

APPENDIX 2: LEVEL 2 FLORA AND VEGETATION SURVEY OF THE GRUYERE GOLD PROJECT (BOTANICA 2015B)



Level 2 Flora & Vegetation Survey
of the
Gruyere Project
Tenement M38/1267
Prepared for Gold Road Resources Limited



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Acronyms/Abbreviations:

BAM Act: Biosecurity and Agriculture Management Act 2007, WA Government.

BC: Botanica Consulting.

BOM: Bureau of Meteorology.

CALM: Department of Conservation and Land Management (now DPaW), WA Government.

DAFWA: Department of Agriculture and Food, WA Government.

DEC: Department of Environment and Conservation (now DPaW), WA Government.

DEH: Department of Environment and Heritage (now DoE), Australian Government.

DEP: Department of Environment Protection (now DER), WA Government.

DEWHA: Department of the Environment, Water, Heritage and the Arts (now DoE), Australian Government

DER: Department of Environment Regulation (formerly DEC, DoE), WA Government.

DMP: Department of Mines and Petroleum (formerly DoIR), WA Government.

DoE: Department of Environment (now DER/DPaW), WA Government.

DoIR: Department of Industry and Resources (now DMP), WA Government.

DoE: Department of the Environment (formerly SEWPaC, DWEHA, and DEH), Australian Government.

DPaW: Department of Parks and Wildlife (formerly DEC, CALM, DoE), WA Government.

EP Act: *Environmental Protection Act 1986*, WA Government.

EPA: Environmental Protection Authority, WA Government.

EPBC Act: *Environment Protection and Biodiversity Conservation Act 1999*, Australian Government.

ESA: Environmentally Sensitive Area.

Ha: Hectare (10,000 square metres).

IBRA: Interim Biogeographic Regionalisation for Australia.

IUCN: International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union.

Km: Kilometre (1,000 metres).

MVG: Major Vegetation Groups.

NVIS: National Vegetation Information System.

OEPA: Office of the Environmental Protection Authority, WA Government.

PEC: Priority Ecological Community.

DSEWPaC: Department of Sustainability, Environment, Water, Population and Communities (now DoE, formerly DEH, DEWHA), Australian Government.

TEC: Threatened Ecological Community.

WA: Western Australia.

WAHERB: Western Australian Herbarium.

WC Act: *Wildlife Conservation Act 1950*, WA Government.

Executive Summary

Botanica Consulting was commissioned by Gold Road Resources Limited to undertake a Level 2 flora and vegetation survey of the Gruyere Project, located approximately 160km to the north-east of Laverton, WA. Fieldwork for a Level 2 spring flora and vegetation survey was conducted from the 12th to the 16th of November 2014. This survey covered the pending mining tenement M38/1267 which covers an area of approximately 6,846 ha. Level 1 autumn survey of approximately 2,100ha within the mining tenement was previously conducted by Botanica Consulting in May 2014. Following the first stage of the Level 2 flora survey (November 2014), the area of interest for the Gruyere Project was revised to focus on the northern portion of the proposed tenement and the existing survey area was reduced to 3,030 ha. An additional 1,763 ha was added to the north-east of the survey area, encompassing a potential access road route from the Point Sunday Road and potential infrastructure area to the south-east of the existing survey area. The revised survey area covered an area of 4,793 ha. Fieldwork was conducted from the 13th to the 17th May 2015. This report encompasses the results of the spring and autumn flora surveys completed within the current survey area.

Thirty-two broad vegetation communities were identified within the survey area. These communities were represented by a total 44 Families, 104 Genera and 240 Taxa (including sub-species and variants). No Threatened Flora taxa, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)*, the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and as listed by the Department of Parks and Wildlife were identified within the survey area. No Priority Flora taxa as listed by the Department of Parks and Wildlife were identified within the survey area.

The data recorded was used in a PATN analysis to assess species composition of the vegetation within the survey area. With a few exceptions, there was a high degree of homogeneity between the Acacia Forests and Woodlands/Shrublands and Mallee Woodlands and Shrublands of the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope groups despite obvious differences in landform structure. The sandplain communities were mainly distinguished from the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope. There were also differences within the sandplain communities with the Acacia Forest and Woodland/Shrubland sandplain communities mostly separated from the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities. Species composition of the sand dune community was similar to that of the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities.

None of the vegetation communities were found to have National Environmental Significance as defined by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. No Threatened Ecological Communities pursuant to Commonwealth and State legislation or Priority Ecological Communities as listed by the Department of Parks and Wildlife were recorded within the survey area.

The survey area is not located within an Environmentally Sensitive Area or Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. The survey area is not located within any Department of Parks and Wildlife managed land. However the Yeo Lake Nature Reserve, which is listed as a Class A Nature Reserve managed by the Department of Parks and Wildlife, is located approximately 8km to the east of the survey area. The proposed Gruyere mine is located approximately 15km west of the Nature Reserve.

Based on the Keighery vegetation health rating scale (1994) all thirty-two vegetation communities were rated as 'very good'. Disturbances included exploration activities, fire and camel grazing, however the impacts on native vegetation in the area were minimal. Two introduced taxa were identified within the survey area; *Cenchrus ciliaris* (Buffel Grass) and *Cenchrus echinatus* (Burr Grass). According to the

Department of Agriculture and Food Western Australia database, neither of these taxa are listed as as Declared Plant under the *Biosecurity and Agriculture Management Act 2007*.

1 Introduction

1.1 Project Description

Botanica Consulting (BC) was commissioned by Gold Road Resources Limited (GRR) to conduct a Level 2 flora and vegetation survey of the Gruyere Project (referred to as the 'survey area'). The survey area was located approximately 160km north-east of Laverton WA along the White Cliffs Yamarna Road and approximately 21.5km north-east from GRR's Central Bore Project (Figure 1). Fieldwork for a Level 2 spring flora and vegetation survey was conducted from the 12th to the 16th of November 2014. This survey covered the pending mining tenement M38/1267 which covers an area of approximately 6,846 ha. A Level 1 autumn survey of approximately 2,100ha within the mining tenement was previously conducted by BC in May 2014. Following the first stage of the Level 2 flora survey (November 2014), the area of interest for the Gruyere Project was revised to focus on the northern portion of the proposed tenement and the existing survey area was reduced to 3,030 ha. An additional 1,763 ha was added to the north-east of the survey area, encompassing a potential access road route from the Point Sunday Road and potential infrastructure area to the south-east of the existing survey area. The revised survey area covered an area of 4,793 ha. Fieldwork was conducted from the 13th to the 17th May 2015. This report encompasses the results of the spring and autumn flora surveys completed within the current survey area.

The aim of the survey was to produce a vegetation map and taxa list, as well as document the occurrence of any Threatened Ecological Communities (TEC), Priority Ecological Communities (PEC), and Threatened or Priority Flora taxa within the survey area.

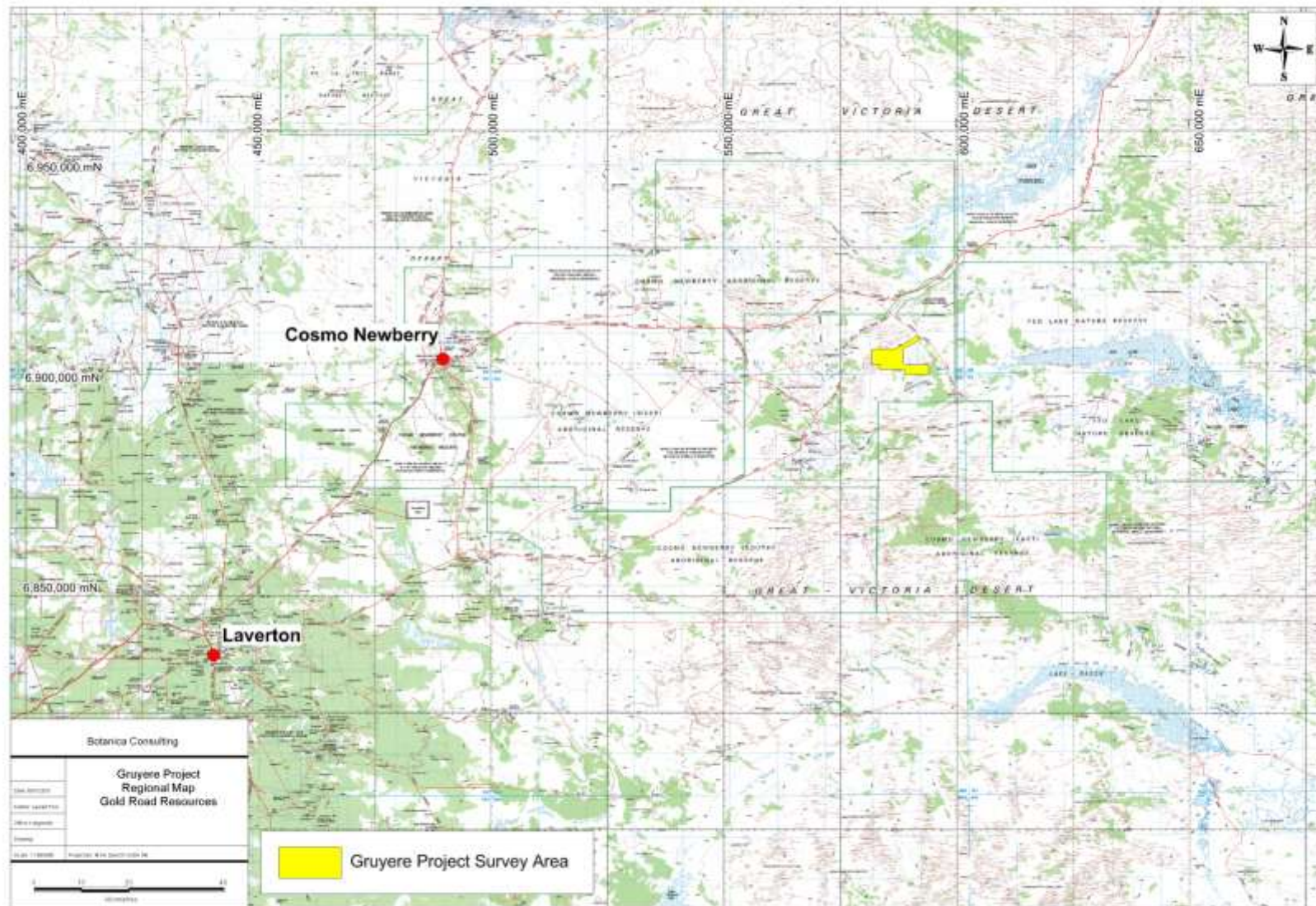


Figure 1: Regional map of the Gruyere Project survey area

1.2 Previous Relevant Flora Surveys

Flora and vegetation surveys, assessments and reviews have been undertaken in nearby areas in the past, though not all are publically available and could not be referenced. The most significant of those available have been used as the primary reference material for compiling the potential flora and vegetation communities for the general area. Those reports referred to included, but were not limited to:

- Inventory and condition survey of the North-Eastern Goldfields, 1994, Department of Agriculture Joint Venture
- Inventory and condition survey of the North-Eastern Goldfields, 1994, Department of Agriculture Joint Venture
- The Biological Survey of the Eastern Goldfields of WA - Pt 10: Sandstone-Sir Samuel and Laverton-Leonora Study Areas. Supplement 47: 1 – 166, 1994, Hall, N. J., McKenzie, N. L. and Keighery, G. J. (eds)
- Tropicana Gold Project, Public Environmental Review, September 2009, Tropicana Joint Venture
- Flora and Vegetation survey Yamarna – Proposed Haul Road, June 2011, Botanica Consulting
- Level 2 Flora and Vegetation survey, Yamarna Project, October 2011 and March 2012, Botanica Consulting
- Level 1 Flora and Vegetation survey, Gruyere Project, July 2014, Botanica Consulting
- Level 1 Flora and Vegetation Survey, Sunrise Dam Gold Mine to Tropicana Gold Mine Gas Pipeline, July 2014, Botanica Consulting
- Level 1 Flora and Vegetation Survey, Minigwal Borefields, November 2014, Botanica Consulting
- Level 2 Flora and Vegetation survey, Gruyere Project, March 2015, Botanica Consulting

1.2.1 *Inventory and condition survey of the North-Eastern Goldfields, 1994, Department of Agriculture Joint Venture*

In 1988, a joint team from the Department of Agriculture and the Department of Land Administration (Western Australia) was commissioned by the Pastoral Lands Board to undertake a regional survey of the north-eastern Goldfields. The survey was undertaken during 1988-1990 by the joint team with the support of the Department of Conservation and Land Management (CALM), covering an area of approximately 100,570km². The Gruyere survey area is located in the north-eastern region of the Inventory and condition survey area.

Perennial grasses were common throughout the survey area, divided into two major groups; Wanderrie bunch grasses and Spinifex hummock grasses. *Eragrostis eriopoda* (woolly butt) being the most widespread and abundant of the Wanderrie grasses with *Triodia basedowii* (hard spinifex) being the most abundant of the hummock grasses. *Triodia basedowii* often occurs as vast expanses in the east of the survey area. Tall shrubs are the most dominant stratum on most of the hardpan plains and adjacent uplands. The most widely distributed and common tall shrubs are from the genera *Acacia* and *Eremophila*. *Acacia* tall shrublands on hardpan plains are generally dominated by a single species; *Acacia aneura* (mulga). Other common *Acacias* which are occasionally dominant are; *A. craspedocarpa*, *A. linophylla*, *A. ramulosa* and *A. tetragonophylla*. On stony plains, *Eremophila macmillaniana*, *E. fraseri* and *E. platycalyx* are common or dominant tall shrubs.

There are three common groups of mallees (multi-stemmed eucalypts). The first group is found in spinifex sandplains and is most widely represented by *Eucalyptus youngiana* and *E. kingsmillii*. The second group of mallees is found on sandy soils over calcareous pans in the south of the survey area. The most common species are *E. trichopoda* and *E. concinna*. The third group, which includes *E. salubris* var. *salubris*, is found low in the landscape on heavier textured soils in association with *Atriplex vesicaria*.

The most common trees in the survey area are *Acacias*, *Eucalypts* and *Casuarina cristata*. *Acacia* woodland occurs in broad plains with deep sandy loams or loamy sands over hardpan, most extensively in the south of the survey area. Similar land surfaces further north are dominated more frequently by wanderie grasses and the tall shrub form of *A. aneura*. In the north and east of the survey area, *Eucalyptus gongylocarpa* is common in extensive spinifex hummock grasslands on sandplains and on the sides of sand ridges.

1.2.2 The Biological Survey of the Eastern Goldfields of WA - Pt 10: Sandstone-Sir Samuel and Laverton-Leonora Study Areas. Supplement 47: 1 – 166, 1994, Hall, N. J., McKenzie, N. L. and Keighery, G. J. (eds)

Vegetation and flora of the Sandstone-Sir Samuel and Laverton-Leonora Study Areas was documented by a consultant botanist (A.V. Milewski) and G.J. Keighery (CALM). The initial vegetation survey was carried out during several brief visits to the two Study Areas from January 1980 to August 1982. Subsequent work was conducted by G.J. Keighery in October 1987 and September 1992. The Gruyere survey area is located east of the Laverton-Leonora Study Areas.

The Sandstone-Sir Samuel and Laverton-Leonora Study Areas are adjacent, and have a similar climate, geomorphology and biota. Ten landform units are recognized in these Study Areas. The most extensive are Sandplains and Broad Valleys. Salt Lake Features, Calcareous Plains bordering salt lakes, and Undulating Plains are prominent in both Study Areas. Small areas of Dunefields, Breakaways and Granite Exposures are scattered throughout the Study Areas while Hills and Drainage Lines occur largely within Undulating Plains. The main vegetation groups are low woodlands of *Acacia aneura* (Mulga). *Eucalyptus* species with an understorey of hummock grasses (*Triodia*) are dominant on deep sands. Tall and low shrublands occur in limited areas, generally in association with salt lakes and dunes.

The known vascular flora comprises 7 species of ferns and 777 taxa of flowering plants, including 303 taxa recorded from Wanjarri Nature Reserve. No species of Threatened Flora were recorded within the Study Areas.

1.2.3 Tropicana Gold Project, Public Environmental Review, September 2009, Tropicana Joint Venture

In September 2009, Tropicana Joint Venture (partnership between Anglo Gold Ashanti Australia Ltd and Independence Group NL) prepared a Public Environmental Review (PER) for the proposed Tropicana Gold Project which is located approximately 150km south-east of the Gruyere survey area. Tropicana Joint Venture commissioned Ecologia, Mattiske Consulting and BC to conduct several large scale environmental surveys of the proposed disturbance areas of the project.

Sixteen major vegetation communities were identified within the 131,367ha operational area;

1. Mixed Eucalypt woodland over mixed open shrubs and *Triodia basedowii*;

2. Isolated *Acacia* spp. over open low shrubs and moderately dense tussock grasslands;
3. Minor clay pan: Scattered *Acacia nyssophylla*/*Grevillea sarissa* over open herbs and grasses;
4. Dunes: Scattered *Eucalyptus gongylocarpa* over mixed shrubs and *Triodia desertorum* or *T. basedowii*;
5. *Acacia aneura* woodland over grasses ± *Triodia basedowii*;
6. Open to moderately dense *A. aneura* over *Aluta maisonneuvei* subsp. *articulata*/*Acacia ramulosa* var. *ramulosa* over *Eremophila forrestii* subsp. *forrestii* over *Triodia basedowii*;
7. *E. gongylocarpa*/*E. youngiana*/ *E. concinna* over open mixed shrubland over *Triodia desertorum*;
8. Open to moderately dense *Casuarina pauper* woodland over open mixed shrubs and scattered soft grasses and/or *Triodia scariosa*;
9. Narrow drainage channel: Sparse *Acacia aneura* over sparse to open shrubs and moderately dense tussock grasses;
10. Rock breakaways and associated slopes: Open *Acacia quadrimarginea*/*Dodonaea rigida* over sparse mixed shrubs over mixed soft grasses;
11. *E. gongylocarpa* over open shrubland over open *Dodonaea viscosa* subsp. *angustissima*/*Eremophila platythamnus* subsp. *platythamnus* shrubland over *Triodia desertorum* or *T. basedowii*;
12. White to grey brown clay pans: Dwarf halophytic shrublands of variable composition over sparse to dense herbs and grasses,;
13. Pale orange to orange clay pans: Low open to sparse scrub dominated by *Frankenia cinerea*/*Atriplex vesicaria* over sparse cover of *Eragrostis pergracilis*/*Aristida contorta*;
14. Shallow depressions and areas fringing some clay pans: Moderately dense *Melaleuca interioris* shrubland over sparse chenopods and soft grasses;
15. Plains and gentle hill slopes at margins of saline complex: Sparse to open *Casuarina pauper* ± mallee Eucalypts over *Dodonaea viscosa* subsp. *angustissima*/*Senna artemisioides* subsp. *petiolaris* over Chenopod species and soft grasses; and
16. Open mallee *E. concinna* over sparse to open low shrubs over open *Triodia scariosa*.

None of these vegetation communities are listed as TEC under state or Federal legislation. However, vegetation communities within or adjacent to the survey area show possible similarities with the 'Yellow sandplain communities of the Great Victoria Desert,' which is listed as a PEC.

A total of 57 families, 162 genera and 437 taxa were recorded. One DRF/Threatened Flora listed under the *EPBC Act 1999* and *Wildlife Conservation Act 1950* was identified; *Conospermum toddii*. This species was delisted as Threatened and is currently listed as a Priority 4 species. Fourteen Priority Flora taxa as listed by the DPaw were identified within the area¹:

1. *Baeckea* sp. Great Victoria Desert (A.S. Weston 14813) (No longer Priority listed);
2. *Baeckea* sp. Sandstone (C.A. Gardner s.n. 26 Oct. 1963) P3;
3. *Dampiera eriantha* P1;
4. *Dicrasyllis nicholasii* P4;
5. *Malleostemon* sp. Officer Basin (D. Pearson 350) P2;
6. *Olearia arida* P4;
7. *Grevillea secunda* P4;
8. *Acacia eremophila* numerous-nerved variant (A.S. George 11924) P3;

¹ Priority levels are based on current ratings (WAHERB, 2015)

9. *Acacia eremophila* var. *variabilis* P3;
10. *Dicrastylis cundeeleensis* P4;
11. *Microcorys macredieana* (No longer Priority listed);
12. *Micromyrtus stenocalyx* (No longer Priority listed);
13. *Daviesia purpurascens* (No longer Priority listed); and
14. *Lepidobolus deserti* (No longer Priority listed).

1.2.4 Flora and Vegetation survey Yamarna – Proposed Haul Road, June 2011, Botanica Consulting

BC was commissioned by GRR to undertake a Level 1 flora and vegetation survey of the proposed Yamarna Haul Road located adjacent to the Mount Shenton-Yamarna Road, approximately 135km north-east of Laverton in WA. The Yamarna Proposed Haul Road is located approximately 22km east of the Gruyere survey area. The survey covered an area of approximately 110ha and was conducted on 11th May 2011.

Five vegetation communities were identified within the survey area;

1. Mallee/Mulga woodland over Spinifex;
2. *Eucalyptus youngiana* Mallee shrubland over Spinifex;
3. *Melaleuca* shrubland over Spinifex;
4. *Eucalyptus gypsophila* woodland; and
5. *Eucalyptus gongylocarpa* over mixed Mallee and Spinifex.

There were also three sub-communities identified within the survey area;

1. Burnt Spinifex grassland;
2. Spinifex grassland; and
3. Burnt Mallee/Mulga woodland over Spinifex.

These vegetation communities were represented by a total of 27 Families, 61 Genera and 122 taxa (including sub-species and variants). No Threatened or Priority Flora taxa were recorded during the survey. No TECs pursuant to the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* or listed by the Department of Environment and Conservation (now known as the Department of Parks and Wildlife (DPAW)) were recorded within the survey area. No PECs listed by the DPAW were recorded within the survey area.

Based on Keighery's 1994 vegetation health rating scale, all five vegetation communities within the area surveyed were classed as being in 'very good' health. One introduced taxa was identified within the survey area, *Portulaca oleracea*².

1.2.5 Level 2 Flora and Vegetation survey, Yamarna Project, October 2011 and March 2012, Botanica Consulting

BC were commissioned by GRR to undertake a Level 2 autumn flora and vegetation survey of the Yamarna project area located approximately 134km north-east of the township of Laverton. The Yamarna Project is located approximately 12km west of the Gruyere Project. From the 9th to 12th May 2011, 57 quadrats were established within the survey area. From the 4th to 6th September 2011

²No longer listed as an alien taxon in Western Australia (WAHERB, 2015)

these 57 quadrats were re-surveyed and an additional 16 quadrats were established within an additional 884ha adjacent to the original 3,176 ha Yamarna survey area. From the 15th to 16th March 2012 these 16 additional quadrats were resurveyed. The total survey covered an area of approximately 4,060 ha.

No Threatened taxa were identified during the spring and autumn surveys; however two Priority taxa species, *Calytrix warburtonensis* (P2) and *Thryptomene nealensis* (P3) were recorded within the survey area. Both of these species were identified within the Low woodland of Mulga over mixed dwarf scrub on breakaway.

Sixteen vegetation communities were identified within the survey area:

1. Low forest of Mulga (*Acacia aneura*) over dense low grass of *Eragrostis eriopoda*/*Eragrostis kennedyae*;
2. Low forest of Mulga over mixed dwarf scrub;
3. Heath of *Senna artemisioides* subsp. *helmsii* over low grass of *Aristida contorta*/*Eragrostis kennedyae*;
4. Low woodland of Mulga over mixed dwarf scrub on breakaway;
5. Low woodland of Mulga over low scrub of *Eremophila oldfieldii* subsp. *angustifolia* and dense low grass of *Eragrostis eriopoda*/*Eragrostis kennedyae* in creekline/drainage area;
6. Low Mulga woodland over low scrub of *Eremophila latrobei* subsp. *filiformis*/*Eremophila abietina* subsp. *ciliata* and mixed dwarf scrub on rocky substrate;
7. Low woodland of *Casuarina pauper* over dwarf scrub of *Ptilotus obovatus*/*Solanum lasiophyllum*;
8. Open low woodland of Mulga over dwarf scrub of mixed Chenopods;
9. Open shrub mallee and thicket of Mulga over mid dense hummock grass of *Triodia basedowii*;
10. Heath of *Acacia burkittii* over mixed dwarf scrub and mid dense hummock grass of *Triodia basedowii*;
11. Low woodland of *Eucalyptus gongylocarpa* over mixed open shrub mallee and mid dense hummock grass of *Triodia basedowii*;
12. Open shrub mallee of *E. youngiana* over dense hummock grass of *Triodia basedowii*;
13. Open shrub mallee of *E. youngiana* over dwarf scrub of *Aluta maisonneuvei* and dense hummock grass of *Triodia basedowii* on sand dune;
14. Low open woodland of Mulga over dwarf scrub of *Ptilotus obovatus*/*Solanum lasiophyllum*;
15. Low woodland of *E. gypsophila* over dwarf scrub of *Senna artemisioides* subsp. *helmsii*, *Eremophila scoparia* and *Ptilotus obovatus* on breakaway; and
16. Low woodland of Mulga over mid dense hummock grass of *Triodia basedowii*.

There were also five sub-communities identified within the survey area:

1. Dwarf scrub of *Senna artemisioides* subsp. *helmsii* and *Maireana pyramidata*;
2. Dense thicket of Mulga;
3. Low forest of Mulga over dwarf scrub of *Eremophila gilesii* subsp. *variabilis*;
4. Low forest of *Casuarina pauper* over mixed dwarf scrub; and
5. Mixed open shrub mallee over mid dense hummock grass of *Triodia basedowii*.

These sixteen vegetation communities were represented by a total of 37 families, 101 genera and 239 taxa (including sub-taxa and variants). The data recorded from the quadrat survey was used in a PATN analysis to group quadrats with similar species compositions. With a few exceptions, namely quadrats of the Low forest of Mulga over mixed dwarf scrub and Low Mulga woodland over

low scrub of *Eremophila latrobei* subsp. *filiformis*/ *Eremophila abietina* subsp. *ciliata* and mixed dwarf scrub on rocky substrate, the majority of the quadrats of a given vegetation community delineated in the field were grouped together in the PATN analysis. However, of the sixteen vegetation communities identified in the field just two contained only those quadrats designated to the respective vegetation community. Within all the other vegetation communities delineated from the PATN analysis there was a high degree of intermixing between vegetation communities with an individual grouping containing quadrats from anywhere up to five different vegetation communities. This result is not surprising given that the majority of the vegetation communities had an upper stratum of Mulga and an understorey of Spinifex and Chenopod species. The results show that the species composition of the vegetation communities within the area is highly homogeneous with minimal distinct vegetation boundaries despite presence of distinct habitats including sand dunes, creeklines and breakaways.

No TECs pursuant to the Commonwealth *EPBC Act 1999* or listed by the DPaW were recorded within the survey area. No PECs listed by DPaW were recorded within the survey area. Based on the Keighery vegetation health rating scale (1994), thirteen of the sixteen vegetation communities within the area surveyed by BC were rated as being in 'very good' health. One vegetation community was rated as being in 'excellent' health and the two vegetation communities were rated as in 'good' health.

Three introduced taxa were identified within the survey area, *Portulaca oleracea*³, *Medicago minima* and *Tribulus terrestris*. These species were identified during the spring survey. According to the DAFWA none of these taxa are listed as a Declared Plant under Section 22 of the *BAM Act 2007*.

1.2.6 Level 1 Flora and Vegetation survey, Gruyere Project, July 2014, Botanica Consulting

BC was commissioned by GRR to undertake a Level 1 flora and vegetation survey of the Gruyere Project, located approximately 160km to the north-east of Laverton, WA. The survey included an area of approximately 2,092 ha within the Gruyere Project (approximately 1945 ha is encompassed in the current survey area) and a 21.5km X 100m haul road corridor (~427ha) extending from GRR's Central Bore Project to the Gruyere Project. Fieldwork was conducted from the 12th to the 16th of May 2014.

Thirty-four broad vegetation communities were identified within the survey area. These communities were represented by a total 37 Families, 82 Genera and 170 Taxa, (including sub-species and variants). No Threatened taxa, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)*, the Commonwealth *EPBC Act 1999* and as listed by DPaW were identified within the survey area. Two Priority Flora taxa, as listed by the DPaW were identified within the survey area; *Calytrix warburtonensis* (P2) and *Thryptomene nealensis* (P3).

None of the vegetation communities were found to have National Environmental Significance as defined by the Commonwealth *EPBC Act 1999*. No TEC pursuant to Commonwealth legislation or PEC as listed by DPaW were recorded within the survey area.

³ No longer listed as an alien taxa to Western Australia (WAHERB, 2015)

The survey area is not located within an ESA or Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. The survey area is not located within any DPaW managed land. Based on the Keighery vegetation health rating scale (1994) all thirty-four vegetation communities were rated as 'very good'. Disturbances included exploration activities, fire and camel grazing however the impacts on native vegetation in the area were minimal. No introduced taxa were identified within the survey area.

1.2.7 Level 1 Flora and Vegetation Survey, Sunrise Dam Gold Mine to Tropicana Gold Mine Gas Pipeline, July 2014, Botanica Consulting

BC was commissioned by AngloGold Ashanti Australia to undertake a Level 1 flora and vegetation survey of a 208km proposed gas pipeline route extending from the Sunrise Dam Gold Mine to the Tropicana Gold Mine located approximately 330km east north-east of Kalgoorlie-Boulder, Western Australia. The gas pipeline route is located approximately 128km south of the Gruyere Project.

The initial survey was conducted from the 30th October to 5th November 2013, covering an area of approximately 14,060ha. Approximately 50km of the 208km proposed gas pipeline route was unable to be surveyed due to access constraints. Additional surveys were conducted along the entire pipeline route from the 31st March to the 2nd April 2014 following high summer rainfall. One hundred and four vegetation communities were identified within the Sunrise Dam to Tropicana survey area (survey area). These vegetation communities were represented by a total of 43 Families, 114 Genera and 281 Taxa.

No DRF/Threatened Flora, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act 1950*, the Commonwealth *EPBC Act 1999* and as listed by DPaW were identified within the survey area. Seven Priority Flora taxa, as listed by DPaW were identified within the survey area:

1. *Acacia eremophila* numerous-nerved variant (A.S. George 11924) (P3);
2. *Caesia talingka* (P2);
3. *Dicrastylis cundeeleensis* (P4);
4. *Grevillia secunda* (P4);
5. *Labichea eremaea* (P3);
6. *Melaleuca apostiba* (P3); and
7. *Olearia arida* (P4).

