

FLORA AND VEGETATION BLUE HILLS



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1 INTRODUCTION

Bennett Environmental Consulting Pty Ltd was contracted by ATA Environmental to undertake a flora and vegetation survey of a proposed iron ore lease at Blue Hills on Karara Station, within the Shire of Perenjori and north east of the townsite of Perenjori. Karara Station occurs on the boundary between the Austin Botanical District of the Eremaean and the Avon Botanical District of the Southwest Botanical Provinces (Beard, 1990). The division between these two Botanical Provinces is the 'Eucalyptus-Acacia' line between the *Acacia* low woodland and the *Eucalyptus* medium height woodland on lower slope soils. The Austin Botanical District is characterised by mulga (*Acacia aneura*) low woodland on the plains and shrubs on the hills with *Eucalyptus* species and *Triodia basedowii* on the sand plains. The Avon Botanical District is characterised by low shrubs and heath on the sandplain, *Acacia-Allocasuarina* thickets on the ironstone gravels, woodlands of York gum (*Eucalyptus loxophleba*), Salmon gums (*Eucalyptus salmonophloia*) and Wandoo (*Eucalyptus wandoo*) on loam soils and Halophytes on saline soils.

Both these Botanical Districts have a similar geology being Archaean granites with infolded metamorphics of the Yilgarn Block. The rainfall of the Avon Botanical District varies over its range from 300-650mm whereas the Austin Botanical District has a rainfall of approximately 200mm. Beard (1990) described the topography as an undulating plateau mostly with disorganised drainage for the Avon Botanical District and undulating with occasional ranges of low hills for the Austin Botanical District. The soils of the Avon Botanical District are typically yellow earths on sandplains with ironstone gravels, hard setting loam soils on the slopes and lower land and saline soils in the depressions. The soils of the Austin Botanical District are described as shallow earthy loam over overlying red-brown hardpan with shallow stony loams on the hills and red earthy sands on the sand plains.

2 BACKGROUND

Karara Station occurs in the Semi-desert Mediterranean bioclimatic region of Beard (1990). There are 9-11 months of dry weather with mild wet winters, hot dry summers and an average annual rainfall between 250-300mm. The nearest rainfall recording station is at Paynes Find where the average rainfall is 273mm. The rainfall is both irregular and variable in the area. During the 2003 winter, the area around the town of Perenjori received good rainfall as did some sections of the station but the rainfall appeared to drop markedly around the hills. As a consequence the spring annuals so typical after a good winter rain were apparent around some areas of the Station and close to the town but not in the hills.

Payne et al. (1998) mapped the land systems present at Karara Station as part of their survey of the Sandstone – Yalgoo – Paynes Find area. The section relevant to the study area is extracted in the Diagram 1.

3 METHOD

Temporary 20m x 20m quadrats were monitored, as quadrats are a requirement of the EPA Guidance No 51 (Environmental Protection Authority, 2003). These were selected for variations in topography and vegetation structure. Additional species (opportunistic) recorded from the surrounding area within the same vegetation unit were listed for that unit. Where a particular vegetation type was widespread additional temporary quadrats were sampled.

Where a vegetation community was small and it was impossible to place a 20m x 20m quadrat within the area, relevees were sampled. These still had the same information recorded. Plants unknown in the field were collected, pressed and later identified using relevant keys and by comparison with specimens housed at the Western Australian Herbarium.

Flora and Vegetation of Blue Hills, Karara Station

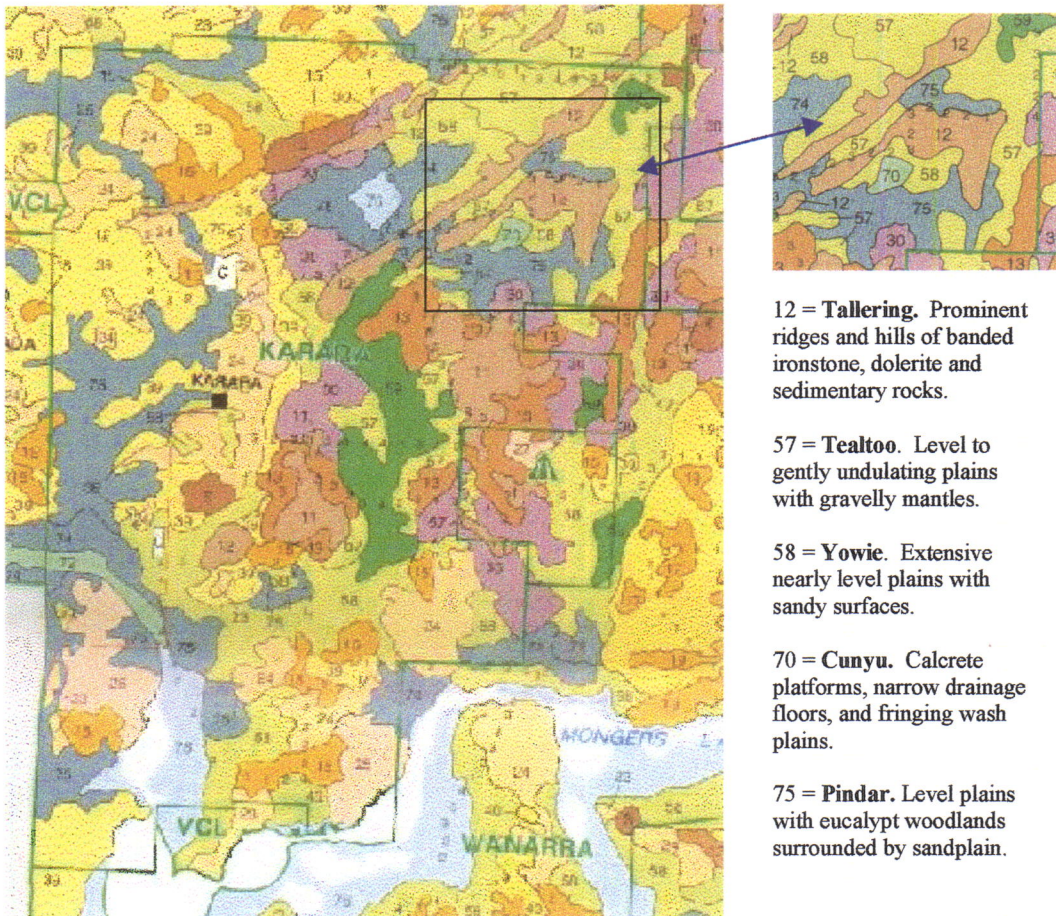


Diagram 1. Land systems present at Karara Station and the research area highlighted extracted from Payne *et al.* (1998).

Within each quadrat and relevee the following was recorded:

- all species, including weeds,
- GPS reading in WGS format at the NW corner of the quadrat,
- photograph at the NW corner recorded the vegetation,
- soil type,
- presence of rocks, their geological type and outcropping,
- topography and where appropriate aspect, and
- general vegetation description, which will be enhanced when the report is prepared.

All passable tracks were driven using a 4-wheel drive vehicle and transects walked from these. Using the aerial photographs provided by ATA Environmental any apparent changes in vegetation were noted and if there was no vehicle track into the area it was walked. This was necessary in several locations, including the large area to the south east. Often the placement of quadrats and relevees on the map in Appendix C does not indicate the total area traversed as often where the vegetation units were noted to be the same as elsewhere additional quadrats and relevees were not established.

4 RESULTS

A field survey was undertaken between 20th and 24th October 2003. There was a variation noted between the vegetation around the paddocks of Karara Station near the homestead and that at Blue Hills. This also reflected the variation in rainfall and possibly also variations in soil type as the soil around the homestead was sandy whereas at the hills there was only remnant soil. The annual growth in the paddocks was extensive but at Blue Hills annuals were sparse and where they were present they were small in size. No records are kept of this rainfall variation within one station property.

The area surveyed consisted of banded ironstone formation (BIF) hills with scree slopes and lower slopes with smaller BIF pebbles on the surface. To the south on the eastern side of the lease the soil became sandy with no or very scattered pebbles on the surface. On the southern boundary at the western side of the lease there is a gypsum lake the northern boundary only of which was included in the lease.

Test drilling had already commenced and some of the tracks had very recently been graded which allowed reasonable access into the northern area. The graded tracks were mainly to the north and west of where the testing is currently being undertaken. No tracks were present in the large area to the south east of the lease so this area was traversed on foot.

4.1 Vegetation

The vegetation units are described using the vegetation layers listed in Table 1. This description method is used in preference to Muir (1972) as it more readily understood and directly relates to what is seen. The vegetation units described are mapped in Appendix C, the species recorded for each listed in Appendix B and the quadrat data in Appendix D. The abbreviation used after the description is that used in both Appendices B and C.

Table 1. Vegetation layers. Adapted from: Bush Forever (Department of Environmental Protection, 2000)

Life Form/ Height Class	Canopy Cover			
	100-70%	70-30%	30-10%	10-2%
Trees over 30m	Tall Closed Forest	Tall Open Forest	Tall Woodland	Tall Open Woodland
Trees 10-30m	Closed Forest	Open Forest	Woodland	Open Woodland
Trees under 10m	Low Closed Forest	Low Open Forest	Low Woodland	Low Open Woodland
Tree mallee(8m tall)	Closed Tree Mallee	Tree Mallee	Open Tree Mallee	Very Open Tree Mallee
Shrub mallee(under 8m tall)	Closed Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee
Shrubs over 2m	Closed Tall Scrub	Tall Open Scrub	Tall Shrubland	Tall Open Shrubland
Shrubs 1-2m	Closed Heath	Open Heath	Shrubland	Open Shrubland
Shrubs under 1m	Closed Low Heath	Open Low Heath	Low Shrubland	Low Open Shrubland
Grasses	Closed Grassland	Grassland	Open Grassland	Very Open Grassland
Herbs	Closed Herbland	Herbland	Open Herbland	Very Open Herbland
Sedges	Closed Sedgeland	Sedgeland	Open Sedgeland	Very Open Sedgeland

CALCRETE AREA

Tall Open Shrubland to Closed Tall Scrub of *Melaleuca* affin. *acuminata* subsp. *websteri* over a Herbland of mixed species and/or bare ground. (Ma)

Quadrats BHQ14, BHQ17, BHQ18 and BHQ21

The *Melaleuca* shrubs varied in height from 50cm to 5m, but most were about 3m tall. Where a quadrat was placed within a drainage line (BHQ14) there were many more species recorded than where the soil was drier. At BHQ18 nearly 25% of the *Melaleucas* were dead. This could be an age factor or could be due to the drier years experienced recently in the area (Peter Woodhead, pers. comm.).

Low Open Woodland to Woodland of *Eucalyptus loxophleba* subsp. *loxophleba* over a Closed Low Heath of *Logania* sp. and bare ground. (EL)

Quadrats BHQ15 and BHQ19

Where the trees were dense there was very little shrub cover but where they were more open the *Logania* sp. shrubs were often dense. The shrubs were often on raised soil patches so are forming a very important role in reducing erosion as there was a lot of channelling erosion noted through the area. This vegetation occurred on the edge of the above vegetation unit.

Tall Shrubland of *Melaleuca* affin. *acuminata* subsp. *websteri* with emergent *Eucalyptus loxophleba* subsp. *loxophleba* over an Open Grassland/Herbland and bare ground. (MaEI)

Quadrat BHQ16

This vegetation unit was the interzone between the two previous units. The *Melaleucas* were still relatively dense but there were occasional *Eucalyptus loxophleba* scattered through the unit. Herbs were an important component of this unit.

HILLS AND SURROUNDING SLOPES

Tall Open Scrub of mixed species typically *Allocasuarina acutivalvis* subsp. *prinsepiana*, *Calycopeplus pauciflorus*, *Melaleuca nematophylla* and *Acacia* species over a Very Open Herbland/Grassland or BIF rocks. (ApCp)

Quadrats BHQ5, BHQ10 and Relevee BHR1

Gastrolobium laytonii and *Xanthosia bungei* were common species associated with this community. This community occurred on ridges and upper slopes amongst large outcropping BIF rocks. The soil occurred in pockets in amongst the rocks.

Tall Open Scrub of mixed species typically *Acacia assimilis* var. *assimilis* and *Melaleuca nematophylla* over a Low Open Shrubland to Open Low Heath of *Ptilotus obovatus* var. *obovatus* over a Herbland. (AaPo)

Quadrats BHQ2, BHQ6, BHQ23 and relevees BHR1 and BHR6

This unit was recorded from the middle slope of the south side of the E-W trending hills where there were a large number of outcropping BIF rocks. Typically this area comprised a mixture of the species from the upper slopes and lower slopes often resulting in a greater variety of species. Although not obvious on the map in Appendix C there were areas where *Ptilotus obovatus* var. *obovatus* was dominant. This was typically on the exposed area below an overhang. Quadrat BHQ2 was placed in one of these areas.

Tall Open Scrub of mixed *Acacia* species, including *Acacia aneura* over a Low Open Shrubland dominated by *Philothea sericea* and a Herbland with large areas of bare ground. (Aan)

Quadrats BHQ11 and BHQ12

All of the slope of the northern side recorded this vegetation unit. It occurred on the upper slopes, middle and lower slopes on this aspect. The creeks in the area were also the same vegetation with the *Acacia* species being denser rather than different to that of the surrounding area. *Acacia aneura* was readily recognised in this unit due partly to the foliage cover and partly to its height.

Closed Low Heath of *Thryptomene ramulosa* with emergent *Acacia* species over annual species or bare ground on the lower slopes. (Tr)

Quadrats BHQ4, BHQ8 and relevee BHR4

This vegetation unit was readily located as scattered areas on the aerial photograph as it consisted of shrubs very much lower in height than those of the surrounding vegetation. Occasionally *Thryptomene mucronulata* also occurred as recorded at Quadrat BHQ8, but typically *Thryptomene racemulosa* was the dominant species. Usually these were neat, often rounded areas within the *Acacia* shrubs but at some locations the definition between the two was not obvious.

Low Woodland to Low Open Forest of *Eucalyptus loxophleba* subsp. *loxophleba* over a Low Shrubland often dominated by *Chenopodiaceae* over a Very Open Herbland and bare ground. (E1)

Quadrats BHQ1, BHQ7, BHQ25 and relevees BHR5 and BHR7

This vegetation unit was widespread throughout the study area, varying mainly in the density and species composition of the shrub stratum. It occurred often as a clump of trees in the lower lying areas of the site and was surrounded by *Acacia* shrubs or bare ground. The litter at each of these areas was very high due to shed bark, leaves and limbs that had fallen.

Open Shrub Mallee of *Eucalyptus leptopoda* over a Tall Open Scrub of *Acacia ramulosa* subsp. *ramulosa* or *Acacia aneura* over an Open Herbland or bare ground. (Ele)

Quadrat BHQ26 and relevee BHR3

The areas were small in size and not readily distinguished on the aerial photograph. Only 2 locations were recorded during the survey.

Tall Shrubland of *Acacia* species typically dominated by *Acacia ramulosa* subsp. *ramulosa* over a Low Open Shrubland dominated by *Philothea sericea* over an Open Herbland of annual daisies and/or bare ground. (Arr)

Quadrats BHQ3, BHQ13, BHQ20, BHQ22 and BHQ29.

This was the dominant vegetation unit at the site as it was associated with the lower slopes. There were several different species recorded from the area as illustrated in Appendix B but the dominant species throughout the whole of the area was *Acacia ramulosa* subsp. *ramulosa*.

