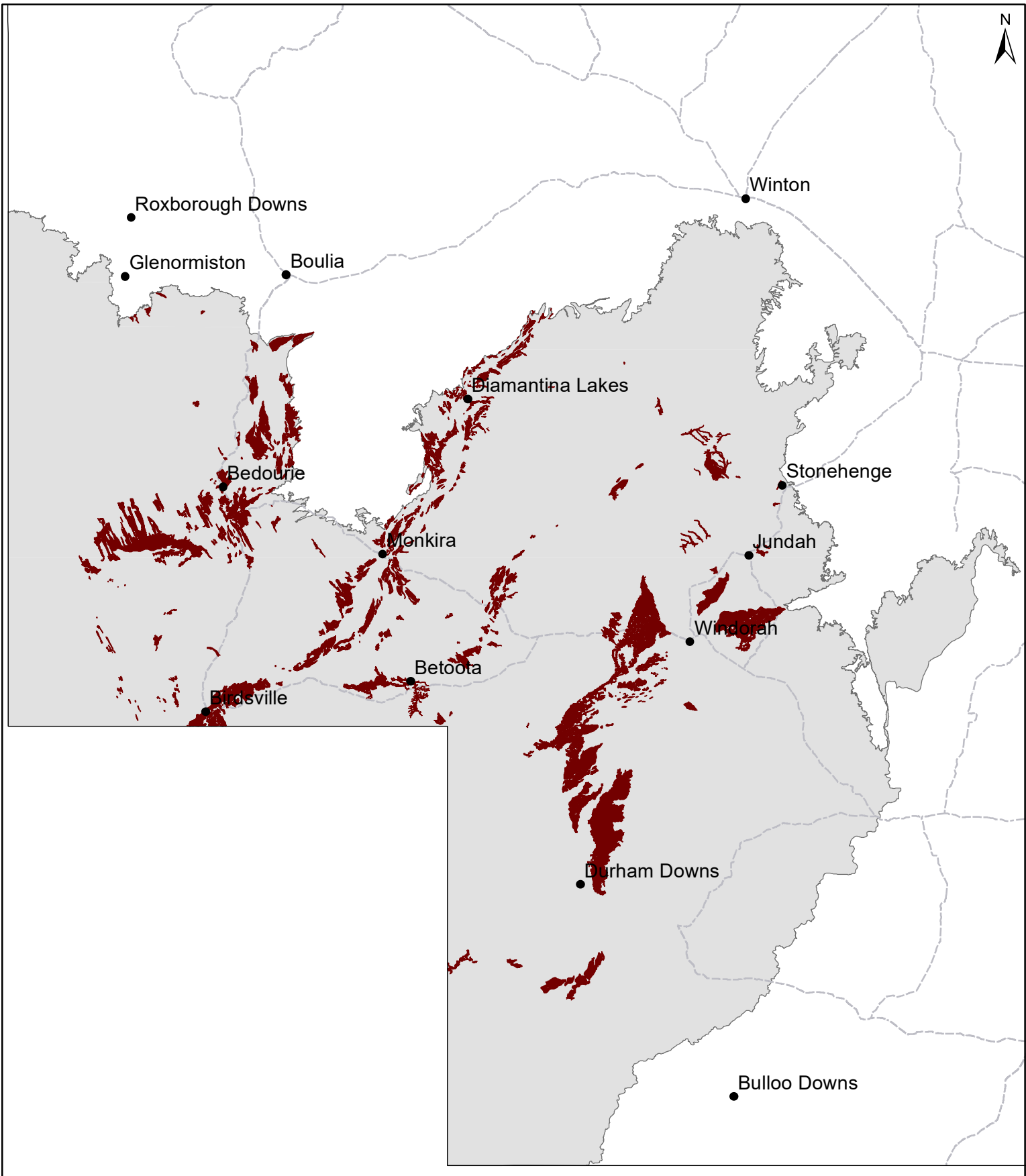
WARLUS Part

I	II	III	IV	V	VI
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Land systems

C2 (<i>Cunnawilla</i>)	C2 (<i>Cunnawilla</i>)				C2 (<i>Cunnawilla</i>)
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CC02 Occasionally flooded open plains (C2 floodplains)



Area of land type in region: 4%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 3%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**

Poorly drained swamps and depressions (C3 floodplains)



General description	Braided channels and poorly drained swamps on alluvial plains. Annual grass may dominate when in good condition. Flooding is intermittent, with variable water speed and depth, generally associated with the outer lying channels.
Landform	Swamps on alluvial plains.
Woody vegetation	Coolibah, lignum, belalie, gooramurra, Queensland bluebush#.
Expected native pasture composition	<i>* Denotes non-native "Expected Pasture Composition" species.</i> <i># Denotes non-grass species that are important to grazing and land condition values in annually dominated land types.</i>
Preferred	Cow vine#, Cooper clover#, Queensland bluebush#. Preferred annuals include native sorghum.
Intermediate	Rat's tail couch, spiny flat sedge#, neverfail, swamp canegrass, nutgrass#. Intermediate annuals include pepper grass, button grass.
Non-preferred	Unpalatable sedges and nutgrasses.
Annual grasses	See preferred, intermediate and non-preferred species lists.
Common forbs	Verbine, pea bush, bogan flea, daisy burrs, nardoo, budda pea, cudweed, pigweed, goodenia#, jerry-jerry, mint bush, nutheads, wandering jew, daisies#, fireweed, native carrot#.
Suitable sown pasture	Not suitable for sown pastures.
Introduced weeds	Noogoora burr, parkinsonia, mesquite.
Soil	Very deep, poorly drained, alkaline and weakly to moderately gilgaied grey cracking clays.
Description	Surface: Self-mulching; Surface texture: heavy clays, Subsoil texture: heavy clay with sand bands in the profile.
Features	Recent alluvial sediments. Soils have strong core structure and crack widely.
Water availability	Moderate to high.
Rooting depth	Can be in excess of 1 m if not limited by sodicity.

Infiltration	High initially on a dry soil profile, slowing to moderate levels after 75 mm of rain as cracks close and to low levels after 100 mm of rain. Estimates based on low to moderate intensity storm rain.
Fertility	High
Salinity	Very low at the surface increasing to very high at depth.
Sodicity	Strongly sodic at depth.
pH	Moderate to strongly alkaline.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 253 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	170 - 770	Generally low, <15%	25 - 115
	3 TBA 8 FPC	30 - 250	Generally low, <15%	78 – 649

Enterprise

Breeding, backgrounding and finishing.

Land use and management recommendations

- Allow natural spelling of annual plants to occur, to promote seed for future pastures.

Land use limitations

- Lignum thickening can be problematic.
- Water logging within gutters and swamps can limit plant growth.
- Depth and duration of flooding can limit livestock access to pastures.

Conservation features and related management

- Provides important drought refuge and seasonal water bird habitat. Lignum swamps potential habitat for rare and threatened fauna species including freckled duck. Lignum is habitat for grey grass wrens.
- Open herb fields are potential habitat for plains wanderer and fierce snake (western taipan).
- Springs are within Great Artesian Basin discharge areas. Impacted by artificial extraction, excavation, pig digging and stock trampling.
- Habitat for feral pigs.

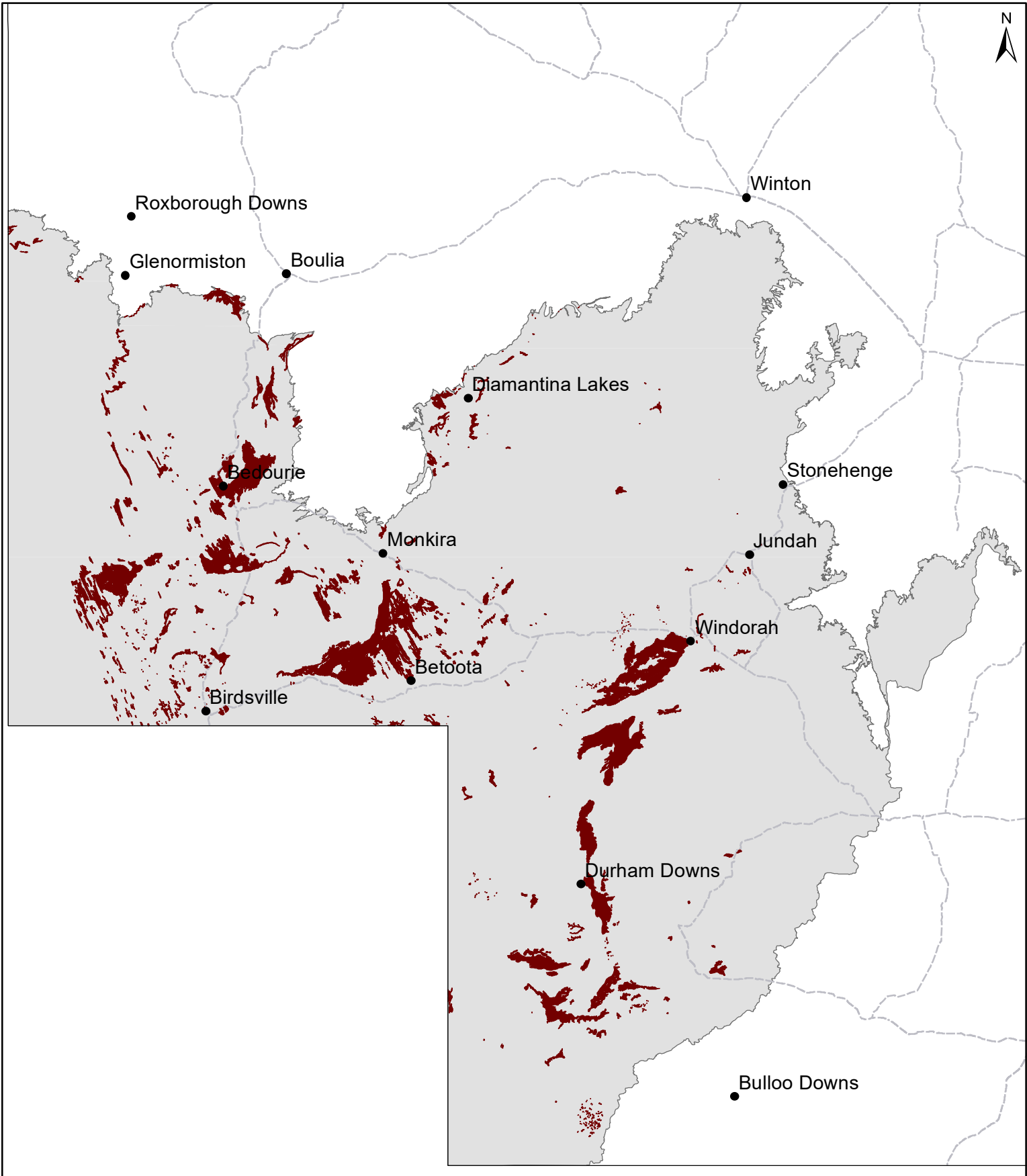
Regional Ecosystems

5.3.12a-b, 5.3.13a, 5.3.15b, 5.3.16a–b, 5.3.17a-b, 5.3.8c.

