

## Northern Gulf Region Plant Index

Common name	Scientific name	Page
Abingdon clover	<i>Alysicarpus</i> sp.	NG10
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<b>Common name</b>	<b>Scientific name</b>	<b>Page</b>
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Caatinga stylo/s*	<i>Stylosanthes seabrana</i>	NG01, NG03, NG09
canegrass	<i>Ophiuros exaltatus</i>	NG01, NG06
Caribbean stylo/s*	<i>Stylosanthes hamata</i> (cvv. Verano, Amigo)	NG03, NG04, NG07, NG10, NG11, NG12, NG13, NG14, NG15
chinee apple*	<i>Ziziphus mauritiana</i>	NG03, NG04, NG07, NG10, NG13
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Cooktown ironwood	<i>Erythrophleum chlorostachys</i>	NG12, NG13, NG14
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creeping bluegrass*	<i>Bothriochloa insculpta</i> cvv. Bisset, Hatch	NG01, NG09
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Darwin woollybutt	<i>Eucalyptus miniata</i>	NG05, NG12
dead finish	<i>Archidendropsis basaltica</i>	NG13
desert bluegrass see forest bluegrass	<i>Bothriochloa ewartiana</i>	
Desmanthus*	<i>Desmanthus virgatus</i>	NG01, NG03, NG09
emu apple	<i>Owenia acidula</i>	NG13
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fringe rush	<i>Fimbristylis littoralis</i>	NG06
<i>Gardenia scabrella</i>	<i>Gardenia scabrella</i>	NG11
Georgetown box	<i>Eucalyptus microneura</i>	NG04, NG14

<b>Common name</b>	<b>Scientific name</b>	<b>Page</b>
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giant grey spinifex	<i>Triodia longiceps</i>	
giant speargrass	<i>Heteropogon triticeus</i>	NG03, NG04, NG07, NG08, NG09, NG10, NG11, NG12, NG14, NG15
golden beard grass	<i>Chrysopogon fallax</i>	NG01, NG02, NG03, NG04, NG07, NG08, NG10, NG11, NG12, NG13, NG14, NG15
grader grass*	<i>Themeda quadrivalvis</i>	NG01, NG03, NG04, NG09, NG13
grevilleas	<i>Grevillia</i> spp.	NG08, NG09, NG11
grey box	<i>Eucalyptus leptophleba</i>	NG03, NG07, NG15
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gum-topped bloodwood	<i>Corymbia erythrophloia</i>	NG04, NG09, NG10
guttapercha	<i>Excoecaria parvifolia</i>	NG02, NG07, NG14
<i>Homoranthus tropicus</i>	<i>Homoranthus tropicus</i>	NG14
Howitt's box	<i>Eucalyptus howittiana</i>	NG12
hyptis*	<i>Hyptis suaveolens</i>	NG03, NG07
Indian couch*	<i>Bothriochloa pertusa</i>	NG01, NG09, NG10, NG11
ironwood	<i>Acacia excelsa</i>	NG13
<i>Jedda multicaulis</i>	<i>Jedda multicaulis</i>	NG11
kangaroo grass	<i>Themeda triandra</i>	NG01, NG08, NG09, NG11, NG13, NG15
kurrajong	<i>Brachychiton vitifolius</i>	NG14
lancewood	<i>Acacia shirleyi</i>	NG05
lantana*	<i>Lantana camara</i>	NG09
<i>Labichea brassii</i>	<i>Labichea brassii</i>	NG11, NG12
lemon-scented grass	<i>Cymbopogon bombycinus</i>	NG01, NG05, NG08, NG09, NG10, NG11, NG15
leucaena*	<i>Leucaena leucocephala</i>	NG01, NG09
long-awn wanderrie grass	<i>Eriachne armitii</i>	NG02, NG04, NG12, NG13, NG14
long-fruited bloodwood	<i>Corymbia polycarpa</i>	NG13
lovegrass/es	<i>Eragrostis</i> spp.	NG05, NG09, NG12, NG13, NG14, NG15

<b>Common name</b>	<b>Scientific name</b>	<b>Page</b>
<i>Macropteranthes montana</i>	<i>Macropteranthes montana</i>	NG14
marine couch	<i>Sporobolus virginicus</i>	NG06
messmate	<i>Eucalyptus tetrodonta</i>	NG12, NG14
mimosa bush*	<i>Acacia farnesiana</i>	NG01, NG02, NG04, NG13
mission grass*	<i>Pennisetum polystachion</i>	NG01
mock orange	<i>Bursaria incana</i>	NG05
Molloy red box see grey box		
Moreton Bay ash	<i>Corymbia tessellaris</i>	NG03
mudgrass	<i>Pseudooraphis spinescens</i>	NG06
narrow-leaved ironbark	<i>Eucalyptus crebra</i> , <i>E. shirleyi</i>	NG01, NG05, NG08, NG09, NG10, NG11, NG12, NG15
narrow-leaved tea tree	<i>Melaleuca citrolens</i>	NG14
native couch	<i>Brachyachne convergens</i>	NG10
native millet	<i>Panicum decompositum</i>	NG01
noogoora burr*	<i>Xanthium occidentale</i>	NG01, NG03
northern rice grass	<i>Oryza australiensis</i>	NG02, NG06
northern wanderie grass	<i>Eriachne obtusa</i>	NG01, NG04, NG12, NG13, NG14, NG15
paperbarks see also broad-leaved and narrow-leaved tea tree	<i>Melaleuca nervosa</i> , <i>M. viridiflora</i> , <i>M. acacioides</i>	NG13
parkinsonia*	<i>Parkinsonia aculeata</i>	NG02, NG03, NG06, NG07
pigeon grass	<i>Setaria apiculata</i>	NG04, NG12, NG13, NG14
pincushion spinifex	<i>Triodia molesta</i>	
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Queensland bluegrass	<i>Dichanthium sericeum</i>	NG02, NG09, NG10
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rare panic	<i>Paspalidium rarum</i>	NG04, NG12, NG13, NG14
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<b>Common name</b>	<b>Scientific name</b>	<b>Page</b>
reedgrass	<i>Arundinella nepalensis</i>	NG02
Rhodes grasses*	<i>Chloris</i> spp.	NG02
rice grass see northern rice grass	<i>Oryza australiensis</i>	
rubbervine*	<i>Cryptostegia grandiflora</i>	NG01, NG03, NG04, NG06, NG07, NG09
samphire	<i>Tecticornia</i> spp.; <i>Sarcornia</i> spp.; <i>Halosarcia</i> spp	NG06
sandstone panic	<i>Cleistochloa subjuncea</i>	NG08
sedges	<i>Cyperus</i> spp., <i>Fimbristylis</i> spp.	NG06
Shrubby stylo/s*	<i>Stylosanthes scabra</i> cvv. Seca, Siran	NG03, NG04, NG07, NG08, NG10, NG11, NG12, NG13, NG14, NG15
silky browntop	<i>Eulalia aurea</i>	NG01, NG02, NG03, NG07, NG08, NG09, NG10, NG11, NG15
silky oil grass see lemon-scented grass	<i>Cymbopogon bombycinus</i>	
silkytop grass	<i>Mnesithea formosa</i>	NG04, NG08, NG12, NG13, NG14
silver-leaved ironbark	<i>Eucalyptus melanophloia</i>	NG08
slender chloris	<i>Chloris divaricata</i>	NG06
slender wanderrie grass	<i>Eriachne ciliata</i>	NG05, NG08
soap tree	<i>Alphitonia excelsa</i>	NG05
soft spinifex	<i>Triodia pungens</i>	
spike rushes	<i>Eleocharis</i> spp.	NG06
spinifex see also soft, giant grey, pincushion	<i>Triodia</i> spp.	NG05, NG08
stylos* see Caribbean, Caatinga, Shrubby	<i>Stylosanthes</i> spp.	NG10
tea tree/s see also paperbarks	<i>Melaleuca</i> spp.	NG15
terminalia see also arid peach	<i>Terminalia</i> spp.	NG02, NG04, NG07
<i>Themeda arguens</i>	<i>Themeda arguens</i>	NG08
thornapple*	<i>Datura stramonium</i>	NG10
twirly windmill grass	<i>Enteropogon ramosus</i>	NG02
two-coloured panic	<i>Panicum simile</i>	NG01
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<b>Common name</b>	<b>Scientific name</b>	<b>Page</b>
wait-a-while	<i>Capparis lasiantha</i>	NG13, NG14
wattles	<i>Acacia</i> spp.	NG08, NG11, NG12, NG14, NG15
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wiregrass/es	<i>Aristida</i> spp.	NG01, NG02, NG03, NG04, NG05, NG07, NG08, NG09, NG10, NG11, NG12, NG13, NG14, NG15

\* Denotes non-native species.

# Black soils on basalt and granite



<b>Landform</b>	Undulating to gently undulating plains and rises formed on predominantly basalt but also granite and granodiorite.
<b>Woody vegetation</b>	Treeless plains with scattered black tea tree scrub; or open mountain coolibah, bloodwood and narrow-leaved ironbark woodlands. Generally understory is absent.
<b>Expected pasture composition</b>	<p><i>* Denotes non-native "Expected Pasture Composition" species.</i></p> <p><i>Bare ground or little grass cover occurs on the hard rock rubble of lava flows.</i></p>
Preferred	Angleton bluegrass* (naturalised), couch grass, forest bluegrass, kangaroo grass, black speargrass.
Intermediate	Pitted bluegrass, silky browntop, canegrass, golden beard grass, lemon-scented grass, native millet.
Non-preferred	Wiregrasses, northern wanderrie grass.
Annual grasses	Comet grass, Flinders grass, two-coloured panic. Non-preferred species include asbestos grass.
<b>Suitable sown pastures</b>	Angleton grass, Indian couch, creeping bluegrass, butterfly pea, leucaena, Caatinga stylo, desmanthus.
<b>Introduced weeds</b>	Mimosa bush, rubbervine, Noogoora burr, grader grass, mission grass.
<b>Soil</b>	Massive black and brown earths; sometimes cracking.
Description	<b>Surface:</b> Self-mulching; <b>Surface texture:</b> medium clay; <b>Subsoil texture:</b> medium to heavy clay.

**Features**

Slight gilgai development. High moisture holding capacity. Slow internal drainage. Carbonate concretions at depth. Black basalt soils can have high boulder coverage.

**Water availability**

High

**Fertility**

High (basalt-derived soils); moderate nitrogen (5 mg/kg); moderate phosphorus (11 mg/kg); high potassium (1.0 cmol /kg).

Moderate (granite-derived soils); moderate nitrogen (5 mg/kg); moderate phosphorus (6 mg/kg); moderate potassium (0.7 cmol /kg).

**Salinity**

Non-saline

**Sodicity**

Non-sodic

**pH**

Neutral (7.0) surface increasing alkalinity 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 663 – 742 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1250 - 1460	30%	6.7 – 7.8
	6 TBA 15 FPC	690 - 980	30%	10 – 14

**Enterprise**

Breeding and growing.

**Land use and management recommendations**

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody weeds (e.g. rubbervine).

**Land use limitations**

- Internal drainage may be slow leaving soils prone to waterlogging.
- Basalt soils have rocky profile throughout.
- Narrow range of optimum moisture for tillage and traffic.

**Conservation features and related management**

- Largely restricted to the south-west of the Einasleigh bioregion.
- Subject to high grazing pressure.
- Subject to weed infestation by rubbervine (*Cryptostegia grandiflora*) and grader grass (*Themeda quadrivalvis*) and invasive exotic weed species such as mimosa (*Acacia farnesiana*) that may change the community to a tall open shrubland.

**Regional Ecosystems**

9.3.10a-b, 9.3.11a.

**Land system, Local Pasture Unit**

Rosella (59) (Perry *et al* 1964); LPU 28 (Tothill and Gillies 1992).

