

## **Alacer Gold Corporation**

Location Lease 48 & 50

# LEVEL 2 FLORA AND VEGETATION SURVEY

September 2012



Prepared for:

Prepared by: Native Vegetation Solutions



Final January 2013



#### **EXECUTIVE SUMMARY**

Alacer Gold Corporation (AQG) is a publicly listed company with gold interests in its South Kalgoorlie Operations in the Coolgardie Region of Western Australia. The Location Lease 48 & 50 project is located approximately 570kms east of Perth, and 26 km south of Kalgoorlie.

The Location Lease 48 & 50 project area is freehold land, and also includes mining tenement M26/224. This report makes up part of an application for clearing permit by AQG, with intentions to conduct exploration activities within this area.

The survey area, for the purposes of this report, encompasses the above mentioned sites totalling 8,260ha.

The Location Lease 48 & 50 project area is located in the Coolgardie Botanical District of Beard (1990). The Coolgardie Botanical District is dominated by eucalypt woodlands, eucalypt open woodlands in the east, other shrublands, heath, acacia shrublands, chenopod and samphire shrublands, mallee woodlands and shrublands. There are small areas of acacia forests and woodlands and hummock grasslands occur in the north (ANRA, 2012).

The search undertaken with the Environment Protection and Biodiversity Conservation's (EPBC's) Protected Matters Search Tool reported that no Threatened Ecological Communities (TEC's) were present in the region (DSEWPC, 2012a).

The Department of Environment and Conservation (DEC) database searches revealed no Priority Flora species, and no threatened species occurring within a 1km buffer of the survey area (DEC, 2012b).

However, three Priority Flora were recorded during the flora survey; *Astartea sp* Red Hill (P1), *Melaleuca coccinea* (P3) and *Angianthus prostratus* (P3). These species are mainly located on hill systems and salt lakes.

The Priority Ecological Community and Threatened Ecological Community (PEC & TEC) search revealed that the survey area contains no PEC's or TEC's (DEC, 2012a)

The survey area does not lie within or contain any Environmentally Sensitive Areas (ESA's) or Conservation Reserves (DEC, 2012).

No wetlands which are recorded on the DAFWA WetlandBase occur within the survey area (DAFWA, 2012a).

The survey area lies south of the 26<sup>th</sup> parallel, however receives average annual rainfall between 236mm and 250mm (BoM, 2012), below the 400mm threshold mark. There is no record of *Phytophthora cinnamomi* establishing in natural ecosystems in regions receiving <400mm rainfall per annum (CALM, 2003). Therefore Dieback is not considered an issue for this survey area, however all measures should be taken to prevent any possible soil contamination which poses a risk within the survey area during seasonally favourable conditions.

Nineteen vegetation groups were described during this survey, largely following topographical features. Mapping of the vegetation groups, as well as the quadrat locations can be seen in Appendix D.

Two Hundred and Nine species were recorded within the survey area with 198 species recorded within quadrats. One hundred and five genera and 35 families were found. These are listed in Appendix E, per Quadrat as well as per vegetation group. Of the native species, Chenopodiaceae had the highest representation, with 33 species from 11 genera, dominated by *Maireana*. Asteraceae was the next best represented family with 31 species from 21 genera

Of the 209 taxa recorded there were fifteen introduced weed species; Carrichtera annua (Wards Weed), Cotula bipinnata, Dittrichia graveolens (stinkwort), Hainardia cylindrica (common barbgrass), Lysimachia arvensis (Pimpernel), Medicago minima (Goldfields medic), Mesembryanthemum nodiflorum (Ice plant), Oncosiphon suffruticosum (Calomba daisy), Portulaca oleracea (Purslane), Rostraria pumila, Salvia verbenaca (Wild Sage), Sisymbrium runcinatum, Sonchus oleraceus (Sowthistle), and Vellereophyton dealbatum (white cudweed). Weeds species were recorded within 13 of the 48 quadrats. Xanthium spinosum is a P3 declared weed and was found in 2 quadrats.

Vegetation in the area has been subjected to grazing and exploration activities.