WARLUS Part Land systems

I	II	III	IV	V	VI
C3 (Woonabootra)	C3 (Woonabootra)				C3 (Woonabootra)

CC03 Poorly drained swamps and depressions (C3 floodplains)

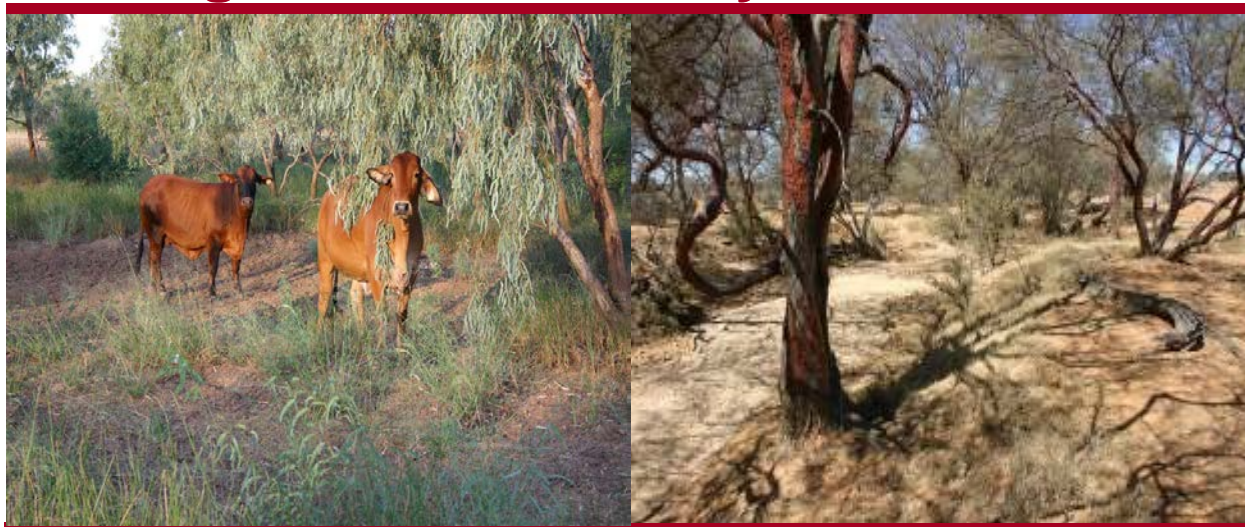


Area of land type in region: 4%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 7%
Median FPC: 9%
Median TBA: 4 m²/ha



**Queensland
Government**

Frontage / alluvial country



General description

Occasionally flooded alluvial plains, often with braided channels. Generally open woodland / shrublands of various woodland communities associated with open tussock grasslands and ephemeral forblands.

Alluvial country covers about 14.6% of the Channel Country.

Landform

Alluvial plains.

Woody vegetation

Coolibah, river red gum, mulga, gidgee, western bloodwood, yapunyah, Georgina gidgee, belalie, gooramurra, mineritchie, lignum, cassia.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Mitchell grass (barley, bull, occasionally curly and hoop), curly bluegrass, Queensland bluegrass, kangaroo grass, Queensland bluebush; increasing areas of buffel grass*.

Intermediate

Rat's tail couch, katoora, lovegrasses, silky browntop, golden beard grass, five-minute grass.

Non-preferred

Feathertop wiregrass.

Annual grasses

Downs couch, Flinders grass, button grass, comb windmill grass, delicate lovegrass, pepper grass. Kerosene grass (non-preferred).

Common forbs

Copperburrs, gidgee burrs, joyweed, bogan flea, daisy burrs, pop saltbush, annual saltbush.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

Noogoora burr, parkinsonia, Athel pine.

Soil

Generally clays – very deep red, brown and grey, some red earths and loamy or sandy surfaced texture contrast soils, some yellow sands in associated with sand dunes. Occasionally gilgaied and most are subject to seasonal scalding. Gypsum may be present at depth.

Description

Surface: Crusted to weakly self mulching, **Surface texture:** medium to heavy clays with some sandy or silty clays, **Subsoil texture:** medium to heavy clays with some sandy or silty clays.

Features

Some occurrence of scalding. Gravel though profile with gypsum occurring at depth in some areas.

Water availability
 Rooting depth
 Infiltration
 Fertility
 Salinity
 Sodicty
 pH

Moderate to good.
 Can be in excess of 1 m if not limited by sodicty.
 High initially on a dry soil profile, slowing to moderate levels after 35 mm of rain as surface seals and to low levels after 50 mm of rain. Estimates based on low to moderate intensity storm rain.
 Moderate.
 Very low to low at the surface increasing to very high at depth.
 Sodict to strongly sodict at depth.
 Slightly acid to very strongly alkaline.

Utilisation

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 390 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	200 - 2500	18%	6 - 81
	3 TBA 8 FPC	50 - 2050	18%	8 – 325

Enterprise Land use and management recommendations

Breeding, backgrounding and finishing.

- Suitable for grazing of native pastures.
- Provides shade and useful top-feed.
- Maximise ground cover to reduce soil erosion.
- Strategic burning to manage gidgee thickening with late dry season hot fires.
- Some clay pan areas can be returned to deep cracking clays using shallow pondage systems.

Land use limitations

- Minor stream bank erosion leading to sedimentation of permanent waterholes.
- Scalding occurs in some areas.
- Provides seasonal habitat and drought refuge for a wide range of wetland birds.
- Provides habitat for rare and threatened species such as grey grass wren and freckled duck.
- Potential impacts on riparian areas from total grazing pressure.
- In some areas 10–15% of gidgee trees stand dead.
- In some areas 30–50% of tall shrubs stand dead.
- Exotic weed species in some areas.
- Springs are within Great Artesian Basin discharge areas. Impacted by artificial extraction, excavation, pig diggings and stock trampling. Habitat for feral pigs and cats.
- Rills on tracks and fence lines may restrict floodwater reaching floodplain extremities.

Conservation features and related management

5.3.10, 5.3.2, 5.3.20a-c, 5.3.21a-b, 5.3.22a-b, 5.3.4, 5.3.5, 5.3.6, 5.3.6x1, 5.3.9, 5.3.9x1, 5.7.13, 6.3.2a, 6.3.3a.

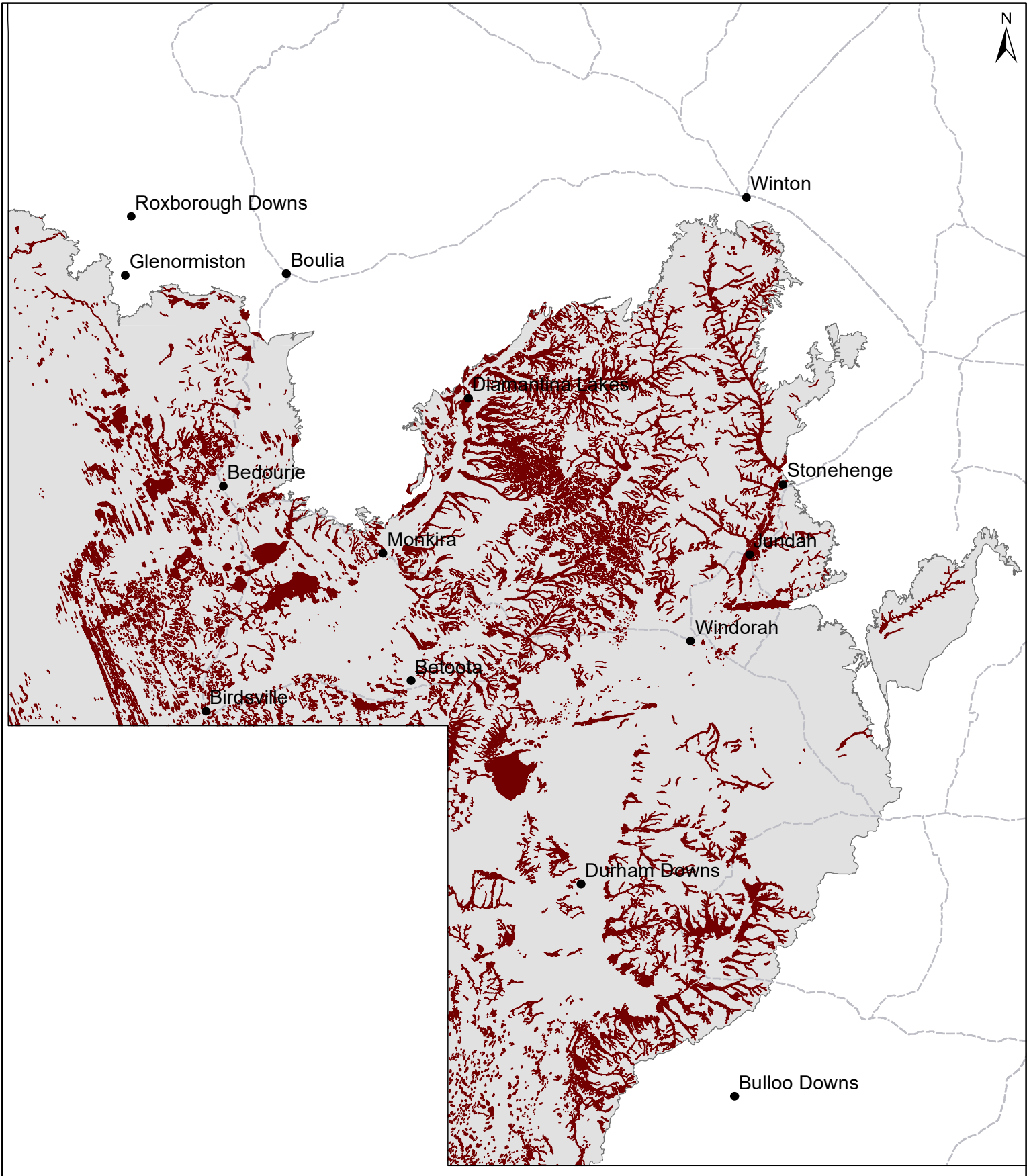
Regional Ecosystems

WARLUS Part

Land systems

	I	II	III	IV	V	VI
	A1, A2, A3, A4, A5, A6, W1, W2, W3, W4, W5, W6, W7	A1, A2, A3, A4, A5, A6, W1, W2, W3, W4, W5, W6, W7				A1, A2, W1, W2

CC04 Frontage / alluvial country



Area of land type in region: 9%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 26%
Median FPC: 8%
Median TBA: 3 m²/ha



**Queensland
Government**

Gidgee woodlands



General description

Gently undulating plains and lower slopes and scarp retreat zones of dissected residuals. Low open woodland of gidgee communities with a ground layer of sparse grasses and ephemeral forbs.