Open Shrub Mallee of *Eucalyptus ewartiana* over a tall Open Scrub of *Acacia ramulosa* subsp. *ramulosa* over an Open Herbland of annual daisies and/or bare ground. (Ew)
 Quadrat BHQ9

This unit was common below the hills and extended south along the western border of the southern extension. The presence of *Eucalyptus ewartiana* was characteristic for this unit.

Tall Shrubland of mixed species dominated by *Melaleuca nematophylla* and *Acacia ramulosa* subsp. *ramulosa* with emergent *Eucalyptus ewartiana* over a Low Shrubland dominated by *Philotheca sericea* over a Herbland of annual daisies and/or bare ground. (MnEw).

Quadrat BHQ28

This vegetation unit was only recorded from the crest of one of the ridges as indicated in the map in Appendix C. The presence of *Eucalyptus ewartiana* separated it from the other vegetation units recorded from the crests. It occurred in outcropping BIF rocks.

Tall Shrubland of *Acacia ramulosa*, *Acacia burkittii*, *Melaleuca leiocarpa* and *Melaleuca uncinata* over an Open Herbland of annual daisies, leaf litter and bare rocks. (Mu)

Relevees BHR12, BHR13

This vegetation unit was common on the middle slopes below that described above. The presence of *Melaleuca uncinata* providing a dense cover was characteristic for this unit.

SANDY FLATS

Tree mallee of *Eucalyptus kochii* subsp. *plenissima* and Shrub Mallee of *Eucalyptus ewartiana* over a Tall Shrubland dominated by *Acacia ramulosa* subsp. *ramulosa* over Very Open Herbland or annual daisies and bare ground. (Ek)

Quadrat BHQ27 and relevees BHR8, BHR9

This was the dominant vegetation unit in the southern extension of the lease. The clumps of mallees were scattered with large areas of bare ground and occasional dense patches of *Acacia* species. This unit was only recorded from this one large area.

4.2 Flora

A total of 53 vascular families, 126 genera and 211 taxa were recorded during the survey (See Appendix A). The dominant families are illustrated in Table 2.

Table 2. Dominant vascular plant families recorded during survey

FAMILY	NUMBER GENERA	NUMBER OF TAXA		
		NATIVE	WEED	TOTAL
Asteraceae	29	40	2	42
Mimosaceae	1	20	0	20
Poaceae	10	9	5	14
Chenopodiaceae	5	13	0	13
Myrtaceae	4	12	0	12
TOTAL	49	94	7	101

These 5 dominant families represent 39% of all genera and 48% of the total number of taxa recorded from the site.

Two species dominant in two of the vegetation units could not be positively identified. One is listed as *Logania* sp., which was sterile and even lacked leaves when collected. The other was the *Melaleuca* species around the calcrete area, which has been tentatively identified as *Melaleuca* affin. *acuminata* subsp. *websteri*. The *Melaleuca* is definitely not that taxon as it differed in several characters but it was the best match with those housed at the Western Australian Herbarium. Flowering material will be needed to positively identify these plants.

4.3 Significant Flora

ATA Environmental undertook a search of the CALM Rare Flora database prior to the field work being undertaken. The search for the co-ordinates 20°07'12" – 19°10'48"S and 116°44'24" – 116°49'12"E resulted in *Persoonia kararae*, a Priority 1 Flora being recorded. This species has only been recorded from Karara Station growing in sand. A description of the categories for significant flora is recorded in Table 3.

Table 3. Code and description of significant flora categories

Code	Code Declared Rare and Priority Flora Categories
R	DRF (Declared Rare Flora) -Extant Taxa. 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.
X	DRF (Declared Rare Flora) -Presumed Extinct Taxa. Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently.
1	Priority One -Poorly Known Taxa. Taxa, which are known from one or a few (generally <5) populations, which are under threat.
2	Priority Two -Poorly Known Taxa. Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat.
3	Priority Three -Poorly Known Taxa. Taxa, which are known from several populations, at least some of which are not believed to be under immediate threat.
4	Priority Four -Rare Taxa. Taxa which are considered to have been adequately surveyed and which whilst being rare, are not currently threatened by any identifiable factors.

No plants of *Persoonia kararae* were recorded but the Priority 2 Flora, *Persoonia pentasticha* was recorded from several habitats, in particular the BIF rocks (Appendix E). This species, a shrub to 1m tall, occurs in an area roughly bounded by Mullewa, Mingenew, Wubin and Paynes Find (Weston, 1995).

An addition Priority 2 Flora, *Stenanthemum poicilum* is tentatively recorded from the site (Appendix E). The plants were sterile but by comparison with the collections at the Western Australian Herbarium appeared to match this species. To ensure its correct identity additional collections would need to be made when the plants are in flower. This species has been recorded between Mullewa and Morawa from loam and BIF rocky soils.

The Priority 3 Flora, *Cryptandra imbricata* was recorded from two quadrats on the lower slopes. It is a shrub to 1.5m tall and has also been recorded from Paynes Find and Mt Gibson (Appendix E).

4.4 Weeds

Very few weed species were observed in the bushland particularly as the area was a pastoral lease until 2002 when the station was purchased by CALM. However it is unlikely that the sheep would have walked into the hills to graze, as there was plenty of flat ground. There were many weeds around the homestead and shearing sheds and associated paddocks and the lack of these where the survey was undertaken may have been due to the lower rainfall in the Blue Hills area.

A total of 15 weed species was recorded from the area studied and they were scattered in the different quadrats with fewer being recorded in the hills than in the calcrete area at the base of the hills. **Echium plantagineum*, although not recorded in any of the quadrats was dominant around the original mine area. This species has the potential to increase in distribution and should be removed before any vehicle movement occurs.

All the weeds have been determined as environmental weeds by the Department of Conservation and Land Management (1999). The rating allocated to each weed by CALM is based on three criteria:

Invasiveness – ability to invade natural bushland in good to excellent condition or ability to invade waterways.

Distribution – wide current or potential distribution including consideration of known history of wide spread distribution elsewhere in the world.

Environmental impacts – Ability to change the structure, composition and function of ecosystems. In particular an ability to form a monoculture in a vegetation community.

Ratings indicate the following.

High indicates this weed is prioritised for control and/or research ie prioritising funding to it.

Moderate indicates control or research effort should be directed to it if funds are available, however it should be monitored (possibly a reasonably high level of monitoring).

Mild indicates monitoring of the weed and control where appropriate.

Low indicates that this species would require a low level of monitoring.

Table 1. Weeds recorded during the survey classified according to Department of Conservation and Land Management (1999)

Scientific Name	Common Name	CALM Rating		
		Rating	Invasiveness	Impacts
* <i>Echium plantagineum</i>	Paterson's curse	Department of Agriculture classification - P1; The Whole of the State+		
* <i>Bromus hordeaceus</i>	Soft brome	Low		None of the weeds are recorded as having impacts on the natural environment.
* <i>Erodium botrys</i>	Long storks bill	Low		
* <i>Stellaria media</i>	Chickweed	Low		
* <i>Malva parviflora</i>	Marshmallow	Mild		
* <i>Medicago minima</i> var. <i>minima</i>	Small burr medic	Mild		
* <i>Mesembryanthemum nodiflorum</i>	Slender iceplant	Mild		
* <i>Anagallis arvensis</i> subsp. <i>arvensis</i>	Pimpernel	Moderate	✓	
* <i>Bromus rubens</i>	Red brome	Moderate	✓	
* <i>Ehrharta longiflora</i>	Annual veldtgrass	Moderate	✓	
* <i>Hypochaeris glabra</i>	Flat weed	Moderate	✓	
* <i>Pentaschistis airoides</i>	False hairgrass	Moderate	✓	
* <i>Rostraria pumilio</i>		Moderate	✓	
* <i>Sisymbrium orientale</i>	Indian hedge mustard	Moderate	✓	
* <i>Sonchus oleraceus</i>	Sowthistle	Moderate	✓	

+ Listed by Department of Agriculture (2003) P1 Requirements: Prohibits movement. The movement of plants or their seeds is prohibited within the State. This prohibits the movement of contaminated machinery and produce including livestock and fodder.

**Echium plantagineum* is a weed that should be removed and at the site is currently limited in its distribution.

5 DISCUSSION

Acacia ramulosa subsp. *ramulosa* was the dominant species through the area surveyed occurring in all vegetation units except those associated with the calcrete lake. The lease area consisted of banded ironstone hills, which rose sharply from the lower ground. Most of the lower slopes had BIF rocks of varying size scattered on the soil surface. The sandy area to the south east and the calcrete lake at the southern edge of the western part had very scattered to no rocks present.

The vegetation units and the associated species varied little between the crest and upper slopes of the range and gradually those species common on the upper slopes were replaced by other species on the middle to lower slopes. Again the vegetation on the lower slopes showed very little variation across the area studied. The vegetation of the lower slopes of the northern side of the range included a suite of different species to those recorded on the southern side, in particular *Acacia aneura* which was abundant on the northern side adding a different colour appearance to the vegetation. No or very few plants of this species were recorded on the slopes of the southern side.

There were small patches of a Closed Low Heath of *Thryptomene ramulosa* occasionally with *Thryptomene mucronulata* occurring as scattered occurrences on both the north and south facing lower slopes. These occurred where there were numerous small rocks on the surface and were surrounded by dense *Acacia* shrubs.

Eucalyptus ewartiana, a mallee with miniritchie bark was recorded from 2 very distinct habitats, the sandy soil in the eastern southern area and as scattered plants along a low and small BIF ridge. In the sandy soil of the south eastern extension *Eucalyptus ewartiana* occurred as groups of trees often scattered amongst groups of *Eucalyptus kochii* subsp. *plenissima*. *Eucalyptus kochii* subsp. *plenissima* was dominant further south than where *Eucalyptus ewartiana* was dominant. The leaf litter under these was extensive.

Eucalyptus loxophleba subsp. *loxophleba* was extensive through the lease occurring in the lower areas, often along drainage lines and small creeks. These trees often occurred as single large trees or as clumps of several trees but under each the litter was extensive.

Two priority flora, *Persoonia pentasticha* (P2) and *Cryptandra imbricata* (P3) were definitely recorded and possibly a third one *Stenanthemum poecilum* (P2). *Persoonia pentasticha* was the only *Persoonia* species recorded during the survey. Flowering collections of the plant identified as *Stenanthemum poecilum* need to be collected to confirm its identity.

Two other plants from the calcrete area could not be positively identified. *Melaleuca* affinis *acuminata* subsp. *webserti* and *Logania* sp. need to be collected in flower for positive identification.

Fourteen vegetation units were described for the survey area, three were from the calcrete lake and another from the sandy soils in the southeast. The remaining 10 were associated with the hills, their slopes and associated flat ground at the base. None are recorded as Threatened Ecological Communities (English, 2003).

A total of 53 vascular families, 126 genera and 212 taxa were recorded from the survey area with the families Asteraceae, Mimosaceae, Poaceae, Chenopodiaceae and Myrtaceae recording the most species.

A total of 15 weed species was recorded during the survey but on the whole the area was surprisingly free of weeds when it is considered that Karara Station has been running sheep for over a century. One of the weeds, *Echium plantagineum*, only recorded in the survey at the previous mine area, is a Declared Weed listed by the Department of Agriculture (2003) and the small infestation observed should be removed to control its spread.

6 REFERENCES

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APPENDIX A

List of vascular plant species recorded from survey area

LEGEND

subsp.	Subspecies
var.	Variety
?	Unsure if species name is correct
affin.	Closest to that species
sp.	Unable to identify to species due to no flowering or fruiting material present at the time of the survey
*	Weed
sp. Paynes Find	Identification name applied to this taxon

Flora and Vegetation of Blue Hills, Karara Station

FAMILY	SPECIES
ADIANTACEAE	<i>Cheilanthes sieberi</i>
AIZOACEAE	<i>Gunniopsis glabra</i>
	<i>Gunniopsis rodwayi</i>
	<i>Gunniopsis septifraga</i>
	* <i>Mesembryanthemum nodiflorum</i>
	<i>Tetragonia eremaea</i>
AMARANTHACEAE	<i>Ptilotus divaricatus</i>
	<i>Ptilotus exaltatus</i>
	<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>
	<i>Ptilotus obovatus</i> var. <i>obovatus</i>
	<i>Ptilotus</i> sp.
ANTHERICACEAE	<i>Arthropodium dyeri</i>
APIACEAE	<i>Daucus glochidiatus</i>
	<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>
	<i>Hydrocotyle</i> sp.
	<i>Trachymene ornata</i>
	<i>Trachymene pilosa</i>
	<i>Xanthosia bungei</i>
APOCYNACEAE	<i>Alyxia buxifolia</i>
ASCLEPIADACEAE	<i>Rhyncharrhena linearis</i>
	<i>Sarcostemma australis</i>
ASTERACEAE	<i>Angianthus tomentosus</i>
	<i>Brachyscome cheilocarpa</i>
	<i>Brachyscome ciliaris</i> var. <i>ciliaris</i>
	<i>Brachyscome onchocarpa</i>
	<i>Calocephalus multiflorus</i>
	<i>Calotis hispidula</i>
	<i>Centipedia minima</i>
	<i>Cephalopterum drummondii</i>
	<i>Ceratogyne obionoides</i>
	<i>Chthonocephalus gnaphii</i>
	<i>Feldstonia nitens</i>
	<i>Gilbertia tenuifolia</i>
	<i>Gilruthia osbornei</i>
	<i>Gnephosis tenuissima</i>
	<i>Helichrysum craspedioides</i>
	<i>Hyalosperma cotula</i>
	* <i>Hypochoeris glabra</i>
	<i>Isoetopsis graminifolia</i>
	<i>Lawrencella davenportii</i>
	<i>Lawrencella rosea</i>
	<i>Lemooria burkittii</i>
	<i>Millotia tenuifolia</i> subsp. <i>tenuifolia</i>
	<i>Minuria cunninghamii</i>
	<i>Myriocephalus rudalii</i>
	<i>Olearia humilis</i>
	<i>Olearia pimeleoides</i>

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FAMILY	SPECIES
ASTERACEAE (cont.)	<i>Olearia stuartii</i>
	<i>Podolepis lessonii</i>
	<i>Rhodanthe battii</i>
	<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>
	<i>Rhodanthe citrina</i>
	<i>Rhodanthe cotula</i>
	<i>Rhodanthe laevis</i>
	<i>Rhodanthe manglesii</i>
	<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>
	<i>Rhodanthe pygmaea</i>
	<i>Rhodanthe tiekensii</i>
	<i>Schoenia cassiniana</i>
	<i>Senecio glossanthus</i>
	* <i>Sonchus oleraceus</i>
	<i>Trichanthodium skirrophorum</i>
<i>Waitzia acuminata</i> var. <i>acuminata</i>	
BORAGINACEAE	* <i>Echium plantagineum</i>
BRASSICACEAE	<i>Lepidium oxytrichum</i>
	* <i>Sisymbrium orientale</i>
	<i>Stenopetalum filifolium</i>
CAESALPINIACEAE	<i>Senna artemisioides</i> subsp. <i>artemisioides</i>
	<i>Senna artemisioides</i> subsp. <i>filifolia</i>
	<i>Senna cardiosperma</i> subsp. <i>stowardii</i>
	<i>Senna charlesiana</i>
	<i>Senna</i> sp. Austin
CAMPANULACEAE	<i>Wahlenbergia preissii</i>
CARYOPHYLLACEAE	* <i>Stellaria media</i>
CASUARINACEAE	<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>
	<i>Allocasuarina dielsiana</i>
CHENOPODIACEAE	<i>Chenopodium</i> sp.
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>
	<i>Rhagodia eremaea</i>
	<i>Rhagodia</i> sp. Watheroo
	<i>Sclerolaena diacantha</i>
	<i>Sclerolaena drummondii</i>
	<i>Sclerolaena eurotioides</i>
	<i>Sclerolaena fusiformis</i>
	<i>Maireana carnosae</i>
	<i>Maireana georgei</i>
	<i>Maireana planifolia</i>
	<i>Maireana thesioides</i>
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	
CONVOLVULACEAE	<i>Convolvulus angustissimus</i>
CRASSULACEAE	<i>Crassula colorata</i> subsp. <i>acuminata</i>
CUSCUTACEAE	<i>Cuscuta australis</i>
CYPERACEAE	<i>Gahnia drummondii</i>
DASYPOGONACEAE	<i>Lomandra effusa</i>
DILLENIACEAE	<i>Hibbertia arcuata</i>