None of the vegetation communities identified during the survey have National Environmental Significance as defined by the Commonwealth *EPBC Act 1999*. No TEC pursuant to Commonwealth legislation or as listed by DPaW were recorded within the survey area. No PEC as listed by DPaW were recorded within the survey area. However the *Mount Linden Range banded ironstone ridge vegetation complex* Priority 3 Ecological Community and *Yellow Sandplain Communities of the Great Victoria Desert* Priority 3 Ecological Community are located approximately 26km south of the western end of the survey corridor (Sunrise Dam Gold Mine end) and 20km south of the far eastern end of the survey corridor (Tropicana Gold Mine end) respectively. None of the vegetation communities identified within the survey area are representative of vegetation that characterises the *Mount Linden Range banded ironstone ridge vegetation complex*. One of the vegetation communities identified within the survey area; Occasional Shrub Mallee of *Eucalyptus youngiana* over sparse scrub of *Callitris preissii* and *Thryptomene biseriata* over moderately dense *Triodia basedowii* on sand dune however was

representative of vegetation that characterises the *Yellow Sandplain Communities of the Great Victoria Desert* as defined by Pearson (1994).

The survey area is not located in an ESA or within a Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Vegetation) Regulation 2004*. The survey area is not located within any conservation reserves listed by DPaW or proposed by the EPA Red Books listing (1976-1991).

1.2.8 Level 1 Flora and Vegetation Survey, Minigwal Borefields, November 2014, Botanica Consulting

BC was commissioned by AngloGold Ashanti Australia to undertake a Level 1 flora and vegetation survey of the Minigwal Borefields area covering 58,030 ha within tenements L38/113 L38/114, L39/178. The Minigwal Borefields is located approximately 122km south-east of the Gruyere Project. The survey was conducted from the 14th to the 21st of September 2014.

Twenty vegetation communities were identified within the survey area. These vegetation communities were represented by a total of 35 Families, 91 Genera and 168 Taxa (including sub-species and variants).

No Declared Rare Flora/Threatened Flora, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act 1950*, the Commonwealth *EPBC Act 1999* and as listed by DPaW were identified within the survey area. Two Priority Flora taxa, as listed by DPaW and one plant of conservation significance were identified within the survey area:

1. *Conospermum toddii* (P4);
2. *Olearia arida* (P4); and
3. *Lawrenzia* aff. *cinerea* (Species of conservation significance)

None of the vegetation communities identified during the survey have National Environmental Significance as defined by the Commonwealth *EPBC Act 1999*. No TEC pursuant to Commonwealth legislation or as listed by the DPaW were recorded within the survey area. No PEC as listed by the DPaW were recorded within the survey area. The *Yellow Sandplain Communities of the Great Victoria Desert* Priority 3 Ecological Community is located approximately 33km south of the survey area. One of the vegetation communities identified within the survey area; Open low woodland of *Eucalyptus gongylocarpa* over very open tree mallee of *Eucalyptus youngiana* over open low scrub of *Calothamnus gilesii* /*Grevillea juncifolia* subsp. *juncifolia* and mid dense hummock grass of *Triodia irritans* on sand dunes however was representative of vegetation that characterises the *Yellow Sandplain Communities of the Great Victoria Desert*.

The survey area is not located in an ESA or within a Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Vegetation) Regulation 2004*. The survey area is not located within any conservation reserves listed by DPaW or proposed conservation reserves under the EPA Red Books listing (1976-1991). The nearest Nature Reserves are the Yeo Lake Nature Reserve and Neale Junction Nature Reserve which are located 60km north and 100km north-east of the survey area respectively.

Based on Keighery's (1994) vegetation health rating scale, all twenty of the vegetation communities were rated as being in 'very good' health. A 'very good' health condition is defined as vegetation that

has been altered due to obvious signs of disturbance, in this instance as a result of exploration activities. According to Landgate (2014) the survey area has been subject to two fires in 2008 and 2012, fire is a common occurrence throughout the Great Victorian Desert.

1.2.9 Level 2 Flora and Vegetation Survey, Gruyere Project, March 2015, Botanica

Consulting

BC was commissioned by GRR to undertake a Level 2 flora and vegetation survey of the Gruyere Project, located approximately 160km to the north-east of Laverton, WA. The survey covered the entire boundary of the pending mining tenement M38/1267 which covers an area of approximately 6,846 ha. Fieldwork was conducted from the 12th to the 16th of November 2014.

Thirty-seven broad vegetation communities were identified within the survey area. These communities were represented by a total 39 Families, 85 Genera and 199 Taxa, (including sub-species and variants). No Threatened taxa, pursuant to subsection (2) of section 23F of the *WC Act 1950*, the Commonwealth *EPBC Act 1999* and as listed by DPaW were identified within the survey area. One Priority Flora taxon, as listed by DPaW was identified within the survey area; *Thryptomene nealensis* (P3).

The data recorded was used in a PATN analysis to assess species composition of the vegetation within the survey area. With a few exceptions, there was a high degree of homogeneity between the Acacia Forests and Woodlands/Shrublands, Mallee Woodlands and Shrublands/ Casuarina Forest and Woodlands of the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope groups despite obvious differences in landform structure. The exception being the Mallee Woodlands and Shrublands breakaway community (B-MWS1) and Acacia Open Woodland rocky hillslope community (RH-AOW1) which were shown to have a distinct species composition from the other communities. The sandplain communities were mainly distinguished from the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope. There were also differences within the sandplain communities with the Acacia Forest and Woodland/Shrubland sandplain communities mostly separated from the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities. Species composition of the sand dune community was similar to that of the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities.

None of the vegetation communities were found to have National Environmental Significance as defined by the Commonwealth *EPBC Act 1999*. No TEC pursuant to Commonwealth and State legislation or PEC as listed by DPaW were recorded within the survey area.

The survey area is not located within an ESA or Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. The survey area is not located within any DPaW managed land. However the Yeo Lake Nature Reserve managed by DPaW, is located approximately 10km to the east of the survey area.

Based on the Keighery vegetation health rating scale (1994) all thirty-seven vegetation communities were rated as 'very good'. Disturbances included exploration activities, fire and camel grazing however the impacts on native vegetation in the area were minimal. One introduced taxon was identified within the survey area; *Cenchrus ciliaris* (Buffel Grass). According to the DAFWA database, this taxon is not listed as a Declared Plant under the *BAM Act 2007*.

2 Regional Biophysical Environment

2.1 Regional Environment

The survey area lies within the Great Victoria Desert of Western Australia (WA) of the Eremaean Province in a region known as the Helms Botanical District. The area is dominated by Mulga low woodland on hardpan soils between dunes; otherwise tree steppe of *Eucalyptus gongylocarpa*, *E. youngiana* and *Triodia basedowii* (Beard 1990). The Great Victoria Desert Region is further divided into four subregions, Shield, Central, Maralinga and Kintore based on the Interim Biogeographic Regionalisation of Australia (IBRA). The survey area is located within the Shield (GVD1) subregion and the Central (GVD2) subregion (Barton & Cowan, 2001a; Barton & Cowan, 2001b). A map of the survey area in relation to the subregions of the Great Victoria Desert Region is provided in Figure 2.

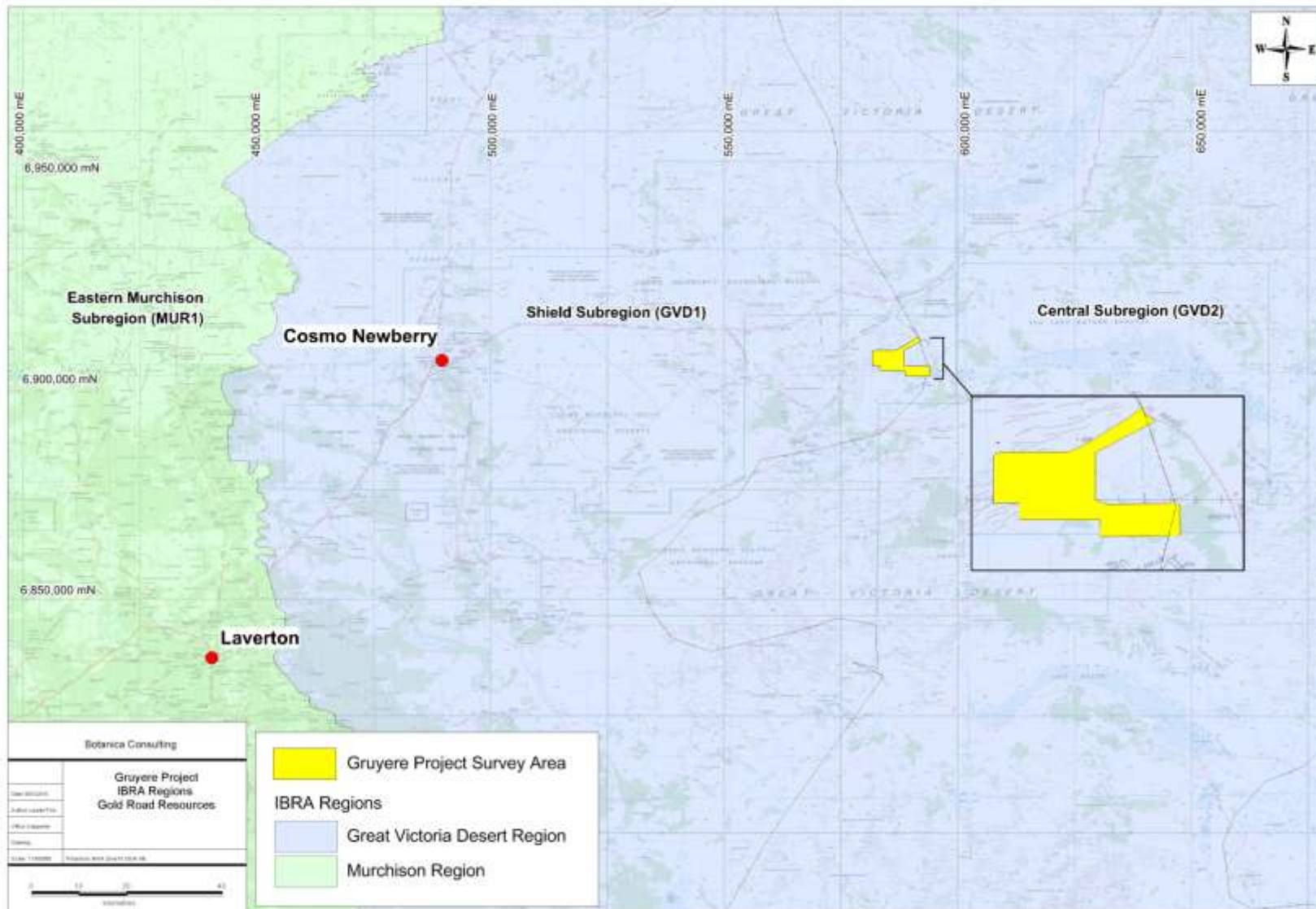


Figure 2: Gruyere Project survey area in relation to the IBRA subregion

2.2 Topography & Soils

The Shield subregion is located in the west of the Great Victoria Desert (GVD) and is underlain by Yilgarn Craton and has the highest proportion of sandplains (Barton & Cowan, 2001a). The topography is undulating, mostly with longitudinal dunes. Shallow earthy loams overlying red-brown hardpan frequently occur between the dunes; otherwise red earthy sands, with red-brown sands in the dunes (Beard, 1990). The Shield subregion contains Ponton Creek (a major palaeochannel occasionally running from the northeast Goldfields to Lake Bonderoo) and the highest proportion of sandplains in the bioregion. It is bounded to the east by an arid active sand-ridge desert of deep Quaternary Aeolian sands overlying Permian and Mesozoic strata of the Officer Basin (Barton & Cowan, 2001a).

The major landforms of the Shield subregion include:

- Salt lakes and major valley floors with lake derived dunes.
- Sand plains with patches of seif dunes running east west.
- Areas of moderate relief with out-cropping and silcrete-capped mesas and plateaus (breakaways).

The Central subregion is characterised as an arid active sand-ridge desert with extensive dune fields of deep Quaternary Aeolian sands overlying Permian strata of the Gunbarrel Basin. Landforms consist of salt lakes and major valley floors with lake derived dunes. Sand plains with extensive seif dunes running east west, occasional outcropping (breakaways) and quartzite hills provide minor relief (Barton & Cowan, 2001b).

The GVD is dominated by longitudinal sand dunes with a predominant east-west orientation and ring dunes separated by interdune corridors (or swales) and sand plains (TJV, 2009). These sandplains sit at an elevation of 350-500 m AHD30, dropping to less than 300 m in the south. They contain occasional outcrops of sandstones, laterites and silcretes, some calcareous mounds, and occasional salt pans. Other landforms present are scarpland-breakaways and residuals of various forms (cuestas, mesas, buttes, stony hillocks and hills) (Tille, 2006). These are usually surrounded by stone and gravel pavements. Shallow valleys (with lakes, claypans, salt pans, calcrete platforms, sand dunes, kopi dunes and calcareous dunes) are usually a relatively minor component of the landscape.

The western end of the GVD is underlain by the Yilgarn Craton, containing some of the oldest rocks of the Western Australian Shield, and dominantly granite with belts of greenstone rocks. Adjoining the Yilgarn Craton is the Albany-Fraser Province and its transition zone, in which Archaean rocks have been metamorphosed and intruded by granite during the Proterozoic (TJV, 2009). To the east of the transition zone lie the Gunbarrel and Officer Basins. The sedimentary rocks of the Gunbarrel Basin include sandstone, glaucigenite, marine and continental siliclastic and arenite. The Gunbarrel Basin overlies the Officer Basin, a former marine trough, which comes to the surface in the north-east of the GVD, and includes conglomerate, sandstone and arenite.

2.3 Vegetation

Vegetation of the Helms Botanical District (as described by Beard, 1990) comprises a mosaic of tree and shrub steppe between sandhills and on sandplains, consisting of Marble gum, mallee and spinifex (*Eucalyptus gongylocarpa* (9-12 m), *E. youngiana*, *Triodia basedowii*). Beard states that dunes in the west, are rather thinner, few and weak. *E. gongylocarpa* is comparatively scarce with *E. youngiana* replaced by *E. kingsmillii* and *Acacia aneura* and *A. linophylla* becoming frequent on the sandplain.

The Shield subregion contains spinifex (*Triodia* spp.) and mallee (*Eucalyptus kingsmillii*, *E. youngiana*) over hummock grassland dominated by *Triodia basedowii* on aeolian sand plain. Scattered marble gum (*E. gongylocarpa*) and native pine (*Callitris* sp.) occur on the deeper sands of the sand plains. Mulga and acacia woodland occur mainly on the colluvial and residual soils. Halophytes such as salt bush (*Atriplex*), bluebush (*Kochia*) and samphire (*Arthrocnemum*) occur on the margins of salt lakes and in saline drainage areas (Barton and Cowan, 2001a). The Central subregion vegetation is primarily a tree steppe of *Eucalyptus gongylocarpa*, Mulga and *E. youngiana* over hummock grassland dominated by *Triodia basedowii* on the Aeolian sands. The *Acacia* dominates colluvial soils with *Eremophila* and *Santalum* spp., halophytes are confined to edges of salt lakes and saline drainage systems Barton and Cowan, 2001b).

The DAFWA GIS file (2011) indicates that the Gruyere survey area is within Pre-European Beard vegetation associations Great Victoria Desert 18, Great Victorian Desert 45 and Great Victoria Desert 84. The extent of these associations as described by DAFWA is shown in Table 1 and Figure 3.

Areas retaining less than 30% of their pre-European vegetation extent generally experience exponentially accelerated taxa loss, while areas with less than 10% are considered “endangered”

Table 1: Remaining Beard Vegetation Associations within Western Australia (DAFWA, 2011)

Veg association	Extent within Survey Area (ha)	Pre-European Extent (ha)	Current Extent (ha)	Pre-European extent remaining (%)	% of Current extent within DPaW managed lands	Vegetation Description (Beard, 1990)
Great Victoria Desert 18	2539.5	62827.38	62827.38	100	0.24	Low woodland; mulga (<i>Acacia aneura</i>)
Great Victorian Desert 45	119.5	96739.54	96739.54	100	10.04	Shrublands; mallee scrub (Great Victoria Desert)
Great Victoria Desert 84	2,134	551.83	551.83	100	15.16	Hummock grasslands, open low tree & mallee steppe; marble gum & mallee (<i>Eucalyptus youngiana</i>) over hard spinifex <i>Triodia basedowii</i> between sandhills

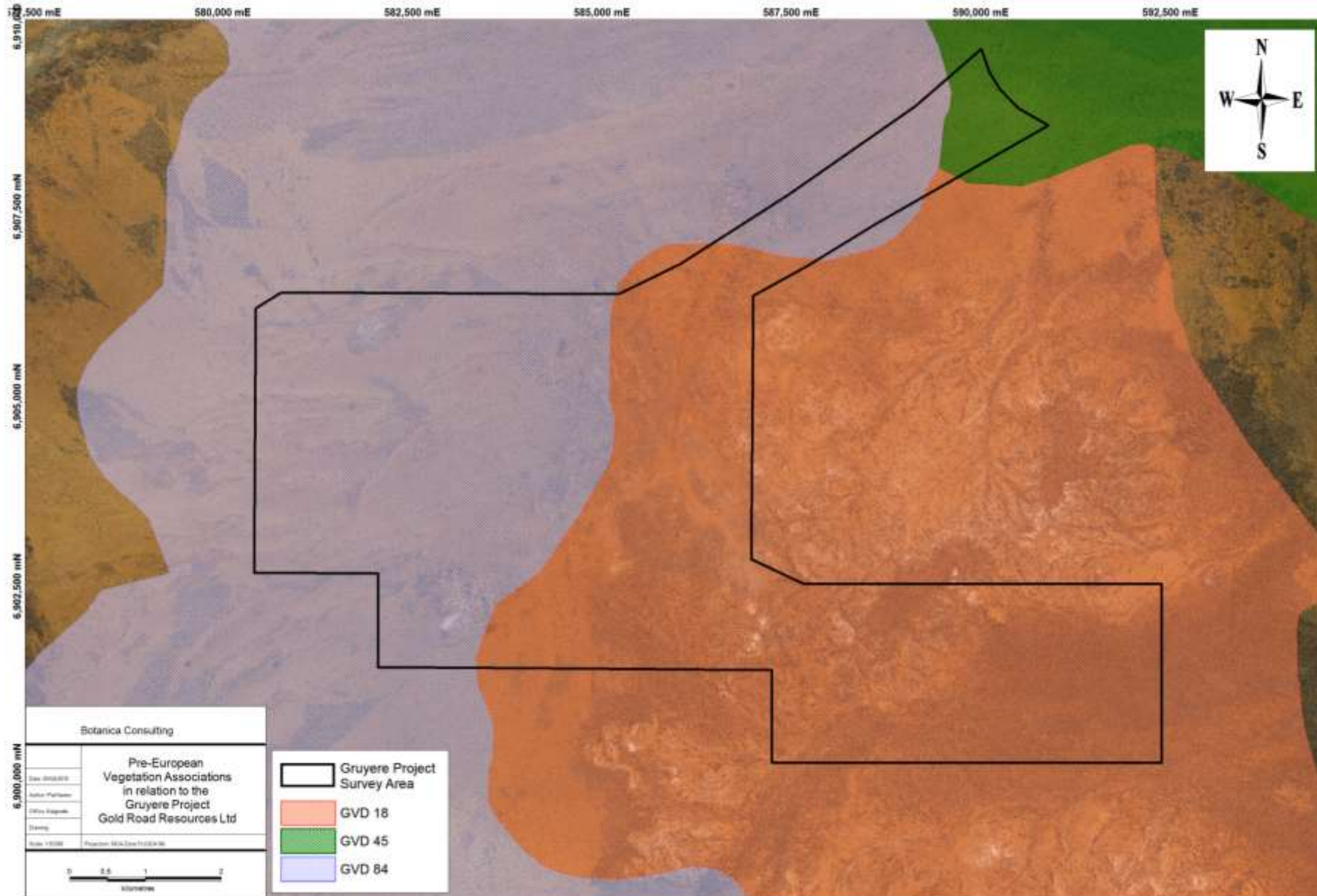


Figure 3: Pre-European Vegetation Associations within the Gruyere Project survey area

2.4 Soil Landscapes Systems

Based on geographic information provided by DAFWA (2014), the Gruyere survey area is located within the Leemans Sandplain Zone 274 of the Murchison Province 27 and the Northwestern Great Victoria Desert Zone 122 of the Gunbarrel Province 12.

The Leemans Sandplain Zone is characterised by sandplains (with some gravel plains, mesas and salt lakes) on granitic rocks of the Yilgarn Craton (Eastern Goldfields Superterrane). Soil is comprised of red sandy earths with red loamy earths and some red deep sands, red-brown hardpan shallow loams and calcareous loamy earths. Spinifex grasslands with marble gum, mallee and mulga shrublands (and some halophytic shrublands) dominate the zone. It is located in the south-western Arid Interior between Lakes Wells and Minigwal (to the east of Laverton).

The Northwestern Great Victoria Desert Zone is characterised by sandplains and dunes (with some undulating plains and uplands) on sedimentary rocks of the Gunbarrel Basin. Red sandy earths and red deep sands with some red loamy earths and red-brown hardpan shallow loams. Mulga shrublands and spinifex grasslands with mallee. It is located in the southern arid Interior sitting between Lake Carnegie, Rason Lake and Warburton.

The Leemans Sandplain and Northwestern Great Victoria Desert Zones are further divided into systems with the Gruyere survey area located within the AB 47, MY 99 and BY 7 systems in the Leemans Sandplain Zone and MY 99 in the Northwestern Great Victoria Desert Zone (Figure 4). Information on these systems is provided in Table 2 (Australian Soil Resource Information System (ASRIS), 2014).

Table 2: Soil landscape systems within the Gruyere Survey Area (ASRIS, 2014)

System	Extent within Survey Area (ha)	Description
AB 47	2090	Plains and dunes - longitudinal and ring dunes with interdune corridors and plains; occasional salt pans
MY 99	1936	Plains with extensive gravel pavements and small tracts of longitudinal dunes
BY 7	767	Scarpland- low lateritic breakaways on granites and gneisses

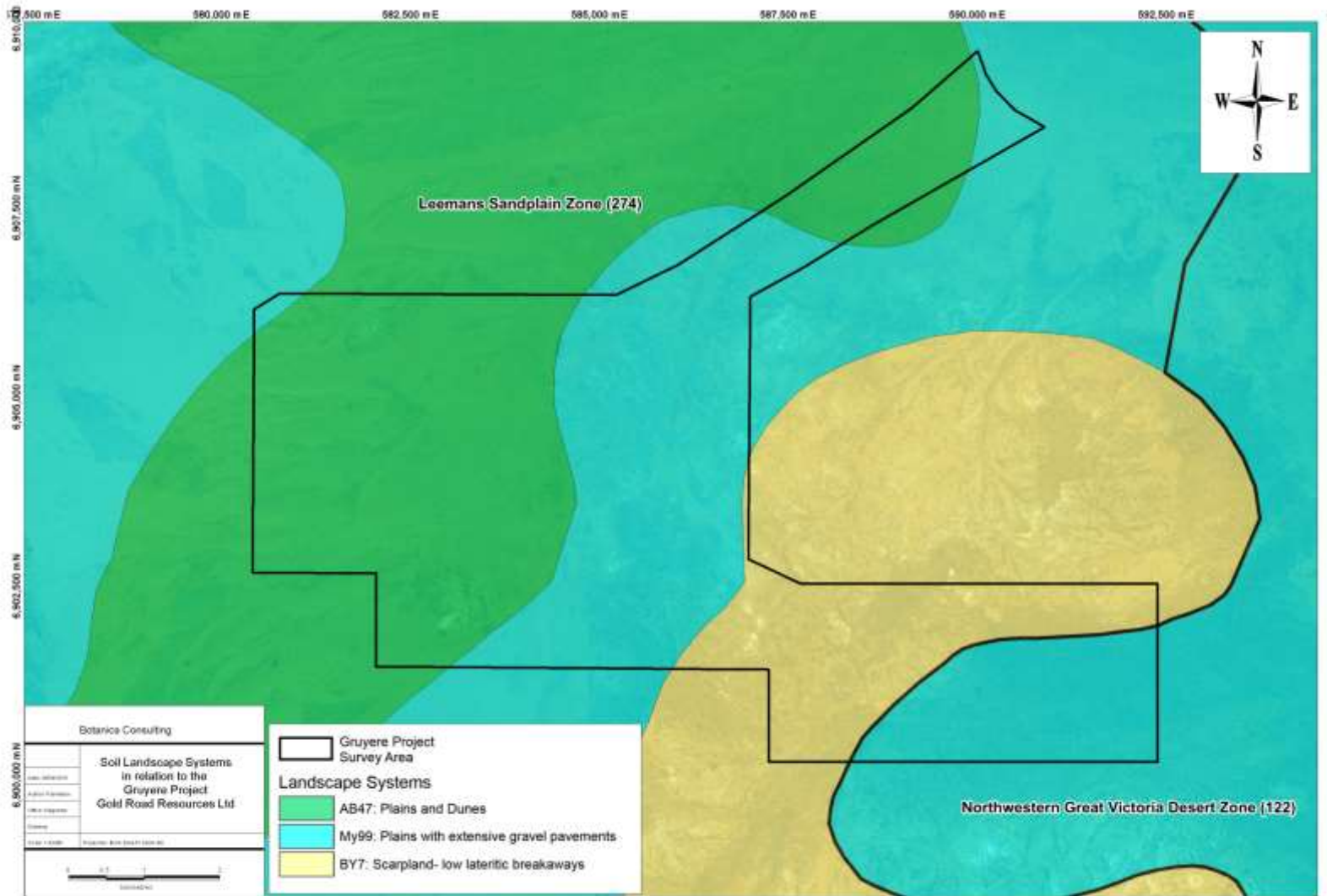


Figure 4: Soil Landscape Systems within the Gruyere Project survey area

2.5 Climate

The climate of the GVD is characterised as arid with annual rainfall approximately 150-190mm (Beard, 1990; Barton & Cowan, 2001a; Barton & Cowan, 2001b). Rainfall data for the Laverton Aero Station (#12305) located approximately 160km south-west of the Gruyere survey area is shown in Figure 5 (Bureau of Meteorology, BOM, 2015).

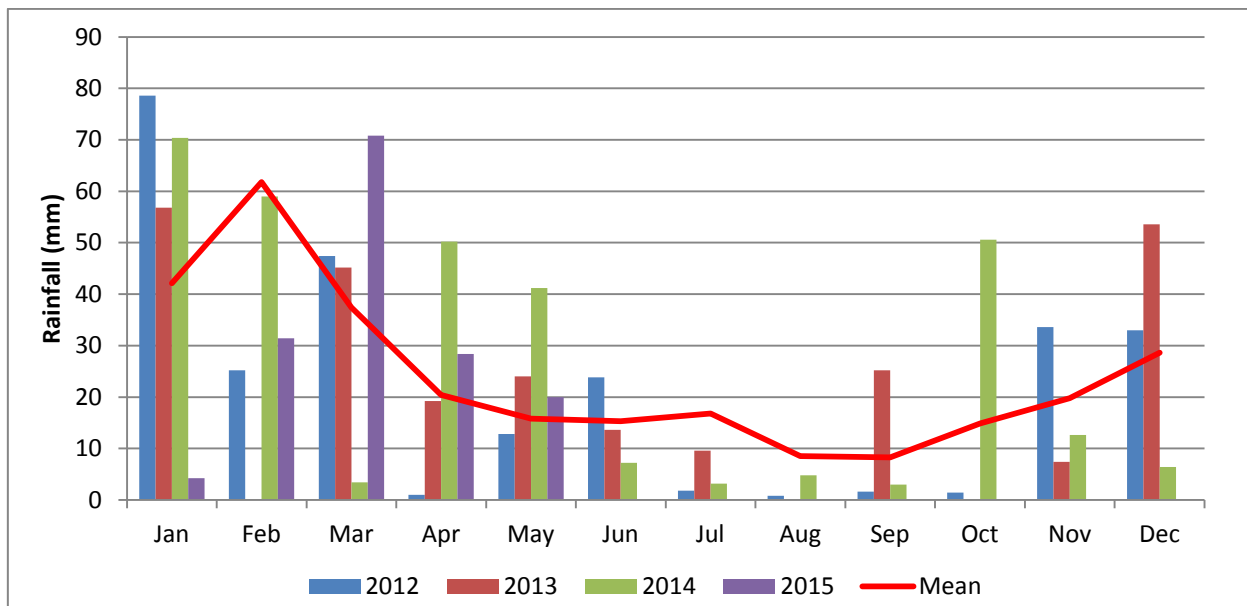


Figure 5: Monthly rainfall from January 2012 to May 2015 and mean monthly rainfall (January 1994 to May 2015) for the Laverton Aero weather station (#12305) (BOM 2015)

2.6 Land Use

The dominant land uses of the Shield and Central subregion are summarised in Table 3 below (Barton & Cowan, 2001a; Barton & Cowan, 2001b).

Table 3: Dominant Land Use of the Shield and Central IBRA Subregion

Land Use	% Land Use (Shield Subregion)	% Land Use (Central Subregion)
Aboriginal Reserve	12.33	7.36
Conservation Reserves	7.05	9.11
Grazing Native Pastures	24.85	3.41
Other – Lakes and major watercourse	0.09	0.19
Unallocated Crown Land and Crown Reserves	55.68	78.92

2.7 Survey Objectives

The objectives of the survey were to:

- Survey the northern portion of the proposed mining lease area using existing quadrats to give additional seasonal information following above average rainfall and provide additional certainty on species composition for previously mapped communities.
- Survey of a wide corridor area between Point Sunday Road and the north eastern corner of the proposed mine lease boundary that is considered the most likely location to develop a project access road.
- Survey an area east of the proposed mine lease boundary that is considered the most likely location to develop an accommodation camp and airstrip.
- Identify additional areas of interest for a number of vegetation communities that were identified during the previous Spring survey as having a small footprint (i.e. less than 100 ha).
- Compile a broad scale vegetation community flora map and species list of the total survey area (Appendix 3 & 4);
- Document and map locations of any Threatened or Priority listed flora species;
- Assess the regional and local conservation status of plant taxa and ecological communities within the survey area;
- Identify and map occurrences of any “Declared and Environmental” weeds within the survey area; and
- Provide plot based data as per Guidance Statement 51 (Environmental Protection Authority, EPA, 2004).

3 Survey Methodology

3.1 Desktop Assessment

Searches of the following databases were undertaken to aid in the compilation of a list of flora taxon within survey area:

- DPaW's *NatureMap* Database (DPaW, 2014); and
- DoE Protected matters search tool (DoE, 2015a).