Landform

Gently undulating plains and lower slopes and scarps.

Woody vegetation

Gidgee, false sandalwood, boree, mulga, Georgina gidgee.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Barley, curly and hoop Mitchell grasses, katoora, buffel grass* (naturalised).

Intermediate

Five-minute grass, bottlewasher grasses.

Non-preferred

Wiregrasses and unpalatable forbs.

Annual grasses

Button grass, fairy grass, pepper grass, comb windmill grass, downs couch.

Common forbs

Bladder saltbush, copperburrs, gidgee burrs.

Suitable sown pasture

Buffel useful in some areas.

Introduced weeds

None

Soil

Shallow to moderately deep stony brown, red and grey cracking clays. Some areas with ironstone gravel on the surface and/or weak to moderate gilgais.

Description

Surface: Crusted to weakly self mulching often with scattered stone, **Surface texture:** medium to heavy clays, **Subsoil texture:** medium to heavy clays

Features

Prevalent ironstone and gidgee stone cover. Gilgai depressions benefit from run-on. Gypsum is present at depth.

Water availability

Moderate to low, limited by sodicity

Rooting depth

Medium ~60 cm, limited by shallow soils and sodicity

Infiltration

Moderate initially on a dry soil profile, slowing to low levels after 35 mm of rain as topsoil is saturated. High run-off following 50 mm of rain. Estimates based on low to moderate intensity storm rain.

Fertility	Low to moderate.
Salinity	Very low at the surface increasing to very high at depth.
Sodicity	Strongly sodic at depth.
pH	Neutral to moderately alkaline. Lime through profile and gypsum at depth.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 197 – 390 mm				
Pasture type	Median tree cover (TBA m ² /ha (FPC %))	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	530 - 1970	18%	8 - 31
	1 TBA 3 FPC	280 - 1690	18%	10 – 58

Enterprise Land use and management recommendations

- Breeding
- Suitable for grazing of native pastures.
 - Opportunities for clearing, but generally unsuited.
 - Rotational wet season spelling to maintain perennial pastures.
 - Maintain adequate ground cover to minimise soil erosion.
 - Reduce erosion risk by preventing subsoils from being exposed.
 - Hard gidgee areas provide good run-off for adjacent country.
 - Provides shade and sparse top-feed.
 - Strategic burning to manage gidgee thickening with late dry season hot fires.

Land use limitations

- Responds well to soaking rain.
- Medium pasture bulk.
- Occasionally subject to scalding in areas without stone cover.
- Georgina gidgee poisoning can be an issue in dry times (within the Georgina basin).
- Woody regrowth.
- No issues listed.

Conservation features and related management

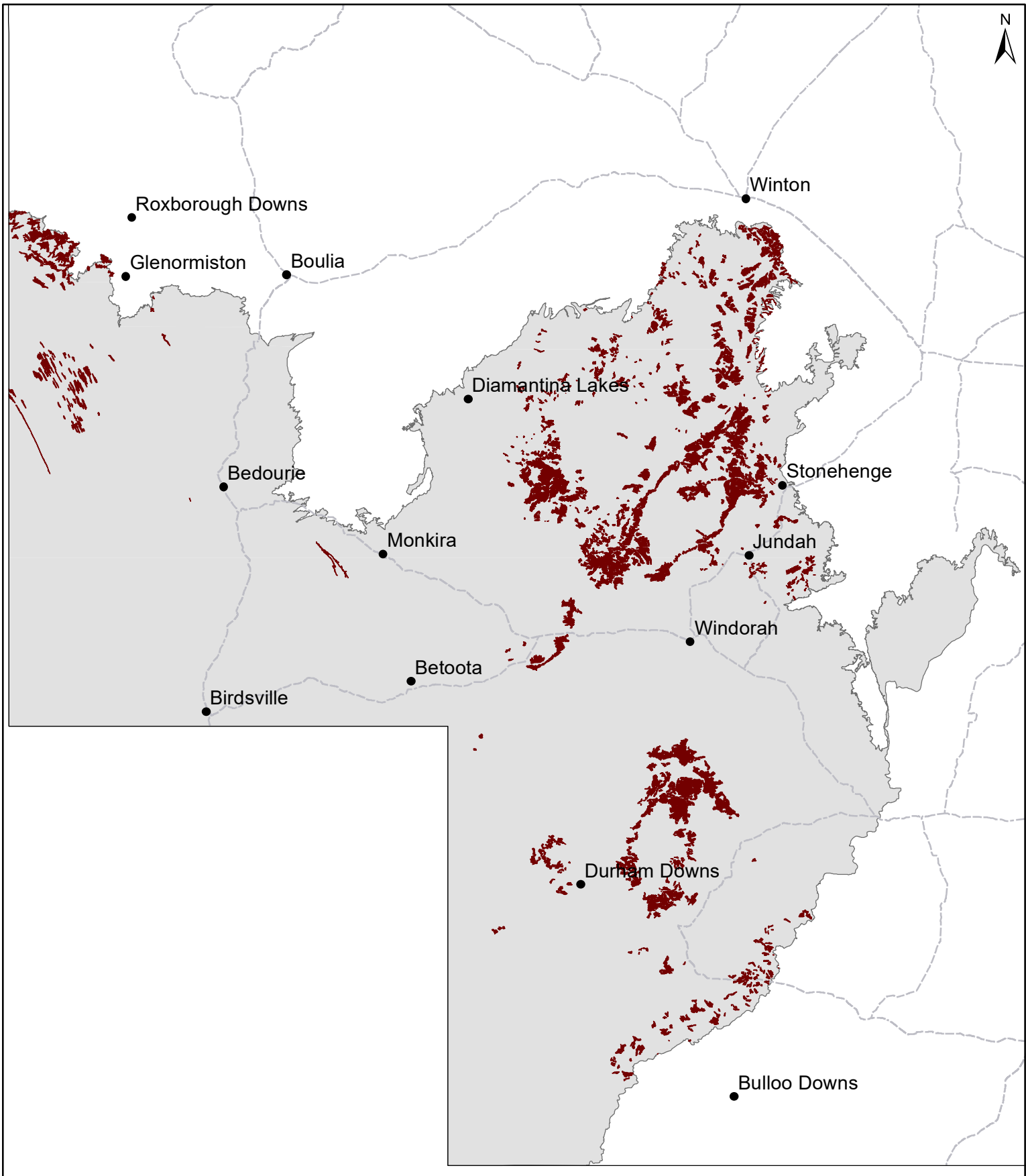
5.3.11, 5.7.6, 5.9.2x1, 5.9.2x2.

Regional Ecosystems

WARLUS Part Land systems

I	II	III	IV	V	VI
G1, G2, G3, G4, G5	G1, G2, G3, G4				T1, T2, areas within A2

CC05 Gidgee woodlands



Area of land type in region: 3%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 56%
Median FPC: 3%
Median TBA: 1 m²/ha



**Queensland
Government**

Mulga woodlands



General description

Flat to gently undulating plains and low hills with mulga tall open shrubland or low open woodlands, dominated by mulga communities. Can distinguish between soft or hard mulga, depending on the underlying soils.

Mulga woodlands cover about 1.4% of the Channel Country.

Landform

Flat to gently undulating plains and low hills.

Woody vegetation

Mulga, poplar box, gidgee, western bloodwood, beefwood, whitewood, vinetree, bastard mulga, dead finish, turkey bush.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Queensland bluegrass, silky browntop, mulga Mitchell, mulga oats, cotton panic, silky umbrella grass, kangaroo grass.

Intermediate

Lovegrasses (e.g. Brown's, clustered), woollybutt wanderrie, mountain wanderrie, five-minute grass, bottlewasher grasses, spinifex.

Non-preferred

Wiregrasses, greybeard grass.

Annual grasses

Button grass, three-awned wanderrie, comb windmill grass.

Common forbs

Narrow-leaved indigo, pigweed, pussytails, woolly copperburr, sida.

Suitable sown pasture

Buffel grass may be useful in some areas of soft mulga, but establishment may be limited by low soil phosphorous.

Introduced weeds

None

Soil

Softer mulga – deep loamy red earths, red clays and texture contrast soils, sinkholes common.

Harder mulga – shallow stony red earths, texture contrast soils and brown/red clays, hardpan soils and gravelly cover common.

Description

Surface: Loamy hard or moderately hard surfaces; **Surface texture:** light sandy loam to clay loams; **Subsoil texture:** clay content increasing down profile to light to medium clays.

Features

Clay plains and overlying sand deposits, deeply weathered. Sinkholes associated with sandy light clays.

Water availability

Medium to low.

Rooting depth

Limited by soil depth.

Infiltration

High

Fertility

Low to moderate.

Salinity
Sodicity
pH

Very low at surface increasing to medium at depth.
Non-sodic.
(Soft mulga) Moderately acid at surface grading to slightly acid to moderately alkaline at depth.
(Hard mulga) Very strongly to slightly acid.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 175 – 390 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	30 - 820	15%	24 - 649
	2 TBA 5 FPC	20 - 400	15%	49 – 974

Enterprise

Land use and management recommendations

- Breeding
- Suitable for grazing of native pastures. Maximise ground cover to reduce soil erosion.
 - These areas provide good run-off for adjacent country.
 - Provides shade and useful top feed.
 - Responds to small falls of rain.
 - Strategic burning with hot fires may be needed to reduce thickening and to increase spinifex palatability and availability of green forage.
 - Livestock may need phosphorus supplements.
 - Encroachment and thickening problems.
 - Susceptible to wind and water erosion (e.g. sheet erosion), especially when ground cover is low.
 - Run-off can be very high on harder country (poor infiltration).
 - Mulga soils tend to have modified ground layer.
 - Fencing to manage total grazing pressure and wet season spelling can be beneficial.
 - Spinifex areas are potential habitat for endangered night parrot. Spinifex communities benefit from a patch burning regime to maintain diversity and minimise wildfire risk.
 - Burning should only be carried out when there is sufficient moisture in the soil profile to generate new growth.
 - Rare flora e.g. *Grevillea kennedyana* may occur in this land type.