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FAMILY	SPECIES
DROSERACEAE	<i>Drosera</i> sp. climbing
EPACRIDACEAE	<i>Leucopogon breviflorus</i>
EUPHORBIACEAE	<i>Calycopeplus pauciflorus</i>
	<i>Euphorbia drummondii</i>
GERANIACEAE	* <i>Erodium botrys</i>
GOODENIACEAE	<i>Goodenia beardiana</i>
	<i>Goodenia occidentalis</i>
	<i>Scaevola spinescens</i>
	<i>Velleia cyptopotamica</i>
	<i>Velleia rosea</i>
HALORAGACEAE	<i>Gonocarpus nodulosus</i>
LAMIACEAE	<i>Hemigenia divaricata</i>
	<i>Prostanthera magnifica</i>
	<i>Prostanthera patens</i>
	<i>Teucrium racemosum</i>
	<i>Wrixonia prostanthoides</i>
LAURACEAE	<i>Amyema gibberula</i> subsp. <i>tatei</i>
LOBELIACEAE	<i>Isotoma petraea</i>
	<i>Lobelia winfridae</i>
LOGANIACEAE	<i>Logania</i> sp.
MALVACEAE	<i>Lawrencia squamata</i>
	* <i>Malva parviflora</i>
	<i>Sida calyxhymenia</i>
MIMOSACEAE	<i>Acacia acanthoclada</i>
	<i>Acacia acuminata</i>
	<i>Acacia</i> affn. <i>stowardii</i>
	<i>Acacia alata</i> var. <i>biglandulosa</i>
	<i>Acacia aneura</i>
	<i>Acacia anthochaera</i>
	<i>Acacia assimilis</i> subsp. <i>assimilis</i>
	<i>Acacia blakeyi</i>
	<i>Acacia burkittii</i>
	<i>Acacia colletioides</i>
	<i>Acacia erinacea</i>
	<i>Acacia exocarpoidea</i>
	<i>Acacia imitans</i>
	<i>Acacia jibberdingensis</i>
	<i>Acacia longiphyllodinea</i>
	<i>Acacia multispicata</i>
<i>Acacia murrayana</i>	
<i>Acacia obtecta</i>	
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	
<i>Acacia tetragonophylla</i>	
MYOPORACEAE	<i>Eremophila clarkei</i>
	<i>Eremophila latrobei</i> var. <i>latrobei</i>
	<i>Eremophila oppositifolia</i> subsp. <i>oppositifolia</i>
	<i>Eremophila pantonii</i>
	<i>Eremophila scoparia</i>

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FAMILY	SPECIES
MYOPORACEAE (cont.)	<i>Eremophila serrulata</i>
	<i>Eremophila shonae</i> subsp. <i>shonae</i>
MYRTACEAE	<i>Eucalyptus ewartiana</i>
	<i>Eucalyptus kochii</i> subsp. <i>plenissima</i>
	<i>Eucalyptus leptopoda</i>
	<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>
	<i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i>
	<i>Melaleuca leiocarpa</i>
	<i>Melaleuca nematophylla</i>
	<i>Melaleuca radula</i>
	<i>Melaleuca uncinata</i>
	<i>Micromyrtus racemosa</i> var. <i>racemosa</i>
	<i>Thryptomene mucronulata</i>
<i>Thryptomene racemulosa</i>	
PAPILIONACEAE	<i>Cullen cinereum</i>
	<i>Daviesia divaricata</i>
	<i>Gastrolobium laytonii</i>
	<i>Indigofera brevipedata</i>
	* <i>Medicago minima</i> var. <i>minima</i>
	<i>Mirbelia</i> sp. Paynes Find
	<i>Swainsona kingii</i>
PHORMIACEAE	<i>Dianella revoluta</i>
PITTIOSPORACEAE	<i>Bursaria occidentalis</i>
	<i>Pittosporum angustifolium</i>
PLANTAGINACEAE	<i>Plantago hispida</i>
POACEAE	<i>Agrostis avenacea</i> var. <i>avenacea</i>
	<i>Aristida contorta</i>
	<i>Austrodanthonia caespitosa</i>
	<i>Austrostipa elegantissima</i>
	<i>Austrostipa hemipogon</i>
	<i>Austrostipa nitida</i>
	<i>Austrostipa trichophylla</i>
	* <i>Bromus hordeaceus</i>
	* <i>Bromus rubens</i>
	* <i>Ehrharta longiflora</i>
	<i>Eragrostis eriopoda</i>
	<i>Monachather paradoxa</i>
	* <i>Pentaschistis airoides</i>
* <i>Rostraria pumilio</i>	
POLYGONACEAE	<i>Comesperma integerrimum</i>
PORTULACACEAE	<i>Calandrinia</i> affin. <i>primuliflora</i>
	<i>Calandrinia eremaea</i>
	<i>Calandrinia primuliflora</i>
PRIMULACEAE	<i>Anagallis arvensis</i> var. <i>arvensis</i>
PROTEACEAE	<i>Grevillea candelabroides</i>
	<i>Grevillea obliquistigma</i>
	<i>Hakea recurva</i>
	<i>Persoonia pentasticha</i>

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FAMILY	SPECIES
RHAMNACEAE	<i>Cryptandra imbricata</i>
	<i>Stenanthemum ? poecilum</i>
RUTACEAE	<i>Drummondita hassellii</i>
	<i>Philotheca brucei</i>
	<i>Philotheca sericea</i>
SANTALACEAE	<i>Exocarpos sparteus</i>
	<i>Santalum acuminatum</i>
	<i>Santalum spicatum</i>
SAPINDACEAE	<i>Dodonaea inaequifolia</i>
	<i>Dodonaea petiolaris</i>
SOLANACEAE	<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>
	<i>Solanum cleistogamum</i>
	<i>Solanum lasiophyllum</i>
	<i>Solanum nummularium</i>
STERCULIACEAE	<i>Brachychiton gregorii</i>
	<i>Keraudrenia integrifolia</i>
THYMELAEACEAE	<i>Pimelea spiculigera</i>
URTICACEAE	<i>Parietaria cardiostegia</i>
	<i>Parietaria debilis</i>
ZYGOPHYLLACEAE	<i>Zygophyllum eremaeum</i>
	<i>Zygophyllum ovatum</i>

APPENDIX B

List of species recorded from vegetation units

LEGEND

	Priority flora
subsp.	Subspecies
var.	Variety
?	Unsure if species name is correct
affin.	Closest to that species
sp.	Unable to identify to species due to no flowering or fruiting material present at the time of the survey
*	Weed
sp. Paynes Find	Identification name applied to this taxon
Ma	Tall Open Shrubland to Closed Tall Scrub of <i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i> over a Herbland of mixed species and/or bare ground.
EL	Low Open Woodland to Woodland of <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> over a Closed Low Heath of <i>Logania</i> sp. and bare ground.
MaEl	Tall Shrubland of <i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i> with emergent <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> over an Open Grassland/Herbland and bare ground.
ApCp	Tall Open Scrub of mixed species typically <i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i> , <i>Calycopeplus pauciflorus</i> , <i>Melaleuca nematophylla</i> and <i>Acacia</i> species over a Very Open Herbland/Grassland or BIF rocks.
AaPo	Tall Open Scrub of mixed species typically <i>Acacia assimilis</i> var. <i>assimilis</i> and <i>Melaleuca nematophylla</i> over a Low Open Shrubland to Open Low Heath of <i>Ptilotus obovatus</i> var. <i>obovatus</i> over a Herbland of annual daisies.
Aan	Tall Open Scrub of mixed <i>Acacia</i> species, including <i>Acacia aneura</i> over a Low Open Shrubland dominated by <i>Philotheca sericea</i> and a Herbland with large areas of bare ground.
Tr	Closed Low Heath of <i>Thryptomene ramulosa</i> with emergent <i>Acacia</i> species over annual species or bare ground on the lower slopes.
El	Low Woodland to Low Open Forest of <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> over a Low Shrubland often dominated by Chenopodiaceae over a Very Open Herbland and bare ground.
Ele	Open Shrub Mallee of <i>Eucalyptus leptopoda</i> over a Tall Open Scrub of <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> or <i>Acacia aneura</i> over an Open Herbland or bare ground.
Arr	Tall Shrubland of <i>Acacia</i> species typically dominated by <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> over a Low Open Shrubland dominated by <i>Philotheca sericea</i> over an Open Herbland of annual daisies and/or bare ground.
Ew	Open Shrub Mallee of <i>Eucalyptus ewartiana</i> over a tall Open Scrub of <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> over an Open Herbland of annual daisies and/or bare ground.
MnEw	Tall Shrubland of mixed species dominated by <i>Melaleuca nematophylla</i> and <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> with emergent <i>Eucalyptus ewartiana</i> over a Low Shrubland dominated by <i>Philotheca sericea</i> over a Herbland of annual daisies and/or bare ground.
Mu	Tall Shrubland of <i>Acacia ramulosa</i> , <i>Acacia burkittii</i> , <i>Melaleuca leiocarpa</i> and <i>Melaleuca uncinata</i> over an Open Herbland of annual daisies, leaf litter and bare rocks.
Ek	Tree Mallee of <i>Eucalyptus kochii</i> subsp. <i>plenissima</i> and Shrub Mallee of <i>Eucalyptus ewartiana</i> over a Tall Shrubland dominated by <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> over Very Open Herbland or annual daisies and bare ground.

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SPECIES	VEGETATION UNIT													
	Aan	AaPo	ApCp	Arr	Ek	EL	El	Ele	Ew	Ma	MaEL	MnEw	Mu	Tr
<i>Acacia acanthoclada</i>		+		+										+
<i>Acacia acuminata</i>		+	+	+			+							
<i>Acacia affin. stowardii</i>				+					+					+
<i>Acacia alata var. biglandulosa</i>		+	+											
<i>Acacia aneura</i>	+	+	+	+	+			+				+	+	
<i>Acacia anthochaera</i>	+			+										
<i>Acacia assimilis subsp. assimilis</i>	+	+	+	+			+					+		+
<i>Acacia blakeyi</i>							+			+				
<i>Acacia burkittii</i>				+			+			+			+	
<i>Acacia colletioides</i>							+							
<i>Acacia erinacea</i>				+			+							
<i>Acacia exocarpoides</i>		+	+	+	+		+	+						+
<i>Acacia imitans</i>							+							
<i>Acacia jibberdingensis</i>	+	+		+	+			+	+					+
<i>Acacia longiphylloidea</i>													+	
<i>Acacia multispicata</i>					+		+						+	
<i>Acacia murrayana</i>									+					
<i>Acacia obtecta</i>							+							
<i>Acacia ramulosa var. ramulosa</i>	+	+	+	+	+		+	+	+			+	+	+
<i>Acacia tetragonophylla</i>		+		+	+		+		+	+		+	+	
<i>Agrostis avenacea var. avenacea</i>		+		+		+				+				
<i>Allocasuarina acutivalvis subsp. prinsepiana</i>	+	+	+	+				+				+	+	
<i>Allocasuarina dielsiana</i>				+					+					
<i>Alyxia buxifolia</i>				+										
<i>Amyema gibberula subsp. tatei</i>							+							
<i>*Anagallis arvensis var. arvensis</i>										+				
<i>Angianthus tomentosus</i>				+			+			+			+	
<i>Aristida contorta</i>						+								
<i>Arthropodium dyeri</i>		+	+	+									+	
<i>Austrodanthonia caespitosa</i>		+		+	+	+				+				
<i>Austrostipa elegantissima</i>				+	+		+				+			
<i>Austrostipa hemipogon</i>		+												
<i>Austrostipa nitida</i>				+	+	+	+			+	+			
<i>Austrostipa trichophylla</i>	+	+		+			+			+			+	
<i>Brachychiton gregorii</i>	+			+										
<i>Brachyscome cheilocarpa</i>				+				+				+		
<i>Brachyscome ciliaris var. ciliaris</i>		+					+							
<i>Brachyscome onchocarpa</i>				+										
<i>*Bromus hordeaceus</i>					+					+				
<i>*Bromus rubens</i>		+		+						+				
<i>Bursaria occidentalis</i>		+												
<i>Calandrinia affin. primuliflora</i>				+						+	+			
<i>Calandrinia eremaea</i>		+	+	+	+		+		+	+	+			
<i>Calandrinia primuliflora</i>				+						+	+			
<i>Calocephalus multiflorus</i>	+	+		+	+		+	+		+				+
<i>Calotis hispidula</i>		+		+						+				+

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SPECIES	VEGETATION UNIT														
	Aan	AaPo	ApCp	Arr	Ek	EL	El	Ele	Ew	Ma	MaEL	MnEw	Mu	Tr	
<i>Calycopeplus pauciflorus</i>	+	+	+	+								+			
<i>Centipedia minima</i>										+					
<i>Cephalopterum drummondii</i>				+	+	+	+	+		+	+			+	
<i>Ceratogyne obionoides</i>														+	
<i>Cheilanthes sieberi</i>		+	+	+				+				+	+		
<i>Chenopodium</i> sp.				+			+								
<i>Chthonocephalus gnaphii</i>										+					
<i>Comesperma integerrimum</i>			+	+			+	+					+		
<i>Convolvulus angustissimus</i>						+				+					
<i>Crassula colorata</i> subsp. <i>acuminata</i>		+	+	+						+					
<i>Cryptandra imbricata</i>					+										
<i>Cryptandra</i> sp.				+											
<i>Cullen cinereum</i>						+									
<i>Cuscuta australis</i>				+	+									+	
<i>Daucus glochidiatus</i>		+	+		+	+				+					
<i>Daviesia divaricata</i>					+										
<i>Dianella revoluta</i>				+	+		+	+					+		
<i>Dodonaea inaequifolia</i>		+	+				+								
<i>Dodonaea petiolaris</i>		+	+												
<i>Drosera</i> sp. climbing				+											
<i>Drummondita hassellii</i>	+		+	+				+				+			
* <i>Ehrharta longiflora</i>		+													
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>				+	+		+			+					
<i>Eragrostis eriopoda</i>						+									
<i>Eremophila clarkei</i>		+	+	+	+		+	+	+			+	+		
<i>Eremophila latrobei</i> var. <i>latrobei</i>	+	+	+	+				+				+		+	
<i>Eremophila oppositifolia</i> subsp. <i>oppositifolia</i>								+							
<i>Eremophila pantonii</i>				+		+				+					
<i>Eremophila scoparia</i>	+			+						+	+				
<i>Eremophila serrulata</i>		+		+			+								
<i>Eremophila shonae</i> subsp. <i>shonae</i>				+											
* <i>Erodium botrys</i>		+		+		+	+	+		+	+		+	+	
<i>Eucalyptus ewartiana</i>				+	+				+			+	+		
<i>Eucalyptus kochii</i> subsp. <i>plenissima</i>					+										
<i>Eucalyptus leptopoda</i>								+							
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>		+		+		+	+			+					
<i>Euphorbia drummondii</i>											+				
<i>Exocarpos sparteus</i>				+		+	+			+					
<i>Feldstonia nitens</i>		+			+					+					
<i>Gahnia drummondii</i>			+												
<i>Gastrolobium laytonii</i>		+	+												
<i>Genphosis tenuissima</i>							+								
<i>Gilbertia tenuifolia</i>							+								
<i>Gilbertia tenuifolia</i>								+							
<i>Gilruthia osbornei</i>				+	+		+			+					
<i>Gonocarpus nodulosus</i>			+	+				+							
<i>Goodenia beardiana</i>	+	+	+	+			+	+					+		