# NG01 Black soils on basalt and granite



Area of land type in region: 0.005%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 62%  
Median FPC: 15%  
Median TBA: 6 m<sup>2</sup>/ha



**Queensland**  
Government



# Coolibah country



<b>Landform</b>	Riverine lightly timbered floodplains that are seasonally inundated.
<b>Woody vegetation</b>	Open coolibah grassy woodland. Associated with whitewood, terminalia, ghost gum and guttapercha.
<b>Expected pasture composition</b>	<i>* Denotes non-native "Expected Pasture Composition" species.</i>
Preferred	Silky browntop, forest bluegrass, Queensland bluegrass, black speargrass, golden beard grass, plume sorghum.
Intermediate	Pitted bluegrass, Rhodes grasses, bull Mitchell grass, bottlewasher grasses, northern rice grass, twirly windmill grass.
Non-preferred	Wiregrasses, reedgrass.
Annual grasses	Button grass, long-awn wanderrie, Flinders grass. Non-preferred species include asbestos grass.
<b>Suitable sown pastures</b>	Not suitable for sown pastures.
<b>Introduced weeds</b>	Parkinsonia, mimosa bush.
<b>Soil</b>	Cracking and calcareous clays. Frequently there is a thin crust of fine soil/sand on the surface. Colours range from dark grey to olive-brown to red-yellow. Commonly interspersed with alluvial soils along stream, river and creek beds.
Description	<b>Surface:</b> Variable gravel cover, sometimes with self-mulching surfaces; <b>Surface texture:</b> Fine sand/silt; <b>Subsoil texture:</b> sandy loams to heavy clays.
Features	Subsoils are massive silty clays or heavy clays that can be mottled at depth.

Water availability

High

Rooting depth

0.1–1 m.

Fertility

Moderate. Low to moderate nitrogen (6 mg/kg); low to moderate phosphorus (4 mg/kg); high potassium (0.3 cmol /kg).

Salinity

Low

Sodicity

Moderate

pH

Neutral (7.0) at surface.

### Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 544 – 1297 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	560 - 2400	25%	4.9 - 21
	6 TBA 15 FPC	290 - 1280	25%	9.1 – 41

### Enterprise

Breeding herds.

### Land use and management recommendations

- Strategic burning (late dry hot burn) to manage woody weeds (e.g. parkinsonia).
- Phosphate supplements are required in the wet season.
- These areas are preferentially grazed and require cattle control to prevent over grazing and degradation of areas.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.

### Land use limitations

- Seasonal inundation.
- Uncontrolled grazing (cattle, pigs, wallabies) leads to overgrazing of these areas with subsequent loss of 3P grasses and weed invasions.
- Regrowth and high shrub densities can limit productivity.

### Conservation features and related management

- Subject to very high grazing pressure, particularly during wet season.
- This land type includes a variety of seasonal wetlands significant as feeding sites for water birds.

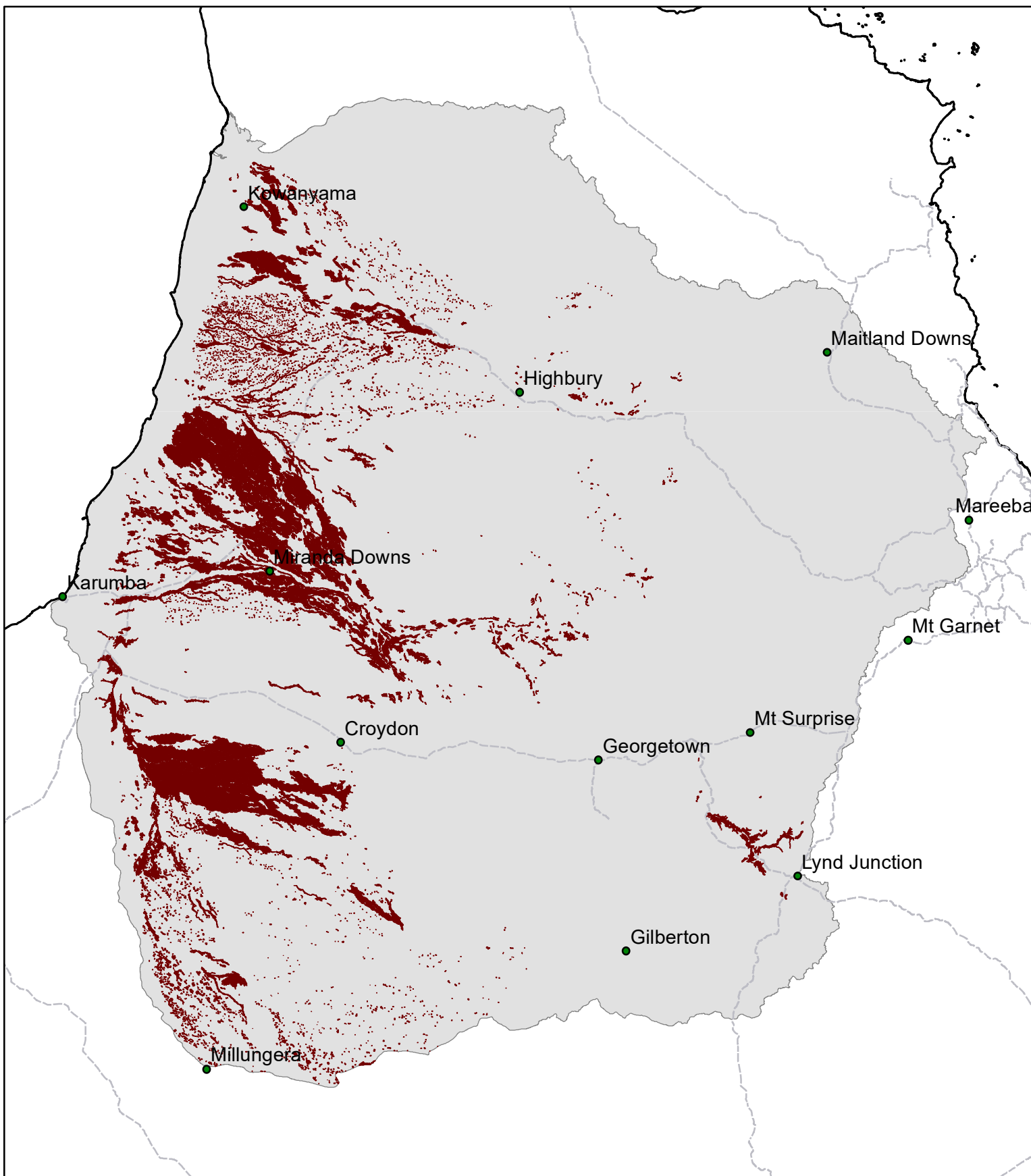
### Regional Ecosystems

2.3.11, 2.3.13, 2.3.15, 2.3.17a-b, 2.3.19, 2.3.27x2, 2.3.33a-b, 2.3.42a-c, 2.3.51, 2.3.55b-c, 2.3.61a-c, 2.3.63, 2.3.9, 2.4.4a, 3.3.35, 3.3.37a, 3.3.46, 9.3.19a.

### Land system, Local Pasture Unit

Glenore (50) (Perry *et al* 1964); LPU 67 (Tohill and Gillies 1992).

# NG02 Coolibah country



Area of land type in region: 5%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 80%  
Median FPC: 15%  
Median TBA: 6 m<sup>2</sup>/ha



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# Frontage



<b>Landform</b>	Level plains.
<b>Woody vegetation</b>	Grey box, Moreton Bay ash, ghost gum and broad-leaved carbeen woodlands.
<b>Expected pasture composition</b>	* Denotes non-native "Expected Pasture Composition" species.
Preferred	Black speargrass, forest bluegrass, golden beard grass, silky browntop, giant speargrass.
Intermediate	Pitted bluegrass.
Non-preferred	Wiregrasses.
Annual grasses	Comet grass.
<b>Suitable sown pastures</b>	Buffel grass on lighter soils. Urochloa, Desmanthus, Shrubby, Caribbean and Caatinga stylos on heavier soils.
<b>Introduced weeds</b>	Castor oil bush, rubbervine, calotrope, parkinsonia, Noogoora burr, hyptis, bellyache bush, chinee apple, grader grass.
<b>Soil</b>	Alluvial loams.
Description	<b>Surface:</b> Fine, non-cracking; <b>Surface texture:</b> silty loam; <b>Subsoil texture:</b> loam to clay.
Features	Depth to clay is variable in these land types.

Water availability

Moderate

Fertility

High. Low nitrogen (0.08%); high phosphorus (>20 mg/kg); high potassium (0.45 cmol /kg).

Salinity

Non-saline

Sodicity

Non-sodic

pH

Slightly acidic (6.0) throughout 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 716 – 1297 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha (FPC %))	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1860 - 2560	30%	3.8 – 5.2
	7 TBA 18 FPC	930 - 1390	30%	7 – 11

### Enterprise

Breeding and growing.

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Frontage areas are preferentially grazed and require cattle control to prevent over grazing and degradation of areas.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody weeds (e.g. rubbervine).

### Land use limitations

- Uncontrolled grazing (cattle, pigs, wallabies) leads to overgrazing of these areas with subsequent loss of 3P grasses and weed invasions.

### Conservation features and related management

- Subject to erosion and weed infestation due to high grazing pressure.
- Subject to weed infestation by rubbervine (*Cryptostegia grandiflora*), lantana and grader grass (*Themeda quadrivalvis*).
- Hollows that occur in older trees provide habitat for arboreal mammals.

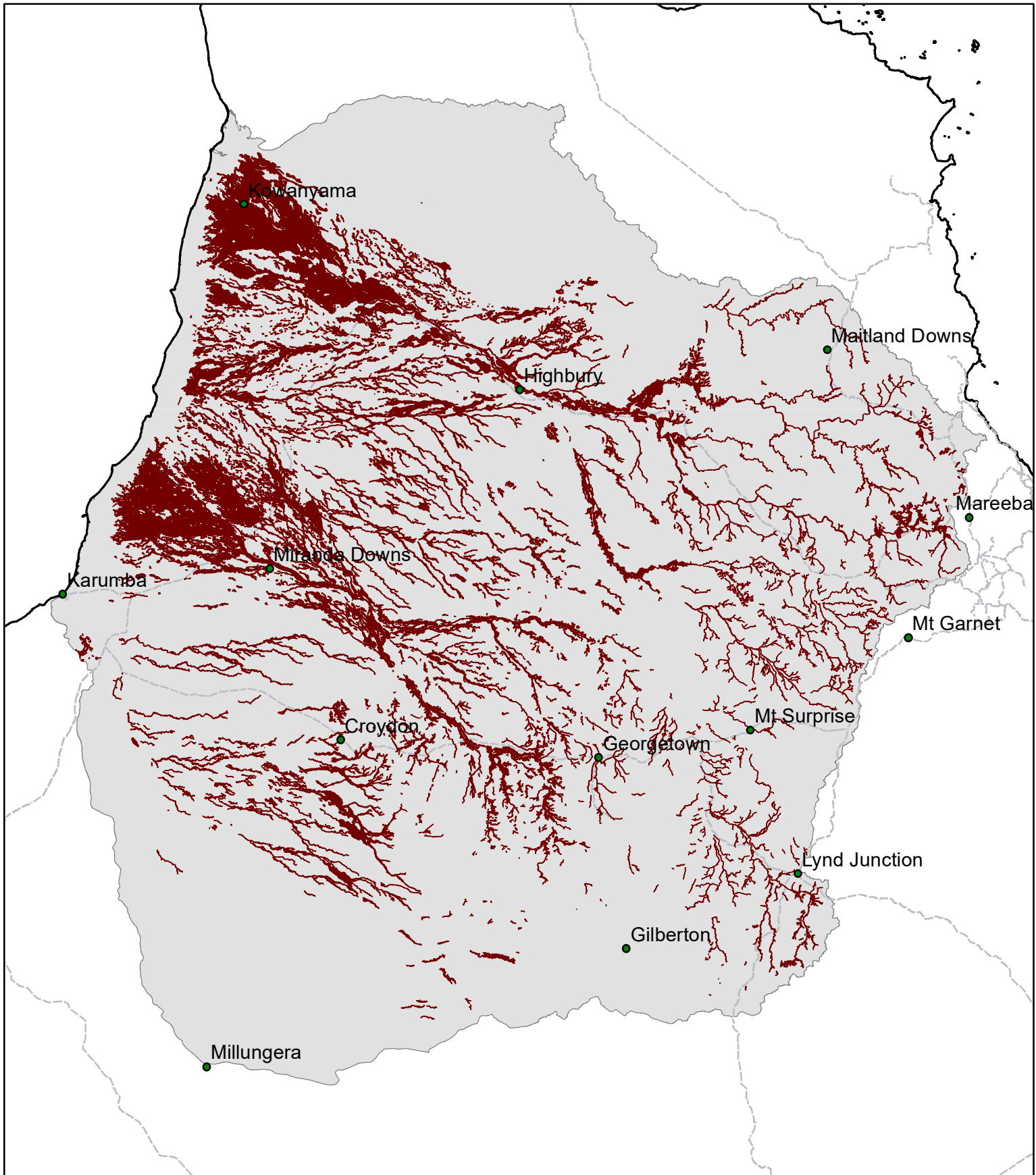
### Regional Ecosystems

2.3.21f-j, 2.3.22, 2.3.24a-c, 2.3.26a-f, 2.3.41, 2.3.44a-c, 2.3.44e, 2.3.52, 2.3.53, 2.3.54, 2.3.62a-b, 2.3.68, 2.3.69a, 2.3.6a-b, 2.3.72a-b, 9.3.13, 9.3.14a-b, 9.3.15, 9.3.16, 9.3.20, 9.3.21, 9.3.26, 9.3.3c-e, 9.3.6a.