Land use limitations

Conservation features and related management

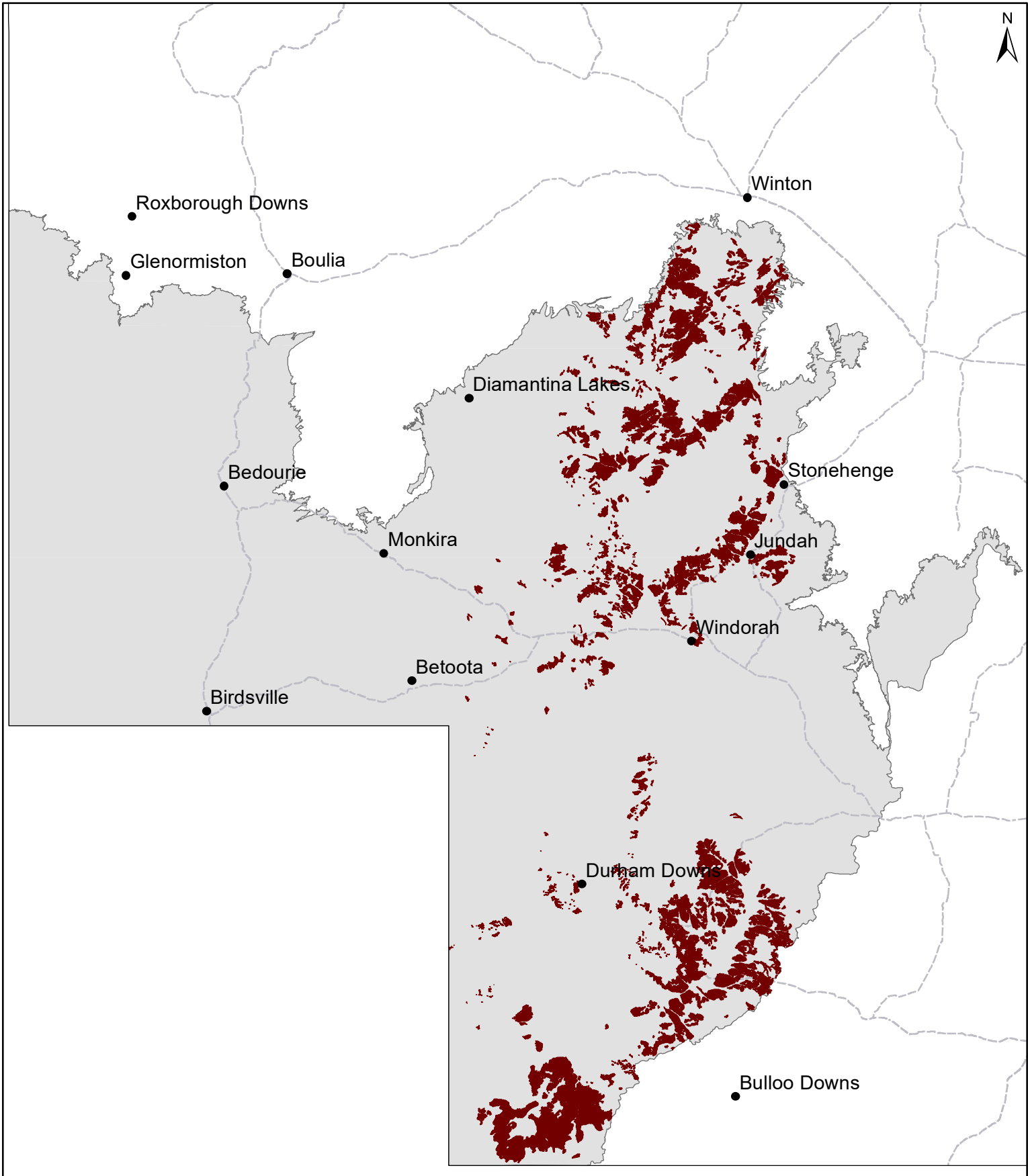
Regional Ecosystems

5.5.1, 5.5.1x2, 5.5.2, 5.5.3a-b.

WARLUS Part Land systems

I	II	III	IV	V	VI
(Soft mulga) M1, M2, M3, M4, M5 (Hard mulga) H1, H2, H3, H4, H5	(Soft mulga) M1, M2, M3, M4 (Hard mulga) H1, H2, H3, H4				(Soft mulga) M1 (Hard mulga) H1

CC06 Mulga woodlands



Area of land type in region: 6%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 47%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**

Sandplains



General description

Generally flat or gently undulating sandplains with spinifex grasslands, wooded with mulga and bloodwood. Can also be dominated by low open cassia shrublands.

Sandplains and dunefields cover about 21.4% of the Channel Country.

Landform

Flat or gently undulating sandplains.

Woody vegetation

Mulga, bastard mulga, western bloodwood, beefwood, Normanton box, river red gum, poplar box, Georgina gidgee (in drainage lines), eastern dead finish, bauhinia, dead finish, ironwood, cassias, turkey bush.

* Denotes non-native "Expected Pasture Composition" species.

Expected pasture composition

Preferred

Desert bluegrass, mulga Mitchell, mulga oats, neverfail, cotton panic, silky umbrella grass, woollybutt.

Intermediate

Buck spinifex, porcupine spinifex, five-minute grass, bottlewasher grasses, knottybutt grass.

Non-preferred

Wiregrasses.

Annual grasses

Small burr grass, button grass, comet grass, fire grass, three-awned wanderrie. Kerosene grass (non-preferred).

Common forbs

Pussytails, billybuttons, cockroach bush, ruby saltbush, soft roly poly, flannel weed, sida, caltrop.

Suitable sown pasture

Buffel grass may be useful in some areas, but establishment may be limited by low soil phosphorous.

Introduced weeds

None

Soil

Deep sandy red earths on flat to gently undulating plains, with some red earthy sands and shallow alluvial grey clays in run-on areas. Red siliceous sands forming low dunes on normally hard setting surface.

Description

Surface: Hard-setting often with crust, **Surface texture:** sandy loam, **Subsoil texture:** sandy loam.

Features

Sandplains over clay and alluvia.

Water availability

Low

Rooting depth

Deep

Infiltration High
 Fertility Low
 Salinity Low increasing to medium at depth.
 Sodicity Non-sodic.
 pH Slightly alkaline to slightly acid.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 390 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	30 - 510	15%	38 - 650
	3 TBA 8 FPC	10 - 40	15%	490 – 1950

**Enterprise
 Land use and management recommendations**

Breeding

- Suitable for grazing of native pastures.
- Provides shade and limited top feed.
- In texture contrast soils, maximise surface cover, particularly with standing pasture, to increase infiltration and increase pasture production.
- Maximise ground cover to reduce soil erosion.
- Mosaic burning to increase spinifex palatability and availability of green forage.

Land use limitations

- Low fertility soils limit production.
- Livestock may need phosphorus supplements.
- Texture contrast soils are prone to scalding and sheet erosion.
- Soils can be susceptible to wind and water erosion.
- Low bulk to pastures.
- Presence of Georgina gidgee in some far western drainage areas.

Conservation features and related management

- Rabbits can be problematic in some areas.
- Rare species including *Grevillea kennedyana* and *Eremophila alatisepala* may occur in these land types.
- Spinifex grassland benefits from mosaic burning over 7 to 10 year cycle to maintain diversity and reduce wildfire risk.
- Burning should only be carried out when there is sufficient soil moisture to generate new growth.

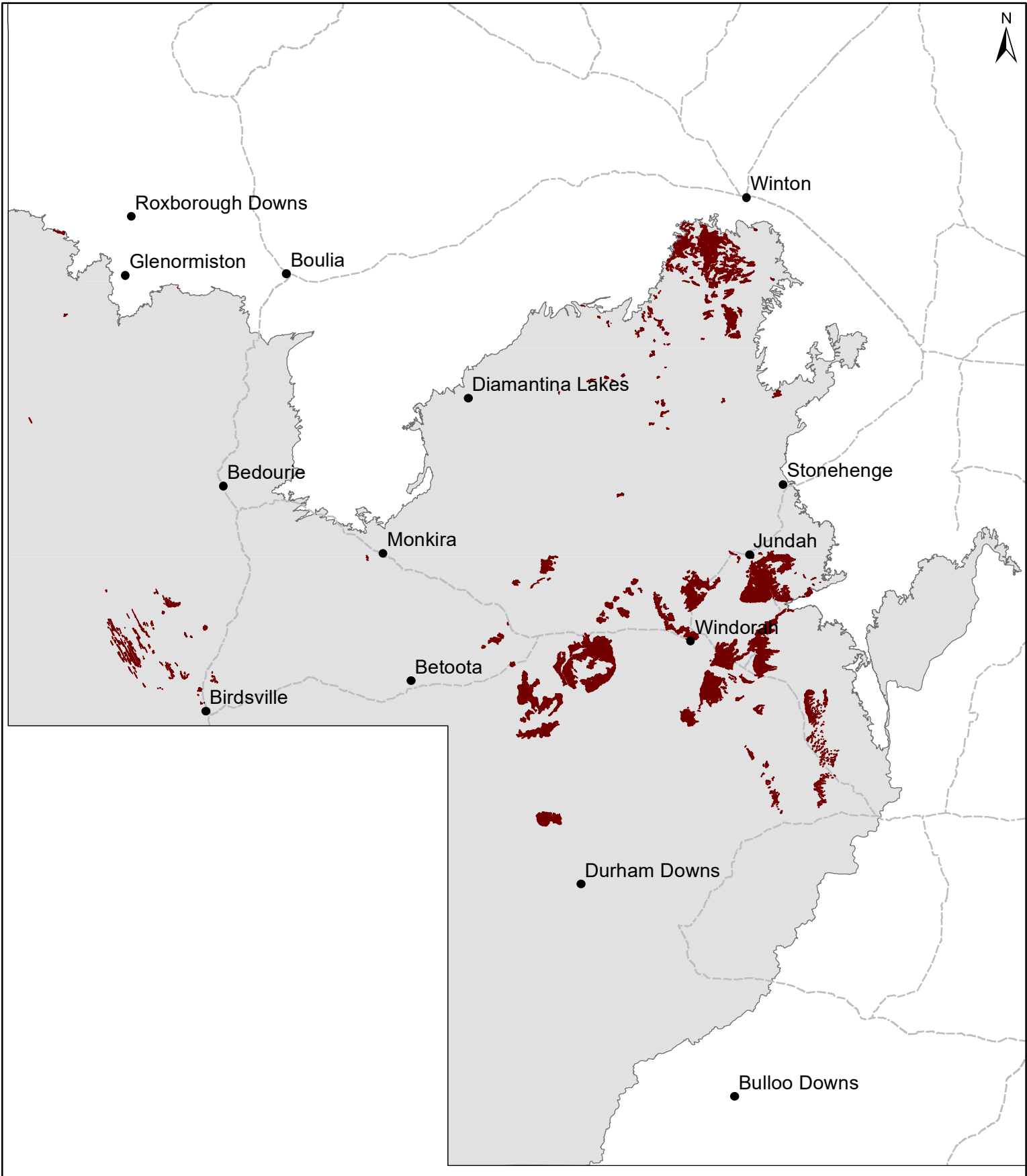
Regional Ecosystems

5.5.1x1, 5.5.6, 5.5.6a, 5.5.6x1, 5.6.6, 6.6.1b.