According to Keighery (1994), most of the sites/quadrats inspected were in Good to Very Good condition (Appendix A). There were existing vehicle tracks in some areas, due to mine exploration activities. The vegetation more than 0.5m off these tracks was mostly in a Very Good condition (Keighery 1994).

The Environmental Protection Authority's (EPAs) objective for flora and vegetation is to maintain the abundance, species diversity and geographical distribution of flora and vegetation as well as protect Threatened flora consistent with the provisions of the *Wildlife Conservation Act 1950*.

The proposed clearing of vegetation will result in the loss of some individuals from the local area; however, the impact will not be great enough to remove whole communities or populations. Most of the species and communities recorded during this survey are widespread throughout the Coolgardie Bioregion and therefore the loss of a small proportion from this area will not be significant.

It is recommended that clearing be avoided in vegetation groups containing Priority Flora as well as the areas where Priority Flora were recorded in this survey. If avoidance is not possible then a permit to destroy should be sought from the DEC. The DEC will require information regarding the nature of the disturbance and the effect on that local population as well as the effect on the region conservation significance of that species.

This report summarises the results of the first stage of the Level 2 survey. It is not deemed necessary to conduct a second stage follow up survey as the results of a previous survey by Western Botanical in a different season was incorporated into this report.



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#### 1 INTRODUCTION

#### 1.1 BACKGROUND

Alacer Gold Corporation (AQG) is a publicly listed company with gold interests in its South Kalgoorlie Operations in the Coolgardie Region of Western Australia. The Location Lease 48 & 50 project is located approximately 570kms east of Perth, and 26 km south of Kalgoorlie (Figure 1).

The Location Lease 48 & 50 project area is freehold land, and also includes mining tenement M26/224. This report makes up part of an application for clearing permit by AQG, with intentions to conduct exploration activities within this area.

The survey area, for the purposes of this report, encompasses the above mentioned sites totalling 8,260ha.

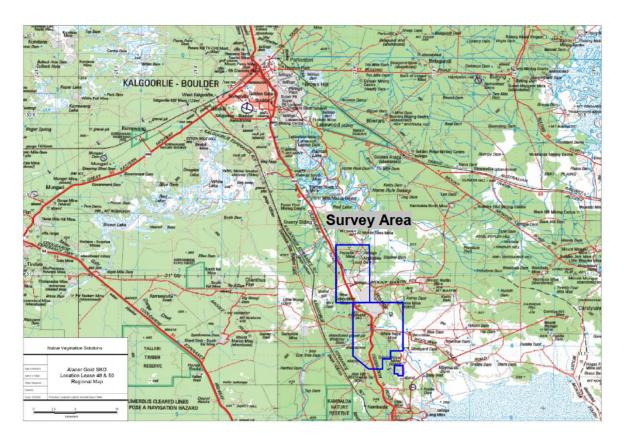


Figure 1: Position of the Location Lease 48 & 50 project

#### 1.2 PURPOSE AND SCOPE

A Level 1 Flora Survey was previously completed by Western Botanical in 2003-04 (WB, 2003-04). This Level 2 report expands on the Level 1 Flora survey and was aimed at targeting specific areas of disturbance with a greater intensity of survey effort via quadrat sampling.

The objective of this report is to document the results of the flora and vegetation component of a Level 2 assessment conducted in accordance with the Environmental Protection Authority's



(EPA) "Terrestrial Biological Surveys as an Element of Biodiversity Protection; Position Statement No. 3" (EPA, 2002) and Guidance Statement No. 51 "Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA 2004), for the purpose of describing the flora and vegetation of the survey area, and potential impacts on the environment from the Location Lease 48 & 50 project area.



#### 2 EXISTING ENVIRONMENT

#### 2.1 CLIMATE

Typically the climate is characterised as being arid to semi-arid Mediterranean with mainly winter rainfall as well as summer thunderstorms. The area receives approximately 250-300mm of rainfall per year (Beard, 1990; CALM, 2002). The nearest official meteorological weather station with the most complete and up to date information is Kalgoorlie-Boulder Airport, which is located approximately 26 km north of the survey area.