### Land system, Local Pasture Unit

Gilbert (54), Miranda (51) (Perry *et al* 1964).

# NG03 Frontage



Area of land type in region: 8%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 82%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



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# Georgetown granites



<b>Landform</b>	Rolling granite plains.
<b>Woody vegetation</b>	Georgetown box open woodlands with terminalia, gum-topped bloodwood and understorey of breadfruit, bauhinia, quinine and corkwood wattle.
<b>Expected pasture composition</b>	<i>*Denotes non-native "Expected Pasture Composition" species.</i> Pastures often dominated by <i>Aristida</i> species.
<b>Preferred</b>	Black speargrass, forest bluegrass, golden beard grass, plume sorghum, giant speargrass.
<b>Intermediate</b>	Northern wanderrie grass, cotton panic, wiregrasses.
<b>Non-preferred</b>	
<b>Annual grasses</b>	Silkytop grass, fire grass, rare panic, comet grass, comb finger grass, pigeon grass, long-awn wanderrie grass, fire grass. Non-preferred species include grader grass*.
<b>Suitable sown pastures</b>	Oversow with legumes – Caribbean and Shrubby stylos.
<b>Introduced weeds</b>	Chinee apple, mimosa bush, rubbervine, grader grass.
<b>Soil</b>	Brown soils of light texture, earthy sands, and texture contrast soils.
<b>Description</b>	<b>Surface:</b> Originally sandy, loose surface; <b>Surface texture:</b> sandy loam; <b>Subsoil texture:</b> medium clay.



**Features**

Large granite outcrops. Sheet erosion is widespread. Often associated with red duplex land type.

**Water availability**

Moderate

**Fertility**

Moderate; low nitrogen (0.02%); moderate phosphorus (5 mg/kg); low potassium (0.15 cmol /kg).

**Salinity**

Non-saline

**Sodicity**

Non-sodic

**pH**

Slightly acid (6.0) throughout 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 663 – 927 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1720 - 2420	20%	6.0 – 8.5
	7 TBA 18 FPC	820 - 1600	20%	10 – 19

**Enterprise**

Breeding and growing.

**Land use and management recommendations**

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody thickening (e.g. breadfruit).
- Phosphate supplements are required in wet season.

**Land use limitations**

- Granite rock outcrops.
- Loss of 3 P grasses has greatly reduced the productivity potential on this land type.

**Conservation features and related management**

- Vulnerable to the invasion of exotic weed *Senna magnifolia* (weedy Cassia).

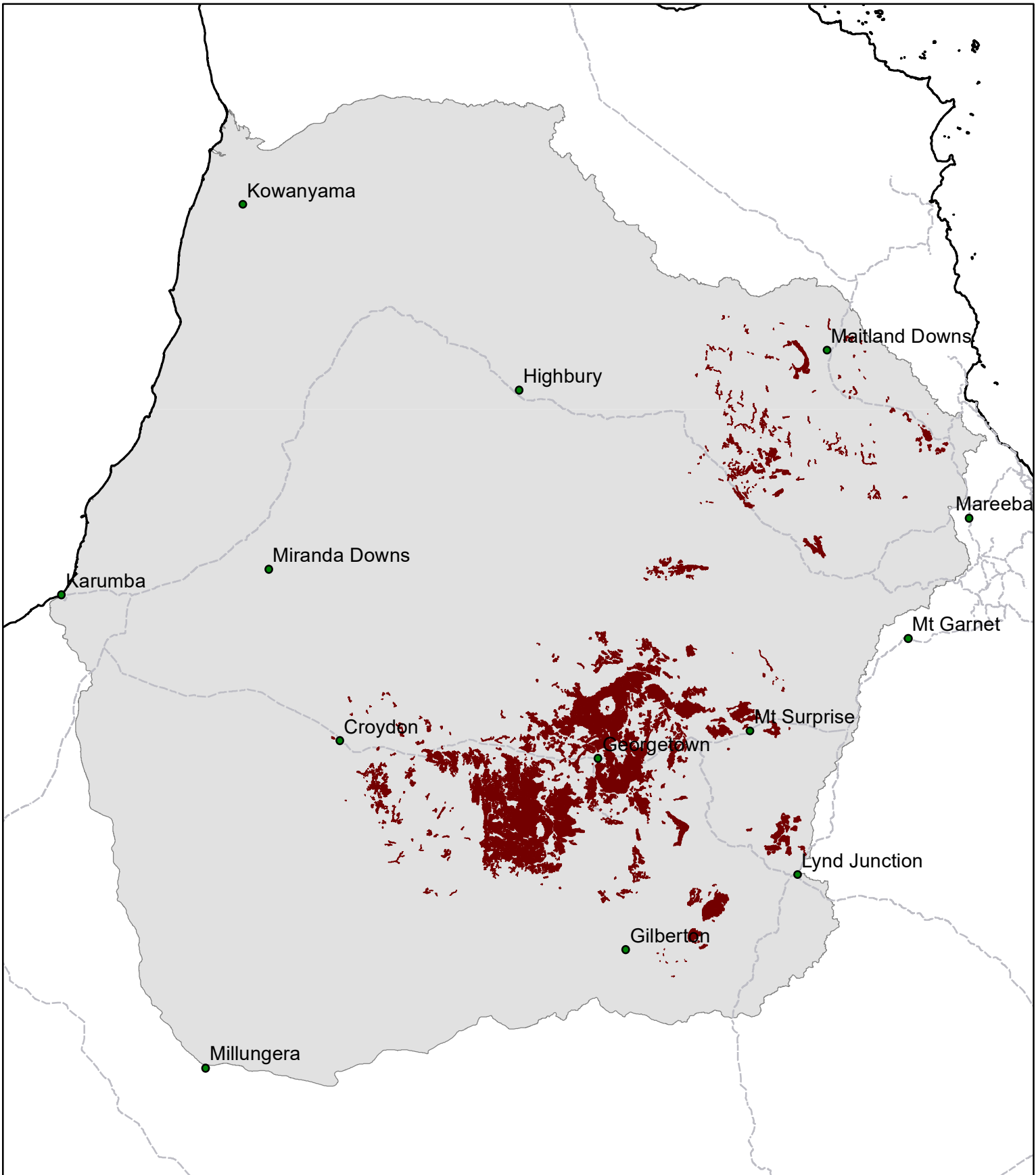
**Regional Ecosystems**

2.3.71, 7.12.55, 9.11.23a-c, 9.11.24a-b, 9.11.26a-b, 9.12.33, 9.12.36a, 9.5.10a-c.

**Land system, Local Pasture Unit**

Georgetown (38) (Perry *et al* 1964); LPU 41 (Tothill and Gillies 1992).

# NG04 Georgetown granites



Area of land type in region: 3%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 93%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
Government

# Lancewood



<b>Landform</b>	Scarps and remnant plateaus.
<b>Woody vegetation</b>	Lancewood woodland with occasional narrow-leaved ironbark and Darwin woollybutt. Quinine, mock orange and soap tree occur infrequently.
<b>Expected pasture composition</b>	<i>* Denotes non-native "Expected Pasture Composition" species. Pastures may be dominated by the annual fire grass species.</i>
<b>Preferred</b>	Forest bluegrass, lemon-scented grass, spinifex.
<b>Intermediate</b>	Wiregrasses
<b>Non-preferred</b>	
<b>Annuals</b>	Fire grass, lovegrasses, slender wanderrie grass.
<b>Suitable sown pastures</b>	Not suitable for sown pastures.
<b>Introduced weeds</b>	

## Soil

Skeletal, stony soils.

### Description

**Surface:** Variable cover of rock and gravel; **Surface texture:** sandy clay; **Subsoil texture:** fragmented bedrock.

### Features

Hard-setting, very shallow, usually stony.

### Water availability

Low

### Fertility

Low

### Salinity

Non-saline

### Sodicity

Non-sodic

### pH

Variable, slightly acid soils.

## Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 692 – 961 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	640 - 1170	15%	17 - 30
	8 TBA 20 FPC	210 - 330	15%	59 – 93

## Enterprise

Breeding

## Land use and management recommendations

- Lancewood is useful for yard rails.

## Land use limitations

- Skeletal, shallow and rocky soils limit productivity.

## Conservation features and related management

- Structural diversity in this land type provides habitat for range of fauna.
- Some areas are subject to timber harvesting.

## Regional Ecosystems

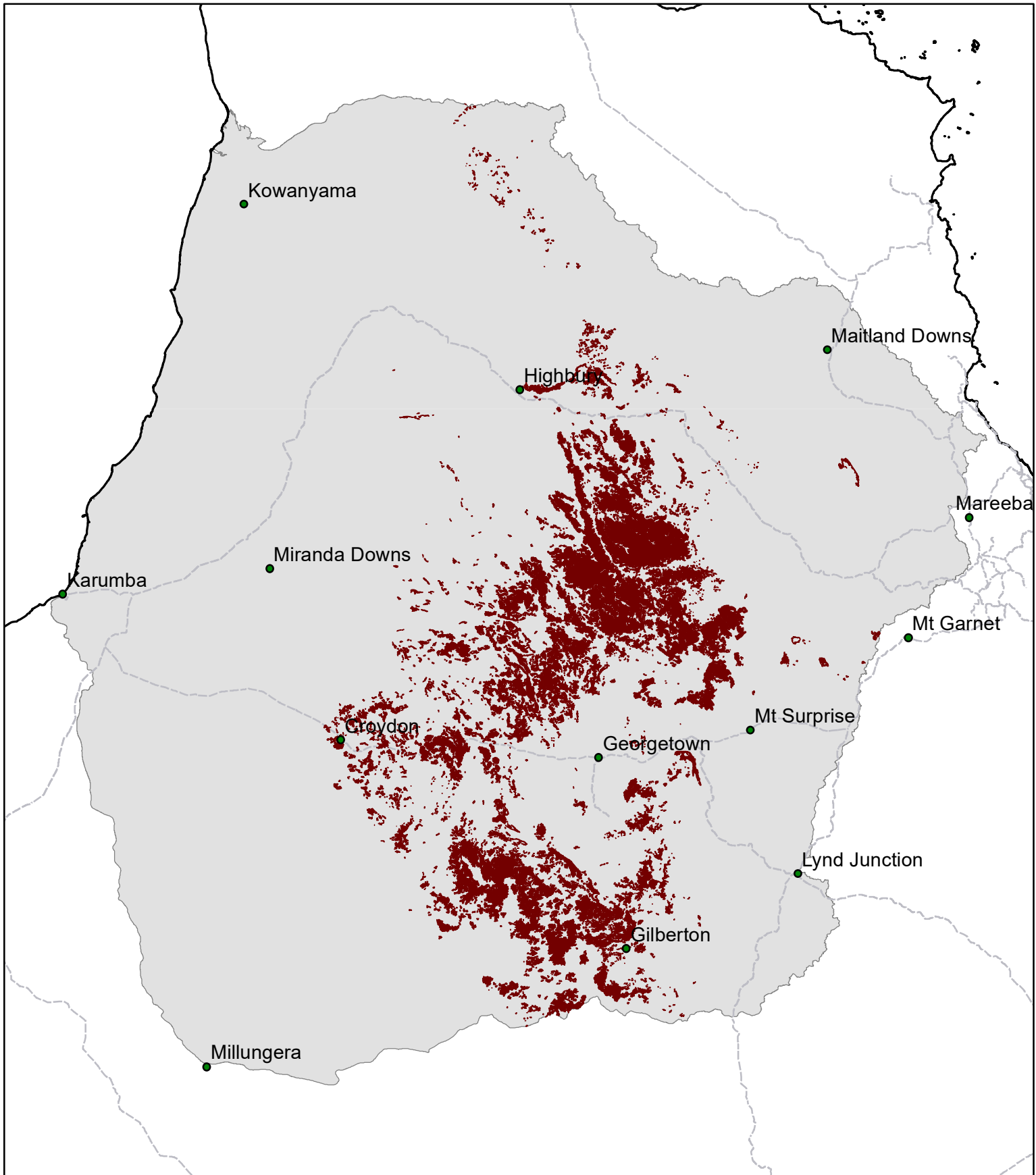
2.10.5a, 2.10.5b, 2.10.5x1, 2.10.5x4, 2.7.1, 2.7.1x2a-c, 2.7.1x3a, 2.7.1x4, 2.7.1x5, 2.7.1x6, 2.7.1x7, 2.7.2a, 2.7.2x10, 2.7.2x11, 2.7.2x2a-f, 2.7.2x3, 2.7.2x4, 2.7.2x5, 2.7.2x6, 2.7.2x8, 3.7.2, 9.10.1, 9.10.1c, 9.10.3a-c, 9.10.9, 9.11.28a-c, 9.11.30a-b, 9.12.37, 9.12.38a.