**WARLUS Part
 Land systems**

I	II	III	IV	V	VI
S1, S2	S1, S2, S4,S5,S6				S1, S2

CC07 Sandplains



Area of land type in region: 2%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 36%
Median FPC: 8%
Median TBA: 3 m²/ha



**Queensland
Government**

Open downs



General description

Flat to gently undulating plains of Mitchell grass and open tussock grassland and saltbush herbfields.

Landform

Flat to gently undulating plains.

Woody vegetation

Mimosa bush, beefwood, whitewood, vine tree, western bloodwood, desert gum, boonaree, bauhinia.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Barley, curly and hoop Mitchell grasses, Queensland bluegrass.

Intermediate

Lovegrasses, silky browntop, stargrass, katoora, bottlewasher grasses.

Non-preferred

Feathertop wiregrass.

Annual grasses

Button grass, Flinders grass, pepper grass, downs couch, comb windmill grass, delicate lovegrass.

Common forbs

Bladder saltbush, grey rattlepod, annual verbine, paper rose, copperburrs, gidgee burrs, bogon flea, sida.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Moderately deep red, brown and grey deeply cracking clays with self-mulching surfaces, and some deep desert loams. Often gilgaied, and may have scattered stone pavements.

Description

Surface: Self-mulching with some crusting; **Surface texture:** heavy clay; **Subsoil texture:** heavy clay.

Features

Cretaceous deposits and mantled pediments with some deeply weathered rock. Some surface stone that may be varnished.

Water availability

Moderate

Rooting depth

Deep but limited by salinity and sodicity.

Infiltration

High initially on a dry soil profile, slowing to moderate levels after 50 mm of rain as cracks close and to low levels after 75 mm of rain. Increasing run-off following 75 mm of rain. Estimates based on low to moderate intensity storm rain.

Fertility

Moderate

Salinity

Very low to low at the surface increasing to very high at depth.

Sodicity

Sodic at depth.

pH

Moderately to very strongly alkaline with soft lime present and gypsum at depth.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 186 – 335 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	230 - 1770	20%	8 - 64
	3 TBA 8 FPC	90 - 930	20%	16 – 162

Enterprise

Breeding and seasonal backgrounding.

Land use and management recommendations

- Suitable for grazing of native pastures.
- Rotational wet season spelling to maintain perennial pasture composition.
- Maintain adequate ground cover to minimise soil erosion.

Land use limitations

- Best pasture growth from gilgais and depressions.
- Susceptible to erosion along stockpads, fencelines, roads and near water points.

Conservation features and related management

- No listed issues.

Regional Ecosystems

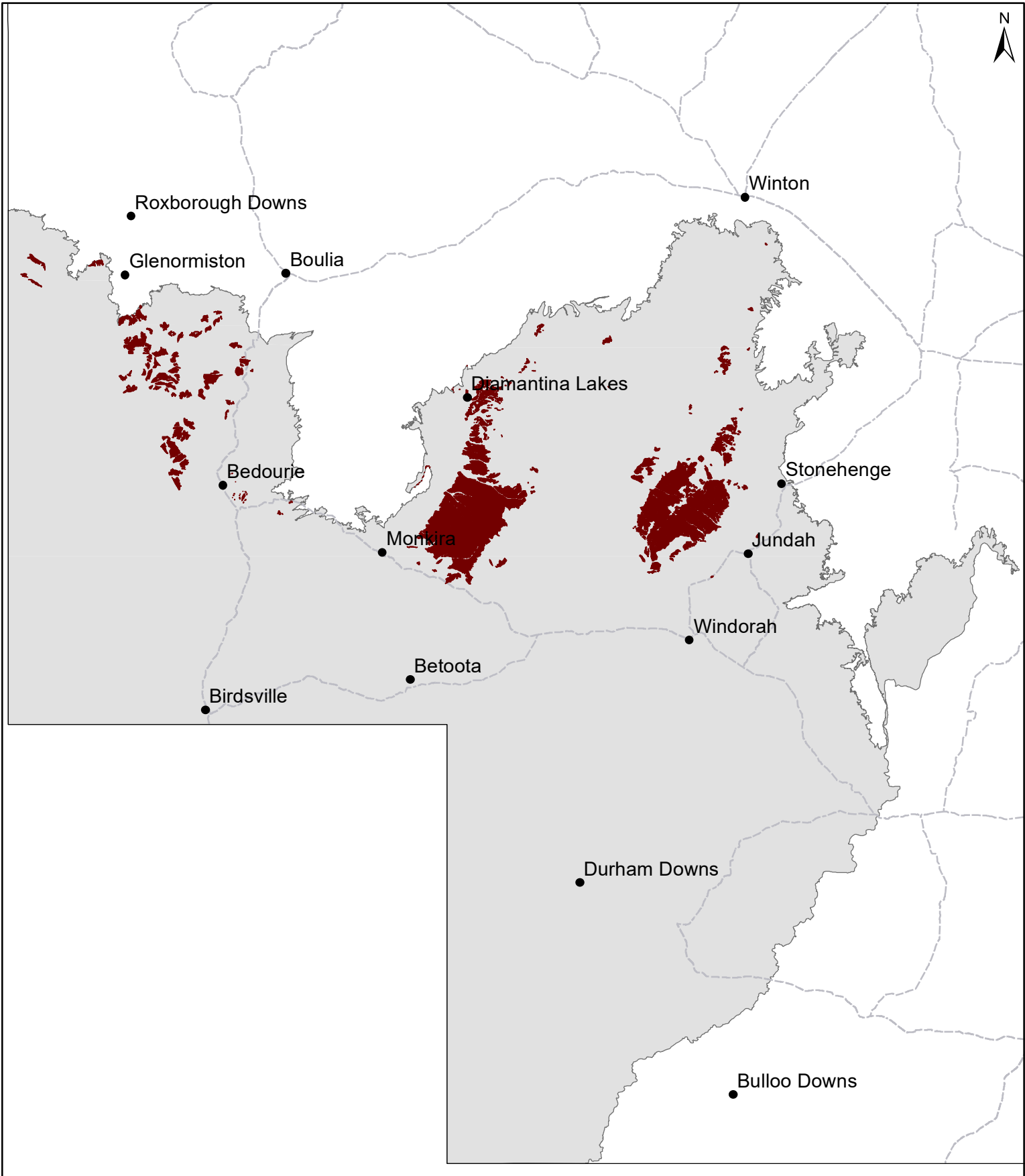
5.9.3a-b.

WARLUS Part

Land systems

	I	II	III	IV	V	VI
	F1, F2, F3, F4	F1, F2, F3, F4, F5, F6, F7, F8				F1, F2, F3, F4

CC08 Open downs



Area of land type in region: 3%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 1%
Median FPC: 8%
Median TBA: 3 m²/ha



**Queensland
Government**

Pebbly downs



General description

Flat gently undulating open Mitchell grass plains on moderately cracking clay soils with ironstone or gidgee stone cover prominent. Can be dominated by sparse forbland (often saltbush or copperburr) or annual grassland. Generally drain into open or wooded alluvia and adjacent to soft mulga and/or hard gidgee.

Landform

Flat gently undulating plains.

Woody vegetation

Mimosa bush, beefwood, whitewood, vine tree, western bloodwood, desert gum, boonaree, bauhinia.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Barley Mitchell grass, Queensland bluegrass, katoora.

Intermediate

Lovegrasses, silky browntop (along drainage lines), stargrass/native millet, bottlewasher grasses.

Non-preferred

Feathertop wiregrass.

Annual grasses

Button grass, Flinders grass, downs couch, comb windmill grass.

Common forbs

Native legumes (e.g. rattlepod), sida, daisy burrs, wild carrot, galvanised burr, gidgee burr, copperburrs, sida, lamb's tongue, potato bush, saltbush, pigweed, soda bush, tarvine.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Deep weakly gilgaied, stony surfaced, red cracking clays. May have a weak surface crust and some deep desert loams.

Description

Surface: Weakly self-mulching to weakly crusting clay with light to moderate stone cover, **Surface texture:** medium clay, **Subsoil texture:** medium clay.

Features

Desert varnished stone, gypsum present at depth, areas of abundant silcrete.

Water availability

Medium

Rooting depth

Low to moderate.

Infiltration

Moderate initially on a dry soil profile, slowing to low levels after 35 mm of rain as topsoil is saturated. High run-off following 50 mm of rain. Estimates based on low to moderate intensity storm rain.

Fertility

Moderate to high.

Salinity

Very low at the surface increasing to very high at depth.

Sodicity

Sodic at depth.

pH

Neutral to mildly alkaline with gypsum at depth.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 283 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	150 - 630	18%	26 - 108
	2 TBA 5 FPC	30 - 300	18%	54 – 541

Enterprise

Breeding and seasonal growing out of weaners.

Land use and management recommendations

- Suitable for grazing of native pastures.
- Rotational wet season spelling to maintain perennial pasture composition.
- Maintain adequate ground cover to minimise soil erosion.
- Avoid disturbing stone cover to minimise erosion risk.

Land use limitations

- Best pasture growth from gilgais and depressions.
- Where very low, phosphorous can limit plant and animal growth.
- Susceptible to erosion along stockpads, fencelines, roads and near water points.
- Habitat for threatened fauna including kowari.