The searches were conducted for an area encompassing a 20km radius of the centre coordinates 123°51' 16" E, 28°01' 07" S. It should be noted that these lists are based on observations from a broader area than the survey area (20km radius) and therefore may include taxon not present within the survey area. The databases also often included very old records that may be incorrect or in some cases the taxon in question has become locally or regionally extinct. Information from these sources should therefore be taken as indicative only and local knowledge and information also needs to be taken into consideration when determining what actual species may be present within the specific area being investigated.

Prior to the field survey, a combined search of DPaW's Flora of Conservation Significance databases (DPaW, 2013b) was also undertaken and the results are provided in Appendix 5. These significant flora species were examined on the WAHERB web page prior to the survey, to familiarise staff with their appearance. Locations of Threatened Flora and Priority Flora were overlaid on aerial photography of the area. Vegetation descriptions and available images of the Priority Flora were also obtained from Florabase.

Priority Flora and their respective vegetation types were targeted and all occurrences were traversed on foot specifically looking for the threatened flora associated with that vegetation description.

The conservation significance of flora taxon was assessed using data from the following sources:

- EPBC Act. Administered by the Australian Government DoE;
- WC Act. Administered by the WA DPaW (Govt. of WA 2015);
- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List – the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and
- DPaW Priority Flora list. A non-legislative list maintained by DPaW for management purposes (DPaW, 2013b).

Table 4 below represents the definitions of flora of conservation significance ratings under the *Wildlife Conservation Act 1950* as extracted from Florabase (WAHERB, 2015).

Table 4: Definitions of Rare and Priority Flora Species (WAHERB, 2015)

T: Schedule 1 Threatened Flora under the <i>Wildlife Conservation Act 1950</i>
Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.
X: Declared Rare flora – Presumed Extinct Taxa
Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such.
1: Priority One – Poorly known Species
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
2: Priority Two – Poorly Known Species
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
3: Priority Three – Poorly known Species
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
4: Priority Four – Rare, Near Threatened and other species in need of monitoring
<ol style="list-style-type: none"> 1. Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. 2. Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. 3. Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
5: Priority 5 – Conservation Dependent Species
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

A search of the DPaW PEC and TEC database was also conducted within a 10km radius of the survey area (DPaW, 2013a).

3.2 Sampling and Analysis Methods

BC was commissioned by GRR to conduct a Level 2 flora and vegetation survey of the Gruyere Project area. Fieldwork for a Level 2 spring flora and vegetation survey was conducted from the 12th to the 16th of November 2014. This survey covered the pending mining tenement M38/1267 which covers an area of approximately 6,846 ha. A Level 1 autumn survey of approximately 2,100ha within the mining tenement was previously conducted by BC in May 2014. Following the first stage of the Level 2 flora survey (November 2014), the area of interest for the Gruyere Project was revised to focus on the northern portion of the proposed tenement and the existing survey area was reduced to 3,030 ha. An additional 1,763 ha was added to the north-east of the survey area, encompassing a potential access road route from Point Sunday Road and potential infrastructure area to the south-east of the existing survey area. The revised survey area covered an area of 4,793 ha. Fieldwork was conducted from the 13th to the 17th May 2015. The aim of the autumn survey was to build on the findings of the spring season survey and capture any autumn ephemeral species following summer rains.

Prior to the commencement of field work, aerial photography was inspected and obvious differences in the vegetation assemblages were identified. The different vegetation communities identified were then inspected during the field survey to assess their validity. A handheld GPS unit was used to record the co-ordinates of the boundaries between existing vegetation communities.

At each sample point, the following information was recorded:

- GPS location;
- Photograph of vegetation;
- Dominant species;
- Collection and documentation of unknown plant specimens; and
- GPS location, photograph and collection of Threatened Flora if encountered.

Unknown specimens collected during the survey were identified with the aid of samples housed at the BC Herbarium and the Western Australian Herbarium. Presence/absence data of species from sample sites of similar vegetation was then compiled forming the best representative vegetation communities. Similar vegetation communities were recognised visually in the field.

The Gruyere survey area was traversed by two people on foot and All-Terrain Vehicle. Figure 6 provides a map of the area traversed throughout the survey.

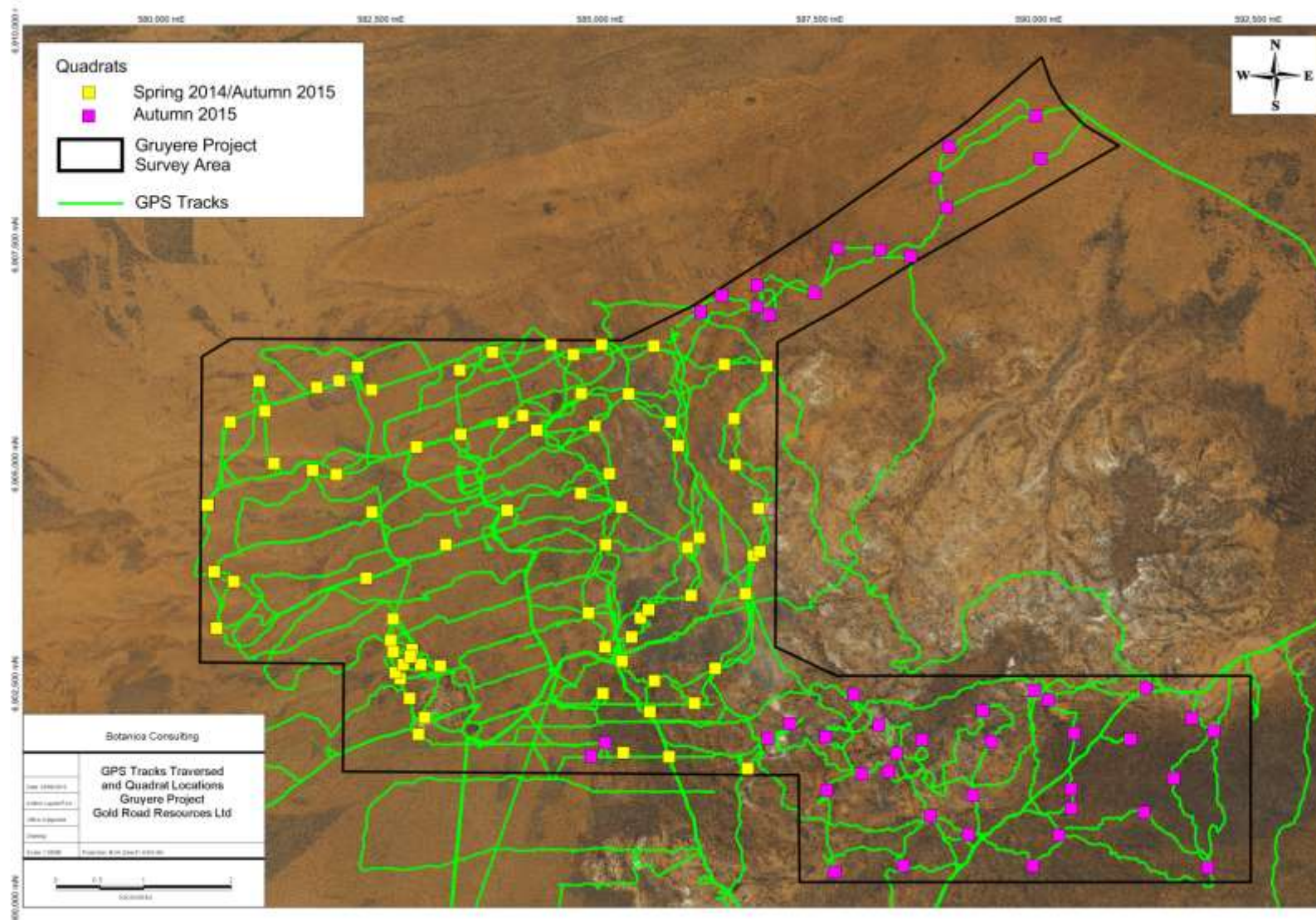


Figure 6: GPS tracks traversed and Quadrat locations throughout the Gruyere Project survey area

3.2.1 20m X 20m Quadrats

In November 2014, one hundred and forty one 20m x 20m quadrats were established within the Gruyere Project survey area. Following the amendment to the survey area (focusing on northern region and extending survey area to the east) a total of 65 quadrats surveyed in November 2014 were removed from the survey. An additional 47 quadrats were established in the revised survey area, giving a total of 123 quadrats within the current survey area (Figure 6). The objective was to establish at least two quadrats per vegetation community to capture the floristic variations within the survey area. The quadrats were established by inserting metal pickets in each corner, and measuring the length of the resultant boundaries to verify the quadrats were 20m square.

Following their establishment and boundary verification, the location of each quadrat was recorded by GPS (Appendix 6) photographed (Appendix 10) and all vascular plants within the quadrat were recorded. This included recording of dominant taxa from the upper, middle and lower stratum, and sampling of all unknown taxa. Unknown taxa were identified using BC's own reference herbarium and relevant taxonomical keys or by a taxonomical consultant. Data on the average heights of all vascular plants were recorded. Data on level of disturbance, presence of coarse fragments on surface, topographical position, percentage litter, percentage bare ground, percentage surface rock (bedrock and surface deposits), soil types (colour, profile, field texture and surface type), and vegetation structure were collected from each quadrat. Methods of recording data from these quadrats largely follow those outlined in CSIRO's *Australian Soil and Land Survey Field Handbook* (McDonald *et al.* 1998).

3.3 Key points of methodology

- Standard size quadrats used (20m²)
- Standard set of information collected
- Survey conducted in two seasons (spring and autumn)
- Voucher specimens to be lodged at Western Australian Herbarium
- Analysis methodology described in detail
- Datasets available electronically

3.3.1 Personnel involved

Jim Williams - Environmental Consultant/Botanist (Diploma of Horticulture)
Lauren Pick - Environmental Consultant (Bachelor of Science)

3.3.2 Scientific licences

Table 5: Scientific Licences of Botanica Staff coordinating the survey

Licensed staff	Permit Number	Valid Until
Jim Williams	SL011001	21-05-15
Lauren Pick	SL011000	21-05-15

3.4 Data Analysis Tools

Once the survey was completed the data obtained was analysed to generate a vegetation map (Appendix 3). The statistical program PATN was used to complete a pattern analysis on the data obtained from the quadrats.

3.4.1 PATN Analysis

PATN is a software package that aims to display patterns in complex data. Complex in PATN's terms, means that you have at least 6 objects (i.e. different taxon) that you want to know something about and a suite of more than 4 variables (i.e. different quadrats) that describe the objects.

This is achieved by grouping quadrats based on similarities in the flora taxon that are present or absent in each quadrat. This produces a quantitative estimate of the relationship between species composition of each quadrat.

Data must be in the form of a Microsoft Excel™ spreadsheet of rows (analysis data/taxon) and columns (variables/quadrats). The classifications are based upon a Bray-Curtis association matrix using a flexible Unweighted Pair Group Arithmetic Mean (UPGMA) method which standardises the data enabling the analysis to be completed. Semi-strong hybrid (SSH) ordination of the quadrat is then undertaken to show spatial relationships between groups and to elucidate possible environmental correlates with the classification.

Once the program has completed the analysis it produces a dendrogram (see Figure 7) and ordination graphs which represents the groupings of the different quadrats into vegetation communities based on how similar their species composition are. Separate vegetation communities are distinguished by different colours in the dendrogram (i.e. orange and blue). The values along the horizontal axis represent the level of similarity between quadrats ranging from low to high (i.e. low value means high similarity). For example, in Figure 7 Quadrats 1 and 5 are most similar as the lines end at value 0.4167.

The dotted line running vertically down the dendrogram represents the point at which quadrats are divided into vegetation communities based on the number of taxon in common between quadrats.

The analysis also produces a stress value which is a measure of the 'strength' of the analysis (i.e. how well the quadrats are grouped together into the appropriate vegetation communities). The lower the stress value the greater the strength of the analysis with a value of less than 0.3 showing that the analysis grouped quadrats accordingly. A stress value greater than 0.3 suggests that the analysis was unable to group quadrats appropriately due to extraneous variables (i.e. other factors influencing differences in vegetation communities other than species composition e.g. fire, clearing disturbance etc.).

The PATN analysis was conducted on all perennial taxa present in each quadrat using a Flexible UPGMA and a beta value of -0.1. Species reconciliation eliminated those sterile taxa that could not be fully identified from the analysis.

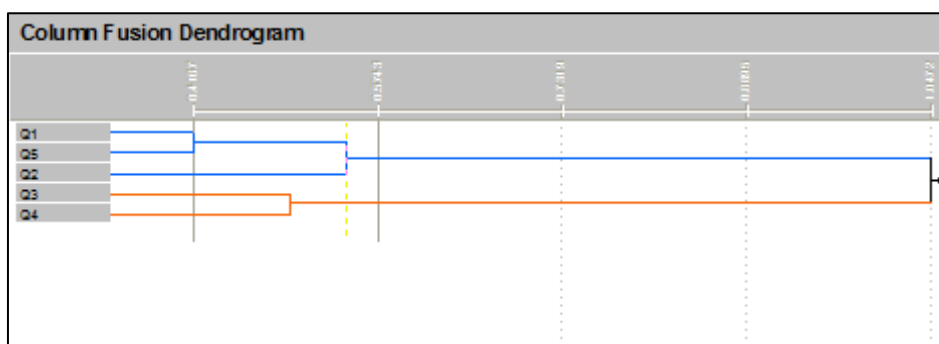


Figure 7: Example of a dendrogram produced from PATN analysis

3.5 Flora survey limitations and constraints

It is important to note that flora surveys will entail limitations notwithstanding careful planning and design. Potential limitations are listed in Table 6.

Table 6: Limitations and constraints associated with the flora and vegetation survey.

Variable	Potential Impact on Survey	Details
Access problems	Not a constraint	The survey was conducted by All-terrain vehicle and on foot. BC staff came across no access restrictions and was able to access the majority of the survey area.
Experience levels	Not a constraint	The BC staff members who conducted the survey were regarded as suitably qualified and experienced. Coordinating Botanist: Jim Williams Field Staff: Jim Williams, Lauren Pick Data Interpretation: Jim Williams, Lauren Pick & Pat Harton
Timing of survey, weather & season	Not a constraint	The survey area is located in the Eremaean Province where main rainfall is sporadic (EPA, 2004). Initial fieldwork was carried out in spring in accordance with EPA guidance statement 51; however rainfall for the winter months preceding the survey were below average. Additional fieldwork was completed following above average summer rainfalls received in the area and many ephemeral species were present at the time of survey.
Sources of information	Not a constraint	BC was able to obtain information about the area from previous research conducted within the Great Victoria Deserts Shields subregion which enabled adequate background information about the region.
Mapping reliability	Not a constraint	BC obtained a high resolution satellite imagery to assist with vegetation mapping.
Area disturbance	Not a constraint	The central Gruyere Project area has been subject to disturbance from exploration activities (including historical exploration) which allowed ease of access. The remaining vegetation within the outer Gruyere Project area comprised of dunefields with the only disturbances observed including fire and grazing by camels. According to Keigherys (1994) Health Rating Scale, all vegetation communities were rated as being in 'very good' health.
Survey	Not a constraint	Survey intensity has been appropriate with a Level 1 flora and

Variable	Potential Impact on Survey	Details
Intensity		vegetation survey conducted in autumn 2014 (~2100ha of current survey area) and a Level 2 survey conducted in spring 2014 and autumn 2015.
Resources	Not a constraint	The DPaW provided threatened flora information which was used to complete the survey. Other information was utilised from previous BC surveys in the Great Victoria Desert area.
Data Analysis	Minor constraint	BC staff conducting the PATN analyses are not statistical analysts and have basic statistics training. These analyses are able to provide basic information on the relationships between vegetation communities.
Completeness	Not a constraint	<p>In the opinion of BC the survey area was covered sufficiently. BC estimate that approximately 95% of the flora taxa including ephemeral/annual species in the survey area were recorded. This estimation takes into account the timing of the survey and the experience of the botanists undertaking the work.</p> <p>The vegetation communities for this study were based on visual descriptions of locations in the field. The distribution of these vegetation communities outside the study area is not known, however vegetation communities identified were categorised via comparison to vegetation distributions throughout Australia given on the National Vegetation Information System (DoE, 2015b).</p>

4 Results

4.1 Desktop Assessment

The results of the combined search of DPaW's Flora of Conservation Significance databases (DPaW, 2013b) revealed no DPaW listings of Threatened or Priority Flora taxa located within the Gruyere survey area. There were however five Priority Flora taxa within a 40km radius of the survey area (Appendix 5) each of which have the potential to occur in the area, based on habitat requirements identified within the area. An additional Priority Flora taxon previously identified within the Yamarna Project (described in Section 1.2.5) which is not listed on the DPaW database was also considered as potentially occurring within the survey area. A total of six Priority Flora taxa have the potential to occur within the survey area as listed below in Table 7.

Table 7: Priority Flora with the potential to occur within the survey area (WAHERB, 2015)

Taxon	Conservation Code	Description (WAHERB, 2015)
<i>Calytrix warburtonensis</i> ⁴	2	This species is described as a shrub, which grows between 0.3-0.6 metres high. It produces a white flower in March or September to October. This species commonly occurs on rocky hills and breakaways
<i>Comesperma viscidulum</i>	4	This species is described as a shrub which grows to a height of 0.7m high
<i>Conospermum toddii</i>	4	This species is described as a spreading shrub, which grows to a height of between 1.2 and 2 metres high. It produces white to yellow flowers in July to October. This species commonly occurs on yellow sand and on sand dunes
<i>Grevillea secunda</i>	3	This species is described as a low spreading shrub, which grows between 0.3 to 0.8 metres high. It produces red flowers from September to October. This species commonly occurs on red or yellow sand on sand plains or sand dunes
<i>Sauropus ramosissimus</i>	3	This species is described as a slender many branched shrub, which grows up to 0.3 metres high
<i>Thryptomene nealensis</i> ^{4,5}	3	This species is described as a shrub, which grows up to 0.3 metres high. It produces a pink flower in October and is generally found on lateritic breakaways

4.2 Flora of conservation significance

No Threatened Flora taxa pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)*, the *EPBC Act 1999* and as listed by the DPaW (Jacob, 2014) were identified within the survey area. No Priority Flora as listed by the DPaW (2013b) were identified within the survey area.

⁴ Identified during Yamarna Level 2 Flora Survey (BC, 2012) and Gruyere Level 1 Flora Survey (BC, 2014)

⁵ Identified during Yamarna Level 2 Flora Survey (BC, 2012), Gruyere Level 1 Flora Survey (BC, 2014) and Gruyere Level 2 Flora Survey (March 2015).

4.3 Vegetation Communities

Thirty-two vegetation communities were identified within the survey area. These communities comprised of seven different landform types and seven NVIS broad vegetation groups (Table 8). These communities were represented by a total 44 Families, 104 Genera and 240 Taxa, (including sub-species and variants) as listed in Appendix 4. Maps showing the vegetation communities present in the survey area are located in Appendix 3.

Table 8: Summary of vegetation communities and area covered within the Gruyere Project survey area

Landform	NVIS Vegetation Group	Vegetation Community	Code	Area (ha)	Area (%)
Breakaway	Acacia Shrublands	Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	B-AS1	4	0.08
Clay-Loam Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	CLP-AFW1	240	5.01
		Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AFW2	55	1.15
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-AFW3	414	8.64
	Acacia Shrublands	Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AS1	160	3.34
	Mallee Open Woodlands and Sparse Mallee Shrublands	Very open tree mallee of <i>Eucalyptus lucasii</i> /low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-MOW/SMS1	60	1.25
Drainage Depression	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> over dwarf scrub of <i>Maireana pyramidata</i> and low heath of <i>Frankenia georgei</i> and <i>Sclerolaena densiflora</i> in drainage depression	DD-AOW1	130	2.71
	Acacia Forests and Woodlands	Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	DD-AFW1	120	2.50

Landform	NVIS Vegetation Group	Vegetation Community	Code	Area (ha)	Area (%)
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and dwarf scrub of <i>Eremophila malacoides</i> in drainage depression	DD-AFW2	16	0.33
Quartz/Rocky Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> / <i>Senna</i> <i>artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana</i> <i>triptera</i> on quartz/rocky plain	QRP-AFW1	90	1.88
		Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila</i> <i>exilifolia</i> on quartz/rocky plain	QRP-AFW2	135	2.82
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus</i> <i>obovatus</i> on quartz/rocky plain	QRP-AFW3	80	1.67
		Low woodland of <i>Acacia</i> <i>quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> with occasional <i>Triodia irritans</i> on quartz/rocky plain	QRP-AFW4	390	8.14
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> / heath of <i>Senna</i> <i>artemisioides</i> subsp. x <i>artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on quartz/rocky plain	QRP-AFW6	30	0.63
	Acacia Open Woodlands	Open low woodland of <i>Acacia</i> <i>incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> and low heath of <i>Maireana</i> <i>glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	QRP-AOW1	14	0.29
Rocky Hillslope	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia</i> <i>irritans</i> on rocky hillslope	RH-AFW1	158	3.30
Sand Dune	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Open low woodland of <i>Eucalyptus</i> <i>gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	SD- EW/MWS1	247	5.15
Sandplain	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW1	95	1.98
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW2	47	0.98

Landform	NVIS Vegetation Group	Vegetation Community	Code	Area (ha)	Area (%)
		Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW3	134	2.80
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over dwarf scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW4	244	5.09
	Eucalypt Woodlands	Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW1	390	8.14
	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS1	538	11.22
		Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS2	83	1.73
	Mallee Woodlands and Shrublands	Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS1	180	3.76
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS2	120	2.50
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS3	350	7.30
		Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS4	23	0.48
		Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS5	25	0.52
		Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS6	5	0.10
		Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS7	129	2.69
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS8	87	1.82

Breakaway: Acacia Shrublands

4.4 Open scrub of *Acacia incurvaneura* over low scrub of *Acacia quadrimarginea* and low heath of *Prostanthera wilkieana* on breakaway (B-AS1)

4.4.1 Flora

The total flora recorded within this vegetation community (Plate 1) was represented by a total of 19 Families, 26 Genera and 32 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.4.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 9. The Muir Life Form and Height Class sheet is located in Appendix 7. According to NVIS this vegetation community is best represented by the Acacia Shrublands vegetation group (DoE, 2015b).

Table 9: Vegetation assemblage for Open scrub of *Acacia incurvaneura* over low scrub of *Acacia quadrimarginea* and low heath of *Prostanthera wilkieana* on breakaway within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub >2m	2-10%	<i>Acacia incurvaneura</i>
Shrub 1-1.5m	10-30%	<i>Acacia quadrimarginea</i>
Shrub <0.5m	30-70%	<i>Prostanthera wilkieana</i>



Plate 1: Open scrub of *Acacia incurvaneura* over low scrub of *Acacia quadrimarginea* and low heath of *Prostanthera wilkieana* on breakaway

Clay-Loam Plain: Acacia Forests and Woodlands

4.5 Low woodland of *Acacia incurvaneura*/ *Acacia caesaneura*/ *Acacia aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus* on clay-loam plain (CLP-AFW1)

4.5.1 Flora

The total flora recorded within this vegetation community (Plate 2) was represented by a total of 18 Families, 29 Genera and 50 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.5.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 10. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 10: Vegetation assemblage Low woodland of *Acacia incurvaneura*/ *Acacia caesaneura*/ *Acacia aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus* on clay-loam plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia incurvaneura</i> <i>Acacia caesaneura</i> <i>Acacia aptaneura</i>
Shrub 1-1.5m	30-70%	<i>Senna artemisioides</i> subsp. <i>helmsii</i> <i>Senna artemisioides</i> subsp. <i>x artemisioides</i>
Shrub <0.5m	30-70%	<i>Ptilotus obovatus</i>



Plate 2: Low woodland of *Acacia incurvaneura*/ *Acacia caesaneura*/ *Acacia aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus* on clay-loam plain

4.6 Thicket of *Acacia burkittii* over heath of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on clay-loam plain (CLP-AFW2)

4.6.1 Flora

The total flora recorded within this vegetation community (Plate 3) was represented by a total of 15 Families, 22 Genera and 37 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.6.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 11. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 11: Vegetation assemblage for Thicket of *Acacia burkittii* over heath of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on clay-loam plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub >2m	30-70%	<i>Acacia burkittii</i>
Shrub 1-1.5m	30-70%	<i>Senna artemisioides</i> subsp. <i>filifolia</i>
Shrub <0.5m	10-30%	<i>Ptilotus obovatus</i>
Bunch Grass <0.5m	30-70%	<i>Aristida contorta</i>



Plate 3: Thicket of *Acacia burkittii* over heath of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on clay-loam plain

4.7 Low woodland of *Acacia caesaneura*/*Acacia incurvaneura* over low scrub of *Eremophila forrestii* subsp. *forrestii*/*Eremophila latrobei* subsp. *latrobei* and low grass of *Eragrostis eriopoda* on clay-loam plain (CLP-AFW3)

4.7.1 Flora

The total flora recorded within this vegetation community (Plate 4) was represented by a total of 19 Families, 28 Genera and 38 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.7.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 12. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 12: Vegetation assemblage for Low woodland of *Acacia caesaneura*/*Acacia incurvaneura* over low scrub of *Eremophila forrestii* subsp. *forrestii*/*Eremophila latrobei* subsp. *latrobei* and low grass of *Eragrostis eriopoda* on clay-loam plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia caesaneura</i> <i>Acacia incurvaneura</i>
Shrub 1-1.5m	10-30%	<i>Eremophila forrestii</i> subsp. <i>forrestii</i> <i>Eremophila latrobei</i> subsp. <i>latrobei</i>
Bunch Grass <0.5m	30-70%	<i>Eragrostis eriopoda</i>



Plate 4: Low woodland of *Acacia caesaneura*/*Acacia incurvaneura* over low scrub of *Eremophila forrestii* subsp. *forrestii*/*Eremophila latrobei* subsp. *latrobei* and low grass of *Eragrostis eriopoda* on clay-loam plain

Clay-Loam Plain: Acacia Shrublands

4.8 Scrub of *Acacia burkittii* over low scrub of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on clay-loam plain (CLP-AS1)

4.8.1 Flora

The total flora recorded within this vegetation community (Plate 5) was represented by a total of 19 Families, 28 Genera and 48 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.8.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 13. According to NVIS this vegetation community is best represented by the Acacia Shrublands vegetation group (DoE, 2015b).

Table 13: Vegetation assemblage for Scrub of *Acacia burkittii* over low scrub of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on clay-loam plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub >2m	10-30%	<i>Acacia burkittii</i>
Shrub 1-1.5m	10-30%	<i>Senna artemisioides</i> subsp. <i>filifolia</i>
Shrub <0.5m	10-30%	<i>Ptilotus obovatus</i>
Bunch Grass <0.5m	30-70%	<i>Aristida contorta</i>



Plate 5: Scrub of *Acacia burkittii* over low scrub of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on clay-loam plain

Clay-Loam Plain: Mallee Open Woodlands and Sparse Mallee Shrublands

4.9 Very open tree mallee of *Eucalyptus lucasii*/ low woodland of *Acacia incurvaneura*/ *Acacia caesaneura* over heath of *Eremophila latrobei* subsp. *glabra* and very open low grass of *Eragrostis eriopoda* on clay-loam plain (CLP-MOW/SMS1)

4.9.1 Flora

The total flora recorded within this vegetation community (Plate 6) was represented by a total of 20 Families, 30 Genera and 47 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.9.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 14. According to NVIS this vegetation community is best represented by the Mallee Open Woodlands and Sparse Mallee Shrublands vegetation group (DoE, 2015b).

**Table 14: Vegetation assemblage for Very open tree mallee of *Eucalyptus lucasii*/ low woodland of *Acacia incurvaneura*/
Acacia caesaneura over heath of *Eremophila latrobei* subsp. *filiformis* and very open low grass of *Eragrostis eriopoda* on clay-loam plain within the survey area (Muir, 1977)**

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	2-10%	<i>Eucalyptus lucasii</i>
Tree <5m	10-30%	<i>Acacia incurvaneura</i> <i>Acacia caesaneura</i>
Shrub 1-1.5m	30-70%	<i>Eremophila latrobei</i> subsp. <i>glabra</i>
Bunch Grass <0.5m	30-70%	<i>Eragrostis eriopoda</i>



**Plate 6: Very open tree mallee of *Eucalyptus lucasii*/ low woodland of *Acacia incurvaneura*/
Acacia caesaneura over heath of *Eremophila latrobei* subsp. *glabra* and very open low grass of *Eragrostis eriopoda* on clay-loam plain**

Drainage Depression: Acacia Open Woodlands

4.10 Open low woodland of *Acacia incurvaneura* over dwarf scrub of *Maireana pyramidata* and low heath of *Frankenia georgei*/ *Sclerolaena densiflora* in drainage depression (DD-AOW1)

4.10.1 Flora

The total flora recorded within this vegetation community (Plate 7) was represented by a total of 11 Families, 18 Genera and 31 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.10.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 15. According to NVIS this vegetation community is best represented by the Acacia Open Woodlands vegetation group (DoE, 2015b).