#### 2.1.1 Temperature

Mean annual minimum temperature at Kalgoorlie is 11.7°C and mean annual maximum temperature is 25.2°C. The coldest temperatures occur in July (mean minimum temperature 5.0°C), the hottest is January (mean maximum temperature 33.7°C) and diurnal temperature variations are relatively consistent throughout the year (Figure 2).

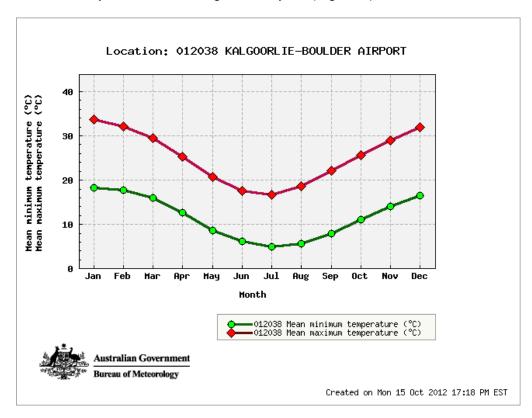


Figure 2: Mean temperature ranges for Kalgoorlie-Boulder weather station

#### 2.1.2 Rainfall

The annual average rainfall at Kalgoorlie is 265.3mm over an average 39.9 rain days. Average rainfall varies across the months, with slightly larger rainfall events falling between January to March and May to July (Figure 3), and the least rainfall received in September. Rainfall for 2012 was more than twice the average for March, and July also received average rainfall levels. All other months recorded below average levels. April has been the driest month for 2012.



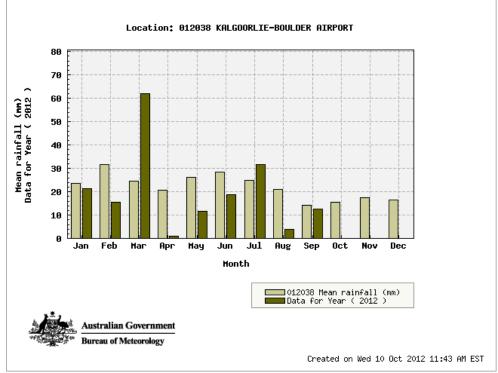


Figure 3: Rainfall data for the Kalgoorlie Boulder Meteorological Station

#### 2.2 INTERIM BIOGEOGRAPHIC REGIONALISATION OF AUSTRALIA (IBRA) REGION

The IBRA recognises 89 bioregions within Australia and 419 subregions (DSEWPC, 2012). The project is located in the Eastern Goldfields IBRA subregion (COO3) which totals over 5.1 million hectares (CALM, 2002). The Coolgardie 3 subregion lies on the 'Eastern Goldfields Terrains'. The relief is subdued and comprises of gently undulating plains interrupted in the west with low hills and ridges of Archaean greenstones and in the east by a horst of Proterozoic basic granulite. The underlying geology is of gneisses and granites eroded into a flat plane covered with tertiary soils and with scattered exposures of bedrock. Calcareous earths are the dominant soil group and over much of the plains and greenstone areas. A series of large playa lakes in the western half are the remnants of an ancient major drainage line.

The dominant land uses of the COO3 subregion are: UCL and Crown reserves, Grazing-Native pastures-leasehold (37.8%), freehold (7.15%), conservation, mining leases (CALM, 2002).

#### 2.3 LANDFORMS AND SOILS

This bioregion consists of granite rocky outcrops, low greenstone hills, laterite uplands and broad plains. There are no major rivers or creeks within the bioregion. Numerous salt lakes of varying size occur across the region (ANRA, 2012).

The soils of the COO3 IBRA region are summarised above. Beard (1990) describes the soil types as: principally brown calcareous earths, with sandplains in the western part and some large playa lakes.

#### 2.4 BOTANICAL DISTRICTS AND EXISTING VEGETATION

The Location Lease 48 & 50 project area is located in the Coolgardie Botanical District of Beard (1990). The Coolgardie Botanical District is dominated by eucalypt woodlands, eucalypt open woodlands in the east, other shrublands, heath, *Acacia* shrublands, chenopod and samphire



shrublands, mallee woodlands and shrublands. There are small areas of *Acacia* forests and woodlands, and hummock grasslands occur in the north (ANRA, 2012).