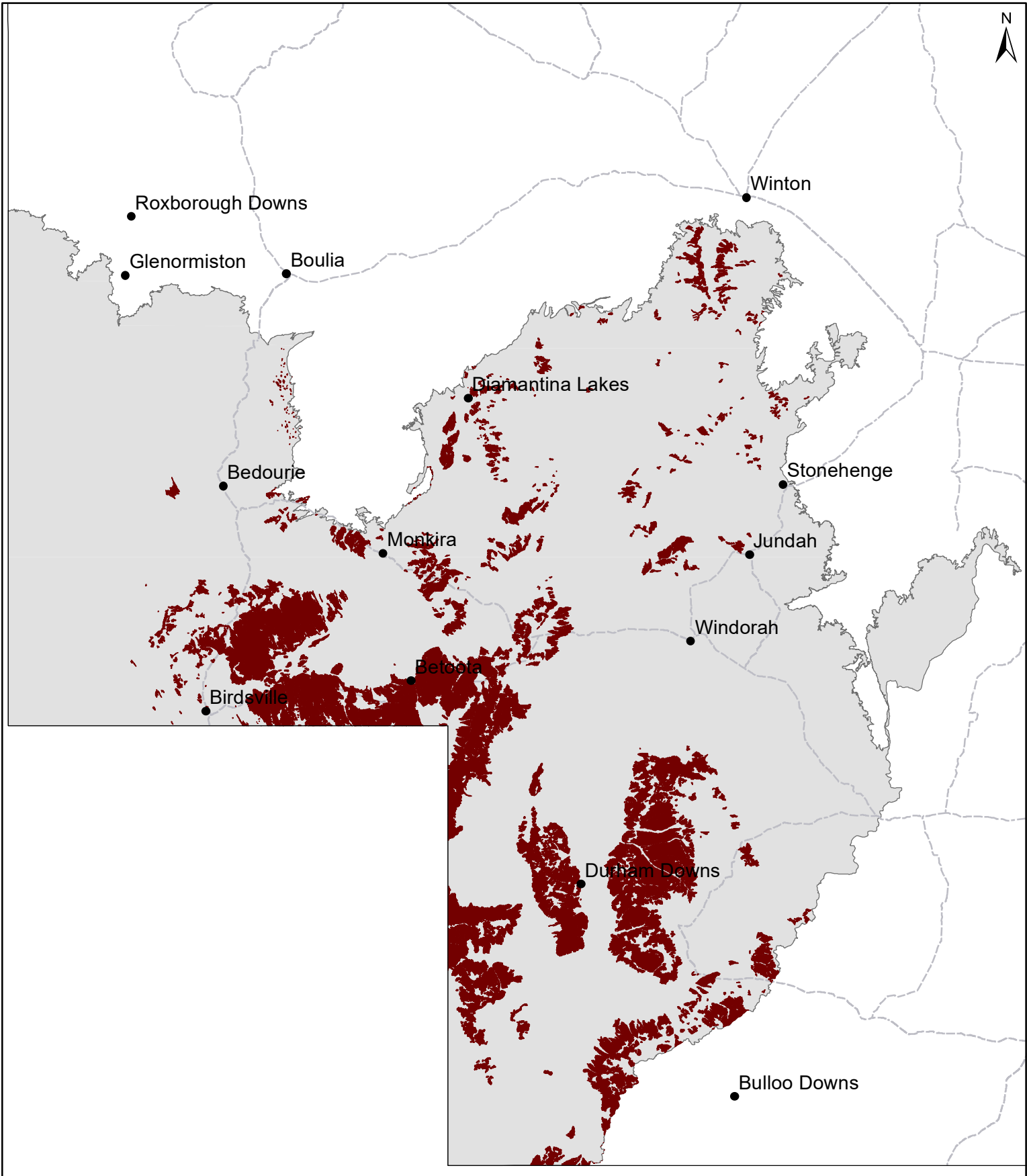
Conservation features and related management**Regional Ecosystems**

5.9.1b, 5.9.3, 5.9.3x2, 5.9.3x3.

WARLUS Part**Land systems**

	I	II	III	IV	V	VI
	F1, F2, F3, F4	F1, F2, F3, F4, F5, F6, F7, F8				F4

CC09 Pebbly downs



Area of land type in region: 10%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 4%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**

Gilgaied stony country



General description

Flat to gently undulating plains, low hills and scarp slopes supporting open seasonal forbland (often saltbush or copperburr) on desert loam soils with dense iron-stone or gidgee stone cover. Barley Mitchell and other perennial grasses confined to depressions, gilgais and drainage lines. Developing sand dunes often present as circular patches of very shallow sand deposits.

Landform

Flat to gently undulating plains, low hills and scarp slopes.

Woody vegetation

Mimosa bush, Georgina gidgee in drainage lines or run-on areas.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Barley Mitchell grass in gilgais, buffel grass* (naturalised) on shallow sand deposits.

Intermediate

Lovegrasses, five-minute grass, knottybutt grass, katoora, bottlewasher grasses.

Non-preferred

Feathertop wiregrass.

Annual grasses

Kerosene grass (non-preferred).

Common forbs

Desert rice-flower (pimelea), swamp pimelea, pigweed, pink mulla-mulla, silky copperburr, sida, bladder saltbush, copperburrs, gidgee burrs, red spinach, soda bush, potato bush, tarvine, parakeelya.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Predominately deep desert loams with dense ironstone / silcrete / lateritic gravel cover. Very weak gilgais may form. Surface crusting clays overlying soft powdered clays. Minor red, non-cracking clays present.

Description

Surface: Abundant silcrete cover, **Surface texture:** fine sandy loam to clay loam and soft powdery clay, **Subsoil texture:** medium clay

Features

Mantled pediments, fresh rock and deeply weathered rock and clay plains.

Water availability
 Rooting depth
 Infiltration
 Fertility
 Salinity
 Sodidity
 pH

Low to very low increasing to moderate within gilgais.
 Shallow, limited by strong sodicity increasing to moderate within gilgais.
 Moderate initially on a dry soil profile, slowing to low levels after 10 mm of rain as topsoil is saturated. High run-off following 10 mm of rain. Estimates based on low to moderate intensity storm rain. Run-off contributes to total water availability in gilgais and run-on areas which comprise about 5–10% of the land type.
 Low, increasing to moderate within gilgais and run-on areas.
 Crusted soils high in salinity throughout whilst non-crusted soils low salinity at the surface increasing to high at depth.
 Strongly sodic throughout.
 Slightly acid sandy to clay loam overlying neutral to alkaline medium clay soil.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 233 mm				
Pasture type	Median tree cover (TBA m ² /ha (FPC %))	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	100 - 370	15%	53 - 195
	2 TBA 5 FPC	30 - 180	15%	108 – 649

Enterprise

Breeding and seasonal growing out of weaners.

Land use and management recommendations

- Suitable for seasonal grazing of native pastures.
- Rotational wet season spelling to maintain perennial pasture composition.
- Avoid disturbing stone cover to minimise erosion risk.

Land use limitations

- Low productivity overall; limited to barley Mitchell grass and annual pastures in gilgais and drainage lines.
- Pasture availability is strongly seasonal, limited perennial carryover.
- Areas of highly dispersive clays susceptible to sheet and gully erosion and scalding if stone cover is disturbed.
- Responds quickly to rainfall, tending towards forbs in winter and grasses in summer.

Conservation features and related management

- Some localised sheet erosion.
- Some Georgina gidgee dieback in areas.
- Habitat for threatened fauna including kowari.

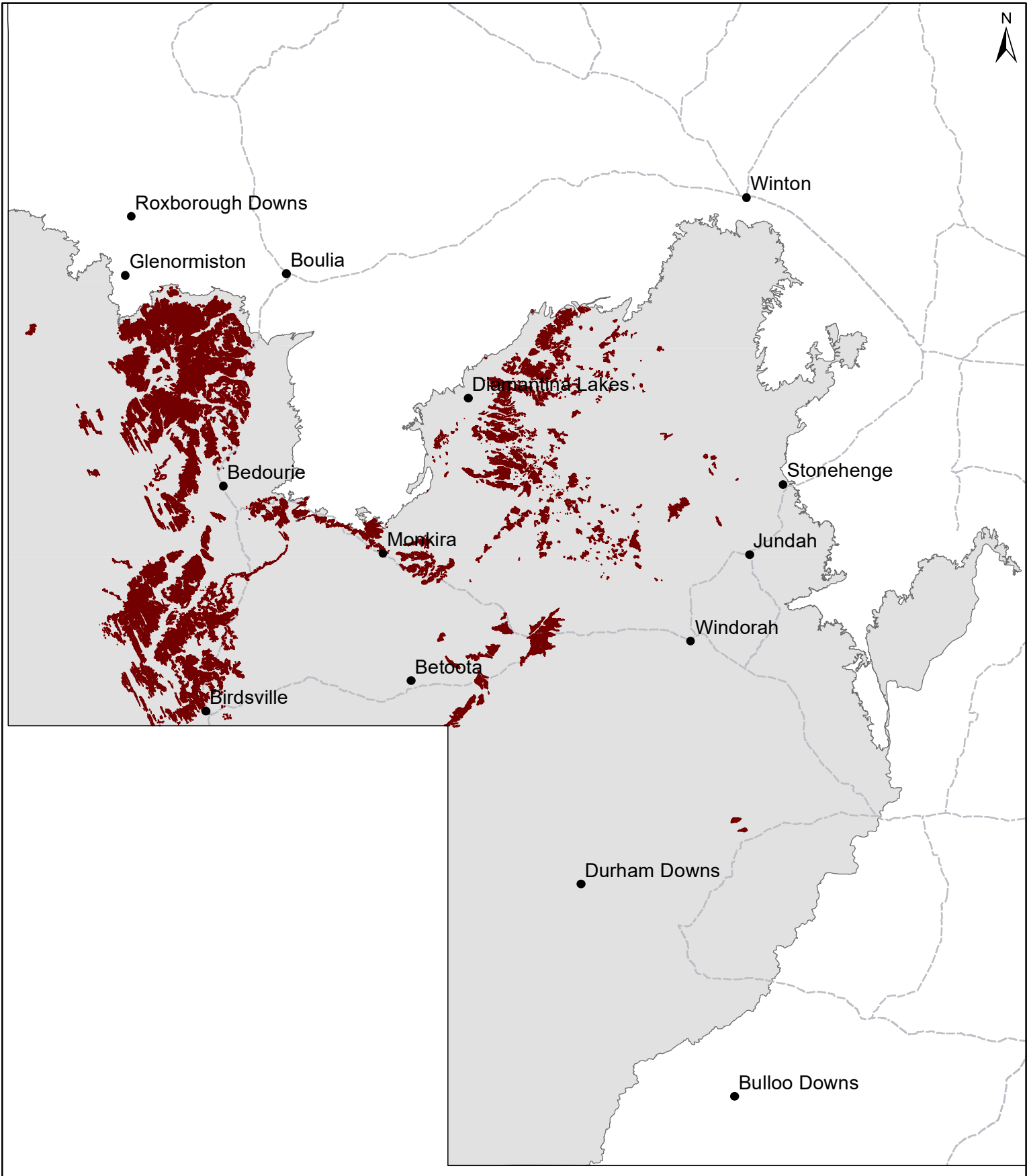
Regional Ecosystems

5.7.10x1, 5.7.8x1, 5.9.1x1, 5.9.4x2, 5.9.5, 5.9.5x1, 5.9.5x2.

WARLUS Part Land systems

I II III IV V VI
 P2

CC10 Gilgaid stony country



Area of land type in region: 6%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 4%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**

Hard gibber and ironstone country



General description

Flat to gently undulating plains and low hills and scarp slopes, generally with gidgee stone sitting on top of a dense ironstone pavement. Stone generally appears wind polished. Seasonally variable ephemeral forland confined to drainage lines and run-on areas, with minor areas of barley Mitchell in gilgais and drainage lines.

Landform

Flat to gently undulating plains, low hills and scarp slopes.

Woody vegetation

Mimosa bush, Georgina gidgee and mineritchie may occur along drainage lines.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Denotes non-grass species that are important to grazing and land condition values in annually dominated land types.

Preferred

Limited occurrences of barley Mitchell grass, katoora.

Intermediate

Limited occurrences of knottybutt grass, short wiregrasses, five-minute grass, bottlewasher grasses.

Non-preferred

Annual grasses

Kerosene grass (non-preferred).