Table 15: Vegetation assemblage for Open low woodland of *Acacia incurvaneura* over dwarf scrub of *Maireana pyramidata* and low heath of *Frankenia georgei*/ *Sclerolaena densiflora* in drainage depression within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree 5-15m	2-10%	<i>Acacia incurvaneura</i>
Shrub 0.5-1m	10-30%	<i>Maireana pyramidata</i>
Shrub <0.5m	30-70%	<i>Frankenia georgei</i> <i>Sclerolaena densiflora</i>



Plate 7: Open low woodland of *Acacia incurvaneura* over dwarf scrub of *Maireana pyramidata* and low heath of *Frankenia georgei*/ *Sclerolaena densiflora* in drainage depression

Drainage Depression: Acacia Forests and Woodlands

4.11 Low woodland of *Acacia aptaneura*/ *Acacia caesaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei* and dwarf scrub of *Eremophila gilesii*/ *Eremophila malacoides* with occasional *Eragrostis eriopoda* in drainage depression (DD-AFW1)

4.11.1 Flora

The total flora recorded within this vegetation community (Plate 8) was represented by a total of 20 Families, 34 Genera and 61 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.11.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 16. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 16: Vegetation assemblage for Low woodland of *Acacia aptaneura*/ *Acacia caesaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei* and dwarf scrub of *Eremophila gilesii*/ *Eremophila malacoides* with occasional *Eragrostis eriopoda* in drainage depression within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia caesaneura</i> <i>Acacia incurvaneura</i>
Shrub 1-1.5m	10-30%	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>
Shrub 0.5-1m	10-30%	<i>Eremophila gilesii</i> <i>Eremophila malacoides</i>
Tussock Grass	10-30%	<i>Eragrostis eriopoda</i>



Plate 8: Low woodland of *Acacia aptaneura*/ *Acacia caesaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei* and dwarf scrub of *Eremophila gilesii*/ *Eremophila malacoides* with occasional *Eragrostis eriopoda* in drainage depression

4.12 Low woodland of *Acacica incurvaneura*/ *Acacia quadrimarginea* over low scrub of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and dwarf scrub of *Eremophila malacoides* in drainage depression (DD-AFW2)

4.12.1 Flora

The total flora recorded within this vegetation community (Plate 9) was represented by a total of 17 Families, 33 Genera and 46 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.12.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 17. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 17: Vegetation assemblage for Low woodland of *Acacica incurvaneura*/ *Acacia quadrimarginea* over low scrub of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and dwarf scrub of *Eremophila malacoides* in drainage depression within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia incurvaneura</i> <i>Acacia quadrimarginea</i>
Shrub 1-1.5m	10-30%	<i>Senna artemisioides</i> subsp. <i>artemisioides</i> <i>Senna artemisioides</i> subsp. <i>helmsii</i>
Shrub 0.5-1m	10-30%	<i>Eremophila malacoides</i>



Plate 9: Low woodland of *Acacica incurvaneura*/ *Acacia quadrimarginea* over low scrub of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and dwarf scrub of *Eremophila malacoides* in drainage depression

Quartz/Rocky Plain: Acacia Forests and Woodlands

4.13 Low woodland of *Acacia incurvaneura*/ *A. caesaneura*/ *A. aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus*/ *Maireana triptera* on quartz/rocky plain (ORP-AFW1)

4.13.1 Flora

The total flora recorded within this vegetation community (Plate 10) was represented by a total of 18 Families, 27 Genera and 49 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.13.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 18. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 18: Vegetation assemblage Low woodland of *Acacia incurvaneura*/ *A. caesaneura*/ *A. aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus*/ *Maireana triptera* on quartz/rocky plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia aptaneura</i> <i>Acacia caesaneura</i> <i>Acacia incurvaneura</i>
Shrub 1-1.5m	30-70%	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i> <i>Senna artemisioides</i> subsp. <i>helmsii</i>
Shrub <0.5m	30-70%	<i>Maireana triptera</i> <i>Ptilotus obovatus</i>



Plate 10: Low woodland of *Acacia incurvaneura*/ *A. caesaneura*/ *A. aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus*/ *Maireana triptera* on quartz/rocky plain

4.14 Low woodland of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei* and low heath of *Eremophila exilifolia* on quartz/rocky plain (ORP-AFW2)

4.14.1 Flora

The total flora recorded within this vegetation community (Plate 11) was represented by a total of 22 Families, 30 Genera and 47 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.14.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 19. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 19: Vegetation assemblage for Low woodland of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei* and low heath of *Eremophila exilifolia* on quartz/rocky plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia incurvaneura</i>
Shrub 1-1.5m	30-70%	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>
Shrub 0.5-1m	30-70%	<i>Eremophila exilifolia</i>



Plate 11: Low woodland of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei* and low heath of *Eremophila exilifolia* on quartz/rocky plain

4.15 Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over heath of mixed shrubs and dwarf scrub of *Ptilotus obovatus* on quartz/rocky plain (QRP-AFW3)

4.15.1 Flora

The total flora recorded within this vegetation community (Plate 12) was represented by a total of 21 Families, 36 Genera and 57 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.15.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 20. No broad scale clearing for agricultural purposes has occurred within this vegetation community within the survey area. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 20: Vegetation assemblage Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over heath of mixed shrubs and dwarf scrub of *Ptilotus obovatus* on quartz/rocky plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	30-70%	<i>Acacia incurvaneura</i> <i>Acacia caesaneura</i>
Shrub 1-1.5m	30-70%	<i>Scaevola spinescens</i> <i>Dodonaea lobulata</i> <i>Senna artemisioides</i> subsp. x <i>artemisioides</i>
Shrub <0.5m	10-30%	<i>Ptilotus obovatus</i>



Plate 12: Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over heath of mixed shrubs and dwarf scrub of *Ptilotus obovatus* on quartz/rocky plain

4.16 Low woodland of *Acacia quadrimarginea*/ *Acacia caesaneura* over heath of mixed shrubs and dwarf scrub of *Ptilotus obovatus* with occasional *Triodia irritans* on quartz/rocky plain (QRP-AFW4)

4.16.1 Flora

The total flora recorded within this vegetation community (Plate 13) was represented by a total of 16 Families, 28 Genera and 51 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.16.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 21. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 21: Vegetation assemblage for Low woodland of *Acacia quadrimarginea*/ *Acacia caesaneura* over heath of mixed shrubs and dwarf scrub of *Ptilotus obovatus* with occasional *Triodia irritans* on quartz/rocky plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia quadrimarginea</i> <i>Acacia caesaneura</i>
Shrub 1-1.5m	30-70%	<i>Scaevola spinescens</i> <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> <i>Dodonaea lobulata</i>
Shrub <0.5m	10-30%	<i>Ptilotus obovatus</i>
Hummock Grass	10-30%	<i>Triodia irritans</i>



Plate 13: Low woodland of *Acacia quadrimarginea*/ *Acacia caesaneura* over heath of mixed shrubs and dwarf scrub of *Ptilotus obovatus* with occasional *Triodia irritans* on quartz/rocky plain

4.17 Low woodland of *Acacia incurvaneura*/ *Acacia quadrimarginea* over low scrub of *Acacia cuthbertsonii*/ heath of *Senna artemisioides* subsp. x *artemisioides* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on quartz/rocky plain (QRP-AFW6)

4.17.1 Flora

The total flora recorded within this vegetation community (Plate 14) was represented by a total of 15 Families, 21 Genera and 36 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.17.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 22. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 22: Vegetation assemblage for of Low woodland of *Acacia incurvaneura*/ *A. quadrimarginea* over low scrub of *A. cuthbertsonii*/ heath of *Senna artemisioides* subsp. x *artemisioides* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on quartz/rocky plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia incurvaneura</i> <i>Acacia quadrimarginea</i>
Shrub 1.5-2m	10-30%	<i>Acacia cuthbertsonii</i>
Shrub 1-1.5m	30-70%	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>
Shrub <0.5m	10-30%	<i>Ptilotus obovatus</i>
Bunch grass <0.5m	30-70%	<i>Aristida contorta</i>



Plate 14: of Low woodland of *Acacia incurvaneura*/ *A. quadrimarginea* over low scrub of *A. cuthbertsonii*/ heath of *Senna artemisioides* subsp. x *artemisioides* and dwarf scrub of *Ptilotus obovatus*/ low grass of *Aristida contorta* on quartz/rocky plain

Quartz/Rocky Plain: Acacia Open Woodlands

4.18 Open low woodland of *Acacia incurvaneura*/ *Acacia caesaneura* over low scrub of *Senna artemisioides* subsp. *helmsii*/ *Senna artemisioides* subsp. *x artemisioides* and low heath of *Maireana glomerifolia*/ *Frankenia georgei* on quartz/rocky plain (QRP-AOW1)

4.18.1 Flora

The total flora recorded within this vegetation community (Plate 15) was represented by a total of 11 Families, 21 Genera and 41 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.18.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 23. According to NVIS this vegetation community is best represented by the Acacia Open Woodlands vegetation group (DoE, 2015b).

Table 23: Vegetation assemblage for Open low woodland of *Acacia incurvaneura*/ *Acacia caesaneura* over low scrub of *Senna artemisioides* subsp. *helmsii*/ *Senna artemisioides* subsp. *x artemisioides* and low heath of *Maireana glomerifolia*/ *Frankenia georgei* on quartz/rocky plain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	2-10%	<i>Acacia incurvaneura</i> <i>Acacia caesaneura</i>
Shrub 1-1.5m	10-30%	<i>Senna artemisioides</i> subsp. <i>helmsii</i> <i>Senna artemisioides</i> subsp. <i>x artemisioides</i>
Shrub <0.5m	30-70%	<i>Maireana glomerifolia</i> <i>Frankenia georgei</i>



Plate 15: Open low woodland of *Acacia incurvaneura*/ *Acacia caesaneura* over low scrub of *Senna artemisioides* subsp. *helmsii*/ *Senna artemisioides* subsp. *x artemisioides* and low heath of *Maireana glomerifolia*/ *Frankenia georgei* on quartz/rocky plain

Rocky Hillslope: Acacia Forests and Woodlands

4.19 Low forest of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei*/*Scaevola spinescens* and sparse hummock grass of *Triodia irritans* on rocky hillslope (RH-AFW1)

4.19.1 Flora

The total flora recorded within this vegetation community (Plate 16) was represented by a total of 19 Families, 23 Genera and 47 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.19.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 24. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 24: Vegetation assemblage for Low forest of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei*/ *Scaevola spinescens* and sparse hummock grass of *Triodia irritans* on rocky hillslope within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	30-70%	<i>Acacia incurvaneura</i>
Shrub 1-1.5m	30-70%	<i>Eremophila latrobei</i> subsp. <i>latrobei</i> <i>Scaevola spinescens</i>
Hummock Grass	10-30%	<i>Triodia irritans</i>



Plate 16: Low forest of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei*/*Scaevola spinescens* and sparse hummock grass of *Triodia irritans* on rocky hillslope

Sand Dune: *Eucalypt* woodland/ Mallee Woodlands and Shrublands

4.20 Open low woodland of *Eucalyptus gongylocarpa* over open shrub mallee of *Eucalyptus youngiana* and mid-dense hummock grass of *Triodia basedowii* on sand dune (SD-EW/MWS1)

4.20.1 Flora

The total flora recorded within this vegetation community (Plate 17) was represented by a total of 24 Families, 38 Genera and 55 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.20.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 25. According to NVIS this vegetation community is best represented by the Eucalypt Woodlands vegetation group (DoE, 2015b).

Table 25: Vegetation assemblage for Open low woodland of *Eucalyptus gongylocarpa* over open shrub mallee of *Eucalyptus youngiana* and mid-dense hummock grass of *Triodia basedowii* on sand dune within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree 5-15m	2-10%	<i>Eucalyptus gongylocarpa</i>
Mallee Tree Form	10-30%	<i>Eucalyptus youngiana</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 17: Open low woodland of *Eucalyptus gongylocarpa* over open shrub mallee of *Eucalyptus youngiana* and mid-dense hummock grass of *Triodia basedowii* on sand dune

Sandplain: Acacia Forests and Woodlands

4.21 Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over dense hummock grass of *Triodia basedowii* in sandplain (S-AFW1)

4.21.1 Flora

The total flora recorded within this vegetation community (Plate 18) was represented by a total of 18 Families, 28 Genera and 44 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.21.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 26. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 26: Vegetation assemblage for Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	30-70%	<i>Acacia incurvaneura</i> <i>Acacia caesaneura</i>
Hummock Grass	70-100%	<i>Triodia basedowii</i>



Plate 18: Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over dense hummock grass of *Triodia basedowii* in sandplain

4.22 Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over low scrub of mixed shrubs over dwarf scrub of *Eremophila gilesii* and sparse hummock grass of *Triodia irritans* in sandplain (S-AFW2)

4.22.1 Flora

The total flora recorded within this vegetation community (Plate 19) was represented by a total of 17 Families, 27 Genera and 36 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.22.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 27. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 27: Vegetation assemblage for Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over low scrub of mixed shrubs over dwarf scrub of *Eremophila gilesii* and sparse hummock grass of *Triodia irritans* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	30-70%	<i>Acacia incurvaneura</i> <i>Acacia caesaneura</i>
Shrub 1-1.5m	10-30%	<i>Eremophila latrobei</i> subsp. <i>glabra</i> <i>Sida calyxhymenia</i> <i>Scaevola spinescens</i>
Shrub <0.5m	10-30%	<i>Eremophila gilesii</i>
Hummock Grass	10-30%	<i>Triodia irritans</i>



Plate 19: Low forest of *Acacia incurvaneura*/ *Acacia caesaneura* over low scrub of mixed shrubs over dwarf scrub of *Eremophila gilesii* and sparse hummock grass of *Triodia irritans* in sandplain

4.23 Low woodland of *Acacia incurvaneura*/ *Hakea lorea* over heath of *Melaleuca interioris* and mid-dense hummock grass of *Triodia basedowii* in sandplain (S-AFW3)

4.23.1 Flora

The total flora recorded within this vegetation community (Plate 20) was represented by a total of 11 Families, 17 Genera and 24 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.23.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 28. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 28: Vegetation assemblage for Low woodland of *Acacia incurvaneura*/ *Hakea lorea* over heath of *Melaleuca interioris* and mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia incurvaneura</i> <i>Hakea lorea</i>
Shrub 1.5-2m	30-70%	<i>Melaleuca interioris</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 20: Low woodland of *Acacia incurvaneura*/ *Hakea lorea* over heath of *Melaleuca interioris* and mid-dense hummock grass of *Triodia basedowii* in sandplain

4.24 Low woodland of *Acacia caesaneura*/ *Acacia incurvaneura* over dwarf scrub of *Eremophila forrestii* subsp. *forrestii* and mid-dense hummock grass of *Triodia irritans* in sandplain (S-AFW4)

4.24.1 Flora

The total flora recorded within this vegetation community (Plate 21) was represented by a total of 20 Families, 26 Genera and 36 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.24.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 29. According to NVIS this vegetation community is best represented by the Acacia Forests and Woodlands vegetation group (DoE, 2015b).

Table 29: Vegetation assemblage for Low woodland of *Acacia caesaneura*/ *Acacia incurvaneura* over dwarf scrub of *Eremophila forrestii* subsp. *forrestii* and mid-dense hummock grass of *Triodia irritans* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <5m	10-30%	<i>Acacia caesaneura</i> <i>Acacia incurvaneura</i>
Shrub 0.5-1m	10-30%	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>
Hummock Grass	30-70%	<i>Triodia irritans</i>



Plate 21: Low woodland of *Acacia caesaneura*/ *Acacia incurvaneura* over dwarf scrub of *Eremophila forrestii* subsp. *forrestii* and mid-dense hummock grass of *Triodia irritans* in sandplain

Sandplain: *Eucalypt Woodlands*

4.25 Low woodland of *Eucalyptus gongylocarpa* over heath of *Acacia ligulata* and dense hummock grass of *Triodia basedowii* in sandplain (S-EW1)

4.25.1 Flora

The total flora recorded within this vegetation community (Plate 22) was represented by a total of 19 Families, 30 Genera and 46 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.25.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 30. According to NVIS this vegetation community is best represented by the Eucalypt Woodlands vegetation group (DoE, 2015b).

Table 30: Vegetation assemblage for Low woodland of *Eucalyptus gongylocarpa* over heath of *Acacia ligulata* and dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree 5-15m	10-30%	<i>Eucalyptus gongylocarpa</i>
Shrub 1.5-2m	30-70%	<i>Acacia ligulata</i>
Hummock Grass	70-100%	<i>Triodia basedowii</i>



Plate 22: Low woodland of *Eucalyptus gongylocarpa* over heath of *Acacia ligulata* and dense hummock grass of *Triodia basedowii* in sandplain

Sandplain: *Eucalypt* Woodlands/ Mallee Woodlands and Shrublands

4.26 Low woodland of *Eucalyptus gongylocarpa* over shrub mallee of *Eucalyptus youngiana* and mid-dense hummock grass of *Triodia basedowii* in sandplain (S-EW/MWS1)

4.26.1 Flora

The total flora recorded within this vegetation community (Plate 23) was represented by a total of 22 Families, 35 Genera and 55 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.26.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 31. According to NVIS this vegetation community is best represented by the Eucalypt Woodlands (DoE, 2015b).

Table 31: Vegetation assemblage Low woodland of *Eucalyptus gongylocarpa* over shrub mallee of *Eucalyptus youngiana* and mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree 5-15m	2-10%	<i>Eucalyptus gongylocarpa</i>
Mallee Tree Form	30-70%	<i>Eucalyptus youngiana</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 23: Low woodland of *Eucalyptus gongylocarpa* over shrub mallee of *Eucalyptus youngiana* and mid-dense hummock grass of *Triodia basedowii* in sandplain

4.27 Low woodland of *Eucalyptus gongylocarpa* over open mallee tree of *Eucalyptus youngiana* and low heath of *Aluta maisonneuvei* subsp. *auriculata* mid-dense hummock grass of *Triodia basedowii* in sandplain (S-EW/MWS2)

4.27.1 Flora

The total flora recorded within this vegetation community (Plate 24) was represented by a total of 12 Families, 18 Genera and 26 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.27.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 32. According to NVIS this vegetation community is best represented by the Eucalypt Woodlands/Mallee Woodlands and Shrublands vegetation community (DoE, 2015b).

Table 32: Vegetation assemblage for Low woodland of *Eucalyptus gongylocarpa* over open mallee tree of *Eucalyptus youngiana* and low heath of *Aluta maisonneuvei* subsp. *auriculata* mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree 5-15m	10-30%	<i>Eucalyptus gongylocarpa</i>
Mallee Tree Form	10-30%	<i>Eucalyptus youngiana</i>
Shrub 0.5-1m	30-70%	<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 24: Low woodland of *Eucalyptus gongylocarpa* over open mallee tree of *Eucalyptus youngiana* and low heath of *Aluta maisonneuvei* subsp. *auriculata* mid-dense hummock grass of *Triodia basedowii* in sandplain

Sandplain: Mallee Woodlands and Shrublands

4.28 Open tree mallee of *Eucalyptus youngiana* over dense hummock grass of *Tridonia basedowii* in sandplain (S-MWS1)

4.28.1 Flora

The total flora recorded within this vegetation community (Plate 25) was represented by a total of 12 Families, 23 Genera and 40 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.28.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 33. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 33: Vegetation assemblage for Open tree mallee of *Eucalyptus youngiana* over dense hummock grass of *Tridonia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus youngiana</i>
Hummock Grass	70-100%	<i>Tridonia basedowii</i>



Plate 25: Open tree mallee of *Eucalyptus youngiana* over dense hummock grass of *Tridonia basedowii* in sandplain

4.29 Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia caesaneura* and mid-dense hummock grass of *Triodia basedowii* in sandplain (S-MWS2)

4.29.1 Flora

The total flora recorded within this vegetation community (Plate 26) was represented by a total of 17 Families, 26 Genera and 37 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.29.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 34. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 34: Vegetation assemblage for Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia caesaneura* and mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus youngiana</i>
Shrub 1.5-2m	30-70%	<i>Acacia caesaneura</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 26: Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia caesaneura* and mid-dense hummock grass of *Triodia basedowii* in sandplain

4.30 Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia desertorum*/ *Acacia grasbyi* and low heath of *Aluta maisonneuvei* subsp. *auriculata* over mid-dense hummock grass of *Triodia irritans* in sandplain (S-MWS3)

4.30.1 Flora

The total flora recorded within this vegetation community (Plate 27) was represented by a total of 15 Families, 24 Genera and 53 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.30.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 35. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 35: Vegetation assemblage for representative Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia desertorum*/ *Acacia grasbyi* and low heath of *Aluta maisonneuvei* subsp. *auriculata* over mid-dense hummock grass of *Triodia irritans* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus youngiana</i>
Shrub 1.5-2m	30-70%	<i>Acacia desertorum</i> <i>Acacia grasbyi</i>
Shrub 0.5-1m	30-70%	<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>
Hummock Grass	30-70%	<i>Triodia irritans</i>



Plate 27: Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia desertorum*/ *Acacia grasbyi* and low heath of *Aluta maisonneuvei* subsp. *auriculata* over mid-dense hummock grass of *Triodia irritans* in sandplain

4.31 Open tree mallee of *Eucalyptus concinna* over low scrub of *Eremophila latrobei* subsp. *glabra* and mid-dense hummock grass of *Triodia irritans* in sandplain (S-MWS4)

4.31.1 Flora

The total flora recorded within this vegetation community (Plate 28) was represented by a total of 15 Families, 21 Genera and 37 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.31.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 36. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 36: Vegetation assemblage for Open tree mallee of *Eucalyptus concinna* over low scrub of *Eremophila latrobei* subsp. *glabra* and mid-dense hummock grass of *Triodia irritans* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus concinna</i>
Shrub 1-1.5m	10-30%	<i>Eremophila latrobei</i> subsp. <i>glabra</i>
Hummock Grass	30-70%	<i>Triodia irritans</i>



Plate 28: Open tree mallee of *Eucalyptus concinna* over low scrub of *Eremophila latrobei* subsp. *glabra* and mid-dense hummock grass of *Triodia irritans* in sandplain

4.32 Open tree mallee of *Eucalyptus concinna*/ *Eucalyptus mannensis* over heath of mixed shrubs and sparse hummock grass of *Triodia basedowii* in sandplain (S-MWS5)

4.32.1 Flora

The total flora recorded within this vegetation community (Plate 29) was represented by a total of 15 Families, 21 Genera and 38 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.32.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 37. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 37: Vegetation assemblage for Open tree mallee of *Eucalyptus concinna*/ *Eucalyptus mannensis* over heath of mixed shrubs and sparse hummock grass of *Triodia basedowii* within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus concinna</i> <i>Eucalyptus mannensis</i>
Shrub 1-1.5m	30-70%	<i>Acacia ligulata</i> <i>Senna artemisioides</i> subsp. <i>filifolia</i> <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> <i>Scaevola spinescens</i>
Hummock Grass	10-30%	<i>Triodia basedowii</i>



Plate 29: Open tree mallee of *Eucalyptus concinna*/ *Eucalyptus mannensis* over heath of mixed shrubs and sparse hummock grass of *Triodia basedowii* in sandplain

4.33 Open tree mallee of *Eucalyptus hypolaena* over heath of *Senna artemisioides* subsp. *filifolia* and mid-dense hummock grass of *Triodia basedowii* in sandplain (S-MWS6)

4.33.1 Flora

The total flora recorded within this vegetation community (Plate 30) was represented by a total of 13 Families, 17 Genera and 29 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.33.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 38. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 38: Vegetation assemblage for Open tree mallee of *Eucalyptus hypolaena* over heath of *Senna artemisioides* subsp. *filifolia* and mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus hypolaena</i>
Shrub 1-1.5m	30-70%	<i>Senna artemisioides</i> subsp. <i>filifolia</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 30: Open tree mallee of *Eucalyptus hypolaena* over heath of *Senna artemisioides* subsp. *filifolia* and mid-dense hummock grass of *Triodia basedowii* in sandplain

4.34 Open tree mallee of *Eucalyptus concinna* over heath of mixed shrubs and mid-dense hummock grass of *Triodia basedowii* in sandplain (S-MWS7)

4.34.1 Flora

The total flora recorded within this vegetation community (Plate 31) was represented by a total of 15 Families, 23 Genera and 36 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.34.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 39. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 39: Vegetation assemblage for Open tree mallee of *Eucalyptus concinna* over heath of mixed shrubs and mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus concinna</i>
Shrub 1.5-2m	30-70%	<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i> <i>Olearia pimelioides</i> <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> <i>Senna artemisioides</i> subsp. <i>filifolia</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 31: Open tree mallee of *Eucalyptus concinna* over heath of mixed shrubs and mid-dense hummock grass of *Triodia basedowii* in sandplain

4.35 Open tree mallee of *Eucalyptus youngiana* over heath of *Grevillea didymobotrya* subsp. *didymobotrya*/ *Acacia desertorum* and mid-dense hummock grass of *Triodia basedowii* in sandplain (S-MWS8)

4.35.1 Flora

The total flora recorded within this vegetation community (Plate 32) was represented by a total of 9 Families, 14 Genera and 18 Taxa (Appendix 4). No Priority Flora taxa were identified within this vegetation community.

4.35.2 Vegetation

Dominant taxa from the vegetation assemblage, according to Muir (1977), are shown in Table 40. According to NVIS this vegetation community is best represented by the Mallee Woodlands and Shrublands vegetation group (DoE, 2015b).

Table 40: Vegetation assemblage for Open tree mallee of *Eucalyptus youngiana* over heath of *Grevillea didymobotrya* subsp. *didymobotrya*/ *Acacia desertorum* and mid-dense hummock grass of *Triodia basedowii* in sandplain within the survey area (Muir, 1977)

Life Form/Height Class	Canopy Cover	Dominant taxa present
Mallee Tree Form	10-30%	<i>Eucalyptus youngiana</i>
Shrub 1-1.5m	30-70%	<i>Acacia desertorum</i> <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i>
Hummock Grass	30-70%	<i>Triodia basedowii</i>



Plate 32: Open tree mallee of *Eucalyptus youngiana* over heath of *Grevillea didymobotrya* subsp. *didymobotrya*/ *Acacia desertorum* and mid-dense hummock grass of *Triodia basedowii* in sandplain

4.36 Vegetation of Conservation Significance

None of the vegetation communities within the Gruyere survey area were found to have National Environmental Significance as defined by the Commonwealth *EPBC Act 1999*. There were no TECs or PECs listed under Commonwealth legislation or as defined by the DPaW identified within the survey area (DPaW 2013a; DoE, 2015a).

The survey area is not located within any ESA or Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

The survey area is not located within any DPaW managed land. However the Yeo Lake Nature Reserve, which is listed as a Class A Nature Reserve managed by the DPaW, is located approximately 8km to the east of the survey area and 15km east of the proposed Gruyere Mine. The Yeo Lake Nature Reserve is also listed as an ESA and a Schedule 1 Area.

The Yeo Lake Nature Reserve is significant as it is biologically important for the different assemblage of plants and animals present. It comprises of some permanent and semi-permanent water holes in an otherwise arid region (DoE, 2015c). It is described as a system of salt lakes, with the floor of which is vegetated with rich variety of halophytes (some endemic). It includes gypsum ridges carrying *Casuarina cristata/Acacia colletioides* association that is unknown elsewhere in the desert. To the west, south-west and north are extensive sand plains and dunes interspersed with rocky hills and breakaways. The area is rich in reptiles (forty lizard species and three snake species) and is the type locality for several species. The sand areas dominated by spinifex, mallees, mulga and bara gum (DoE, 2015c).

A regional map of the Gruyere survey area in relation to surrounding areas of conservation significance is provided in Appendix 1.

4.37 Regional Vegetation

A regional assessment was made for 19 vegetation communities identified during the survey as covering an area of less than 100ha within the survey area, ten of which were identified during the previous spring 2014 flora survey. Following revision of the survey area (autumn 2015), four of these vegetation communities (surveyed in spring 2014) were not required to be assessed regionally as the area of vegetation increased to >100ha within the survey area (QRP-AFW2 and CLP-AFW3) or these communities were no longer represented within the revised survey area following additional assessments on species composition in autumn 2015 (QRP-CFW1 and QRPAFW5). A total of 15 vegetation communities were assessed regionally (Table 41). BC conducted targeted searches for additional locations of these vegetation communities within a 30km radius of the survey area. Areas were targeted based on visual observations made in aerial imagery and topography of the surrounding areas in relation the vegetation communities within the survey area. Determinations of each vegetation community in the surrounding region were made based on visual observations of similar habitat characteristics and dominant stratum. The boundaries of these regional vegetation communities were mapped using hand held GPS and using aerial imagery to determine changes in vegetation and using previously mapped vegetation communities from the spring 2014 survey area (i.e. areas of vegetation in the southern region mapped prior to amendment of the survey area). Of the targeted 15 vegetation communities with less than a 100 ha footprint area, all were found to be represented in the local region (i.e. within 30 km of the survey area). Some of the additional mapped areas were located within the additional areas surveyed as part of the autumn 2015 survey. A map of these vegetation communities is provided in Figure 8.

Table 41: Vegetation Communities less than 100ha within the survey area

Landform	NVIS Vegetation Group	Vegetation Community	Code	Area within Survey Area (ha) ⁶	Area within surrounding Region (within 30km) ⁷	Total Area (ha)
Breakaway	Acacia Shrublands	Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	B-AS1	4	130	134
Clay-Loam Plain	Acacia Forests and Woodlands	Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AFW2	55	620	675
	Mallee Open Woodlands and Sparse Mallee Shrublands	Very open tree mallee of <i>Eucalyptus lucasii</i> /low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-MOW/SMS1	60	163	223
Drainage Depression	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and dwarf scrub of <i>Eremophila malacoides</i> in drainage depression	DD-AFW2	16	228	244
Quartz/Rocky Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	QRP-AFW1	90	130	220
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	QRP-AFW3	80	99	179

⁶ Autumn 2015 Level 2 survey area: 4,793ha

⁷ Includes vegetation communities identified in the spring 2014 Level 2 survey

Landform	NVIS Vegetation Group	Vegetation Community	Code	Area within Survey Area (ha) ⁶	Area within surrounding Region (within 30km) ⁷	Total Area (ha)
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> / heath of <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on quartz/rocky plain	QRP-AFW6	30	123	153
	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> and low heath of <i>Maireana glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	QRP-AOW1	14	76	90
Sandplain	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW1	95	88	183
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW2	47	235	282
		Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS2	83	118	201
	Mallee Woodlands and Shrublands	Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS4	23	780	803
		Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS5	25	81	106
		Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS6	5	138	143
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS8	87	74	161



Figure 8: Map of regional locations of vegetation communities covering less than 100 hectares within the survey area

A total of 37 vegetation communities (Table 42) were identified in the previous Level 2 flora survey (November 2014) which covered the entire boundary of the pending mining tenement M38/1267 (area of approximately 6,846 ha). These vegetation communities comprised of seven landform types and six NVIS broad vegetation groups and were represented by a total 39 Families, 85 Genera and 199 Taxa, (including sub-species and variants). A map of these vegetation communities is provided in Figure 9. The vegetation communities identified in the November 2014 Level 2 flora survey have been used to provide regional context for the vegetation communities identified within the current autumn 2015 survey area. Three of the 32 vegetation communities identified in the autumn 2015 survey area were not previously recorded in the spring 2014 survey area:

1. Low woodland of *Acacia aptaneura*/*Acacia caesaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei* and dwarf scrub of *Eremophila gilesii*/*Eremophila malacoides* with occasional *Eragrostis eriopoda* in drainage depression (DD-AFW1);
2. Low woodland of *Acacia incurvaneura*/*Acacia quadrimarginea* over low scrub of *Senna artemisioides* subsp. *x artemisioides*/*Senna artemisioides* subsp. *helmsii* and dwarf scrub of *Eremophila malacoides* in drainage depression (DD-AFW2); and
3. Low woodland of *Acacia caesaneura*/*Acacia incurvaneura* over dwarf scrub of *Eremophila forrestii* subsp. *forrestii* and mid-dense hummock grass of *Triodia irritans* in sandplain (S-AFW4).

These vegetation communities were located within the potential infrastructure area to the south-east of the existing survey area.