## Land system, Local Pasture Unit

Torwood (11) Perry *et al* 1964); LPU 47 (Tothill and Gillies 1992).



# NG05 Lancewood



Area of land type in region: 6%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 93%  
Median FPC: 20%  
Median TBA: 8 m<sup>2</sup>/ha



**Queensland**  
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# Marine plains



<b>Landform</b>	Level, saline coastal plains, mostly bare mud and salt flats or plains of saline clays.
<b>Woody vegetation</b>	Treeless plains.
<b>Expected pasture composition</b>	<i>*Denotes non-native "Expected Pasture Composition" species.</i>
Preferred	Marine couch, mudgrass, northern rice grass.
Intermediate	Canegrass, slender chloris.
Non-preferred	
Annual grasses	None.
Common forbs	Spike rushes, fringe rush, sedges. Samphire grows on some mud and salt flats but is not eaten.
<b>Suitable sown pastures</b>	Not suitable for sown pastures.
<b>Introduced weeds</b>	Rubbervine, parkinsonia (more elevated areas).
<b>Soil</b>	Grey and black saline, cracking clay soils (solonchaks).
Description	<b>Surface:</b> Thin salt crust; <b>Surface texture:</b> heavy clay; <b>Subsoil texture:</b> heavy clay.
Features	Carbonate nodules and/or gypsum at shallow depths.
Water availability	High

Fertility	Moderate to high. Low nitrogen (2%); high phosphorus (21 mg/kg); high potassium (2.2 cmol /kg).
Salinity	Very high.
Sodicity	Highly sodic.
pH	Neutral (6.7) at surface; increasing alkalinity 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 778 – 1297 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	3420	25%	3.4
	7 TBA 18 FPC	2890 - 3030	25%	3.9 – 4.0

### Enterprise

Breeding herds.

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Seasonal inundation provides wet season spelling in most years.
- Early dry (July) burning and overgrazing should be avoided to maintain effective ground cover at break of season.

### Land use limitations

- Regular inundation.
- Most surface water is saline, restricting grazing to short periods only during wet season when fresh water is available.
- Soils too saline for agriculture.

### Conservation features and related management

- Significant wader habitat.
- Seasonally important habitat for water birds for feeding and breeding.

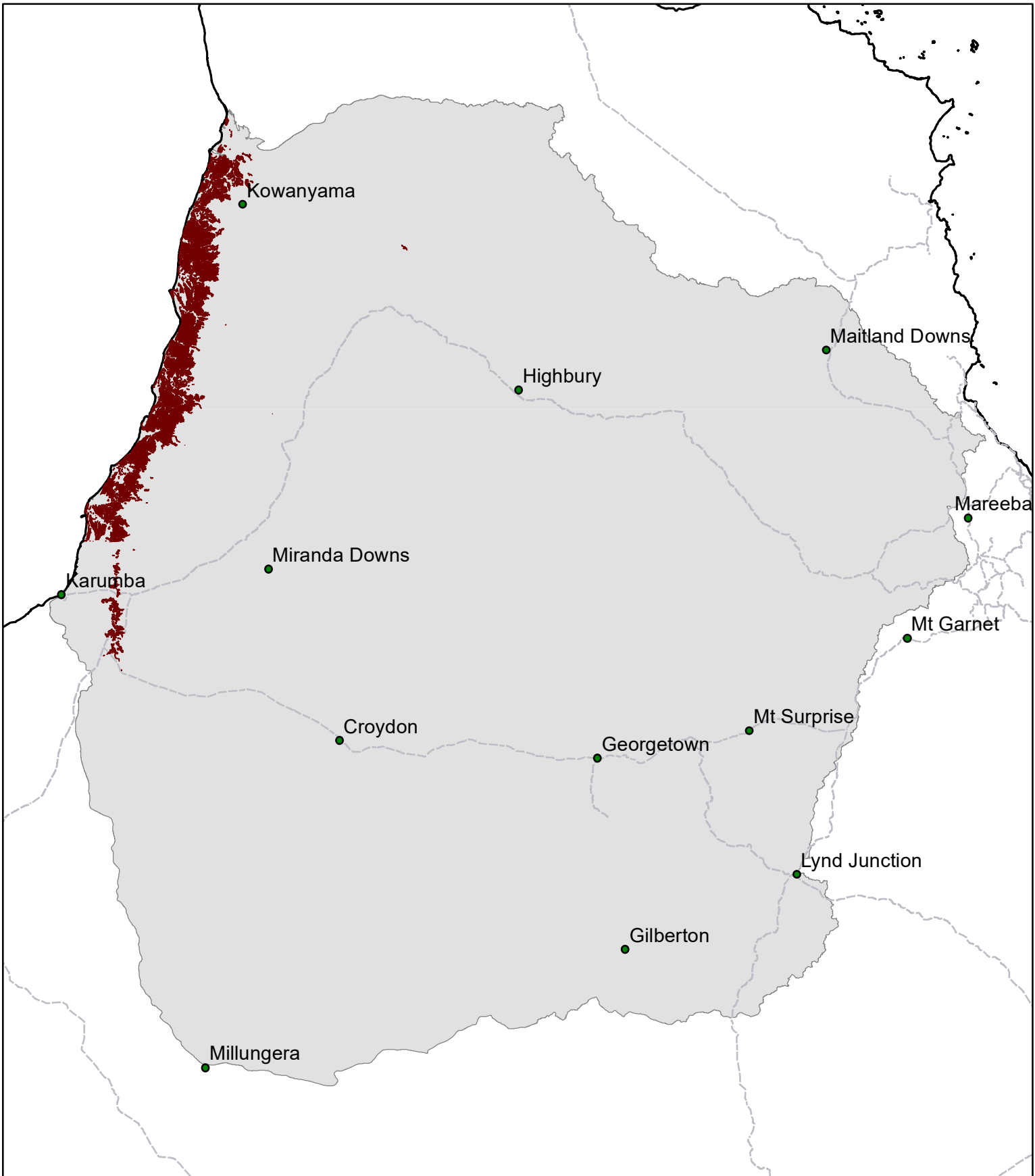
### Regional Ecosystems

7.1.1, 7.1.2a-b, 7.1.3a-c, 7.1.4a-d, 7.1.5.

### Land system, Local Pasture Unit

Carpentaria (58) (Perry *et al* 1964); LPU 131 (Tohill and Gillies 1992).

# NG06 Marine plains



Area of land type in region: 1%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 13%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
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# Old alluvials



## Landform

Level plains including abandoned stream channels, backslopes and adjacent floodplains.

## Woody vegetation

Ghost gum, bloodwood, grey box, terminalia open woodlands with breadfruit or guttapercha understorey.

## Expected pasture composition

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

### Preferred

Black speargrass, forest bluegrass, golden beard grass, silky browntop, giant speargrass.

### Intermediate

Pitted bluegrass.

### Non-preferred

Wiregrass.

### Annual grasses

Comet grass.

## Suitable sown pastures

Buffel grass, urochloa, Shrubby and Caribbean stylos.

## Introduced weeds

Rubbervine, parkinsonia, hyptis, chinee apple.

## Soil

Alluvial loams and yellow duplex soils.

## Description

**Surface:** Non-cracking; **Surface texture:** loamy clay; **Subsoil texture:** light to medium clay.

## Features

Water availability	Moderate
Fertility	Moderate
Salinity	Non-saline
Sodicity	Non-sodic
pH	Slightly acidic (6.0) throughout 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 778 – 1297 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	980 - 2040	25%	6 - 12
	7 TBA 18 FPC	460 - 890	25%	13 – 25

### Enterprise

Breeding and growing.

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody weeds (e.g. rubbervine).

### Land use limitations

- Moderate erodibility on duplex soils on steeper slopes.

### Conservation features and related management

- Subject to high total grazing pressure leading to wind erosion, scalding and weed invasion (e.g. rubbervine, hyptis).
- Significant habitat particularly for herbivores such as macropods and arboreal mammals.
- Significant habitat as drought refuge, wildlife corridors and for arboreal animals.

### Regional Ecosystems

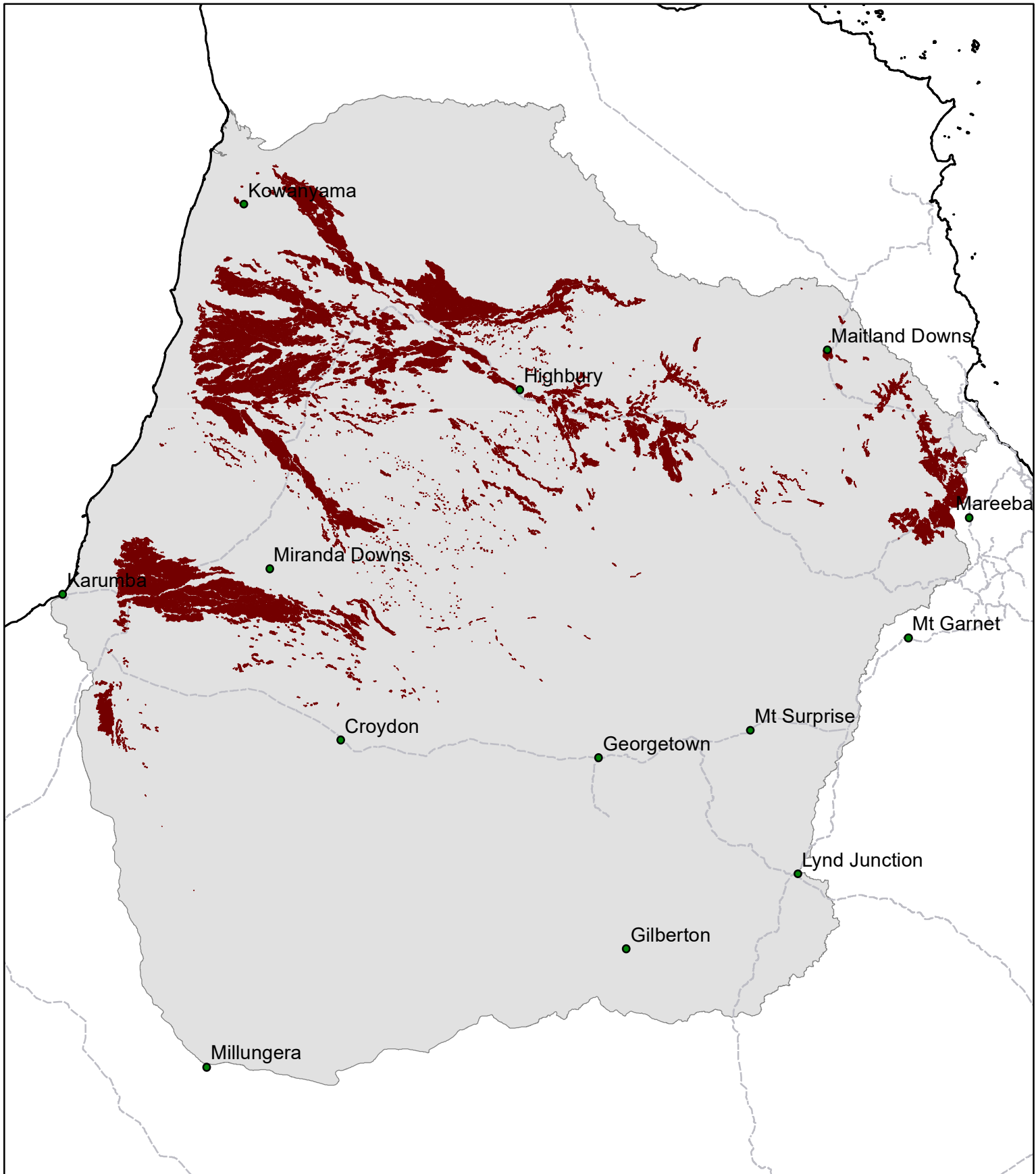
2.3.10a-c, 2.3.10e-f, 2.3.18, 2.3.21b, 2.3.21e, 2.3.40, 2.3.42e, 2.3.45, 2.3.46, 2.3.49, 2.3.55a, 2.3.56, 2.3.57, 2.3.58, 2.3.59a, 2.3.60, 2.3.66, 2.3.69b, 9.3.70, 2.4.4b, 2.5.22a-b, 2.5.23c, 9.5.9a-c.