Within the Coolgardie Botanical District, the Eastern Goldfields subregion is comprised of Mallees, *Acacia* thickets and shrubheaths on sandplains. Diverse *Eucalyptus* woodlands occur around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire. Woodlands and *Dodonaea* shrubland occur on basic granulites of the Fraser Range. The area is rich in endemic *Acacia*'s (CALM 2002).

The Goldfields Woodlands is a centre of endemism and includes exceptionally high diversity of *Eucalyptus* species with as many as 170 species occurring in the bioregion. The COO3 subregion also has high diversity in *Acacia* species, as well as ephemeral flora communities of tertiary sandplain shrublands and of valley floor woodlands (CALM, 2002).



#### 3 METHODS

#### 3.1 LEVEL OF SURVEY

The survey was conducted in accordance with EPA's Position Statement No. 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection (EPA, 2002) and Guidance for the Assessment of Environmental Factors No. 51: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2004).

In designing this survey, note was taken of Tables 2 and 3 of EPA Guidance Statement 51 (pp 39-45). Using the Table 3 criterion on 'Size/scale of the proposal/impact' it is determined that the impact of this mining proposal is High, although other criteria (for example 'Degree of degradation or clearing within region' and 'Rarity of vegetation') may mitigate this to Low impact. This survey, however, is designed to accommodate the High impact and as such, in the Eastern Goldfields subregion, a Level 2 survey is required.

The flora and vegetation aspect of a Level 2 study has two components:

- 1a. Desktop study which includes a literature review and a search of the relevant databases; and
- 1b. Reconnaissance survey of the subject area to: verify the desktop survey, undertake low impact sampling, define flora and vegetation values present in the area, and to determine potential sensitivity to impact. These together comprise a Level 1 survey (Completed in Feb 2004).

and

- 2a. Detailed survey, comprising multiple visits in different seasons and replication of plots in vegetation units incorporating greater coverage than a reconnaissance survey; and
- 2b. Comprehensive survey when necessary to: enhance the level of knowledge at the locality or sub-regional scale, in order to provide wider context for the local scale.

Therefore, the scope of work for the flora and vegetation survey was to:

- Conduct a desktop study that includes a literature review and search of relevant databases;
- Conduct a plot-based survey of the proposed area of impact;
- Prepare an inventory of species occurring in the study area;
- Identify any conservation significant vegetation or flora within the study area;
- Provide an impact risk assessment for both threatening processes and for flora of conservation significance; and
- Provide recommendations, including the management of perceived impacts to flora and vegetation, particularly flora of conservation significance, within the study area.

#### 3.2 PRELIMINARY DESKTOP STUDY

A preliminary assessment of the survey area and its potential constraints was undertaken by reviewing a number of government agency managed databases and consulting where necessary. The following sections provide a summary of the methodology used for each potential environmental aspect associated with the survey area.

#### 3.2.1 EPBC Protected Matters Search Tool

A search was completed on the EPBC Protected Matters Search website for known records of important environmental significance (DSEWPC, 2012a).



#### 3.2.2 Threatened Flora and Communities

The Species and Communities Branch of the DEC was contacted for a search of their databases containing known populations of threatened flora (Reference: 52-1012FL, DEC, 2012b).

The presence of TECs & PECs was determined by examining Geographic Information System (GIS) data supplied by the DEC upon request. (Reference: 58-1012EC, DEC, 2012a).

#### 3.2.3 Environmentally Sensitive Areas and Conservation Reserves

DEC's Native Vegetation Map Viewer was used to determine the location of any ESA's (http://maps.dec.wa.gov.au/idelve/nv/index.jsp).

The location of any Conservation Reserves was determined by examining Geographical Information System (GIS) data available from the DEC website and consulting with the local DEC office where necessary.

#### 3.2.4 Vegetation Type, Extent and Status

Vegetation extent and status data was sourced from the Department of Agriculture and Food (DAFWA) report "Land-Use and Vegetation in Western Australia- National Land and Water Resources Audit Report" and its associated GIS file.