Table 42: Corresponding codes for the Vegetation Communities of the spring 2014 L2 Flora and Vegetation survey

Landform	NVIS Vegetation Group	Vegetation Community	Code
Breakaway	Acacia Shrublands	Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	B-AS1
	Mallee Woodlands and Shrublands	Open tree mallee of <i>Eucalyptus carnei</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and dwarf scrub of <i>Atriplex vesicaria</i> / <i>Frankenia georgei</i> on breakaway	B-MWS1
Clay-Loam Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	CLP-AFW1
		Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AFW2
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-AFW3
	Acacia Open Woodlands	Open low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over open low scrub of <i>Acacia ramulosa</i> var. <i>ramulosa</i> / <i>Maireana pyramidata</i> and dwarf of <i>Eremophila malacoides</i> on clay-loam plain	CLP-AOW1

Landform	NVIS Vegetation Group	Vegetation Community	Code
	Acacia Shrublands	Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AS1
	Mallee Open Woodlands and Sparse Mallee Shrublands	Very open tree mallee of <i>Eucalyptus lucasii</i> /low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>filiformis</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-MOW/SMS1
Drainage Depression	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> over dwarf scrub of <i>Maireana pyramidata</i> and low heath of <i>Frankenia georgei</i> and <i>Sclerolaena densiflora</i> in drainage depression	DD-AOW1
	Mallee Open Woodlands and Sparse Mallee Shrublands	Very open tree mallee of <i>Eucalyptus lucasii</i> /over low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Ptilotus obovatus</i> in drainage depression	DD-MOW/SMS1
Quartz/Rocky Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	QRP-AFW1
		Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	QRP-AFW2
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	QRP-AFW3
		Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	QRP-AFW4
		Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and sparse hummock grass of <i>Triodia basedowii</i> on quartz/rocky plain	QRP-AFW5
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> /heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on quartz/rocky plain	QRP-AFW6
	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and low heath of <i>Maireana glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	QRP-AOW1
	Casuarina Forests and Woodlands	Low woodland of <i>Casuarina pauper</i> over heath of <i>Eremophila scoparia</i> / <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	QRP-CFW1
Rocky Hillislope	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia irritans</i> on rocky hillislope	RH-AFW1

Landform	NVIS Vegetation Group	Vegetation Community	Code
	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Mirbelia microphylla</i> / <i>Thryptomene nealensis</i> (P3) and open low grass of <i>Eriachne mucronata</i> on rocky hillslope	RH-AOW1
Sand Dune	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	SD-EW/MWS1
Sandplain	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW1
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW2
		Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW3
	Acacia Shrublands	Open low scrub of <i>Acacia abrupta</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AS1
	Eucalypt Woodlands	Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW1
	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS1
		Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS2
	Mallee Woodlands and Shrublands	Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS1
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS2
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS3
		Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>filiformis</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS4
		Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS5
		Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS6
Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain		S-MWS7	
Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain		S-MWS8	

Landform	NVIS Vegetation Group	Vegetation Community	Code
		Open tree mallee of <i>Eucalyptus glomerosa</i> / <i>Eucalyptus youngiana</i> over low scrub of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS9

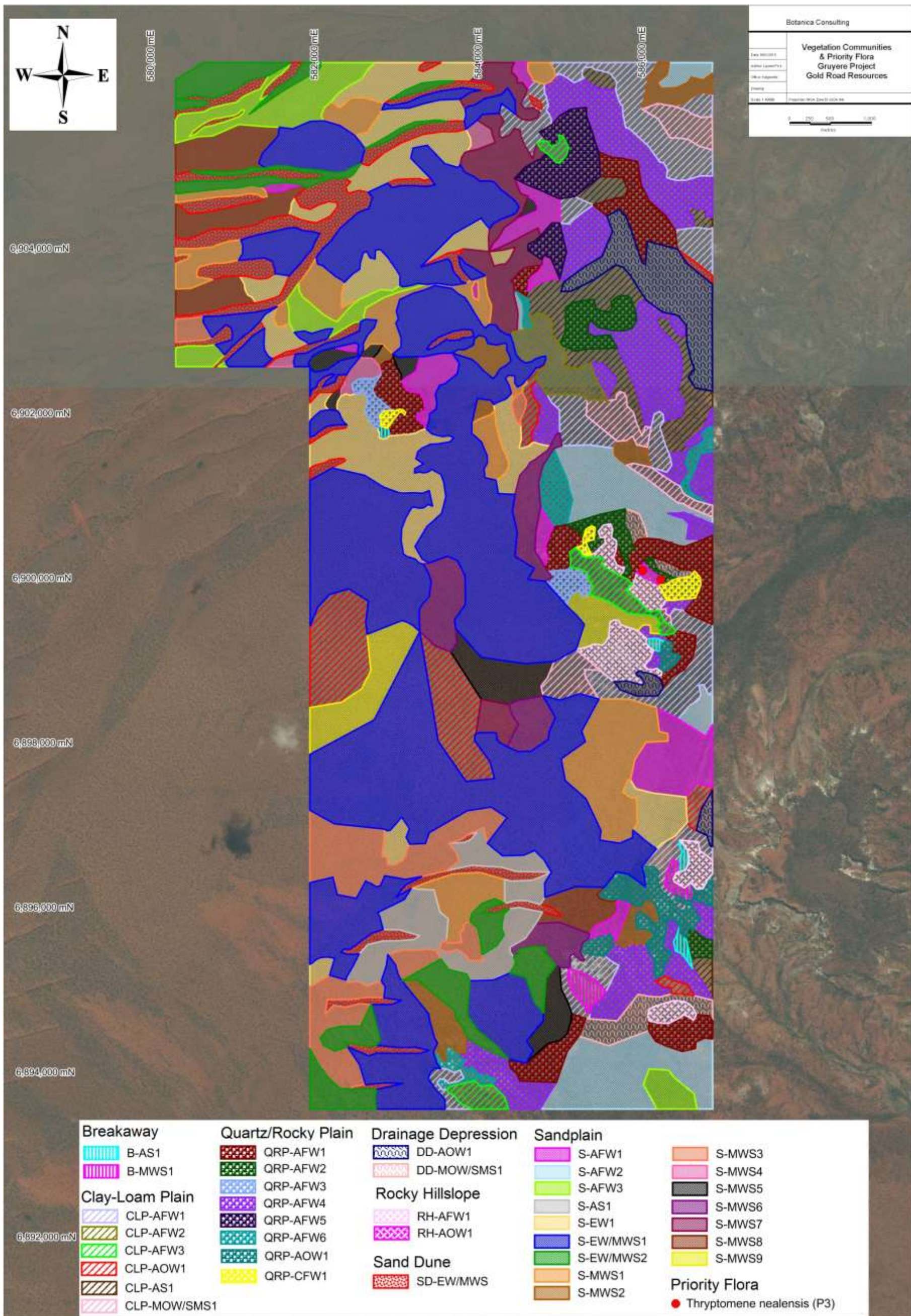


Figure 9: Map of of vegetation communities identified within the spring 2014 Level 2 Flora and Vegetation survey area

4.38 Vegetation condition

Based on the Keighery vegetation health rating scale (1994) (Appendix 8) all thirty-two vegetation communities were rated as 'very good' which is defined as *vegetation that is altered due to obvious signs of disturbance*. Disturbances within the Gruyere survey area included exploration activities mainly within the central region of the Project area, fire and camel grazing, however the impacts on native vegetation within the survey area was minimal.

4.39 Introduced Plant Taxa

Two introduced taxon was identified within the Gruyere survey area; *Cenchrus ciliaris* (Buffel Grass) and *Cenchrus echinatus* (Burr Grass). Neither taxon are listed a Declared Plant under Section 22 of the *BAM Act 2007*.

4.39.1 *Cenchrus ciliaris* (Buffel Grass)

This taxon is described as a tufted or sometimes stoloniferous perennial, grass-like or herbaceous plant, which grows between 0.2-1.5 m high (Plate 34). It produces purple flowers from February to October. It occurs on white, red or brown sand, stony red loam and black cracking clay soils (WAHERB, 2015). This taxon was recorded within the Very open tree mallee of *Eucalyptus lucasii*/ low woodland of *Acacia incurvaneura*/ *Acacia caesaneura* over heath of *Eremophila latrobei* subsp. *glabra* and very open low grass of *Eragrostis eriopoda* on clay-loam plain vegetation community.



Plate 33: *Cenchrus ciliaris* (Buffel Grass)

4.39.2 *Cenchrus echinatus* (Burr Grass)

This taxon is described as a sometimes rhizomatous, tufted annual or perennial (rarely) grass which grows between 0.1 to 0.6 m high. It produces green flowers from January to August. It occurs on sand, red loam and black peaty clay soils (WAHERB, 2015). This taxon was identified within two vegetation communities:

1. Low woodland of *Acacia incurvaneura*/ *Acacia caesaneura*/ *Acacia aptaneura* over heath of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus* on clay-loam plain; and
2. Low woodland of *Acacia incurvaneura*/ *Acacia quadrimarginea* over low scrub of *Senna artemisioides* subsp. *x artemisioides*/ *Senna artemisioides* subsp. *helmsii* and dwarf scrub of *Eremophila malacoides* in drainage depression.



Plate 34: *Cenchrus echinatus* (Burr Grass) image obtained from WAHERB (2015)

4.40 Species Composition

PATN analysis was used to determine the similarities or differences between and within vegetation communities delineated in the field. The quadrats are represented as Q1-Q58, Q125-Q140, Q142-Q188 (Q59-Q124 and Q141 no longer included following revision of the autumn survey area). Table 42 lists the vegetation community and its corresponding quadrats. A dendrogram, two way table and ordination graph resulting from the PATN analysis are provided in Appendix 9. The PATN analysis produced a stress value of 0.1959.

Table 43: Vegetation communities with corresponding quadrats

Landform	NVIS Vegetation Group	Vegetation Community	Code	Quadrats
Breakaway	Acacia Shrublands	Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	B-AS1	Q55, Q150
Clay-Loam Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	CLP-AFW1	Q6, Q8, Q31, Q40, Q184
		Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AFW2	Q125, Q126, Q127
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-AFW3	Q142, Q144, Q148, Q153, Q154, Q165, Q182
	Acacia Shrublands	Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AS1	Q1, Q7, Q39, Q110
	Mallee Open Woodlands and Sparse Mallee Shrublands	Very open tree mallee of <i>Eucalyptus lucasii</i> /low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-MOW/SMS1	Q9, Q109, Q170
Drainage Depression	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> over dwarf scrub of <i>Maireana pyramidata</i> and low heath of <i>Frankenia georgei</i> and <i>Sclerolaena densiflora</i> in drainage depression	DD-AOW1	Q5, Q35
	Acacia Forests and Woodlands	Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	DD-AFW1	Q151, Q152, Q166, Q168, Q171

Landform	NVIS Vegetation Group	Vegetation Community	Code	Quadrats
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and dwarf scrub of <i>Eremophila malacoides</i> in drainage depression	DD-AFW2	Q145, Q160
Quartz/Rocky Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> / <i>Senna</i> <i>artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana</i> <i>triptera</i> on quartz/rocky plain	QRP-AFW1	Q33, Q34, Q52
		Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila</i> <i>exilifolia</i> on quartz/rocky plain	QRP-AFW2	Q36, Q37, Q38, Q146, Q156
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus</i> <i>obovatus</i> on quartz/rocky plain	QRP-AFW3	Q54, Q128, Q129, Q155, Q163
		Low woodland of <i>Acacia</i> <i>quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> with occasional <i>Triodia irritans</i> on quartz/rocky plain	QRP-AFW4	Q2, Q3, Q12, Q32, Q139, Q140, Q158
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> / heath of <i>Senna</i> <i>artemisioides</i> subsp. x <i>artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> /low grass of <i>Aristida contorta</i> on quartz/rocky plain	QRP-AFW6	Q58, Q179
	Acacia Open Woodlands	Open low woodland of <i>Acacia</i> <i>incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> and low heath of <i>Maireana</i> <i>glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	QRP-AOW1	Q159, Q162
Rocky Hillslope	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia</i> <i>irritans</i> on rocky hillslope	RH-AFW1	Q147, Q149, Q157, Q161
Sand Dune	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Open low woodland of <i>Eucalyptus</i> <i>gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	SD- EW/MWS1	Q4, Q20, Q44, Q48, Q174, Q187
Sandplain	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW1	Q13, Q23, Q29, Q49, Q180, Q188
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW2	Q11, Q56, Q183

Landform	NVIS Vegetation Group	Vegetation Community	Code	Quadrats
		Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW3	Q17, Q18, Q19
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over dwarf scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW4	Q164, Q167, Q169
	Eucalypt Woodlands	Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW1	Q14, Q25, Q27, Q175, Q186
	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS1	Q24, Q26, Q42, Q43
		Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS2	Q15, Q22
	Mallee Woodlands and Shrublands	Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS1	Q16, Q30, Q45, Q172, Q181
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS2	Q10, Q57, Q143
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS3	Q21, Q46, Q47, Q173, Q176, Q185
		Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS4	Q28, Q130, Q131, Q132
		Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS5	Q41, Q50, Q51, Q53
		Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS6	Q177, Q178
		Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS7	Q136, Q137, Q138
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS8	Q133, Q134, Q135

Quadrats from the Acacia Shrubland breakaway community (B-AS1) were grouped into two separate groups which contained an intermix of Acacia Forest and Woodland quadrats of the clay-loam plain, quartz/rocky plain, drainage depression, rocky hillslope and sandplain landforms. This result suggests species composition of these communities is similar despite differences in landform structure across the survey area.

The two Acacia Open Woodland quadrats of the drainage depression landform group (DD-AOW1) were grouped separately from one another into two closely related groups containing quadrats from the Acacia Forests and Woodlands of the clay-loam plain and quartz/rocky plain landforms. The two Acacia Forests and Woodlands groups (DD-AFW1 and DD-AFW2) were intermixed into two closely related groups containing Acacia Forest and Woodland/Mallee Woodlands and Shrubland quadrats of the clay loam plain landform.

There was a high degree of intermixing between the Acacia Forest Woodlands/Acacia Open Woodland/Acacia Shrubland vegetation communities of the clay-loam plain, quartz/rocky plain and rocky hillslope landforms with six groups delineated in the PATN analysis containing quadrats from these three landform types. Only two of the seven Acacia Forest and Woodland quartz/rocky plain vegetation communities (QRP-AFW4 and QRP-AFW5) were not intermixed into several groups, and contained the majority of the quadrats consolidated together into an individual group from all other quadrats. As evident in the ordination graph provided in Appendix 9 these communities had a greater similarity in composition of mid-storey species comparative to the other Acacia Forest and Woodland communities.

One Mallee Woodland and Shrubland quadrat (Q9) from the clay-loam plain community was grouped individually from all other quadrats and found to be more closely related to Acacia Forest and Woodlands/Mallee Woodlands and Shrubland quadrats from the sandplain community than the clay-loam plain community. This appears to be a result of its geographical location with the quadrat located in the far east of the survey area in close proximity to the sandplain region extending north-east along the proposed access track route.

One of the six Eucalypt Woodlands/Mallee Woodlands and Shrublands on sand dune community (SD-EW/MWS1) quadrats (Q4) was grouped separately from the remaining sand dune quadrats and recorded a more similar species composition to quadrats from the Acacia Forest and Woodland of the quartz/rocky plain and clay-loam plain. This variation in species composition within the sand dune community appears to be a result in geographical distribution of the sand dunes with Q4 located within an isolated dune on the eastern edge of the survey area surrounded by clay-loam plain and drainage depressions whereas the remaining dunes are located within the sandplains in the north-east and western region of the survey area. The remaining sand dune quadrats (western region) were grouped together into two groups with Eucalypt Woodland and Mallee Woodlands and Shrubland quadrats from the sandplain community which suggests minimal difference between species composition of the dunes comparative to the surrounding sandplain.

Quadrats from the Acacia Forests and Woodlands/Shrublands sandplain communities were mainly grouped together with occasional quadrats grouped with Acacia Forest and Woodlands/ Shrublands quadrats of the clay-loam plain and/or quartz/rocky plain communities. Three quadrats (Q13, Q29 and Q188) from the S-AFW1 community were grouped separately from all other quadrats. The dissimilarity in species composition of these quadrats compared to other quadrats of its vegetation community (S-AFW1) appears to be a result of the low species diversity of these quadrats.

The Eucalypt Woodlands/Mallee Woodlands and Shrubland sandplain communities were also mostly grouped together and included quadrats from the sand dune community. Two quadrats (Q50 and Q177) from the Mallee Woodlands and Shrubland sandplain community (S-MWS5 and S-MWS6) was grouped individually from all other quadrats. Two quadrats (Q175 and Q186) from the Eucalypt Woodlands sandplain community (S-EW1) were also grouped individually from all other quadrats. However these individual quadrats were closely related to each other and to the intermixed sand dune/sandplain groups described previously.

With a few exceptions, there was a high degree of homogeneity between the Acacia Forests and Woodlands/Shrublands and Mallee Woodlands and Shrublands of the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope groups despite obvious differences in landform structure. The sandplain communities were mainly distinguished from the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope. There were also differences within the sandplain communities with the Acacia Forest and Woodland/Shrubland sandplain communities mostly separated from the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities. Species composition of the sand dune community was similar to that of the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities.

5 Relevant Legislation and Compliance with Recognised Standards

5.1 Commonwealth Legislation

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The aim of this Act is to protect matters of national environmental significance and is used by the Commonwealth DoE to list threatened taxa and ecological communities into categories based on the criteria set out in the Act (www.environment.gov.au/epbc/index.html). The Act provides a national environmental assessment and approval system for proposed developments and enforces strict penalties for unauthorised actions that may affect matters of national environmental significance.

The survey area does not contain any Threatened Flora or TECs listed under the Commonwealth *EPBC Act 1999*.

5.2 State Legislation

Clearing of Native Vegetation

The *Environmental Protection (Clearing of Native Vegetation) Regulations WA 2004* establishes that any clearing of native vegetation in Western Australia requires a permit from the DPaW. Under Section 51A of the *WA Environmental Protection Act, 1986 (EP Act 1986)* native vegetation includes aquatic and terrestrial vegetation indigenous to Western Australia, and intentionally planted vegetation declared by regulation to be native vegetation, but not vegetation planted in a plantation or planted with commercial intent. Section 51A of the EP Act defines clearing as “*the killing or destruction of; the removal of; the severing or ringbarking of trunks or stems of; or the doing of substantial damage to some or all of the native vegetation in an area, including the flooding of land, the burning of vegetation, the grazing of stock or an act or activity that results in the above*”.

Regulation 6 of the 2004 Regulations defines Environmentally Sensitive Areas (ESA) as “*the area covered by vegetation within 50m of Rare Flora, to the extent to which the vegetation is continuous with the vegetation in which the Rare Flora is located*”.

A clearing permit must be granted prior to any clearing within a minimum of 50m surrounding all populations of Threatened Flora. The area covered by a TEC is also considered an ESA wherein clearing cannot occur unless a clearing permit is granted.

The survey area is not located within an ESA (as listed by the DPaW) or Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

Environmental Protection Act WA 1986

The *EP Act 1986* includes requirements relating to the protection of Threatened Flora and TEC, and to the assessment of applications for clearing permits. TEC are protected even where exemptions for a clearing permit may apply. The *EP Act 1986* enforces both financial and/or imprisonment penalties on those who unlawfully damage a TEC. Under Schedule 5 of the *EP Act 1986* there are ten principles for clearing of native vegetation. These clearing principles (relevant to flora and vegetation) are outlined in Section 6.4 of the report.

The survey area does not contain any TECs.

Wildlife Conservation Act WA 1950

The DPaW uses the provisions of this Act to list flora taxa as protected and the level of protection assigned to such flora. Flora taxa are classified as Threatened when their populations are geographically restricted or are threatened by local processes. Under this Act, all native flora (spermatophytes, pteridophytes, bryophytes and thallophytes) are protected throughout the State. Financial penalties pursuant to the Act can be imposed if threatened plant taxa are collected without an appropriate licence.

The Gruyere Project survey area does not contain any Threatened Flora taxa listed under the *Wildlife Conservation Act 1950*.

DPaW Priority lists

The DPaW lists 'Priority' flora taxa which are under consideration for declaration as Rare Flora. Taxa classed as Priority 1-3 are in urgent need of further survey, whereas Priority 4 taxa are considered to have been adequately surveyed but may become vulnerable or rare in future years. Priority 4 taxa are also taxa that have been removed from the threatened taxa list in the past 5 years. Priority 5 taxa are those taxa which are not currently threatened but are likely to become threatened within 5 years if not subject to a specific conservation program. The DPaW also lists PEC as a mechanism for identifying communities that may need monitoring before possible nomination for TEC status. These priority taxa and communities have no formal legal protection until they are endorsed by the Minister as being Threatened Flora and TEC respectively.

Results of the DPaW database search revealed five Priority Flora taxa recorded within a 40km radius of the survey area (DPaW, 2013b), of which all had the potential to occur within the survey area. No Priority Flora taxon was identified within the survey area.

5.3 EPA Position Statements

The EPA develops Position Statements to inform the public about environmental issues facing Western Australia and the plans for the future to ensure protection and ecological sustainability of environmentally important ecosystems. It provides a set of principles to assist the public and decision-makers on their responsibilities for managing land with care.

These principles also provide the basis for the Environmental Protection Authority to evaluate and report upon achieving environmental and ecological sustainability and the protection of natural resources.

Position Statement No. 2 *Environmental Protection of Native Vegetation in Western Australia* (EPA 2000) outlines EPA policy on the protection of native vegetation in Western Australia, particularly in the agricultural area. It identifies basic elements that the EPA should consider when assessing proposals that impact on biological diversity. These include comparison of all proposal options; avoidance of taxa and community extinctions; an expectation that implementing the proposal will not take a vegetation type below the "threshold level" of 30%; and that proponents should demonstrate that on- and off-site impacts can be managed.

The survey area does not contain any Threatened Flora or TEC suggesting that clearing within the survey area will meet the EPA standards outlined in Position statement No. 2. According to DAFWA (2011) the survey area occurs in the pre-European Beard vegetation association Great Victoria Desert 18, 45 and 84, of which 100% of the original vegetation extent remains.

Position Statement No. 3 *Terrestrial Biological Surveys as an Element of Biodiversity Protection* establishes that the EPA has adopted the definition and principles of biological diversity as defined in the *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia, 1996), and has stipulated the following requirements:

- The quality of information and scope of field surveys should meet standards, requirements and protocols as determined and published by the EPA; and
- The IBRA regionalisations should be used as the largest unit for environmental impact assessment (EIA) decision-making in relation to the conservation of biodiversity.

Pursuant to the IBRA regionalisations, 26 bioregions in WA, which are affected by a range of different threatening processes and have varying levels of sensitivity to impact, have been identified. Terrestrial biological surveys should provide sufficient information to address both biodiversity conservation and ecological functional values within the context of proposals and the results of surveys should be publicly available. The flora survey was planned and implemented as far as practicable according to the EPA Guidance Statement No. 51 *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004). Also, the IBRA regionalisations have been used in preparing the report to identify the conservation status of the area and identify the main threats to the biodiversity of plant taxa in the region.

5.4 Native Vegetation Clearing Principles

Based on the outcomes from the survey undertaken, as presented in this report, BC provides the following comments regarding the native vegetation clearing principles listed under Schedule 5 of the *EP Act 1986* (Table 43).

Table 44: Assessment of Gruyere Project against vegetation clearing principles

Letter	Principle	Assessment	Outcome
(a)	Native vegetation should not be cleared if it comprises a high level of biological diversity.	Vegetation identified within the survey area is not considered to be of high biological diversity, and is well represented outside of the proposed impact area.	Development within the survey area is unlikely to be at variance to this principle
(c)	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of rare flora.	No Threatened Flora taxa, pursuant to subsection (2) of section 23F of the <i>Wildlife Conservation Act 1950</i> , the <i>EPBC Act 1999</i> and as listed by the DPaW (Jacob, 2014), were identified within the survey area	Development within the survey area is unlikely to be at variance to this principle
(d)	Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of a threatened ecological community (TEC).	No TEC listed under Commonwealth and State legislation occur within the survey area.	Development within the survey area is unlikely to be at variance to this principle
(e)	Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared	According to DAFWA (2011) the survey area occurs in the pre-European Beard vegetation associations Great Victoria Desert 18, 45 and 84, of which 100% of the original vegetation extent remains.	Development within the survey area is unlikely to be at variance to this principle
(f)	Native vegetation should not be cleared if it is growing, in, or in association with, an environment associated with a watercourse or wetland	Three vegetation communities identified within the survey area were located within a drainage depression, however according to the Geoscience Australia GIS hydrological database (2011) there are no watercourses or wetlands identified within the survey area.	Development within the survey area is unlikely to be at variance to this principle
(h)	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	The survey area is not located within any Conservation areas. The nearest Conservation area is the Yeo Lake Nature Reserve which is located 8km east of the survey area.	Development within the survey area is unlikely to be at variance to this principle

6 Conclusions

Thirty-two vegetation communities were identified within the survey area, which are represented by a total of 44 Families, 104 Genera and 240 Taxa, including sub-species and variants (Appendix 4). Three of these communities were not previously identified in the spring 2014 survey area of the entire mining tenement boundary. A total of 44 annual taxa were recorded in autumn 2015, which was a significant increase since the previous survey conducted in spring 2014 where 17 annual taxa were recorded. The increase in annual species is a result of above average rainfall received in the area in the months prior to the survey. No Threatened taxa, pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)*, the Commonwealth *EPBC Act 1999* and as listed by the DPaW (Jacob, 2014), were identified within the survey area. No Priority Flora taxa as listed by the DPaW were identified within the survey area.

With a few exceptions, there was a high degree of homogeneity between the Acacia Forests and Woodlands/Shrublands and Mallee Woodlands and Shrublands of the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope groups despite obvious differences in landform structure. The sandplain communities were mainly distinguished from the breakaway, clay-loam plain, quartz/rocky plain, drainage depression and rocky hill slope. There were also differences within the sandplain communities with the Acacia Forest and Woodland/Shrubland sandplain communities mostly separated from the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities. Species composition of the sand dune community was similar to that of the Eucalypt Woodland/Mallee Woodland and Shrubland sandplain communities.

None of the vegetation communities within the Gruyere survey area were found to have National Environmental Significance as defined by the Commonwealth *EPBC Act 1999*. No TEC pursuant to the Commonwealth *EPBC Act 1999* or PEC as listed by the DPaW was recorded within the project areas.

The Gruyere Project survey area is not located within any ESA or Schedule 1 Area, as described in Regulation 6 and Schedule 1, clause 4 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. The survey area is not located within any DPaW managed land. However the Yeo Lake Nature Reserve, which is listed as a Class A Nature Reserve managed by the DPaW, is located approximately 8km to the east of the survey area and 15km east of the proposed Gruyere Mine. The Yeo Lake Nature Reserve is also listed as an ESA and a Schedule 1 Area.

Based on the Keighery vegetation health rating scale (1994) all thirty-two vegetation communities were rated as 'very good'. Disturbances included exploration activities, fire and camel grazing however the impacts on native vegetation in the area were minimal. Two introduced taxon were identified within the survey area; *Cenchrus ciliaris* (Buffel Grass) and *Cenchrus echinatus* (Burr Grass). According to the DAFWA database, neither of these taxa are listed as as Declared Plant under the *BAM Act 2007*.