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SPECIES	VEGETATION UNIT														
	Aan	AaPo	ApCp	Arr	Ek	EL	El	Ele	Ew	Ma	MaEL	MnEw	Mu	Tr	
<i>Goodenia occidentalis</i>	+	+	+	+				+				+	+	+	
<i>Grevillea candelabroides</i>				+											
<i>Grevillea obliquistigma</i>	+			+								+		+	
<i>Gunniopsis glabra</i>		+		+						+					
<i>Gunniopsis rodwayi</i>										+	+				
<i>Gunniopsis septifraga</i>										+	+				
<i>Hakea recurva</i>			+	+	+		+								
<i>Helichrysum craspedioides</i>		+	+	+			+						+		
<i>Hemigenia divaricata</i>			+												
<i>Hibbertia arcuata</i>	+		+	+				+				+	+	+	
<i>Hyalosperma cotula</i>				+											
<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>										+					
<i>Hydrocotyle</i> sp.										+					
* <i>Hypochaeris glabra</i>										+					
<i>Indigofera brevipedata</i>							+								
<i>Isoetopsis graminifolia</i>										+					
<i>Isotoma petraea</i>		+	+					+							
<i>Keraudrenia integrifolia</i>	+		+	+	+		+								
<i>Lawrencella davenportii</i>		+	+	+	+							+		+	
<i>Lawrencella rosea</i>	+	+	+	+				+							
<i>Lawrencella squamata</i>		+													
<i>Lemooria burkittii</i>			+							+					
<i>Lepidium oxytrichum</i>		+			+					+	+				
<i>Leucopogon breviflorus</i>				+									+		
<i>Lobelia winfridiaea</i>	+	+		+				+		+		+	+	+	
<i>Logania</i> sp.							+			+	+				
<i>Lomandra effusa</i>				+			+								
<i>Maireana carnosa</i>				+	+		+			+	+				
<i>Maireana georgei</i>				+	+		+			+	+				
<i>Maireana planifolia</i>				+	+		+								
<i>Maireana thesioides</i>							+								
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>		+		+	+		+			+					
* <i>Malva parviflora</i>							+								
* <i>Medicago minima</i> var. <i>minima</i>							+			+					
<i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i>							+			+	+				
<i>Melaleuca leiocarpa</i>	+			+				+				+	+		
<i>Melaleuca nematophylla</i>	+	+	+	+								+	+		
<i>Melaleuca radula</i>		+	+												
<i>Melaleuca uncinata</i>				+									+		
* <i>Mesembryanthemum nodiflorum</i>		+						+							
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	+	+	+					+				+			
<i>Millotia tenuifolia</i> subsp. <i>tenuifolia</i>		+	+	+											
<i>Minuria cunninghamii</i>		+		+	+		+								
<i>Mirbelia</i> sp. Paynes Find	+	+	+	+			+					+		+	
<i>Monachather paradoxa</i>				+				+				+			
<i>Myriocephalus rudalii</i>			+	+							+				
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>		+	+		+		+				+				

Flora and Vegetation of Blue Hills, Karara Station

SPECIES	VEGETATION UNIT													
	Aan	AaPo	ApCp	Arr	Ek	EL	El	Ele	Ew	Ma	MaEL	MnEw	Mu	Tr
<i>Olearia humilis</i>				+										
<i>Olearia pimeleoides</i>				+										
<i>Olearia stuartii</i>				+										
<i>Parietaria cardiostegia</i>		+		+										
<i>Parietaria debilis</i>		+												
* <i>Pentaschistis airoides</i>	+	+	+	+	+	+	+		+	+	+			+
<i>Persoonia pentasticha</i>		+	+	+	+									+
<i>Philotheca brucei</i>		+	+	+					+					+
<i>Philotheca sericea</i>	+	+	+	+				+				+		+
<i>Pimelea spiculigera</i>					+		+							
<i>Pittosporum angustifolium</i>		+												
<i>Plantago hispida</i>				+							+			
<i>Podolepis lessonii</i>	+	+	+	+					+	+			+	+
<i>Prostanthera magnifica</i>	+		+											
<i>Prostanthera patens</i>													+	
<i>Ptilotus divaricatus</i>				+			+			+				
<i>Ptilotus exaltatus</i>					+		+			+				
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>		+		+	+		+			+				+
<i>Ptilotus obovatus</i> var. <i>obovatus</i>		+	+	+	+		+		+		+			
<i>Ptilotus</i> sp.							+							
<i>Rhagodia eremaea</i>				+	+		+			+				
<i>Rhagodia</i> sp. <i>Watheroo</i>							+		+					
<i>Rhodanthe battii</i>		+	+											
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>			+	+										
<i>Rhodanthe citrina</i>				+				+						
<i>Rhodanthe cotula</i>				+										
<i>Rhodanthe laevis</i>		+		+										
<i>Rhodanthe manglesii</i>								+						
<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>				+						+				
<i>Rhodanthe pygmaea</i>							+							
<i>Rhodanthe tiekensis</i>				+										
<i>Rhyncharrhena linearis</i>	+			+	+									+
* <i>Rostraria pumilio</i>							+	+		+				
<i>Santalum acuminatum</i>	+		+	+										
<i>Santalum spicatum</i>		+												
<i>Sarcostemma australis</i>								+						+
<i>Scaevola spinescens</i>	+	+		+	+		+							
<i>Schoenia cassiniana</i>				+										+
<i>Sclerolaena drummondii</i>										+				
<i>Sclerolaena diacantha</i>					+		+			+	+			
<i>Sclerolaena drummondii</i>										+	+			
<i>Sclerolaena eurotioides</i>										+	+			
<i>Sclerolaena fusiformis</i>				+			+			+	+			
<i>Senecio glassanthus</i>		+	+				+							
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>					+		+							
<i>Senna artemisioides</i> subsp. <i>filifolia</i>				+			+					+		

Flora and Vegetation of Blue Hills, Karara Station

SPECIES	VEGETATION UNIT													
	Aan	AaPo	ApCp	Arr	Ek	EL	El	Ele	Ew	Ma	MaEL	MnEw	Mu	Tr
<i>Senna cardiosperma</i> subsp. <i>stowardii</i>				+										
<i>Senna charlesiana</i>		+	+	+			+							
<i>Senna</i> sp. <i>Austin</i>				+			+		+			+		
<i>Sida calyxhymenia</i>		+					+		+					
* <i>Sisymbrium orientale</i>		+				+				+				
<i>Solanum cleistogamum</i>					+		+							
<i>Solanum lasiophyllum</i>	+	+	+	+			+		+					
<i>Solanum nummularium</i>				+		+								
* <i>Sonchus oleraceus</i>		+								+				
* <i>Stellaria media</i>		+												
<i>Stenanthemum</i> ? <i>poicilum</i>				+										
<i>Stenopetalum filifolium</i>		+		+	+		+							+
<i>Swainsona kingii</i>										+				
<i>Tetragonia eremaea</i>										+	+			
<i>Teucrium racemosum</i>						+								
<i>Thryptomene mucronulata</i>	+								+				+	+
<i>Thryptomene racemulosa</i>	+		+	+									+	+
<i>Trachymene ornata</i>	+	+	+	+			+	+	+			+	+	+
<i>Trachymene pilosa</i>				+										+
<i>Trichanthodium skirrophorum</i>											+			
<i>Velleia cyptopotamica</i>							+							
<i>Velleia rosea</i>	+	+	+	+	+	+	+	+	+	+		+	+	+
<i>Wahlenbergia preissii</i>										+			+	
<i>Waitzia acuminata</i> var. <i>acuminata</i>	+	+	+	+			+	+	+			+	+	+
<i>Wrixonia prostanthoides</i>		+											+	
<i>Xanthosia bungei</i>	+	+	+	+				+						
<i>Zygophyllum eremaeum</i>										+				
<i>Zygophyllum ovatum</i>			+	+	+		+			+				

APPENDIX C

Maps

1. Location of quadrats and releves
2. Vegetation units

APPENDIX D

Quadrat data

QUADRAT BHQ1

490199E : 6776678N

Clay with ironstone rocks scattered over the surface. Ironstone rocks outcropping

Minor drainage creek. Aspect SW



Bare ground 90%
Litter: leaves 5%; branches 5%

QUADRAT BHQ1 (cont.)

SPECIES	% COVER
<i>Acacia imitans</i>	5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	<1
<i>Acacia tetragonophylla</i>	<1
<i>Dodonaea inaequifolia</i>	<1
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	<1
<i>Eremophila oppositifolia</i> subsp. <i>oppositifolia</i>	<1
<i>Eremophila serrulata</i>	<1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	20
<i>Maireana georgei</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
* <i>Mesembryanthemum nodiflorum</i>	<1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Ptilotus</i> sp.	<1
<i>Rhagodia eremaea</i>	1
<i>Sclerolaena diacantha</i>	<1
<i>Sclerolaena fusiformis</i>	<1
<i>Zygophyllum ovatum</i>	<1

QUADRAT BHQ2

490217E : 6776817N

Loam with outcropping BIF

Upper slope. Aspect SE



Bare ground 20%
Litter: Leaves 10%, branches 5%

QUADRAT BHQ2 (cont.)

SPECIES	% COVER
<i>Brachyscome ciliaris</i> var. <i>ciliaris</i>	20
<i>Calandrinia eremaea</i>	2
<i>Calocephalus multiflorus</i>	<1
<i>Calotis hispidula</i>	5
<i>Crassula colorata</i> subsp. <i>acuminata</i>	15
<i>Dodonaea inaequifolia</i>	5
<i>Dodonaea petiolaris</i>	10
* <i>Ehrharta longiflora</i>	<1
<i>Erodium botrys</i>	25
<i>Isotoma petraea</i>	<1
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	1
<i>Parietaria cardiostegia</i>	<1
<i>Parietaria debilis</i>	8
<i>Pittosporum angustifolium</i>	1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	5
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Rhodanthe battii</i>	50
* <i>Sonchus oleraceus</i>	<1
<i>Stellaria media</i>	<1

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ3

490203E : 6776600N

Reddish loam. Rocks lateritised with a few larger ones 10-20cm.

Lower slope. Aspect SW



Bare ground 20%

Litter: leaves 5%, branches 5%

QUADRAT BHQ3 (cont.)

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	2
<i>Acacia jibberdingensis</i>	20
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	3
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	45
<i>Angianthus tomentosus</i>	2
<i>Cheilanthes sieberi</i>	3
<i>Drummondita hassellii</i>	50
<i>Eremophila serrulata</i>	1
<i>Eremophila shonae</i> subsp. <i>shonae</i>	5
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	<1
<i>Hibbertia arcuata</i>	3
<i>Lawrencella rosea</i>	3
<i>Mirbelia</i> sp. Paynes Find	<1
<i>Olearia humilis</i>	1
<i>Parietaria cardiostegia</i>	<1
<i>Philothea sericea</i>	20
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1
<i>Scaevola spinescens</i>	<1
<i>Stenopetalum filifolium</i>	<1
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	5
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Xanthosia bungei</i>	5
<i>Acacia</i> affin. <i>stowardii</i>	Opportunistic
<i>Calandrinia eremaea</i>	Opportunistic
<i>Crassula colorata</i> subsp. <i>acuminata</i>	Opportunistic
<i>Cuscuta australis</i>	Opportunistic
<i>Eremophila clarkei</i>	Opportunistic
<i>Goodenia occidentalis</i>	Opportunistic
<i>Hakea recurva</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Melaleuca nematophylla</i>	Opportunistic
<i>Millotia tenuifolia</i> subsp. <i>tenuifolia</i>	Opportunistic
<i>Philothea brucei</i>	Opportunistic
<i>Rhagodia eremaea</i>	Opportunistic
<i>Rhodanthe laevis</i>	Opportunistic
<i>Stenanthemum</i> ? <i>poicilum</i>	Opportunistic
<i>Thryptomene racemulosa</i>	Opportunistic

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QUADRAT BHQ4

490068E : 6776477N

Reddish brown clay. Lateritised rocks and ironstone fragments. Rocks <10cm.

Lower slope. Aspect SE.



Bare ground 80%.

Litter: leaves 5%, branches 5%

QUADRAT BHQ4 (cont.)

SPECIES	% COVER
<i>Acacia acanthoclada</i>	5
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	1
<i>Calocephalus multiflorus</i>	5
<i>Ceratogyne obionoides</i>	<5
<i>Cuscuta australis</i>	1
<i>Erodium botrys</i>	5
<i>Goodenia occidentalis</i>	1
<i>Lawrencella davenportii</i>	10
<i>Thryptomene racemulosa</i>	80
<i>Trachymene pilosa</i>	5
<i>Velleia rosea</i>	10
<i>Waitzia acuminata</i> var. <i>acuminata</i>	15

QUADRAT BHQ5

489912E : 6776981N

Reddish loam. BIF rocks, in excess of 3cm

Ridge.



Bare ground 25%

Litter: Leaves 10%, branches 10%

NOTES: Crest extending down into west side of valley running 70° nearly in an E-W direction.
Open areas are scattered through the vegetation unit with occasional areas of dense vegetation

QUADRAT BHQ5 (cont.)

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	1
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	70
<i>Calycopeplus pauciflorus</i>	1
<i>Cheilanthes sieberi</i>	2
<i>Comesperma integerrimum</i>	<1
<i>Gahnia drummondii</i>	5
<i>Gastrolobium laytonii</i>	<1
<i>Goodenia occidentalis</i>	<1
<i>Hemigenia divaricata</i>	5
<i>Lawrencella rosea</i>	<1
<i>Philotheca sericea</i>	30
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	2
<i>Waitzia acuminata</i> var. <i>acuminata</i>	<1
<i>Xanthosia bungei</i>	10
<i>Acacia alata</i> var. <i>biglandulosa</i>	Opportunistic
<i>Eremophila clarkei</i>	Opportunistic
<i>Hibbertia arcuata</i>	Opportunistic
<i>Melaleuca nematophylla</i>	Opportunistic
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	Opportunistic
<i>Persoonia pentasticha</i>	Opportunistic
<i>Senna charlesiana</i>	Opportunistic

QUADRAT BHQ6

489957E : 6776893N

Red loam. 90% of area outcropping BIF rocks

Middle slope. Aspect south



Bare ground: 30%

Litter: leaves 15%, branches 15%

QUADRAT BHQ6 (cont.)