### Land system, Local Pasture Unit

Gilbert (54), Miranda (51) (Perry *et al* 1964).



# NG07 Old alluvials



Area of land type in region: 5%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 90%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
Government

# Range soils



<b>Landform</b>	Dissected hilly country.
<b>Woody vegetation</b>	Silver-leaved ironbark, narrow-leaved ironbark and bloodwood woodland with understorey of grevilleas, breadfruit, wattles and quinine.
<b>Expected pasture composition</b>	<i>*Denotes non-native "Expected Pasture Composition" species.</i> <i>Pastures often dominated by Aristida and the annual fire grass species.</i>
<b>Preferred</b>	Black speargrass, kangaroo grass, golden beard grass, gulf bluegrass, spinifex, lemon-scented grass, giant speargrass, silky browntop, plume sorghum.
<b>Intermediate</b>	Cotton panic, sandstone panic, wiregrasses.
<b>Non-preferred</b>	
<b>Annual grasses</b>	Fire grass, comet grass, silkytop grass, slender wanderrie grass, <i>Themeda arguens</i> .
<b>Suitable sown pastures</b>	Shrubby stylos.
<b>Introduced weeds</b>	
<b>Soil</b>	Shallow soils.
<b>Description</b>	<b>Surface:</b> Variable gravel cover; sometimes hard-setting; <b>Surface texture:</b> variable, sandy clay; <b>Subsoil texture:</b> limited by underlying bedrock.



**Features** Shallow, generally stony and rocky soils.

**Water availability** Low

**Fertility** Low

**Salinity** Non-saline

**Sodicity** Non-sodic

**pH** Variable, slightly acid soils.

**Long-term carrying capacity information (A condition)**

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day

Median annual rainfall 692 – 927 mm

Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	920 - 2040	15%	10 - 21
	7 TBA 18 FPC	300 - 980	15%	20 – 65

**Enterprise**

Breeding

**Land use and management recommendations**

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody thickening (e.g. breadfruit, wattles).

**Land use limitations**

- Skeletal, shallow and rocky soils limit productivity.

**Conservation features and related management**

- Subject to degradation from high total grazing pressure and may become vulnerable to weed invasion (e.g. mimosa).
- Some areas are subject to timber harvesting.

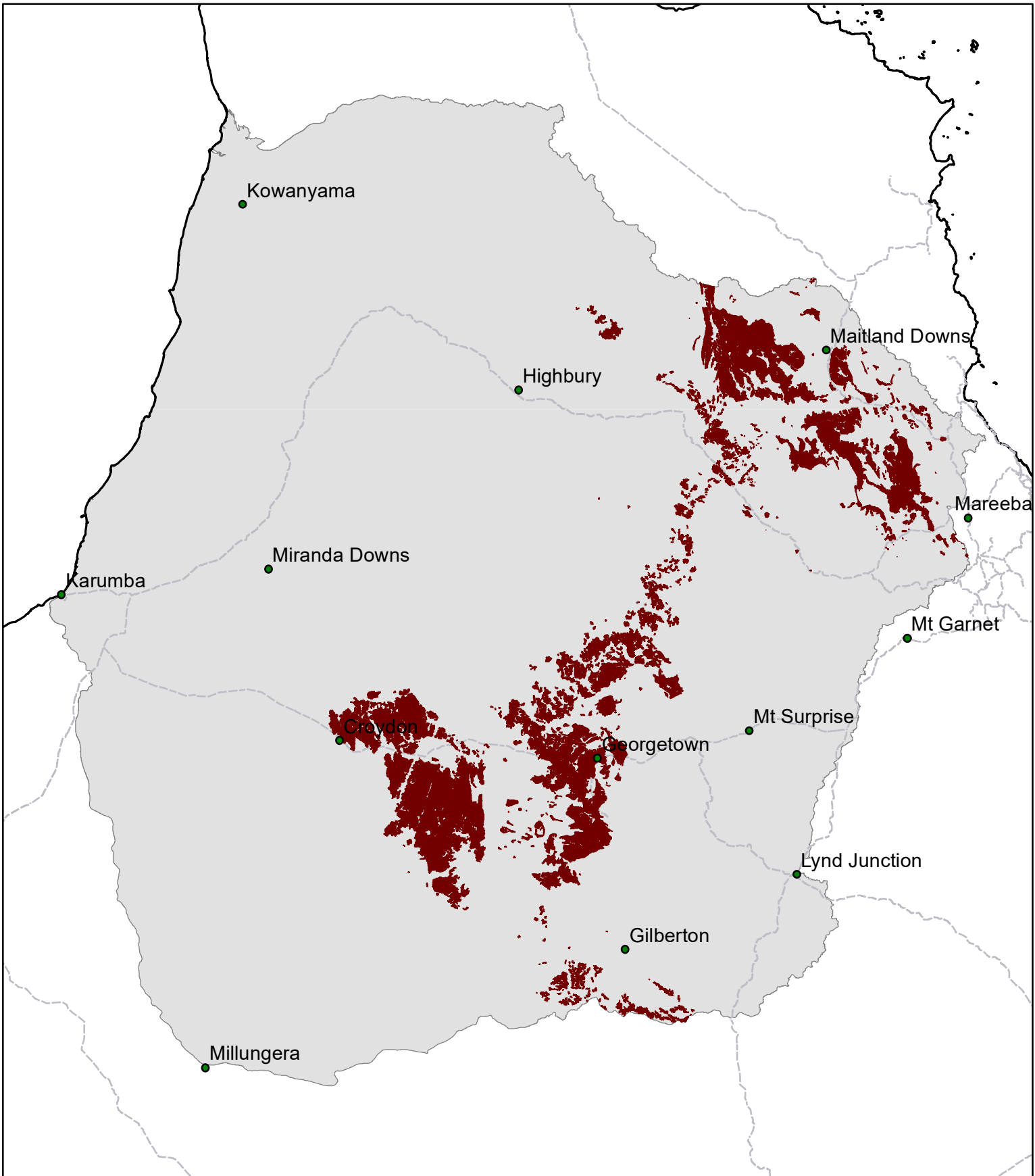
**Regional Ecosystems**

2.10.2x10a-c, 2.10.2x2, 2.10.2x3a-b, 2.10.2x5a-c, 3.12.21, 7.12.7c-d, 9.11.12, 9.11.15a-b, 9.11.16, 9.11.24c, 9.11.25, 9.12.12, 9.12.14, 9.12.15, 9.12.17, 9.12.2, 9.12.27, 9.12.29, 9.12.33a, 9.12.43a-b, 9.12.4a-c, 9.12.6a-b, 9.12.6e, 9.12.7a-c.

**Land system, Local Pasture Unit**

Ortona (10), Leichhardt (16), Belmore (17) (Perry *et al* 1964).

# NG08 Range soils



Area of land type in region: 5%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 91%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
Government

# Red basalt



<b>Landform</b>	Irregular stony plains and low hills.
<b>Woody vegetation</b>	Narrow-leaved ironbark woodlands with gum-topped bloodwood, ghost gum, grevilleas.
<b>Expected pasture composition</b>	<i>* Denotes non-native "Expected Pasture Composition" species.</i>
<b>Preferred</b>	Black speargrass, kangaroo grass, forest bluegrass, Queensland bluegrass, giant speargrass.
<b>Intermediate</b>	Silky browntop, lemon-scented grass, gulf bluegrass, pitted bluegrass, plume sorghum, Indian couch*.
<b>Non-preferred</b>	Wiregrasses.
<b>Annual grasses</b>	Fire grass, comet grass, lovegrasses.
<b>Suitable sown pastures</b>	Buffel grass, leucaena, Angleton bluegrass, creeping bluegrass, Caatinga stylo, desmanthus, butterfly pea.
<b>Introduced weeds</b>	Rubbervine, lantana, grader grass.
<b>Soil</b>	Red brown clay loams (euchrozems, krasnozems).

Description	<b>Surface:</b> Usually stony; <b>Surface texture:</b> clay loam; <b>Subsoil texture:</b> clay loam to medium clay.																									
Features	Free draining and high fertility. Rocks throughout profile.																									
Water availability	Moderate to high.																									
Fertility	High; high nitrogen (14 mg/kg); high phosphorus (40 mg/kg); high potassium (0.6 cmol /kg).																									
Salinity	Non-saline																									
Sodicity	Non-sodic																									
pH	Neutral to slightly acid (6.8) throughout profile.																									
<b>Long-term carrying capacity information (A condition)</b>	<table border="1"> <tr> <td colspan="5">Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day</td> </tr> <tr> <td colspan="5">Median annual rainfall 716 – 742 mm</td> </tr> <tr> <th>Pasture type</th> <th>Median tree cover (TBA m<sup>2</sup>/ha) (FPC %)</th> <th>Median annual pasture growth (DM kg/ha)</th> <th>Safe annual utilisation pasture growth (%)</th> <th>LTCC (ha/AE)</th> </tr> <tr> <td>Native species</td> <td>0 TBA/FPC</td> <td>1080 - 1890</td> <td>30%</td> <td>5.2 – 9.0</td> </tr> <tr> <td></td> <td>7 TBA 18 FPC</td> <td>360 - 760</td> <td>30%</td> <td>13 – 27</td> </tr> </table>	Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day					Median annual rainfall 716 – 742 mm					Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)	Native species	0 TBA/FPC	1080 - 1890	30%	5.2 – 9.0		7 TBA 18 FPC	360 - 760	30%	13 – 27
Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day																										
Median annual rainfall 716 – 742 mm																										
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)																						
Native species	0 TBA/FPC	1080 - 1890	30%	5.2 – 9.0																						
	7 TBA 18 FPC	360 - 760	30%	13 – 27																						
<b>Enterprise</b>	Breeding and growing.																									
<b>Land use and management recommendations</b>	<ul style="list-style-type: none"> <li>• Suitable for grazing of native pastures.</li> <li>• Rotational wet seasons spelling to maintain perennial pasture composition.</li> <li>• Manage grazing pressure to ensure at least 50% ground cover at break of season.</li> <li>• Strategic burning (late dry hot burn) to manage woody thickening (e.g. eucalypts).</li> <li>• Salt and sulphur supplements required in wet season.</li> </ul>																									
<b>Land use limitations</b>	<ul style="list-style-type: none"> <li>• Rocks throughout profile.</li> </ul>																									
<b>Conservation features and related management</b>	<ul style="list-style-type: none"> <li>• Subject to weed infestation by rubbervine (<i>Cryptostegia grandiflora</i>), lantana and grader grass (<i>Themeda quadrivalvis</i>).</li> </ul>																									
<b>Regional Ecosystems</b>	7.8.7a, 9.8.1a.																									
<b>Land system, Local Pasture Unit</b>	Boonderoo (60) (Perry <i>et al</i> 1964); LPU 28 (Tothill and Gillies 1992).																									