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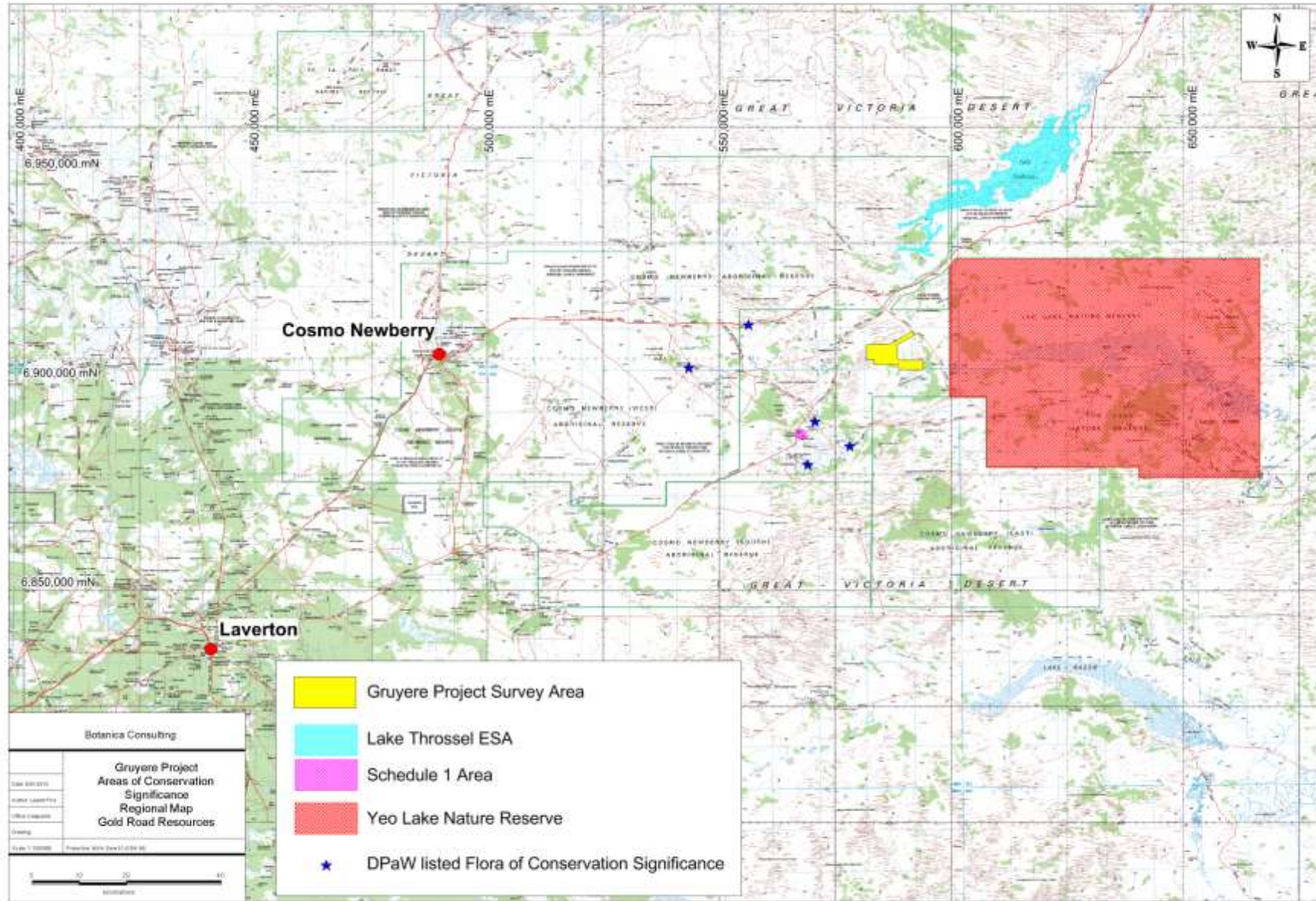
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8 Appendices

Appendix 1: Regional map of the Gruyere Project survey area including DPaW listed Priority Flora locations, Yeo Lake Nature Reserve, ESA and Schedule 1 Area

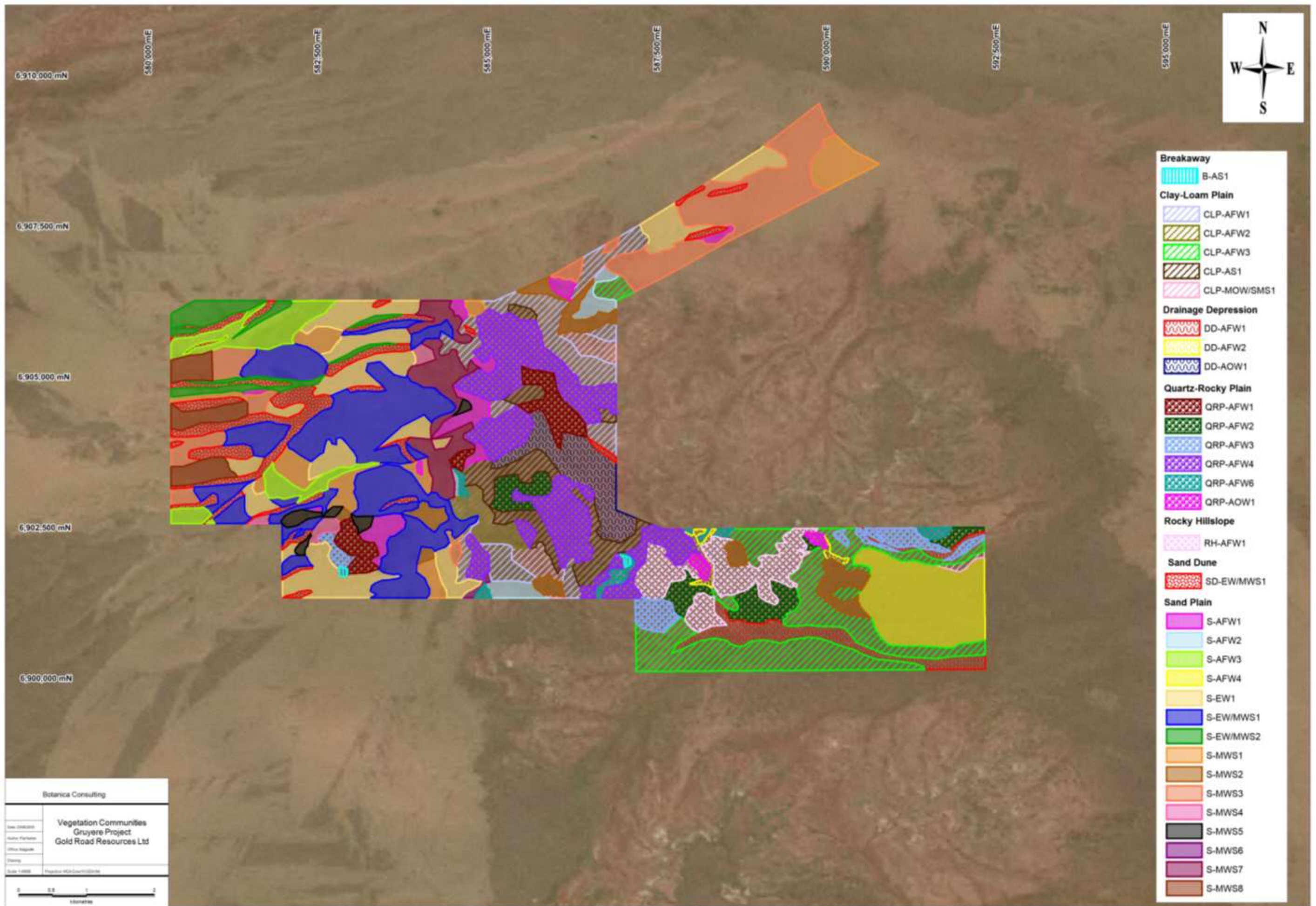


Appendix 2: Corresponding codes for vegetation communities

Landform	NVIS Vegetation Group	Vegetation Community	Code
Breakaway	Acacia Shrublands	Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	B-AS1
Clay-Loam Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	CLP-AFW1
		Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AFW2
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-AFW3
	Acacia Shrublands	Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	CLP-AS1
	Mallee Open Woodlands and Sparse Mallee Shrublands	Very open tree mallee of <i>Eucalyptus lucasii</i> / low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	CLP-MOW/SMS1
Drainage Depression	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> over dwarf scrub of <i>Maireana pyramidata</i> and low heath of <i>Frankenia georgei</i> and <i>Sclerolaena densiflora</i> in drainage depression	DD-AOW1
	Acacia Forests and Woodlands	Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	DD-AFW1
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and dwarf scrub of <i>Eremophila malacoides</i> in drainage depression	DD-AFW2
Quartz/Rocky Plain	Acacia Forests and Woodlands	Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	QRP-AFW1
		Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	QRP-AFW2
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	QRP-AFW3
		Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> with occasional <i>Triodia irritans</i> on quartz/rocky plain	QRP-AFW4
		Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> / heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on quartz/rocky plain	QRP-AFW6
	Acacia Open Woodlands	Open low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and low heath of <i>Maireana glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	QRP-AOW1
Rocky Hillslope	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia irritans</i> on rocky hillslope	RH-AFW1
Sand Dune	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	SD-EW/MWS1
Sandplain	Acacia Forests and Woodlands	Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW1

Landform	NVIS Vegetation Group	Vegetation Community	Code
		Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW2
		Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-AFW3
		Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over dwarf scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-AFW4
	Eucalypt Woodlands	Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW1
	Eucalypt Woodlands/Mallee Woodlands and Shrublands	Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS1
		Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-EW/MWS2
	Mallee Woodlands and Shrublands	Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS1
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS2
		Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS3
		Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	S-MWS4
		Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS5
		Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS6
		Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	S-MWS7
Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain		S-MWS8	

Appendix 3: Vegetation map of the Gruyere Project survey area



Landform			Breakaway	Clay-Loam Plain					Drainage Depression			Quartz/Rocky Plain					Rocky Hillslope	Sand Dune	Sandplain																			
Family	Genus	Taxon	B-AS1	CLP-AFW1	CLP-AFW2	CLP-AFW3	CLP-AS1	CLP-MOW/SMS1	DD-AOW1	DD-AFW1	DD-AFW2	QRP-AFW1	QRP-AFW2	QRP-AFW3	QRP-AFW4	QRP-AFW6	QRP-AOW1	RH-AFW1	SD-EW/MWS1	S-AFW1	S-AFW2	S-AFW3	S-AFW4	S-EW1	S-EW/MWS1	S-EW/MWS2	S-MWS1	S-MWS2	S-MWS3	S-MWS4	S-MWS5	S-MWS6	S-MWS7	S-MWS8				
Scrophulariaceae	<i>Eremophila</i>	<i>georgei</i>																																				
Scrophulariaceae	<i>Eremophila</i>	<i>gilesii</i>				*				*			*									*		*						*								
Scrophulariaceae	<i>Eremophila</i>	<i>glabra</i>			*		*							*	*							*			*		*	*	*	*	*	*	*	*	*	*		
Scrophulariaceae	<i>Eremophila</i>	<i>homoplastica</i>				*		*				*	*	*				*			*	*		*				*	*	*	*	*	*	*	*	*		
Scrophulariaceae	<i>Eremophila</i>	<i>latrobei</i> subsp. <i>glabra</i>		*	*	*	*	*				*		*	*	*		*		*	*	*	*				*	*	*	*	*	*	*	*	*	*		
Scrophulariaceae	<i>Eremophila</i>	<i>latrobei</i> subsp. <i>latrobei</i>	*	*		*		*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*		*		*	*	*	*	*	*	*	*	*	
Scrophulariaceae	<i>Eremophila</i>	<i>longifolia</i>													*											*	*			*		*		*				
Scrophulariaceae	<i>Eremophila</i>	<i>malacoides</i>									*																											
Scrophulariaceae	<i>Eremophila</i>	<i>oldfieldii</i> subsp. <i>angustifolia</i>		*	*		*					*		*	*																							
Scrophulariaceae	<i>Eremophila</i>	<i>platycalyx</i> subsp. <i>platycalyx</i>	*														*																					
Scrophulariaceae	<i>Eremophila</i>	<i>platythamnos</i> subsp. <i>platythamnos</i>			*		*						*							*				*	*	*					*		*	*	*	*		
Scrophulariaceae	<i>Eremophila</i>	<i>punctata</i>	*			*												*																				
Scrophulariaceae	<i>Eremophila</i>	<i>scoparia</i>		*								*					*																					
Scrophulariaceae	<i>Eremophila</i>	<i>serrulata</i>		*	*		*		*	*		*																										
Scrophulariaceae	<i>Eremophila</i>	sp. (sterile)																																				
Scrophulariaceae	<i>Eremophila</i>	<i>spectabilis</i>										*																										
Scrophulariaceae	<i>Eremophila</i>	<i>abietina</i> subsp. <i>ciliata</i>																																				
Solanaceae	<i>Anthotroche</i>	<i>pannosa</i>																		*					*	*	*			*						*	*	
Solanaceae	<i>Duboisia</i>	<i>hopwoodii</i>																		*															*			
Solanaceae	<i>Nicotiana</i>	<i>rosulata</i> subsp. <i>rosulata</i> (A)		*				*			*		*	*									*						*									
Solanaceae	<i>Solanum</i>	<i>centrale</i>						*												*				*	*		*	*										
Solanaceae	<i>Solanum</i>	<i>ferocissimum</i>											*																									
Solanaceae	<i>Solanum</i>	<i>lasiophyllum</i>	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Solanaceae	<i>Solanum</i>	<i>orbiculatum</i>		*	*		*		*			*				*	*			*	*						*	*		*	*	*	*	*	*	*	*	
Solanaceae	<i>Solanum</i>	<i>plicatile</i>																									*											
Solanaceae	<i>Solanum</i>	sp. (sterile)		*					*				*	*		*																			*			
Thymelaeaceae	<i>Pimelea</i>	<i>microcephala</i>																																	*			
Zygophyllaceae	<i>Tribulus</i>	<i>astrocarpus</i> (A)		*																																		
Zygophyllaceae	<i>Zygophyllum</i>	<i>eremaum</i> (A)		*		*	*					*	*	*	*				*			*								*								

Appendix 5: DPaW Threatened Flora Database search results within 40km of the survey area (DPaW, 2013b)

Taxon	Conservation Code
<i>Calytrix warburtonensis</i>	P2
<i>Comesperma viscidulum</i>	P4
<i>Conospermum toddii</i>	P4
<i>Grevillea secunda</i>	P4
<i>Sauropus ramosissimus</i>	P3

Appendix 6: GPS coordinates of Quadrat locations (GDA94)

Quadrat	Zone	Easting	Northing	Quadrat	Zone	Easting	Northing	Quadrat	Zone	Easting	Northing
Q1	51 J	585109	6902545	Q42	51 J	583803	6904261	Q148	51 J	589216	6901983
Q2	51 J	585477	6902322	Q43	51 J	583102	6903873	Q149	51 J	588146	6901287
Q3	51 J	586170	6902461	Q44	51 J	582260	6904245	Q150	51 J	587020	6901833
Q4	51 J	586603	6903747	Q45	51 J	582196	6903489	Q151	51 J	589055	6900572
Q5	51 J	586517	6903315	Q46	51 J	580490	6902922	Q152	51 J	588622	6900779
Q6	51 J	586681	6903792	Q47	51 J	580463	6903565	Q153	51 J	588313	6900212
Q7	51 J	586663	6904288	Q48	51 J	582501	6903025	Q154	51 J	587529	6900143
Q8	51 J	586398	6904786	Q49	51 J	582477	6902782	Q155	51 J	587436	6901071
Q9	51 J	586385	6905309	Q50	51 J	582503	6902653	Q156	51 J	587838	6901259
Q10	51 J	586759	6905905	Q51	51 J	582716	6902674	Q157	51 J	587427	6901684
Q11	51 J	586274	6905926	Q52	51 J	582814	6902507	Q158	51 J	587744	6902165
Q12	51 J	585185	6905588	Q53	51 J	583037	6902489	Q159	51 J	588033	6901820
Q13	51 J	584796	6905220	Q54	51 J	582862	6901900	Q160	51 J	588240	6901497
Q14	51 J	583634	6906063	Q55	51 J	582792	6901709	Q161	51 J	588530	6901645
Q15	51 J	583260	6905861	Q56	51 J	585123	6901503	Q162	51 J	589803	6902208
Q16	51 J	582254	6905634	Q57	51 J	585646	6901454	Q163	51 J	591077	6902237
Q17	51 J	582096	6905895	Q58	51 J	586541	6901318	Q164	51 J	590904	6901656
Q18	51 J	581888	6905737	Q109	51 J	585429	6901968	Q165	51 J	589791	6900213
Q19	51 J	581634	6905665	Q110	51 J	585933	6902064	Q166	51 J	590088	6900563
Q20	51 J	580977	6905733	Q125	51 J	584916	6902707	Q167	51 J	591054	6900824
Q21	51 J	581042	6905392	Q126	51 J	584728	6903092	Q168	51 J	591784	6900191
Q22	51 J	581142	6904799	Q127	51 J	584889	6902179	Q169	51 J	591394	6901207
Q23	51 J	581586	6904719	Q128	51 J	582691	6902122	Q170	51 J	591852	6901748
Q24	51 J	581855	6904673	Q129	51 J	582582	6902344	Q171	51 J	591601	6901892
Q25	51 J	582769	6904984	Q130	51 J	582528	6902412	Q172	51 J	589880	6908273
Q26	51 J	583272	6905128	Q131	51 J	582620	6902506	Q173	51 J	588805	6907715
Q27	51 J	583754	6905266	Q132	51 J	582699	6902594	Q174	51 J	588693	6908052
Q28	51 J	583979	6905342	Q133	51 J	580685	6903453	Q175	51 J	588835	6908409
Q29	51 J	584555	6906036	Q134	51 J	580390	6904321	Q176	51 J	589820	6908756
Q30	51 J	584878	6906147	Q135	51 J	580647	6905270	Q177	51 J	584915	6901613
Q31	51 J	585471	6906133	Q136	51 J	584301	6906150	Q178	51 J	584756	6901462
Q32	51 J	585663	6905270	Q137	51 J	584646	6905594	Q179	51 J	586774	6901666

Quadrat	Zone	Easting	Northing	Quadrat	Zone	Easting	Northing	Quadrat	Zone	Easting	Northing
Q33	51 J	585747	6905000	Q138	51 J	584137	6905173	Q180	51 J	586005	6906521
Q34	51 J	585991	6903950	Q139	51 J	584966	6904683	Q181	51 J	586246	6906709
Q35	51 J	585856	6903837	Q140	51 J	584923	6903870	Q182	51 J	586791	6906487
Q36	51 J	585219	6902821	Q142	51 J	590225	6900869	Q183	51 J	586651	6906580
Q37	51 J	585321	6903038	Q143	51 J	590226	6901089	Q184	51 J	586646	6906827
Q38	51 J	585411	6903133	Q144	51 J	590258	6901721	Q185	51 J	587302	6906744
Q39	51 J	585895	6903295	Q145	51 J	589966	6902100	Q186	51 J	587570	6907245
Q40	51 J	585102	6904301	Q146	51 J	589105	6901018	Q187	51 J	588053	6907227
Q41	51 J	584638	6904459	Q147	51 J	589313	6901628	Q188	51 J	588398	6907157

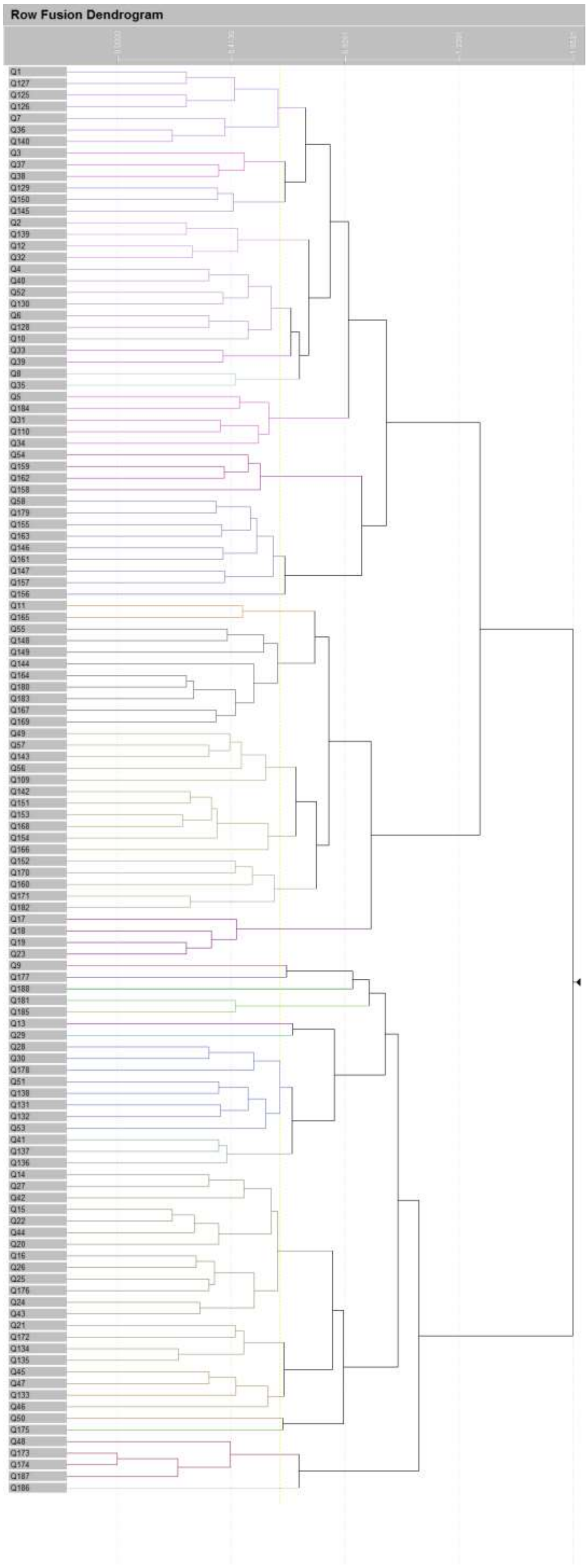
Appendix 7: Muir Life Form/Height Class (Muir, 1977).

LIFE FORM/HEIGHT CLASS	CANOPY COVER			
	DENSE 70% -100%	MID DENSE 30% -70%	SPARSE 10% -30%	VERY SPARSE 2% -10%
Trees > 30m Trees 15 – 30m Trees 5 – 15m Trees < 5m	Dense Tall Forest Dense Forest Dense Low Forest A Dense Low Forest B	Tall Forest Forest Low Forest A Low Forest B	Tall Woodland Woodland Low woodland A Low Woodland B	Open Tall Woodland Open Woodland Open Low Woodland A Open Low Woodland B
Mallee Tree Form Mallee Shrub Form	Dense Tree Mallee Dense Shrub Mallee	Tree Mallee Shrub Mallee	Open Tree Mallee Open Shrub Mallee	Very Open Tree Mallee Very Open Shrub Mallee
Shrubs > 2m Shrubs 1.5 – 2m Shrubs 1 – 1.5m Shrubs 0.5 – 1m Shrubs 0 – 0.5m	Dense Thicket Dense Heath A Dense Heath B Dense Low Heath C Dense Low Heath D	Thicket Heath A Heath B Low Heath C Low Heath D	Scrub Low Scrub A Low Scrub B Dwarf Scrub C Dwarf Scrub D	Open Scrub Open Low Scrub A Open Low Scrub B Open Dwarf Scrub C Open Dwarf Scrub D
Mat Plants Hummock Grass Bunch grass >0.5m Bunch grass < 0.5m Herbaceous spp.	Dense Mat Plants Dense Hummock Grass Dense Tall Grass Dense Low Grass Dense Herbs	Mat Plants Mid-dense Hummock Grass Tall Grass Low Grass Herbs	Open Mat Plants Hummock Grass Open Tall Grass Open Low Grass Open Herbs	Very Open Mat Plants Open Hummock Grass Very Open Tall Grass Very Open Low Grass Very Open Herbs
Sedges > 0.5m Sedges < 0.5m	Dense Tall Sedges Dense Low Sedges	Tall Sedges Low Sedges	Open Tall Sedges Open Low Sedges	Very Open Tall Sedges Very Open Low Sedges
Ferns Mosses, liverworts	Dense ferns Dense Mosses	Ferns Mosses	Open Ferns Open Mosses	Very Open Ferns Very Open Mosses

Appendix 8: Keighery Health rating scale (1994).

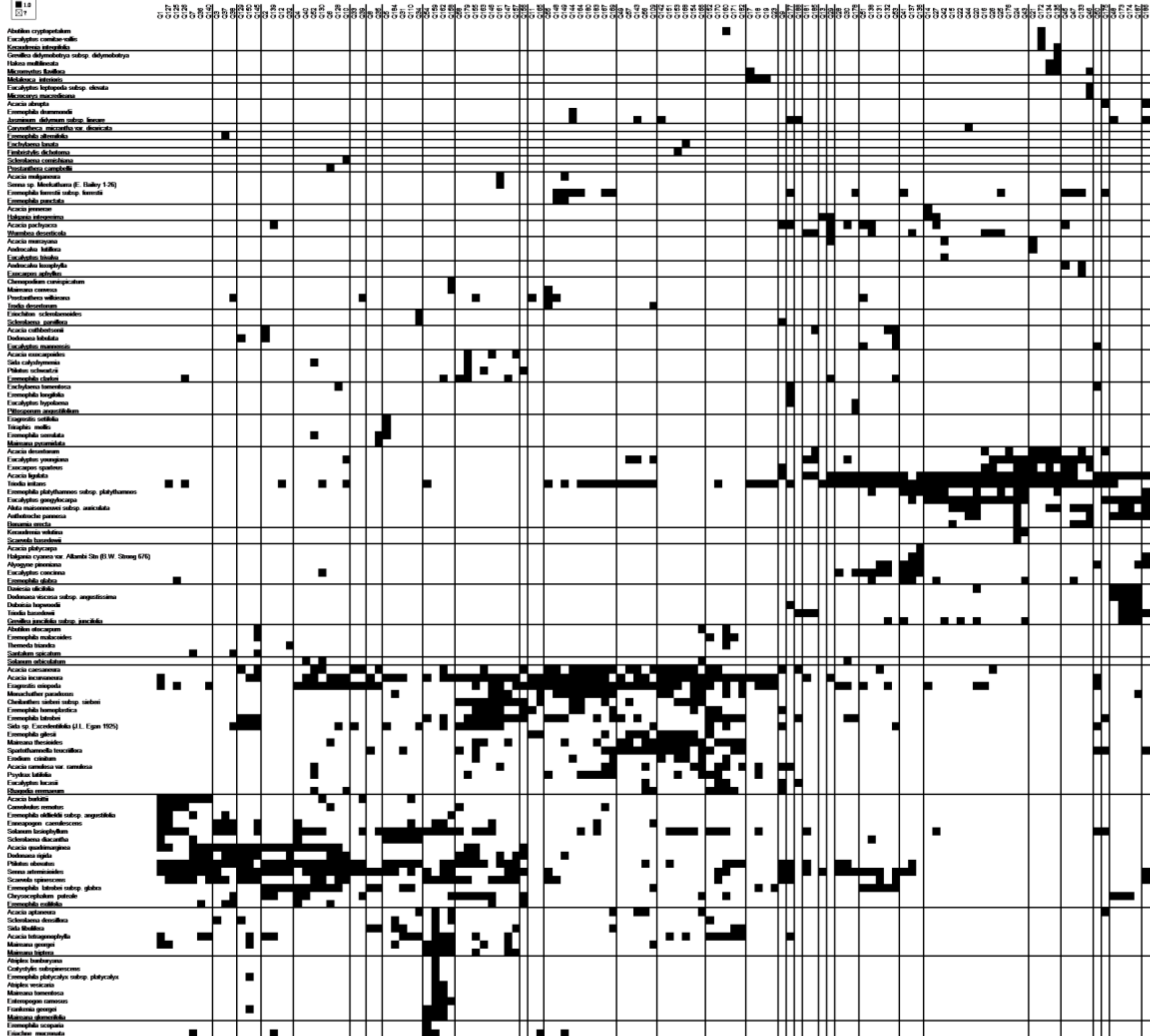
Health Description	Definition
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good	Vegetation structure altered obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as "parkland cleared" with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix 9: PATN analysis results for the Gruyere Project Autumn 2015





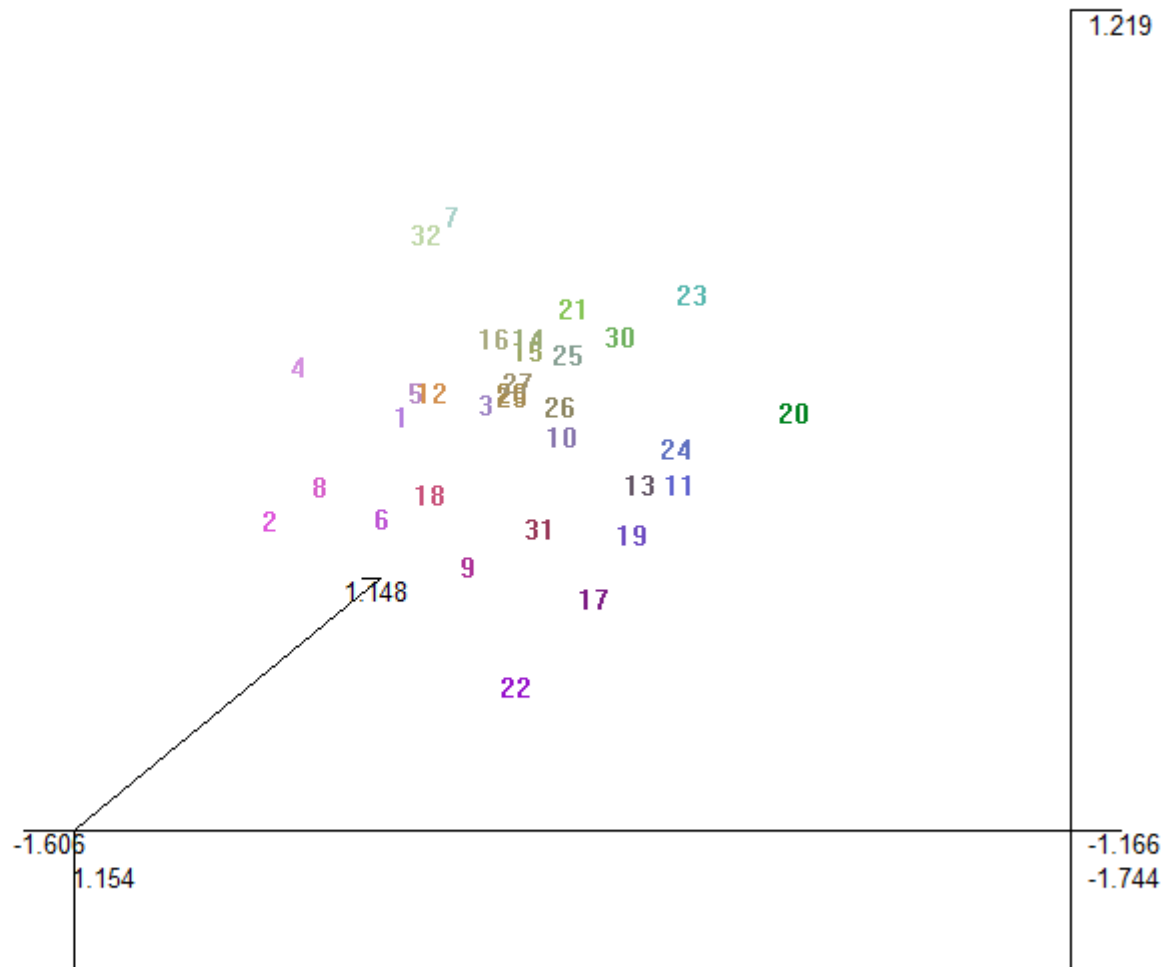
Two-way Table



Stress: 0.1959

LEGEND

- | | |
|------------|------------|
| ● Group 1 | ● Group 17 |
| ● Group 2 | ● Group 18 |
| ● Group 3 | ● Group 19 |
| ● Group 4 | ● Group 20 |
| ● Group 5 | ● Group 21 |
| ● Group 6 | ● Group 22 |
| ● Group 7 | ● Group 23 |
| ● Group 8 | ● Group 24 |
| ● Group 9 | ● Group 25 |
| ● Group 10 | ● Group 26 |
| ● Group 11 | ● Group 27 |
| ● Group 12 | ● Group 28 |
| ● Group 13 | ● Group 29 |
| ● Group 14 | ● Group 30 |
| ● Group 15 | ● Group 31 |
| ● Group 16 | ● Group 32 |