SPECIES	% COVER
<i>Acacia acuminata</i>	1
<i>Acacia alata</i> var. <i>biglandulosa</i>	1
<i>Acacia exocarpoides</i>	5
<i>Acacia jibberdingensis</i>	1
<i>Acacia tetragonophylla</i>	<1
<i>Austrostipa trichophylla</i>	1
<i>Bursaria occidentalis</i>	5
<i>Calandrinia eremaea</i>	1
<i>Calycopeplus pauciflorus</i>	10
<i>Cheilanthes sieberi</i>	10
<i>Crassula colorata</i> subsp. <i>acuminata</i>	1
<i>Daucus glochidiatus</i>	<1
<i>Dodonaea inaequifolia</i>	20
<i>Dodonaea petiolaris</i>	1
* <i>Ehrharta longiflora</i>	1
<i>Eremophila clarkei</i>	1
<i>Erodium botrys</i>	<1
<i>Goodenia occidentalis</i>	5
<i>Lawrencella davenportii</i>	<1
<i>Lepidium oxytrichum</i>	<1
<i>Lobelia winfridiaea</i>	1
* <i>Pentaschistis airoides</i>	1
<i>Philotheca brucei</i>	1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	5
<i>Rhodanthe battii</i>	20
<i>Scaevola spinescens</i>	<1
<i>Senna charlesiana</i>	<1
<i>Solanum lasiophyllum</i>	1
<i>Trachymene ornata</i>	5
<i>Velleia rosea</i>	10
<i>Waitzia acuminata</i> var. <i>acuminata</i>	<1
<i>Xanthosia bungei</i>	2
<i>Acacia acanthoclada</i>	Opportunistic
<i>Agrostis avenacea</i> var. <i>avenacea</i>	Opportunistic
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	Opportunistic
<i>Austrostipa hemipogon</i>	Opportunistic
* <i>Bromus rubens</i>	Opportunistic
<i>Calotis hispidula</i>	Opportunistic
<i>Eremophila serrulata</i>	Opportunistic
<i>Gastrolobium laytonii</i>	Opportunistic
<i>Lawrencia squamata</i>	Opportunistic
<i>Melaleuca radula</i>	Opportunistic
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	Opportunistic
<i>Rhodanthe laevis</i>	Opportunistic
* <i>Sonchus oleraceus</i>	Opportunistic

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QUADRAT BHQ7

489393E : 6776137N

Reddish clay with few scattered rocks <10cm

Flat ground at base of hills. Aspect N/A



Bare ground 60%

Litter: Leaves 20%, branches 5%

QUADRAT BHQ7 (cont).

SPECIES	% COVER
<i>Acacia exocarpoides</i>	1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	1
<i>Acacia tetragonophylla</i>	3
<i>Austrostipa nitida</i>	<1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	25
<i>Maireana georgei</i>	<1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	5
<i>Rhagodia</i> sp. Watheroo	<1
<i>Senna artemisioides</i> subsp. <i>filifolia</i>	3
<i>Velleia rosea</i>	5
<i>Acacia acuminata</i>	Opportunistic
<i>Acacia blakeyi</i>	Opportunistic
<i>Angianthus tomentosus</i>	Opportunistic
<i>Brachyscome ciliaris</i> var. <i>ciliaris</i>	Opportunistic
<i>Calandrinia eremaea</i>	Opportunistic
<i>Cephalopterum drummondii</i>	Opportunistic
<i>Dianella revoluta</i>	Opportunistic
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Opportunistic
* <i>Erodium botrys</i>	Opportunistic
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	Opportunistic
<i>Mirbelia</i> sp. Paynes Find	Opportunistic
* <i>Pentaschistis airoides</i>	Opportunistic
<i>Scaevola spinescens</i>	Opportunistic
<i>Sclerolaena diacantha</i>	Opportunistic
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>	Opportunistic
<i>Senna charlesiana</i>	Opportunistic
<i>Senna</i> sp. Austin	Opportunistic
<i>Stenopetalum filifolium</i>	Opportunistic
<i>Zygophyllum ovatum</i>	Opportunistic

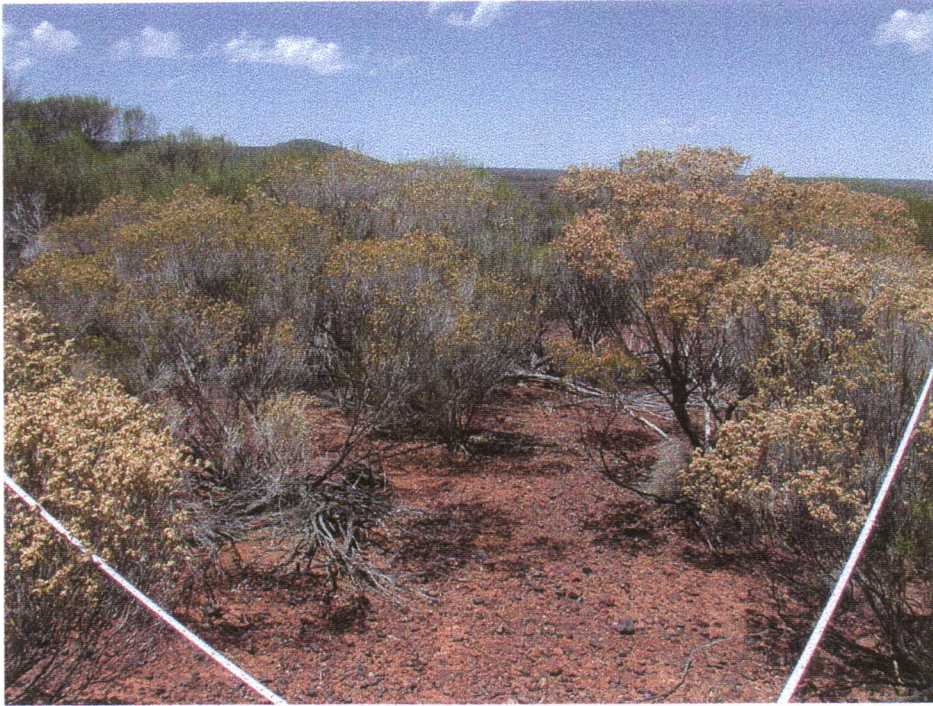
Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ8

489159E : 6776128N

Loam soil with many loose rocks <20cm.

Lower slope on flat ground. Aspect SW



Bare ground 80%

Litter: Leaves 5% branches 15%

QUADRAT BHQ8 (cont.)

SPECIES	% COVER
<i>Acacia</i> affin. <i>stowardii</i>	1
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	2
<i>Acacia exocarpoides</i>	1
<i>Acacia jibberdingensis</i>	20
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	10
<i>Cephalopterum drummondii</i>	1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	1
<i>Grevillea obliquistigma</i>	15
<i>Hibbertia arcuata</i>	1
<i>Lawrencella davenportii</i>	5
<i>Lobelia winfridiae</i>	5
<i>Mirbelia</i> sp. Paynes Find	<1
<i>Philotheca sericea</i>	30
<i>Podolepis lessonii</i>	2
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<1
<i>Stenopetalum filifolium</i>	1
<i>Thryptomene mucronulata</i>	5
<i>Thryptomene racemulosa</i>	5
<i>Trachymene ornata</i>	1
<i>Velleia rosea</i>	20
<i>Waitzia acuminata</i> var. <i>acuminata</i>	10

QUADRAT BHQ9

488412 : 6775982

Loam soil with many rocks on the surface, <20cm.

Lower slope.

Aspect S



Bare ground 50%

Litter: leaves 50%, branches 10%

QUADRAT BHQ9 (cont.)

SPECIES	% COVER
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	60
<i>Acacia tetragonophylla</i>	1
<i>Calandrinia eremaea</i>	1
<i>Eucalyptus ewartiana</i>	15
* <i>Pentaschistis airoides</i>	3
<i>Philotheca brucei</i>	1
<i>Podolepis lessonii</i>	2
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Sida calyxhymenia</i>	1
<i>Trachymene ornata</i>	2
<i>Velleia rosea</i>	10
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Acacia</i> affin. <i>stowardii</i>	Opportunistic
<i>Acacia jibberdingensis</i>	Opportunistic
<i>Acacia murrayana</i>	Opportunistic
<i>Allocasuarina dielsiana</i>	Opportunistic
<i>Eremophila clarkei</i>	Opportunistic
<i>Lobelia winfridiae</i>	Opportunistic
<i>Rhagodia</i> sp. Watheroo	Opportunistic
<i>Senna</i> sp. Austin	Opportunistic
<i>Solanum lasiophyllum</i>	Opportunistic
<i>Thryptomene mucronulata</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ10

488845E : 6776289N

Red loam. Rock outcropping.

Ridge/Crest



Bare ground 60%

Litter: leaves 20%, branches 5%

QUADRAT BHQ10 (cont.)

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	1
<i>Acacia exocarpoides</i>	1
<i>Acacia multispicata</i>	50
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	1
<i>Agrostis avenacea</i> var. <i>avenacea</i>	<1
<i>Cephalopterum drummondii</i>	2
<i>Cheilanthes sieberi</i>	10
<i>Crassula colorata</i> subsp. <i>acuminata</i>	<1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	1
* <i>Erodium botrys</i>	5
<i>Gilruthia osbornei</i>	<1
<i>Hibbertia arcuata</i>	1
<i>Lawrencella davenportii</i>	<1
<i>Lobelia winfridiae</i>	<1
<i>Melaleuca nematophylla</i>	1
<i>Philotheca brucei</i>	1
<i>Philotheca sericea</i>	30
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>	1
<i>Senna charlesiana</i>	1
<i>Stenopetalum filifolium</i>	<1
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	5
<i>Waitzia acuminata</i> var. <i>acuminata</i>	10
<i>Allocasuarina dielsiana</i>	Opportunistic
<i>Calycopeplus pauciflorus</i>	Opportunistic
<i>Grevillea obliquistigma</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	Opportunistic

QUADRAT BHQ11

489061E : 67776547N

Red-yellow loam with numerous BIF rocks <20cm

Middle slope. Aspect NE.

On north side of range



Bare ground 60%

Litter: leaves 5%; branches 20%

QUADRAT BHR11 (cont.)

SPECIES	% COVER
<i>Acacia aneura</i>	30
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	5
<i>Acacia jibberdingensis</i>	10
<i>Drummondita hassellii</i>	2
<i>Eremophila latrobei</i> var. <i>latrobei</i>	2
<i>Eremophila scoparia</i>	1
<i>Goodenia occidentalis</i>	1
<i>Grevillea obliquistigma</i>	1
<i>Hibbertia arcuata</i>	1
<i>Keraudrenia integrifolia</i>	<1
<i>Lawrencella rosea</i>	2
<i>Lobelia winfridiae</i>	5
<i>Melaleuca nematophylla</i>	5
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	1
<i>Philotheca sericea</i>	10
<i>Podolepis lessonii</i>	5
<i>Scaevola spinescens</i>	1
<i>Thryptomene racemulosa</i>	5
<i>Velleia rosea</i>	25
<i>Waitzia acuminata</i> var. <i>acuminata</i>	15
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	Opportunistic
<i>Brachychiton gregorii</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Mirbelia</i> sp. Paynes Find	Opportunistic
<i>Prostanthera magnifica</i>	Opportunistic
<i>Rhyncharrhena linearis</i>	Opportunistic
<i>Santalum acuminatum</i>	Opportunistic
<i>Solanum lasiophyllum</i>	Opportunistic
<i>Xanthosia bungei</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ12

488249E : 6777190N

Yellow brown loam. Lateritised BIF rocks ca 20cm loose on surface

Lower slope

Aspect W



Bare ground 50%

Litter: leaves 20%, branches 25%

QUADRAT BHQ12 (cont.)

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	10
<i>Acacia jibberdingensis</i>	5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	15
<i>Austrostipa trichophylla</i>	<1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	1
<i>Lobelia winfridiae</i>	1
* <i>Pentaschistis airoides</i>	<1
<i>Philotheca sericea</i>	20
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	10
<i>Waitzia acuminata</i> var. <i>acuminata</i>	15
<i>Xanthosia bungei</i>	5
<i>Acacia aneura</i>	Opportunistic
<i>Acacia anthochaera</i>	Opportunistic
<i>Calocephalus multiflorus</i>	Opportunistic
<i>Calycopeplus pauciflorus</i>	Opportunistic
<i>Goodenia beardiana</i>	Opportunistic
<i>Grevillea obliquistigma</i>	Opportunistic
<i>Hibbertia arcuata</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Melaleuca nematophylla</i>	Opportunistic
<i>Mirbelia</i> sp. Paynes Find	Opportunistic
<i>Solanum lasiophyllum</i>	Opportunistic
<i>Thryptomene mucromulata</i>	Opportunistic
<i>Thryptomene racemulosa</i>	Opportunistic

QUADRAT BHQ13

487630E : 6776317N

Red loam with scattered BIF rocks <20mm on the surface

Flat at the bottom of the hills



Bare ground 50%

Litter: leaves 20%, branches 10%

QUADRAT BHQ13 (cont.)

SPECIES	% COVER
<i>Acacia acanthoclada</i>	10
<i>Acacia burkittii</i>	4
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	40
<i>Acacia tetragonophylla</i>	3
<i>Cephalopterum drummondii</i>	1
<i>Lawrencella rosea</i>	1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
<i>Mimuria cunninghamii</i>	5
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1
<i>Velleia rosea</i>	<1
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Acacia anthochaera</i>	Opportunistic
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	Opportunistic
<i>Cuscuta australis</i>	Opportunistic
<i>Erodium botrys</i>	Opportunistic
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	Opportunistic
<i>Exocarpos sparteus</i>	Opportunistic
<i>Hakea recurva</i>	Opportunistic
<i>Keraudrenia integrifolia</i>	Opportunistic
<i>Maireana georgei</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Melaleuca uncinata</i>	Opportunistic
<i>Monachather paradoxa</i>	Opportunistic
<i>Persoonia pentasticha</i>	Opportunistic
<i>Podolepis lessonii</i>	Opportunistic
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	Opportunistic
<i>Schoenia cassiniana</i>	Opportunistic
<i>Senna</i> sp. <i>Austin</i>	Opportunistic
<i>Solanum nummularium</i>	Opportunistic
<i>Stenopetalum filifolium</i>	Opportunistic

QUADRAT BHQ14

486861E : 6775858N

Red clay with scattered small stones (<10mm) on the surface

Flat to the north of calcrete



Bare ground 50%

Litter: Leaves 20%, branches 5%, logs 15%

Most of the surrounding area had fewer annual species present

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ14 (cont.)