Note: This data was provided to Native Vegetation Solutions via a license agreement with the DAFWA.

#### 3.2.5 Wetlands

The location of wetlands within the survey area was determined by examining DAFWA's Wetland Base (<a href="http://spatial.agric.wa.gov.au/wetlands/">http://spatial.agric.wa.gov.au/wetlands/</a>).

#### 3.2.6 Dieback

Dieback is only considered a potential issue if both the mean annual rainfall of the area is >400mm, and if the project area resides below the 26<sup>th</sup> parallel.



#### 3.3 FIELD SURVEY

The first stage of the field survey was conducted by Mr. Eren Reid and Miss. Ashley Owen, Botanists of NVS, from the 3<sup>rd</sup> - 7<sup>th</sup> of September and the 9<sup>th</sup> of October 2012.

#### 3.3.1 Field Methods

Prior to the field work, the aerial photography was examined in conjunction with vegetation mapping completed in the Level 1 survey (NVS, 2011), and representative sample sites for quadrats were chosen to provide coverage over all viable vegetation types. Nineteen sites were chosen by this method.

In the field, these sites were visited and 20 x 20m quadrats established in appropriate locations, taking into account representativeness of the site to surrounding vegetation and vegetation boundaries.

Each quadrat was marked in all corners with a 97cm aluminium fence dropper and was defined by tape measures. The location of the north-west corner was captured on a TwoNav Aventura GPS at ±4m accuracy, using Universal Transverse Mercator location on GDA94 datum. Digital photographs were taken of each site.

Data collected at each site included:

- Species Present;
- Topography;
- Rock Type;
- Soil Colour and Type;
- Aspect;
- % Bare Ground and Litter;
- · Disturbance Level; and
- Condition.

As well as a complete list of all species encountered, the average height and estimated coverage of the species making up the three stratum levels (Tallest, Mid and Lower) was recorded.

Specimens of taxa not recognised by the Botanists were collected and pressed along with specimens of taxa recognised as, or thought to be, conservation-significant species.

The condition of each quadrat was assessed using the method developed by Keighery (1994). Definitions of the condition scale are presented in Appendix A.

#### 3.3.2 Post-Field Methods

Specimens were identified by a consultant Botanist Frank Obbens and Sharnya Thomson with reference to published keys and samples held in the Reference Section of the WAHERB.

Species information was transferred into Microsoft Excel® worksheets in preparation for PATN analysis, via Bray and Curtis Flexible UPGMA, as well as input into a computer program which generates a species accumulation curve.

#### 3.4 PERSONNEL AND REPORTING

The following personnel were involved in the preparation of this report:

- Mr Eren Reid (*BSc- Biological Science*), Principal Botanist of NVS, planned and conducted the survey and reviewed the report;
- Miss Ashley Owen (Dip of Science), Botanist/Consultant of NVS, conducted the survey and prepared the report;



- Mr Frank Obbens (BSc), Consultant Botanist/Plant Taxonomist, undertook identification
  of unknown specimens collected during fieldwork; and
- Miss Sharnya Thomson (*BSc*), Consultant Senior Botanist/Plant Taxonomist, undertook identification of unknown specimens collected during fieldwork.

#### 3.5 LICENCE AND PERMITS

Flora was collected for identification under the Scientific Collection License SL010071 held by Miss A. Owen with expiry 28/06/2013.

#### 3.6 NOMENCLATURE AND TAXONOMY

Nomenclature follows that used by the WAHERB.

Recently the WAHERB has updated its sequence and arrangement of collections to conform to the systematic sequence of the Angiosperm Phylogeny Group (APGIII), with the result that many Families and Genera have been moved or renamed. This report attempts to follow those changes in relation to species recorded during this survey. Definitions of Threatened Flora are also included in Appendix B.

#### 3.7 LIMITATIONS

A number of limitations are suggested by the EPA (2004) as potentially impacting on the completeness or accuracy of surveys such as these. Table 1 lists these and addresses them in terms of their constraint on this survey.