Appendix 10: Quadrat Photographs Spring 2014 & Autumn 2015: Gruyere Project

Provided as separate document

Appendix 11: Level 2 Data Sheets Autumn 2015: Gruyere Project

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 1	
Quadrat size: 20mX20m		
WP: 1	Vegetation Group: Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 179/180/181		
Landform: Simple slope/Middle third/Hillslope		
Land surface/disturbance: Limited clearing		
Coarse fragments on the surface (abundance/size/shape): No qualifier, common (10-20%) Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Light Brown/Uniform/Sandy Clay Loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. <i>artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Convolvulus remotus</i>		
<i>Enneapogon caerulescens</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>		
<i>Eriachne pulchella</i> (A)		
<i>Maireana georgei</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 2	
Quadrat size: 20mX20m		
WP: 4	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 4/5/6		
Landform: Lower slope/Middle third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz Ironstone/No qualifier, common (10-20%)/Coarse gravelly, large pebbles (20-60mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red brown/Uniform/Heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Isolated plants (<1)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia cuthbertsonii</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Dodonaea lobulata</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eriachne pulchella</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe</i> sp. (germinant) (A)		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Zygophyllum eremaum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 3	
Quadrat size: 20mX20m		
WP: 7	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 7/8/9		
Landform: Simple slope/ Middle third/Hillslope		
Land surface/disturbance: No effective disturbance except by hooved animals		
Coarse fragments on the surface (abundance/size/shape): Ironstone/Moderately; many 20% - 50%/Medium gravelly; medium pebbles 6-20mm/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Brown/Uniform/Medium clay/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia quadrimarginea</i>		
<i>Enneapogon caerulescens</i>		
<i>Eriachne pulchella</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Scaevola spinescens</i>		
<i>Sclerolaena densiflora</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 4	
Quadrat size: 20mX20m		
WP: 2	Vegetation Group: Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	
Photo number: 10/11/12		
Landform: Simple slope/Middle third/ Hillslope		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/ No qualifier; common 10% - 20%/ Coarse gravelly; large pebbles 20-60mm/ Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed		
Soil (profile/field texture/soil surface): Brown/ Uniform/ Medium clay/ Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Enneapogon caerulescens</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila exilifolia</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Sclerolaena diacantha</i>		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 5	
Quadrat size: 20mX20m		
WP: 12	Vegetation Group: Open low woodland of <i>Acacia incurvaneura</i> over dwarf scrub of <i>Maireana pyramidata</i> and low heath of <i>Frankenia georgei</i> and <i>Sclerolaena densiflora</i> in drainage depression	
Photo number: 13/1415		
Landform: Simple slope/Bottom third/Valley flat.		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Slightly; few 2% - 10%/Medium gravelly; medium pebbles 6-20mm/ Angular tabular		
Rock outcrop (abundance/runoff): Nil, runoff moderately rapid		
Soil (profile/field texture/soil surface): Red brown/Uniform/Heavy clay/ Soft		
%Cover leaf litter: 5		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very sparse (<10%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis setifolia</i>		
<i>Eremophila serrulata</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		
<i>Triraphis mollis</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 6	
Quadrat size: 20mX20m		
WP: 13	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	
Photo number: 16/17/18		
Soil (profile/field texture/soil surface): Simple slope/Middle third/Hillslope		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/ Moderately; many 20% - 50%/ Medium gravelly; medium pebbles 6-20mm/ Angular tabular		
Rock outcrop (abundance/runoff): Laterite/ Slightly rocky 2-10%/ Moderately rapid		
Soil (profile/field texture/soil surface): Red brown/Uniform/ Medium clay/ Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Senna artemisioides</i> subsp. <i>helmsii</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Convolvulus remotus</i>		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila exilifolia</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Maireana thesioides</i>		
<i>Prostanthera campbellii</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 7	
Quadrat size: 20mX20m		
WP: 15	Vegetation Group: Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 19/20/21		
Landform: Lower slope/Middle third/Hillslope		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Extremely; very abundant >90%/Subrounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/ Medium clay/ Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Scaevola spinescens</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia quadrimarginea</i>		
<i>Dodonaea rigida</i>		
<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>		
<i>Eriachne mucronata</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Santalum spicatum</i>		
<i>Scaevola spinescens</i>		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 8	
Quadrat size: 20mX20m		
WP: 18	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	
Photo number: 23/23/24		
Landform: Flat/ Middle third/Plain		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/moderately rapid		
Soil (profile/field texture/soil surface): Brown/Uniform/ Medium heavy clay/ Firm		
%Cover leaf litter: 10		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.25-.0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Aristida contorta</i> (A)
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Rhodanthe charsleyae</i> (A)		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida fibulifera</i>		
<i>Spartothamnella teucriflora</i>		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 9	
Quadrat size: 20mX20m		
WP: 21	Vegetation Group: Very open tree mallee of <i>Eucalyptus lucasii</i> low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 25/26/27		
Landform: Flat/ Middle third/ Plain		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Very slightly; very few <2%/Cobbly; or cobbles 60-200mm/ Subrounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red brown/ Uniform/ Medium clay/ Firm		
%Cover leaf litter: 40		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree Mallee (>8m)	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus lucasii</i>	<i>Acacia ligulata</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia ligulata</i>		
<i>Acacia pachyacra</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Eremophila homoplastica</i>		
<i>Eucalyptus lucasii</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Exocarpos sparteus</i>		
<i>Maireana</i> sp. (sterile)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhagodia eremaeum</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Scaevola spinescens</i>		
<i>Sclerolaena parviflora</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 10	
Quadrat size: 20mX20m		
WP: 25	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 28/29/30		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed, slow		
Soil (profile/field texture/soil surface): Red/Uniform/ Sandy loam/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee (<8m)	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eucalyptus youngiana</i>		
<i>Euphorbia tannensis</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhagodia eremaeum</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Scaevola spinescens</i>		
<i>Sclerolaena cornishiana</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 11	
Quadrat size: 20mX20m		
WP: 27	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 31/32/33		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Very slightly, very few (<2%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red Brown/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Prostanthera wilkieana</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eremophila homoplastica</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Goodenia mimuloides</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Prostanthera wilkieana</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 12	
Quadrat size: 20mX20m		
WP: 32	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> with occasional <i>Triodia irritans</i> on quartz/rocky plain	
Photo number: 34/35/36		
Landform: Simple slope/Middle third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Moderately, many (20-50%)/Medium gravelly, medium pebbles (6-20mm)/ Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Grey/Uniform/Silty clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eriachne pulchella</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus aevroides</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum</i> sp. (sterile)		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 13	
Quadrat size: 20mX20m		
WP: 34	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 37/38/39		
Landform: Flat/Middle third/Fan		
Land surface/disturbance: Fire		
Coarse fragments on the surface (abundance/size/shape): Very, abundant (50-90%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Medium clay		
%Cover leaf litter: 5		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: N/A	Growth form: Shrub	Growth form: Hummock grass
Height: N/A	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: N/A	Crown cover %: Mid-dense (30-70)	Crown cover %: Dense (>70)
Dominant taxa:	Dominant taxa:	Dominant taxa:
N/A	<i>Halgania integerrima</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Halgania integerrima</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Triodia irritans</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 14	
Quadrat size: 20mX20m		
WP: 45	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 40/41/42		
Landform: Flat/Middle third/Valley flat		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 40		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia jennerae</i>		
<i>Acacia ligulata</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Halgania integerrima</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 15	
Quadrat size: 20mX20m		
WP: 46	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 43/44/45		
Landform: Flat/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 40		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Bonamia erecta</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 16	
Quadrat size: 20mX20m		
WP: 49	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 46/47/48		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed		
Soil (profile/field texture/soil surface): Red/Uniform/Loamy sand/Firm		
%Cover leaf litter: 5		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Eragrostis eriopoda</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Exocarpos sparteus</i>		
<i>Triodia irritans</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 17	
Quadrat size: 20mX20m		
WP: 51	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 49/50/51		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Melaleuca interioris</i>	<i>Leptosema chambersii</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Leptosema chambersii</i>		
<i>Melaleuca interioris</i>		
<i>Micromyrtus flaviflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 18	
Quadrat size: 20mX20m	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
WP: 52		
Photo number: 52/53/54		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 3-6m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Melaleuca interioris</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Melaleuca interioris</i>		
<i>Psydrax latifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Triodia irritans</i>		
<i>Zygophyllum eremaum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 19	
Quadrat size: 20mX20m		
WP: 53	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Hakea lorea</i> over heath of <i>Melaleuca interioris</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 55/56/57		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Melaleuca interioris</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Eragrostis eriopoda</i>		
<i>Euphorbia tannensis</i> (A)		
<i>Melaleuca interioris</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 20	
Quadrat size: 20mX20m		
WP: 54	Vegetation Group: Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	
Photo number: 58/59/60		
Landform: Crest/Top third/ Dune crest		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 70		
%Cover bare ground: 90		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Anthotroche pannosa</i>		
<i>Daviesia ulicifolia</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 21	
Quadrat size: 20mX20m		
WP: 56	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 61/62/63		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Uniform/sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Acacia murrayana</i>		
<i>Androcalva luteiflora</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 22	
Quadrat size: 20mX20m		
WP: 58	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over open mallee tree of <i>Eucalyptus youngiana</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> / mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 64/65/66		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 23	
Quadrat size: 20mX20m		
WP: 59	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 67/68/69		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/uniform/Sandy clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Dense (>70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 24	
Quadrat size: 20mX20m		
WP: 60	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 70/71/72		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/uniform/Sand/Soft		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub Mallee (<8m)	Growth form: Hummock Grass
Height: 6-12m	Height: 3-6m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Eucalyptus youngiana</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Anthotroche pannosa</i>		
<i>Bonamia erecta</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Keraudrenia velutina</i>		
<i>Scaevola basedowii</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 25	
Quadrat size: 20mX20m		
WP: 61/62	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 73/74/75		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/uniform/Sand/Soft		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eucalyptus youngiana</i>		
<i>Triodia irritans</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 26	
Quadrat size: 20mX20m		
WP: 63	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 75/77/78		
Landform: Flat/Middle third/Plain Valley flat		
Land surface/disturbance: Limited clearing		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70)	Crown cover %: Sparse (10-30%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia ligulata</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Triodia irritans</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 27	
Quadrat size: 20mX20m		
WP: 64	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 79/80/81		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hooved animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia pachyacra</i>		
<i>Aristida holathera</i> (A)		
<i>Eremophila glabra</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Halgania integerrima</i>		
<i>Solanum lasiophyllum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 28	
Quadrat size: 20mX20m		
WP: 66	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 82/83/84		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Loamy sand/Firm		
%Cover leaf litter: 60		
%Cover bare ground: 90		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 3-6m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Eragrostis eriopoda</i>		
<i>Eucalyptus concinna</i>		
<i>Ptilotus obovatus</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 29	
Quadrat size: 20mX20m		
WP: 68	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 85/86/87		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Clayey sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Dense (>70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia ligulata</i>		
<i>Acacia murrayana</i>		
<i>Acacia pachyacra</i>		
<i>Eremophila clarkei</i>		
<i>Halgania integerrima</i>		
<i>Triodia irritans</i>		
<i>Wurmbea desarticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 30	
Quadrat size: 20mX20m		
WP: 70	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 88/89/90		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hooved animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Clayey sand/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia pachyacra</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus youngiana</i>		
<i>Ptilotus obovatus</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum orbiculatum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 31	
Quadrat size: 20mX20m		
WP: 74/75	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	
Photo number: 91/929/93		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)	Crown cover %: Isolated plants (<1%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Lepidium oxytrichum</i> (A)		
<i>Lepidium phlebopetalum</i> (A)		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Salsola australis</i> (A)		
<i>Sclerolaena diacantha</i>		
<i>Sida fibulifera</i>		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		
<i>Tribulus astrocarpus</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 32	
Quadrat size: 20mX20m		
WP: 78	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 94/95/96		
Landform: Crest/Hillcrest		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely, Very abundant (>90%)/Coarse gravelly, large pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): Greenstone/Very rocky/Very slow		
Soil (profile/field texture/soil surface): Grey/Uniform/Silty loam/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70)	Crown cover %: Very sparse (<10)	Crown cover %: Very sparse (<10)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia quadrimarginea</i>		
<i>Dodonaea rigida</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus aevroides</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Themeda triandra</i>		
<i>Zygophyllum eremaum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 33	
Quadrat size: 20mX20m		
WP: 80	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	
Photo number: 97/98/99		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Sandy loam/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 90		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eriachne pulchella</i> (A)		
<i>Euphorbia drummondii</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Marsdenia australis</i> (A)		
<i>Podolepis capillaris</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 34	
Quadrat size: 20mX20m		
WP: 83	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	
Photo number: 100/101/102		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Moderately, many (20-50%)/Coarse gravelly, large pebbles (20-60mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Light medium clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 90		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia aptaneura</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia aptaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Eriochiton sclerolaenoides</i>		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Sclerolaena parviflora</i>		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 35	
Quadrat size: 20mX20m		
WP: 85	Vegetation Group: Open low woodland of <i>Acacia incurvaneura</i> over dwarf scrub of <i>Maireana pyramidata</i> and low heath of <i>Frankenia georgei</i> and <i>Sclerolaena densiflora</i> in drainage depression	
Photo number: 103/104/105		
Landform: Flat/Middle third/Drainage depression		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Moderately, many (20-50%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red brown/Uniform/Medium heavy clay/Loose		
%Cover leaf litter: 5		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Tussock grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Isolated plants (<1%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila serrulata</i>		
<i>Leucochrysum fitzgibbonii</i> (A)		
<i>Maireana pyramidata</i>		
<i>Ptilotus aervoides</i> (A)		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Sida fibulifera</i>		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 36	
Quadrat size: 20mX20m		
WP: 89	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	
Photo number: 106/107/108		
Landform: Upper slope/Top third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Greenstone/Very, abundant (50-90%)/Coarse gravelly, large pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/No runoff		
Soil (profile/field texture/soil surface): Dark brown/Uniform/Clay loam sandy/Soft		
%Cover leaf litter: 5		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Eremophila exilifolia</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Dodonaea rigida</i>		
<i>Eremophila exilifolia</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 37	
Quadrat size: 20mX20m		
WP: 92	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	
Photo number: 112/113/114		
Landform: Crest/Top third/Hill crest		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Greenstone/Very, abundant (50-90%)/Coarse gravelly, large pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): Very rocky/Slow		
Soil (profile/field texture/soil surface): Dark brown/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 5		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Eremophila exilifolia</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Dodonaea rigida</i>		
<i>Enneapogon caerulescens</i>		
<i>Eremophila alternifolia</i>		
<i>Eremophila exilifolia</i>		
<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Scaevola spinescens</i>		
<i>Solanum lasiophyllum</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 38	
Quadrat size: 20mX20m		
WP: 93	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	
Photo number: 115/116/117		
Landform: Crest/Top third/Hill crest		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Greenstone/Very, abundant (50-90%)/Coarse gravelly, large pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): Rocky/Very slow		
Soil (profile/field texture/soil surface): Dark grey/Light medium clay/Firm		
%Cover leaf litter: 5		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Eremophila exilifolia</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Dodonaea rigida</i>		
<i>Erneapogon caerulescens</i>		
<i>Eremophila exilifolia</i>		
<i>Eriachne pulchella</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Prostanthera wilkieana</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Salsola australis</i> (A)		
<i>Santalum spicatum</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 39	
Quadrat size: 20mX20m		
WP: 97	Vegetation Group: Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 118/119/120		
Landform: Simple slope/Middle third/Hillslope		
Land surface/disturbance: No effective disturbance except by hooved animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/No qualifier, common (10-20%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia caesaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Eragrostis eriopoda</i>		
<i>Prostanthera wilkieana</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 40	
Quadrat size: 20mX20m		
WP: 101	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	
Photo number: 121/122/123		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Slightly, few (2-10%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red brown/uniform/Medium clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Podolepis capillaris</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Solanum orbiculatum</i>		
<i>Solanum</i> sp. (sterile)		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 41	
Quadrat size: 20mX20m		
WP: 105	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 124/125/126		
Landform: Flat/Fan		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/uniform/Sand/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Alyogyne pinoniana</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila glabra</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus concinna</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 42	
Quadrat size: 20mX20m		
WP: 107	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 127/128/129		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/No runoff		
Soil (profile/field texture/soil surface): Uniform/Sand/Soft		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia murrayana</i>		
<i>Eremophila platythamnus</i> subsp. <i>platythamnus</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eucalyptus trivalva</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 43	
Quadrat size: 20mX20m		
WP: 108	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 130/131/132		
Landform: Open depression (vale)/Top third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/No runoff		
Soil (profile/field texture/soil surface): Uniform/Sand/Soft		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Eremophila glabra</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Keraudrenia velutina</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 44	
Quadrat size: 20mX20m		
WP: 109	Vegetation Group: Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	
Photo number: 135/136/137		
Landform: Crest/Dunecrest		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 30		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Anthotroche pannosa</i>		
<i>Corynotheca micrantha</i> var. <i>divaricata</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 45	
Quadrat size: 20mX20m		
WP: 110	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 138/139/140		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 90		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia pachyacra</i>		
<i>Androcalva loxophylla</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 46	
Quadrat size: 20mX20m		
WP: 111	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 141/142/143		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Anthotroche pannosa</i>		
<i>Bonamia erecta</i>		
<i>Eucalyptus leptopoda</i> subsp. <i>elevata</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Goodenia mimuloides</i> (A)		
<i>Leptosema chambersii</i>		
<i>Microcorys macredieana</i>		
<i>Micromyrtus flaviflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 47	
Quadrat size: 20mX20m		
WP: 112	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 144/145/146		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Bonamia erecta</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila glabra</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Leptosema chambersii</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 48	
Quadrat size: 20mX20m		
WP: 113	Vegetation Group: Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	
Photo number: 147/148/149		
Landform: Crest/Top third/Dunecrest		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Anthotroche pannosa</i>		
<i>Aristida holathera</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Daviesia ulicifolia</i>		
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 49	
Quadrat size: 20mX20m		
WP: 114	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 150/151/152		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Maireana thesioides</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 50	
Quadrat size: 20mX20m		
WP: 115	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 153/154/155		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Clayey sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus mannensis</i>	<i>Acacia incurvaneura</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia ligulata</i>		
<i>Alyogyne pinoniana</i>		
<i>Aristida contorta</i> (A)		
<i>Enchylaena tomentosa</i>		
<i>Eragrostis eriopoda</i>		
<i>Eucalyptus mannensis</i>		
<i>Marsdenia australis</i> (A)		
<i>Ptilotus polystachyus</i> (A)		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 51	
Quadrat size: 20mX20m		
WP: 116	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 156/157/158		
Landform: Open depression (vale)/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Slightly, few (2-10%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Clayey sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus mannensis</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia pachyacra</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus concinna</i>		
<i>Eucalyptus mannensis</i>		
<i>Prostanthera wilkieana</i>		
<i>Ptilotus aervoides</i> (A)		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 52	
Quadrat size: 20mX20m		
WP: 118	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	
Photo number: 159/160/161		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/No qualifier, common (10-20%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Medium clay/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Acacia ramulosa</i> var. <i>ramulosa</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila serrulata</i>		
<i>Psydrax latifolia</i>		
<i>Ptilotus obovatus</i>		
<i>Rhagodia eremaeum</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida calyxhymenia</i>		
<i>Solanum lasiophyllum</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Aristida contorta</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 53	
Quadrat size: 20mX20m		
WP: 120	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> / <i>Eucalyptus mannensis</i> over heath of mixed shrubs and hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 162/163/164		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus mannensis</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia cuthbertsonii</i>		
<i>Acacia ligulata</i>		
<i>Dodonaea lobulata</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila clarkei</i>		
<i>Eucalyptus mannensis</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 54	
Quadrat size: 20mX20m		
WP: 122	Vegetation Group: Low woodland of <i>Casuarina pauper</i> over heath of <i>Eremophila scoparia</i> / <i>Senna artemisioides</i> subsp. x <i>artemisioides</i> and low heath of <i>Ptilotus obovatus</i> / <i>Maireana triptera</i> on quartz/rocky plain	
Photo number: 165/166/167		
Landform: Simple slope/Bottom third/Breakaway		
Land surface/disturbance: Limited clearing		
Coarse fragments on the surface (abundance/size/shape): Quartz/Very, abundant (50-90%)/Coarse gravelly, large pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): Greenstone/Very rocky/Very Slow		
Soil (profile/field texture/soil surface): Light brown/Uniform/Silty clay loam/Firm		
%Cover leaf litter: 5		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila scoparia</i>	<i>Frankenia georgei</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila scoparia</i>		
<i>Eriachne mucronata</i>		
<i>Frankenia georgei</i>		
<i>Maireana georgei</i>		
<i>Maireana glomerifolia</i>		
<i>Maireana triptera</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 55	
Quadrat size: 20mX20m		
WP: 123	Vegetation Group: Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	
Photo number: 168/169/170		
Landform: Upper slope/Top third/Breakaway		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Very abundant (50-90%)/Cobbly, or cobbles (60-200mm)/Angular tabular		
Rock outcrop (abundance/runoff): Quartz/Rockland/No runoff		
Soil (profile/field texture/soil surface): Light brown/Uniform/Silty clay loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Euphorbia tannensis</i> (A)		
<i>Maireana convexa</i>		
<i>Prostanthera wilkieana</i>		
<i>Psydrax latifolia</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Triodia irritans</i>		
<i>Triodia desertorum</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 56	
Quadrat size: 20mX20m		
WP: 128	Vegetation Group: Very open tree mallee of <i>Eucalyptus lucasii</i> over low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Ptilotus obovatus</i> in drainage depression	
Photo number: 171/172/173		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/No runoff		
Soil (profile/field texture/soil surface): Brown/Uniform/Medium clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Acacia ramulosa</i> var. <i>ramulosa</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia aptaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eucalyptus lucasii</i>		
<i>Euphorbia tannensis</i> (A)		
<i>Maireana thesioides</i>		
<i>Ptilotus obovatus</i>		
<i>Rhagodia eremaea</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		
<i>Vittadinia eremaea</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 57	
Quadrat size: 20mX20m		
WP: 131	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 174/175/176		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: Limited clearing		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia caesaneura</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eucalyptus youngiana</i>		
<i>Maireana thesioides</i>		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 58	
Quadrat size: 20mX20m		
WP: 138	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> / heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on quartz/rocky plain	
Photo number: 182/183/184		
Landform: Flat/Middle third/Valley flat		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/No qualifier, common (10-20%)/Coarse gravelly, large pebbles (20-60mm)/Angular tabular		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Light brown/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Scaevola spinescens</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Convolvulus remotus</i>		
<i>Dodonaea rigida</i>		
<i>Eremophila clarkei</i>		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Scaevola spinescens</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 109	
Quadrat size: 20mX20m		
WP: 333	Vegetation Group: Very open tree mallee of <i>Eucalyptus lucasii</i> / low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 363/364/365		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Spartothamnella teucriflora</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Enneapogon caerulescens</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus youngiana</i>		
<i>Euphorbia tannensis</i> (A)		
<i>Maireana georgei</i>		
<i>Maireana thesioides</i>		
<i>Marsdenia australis</i> (A)		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Rhagodia eremaeum</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Spartothamnella teucriflora</i>		
<i>Triodia desertorum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 110	
Quadrat size: 20mX20m		
WP: 337	Vegetation Group: Scrub of <i>Acacia burkittii</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 366/367/368		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/No qualifier, common (10-20%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Light brown/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia tetragonophylla</i>		
<i>Enneapogon caerulescens</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 125	
Quadrat size: 20mX20m		
WP: 387	Vegetation Group: Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 443/444/445		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Loamy sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Convolvulus remotus</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila glabra</i>		
<i>Marsdenia australis</i> (A)		
<i>Podolepis capillaris</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Zygophyllum eremaum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 126	
Quadrat size: 20mX20m		
WP: 388	Vegetation Group: Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 446/447/448		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 90		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Convolvulus remotus</i>		
<i>Eremophila clarkei</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Solanum</i> sp. (sterile)		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Triodia irritans</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 127	
Quadrat size: 20mX20m		
WP: 389	Vegetation Group: Thicket of <i>Acacia burkittii</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on clay-loam plain	
Photo number: 449/450/451		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia quadrimarginea</i>		
<i>Convolvulus remotus</i>		
<i>Enneapogon caerulescens</i>		
<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Maireana georgei</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Triodia irritans</i>		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 128	
Quadrat size: 20mX20m		
WP: 390	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 452/453/454		
Landform: Flat/Middle third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz/Slightly, few (2-10%)/Coarse gravelly, large pebbles (20-60mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Dodonaea rigida</i>		
<i>Enchylaena tomentosa</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eriachne pulchella</i> (A)		
<i>Marsdenia australis</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Zygophyllum eremaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 129	
Quadrat size: 20mX20m		
WP: 391	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 455/456/457		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Quartz Ironstone/Moderately, many (20-50%)/Medium gravelly, medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Dodonaea lobulata</i>		
<i>Dodonaea rigida</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Sclerolaena densiflora</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		
<i>Zygophyllum ermaeum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 130	
Quadrat size: 20mX20m		
WP: 392	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 458/459/460		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia caesaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus concinna</i>		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Salsola australis</i> (A)		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Solanum orbiculatum</i>		
<i>Triodia irritans</i>		
<i>Zygophyllum eremaum</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 131	
Quadrat size: 20mX20m		
WP: 393	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 461/462/463		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia ligulata</i>		
<i>Alyogyne pinoniana</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus concinna</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 132	
Quadrat size: 20mX20m		
WP: 394	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over low scrub of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 464/465/466		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Clayey loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Very sparse (<10%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia cuthbertsonii</i>		
<i>Acacia ligulata</i>		
<i>Alyogyne pinoniana</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus concinna</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 133	
Quadrat size: 20mX20m		
WP: 395	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 467/468/469		
Landform: Flat/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia desertorum</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Androcalva loxophylla</i>		
<i>Bonamia erecta</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos aphyllus</i>		
<i>Leptosema chambersii</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 134	
Quadrat size: 20mX20m		
WP: 296	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 470/471/472		
Landform: Flat/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Eucalyptus youngiana</i>		
<i>Exocarpos sparteus</i>		
<i>Hakea multilineata</i>		
<i>Leptosema chambersii</i>		
<i>Micromyrtus flaviflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 135	
Quadrat size: 20mX20m		
WP: 397	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> / <i>Acacia desertorum</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 473/474/475		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Clayey sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Mid-dense (30-70%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus youngiana</i>		
<i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i>		
<i>Hakea multilineata</i>		
<i>Keraudrenia integrifolia</i>		
<i>Micromyrtus flaviflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 136	
Quadrat size: 20mX20m		
WP: 398	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 476/477/478		
Landform: Open depression (vale)/Middle third/Swale		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 6-12m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Mid-dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Dense (>70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Halgania cyanea</i> var. Allambi Stn (B.W. Strong 676)	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia platycarpa</i>		
<i>Alyogyne pinoniana</i>		
<i>Eremophila platythamnus</i> subsp. <i>platythamnus</i>		
<i>Eucalyptus concinna</i>		
<i>Halgania cyanea</i> var. Allambi Stn (B.W. Strong 676)		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 137	
Quadrat size: 20mX20m		
WP: 399	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 479/480/481		
Landform: Open depression (vale)/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Eucalyptus concinna</i>		
<i>Eremophila glabra</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Halgania cyanea</i> var. Allambi Stn (B.W. Strong 676)		
<i>Alyogyne pinoniana</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Salsola australis</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Triodia irritans</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 138	
Quadrat size: 20mX20m		
WP: 400	Vegetation Group: Open tree mallee of <i>Eucalyptus concinna</i> over heath of mixed shrubs and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 482/483/484		
Landform: Flat/Top third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments.		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Orange/Uniform/Sandy loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 70		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub mallee (<8m)	Growth form: Shrub	Growth form: Hummock grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid-dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus concinna</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Acacia pachyacra</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila glabra</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus concinna</i>		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Triodia irritans</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 139	
Quadrat size: 20mX20m		
WP: 402	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> with occasional <i>Triodia irritans</i> on quartz/rocky plain	
Photo number: 488/489/490		
Landform: Flat/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Moderately, many (20-50%)/Coarse gravelly, large pebbles (20-60mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Medium heavy clay/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia pachyacra</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eriachne mucronata</i>		
<i>Eriachne pulchella</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Podolepis canescens</i> (A)		
<i>Podolepis capillaris</i> (A)		
<i>Ptilotus aervoides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Salsola australis</i> (A)		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 140	
Quadrat size: 20mX20m		
WP: 403	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> with occasional <i>Triodia irritans</i> on quartz/rocky plain	
Photo number: 491/492/493		
Landform: Lower slope/Middle third/Pediment		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Granite/Very, abundant (50-90%)/Medium gravelly; medium pebbles (6-20mm)/Angular tabular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Light grey/Uniform/Silty clay loam/Soft		
%Cover leaf litter: 10		
%Cover bare ground: 80		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Very sparse (<10%)	Crown cover %: Very sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Acacia burkittii</i>	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>
ALL SPECIES		
<i>Acacia burkittii</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eriachne pulchella</i> (A)		
<i>Ptilotus aevoides</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Zygophyllum eremaeum</i> (A)		

Date: 12th-19th May 2015		Botanist: Jim Williams
Location: Gruyere		Quadrat: 142
Quadrat size: 20mX20m		
WP: 70	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 305/306/307		
Landform: Flat/Bottom third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Light grey/Uniform/clay loam/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila gilesii</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Erodium crinitum</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 143	
Quadrat size: 20mX20m		
WP: 72	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia caesaneura</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 308/309/310		
Landform: Flat/Bottom third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Sandy loam/Firm		
%Cover leaf litter: 70		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Tree	Growth form: Hummock Grass
Height: 3-6m	Height: 3-6m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia caesaneura</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia aptaneura</i>		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus youngiana</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Marsdenia australis</i> (A)		
<i>Spartothamnella teucrifflorea</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 144	
Quadrat size: 20mX20m		
WP: 77	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 315/316/317		
Landform: Flat/Bottom third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Hard Setting		
%Cover leaf litter: 70		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	<i>Eragrostis eriopoda</i>
<i>Acacia incurvaneura</i>		
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila drummondii</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila homoplastica</i>		
<i>Erodium crinitum</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Monachather paradoxus</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 145	
Quadrat size: 20mX20m		
WP: 82	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and dwarf scrub of <i>Eremophila malacoides</i> in drainage depression	
Photo number: 322/323/324		
Landform: Open Depression/Bottom third/Drainage Depression		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Slightly; few (2-10%)/ fine gravelly; small pebbles (2-6mm)/Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 40		
%Cover bare ground: 25		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia quadrimarginea</i>	<i>Senna artemisioides</i> subsp. <i>artemisioides</i> <i>Senna artemisioides</i> subsp. <i>helmsii</i>	<i>Eremophila malacoides</i>
ALL SPECIES		
<i>Abutilon otocarpum</i>		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Calotis multicaulis</i> (A)		
<i>Cenchrus echinatus</i> (W)		
<i>Dodonaea rigida</i>		
<i>Dysphania melanocarpa</i> (A)		
<i>Enneapogon caerulescens</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila malacoides</i>		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Paspalidium clementii</i> (A)		
<i>Ptilotus aevoides</i> (A)		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Santalum spicatum</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 146	
Quadrat size: 20mX20m		
WP: 88	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	
Photo number: 326/327/328		
Landform: Lower Slope/Bottom third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/Cobbly; cobbles (60-200mm)/Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 15		
%Cover bare ground: 50		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Isolated Plants (<1%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Eremophila homoplastica</i>
ALL SPECIES		
<i>Acacia exocarpoides</i>		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Enneapogon caerulescens</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila exilifolia</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Monachather paradoxus</i>		
<i>Scaevola spinescens</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		