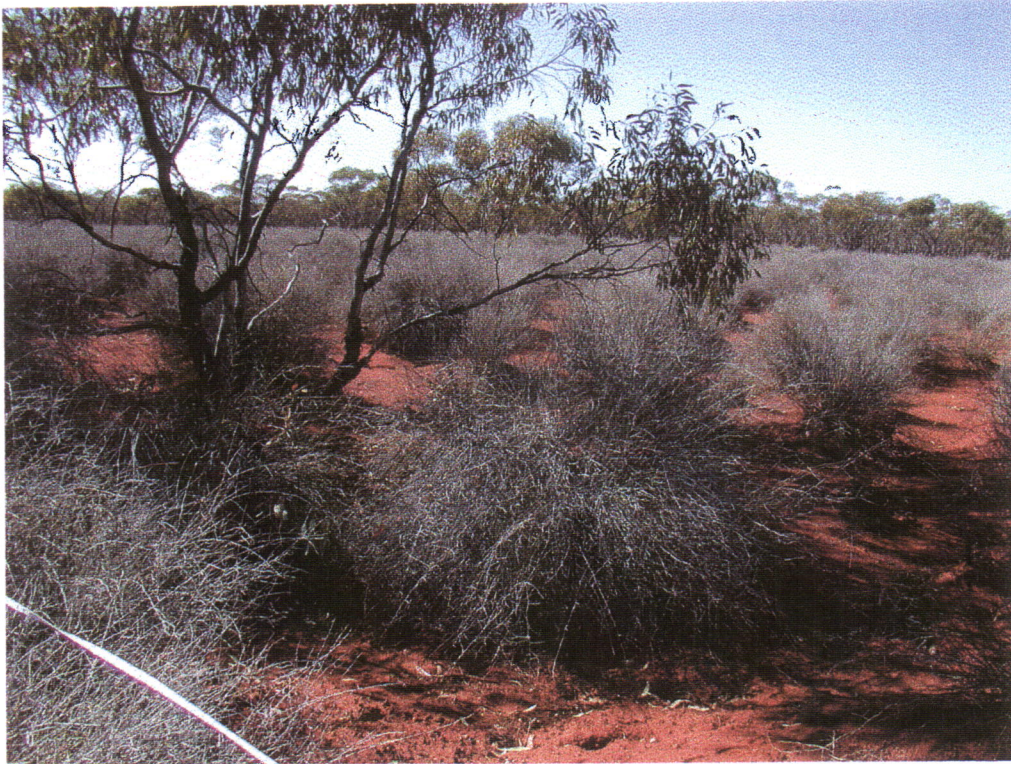
SPECIES	% COVER	SPECIES	% COVER
<i>Agrostis avenacea</i> var. <i>avenacea</i>	3	<i>Acacia tetragonophylla</i>	Opportunistic
* <i>Anagallis arvensis</i> var. <i>arvensis</i>	3	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Opportunistic
<i>Angianthus tomentosus</i>	1	<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	Opportunistic
<i>Austrodanthonia caespitosa</i>	2	<i>Gummiopsis glabra</i>	Opportunistic
<i>Austrostipa nitida</i>	1	<i>Maireana carnosa</i>	Opportunistic
<i>Austrostipa trichophylla</i>	1	<i>Ptilotus exaltatus</i>	Opportunistic
* <i>Bromus hordeaceus</i>	<1		
* <i>Bromus rubens</i>	1		
<i>Calandrinia primuliflora</i>	<1		
<i>Calocephalus multiflorus</i>	1		
<i>Calotis hispidula</i>	10		
<i>Centipedia minima</i>	5		
<i>Cephalopterum drummondii</i>	30		
<i>Chthonocephalus gnaphii</i>	1		
<i>Convolvulus angustissimus</i>	3		
<i>Daucus glochidiatus</i>	5		
<i>Eremophila scoparia</i>	1		
* <i>Erodium botrys</i>	2		
<i>Feldstonia nitens</i>	10		
<i>Gilruthia osbornei</i>	1		
<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>	1		
<i>Hydrocotyle</i> sp.	1		
* <i>Hypochaeris glabra</i>	1		
<i>Isoetopsis graminifolia</i>	2		
<i>Lemooria butkittii</i>	1		
<i>Lepidium oxytrichum</i>	1		
<i>Logania</i> sp.	1		
* <i>Medicago minima</i> var. <i>minima</i>	5		
<i>Melaleuca</i> affn. <i>acuminata</i> subsp. <i>websteri</i>	25		
* <i>Pentaschistis airoides</i>	5		
<i>Plantago hispida</i>	5		
<i>Podolepis lessonii</i>	2		
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	1		
<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>	5		
<i>Rostraria pumilio</i>	40		
<i>Sclerolaena drummondii</i>	1		
<i>Sclerolaena diacantha</i>	2		
* <i>Sisymbrium orientale</i>	5		
* <i>Sonchus oleraceus</i>	1		
<i>Swainsona kingii</i>	2		
<i>Tetragonia eremaea</i>	3		
<i>Velleia rosea</i>	5		
<i>Wahlenbergia preissii</i>	2		
<i>Zygophyllum eremaeum</i>	1		

QUADRAT BHQ15

486890E : 6775563N

Red clayey loam. No rocks

Salt flat



Bare ground 40%

Lot of gullying through the area with the *Logania* sp. on raised ground

Litter: Leaves 10%

QUADRAT BHQ15 (cont.)

SPECIES	% COVER
<i>Aristida contorta</i>	1
<i>Austrostipa nitida</i>	2
<i>Cephalopterum drummondii</i>	1
<i>Daucus glochidiatus</i>	<1
<i>Eragrostis eriopoda</i>	<1
<i>Eremophila pantonii</i>	<1
* <i>Erodium botrys</i>	1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	5
<i>Exocarpos sparteus</i>	1
<i>Logania</i> sp.	80
* <i>Malva parviflora</i>	<1
* <i>Medicago minima</i> var. <i>minima</i>	3
<i>Rhodanthe pygmaea</i>	<1
* <i>Rostraria pumilio</i>	3
<i>Senecio glossanthus</i>	<1
* <i>Sisymbrium orientale</i>	<1
<i>Velleia rosea</i>	1

QUADRAT BHQ16

487077E : 6775686N

Red loamy clay with numerous pebbles on the surface

Salt flat



Bare ground 80%

Litter: leaves 2%, branches 2%. Logs 2%

QUADRAT BHQ16 (cont.)

SPECIES	% COVER
<i>Austrostipa nitida</i>	2
<i>Calandrinia eremaea</i>	<1
<i>Calandrinia primuliflora</i>	<1
<i>Cephalopterum drummondii</i>	2
<i>Eremophila scoparia</i>	<1
* <i>Erodium botrys</i>	1
<i>Euphorbia drummondii</i>	<1
<i>Gunniopsis rodwayi</i>	3
<i>Gunniopsis septifraga</i>	<1
<i>Lepidium oxytrichum</i>	<1
<i>Logania</i> sp.	<1
<i>Maireana carnosa</i>	3
<i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i>	20
<i>Myriocephalus rudalii</i>	<1
* <i>Pentaschistis airoides</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Sclerolaena diacantha</i>	1
<i>Sclerolaena drummondii</i>	10
<i>Sclerolaena fusiformis</i>	5
<i>Tetragonia eremaea</i>	<1
<i>Austrostipa elegantissima</i>	Opportunistic
<i>Calandrinia</i> affin. <i>primuliflora</i>	Opportunistic
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	Opportunistic
<i>Maireana georgei</i>	Opportunistic
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	Opportunistic
<i>Sclerolaena eurotioides</i>	Opportunistic
<i>Trichanthodium skirrophorum</i>	Opportunistic

QUADRAT BHQ17

486787E : 6775894N

Reddish loamy clay with small scattered to dense gibbers

Edge of lake



Bare ground 85%

Litter: leaves 10%

Several dead Melaleucas. Open areas between dense cover

QUADRAT BHQ17 (cont.)

SPECIES	% COVER
<i>Austrostipa nitida</i>	3
<i>Calandrinia</i> affn. <i>primuliflora</i>	<1
<i>Cephalopterum drummondii</i>	2
<i>Crassula colorata</i> subsp. <i>acuminata</i>	<1
<i>Gilruthia osbornei</i>	<1
<i>Maireana georgei</i>	<1
<i>Melaleuca</i> affn. <i>acuminata</i> subsp. <i>websteri</i>	95
<i>Rhagodia eremaea</i>	<1
<i>Sclerolaena fusiformis</i>	<1
<i>Velleia rosea</i>	<1
<i>Gunniopsis glabra</i>	Opportunistic

QUADRAT BHQ18

486786E : 6775609N

Red silty loam with scattered tiny pebbles on the surface

Edge of lake



Bare ground 85%

Litter: leaves 5%, branches 10%, logs 5%

Soil cracking.

Several dead Melaleucas and Eucalyptus trees

QUADRAT BHQ18 (cont.)

SPECIES	% COVER
<i>Acacia blakeyi</i>	<1
<i>Austrodanthonia caespitosa</i>	<1
<i>Austrostipa nitida</i>	10
<i>Calandrinia</i> affn. <i>primuliflora</i>	1
<i>Calotis hispidula</i>	<1
<i>Cephalipterum drummondii</i>	3
<i>Crassula colorata</i> subsp. <i>acuminata</i>	<1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	5
<i>Logania</i> sp.	<21
<i>Maireana carnososa</i>	<1
<i>Melaleuca</i> affn. <i>acuminata</i> subsp. <i>websteri</i>	70
<i>Sclerolaena diacantha</i>	1
<i>Sclerolaena eurotioides</i>	<1
<i>Sisymbrium orientale</i>	<1
<i>Tetragonia eremaea</i>	<1
<i>Calandrinia eremaea</i>	Opportunistic
<i>Gunniopsis septifraga</i>	Opportunistic
<i>Calandrinia primuliflora</i>	Opportunistic
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	Opportunistic
<i>Rhagodia eremaea</i>	Opportunistic
<i>Sclerolaena fusiformis</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ19

487356E : 6775524N

Red silty loam with pebbles <1cm on the surface

Flat beside calcrete area



Bare ground 70%

Litter: leaves 15%, branches 15%

QUADRAT BHQ19 (cont.)

SPECIES	% COVER
<i>Convolvulus angustissimus</i>	<1
<i>Cullen cinereum</i>	<1
<i>Eragrostis eriopoda</i>	<1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	75
<i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i>	<1
<i>Solanum mummularium</i>	<1
<i>Teucrium racemosum</i>	<1
<i>Velleia rosea</i>	<1
<i>Agrostis avenacea</i> var. <i>avenacea</i>	Opportunistic
<i>Austrodanthonia caespitosa</i>	Opportunistic
<i>Cephalipterum drummondii</i>	Opportunistic
<i>Indigofera brevipedata</i>	Opportunistic
* <i>Pentaschistis airoides</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ20

488902E : 6774475N

Loam with scattered small pebbles.

Topography flat



Bare ground 60%

Litter: leaves 25%, branches 5%

QUADRAT BHQ20 (cont.)

SPECIES	% COVER	SPECIES	% COVER
<i>Acacia anthochaera</i>	10	<i>Grevillea candelabroides</i>	Opportunistic
<i>Acacia burkittii</i>	40	<i>Gunniopsis glabra</i>	Opportunistic
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	1	<i>Hakea recurva</i>	Opportunistic
<i>Acacia tetragonophylla</i>	<1	<i>Lomandra effusa</i>	Opportunistic
<i>Austrodanthonia caespitosa</i>	<1	<i>Maireana georgei</i>	Opportunistic
<i>Austrostipa elegantissima</i>	<1	<i>Mimuria cunninghamii</i>	Opportunistic
<i>Austrostipa nitida</i>	<1	<i>Monachather paradoxa</i>	Opportunistic
<i>Austrostipa trichophylla</i>	<1	<i>Olearia stuartii</i>	Opportunistic
<i>Calandrinia</i> affin. <i>primuliflora</i>	<1	<i>Plantago hispida</i>	Opportunistic
<i>Cephalopterum drummondii</i>	1	<i>Podolepis lessonii</i>	Opportunistic
<i>Cheilanthes sieberi</i>	5	<i>Rhodanthe citrina</i>	Opportunistic
<i>Comesperma integerrimum</i>	2	<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>	Opportunistic
<i>Eremophila scoparia</i>	20	<i>Rhyncharrhena linearis</i>	Opportunistic
<i>Exocarpos sparteus</i>	1	<i>Santalum acuminatum</i>	Opportunistic
<i>Hyalosperma cotula</i>	2	<i>Schoenia cassiniana</i>	Opportunistic
<i>Maireana carnosa</i>	<1	<i>Senna cardiosperma</i> subsp. <i>stowardii</i>	Opportunistic
<i>Maireana planifolia</i>	<1	<i>Senna charlesiana</i>	Opportunistic
<i>Olearia pimeleoides</i>	15	<i>Solanum lasiophyllum</i>	Opportunistic
* <i>Pentaschistis airoides</i>	<1	<i>Trachymene pilosa</i>	Opportunistic
<i>Persoonia pentasticha</i>	<1		
<i>Ptilotus divaricatus</i>	<1		
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<1		
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1		
<i>Rhagodia eremaea</i>	2		
<i>Scaevola spinescens</i>	<1		
<i>Sclerolaena fusiformis</i>	<1		
<i>Solanum lasiophyllum</i>	<1		
<i>Velleia rosea</i>	2		
<i>Zygophyllum ovatum</i>	<1		
<i>Acacia acuminata</i>	Opportunistic		
<i>Acacia aneura</i>	Opportunistic		
<i>Acacia erinacea</i>	Opportunistic		
<i>Alyxia buxifolia</i>	Opportunistic		
<i>Austrostipa nitida</i>	Opportunistic		
<i>Brachychiton gregorii</i>	Opportunistic		
<i>Brachyscome onchocarpa</i>	Opportunistic		
<i>Cephalopterum drummondii</i>	Opportunistic		
<i>Cheilanthes sieberi</i>	Opportunistic		
<i>Dianella revoluta</i>	Opportunistic		
<i>Eremophila clarkei</i>	Opportunistic		
<i>Eremophila pantonii</i>	Opportunistic		
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	Opportunistic		
<i>Gilruthia osbornei</i>	Opportunistic		

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ21

487446E : 6775778N

Red, silty loam rocks <1cm covering ground

Flat beside calcrete area



Bare ground 85%

Litter: leaves 5%, branches 15%

QUADRAT BHQ21 (cont.)

SPECIES	% COVER
<i>Acacia blakeyi</i>	<1
<i>Austrostipa nitida</i>	10
<i>Calandrinia</i> affin. <i>primuliflora</i>	<1
<i>Calandrinia eremaea</i>	1
<i>Cephalipterum drummondii</i>	20
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	<1
<i>Eremophila pantonii</i>	<1
<i>Exocarpos sparteus</i>	1
<i>Gilruthia osbornei</i>	<1
<i>Gunniopsis rodwayi</i>	5
<i>Gunniopsis septifraga</i>	<1
<i>Maireana carnosae</i>	<1
<i>Maireana georgei</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
<i>Melaleuca</i> affin. <i>acuminata</i> subsp. <i>websteri</i>	25
* <i>Pentaschistis airoides</i>	<1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	1
<i>Sclerolaena fusiformis</i>	2
<i>Tetragonia eremaea</i>	<1
<i>Zygophyllum ovatum</i>	<1
<i>Acacia burkittii</i>	Opportunistic
<i>Calandrinia primuliflora</i>	Opportunistic
<i>Ptilotus divaricatus</i>	Opportunistic

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QUADRAT BHQ22

486513E : 6776904N

Silty loam with small rocks scattered on the surface

Flat



Bare ground 60%

Litter: leaves 40%, logs 10%

QUADRAT BHQ22 (cont.)