# NG09 Red basalt



Area of land type in region: 0.01%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 96%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
Government



# Red duplex



<b>Landform</b>	Irregular plains and low hills.
<b>Woody vegetation</b>	Narrow-leaved ironbark woodlands with gum-topped bloodwood, corkwood wattle and understorey currant bush and breadfruit.
<b>Expected pasture composition</b>	<i>* Denotes non-native "Expected Pasture Composition" species.</i>
<b>Preferred</b>	Forest bluegrass, Queensland bluegrass, black speargrass, giant speargrass.
<b>Intermediate</b>	Pitted bluegrass, silky browntop, golden beard grass, lemon-scented grass, gulf bluegrass, plume sorghum, Indian couch*, bottlewasher grasses, native couch.
<b>Non-preferred</b>	Wiregrass, white speargrass.
<b>Annual grasses</b>	Comet grass, fairy grass, fire grass.
<b>Suitable sown pastures</b>	Buffel grass, Shrubby and Caribbean stylos.
<b>Introduced weeds</b>	Chinee apple, thornapple.
<b>Soil</b>	Texture contrast soils (mostly red podzolics).

Description

**Surface:** Variable quartz pebbles and outcrops; **Surface texture:** loamy; **Subsoil texture:** medium clay.

Features

Water availability

Moderate

Fertility

Moderate. Low nitrogen (4 mg/kg); moderate phosphorus (9 mg/kg); high potassium (0.43 cmol /kg).

Salinity

Non-saline

Sodicity

Non-sodic

pH

Neutral (6.3) at surface; increasing alkalinity 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 716 – 833 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1400 - 2000	25%	5.8 – 8.3
	11 TBA 27 FPC	410 - 990	25%	12 – 29

**Enterprise**

Breeding and growing herds.

**Land use and management recommendations**

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody thickening (e.g. breadfruit).

**Land use limitations**

- Limit mechanical disturbance (nothing more severe than a crocodile seeder) due to the slope and fragile nature of the duplex soils.

**Conservation features and related management**

- Flowers of dominant tree species are important feed sources for nectivorous birds.

**Regional Ecosystems**

9.5.6a.

**Land system, Local Pasture Unit**

Reedy Springs (39), Kilbogrie (40) (Perry *et al* 1964); LPU 28 (Tohill and Gillies 1992).

# NG10 Red duplex



Area of land type in region: 0.1%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 55%  
Median FPC: 27%  
Median TBA: 11 m<sup>2</sup>/ha



**Queensland**  
Government



# Red earths



<b>Landform</b>	Upper slopes on level to gently undulating plains.
<b>Woody vegetation</b>	Bloodwood, narrow-leaved ironbark woodland with understorey of grevilleas, wattles and quinine.
<b>Expected pasture composition</b>	<i>* Denotes non-native "Expected Pasture Composition" species.</i>
Preferred	Golden beard grass, forest bluegrass, black speargrass, kangaroo grass.
Intermediate	Cotton panic, silky browntop, lemon-scented grass, gulf bluegrass, plume sorghum, Indian couch*, bottlewasher grasses, giant speargrass.
Non-preferred	Wiregrasses.
Annual grasses	Fire grass, comet grass, fairy grass.
<b>Suitable sown pastures</b>	Shrubby and Caribbean stylos.
<b>Introduced weeds</b>	
<b>Soil</b>	Free draining, grey to red surface grading to red clay soils.
Description	<b>Surface:</b> Loose; <b>Surface texture:</b> sandy loam; <b>Subsoil texture:</b> medium clay.
Features	Free draining. Ironstone nodules in subsoils.

Water availability

Low

Fertility

Variable, generally low. Low nitrogen (1 mg/kg); low phosphorus (4 mg/kg); low potassium (0.1 cmol /kg).

Salinity

Non-saline

Sodicity

Non-sodic

pH

Neutral (6.4) at surface; increasing acidity 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 692 – 927 mm

Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1580 - 2610	20%	5.6 – 9.2
	9 TBA 22 FPC	630 - 1440	20%	10 – 23

### Enterprise

Breeding herds.

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody thickening (e.g. breadfruit, wattles).
- Native pastures need to be burnt prior to over-sowing with stylos.

### Land use limitations

- Timber thickening limits pasture productivity.
- Low fertility limits possibilities for sown grasses.
- Phosphorus supplements are required in wet season.

### Conservation features and related management

- The vulnerable plant species *Jedda multicaulis* and rare species *Gardenia scabrella*, *Acacia ommatosperma* and *Labichea brassii* may occur in this land type.

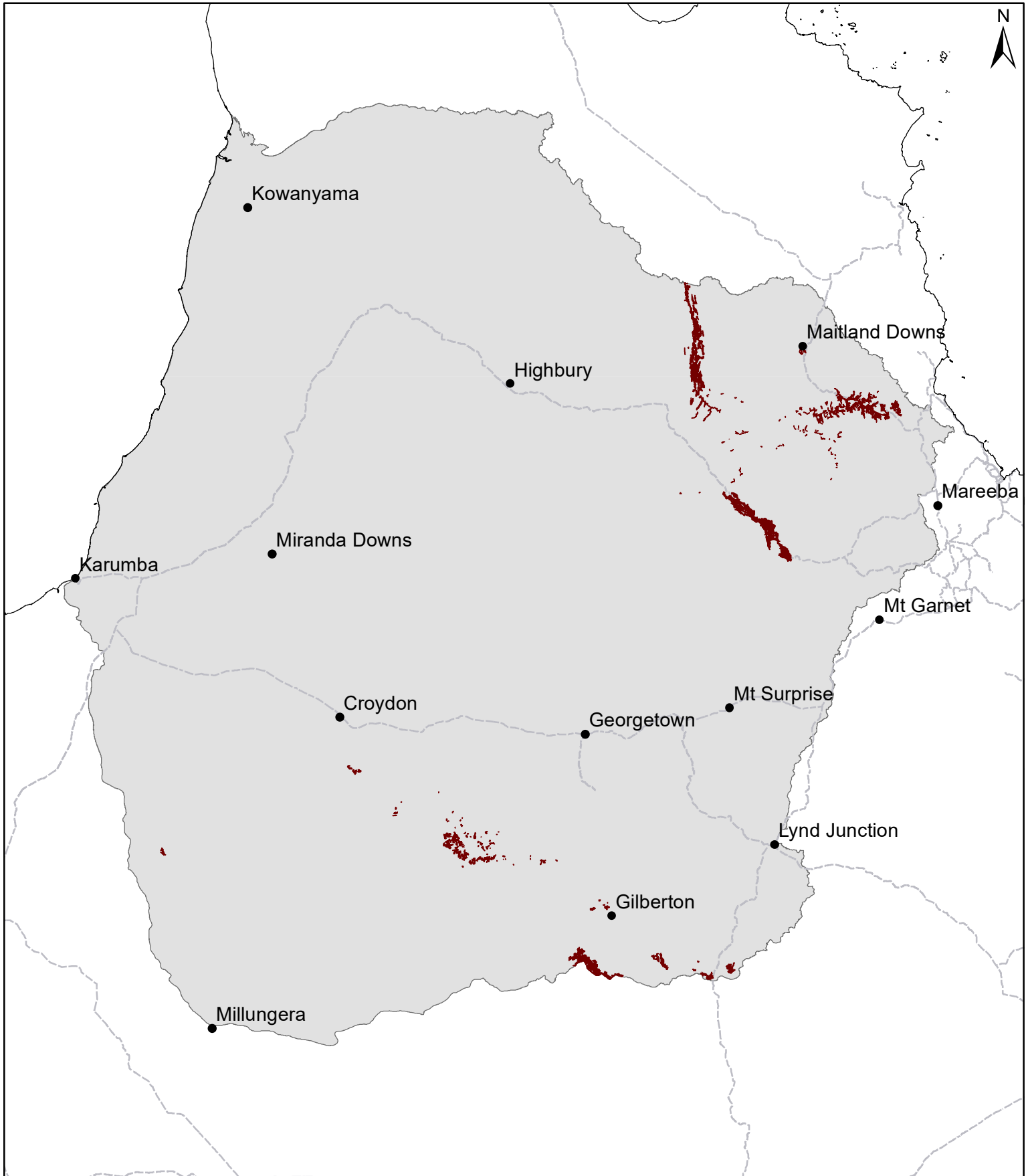
### Regional Ecosystems

2.10.1a, 2.10.4b, 2.11.1a-b, 2.5.1a-b, 2.5.24a-c, 2.5.25, 9.11.13, 9.3.2.

### Land system, Local Pasture Unit

Karoon (2), Boorooman (4), Yanman (25), Glenharding (26), Lyall (32) (Perry *et al* 1964); LPU 28, 41 (Tohill and Gillies 1992).

# NG11 Red earths



Area of land type in region: 0.5%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 82%  
Median FPC: 22%  
Median TBA: 9 m<sup>2</sup>/ha



**Queensland**  
Government

# Sand ridge



## Landform

Subtle ridges on the outwash plains.

## Woody vegetation

Messmate, Darwin woollybutt, Cooktown ironwood, bloodwood, narrow-leaved ironbark woodland with understorey dominated by wattles.

## Expected pasture composition

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

*Preferred species rarely dominate this land type. Pasture may be dominated by fire grass.*

### Preferred

Golden beard grass, forest bluegrass, plume sorghum, black speargrass, giant speargrass.

### Intermediate

Northern wanderrie grass, cotton panic, wiregrasses.

### Non-preferred

### Annuals

Fire grass, silkytop grass, lovegrasses, long-awn wanderrie grass, rare panic, comb finger grass, pigeon grass.

## Suitable sown pastures

Shrubby and Caribbean stylos with fertiliser.

## Introduced weeds

## Soil

Sandy red earths.

## Description

**Surface:** Loose; **Surface texture:** sandy; **Subsoil texture:** light red clay.



**Features** Dry refuge for stock during wet season.

**Water availability** Low

**Fertility** Low; low nitrogen (0.022%); low phosphorus (2 mg/kg); low potassium (0.1 cmol /kg).

**Salinity** Non-saline

**Sodicity** Non-sodic

**pH** Slightly acidic (6.0).

## Utilisation

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day

Median annual rainfall 544 – 961 mm

Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	520 - 1530	15%	13 - 37
	7 TBA 18 FPC	140 - 480	15%	41 – 136

**Enterprise** Breeding

## Land use and management recommendations

- Suitable for grazing of native pastures, but only at low carrying capacities.
- Spelling to achieve fuel loads and strategic burning (late dry hot burn) to manage woody thickening (e.g. wattles).

## Land use limitations

- Very low fertility limits potential carrying capacities.
- Phosphorus supplements are essential in wet season.

## Conservation features and related management

- Seasonal refuge for fauna.
- Subject to heavy total grazing pressure. In some areas prone to scalding and wind erosion.
- The vulnerable plant species *Acacia crombiei* and the rare species Howitt's box *Eucalyptus howittiana*, *Labichea brassii* can occur in this land type.