Common forbs

Predominantly saltbushes# and copperburrs#, but including desert riceflower (pimelea), pigweed, pink mulla-mulla#, sida.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Moderately deep to deep, and some shallow, desert loams with thick ironstone or gibber stone cover.

Description

Surface: Hard-setting to crusting with abundant ironstone or gibber stone cover,
Surface texture: clay loam, soft powdery clay and occasionally fine sandy loam,
Subsoil texture: medium clay.

Features

Salt crystals occur throughout the profile. Lime and gypsum may also occur in the profile. Mantled pediments, fresh rock and deeply weathered rock and clay plains.

Water availability

Low, increasing to very high at depth.

Rooting depth

Shallow to moderate.

Infiltration

Low initially on a dry soil profile, slowing to very low levels after 5 mm of rain as topsoil is saturated. High run-off following 10 mm of rain. Estimates based on low to moderate intensity storm rain. Run-off contributes to total water availability in run-on and drainage areas which comprise up to 5% of the land type.

Fertility

Very low, increasing to moderate within run-on areas and drainage. Available nitrogen is the major limitation.

Salinity

Crusted soils are medium to very highly saline and very highly saline at depth, other soils have very low salinity at the surface increasing to very high at depth.

Sodicity

Very strongly sodic.

pH

Slightly acid to neutral to at the surface and slightly acid to alkaline at depth.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 233 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	70 - 230	15%	85 - 278
	2 TBA 5 FPC	20 - 60	15%	325 – 974

Enterprise

Breeding

Land use and management recommendations

- Suitable for seasonal grazing of native pastures.
- Rotational wet season spelling to maintain perennial pasture composition.
- Avoid disturbing stone cover to minimise erosion risk.

Land use limitations

- Low productivity overall due to dense stone cover. Best pasture growth from run-on areas, such as shallow drainage lines. Pasture availability is strongly seasonal with limited perennial carryover. However, responds quickly to rainfall, tending towards forbs in winter and annual grasses in summer.
- Poisonous plants, especially pimelea, can limit animal performance.
- Where very low, phosphorous can limit plant growth and animal performance.
- Highly dispersive clays susceptible to sheet and gully erosion and scalding if stone cover is disturbed.
- Susceptible to erosion along stockpads, fencelines, roads and near water points.

Conservation features and related management

- Some localised sheet erosion.
- Some Georgina gidgee dieback in areas.
- Habitat for threatened fauna including kowari.

Regional Ecosystems

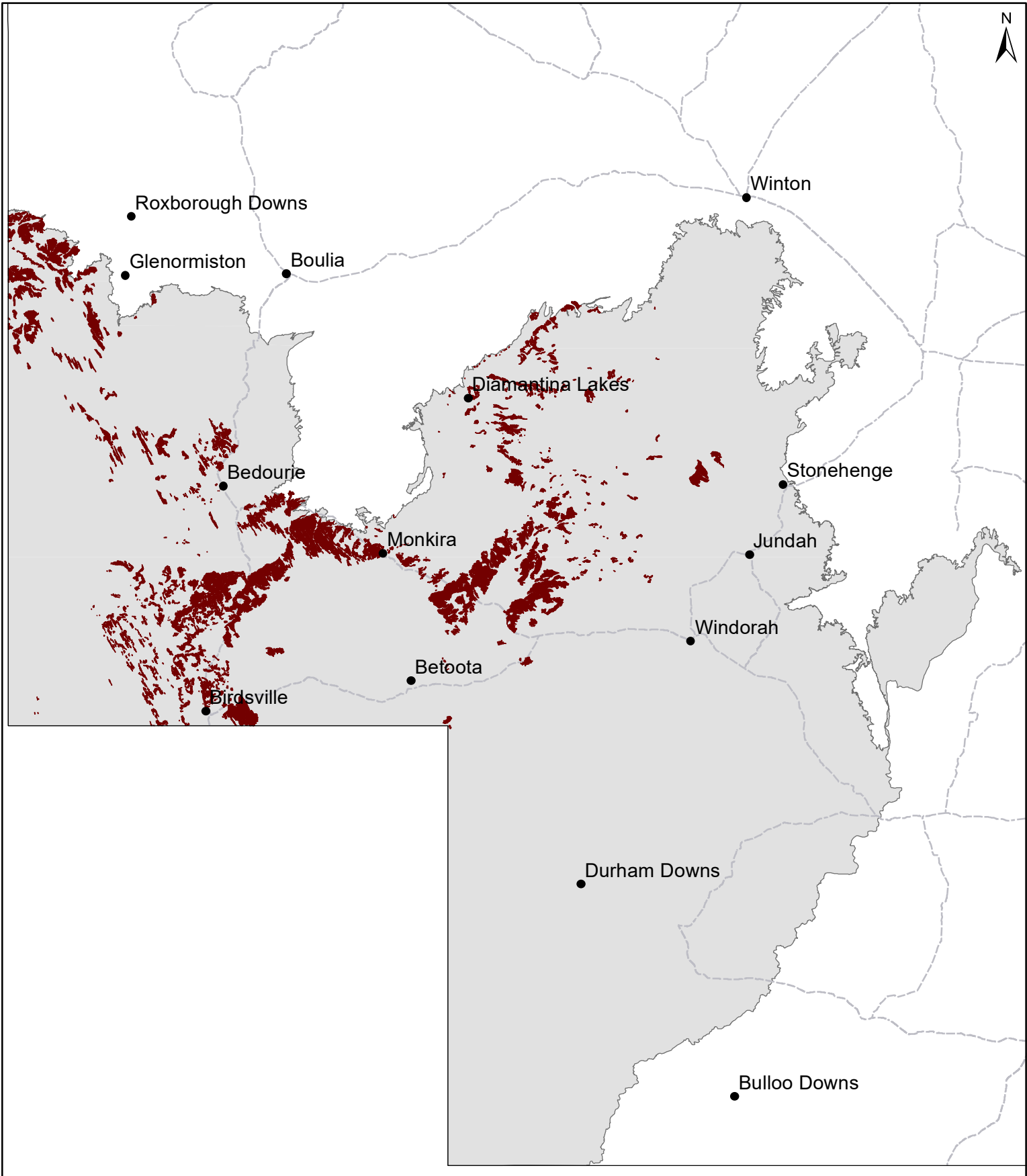
5.3.15a, 5.7.10x2, 5.7.10x3, 5.9.4, 5.9.4x1.

WARLUS Part Land systems

I II III IV V VI

P1, P2, P3

CC11 Hard gibber and ironstone country



Area of land type in region: 3%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 6%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**

Sand dune country



General description

Networks of sand dunes with mobile crests associated with open spinifex hummock grasslands and forblands, often with shrubs and lightly timbered on the lower flanks of the dunes. Inter-dune claypans often consist of swamp canegrass open grasslands and forblands, and may be timbered with coolibah.

The linear dunes in the Simpson Desert are up to 320 km long, running in a NNW-SSE direction.

Sandplains and dunefields cover about 21.4% of the Channel Country.

Landform

Sand dunes with inter-dune claypans.

Woody vegetation

Coolibah, mulga, western bloodwood, whitewood, bauhinia, beefwood, Georgina gidgee, boonaree, needlewood, lignum, sandhill grevillea, sandplain wattle, hopbush, parrot pea, pituri bush.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred grass species occur at the bottom of the swale on inter-dune claypans.

^ Denotes species that are important to dune stabilisation.

Preferred Intermediate

Neverfail, cotton panic, katoora.

Non-preferred

Wiregrasses.

Annual grasses

Fairy grass, button grass, three-awned wanderrie. Kerosene grass (non-preferred).

Common forbs

Samphire, soft roly poly, cottonbush, parakeelya, tangled mulla-mulla (sandhill snow), red twinleaf, annual yellowtop, bluerod, regal birdflower, bluebush pea, wild parsnip, nardoo.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Very deep red, yellow and white silicon sands on mobile crests and upper flanks of dunes; earthy sands and sandy earths on lower flanks of dunes; grey clays in the inter-dune areas.

Description

Surface: Loose, **Surface texture:** sand, **Subsoil texture:** sand.

Features

Cainozoic sand over clay sheet.

Water availability

Very low

Rooting depth

Deep

Infiltration Very high
 Fertility Very low
 Salinity Very low
 Sodidity Non-sodic
 pH Neutral

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 151 – 256 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	90 - 290	10% (inter-dune claypans)	101 – 325
	2 TBA 5 FPC	20 - 120	10%	244 – 1461

Enterprise Land use and management recommendations

Breeding

- Suitable for grazing of native pastures.
- Maximise ground cover to reduce soil erosion and stabilise sand dune ridges.
- Responds to small falls of rain.

Land use limitations

- Subject to sheet erosion by wind and some scalding.
- Generally soil low fertility limits pasture productivity.
- Phosphorus often limits animal performance.
- Palatable perennial pastures generally absent – seasonally variable forage of forbs and short grasses, low bulk.
- Ground cover generally low.
- Responds quickly to light rainfall.
- Some top feed available.

Conservation features and related management

- Lack of *Acacia calcicola* regeneration due to total grazing pressure. High level of rabbit infestation; can be problematic in some areas.
- High reptile diversity.
- Potential habitat for rare and threatened fauna species including mulgara, dusky hopping mouse and the night parrot.
- Habitat for the endemic grass wren.
- Some areas require mosaic burning.
- Spinifex grassland benefits from mosaic burning over 7 to 10 year cycle to maintain diversity and reduce wildfire risk. Burning should only be carried out when there is sufficient soil moisture to generate new growth.