SPECIES	% COVER
<i>Acacia burkittii</i>	7
<i>Acacia exocarpoides</i>	5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	25
<i>Acacia tetragonophylla</i>	15
<i>Agrostis avenacea</i> var. <i>avenacea</i>	1
<i>Arthropodium dyeri</i>	2
<i>Austrostipa elegantissima</i>	<1
* <i>Bromus rubens</i>	<1
<i>Calotis hispidula</i>	5
<i>Cephalopterum drummondii</i>	10
<i>Cheilanthes sieberi</i>	10
<i>Cuscuta australis</i>	<1
<i>Dianella revoluta</i>	<1
* <i>Erodium botrys</i>	<1
<i>Goodenia beardiana</i>	<1
<i>Philotheca brucei</i>	15
<i>Plantago hispida</i>	<1
<i>Podolepis lessonii</i>	5
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Scaevola spinescens</i>	1
<i>Stenopetalum filifolium</i>	<1
<i>Trachymene ornata</i>	5
<i>Velleia rosea</i>	10
<i>Waitzia acuminata</i> var. <i>acuminata</i>	20
<i>Calandrinia primuliflora</i>	Opportunistic
<i>Calycopeplus pauciflorus</i>	Opportunistic
<i>Chenopodium</i> sp.	Opportunistic
<i>Eremophila clarkei</i>	Opportunistic
<i>Eremophila latrobei</i> var. <i>latrobei</i>	Opportunistic
<i>Eucalyptus ewartiana</i>	Opportunistic
<i>Hakea recurva</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Melaleuca nematophylla</i>	Opportunistic
<i>Mirbelia</i> sp. Paynes Find	Opportunistic
<i>Persoonia pentasticha</i>	Opportunistic
<i>Philotheca sericea</i>	Opportunistic
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	Opportunistic
<i>Rhodanthe cotula</i>	Opportunistic
<i>Schoenia cassiniana</i>	Opportunistic
<i>Senna charlesiana</i>	Opportunistic
<i>Senna</i> sp. Austin	Opportunistic
<i>Thryptomene racemulosa</i>	Opportunistic

QUADRAT BHQ23

486502E : 8776300N

Loam

Banded iron formation rock >40cm. Scree slope, so large number outcropping

Topography: middle slope

Aspect NW



Bare ground 30%

Litter: leaves 20%, branches 10%

QUADRAT BHQ23 (cont.)

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	10
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2
<i>Austrostipa trichophylla</i>	<1
<i>Calandrinia eremaea</i>	<1
<i>Cheilanthes sieberi</i>	5
<i>Dodonaea inaequifolia</i>	2
<i>Eremophila clarkei</i>	1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	1
* <i>Erodium botrys</i>	<1
<i>Goodenia beardiana</i>	<1
<i>Lawrencella davenportii</i>	1
<i>Melaleuca nematophylla</i>	35
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	10
<i>Mirbelia</i> sp. Paynes Find	1
* <i>Pentaschistis airoides</i>	<1
<i>Philotheca brucei</i>	5
<i>Philotheca sericea</i>	15
<i>Velleia rosea</i>	5
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Xanthosia bungei</i>	<1

QUADRAT BHQ24

485944E : 6775989N

Loam. BIF outcropping, rocks >40cm in size

Upper slope/Ridge

Aspect N-NW



Bare ground 80%

Litter: leaves 10%, branches 5%, logs 5%

QUADRAT BHQ24 (cont.)

SPECIES	% COVER
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	20
<i>Arthropodium dyeri</i>	<1
<i>Calycopeplus pauciflorus</i>	15
<i>Cheilanthes sieberi</i>	25
<i>Crassula colorata</i> subsp. <i>acuminata</i>	<1
<i>Eremophila clarkei</i>	1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	2
<i>Gastrolobium laytonii</i>	5
<i>Goodenia beardiana</i>	<1
<i>Goodenia occidentalis</i>	<1
<i>Helichrysum craspedioides</i>	2
<i>Keraudrenia integrifolia</i>	1
<i>Melaleuca nematophylla</i>	20
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	10
<i>Millotia tenuifolia</i> subsp. <i>tenuifolia</i>	<1
<i>Myriocephalus rudalii</i>	<1
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	<1
* <i>Pentaschistis airoides</i>	<1
<i>Philothea sericea</i>	10
<i>Prostanthera magnifica</i>	1
<i>Trachymene ornata</i>	<1
<i>Xanthosia bungei</i>	15
<i>Acacia aneura</i>	Opportunistic
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	Opportunistic
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	Opportunistic
<i>Waitzia acuminata</i> var. <i>acuminata</i>	Opportunistic

QUADRAT BHQ25

489232E : 6774412N

Red loam

Flat



Bare ground 25%

Litter: Leaves 40%, branches 5%, logs 30%

These were stands of *Eucalyptus loxophleba* separated by bare areas and Shrubland

QUADRAT BHQ25 (cont.)

SPECIES	% COVER
<i>Acacia colletioides</i>	<1
<i>Acacia erinacea</i>	1
<i>Acacia exocarpoides</i>	<1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	<1
<i>Acacia tetragonophylla</i>	<1
<i>Austrostipa elegantissima</i>	<1
<i>Austrostipa nitida</i>	<1
<i>Austrostipa trichophylla</i>	<1
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	<1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	75
<i>Keraudrenia integrifolia</i>	<1
<i>Maireana georgei</i>	1
<i>Maireana planifolia</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	1
<i>Ptilotus divaricatus</i>	<1
<i>Ptilotus exaltatus</i>	<1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1
<i>Rhagodia eremaea</i>	1
<i>Scaevola spinescens</i>	<1
<i>Sclerolaena fusiformis</i>	<1
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>	<1
<i>Sida calyxhymenia</i>	<1
<i>Zygophyllum ovatum</i>	<1
<i>Acacia obtecta</i>	Opportunistic
<i>Amyema gibberula</i> subsp. <i>tatei</i>	Opportunistic
<i>Austrodanthonia caespitosa</i>	Opportunistic
<i>Cephalopterum drummondii</i>	Opportunistic
<i>Comesperma integerrimum</i>	Opportunistic
<i>Dianella revoluta</i>	Opportunistic
<i>Lomandra effusa</i>	Opportunistic
<i>Maireana carnosae</i>	Opportunistic
<i>Mimuria cunninghamii</i>	Opportunistic
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	Opportunistic
<i>Pimelea spiculigera</i>	Opportunistic
<i>Sarcostemma australis</i>	Opportunistic
<i>Sclerolaena diacantha</i>	Opportunistic
<i>Solanum cleistogamum</i>	Opportunistic
<i>Velleia rosea</i>	Opportunistic

QUADRAT BHQ26

486175E : 6775968N

Red silty loam with scattered BIF stones

Lower slope. Aspect NE



Bare ground 30%

Litter: leaves 40%, branches 15%, logs 15%

QUADRAT BHQ26 (cont.)

SPECIES	% COVER
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	50
<i>Brachyscome cheilocarpa</i>	15
<i>Calocephalus multiflorus</i>	<1
<i>Cephalopterum drummondii</i>	10
<i>Cheilanthes sieberi</i>	10
<i>Comesperma integerrimum</i>	<1
<i>Dianella revoluta</i>	1
* <i>Erodium botrys</i>	<1
<i>Eucalyptus leptopoda</i>	25
<i>Gilbertia tenuifolia</i>	1
<i>Gonocarpus nodulosus</i>	2
<i>Goodenia occidentalis</i>	<1
<i>Melaleuca leiocarpa</i>	2
<i>Monachather paradoxa</i>	<1
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	5

Flora and Vegetation of Blue Hills, Karara Station

QUADRAT BHQ27

489851E : 6774208N

Red silty loam with small pebbles on the surface

Lower slope

Aspect S



Bare ground 30%

Litter: leaves 15%, branches 15%

QUADRAT BHQ27 (cont.)

SPECIES	% COVER
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2
<i>Calandrinia eremaea</i>	<1
<i>Daucus glochidiatus</i>	<1
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	1
<i>Eremophila clarkei</i>	1
<i>Eucalyptus ewartiana</i>	35
<i>Feldstonia nitens</i>	<1
<i>Keraudrenia integrifolia</i>	<1
<i>Maireana carnosae</i>	<1
<i>Maireana georgei</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
<i>Minuria cunninghamii</i>	3
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	1
<i>Persoonia pentasticha</i>	<1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Rhagodia eremaea</i>	1
<i>Velleia rosea</i>	<1
<i>Waitzia acuminata</i> var. <i>acuminata</i>	10
<i>Acacia jibberdingensis</i>	Opportunistic
<i>Acacia tetragonophylla</i>	Opportunistic
<i>Austrostipa elegantissima</i>	Opportunistic
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>	Opportunistic

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QUADRAT BHQ28

487180E : 6777184N

Outcropping BIF rocks

Ridge of low hill



Bare ground 60%

Litter: leaves 15, branches 25%

QUADRAT BHQ28 (cont.)

SPECIES	% COVER
<i>Acacia aneura</i>	1
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	20
<i>Acacia tetragonophylla</i>	1
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	5
<i>Brachyscome cheilocarpa</i>	<1
<i>Calycopeplus pauciflorus</i>	2
<i>Cheilanthes sieberi</i>	5
<i>Drummondita hassellii</i>	<1
<i>Eremophila clarkei</i>	5
<i>Eremophila latrobei</i> var. <i>latrobei</i>	5
<i>Eucalyptus ewartiana</i>	1
<i>Goodenia occidentalis</i>	<1
<i>Grevillea obliquistigma</i>	1
<i>Hibbertia arcuata</i>	1
<i>Lawrencella davenportii</i>	1
<i>Lobelia winfridiae</i>	<1
<i>Melaleuca leiocarpa</i>	5
<i>Melaleuca nematophylla</i>	10
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	3
<i>Mirbelia</i> sp. Paynes Find	5
<i>Monachather paradoxa</i>	<1
<i>Philothea sericea</i>	20
<i>Senna artemisioides</i> subsp. <i>filifolia</i>	1
<i>Senna</i> sp. Austin	<1
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	1
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5

QUADRAT BHQ29

486316E : 6776166N

Silty loam with occasional pebbles. Flat



Bare ground 70%

Litter: leaves 15%, branches 35%

Lot of dead shrubs and litter on ground

QUADRAT BHQ29 (cont.)

SPECIES	% COVER
<i>Acacia exocarpoides</i>	1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	40
<i>Brachyscome cheilocarpa</i>	5
<i>Cephalopterum drummondii</i>	5
<i>Cheilanthes sieberi</i>	10
<i>Dianella revoluta</i>	<1
<i>Drosera</i> sp. climbing	<1
* <i>Erodium botrys</i>	<1
<i>Gonocarpus nodulosus</i>	<1
<i>Goodenia occidentalis</i>	<1
<i>Lobelia winfridiae</i>	1
<i>Melaleuca leiocarpa</i>	5
<i>Melaleuca uncinata</i>	1
<i>Myriocephalus rudalii</i>	5
<i>Podolepis lessonii</i>	2
<i>Rhodanthe tiekensii</i>	<1
<i>Trachymene ornata</i>	1
<i>Velleia rosea</i>	20
<i>Waitzia acuminata</i> var. <i>acuminata</i>	3
<i>Leucopogon breviflorus</i>	Opportunistic

QUADRAT BHR1

489463E : 6776579N

Loam with rocks scattered on the surface

Middle slope

Aspect SE



Bare ground 80%

Litter: leaves 5%, branches 10%

RELEVÉE BHR1 (cont.)

SPECIES	% COVER
<i>Acacia acuminata</i>	1
<i>Acacia jibberdingensis</i>	30
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	25
<i>Acacia tetragonophylla</i>	1
<i>Agrostis avenacea</i> var. <i>avenacea</i>	1
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	1
<i>Arthropodium dyeri</i>	<1
<i>Calotis hispidula</i>	2
<i>Cheilanthes sieberi</i>	5
<i>Dodonaea inaequifolia</i>	2
<i>Eremophila clarkei</i>	1
* <i>Erodium botrys</i>	1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	5
<i>Helichrysum craspedioides</i>	2
<i>Lawrencella davenportii</i>	5
<i>Millotia tenuifolia</i> subsp. <i>tenuifolia</i>	5
* <i>Pentaschistis airoides</i>	5
<i>Persoonia pentasticha</i>	5
<i>Podolepis lessonii</i>	5
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	5
<i>Rhodanthe battii</i>	10
<i>Senecio glossanthus</i>	5
<i>Stenopetalum filifolium</i>	<1
<i>Velleia rosea</i>	20
<i>Waitzia acuminata</i> var. <i>acuminata</i>	10
<i>Wrixonia prostanthoides</i>	<1

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RELEVÉE BHR2

489323E : 6776335N

Loam amongst outcropping rocks

Topography: upper slope to middle slope

Aspect SE



Bare ground 20%

Litter: leaves 15%, branches 15%

RELEVÉE BHR2 (cont.)

SPECIES	% COVER
<i>Acacia acuminata</i>	1
<i>Acacia alata</i> var. <i>biglandulosa</i>	5
<i>Acacia exocarpoides</i>	1
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	5
<i>Calycopeplus pauciflorus</i>	5
<i>Cheilanthes sieberi</i>	20
<i>Dodonaea petiolaris</i>	1
<i>Drummondita hassellii</i>	5
<i>Eremophila clarkei</i>	1
<i>Gastrolobium laytonii</i>	1
<i>Gonocarpus nodulosus</i>	<1
<i>Hemigenia divaricata</i>	<1
<i>Isotoma petraea</i>	5
<i>Lawrencella davenportii</i>	10
<i>Melaleuca nematophylla</i>	20
<i>Melaleuca radula</i>	1
<i>Philothea sericea</i>	<1
<i>Podolepis lessonii</i>	5
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>	5
<i>Senecio glossanthus</i>	5
<i>Solanum lasiophyllum</i>	1
<i>Trachymene ornata</i>	10
<i>Velleia rosea</i>	20
<i>Xanthosia bungei</i>	30
<i>Prostanthera magnifica</i>	Opportunistic
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	Opportunistic

RELEVÉE BHR3

488979E : 6776717N

Topography lower slope, on north side of lease. Aspect NE

No photograph taken

Bare ground 25%

Litter: leaves 15%, branches 15%

SPECIES	% COVER
<i>Acacia aneura</i>	20
<i>Acacia exocarpoides</i>	1
<i>Acacia jibberdingensis</i>	20
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	5
<i>Drummondita hassellii</i>	10
<i>Eremophila clarkei</i>	1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	5
<i>Eucalyptus leptopoda</i>	10
<i>Goodenia beardiana</i>	<1
<i>Hibbertia arcuata</i>	1
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	5
<i>Philothea sericea</i>	45
<i>Rhodanthe citrina</i>	1
<i>Xanthosia bungei</i>	5

Flora and Vegetation of Blue Hills, Karara Station

RELEVÉE BHR4

489351E : 6776253N

Red loam with scattered small BIF rock on the surface

Topography: lower slope

No photograph taken

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	1
<i>Acacia jibberdingensis</i>	7
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2
<i>Calotis hispidula</i>	2
* <i>Erodium botrys</i>	1
<i>Goodenia occidentalis</i>	1
<i>Mirbelia</i> sp. Paynes Find	1
<i>Philothea sericea</i>	1
<i>Podolepis lessonii</i>	1
<i>Thryptomene racemulosa</i>	50
<i>Trachymene ornata</i>	5
<i>Velleia rosea</i>	1
<i>Waitzia acuminata</i> var. <i>acuminata</i>	1

RELEVÉE BHR5

486335 : 6776640

Red silty clay

Flat below hills



Bare ground 35%

Litter: leaves 50%, branches 20%, logs 20%

RELEVÉE BHR5 (cont.)