## Regional Ecosystems

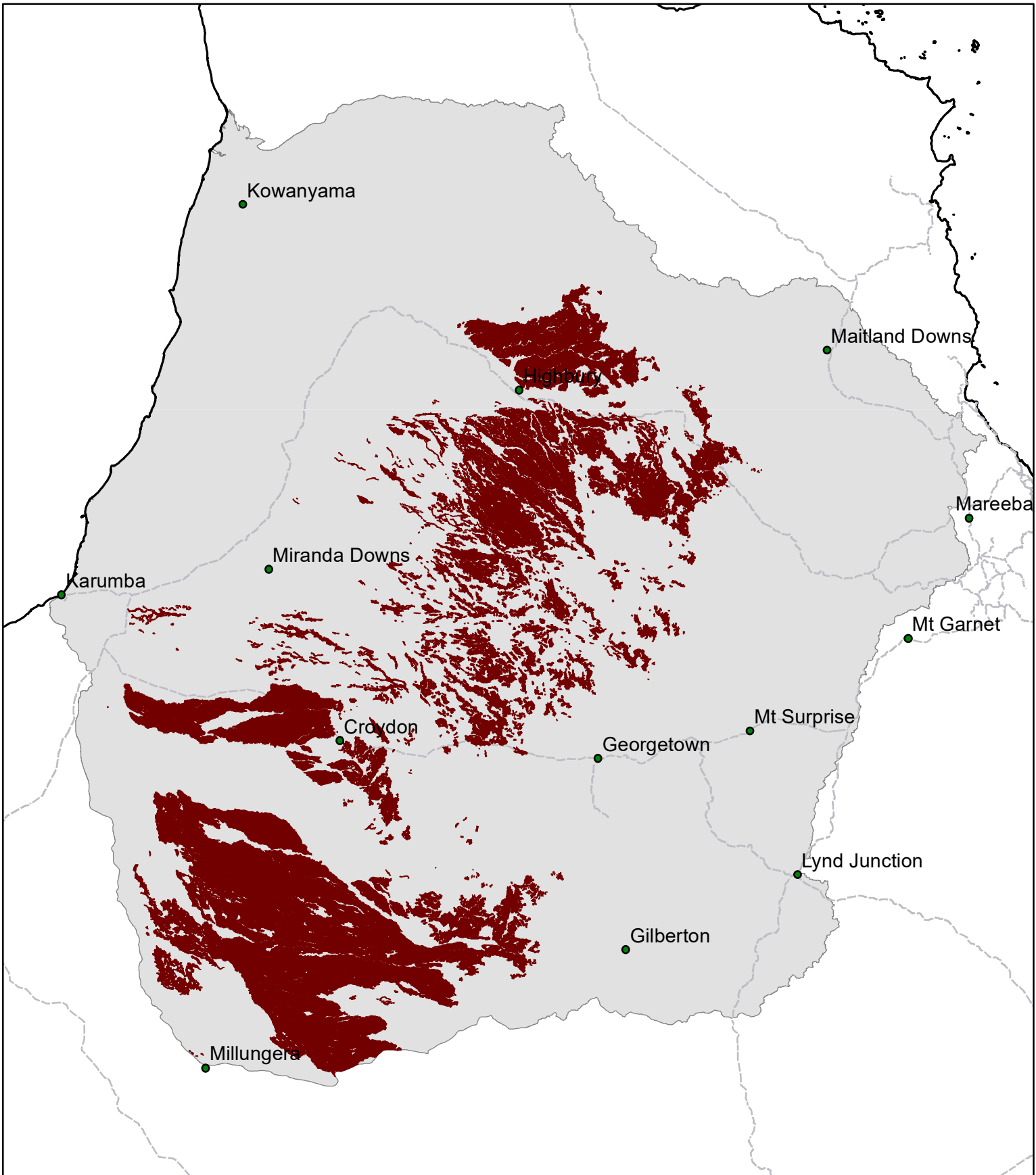
2.5.14a, 2.5.19a-d, 2.5.27, 2.5.3, 2.5.5a-b, 2.5.6a-c, 3.5.32, 9.11.32, 9.12.33c.

## Land system, Local Pasture Unit

Strathpark (19), Dandry (21), Esmeralda (22), Strathmore (23), Stanhill (36), Mayvale (42), Claraville (43), Abingdon (45), Prospect (57) (Perry *et al* 1964); LPU 41 (Tothill and Gillies 1992).



# NG12 Sand ridge



Area of land type in region: 13%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 99%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
Government

# Bauhinia sandy forest



<b>Landform</b>	Outwash sandy plains.
<b>Woody vegetation</b>	Low, moderately dense, woodland of bauhinia, beefwood, whitewood, emu apple, dead finish, ironwood, Cooktown ironwood, arid peach and paperbarks. Emergent long-fruited bloodwoods may occur in some stands. Scattered shrubs include currant bush, wait-a-while and mimosa bush*.
<b>Expected pasture composition</b>	<i>*Denotes non-native "Expected Pasture Composition" species.</i> <i>Pastures often dominated by Aristida and the annual fire grass species.</i>
<b>Preferred</b>	Golden beard grass, plume sorghum, black speargrass, forest bluegrass, gulf bluegrass, kangaroo grass.
<b>Intermediate</b>	Northern wanderrie grass, lovegrasses, cotton panic, wiregrasses.
<b>Non-preferred</b>	
<b>Annual grasses</b>	Fire grass, silkytop grass, comb finger grass, comet grass, rare panic, pigeon grass, long-awn wanderrie grass.
<b>Suitable sown pastures</b>	Shrubby and Caribbean stylos, buffel grass.
<b>Introduced weeds</b>	Chinee apple, grader grass, mimosa bush.
<b>Soil</b>	Red to yellow, light grey uniform or light textured deep sandy soils.
<b>Description</b>	<b>Surface:</b> Loose; <b>Surface texture:</b> sandy; <b>Subsoil texture:</b> sand to light clay.

Features	Surface runoff is very low with high infiltration and internal drainage. Subsoils are soft to slightly hard.
Water availability	Low
Fertility	Low nitrogen (0.022%); low phosphorus (2 mg/kg); low potassium (0.1 cmol /kg).
Salinity	Non-saline
Sodicity	Non-sodic
pH	Strongly acid to neutral in surface.

### Long-term carrying capacity information (A condition)

Based on fully watered area for 1AE = 450 kg animal consuming 8kg DM/day				
Median annual rainfall 544 – 961 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	380 - 1640	15%	12 - 51
	8 TBA 20 FPC	180 - 620	15%	32 – 106

### Enterprise

Breeding

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Generally higher stocking rate than northern sandy forest country, possibly because of top feed (bauhinia, whitewood).
- Spelling to achieve fuel loads and strategic burning (late dry hot burn) to manage woody thickening (e.g. tea trees).
- Native pastures need to be burnt prior to over-sowing with stylos.

### Land use limitations

- Extremely low fertility limits potential carrying capacities.
- Phosphorus supplements are essential in wet season.

### Conservation features and related management

- Subject to heavy total grazing pressure. In some areas prone to scalding and wind erosion.
- Provides wetland habitat for a flora and fauna.
- Includes seasonal wetlands significant as feeding sites for water birds.

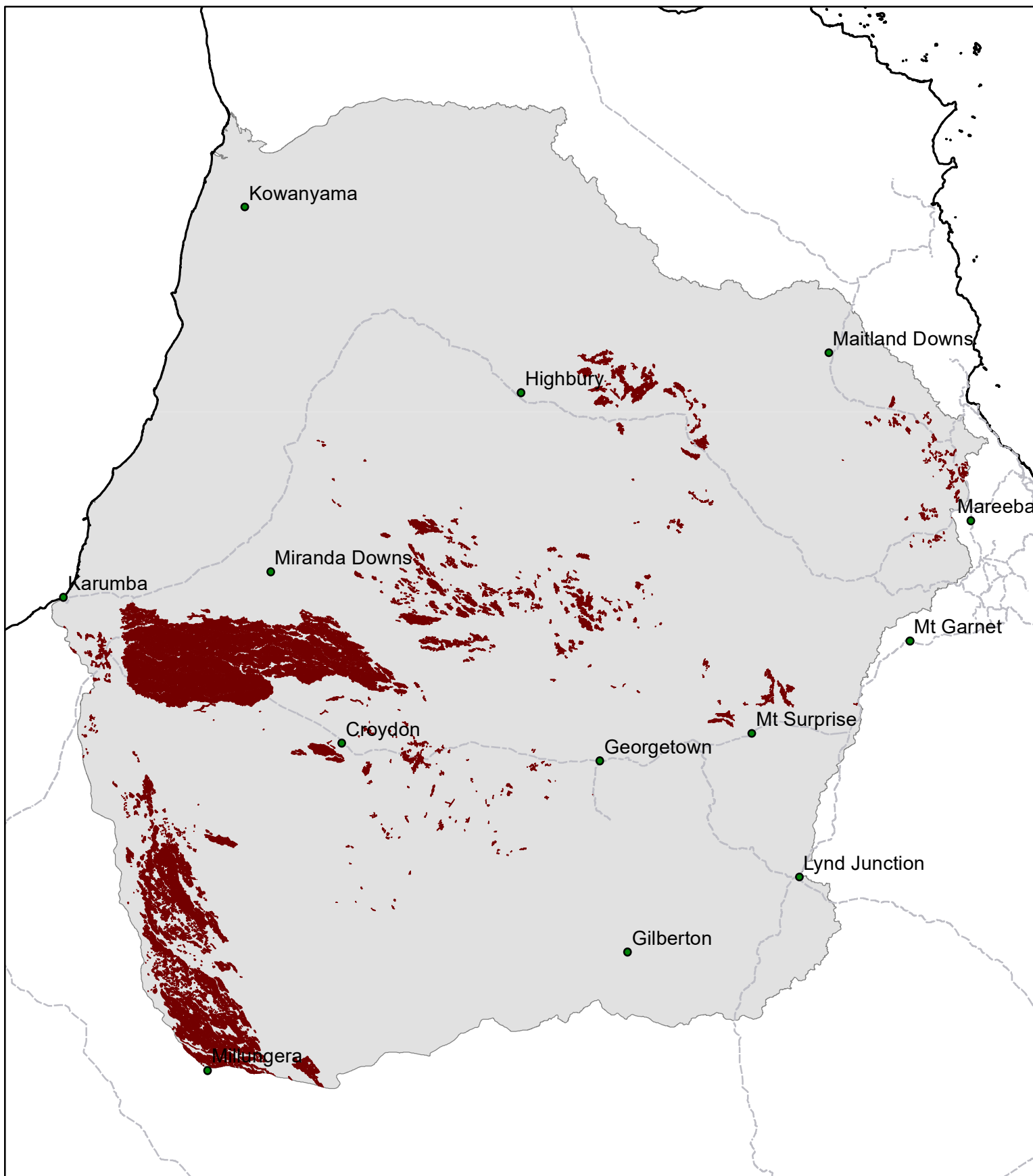
### Regional Ecosystems

2.5.17a-b, 2.5.30, 2.5.36, 2.5.36, 2.5.37a-b, 2.5.41, 9.5.13a-b, 9.5.14, 9.5.15a-b.

### Land system, Local Pasture Unit

Bylong (44), Strathmore (23), Mayvale (42), Claraville (43) (Perry *et al* 1964) LPU 41 (Tothill and Gillies 1992).

# NG13 Bauhinia sandy forest



Area of land type in region: 5%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 97%  
Median FPC: 20%  
Median TBA: 8 m<sup>2</sup>/ha



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# Northern sandy forest



<b>Landform</b>	Outwash plains.
<b>Woody vegetation</b>	Broad-leaved and narrow-leaved tea tree low woodland and Georgetown box woodland. In areas of higher rainfall messmate and bloodwood woodlands occur. Associated species include Cooktown ironwood, wattles, terminalia, guttapercha, quinine and bauhinia. Sparse occurrence of currant bush and wait-a-while.
<b>Expected pasture composition</b>	<i>*Denotes non-native "Expected Pasture Composition" species.</i> Pastures often dominated by <i>Aristida</i> and the annual fire grass species.
Preferred	Golden beard grass, forest bluegrass, plume sorghum, black speargrass, giant speargrass.
Intermediate	Northern wanderrie grass, cotton panic, wiregrasses.
Non-preferred	
Annual grasses	Fire grass, silkytop grass, lovegrasses, long-awn wanderrie grass, rare panic, comb finger grass, pigeon grass.
<b>Suitable sown pastures</b>	Shrubby and Caribbean stylos with fertiliser.
<b>Introduced weeds</b>	
<b>Soil</b>	Texture contrast soils and sandy grey and yellow earths.
Description	<b>Surface:</b> unstructured; <b>Surface texture:</b> loamy sand; <b>Subsoil texture:</b> loamy clay.



Features	Frequently turn to bulldust, mottling of subsoils, slow or impeded drainage.
Water availability	Low to moderate.
Fertility	Low nitrogen (0.022%); low phosphorus (2 mg/kg); low potassium (0.1 cmol /kg).
Salinity	Non-saline
Sodicity	Moderate to high sodicity at surface; high to extremely high at depth.
pH	Acidic (5.5–6.0) throughout the profile; sometimes becoming more neutral (6.5) 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 723 – 1297 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha) (FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1210 - 1580	15%	12 - 16
	7 TBA 18 FPC	460 - 980	15%	20 – 42

### Enterprise

Breeding

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Spelling to achieve fuel loads and strategic burning (late dry hot burn) to manage woody thickening (e.g. tea trees).
- Native pastures need to be burnt prior to over-sowing with stylos.