Project Name: Gruyere	
Date: 12th-19th May 2015	Botanist: Jim Williams

Location: Gruyere		Quadrat: 147
Quadrat size: 20mX20m		
WP: 94	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia irritans</i> on rocky hillslope	
Photo number: 330/331/332		
Landform: Mid Slope/Middle third/Hillslope		
Land surface/disturbance: Limited Clearing		
Coarse fragments on the surface (abundance/size/shape): Very abundant (50-90%)/Stony; stones (200-600mm)/Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Light Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
	<i>Scaevola spinescens</i>	
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eremophila clarkei</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Maireana georgei</i>		
<i>Maireana thesioides</i>		
<i>Maireana triptera</i>		
<i>Monachather paradoxus</i>		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 148	
Quadrat size: 20mX20m		
WP: 98	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 335/336/337		
Landform: Flat/Top Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No qualifier; common (10-20%)/coarse gravelly; large pebbles (20-60mm)/subrounded		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Light Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 50		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila punctata</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Monachather paradoxus</i>		
<i>Prostanthera wilkieana</i>		
<i>Scaevola spinescens</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 149	
Quadrat size: 20mX20m		
WP: 107	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia irritans</i> on rocky hillslope	
Photo number: 342/343/344		
Landform: Upper Slope/Top Third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/Cobbly; cobbles (60-200mm)/Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately Rapid		
Soil (profile/field texture/soil surface): Light Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid dense (30-70%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Eragrostis eriopoda</i>
		<i>Eriachne mucronata</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia mulganeura</i>		
<i>Aristida contorta</i> (A)		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila punctata</i>		
<i>Eriachne mucronata</i>		
<i>Eriachne pulchella</i> (A)		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 150	
Quadrat size: 20mX20m		
WP: 115	Vegetation Group: Open scrub of <i>Acacia incurvaneura</i> over low scrub of <i>Acacia quadrimarginea</i> and low heath of <i>Prostanthera wilkieana</i> on breakaway	
Photo number: 353/354/355		
Landform: Upper Slope/Top Third/Breakaway		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Medium gravelly; medium pebbles (6-20mm)/Angular		
Rock outcrop (abundance/runoff): Breakaway/Rockland/Moderately Rapid		
Soil (profile/field texture/soil surface): Brown-Yellow/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 1-3m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
<i>Acacia quadrimarginea</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Dodonaea rigida</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila platycalyx</i> subsp. <i>platycalyx</i>		
<i>Eriachne pulchella</i> (A)		
<i>Frankenia georgei</i>		
<i>Maireana georgei</i>		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 151	
Quadrat size: 20mX20m		
WP: 124	Vegetation Group: Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	
Photo number: 360/361/362		
Landform: Open Depression/Bottom Third/Drainage Depression		
Land surface/disturbance: No effective disturbance except by hooved animals		
Coarse fragments on the surface (abundance/size/shape): Moderately; many (20-50%)/ Fine gravelly; small pebbles (2-6mm)/Subrounded		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 5		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very Sparse (<10%)	Crown cover %: Very Sparse (<10%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Spartothamnella teucriflora</i>	<i>Eremophila gilesii</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cyperus iria</i> (A)		
<i>Eragrostis dielsii</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Erodium cygnorum</i> (A)		
<i>Euphorbia tannensis</i> (A)		
<i>Helipterum craspedioides</i> (A)		
<i>Lepidium oxytrichum</i> (A)		
<i>Lepidium phlebopetalum</i> (A)		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i> (A)		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 152	
Quadrat size: 20mX20m		
WP: 125	Vegetation Group: Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	
Photo number: 363/364/365		
Landform: Open Depression/Bottom Third/Drainage Depression		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Slightly; few (2-10%)/ Fine gravelly; small pebbles (2-6mm)/ Subrounded		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Cracking		
%Cover leaf litter: 15		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very Sparse (<10%)	Crown cover %: Very Sparse (<10%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Eremophila malacoides</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila malacoides</i>		
<i>Erodium cygnorum</i> (A)		
<i>Psydrax latifolia</i>		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Rhagodia eremaeum</i>		
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i> (A)		
<i>Sclerolaena densiflora</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 153	
Quadrat size: 20mX20m		
WP: 126	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 366/367/368		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Hard Setting		
%Cover leaf litter: 20		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form:	Growth form: Tussock Grass
Height: 3-6m	Height:	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %:	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>		<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Erodium crinitum</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Fimbristylis dichotoma</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Maireana thesioides</i>		
<i>Psydrax latifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 154	
Quadrat size: 20mX20m		
WP: 127	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 369/370/371		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Slightly; few (2-10%)/ Fine gravelly; small pebbles (2-6mm)/ Subrounded		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Hard Setting		
%Cover leaf litter: 10		
%Cover bare ground: 10		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form:	Growth form: Tussock Grass
Height: 3-6m	Height:	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %:	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>		<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eremophila homoplastica</i>		
<i>Maireana thesioides</i>		
<i>Marsdenia australis</i> (A)		
<i>Monachather paradoxus</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Solanum lasiophyllum</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 155	
Quadrat size: 20mX20m		
WP: 131	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 372/373/374		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Very abundant (50-90%)/ Stony; stones (200-600mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Erodium crinitum</i>		
<i>Euphorbia tannensis</i> (A)		
<i>Goodenia mimuloides</i> (A)		
<i>Lepidium oxytrichum</i> (A)		
<i>Lepidium phlebopetalum</i> (A)		
<i>Maireana thesioides</i>		
<i>Maireana triptera</i>		
<i>Marsdenia australis</i> (A)		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Prostanthera wilkieana</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Solanum</i> sp. (sterile)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 156	
Quadrat size: 20mX20m		
WP: 132	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low heath of <i>Eremophila exilifolia</i> on quartz/rocky plain	
Photo number: 375/376/377		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Stony; stones (200-600mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Hard Setting		
%Cover leaf litter: 10		
%Cover bare ground: 50		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Eremophila exilifolia</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i> (A)		
<i>Eremophila exilifolia</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Euphorbia drummondii</i> (A)		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus schwartzii</i>		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172) (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 157	
Quadrat size: 20mX20m		
WP: 133	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia irritans</i> on rocky hillslope	
Photo number: 378/379/380		
Landform: Mid Slope/Middle Third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Stony; stones (200-600mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately Rapid		
Soil (profile/field texture/soil surface): Brown/Uniform/Sandy clay loam/Hard Setting		
%Cover leaf litter: 20		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
	<i>Scaevola spinescens</i>	
ALL SPECIES		
<i>Acacia exocarpoides</i>		
<i>Acacia incurvaneura</i>		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Maireana triptera</i>		
<i>Marsdenia australis</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida fibulifera</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 158	
Quadrat size: 20mX20m		
WP: 134	Vegetation Group: Low woodland of <i>Acacia quadrimarginea</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 381/382/383		
Landform: Lower Slope/Middle Third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Cobbly; cobbles (60-200mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia aptaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Chenopodium curvispicatum</i>		
<i>Chrysocephalum puteale</i>		
<i>Enteropogon ramosus</i>		
<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>		
<i>Maireana convexa</i>		
<i>Maireana georgei</i>		
<i>Maireana triptera</i>		
<i>Ptilotus helipteroides</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Sclerolaena densiflora</i>		
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		
<i>Solanum lasiophyllum</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 159	
Quadrat size: 20mX20m		
WP: 135	Vegetation Group: Open low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and low heath of <i>Maireana glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	
Photo number: 384/385/386		
Landform: Flat/ Middle Third/ Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Cobbly; cobbles (60-200mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia aptaneura</i>	<i>Cratystylis subspinescens</i>	<i>Frankenia georgei</i>
ALL SPECIES		
<i>Acacia aptaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Atriplex bunburyana</i>		
<i>Atriplex vesicaria</i>		
<i>Cratystylis subspinescens</i>		
<i>Enneapogon caerulescens</i>		
<i>Enteropogon ramosus</i>		
<i>Eremophila platycalyx</i> subsp. <i>platycalyx</i>		
<i>Eriachne mucronata</i>		
<i>Eriachne pulchella</i> (A)		
<i>Frankenia georgei</i>		
<i>Maireana georgei</i>		
<i>Maireana glomerifolia</i>		
<i>Maireana tomentosa</i>		
<i>Maireana triptera</i>		
<i>Scaevola spinescens</i>		
<i>Sclerolaena densiflora</i>		
<i>Sida fibulifera</i>		
<i>Solanum lasiophyllum</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 160	
Quadrat size: 20mX20m		
WP: 136	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and dwarf scrub of <i>Eremophila malacoides</i> in drainage depression	
Photo number: 387/388/389		
Landform: Open Depression/Bottom Third/Drainage Depression		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Very Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 5		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Eremophila malacoides</i>
ALL SPECIES		
<i>Abutilon cryptopetalum</i>		
<i>Abutilon otocarpum</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Chrysocephalum puteale</i>		
<i>Dysphania kalpari</i> (A)		
<i>Dysphania melanocarpa</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila malacoides</i>		
<i>Erodium crinitum</i>		
<i>Eucalyptus lucasii</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Lepidium oxytrichum</i> (A)		
<i>Lepidium phlebopetalum</i> (A)		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Paspalidium clementii</i> (A)		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhagodia eremaeum</i>		

Rhodanthe charsleyae (A)

Senna artemisioides subsp. *x artemisioides*

Sida sp. *Excedentifolia* (J.L. Egan 1925)

Solanum lasiophyllum

Themeda triandra

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 161	
Quadrat size: 20mX20m		
WP: 137	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> / <i>Scaevola spinescens</i> and sparse hummock grass of <i>Triodia irritans</i> on rocky hillslope	
Photo number: 390/391/392		
Landform: Lower Slope/ Bottom Third/ Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Cobbly; cobbles (60-200mm)/ Angular		
Rock outcrop (abundance/runoff): No Bedrock Exposed/Moderately Rapid		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
	<i>Scaevola spinescens</i>	
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia mulganeura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Dodonaea rigida</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Euphorbia tannensis</i> (A)		
<i>Monachather paradoxus</i>		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)		
<i>Sida</i> sp. (sterile)		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 162	
Quadrat size: 20mX20m		
WP: 139	Vegetation Group: Open low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of <i>Senna artemisioides</i> subsp. <i>helmsii</i> / <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and low heath of <i>Maireana glomerifolia</i> / <i>Frankenia georgei</i> on quartz/rocky plain	
Photo number: 393/394/395		
Landform: Flat/ Middle Third/ Plain		
Land surface/disturbance: No effective disturbance except by hooved animals		
Coarse fragments on the surface (abundance/size/shape): Very; abundant (50-90%)/ Cobbly; cobbles (60-200mm)/ Angular		
Rock outcrop (abundance/runoff): Very slightly rocky (<2%)/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Hard Setting		
%Cover leaf litter: 10		
%Cover bare ground: 50		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very Sparse (<10%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Atriplex vesicaria</i>
<i>Acacia incurvaneura</i>		<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Atriplex vesicaria</i>		
<i>Enneapogon caerulescens</i>		
<i>Enteropogon ramosus</i>		
<i>Eremophila clarkei</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Frankenia georgei</i>		
<i>Maireana georgei</i>		
<i>Maireana glomerifolia</i>		
<i>Maireana tomentosa</i>		
<i>Maireana triptera</i>		
<i>Paspalidium clementii</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Ptilotus</i> sp. (sterile)		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		
<i>Solanum</i> sp. (sterile)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 163	
Quadrat size: 20mX20m		
WP: 140	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of mixed shrubs and dwarf scrub of <i>Ptilotus obovatus</i> on quartz/rocky plain	
Photo number: 396/397/398		
Landform: Flat/ Bottom Third/ Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Extremely; very abundant (>90%)/ Cobbly; cobbles (60-200mm)/ Angular		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Hard Setting		
%Cover leaf litter: 5		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Lepidium oxytrichum</i> (A)		
<i>Lepidium phlebopetalum</i> (A)		
<i>Maireana georgei</i>		
<i>Maireana thesioides</i>		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Olearia</i> sp. (sterile)		
<i>Ptilotus obovatus</i>		
<i>Ptilotus schwartzii</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		
<i>Solanum lasiophyllum</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 164	
Quadrat size: 20mX20m		
WP: 141	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over dwarf scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 399/400/401		
Landform: Flat/ Bottom Third/ Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Hard Setting		
%Cover leaf litter: 40		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Very Sparse (<10%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	<i>Triodia irritans</i>
<i>Acacia incurvaneura</i>		
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila homoplastica</i>		
<i>Marsdenia australis</i> (A)		
<i>Monachather paradoxus</i>		
<i>Psydrax latifolia</i>		
<i>Ptilotus</i> sp. (sterile)		
<i>Solanum lasiophyllum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 165	
Quadrat size: 20mX20m		
WP: 142	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 402/403/404		
Landform: Flat/ Bottom Third/ Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No qualifier; common (10-20%)/ fine gravelly; small pebbles (2-6mm)/ rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Hard Setting		
%Cover leaf litter: 40		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form:	Growth form: Tussock Grass
Height: 3-6m	Height:	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %:	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>		<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Brunonia australis</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila gilesii</i>		
<i>Eriachne mucronata</i>		
<i>Goodenia</i> sp. (sterile) (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Marsdenia australis</i> (A)		
<i>Monachather paradoxus</i>		
<i>Paspalidium clementii</i> (A)		
<i>Ptilotus aervoides</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 166	
Quadrat size: 20mX20m		
WP: 143	Vegetation Group: Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	
Photo number: 405/406/407		
Landform: Open Depression/Bottom Third/Drainage Depression		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia aptaneura</i>	<i>Acacia ramulosa</i> var. <i>ramulosa</i>	<i>Eragrostis eriopoda</i>
		<i>Monachather paradoxus</i>
ALL SPECIES		
<i>Abutilon otocarpum</i>		
<i>Acacia aptaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Eragrostis eriopoda</i>		
<i>Erodium crinitum</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Psydrax latifolia</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Solanum orbiculatum</i>		
<i>Solanum</i> sp. (sterile)		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 167	
Quadrat size: 20mX20m		
WP: 144	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over dwarf scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 408/409/410		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Slightly; few (2-10%)/ Fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 15		
%Cover bare ground: 15		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	<i>Triodia irritans</i>
<i>Acacia incurvaneura</i>		
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Convolvulus remotus</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila gilesii</i>		
<i>Goodenia</i> sp. (sterile) (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Marsdenia australis</i> (A)		
<i>Monachather paradoxus</i>		
<i>Psydrax latifolia</i>		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 168	
Quadrat size: 20mX20m		
WP: 145	Vegetation Group: Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	
Photo number: 411/412/413		
Landform: Open Depression/Bottom Third/Drainage Depression		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Sandy clay loam/Firm		
%Cover leaf litter: 10		
%Cover bare ground: 5		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %: Isolated Plants (<1%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Spartothamnella teucriflora</i>	<i>Eremophila gilesii</i>
<i>Acacia incurvaneura</i>		
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Enchylaena lanata</i>		
<i>Eragrostis dielsii</i> (A)		
<i>Eremophila gilesii</i>		
<i>Erodium crinitum</i>		
<i>Lepidium oxytrichum</i> (A)		
<i>Lepidium phlebopetalum</i> (A)		
<i>Maireana thesioides</i>		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Ptilotus</i> sp. (sterile)		
<i>Rhodanthe charsleyae</i> (A)		
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i> (A)		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		
<i>Wahlenbergia tumidifruca</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 169	
Quadrat size: 20mX20m		
WP: 146	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over dwarf scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 414/415/416		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No qualifier; common (10-20%)/ Fine gravelly; small pebbles (2-6mm)/ rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Sandy loam/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	<i>Eragrostis eriopoda</i>
ALL SPECIES		
<i>Acacia aptaneura</i>		
<i>Acacia caesaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Erodium crinitum</i>		
<i>Goodenia mimuloides</i> (A)		
<i>Monachather paradoxus</i>		
<i>Psydrax latifolia</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Sida fibulifera</i>		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 170	
Quadrat size: 20mX20m		
WP: 147	Vegetation Group: Very open tree mallee of <i>Eucalyptus lucasii</i> / low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over heath of <i>Eremophila latrobei</i> subsp. <i>glabra</i> and very open low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 417/418/419		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Slightly few (2-10%)/ Fine gravelly; small pebbles (2-6mm)/ rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 50		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus lucasii</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Eremophila homoplastica</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Acacia tetragonophylla</i>		
<i>Eremophila homoplastica</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Eucalyptus lucasii</i>		
<i>Maireana thesioides</i>		
<i>Marsdenia australis</i> (A)		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Psydrax latifolia</i>		
<i>Rhagodia eremaeum</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 171	
Quadrat size: 20mX20m		
WP: 148	Vegetation Group: Low woodland of <i>Acacia aptaneura</i> / <i>Acacia caesaneura</i> over open low scrub of <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and dwarf scrub of <i>Eremophila gilesii</i> / <i>Eremophila malacoides</i> with occasional <i>Eragrostis eriopoda</i> in drainage depression	
Photo number: 420/421/422		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Moderately; many (20-50%)/ Coarse gravelly; large pebbles (20-60mm)/ angular		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Brown/Uniform/Clay loam sandy/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.5-1m
Crown cover %: Very Sparse (<10%)	Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Eremophila malacoides</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Eragrostis dielsii</i> (A)		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eremophila malacoides</i>		
<i>Maireana thesioides</i>		
<i>Portulaca oleracea</i> (A)		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhagodia eremaum</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Sida fibulifera</i>		
<i>Spartothamnella teucriflora</i>		
<i>Tribulus astrocarpus</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 172	
Quadrat size: 20mX20m		
WP: 149	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 423/424/425		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red-brown/Uniform/sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 0.5-1m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia ligulata</i>	<i>Triodia basedowii</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Androcalva luteiflora</i>		
<i>Eremophila longifolia</i>		
<i>Eucalyptus youngiana</i>		
<i>Keraudrenia prorepens</i>		
<i>Triodia basedowii</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 173	
Quadrat size: 20mX20m		
WP: 150	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 426/427/428		
Landform: Flat/Bottom Third/Valley Flat		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Moderately rapid		
Soil (profile/field texture/soil surface): Red-brown/Uniform/sand/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 10		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia basedowii</i>
	<i>Acacia ligulata</i>	
ALL SPECIES		
<i>Abutilon cryptopetalum</i>		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Eucalyptus comitae-vallis</i>		
<i>Eucalyptus youngiana</i>		
<i>Keraudrenia integrifolia</i>		
<i>Triodia basedowii</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 174	
Quadrat size: 20mX20m		
WP: 151	Vegetation Group: Open low woodland of <i>Eucalyptus gongylocarpa</i> over open shrub mallee of <i>Eucalyptus youngiana</i> and mid-dense hummock grass of <i>Triodia basedowii</i> on sand dune	
Photo number: 429/430/431		
Landform: Hillock/Top Third/Dune		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red-brown/Uniform/sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>	<i>Triodia basedowii</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Anthotroche pannosa</i>		
<i>Aristida holathera</i> (A)		
<i>Chrysocephalum puteale</i>		
<i>Daviesia ulicifolia</i>		
<i>Dodoniaea viscosa</i> subsp. <i>angustissima</i>		
<i>Duboisia hopwoodii</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Trichodesma zeylanicum</i> (A)		
<i>Triodia basedowii</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 175	
Quadrat size: 20mX20m		
WP: 152	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 432/433/434		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red-brown/Uniform/sand/Firm		
%Cover leaf litter: 30		
%Cover bare ground: 10		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia abrupta</i>	<i>Triodia irritans</i>
	<i>Acacia ligulata</i>	
ALL SPECIES		
<i>Acacia abrupta</i>		
<i>Acacia aptaneura</i>		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Solanum lasiophyllum</i>		
<i>Spartothamnella teucriflora</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 176	
Quadrat size: 20mX20m		
WP: 153	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 435/436/437		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 10		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 1-3m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Eucalyptus youngiana</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 177	
Quadrat size: 20mX20m		
WP: 15	Vegetation Group: Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 472/473/474		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/sand/Firm		
%Cover leaf litter: 60		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus hypolaena</i>	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia pachyacra</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Acacia tetragonophylla</i>		
<i>Duboisia hopwoodii</i>		
<i>Enchylaena tomentosa</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila longifolia</i>		
<i>Eucalyptus hypolaena</i>		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Ptilotus obovatus</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Solanum</i> sp. (sterile)		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 178	
Quadrat size: 20mX20m		
WP: 16	Vegetation Group: Open tree mallee of <i>Eucalyptus hypolaena</i> over heath of <i>Senna artemisioides</i> subsp. <i>filifolia</i> and mid-dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 475/476/477		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/sand/Firm		
%Cover leaf litter: 50		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus hypolaena</i>	<i>Acacia ligulata</i>	<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eucalyptus concinna</i>		
<i>Eucalyptus hypolaena</i>		
<i>Pittosporum angustifolium</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 179	
Quadrat size: 20mX20m		
WP: 18	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia quadrimarginea</i> over low scrub of <i>Acacia cuthbertsonii</i> / heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> and dwarf scrub of <i>Ptilotus obovatus</i> / low grass of <i>Aristida contorta</i> on quartz/rocky plain	
Photo number: 478/479/480		
Landform: Mid Slope/Mid Third/Hillslope		
Land surface/disturbance: No effective disturbance except by hoofed animals		
Coarse fragments on the surface (abundance/size/shape): Very; abundant (50-90%)/ Cobbly; cobbles (60-200mm)/ Angular		
Rock outcrop (abundance/runoff): No bedrock exposed/Moderately Rapid		
Soil (profile/field texture/soil surface): Red/Uniform/Clay loam sandy/Hard Setting		
%Cover leaf litter: 30		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	<i>Ptilotus obovatus</i>
<i>Acacia quadrimarginea</i>		
ALL SPECIES		
<i>Acacia exocarpoides</i>		
<i>Acacia incurvaneura</i>		
<i>Acacia quadrimarginea</i>		
<i>Aristida contorta</i> (A)		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		
<i>Chrysocephalum puteale</i>		
<i>Dodonaea rigida</i>		
<i>Eremophila clarkei</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eriachne pulchella</i> (A)		
<i>Psydrax latifolia</i>		
<i>Ptilotus obovatus</i>		
<i>Ptilotus schwartzii</i>		
<i>Scaevola spinescens</i>		
<i>Sida calyxhymenia</i>		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 180	
Quadrat size: 20mX20m		
WP: 22	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 480/481/482		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): Moderate; many (20-50%)/ fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy loam/Hard Setting		
%Cover leaf litter: 40		
%Cover bare ground: 60		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form:	Growth form: Hummock Grass
Height: 3-6m	Height:	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %:	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>		<i>Triodia irritans</i>
<i>Acacia incurvaneura</i>		
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Haloragis odontocarpa</i> (A)		
<i>Monachather paradoxus</i>		
<i>Psydrax latifolia</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 181	
Quadrat size: 20mX20m		
WP: 23	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 484/485/486		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No qualifier; common (10-20%)/ fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Very Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy loam/Hard Setting		
%Cover leaf litter: 20		
%Cover bare ground: 10		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia ligulata</i>	<i>Triodia basedowii</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia ligulata</i>		
<i>Eucalyptus youngiana</i>		
<i>Ptilotus obovatus</i>		
<i>Ptilotus</i> sp. (sterile)		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>		
<i>Solanum lasiophyllum</i>		
<i>Triodia basedowii</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 182	
Quadrat size: 20mX20m		
WP: 26	Vegetation Group: Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over low scrub of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> / <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and low grass of <i>Eragrostis eriopoda</i> on clay-loam plain	
Photo number: 487/488/489		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No qualifier; common (10-20%)/ fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Hard Setting		
%Cover leaf litter: 30		
%Cover bare ground: 40		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Tussock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Eragrostis eriopoda</i>
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		
<i>Acacia tetragonophylla</i>		
<i>Aristida contorta</i> (A)		
<i>Brunonia australis</i> (A)		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Euphorbia drummondii</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Sida fibulifera</i>		
<i>Spartothamnella teucriflora</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 183	
Quadrat size: 20mX20m		
WP: 27	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over low scrub of mixed shrubs over dwarf scrub of <i>Eremophila gilesii</i> and sparse hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 490/491/492		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): Moderately; many (20-50%)/ fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Hard Setting		
%Cover leaf litter: 40		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form:	Growth form: Hummock Grass
Height: 3-6m	Height:	Height: 0.25-0.5m
Crown cover %: Mid Dense (30-70%)	Crown cover %:	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>		<i>Triodia irritans</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Acacia incurvaneura</i>		
<i>Brachyscome ciliocarpa</i> (A)		
<i>Enneapogon caerulescens</i>		
<i>Eragrostis eriopoda</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eriachne pulchella</i> (A)		
<i>Haloragis odontocarpa</i> (A)		
<i>Maireana thesioides</i>		
<i>Monachather paradoxus</i>		
<i>Psydrax latifolia</i>		
<i>Solanum lasiophyllum</i>		
<i>Triodia irritans</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 184	
Quadrat size: 20mX20m		
WP: 28	Vegetation Group: Low woodland of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> / <i>Acacia aptaneura</i> over heath of <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low heath of <i>Ptilotus obovatus</i> on clay-loam plain	
Photo number: 493/494/495		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): Very slightly; very few (<2%)/ fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Clay loam/Hard Setting		
%Cover leaf litter: 15		
%Cover bare ground: 50		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Shrub
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia incurvaneura</i>	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	<i>Ptilotus obovatus</i>
ALL SPECIES		
<i>Acacia incurvaneura</i>		
<i>Aristida contorta</i> (A)		
<i>Calandrinia</i> sp. (sterile) (A)		
<i>Cenchrus echinatus</i> (W)		
<i>Euphorbia drummondii</i> (A)		
<i>Maireana georgei</i>		
<i>Monachather paradoxus</i>		
<i>Ptilotus gaudichaudii</i> (A)		
<i>Ptilotus obovatus</i>		
<i>Rhodanthe charsleyae</i> (A)		
<i>Sclerolaena densiflora</i>		
<i>Sclerolaena diacantha</i>		
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		
<i>Sida fibulifera</i>		
<i>Solanum lasiophyllum</i>		
<i>Tribulus astrocarpus</i> (A)		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 185	
Quadrat size: 20mX20m		
WP: 29	Vegetation Group: Open tree mallee of <i>Eucalyptus youngiana</i> over heath of <i>Acacia desertorum</i> / <i>Acacia grasbyi</i> and low heath of <i>Aluta maisonneuvei</i> subsp. <i>auriculata</i> over mid-dense hummock grass of <i>Triodia irritans</i> in sandplain	
Photo number: 496/497/498		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): Moderately; many (20-50%)/ fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 20		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Shrub Mallee	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus youngiana</i>	<i>Acacia desertorum</i>	<i>Triodia basedowii</i>
ALL SPECIES		
<i>Acacia cuthbertsonii</i>		
<i>Acacia desertorum</i>		
<i>Acacia ligulata</i>		
<i>Eucalyptus youngiana</i>		
<i>Triodia basedowii</i>		
<i>Wurmbea deserticola</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 186	
Quadrat size: 20mX20m		
WP: 30	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 499/500/501		
Landform: Mid Slope/Mid Third/Duneslope		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Firm		
%Cover leaf litter: 60		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Mid Dense (30-70%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia abrupta</i>	<i>Triodia basedowii</i>
ALL SPECIES		
<i>Acacia abrupta</i>		
<i>Acacia ligulata</i>		
<i>Aluta maisonneuvei</i> subsp. <i>auriculata</i>		
<i>Alyogyne pinoniana</i>		
<i>Anthotroche pannosa</i>		
<i>Eremophila platythamnos</i> subsp. <i>platythamnos</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Halgania cyanea</i> var. <i>Allambi</i> Stn (B.W. Strong 676)		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Scaevola spinescens</i>		
<i>Senna artemisioides</i> subsp. <i>filifolia</i>		
<i>Spartothamnella teucriflora</i>		
<i>Triodia basedowii</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 187	
Quadrat size: 20mX20m		
WP: 31	Vegetation Group: Low woodland of <i>Eucalyptus gongylocarpa</i> over heath of <i>Acacia ligulata</i> and dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 502/503/504		
Landform: Crest/Top Third/Duneslope		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): No coarse fragments		
Rock outcrop (abundance/runoff): No bedrock exposed/Very slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sand/Loose		
%Cover leaf litter: 40		
%Cover bare ground: 30		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 6-12m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Very Sparse (<10%)	Crown cover %: Sparse (10-30%)	Crown cover %: Very Sparse (<10%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Eucalyptus gongylocarpa</i>	<i>Acacia ligulata</i>	<i>Triodia basedowii</i>
	<i>Daviesia ulicifolia</i>	
ALL SPECIES		
<i>Acacia ligulata</i>		
<i>Alyogyne pannosa</i>		
<i>Anthotroche pannosa</i>		
<i>Aristida holathera</i> (A)		
<i>Daviesia ulicifolia</i>		
<i>Dodoniaea viscosa</i> subsp. <i>angustissima</i>		
<i>Duboisia hopwoodii</i>		
<i>Eucalyptus gongylocarpa</i>		
<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		
<i>Monachather paradoxus</i>		
<i>Triodia basedowii</i>		

Project Name: Gruyere		
Date: 12th-19th May 2015	Botanist: Jim Williams	
Location: Gruyere	Quadrat: 188	
Quadrat size: 20mX20m		
WP: 32	Vegetation Group: Low forest of <i>Acacia incurvaneura</i> / <i>Acacia caesaneura</i> over dense hummock grass of <i>Triodia basedowii</i> in sandplain	
Photo number: 505/506/507		
Landform: Flat/Bottom Third/Plain		
Land surface/disturbance: No effective disturbance		
Coarse fragments on the surface (abundance/size/shape): Moderately; many (20-50%)/ Fine gravelly; small pebbles (2-6mm)/ Rounded		
Rock outcrop (abundance/runoff): No bedrock exposed/Slow		
Soil (profile/field texture/soil surface): Red/Uniform/Sandy clay loam/Hard setting		
%Cover leaf litter: 30		
%Cover bare ground: 20		
Tallest stratum	Mid-stratum	Lower stratum
Growth form: Tree	Growth form: Shrub	Growth form: Hummock Grass
Height: 3-6m	Height: 1-3m	Height: 0.25-0.5m
Crown cover %: Sparse (10-30%)	Crown cover %: Sparse (10-30%)	Crown cover %: Mid Dense (30-70%)
Dominant taxa:	Dominant taxa:	Dominant taxa:
<i>Acacia caesaneura</i>	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	<i>Triodia basedowii</i>
ALL SPECIES		
<i>Acacia caesaneura</i>		
<i>Eremophila latrobei</i> subsp. <i>glabra</i>		
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		
<i>Eucalyptus lucasii</i>		
<i>Jasminum didymum</i> subsp. <i>lineare</i>		
<i>Triodia basedowii</i>		