SPECIES	% COVER
<i>Acacia burkittii</i>	1
<i>Acacia exocarpoides</i>	<1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	10
<i>Acacia tetragonophylla</i>	2
<i>Austrostipa trichophylla</i>	<1
<i>Calandrinia eremaea</i>	<1
<i>Chenopodium</i> sp.	3
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	<1
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	80
<i>Maireana georgei</i>	<1
<i>Pimelea spiculigera</i>	5
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	15
<i>Scaevola spinescens</i>	2
<i>Senna charlesiana</i>	<1
<i>Senna</i> sp. Austin	5
<i>Zygophyllum ovatum</i>	<1
<i>Angianthus tomentosus</i>	Opportunistic
<i>Austrostipa elegantissima</i>	Opportunistic
<i>Calocephalus multiflorus</i>	Opportunistic
<i>Exocarpos sparteus</i>	Opportunistic
<i>Gilruthia osbornei</i>	Opportunistic
<i>Goodenia beardiana</i>	Opportunistic
<i>Hakea recurva</i>	Opportunistic
<i>Helichrysum craspedioides</i>	Opportunistic
<i>Lobelia winfridiae</i>	Opportunistic
<i>Maireana thesioides</i>	Opportunistic
<i>Ptilotus exaltatus</i>	Opportunistic
<i>Stenopetalum filifolium</i>	Opportunistic
<i>Velleia rosea</i>	Opportunistic
<i>Waitzia acuminata</i> var. <i>acuminata</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

RELEVÉE BHR6

486535E : 6776279N

Red loam in amongst large outcropping BIF

Topography: upper slope

Aspect N



Bare ground 80%

Litter: leaves 5%, branches 15%. Logs 5%

RELEVÉE BHR6 (cont.)

SPECIES	% COVER
<i>Acacia aneura</i>	5
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	20
<i>Acacia exocarpoides</i>	5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	5
<i>Arthropodium dyeri</i>	<1
<i>Austrodanthonia caespitosa</i>	<1
<i>Calycopeplus pauciflorus</i>	2
<i>Cheilanthes sieberi</i>	3
<i>Dodonaea inaequifolia</i>	<1
<i>Eremophila clarkei</i>	5
<i>Eremophila latrobei</i> var. <i>latrobei</i>	<1
<i>Gunniopsis glabra</i>	<1
<i>Lawrencella rosea</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
<i>Melaleuca nematophylla</i>	20
<i>Micromyrtus racemosa</i> var. <i>racemosa</i>	2
<i>Mirbelia</i> sp. Paynes Find	1
* <i>Pentaschistis airoides</i>	<1
<i>Philothea brucei</i>	5
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1
<i>Santalum spicatum</i>	5
<i>Sida calyxhymenia</i>	<1
<i>Velleia rosea</i>	5
<i>Xanthosia bungei</i>	1
<i>Calocephalus multiflorus</i>	Opportunistic
* <i>Mesembryanthemum nodiflorum</i>	Opportunistic
<i>Minuria cunninghamii</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

RELEVÉE BHR7

485586E : 6775924N

Red silty loam with small BIF pebbles on the ground

Topography flat



Bare ground 5%

Litter: leaves 70%, branches 15%, logs 10%

RELEVÉE BHR7 (cont.)

SPECIES	% COVER
<i>Acacia multispicata</i>	1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	<1
<i>Acacia tetragonophylla</i>	<1
<i>Austrostipa elegantissima</i>	2
<i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>	75
<i>Maireana carnosa</i>	<1
<i>Maireana georgei</i>	5
<i>Maireana thesioides</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	5
<i>Pimelea spiculigera</i>	2
<i>Ptilotus exaltatus</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Rhagodia eremaea</i>	1
<i>Scaevola spinescens</i>	1
<i>Acacia acuminata</i>	Opportunistic
<i>Angianthus tomentosus</i>	Opportunistic
<i>Austrostipa nitida</i>	Opportunistic
<i>Calandrinia eremaea</i>	Opportunistic
<i>Cephalopterum drummondii</i>	Opportunistic
<i>Genphosis tenuissima</i>	Opportunistic
<i>Gilruthia osbornei</i>	Opportunistic
<i>Isotoma petraea</i>	Opportunistic
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	Opportunistic
<i>Sclerolaena fusiformis</i>	Opportunistic
<i>Senna charlesiana</i>	Opportunistic
<i>Velleia cyptopotamica</i>	Opportunistic
<i>Zygophyllum ovatum</i>	Opportunistic

RELEVÉE BHR7

489667E : 6774236N

Red silty loam with scattered small pebbles

Flat at southern end of lease



Bare ground 40%

Litter: leaves 20%, branches 15%

RELEVÉE BHR8 (cont.)

SPECIES	% COVER
<i>Cephalopterum drummondii</i>	<1
<i>Cryptandra imbricata</i>	<1
<i>Dianella revoluta</i>	<1
<i>Eremophila clarkei</i>	<1
<i>Eucalyptus kochii</i> subsp. <i>plenissima</i>	50
<i>Maireana carnosa</i>	<1
<i>Maireana planifolia</i>	<1
<i>Minuria cunninghamii</i>	<1
* <i>Pentaschistis airoides</i>	<1
<i>Pimelea spiculigera</i>	<1
<i>Ptilotus exaltatus</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1
<i>Rhagodia eremaea</i>	2
<i>Rhyncharrhena linearis</i>	<1
<i>Senna artemisioides</i> subsp. <i>artemisioides</i>	1
<i>Solanum cleistogamum</i>	<1
<i>Zygophyllum ovatum</i>	<1
<i>Austrodanthonia caespitosa</i>	Opportunistic
<i>Bromus hordeaceus</i>	Opportunistic
<i>Cuscuta australis</i>	Opportunistic
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Opportunistic
<i>Eucalyptus ewartiana</i>	Opportunistic
<i>Lawrencella davenportii</i>	Opportunistic
<i>Lepidium oxytrichum</i>	Opportunistic
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	Opportunistic
<i>Stenopetalum filifolium</i>	Opportunistic

RELEVÉE BHR9

490550E : 6773777N

Red sandy loam with small BIF pebbles scattered on the surface

Topography flat



Bare ground 60%

Litter: leaves 5%, branches 20%

RELEVÉE BHR9 (cont.)

SPECIES	% COVER
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	25
<i>Austrostipa nitida</i>	<1
<i>Calocephalus multiflorus</i>	<1
<i>Eremophila clarkei</i>	2
<i>Eucalyptus ewartiana</i>	10
<i>Eucalyptus kochii</i> subsp. <i>plenissima</i>	10
<i>Gilruthia osbornei</i>	<1
<i>Hakea recurva</i>	<1
<i>Maireana carnosa</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
<i>Minuria cunninghamii</i>	<1
<i>Ptilotus exaltatus</i>	<1
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Scaevola spinescens</i>	<1
<i>Stenopetalum filifolium</i>	<1
<i>Velleia rosea</i>	<1
<i>Acacia aneura</i>	Opportunistic
<i>Acacia jibberdingensis</i>	Opportunistic
<i>Acacia multispicata</i>	Opportunistic
<i>Acacia tetragonophylla</i>	Opportunistic
<i>Cryptandra imbricata</i>	Opportunistic
<i>Daviesia divaricata</i>	Opportunistic
<i>Rhyncharrhena linearis</i>	Opportunistic
<i>Sclerolaena diacantha</i>	Opportunistic

RELEVÉE BHR10

4891198E : 6776156N

**Red loam with dense BIF rocks loose on surface
Lower slope. Aspect S**



Bare ground 50%

Litter: leaves 40%, branches 20%

RELEVÉE BHR10 (cont.)

SPECIES	% COVER
<i>Acacia assimilis</i> subsp. <i>assimilis</i>	1
<i>Acacia exocarpoides</i>	1
<i>Acacia jibberdingensis</i>	50
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	1
<i>Agrostis avenacea</i> var. <i>avenacea</i>	<1
<i>Cephalopterum drummondii</i>	2
<i>Cheilanthes sieberi</i>	10
<i>Crassula colorata</i> subsp. <i>acuminata</i>	<1
<i>Eremophila latrobei</i> var. <i>latrobei</i>	1
* <i>Erodium botrys</i>	5
<i>Gilruthia osbornei</i>	<1
<i>Hibbertia arcuata</i>	1
<i>Lawrencella davenportii</i>	<1
<i>Lobelia winfridiai</i>	<1
<i>Melaleuca nematophylla</i>	1
<i>Philothea brucei</i>	1
<i>Philothea sericea</i>	30
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>	1
<i>Senna charlesiana</i>	1
<i>Stenopetalum filifolium</i>	<1
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	5
<i>Waitzia acuminata</i> var. <i>acuminata</i>	10
<i>Allocasuarina dielsiana</i>	Opportunistic
<i>Calycopeplus pauciflorus</i>	Opportunistic
<i>Grevillea obliquistigma</i>	Opportunistic
<i>Melaleuca leiocarpa</i>	Opportunistic
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	Opportunistic

Flora and Vegetation of Blue Hills, Karara Station

RELEVÉE BHR11

487507E : 6776319N

Silty loam with scattered pebbles.

Topography flat



Bare ground 70%

Litter: leaves 10%, branches 15%

RELEVÉE BHR11 (cont.)

SPECIES	% COVER
<i>Acacia acuminata</i>	10
<i>Acacia anthochaera</i>	5
<i>Acacia burkittii</i>	10
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	5
<i>Acacia tetragonophylla</i>	<1
<i>Austrostipa nitida</i>	1
<i>Calocephalus multiflorus</i>	<1
<i>Cheilanthes sieberi</i>	5
<i>Cuscuta australis</i>	<1
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	<1
<i>Eremophila clarkei</i>	1
<i>Gilruthia osbornei</i>	<1
<i>Hakea recurva</i>	2
<i>Maireana carnosae</i>	<1
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<1
<i>Monachather paradoxa</i>	<1
<i>Olearia pimeleoides</i>	1
<i>Olearia stuartii</i>	5
<i>Persoonia pentasticha</i>	<1
<i>Plantago hispida</i>	<1
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<1
<i>Rhagodia eremaea</i>	1
<i>Schoenia cassiniana</i>	5
<i>Solanum nummularium</i>	<1
<i>Stenopetalum filifolium</i>	<1
<i>Trachymene ornata</i>	<1
<i>Velleia rosea</i>	10
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Calandrinia primuliflora</i>	Opportunistic
<i>Cryptandra</i> sp.	Opportunistic
* <i>Erodium botrys</i>	Opportunistic
<i>Exocarpos sparteus</i>	Opportunistic
<i>Helichrysum craspedioides</i>	Opportunistic
<i>Melaleuca uncinata</i>	Opportunistic
<i>Pentaschistis airoides</i>	Opportunistic
<i>Santalum acuminatum</i>	Opportunistic
<i>Senna artimisioides</i> subsp. <i>filifolia</i>	Opportunistic

RELEVÉE BHR12

487100E : 6776945N

Loam with scattered rocks on the surface

Topography: middle slope



Bare ground 40%

Litter: leaves 40%, branches 20%

RELEVÉE BHR12 (cont.)

SPECIES	% COVER
<i>Acacia burkittii</i>	20
<i>Acacia longiphylloidea</i>	1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	20
<i>Acacia tetragonophylla</i>	1
<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>	5
<i>Austrostipa trichophylla</i>	<1
<i>Comesperma integerrimum</i>	<1
<i>Hibbertia arcuata</i>	1
<i>Leucopogon breviflorus</i>	1
<i>Lobelia winfridaea</i>	<1
<i>Melaleuca leiocarpa</i>	20
<i>Melaleuca uncinata</i>	20
* <i>Pentaschistis airoides</i>	<1
<i>Philotheca brucei</i>	5
<i>Schoenia cassiniana</i>	5
<i>Thryptomene mucromulata</i>	1
<i>Velleia rosea</i>	5
<i>Wahlenbergia preissii</i>	<1
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Wrixonia prostanthoides</i>	5
<i>Arthropodium dyeri</i>	Opportunistic
<i>Cheilanthes sieberi</i>	Opportunistic
<i>Dianella revoluta</i>	Opportunistic
<i>Eremophila clarkei</i>	Opportunistic
<i>Goodenia beardiana</i>	Opportunistic

RELEVÉE BHR13

487120E : 6776793N

Red loam with scattered pebbles

Topography: lower slope. Aspect S



Bare ground 30%

Litter: leaves 10%, branches 30%

RELEVÉE BHR13 (cont.)

SPECIES	% COVER
<i>Acacia longiphylloidea</i>	5
<i>Acacia multispicata</i>	60
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	1
<i>Angianthus tomentosus</i>	5
<i>Cheilanthes sieberi</i>	10
<i>Dianella revoluta</i>	<1
<i>Eremophila clarkei</i>	1
<i>Erodium botrys</i>	<1
<i>Eucalyptus ewartiana</i>	5
<i>Goodenia occidentalis</i>	<1
<i>Helichrysum craspedioides</i>	20
<i>Melaleuca nematophylla</i>	5
<i>Melaleuca uncinata</i>	1
<i>Persoonia pentasticha</i>	<1
<i>Philothea brucei</i>	5
<i>Podolepis lessonii</i>	5
<i>Prostanthera patens</i>	<1
<i>Rhyncharhena linearis</i>	<1
<i>Sarcostemma australis</i>	1
<i>Schoenia cassiniana</i>	15
<i>Thryptomene mucronulata</i>	2
<i>Thryptomene racemulosa</i>	<1
<i>Trachymene ornata</i>	5
<i>Velleia rosea</i>	25
<i>Waitzia acuminata</i> var. <i>acuminata</i>	5
<i>Acacia aneura</i>	Opportunistic

APPENDIX E

Location of Priority Flora

Flora and Vegetation of Blue Hills, Karara Station

SPECIES	LOCATION	NUMBER OF PLANTS
<i>Cryptandra imbricata</i>	488915E : 6776128N (BHQ8)	<10
	488412E : 6775982N (BHQ9)	<10
<i>Persoonia pentasticha</i>	489912E : 6776981N (BHQ5)	<10
	487630E : 6776317N (BHQ13)	<10
	488902E : 6774475N (BHQ20)	<10
	486513E : 6776904N (BHQ22)	<10
	489851E : 6774208N (BHQ27)	<10
	489463E : 6776579N (BHR1)	<10
	487507E : 6776319N (BHR11)	<10
	487120E : 6776793N (BHR13)	<10
<i>Stenanthemum poicilum</i>	490203E : 6776600N (BHQ3)	Ca 5

Additional locations recorded by Western Australian Herbarium (2004)

Cryptandra imbricata

Birnerbinmah Station, NW Paynes Find
 Mount Gibson
 Wuraga Road, 700m N junction Morawa-Yalgoo Road
 9.4km N Paynes Find
 12.5km N Paynes Find
 50 miles SW Paynes Find
 45 miles N of Mullewa

Persoonia pentasticha

Whitewells Station
 East Yuna Nature reserve
 Mount Gibson Station
 West Perenjori Nature Reserve
 SE Reserve 40161, East of Morawa
 Oudabunna Station
 210 mile peg N from Wubin
 Carranya property, 15km NW Morawa
 Old Pindar Road
 Reserve 16491
 Camel Soak, E of Perenjori
 6miles from Mullewa towards Pindar
 6km NNE of Pedan Rocks

Stenanthemum poicilum

Wilroy
 12 km E Jasper Hill
 Wilroy Reserve 16km SSE Mullewa
 Canna
 Between Mullewa and Morawa