### Land use limitations

- Extremely low fertility limits potential carrying capacities.
- Phosphorus supplements are essential in wet season.

### Conservation features and related management

- Subject to heavy total grazing pressure. In some areas prone to scalding and wind erosion.
- Provides wetland habitat for a flora and fauna.
- Includes seasonal wetlands significant as feeding sites for water birds.
- The rare species Kurrajong *Brachychiton vitifolius* and *Homoranthus tropicus* and vulnerable species *Macropteranthes montana* can occur in this land type

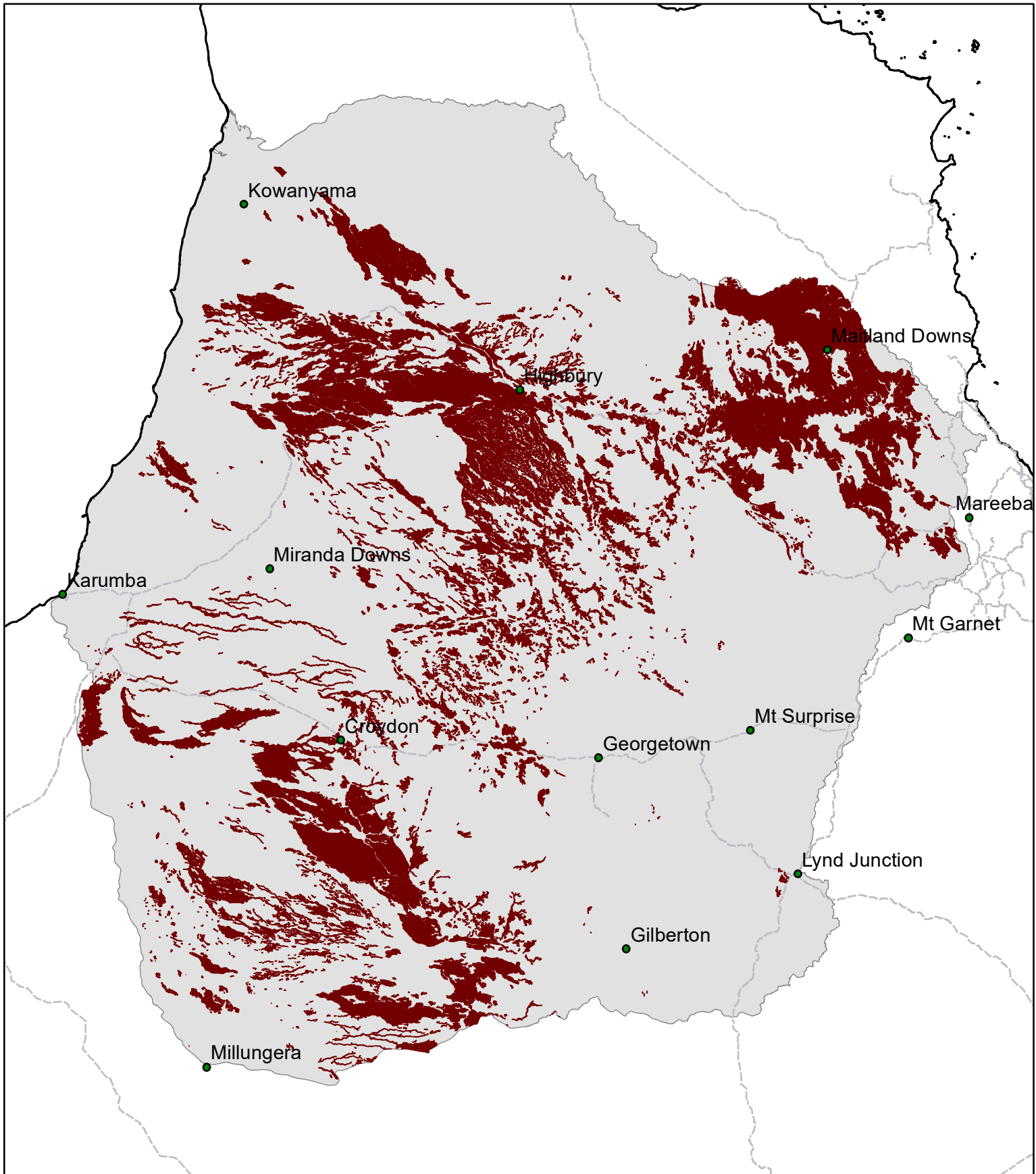
### Regional Ecosystems

2.3.29a-c, 2.3.30a-e, 2.3.36a, 2.5.18a-b, 2.9.6x1, 2.9.7a-b, 9.11.3a, 9.3.24, 9.5.12, 9.5.16, 9.5.8.

### Land system, Local Pasture Unit

Strathmore (23), Mayvale (42), Claraville (43), Prospect (57), Strathpark (19), Dandry (21), Esmeralda (22), Stanhill (36), Abingdon (45) (Perry *et al* 1964); LPU 41, 42 (Tothill and Gillies 1992).

# NG14 Northern sandy forest



Area of land type in region: 14%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 92%  
Median FPC: 18%  
Median TBA: 7 m<sup>2</sup>/ha



**Queensland**  
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# Yellow earths



<b>Landform</b>	Mid to lower slopes of level to gently undulating plains.
<b>Woody vegetation</b>	Grey box and narrow-leaved ironbark woodland with understorey of breadfruit, tea trees, wattles and quinine.
<b>Expected pasture composition</b>	* Denotes non-native “Expected Pasture Composition” species.
Preferred	Golden beard grass, forest bluegrass, black speargrass, kangaroo grass.
Intermediate	Cotton panic, silky browntop, lemon-scented grass, gulf bluegrass, plume sorghum, bottlewasher grasses, giant speargrass, northern wanderrie grass.
Non-preferred	Wiregrasses.
Annual grasses	Fire grass, comet grass, fairy grass, lovegrasses.
<b>Suitable sown pastures</b>	Shrubby and Caribbean stylos.
<b>Introduced weeds</b>	
<b>Soil</b>	Yellow brown texture contrast soils (solodics).
Description	<b>Surface:</b> Loose or soft; <b>Surface texture:</b> sandy loam or sandy clay loam; <b>Subsoil texture:</b> light to medium heavy clay.
Features	Subsoils can have very hard consistence. Impeded drainage leading to bogginess when wet. Mottling of soil at depth. Dispersive subsoils.

Water availability

Low to moderate.

Fertility

Variable, generally low. Low nitrogen (0.08%); low phosphorus (6 mg/kg); low potassium (0.17 cmol /kg).

Salinity

Non-saline

Sodicity

Low at depth.

pH

Slightly acidic (6.1) at surface; increasing to medium acidity 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 723 – 961 mm				
Pasture type	Median tree cover (TBA m <sup>2</sup> /ha FPC %)	Median annual pasture growth (DM kg/ha)	Safe annual utilisation pasture growth (%)	LTCC (ha/AE)
Native species	0 TBA/FPC	1160 - 1820	20%	8.0 - 13
	6 TBA 15 FPC	450 - 860	20%	17 – 33

### Enterprise

Breeding

### Land use and management recommendations

- Suitable for grazing of native pastures.
- Rotational wet seasons spelling to maintain perennial pasture composition.
- Manage grazing pressure to ensure at least 50% ground cover at break of season.
- Strategic burning (late dry hot burn) to manage woody thickening (e.g. breadfruit, wattles).
- Native pastures need to be burnt prior to over-sowing with stylos.

### Land use limitations

- Timber thickening limits pasture productivity.
- Low fertility limits possibilities for sown grasses.
- Phosphorus supplements are required in wet season.
- Limit mechanical disturbance (nothing more severe than crocodile seeder) due to the fragile nature of the duplex soils.

### Conservation features and related management

- Provincial refuge for some flora and fauna species.

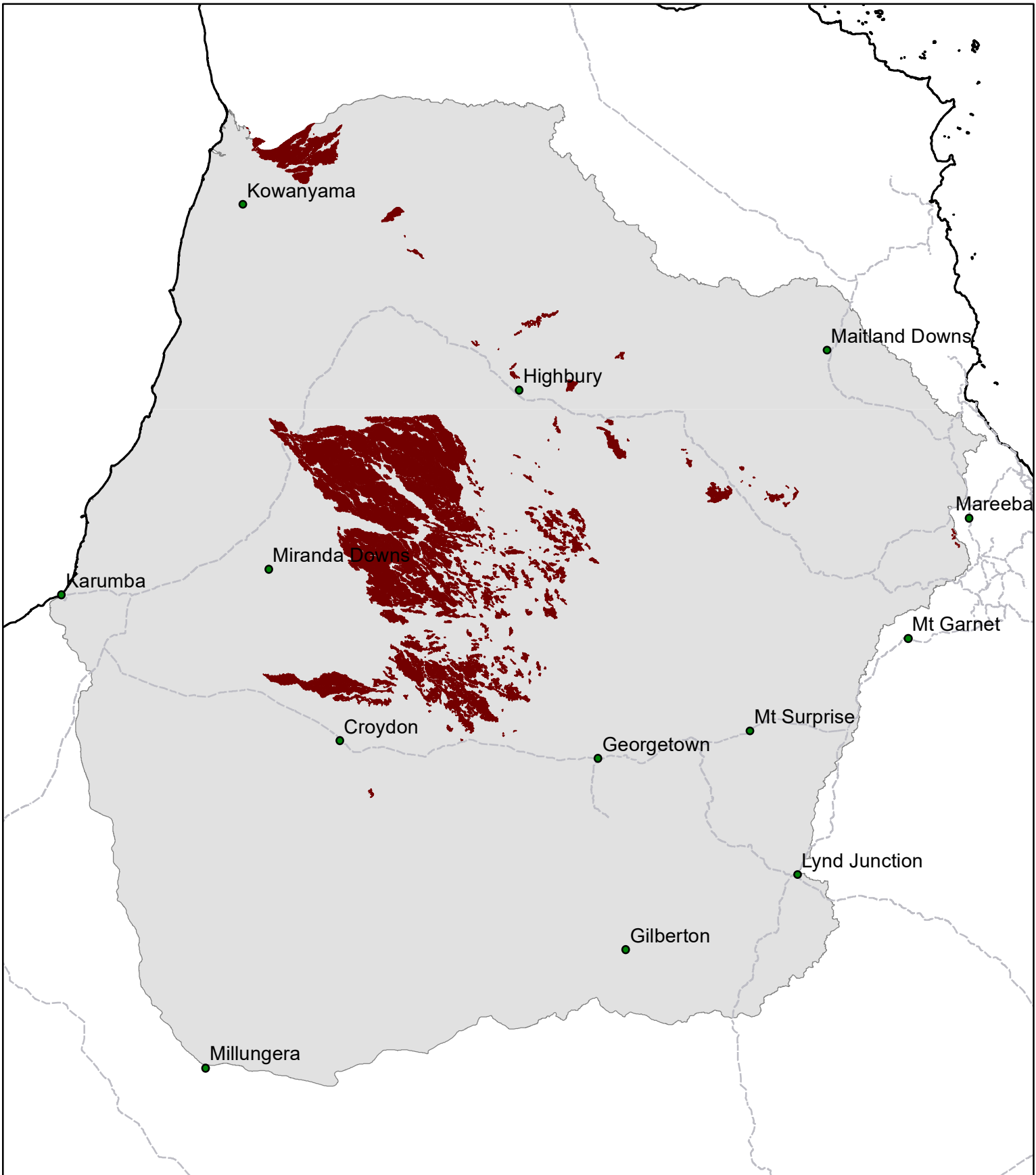
### Regional Ecosystems

2.3.64, 2.5.14c, 2.5.26, 3.3.61b, 9.12.40.

### Land system, Local Pasture Unit

Karoon (2), Yanman (25) (Perry *et al* 1964); LPU 28, 41 (Tothill and Gillies 1992).

# NG15 Yellow earths



Area of land type in region: 4%  
Median rainfall (region): 544 – 1297 mm  
Average rainfall (region): 580 – 1370 mm  
Area of land type with FPC: 97%  
Median FPC: 15%  
Median TBA: 6 m<sup>2</sup>/ha



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