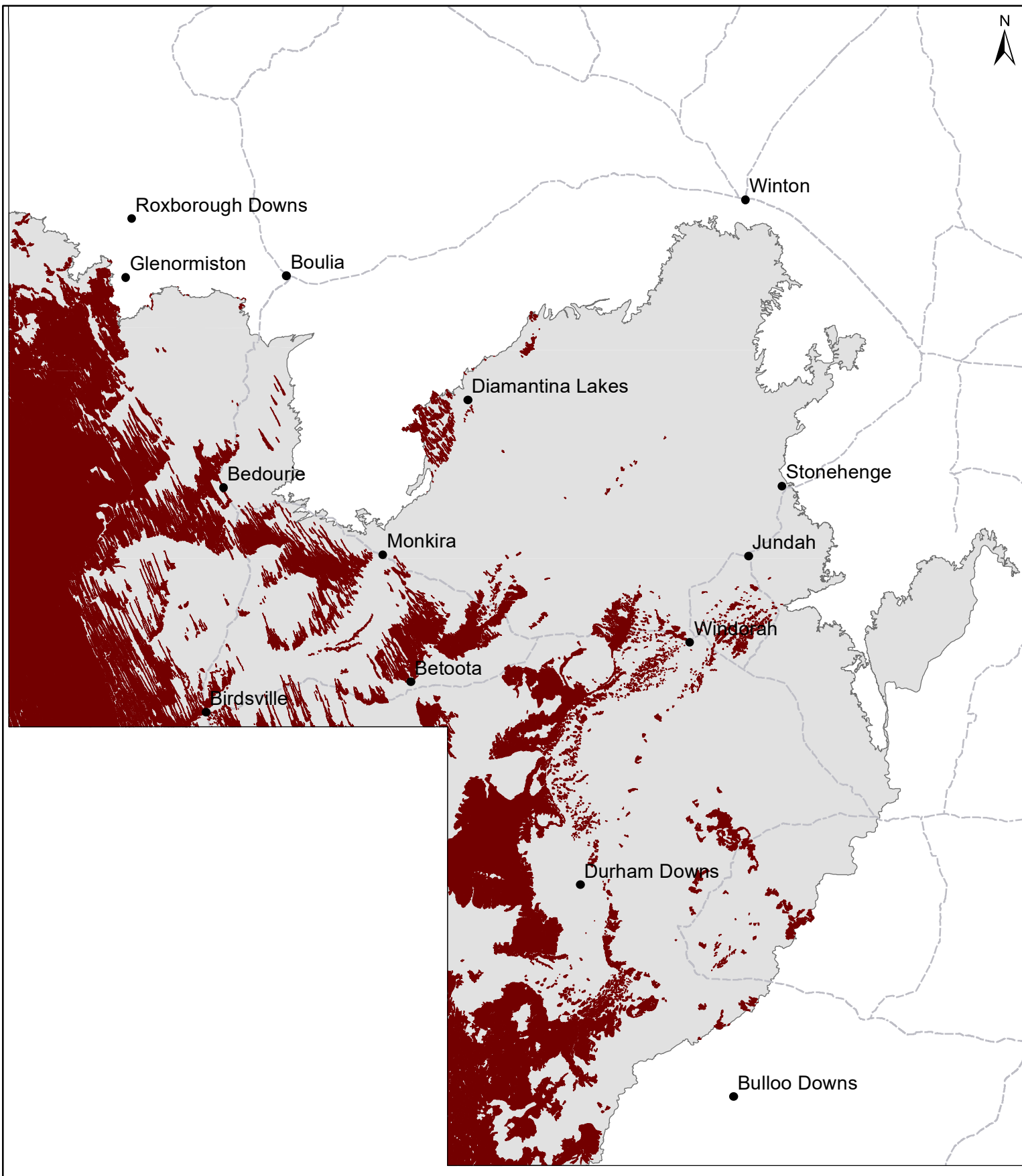
Regional Ecosystems

5.3.13b, 5.3.14, 5.6.1, 5.6.1x1, 5.6.2, 5.6.3, 5.6.4, 5.6.5a-b, 5.6.7, 5.6.8, 5.6.8a-b.

WARLUS part land systems

I	II	III	IV	V	VI
D1, D2, D3, D4, D5, D6, D7, D8	D1, D2, D3, D4				D1, D2

CC12 Sand dune country



Area of land type in region: 20%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 15%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**

Jump-ups / dissected residuals



General description

Actively eroding dissected low hills, mesas, buttes and tablelands, and scarps that form ranges with shallow soils and significant stone pavements. Slopes and flanks generally sparsely vegetated with hummock and tussock grasses. Tops, gullies and lower flanks usually timbered.

Jump-ups cover about 21% of the Channel Country.

Landform

Low hills, mesas, buttes and tablelands, and scarps.

Woody vegetation

Mulga, gidgee, bastard mulga, beefwood, mineritchie, lancewood, dead finish, bendee, dwarf needlewood, snappy gum, Normanton box, witchetty bush, turkey bush, Georgina gidgee, silver-leaved ironbark, tea tree, ghost gum.

Expected pasture composition

* Denotes non-native "Expected Pasture Composition" species.

Preferred

Spinifex, kangaroo grass, neverfail, silky umbrella grass, mulga Mitchell, cotton panic.

Intermediate

Woollybutt, five-minute grass, lemon-scented grass, woollybutt wanderrie, mountain wanderrie.

Non-preferred

Pencil caustic bush, hard burrs.

Annual grasses

Australian dropseed. Kerosene grass (non-preferred).

Common forbs

Foxtails, abutilon, copperburrs, soft roly poly, sida.

Suitable sown pasture

Not suitable for sown pastures.

Introduced weeds

None

Soil

Very shallow lithosols with exposed rock and gibber stone cover, through to desert loams and shallow sandy red earths often with in some areas.

Description

Surface: Hard-setting and crusting, often with stone and gravel cover, **Surface texture:** sandy loam, **Subsoil texture:** weathered parent material.

Features

Eroded sediments and sandstones. Limestone outcrops. Limestone fragments in red soils.

Water availability

Very low.

Rooting depth

Very shallow to shallow.

Infiltration

Very low. High proportion of run-off following 5 mm of rain, even under low intensity rainfall. Run-off contributes to neighbouring land types.

Fertility

Very low.

Salinity

Very low.

Sodicity

Non-sodic.

pH

Acidic loams. Shallow red soils fair to very high at the surface decreasing rapidly to low values down the profile.

Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 175 – 390 mm				
Pasture type	Median tree cover (TBA m ² /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	60 - 550	10%	53 - 487
	<1 TBA 1 FPC	> 30 - 320	10%	< 91 – 974

Enterprise

Rarely grazed.

Land use and management recommendations

- These lands are generally unproductive but are of value for water-shedding and recreation.
- Maximise ground cover to reduce soil erosion, especially on slopes.
- These areas provide good run-off for adjacent country.
- Provides shade.

Land use limitations

- Useful run-off country, responds quickly to rainfall.
- Rarely grazed by cattle, except on lower slopes and gullies.
- Low palatability of perennial pastures.
- Limited top feed.
- Poisonous plants including pencil caustic, and Georgina gidgee within the Georgina basin.

Conservation features and related management

- Habitat for rare and threatened yellow footed rock wallaby, kowari and grey falcons.
- High density of raptors with nesting sites.
- Soils subject to sheet and gully erosion in some areas.
- Some areas require mosaic burning to retain diversity and restrict wildfires.

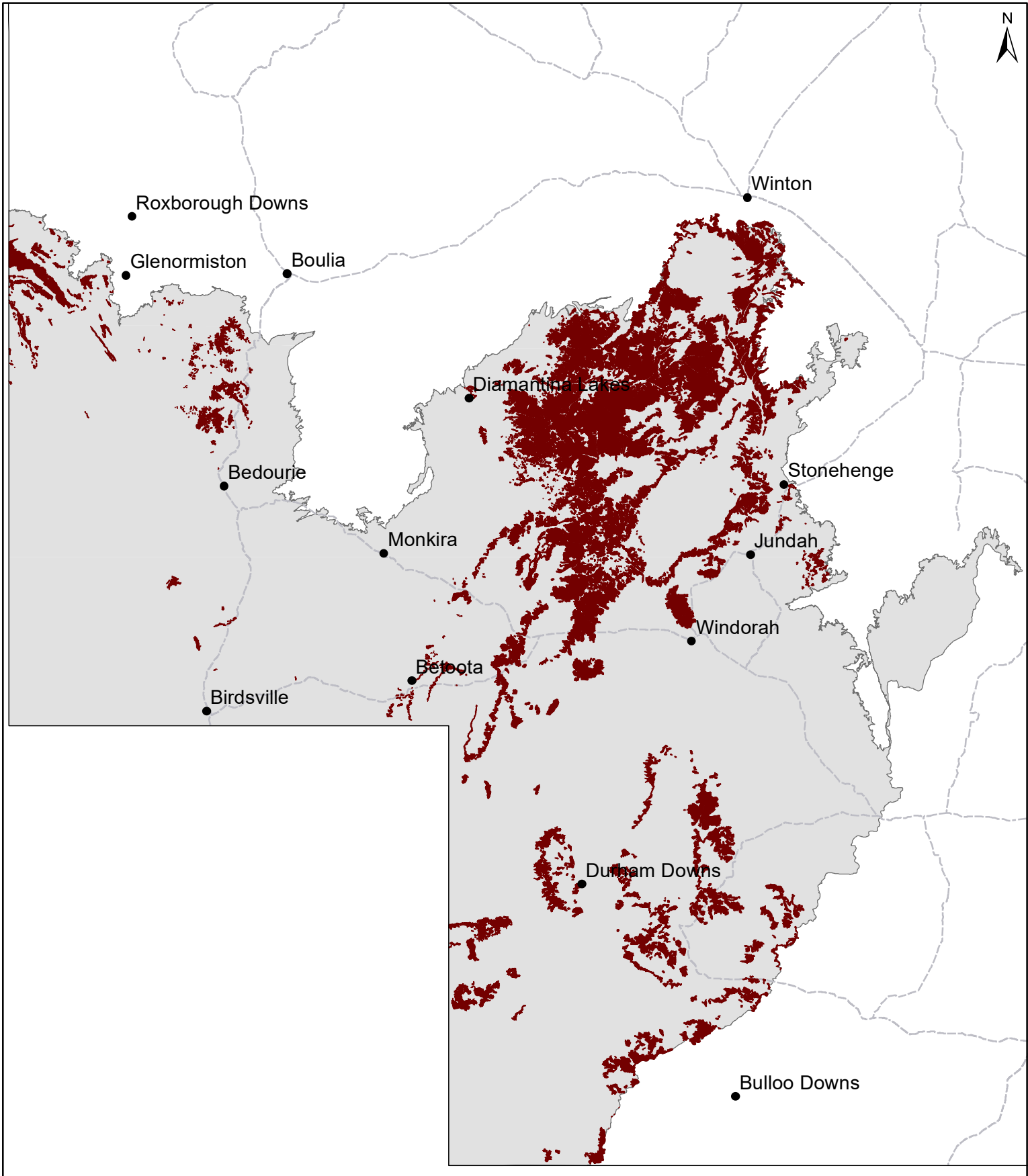
Regional Ecosystems

5.5.4, 5.5.4x1, 5.5.5, 5.7.1, 5.7.12, 5.7.14, 5.7.14x1, 5.7.15, 5.7.2, 5.7.3, 5.7.4, 5.7.5, 5.7.9, 5.9.1, 5.9.1a, 5.9.2.

WARLUS Part Land systems

I	II	III	IV	V	VI
R1, R2, R3, R4, R5, R6	R1, R2, R3, R4, R5, R6, R7, R8	R1, R2, R3	R1, R2, R3, R4	R1, R2, R3, R4	R1, R2, R3, R4, R5

CC13 Jump-ups / dissected residuals



Area of land type in region: 10%
Median rainfall (region): 151 – 390 mm
Average rainfall (region): 187 – 429 mm
Area of land type with FPC: 55%
Median FPC: 5%
Median TBA: 2 m²/ha



**Queensland
Government**