Table 1: Summary of possible Flora and Vegetation Survey limitations

Possible Limitation	Constraint	Comment
		Experienced and competent personnel conducted the
Competency/experience of the		survey. Eren Reid has over 7 years experience in
consultant carrying out the		botanical surveys throughout the Goldfields and over a
survey	No	variety of environments across Western Australia.
Scope	No	The Scope of work was adequately defined.
		All taxa not identified in the field were collected and
	No	pressed, and later identified by a consultant Botanist at
Proportion of flora identified,	NO	the WAHERB. See also Species Accumulation Curves in
recorded and/or collected		section 4.2.2.2.
		Information on flora and vegetation of the region and
		local area was available from publicly available
Sources of information	No	databases, books and reports.
Proportion of the task achieved	No	All tasks completed.
		The survey was undertaken in September 2012. Rainfall
		averages were exceeded in July and lower in May, June
		and August. However, the survey was undertaken in
		Spring, with many perennials in flower, and annuals
Timing/season	No	present and flowering.
		Disturbance from grazing, exploration and historic mining
		activities was apparent in the survey area. However, the
		structural dominants of the vegetation persist and, the
Disturbance in survey area	No	vegetation remains in Good to Very Good condition.
		The intensity of the survey is sufficient to provide
Intensity of survey effort	No	adequate coverage and recognition of vegetation units.
Resources	No	Adequate resources were available.
Remoteness and/or access		All the areas in need of survey were easily accessible
problems	No	from existing tracks, or by foot.
Availability of contextual		Contextual information regarding vegetation and flora
information for the region`	No	around the Gascoyne is readily available.



#### 4 RESULTS

#### 4.1 PRELIMINARY DESKTOP ASSESSMENT

#### 4.1.1 EPBC Protected Matters Search Tool

The search undertaken with the EPBC's Protected Matters Search Tool reported that no TECs were present in the region (DSEWPC, 2012a). The search also revealed that the survey area may contain habitat for the invasive weed species *Carrichtera annua* (Ward's Weed).

The threatened species, Gastrolobium graniticum, was listed as potentially occurring in the area.

Results of the EPBC Protected Matters Search Tool are included in Appendix C.

#### 4.1.2 Threatened Flora and Communities

The DEC database searches revealed no known occurrences of Priority Flora species, and no threatened species occurring within a 1km buffer of the survey area (DEC, 2012b). A 1km buffer search area was used on the survey area as the survey area was quite large.

The TEC/PEC search (DEC, 2012a) revealed that the survey area (with a 10km buffer) contains no TEC/PEC listed locations.

#### 4.1.3 Environmentally Sensitive Areas and Conservation Reserves

The survey area does not lie within or contain any ESA's or Conservation Reserves (DEC, 2012).

#### 4.1.4 Vegetation Type, Extent and Status

Information relating to known vegetation within the survey area has been summarised in Table 2, 3 and 4 below. This information has been compiled through both desktop assessments and the field survey.



Table 2: Summary of information regarding Pre-European and current vegetation extent of vegetation association 9 within the survey area

Factor	Value					
Beard Vegetation Association**	9					
Vegetation Association Description*  Medium woodland; coral gum (E. torquata) & Goldfields blackbutt (E. lesouefii) (also some E. transcontinentalis, and E. flocktoniae)						
	Scale					
Extent (ha)	By Association*	By Association**	By IBRA Region** (Coolgardie- COO)	By IBRA Sub- region** (Eastern Goldfields- COO3)	By Shire** (Shire of Coolgardie)	
	244,735	240,614	240,647	235,247	166,717.56	
% Pre-European Extent Remaining*	100.00%	100.00%	100.00%	100.00%	100.00%	
Surrounding Land Use***	Pasture Grazing, Exploration and Mining					
Weed prevalence***	Low					

<sup>\*</sup> Source: Shepherd et al. (2002) Appendix 2

Table 3: Summary of information regarding Pre-European and current vegetation extent of vegetation association 221 within the survey area

Factor	Value					
Beard Vegetation Association**	221					
Vegetation Association Description*  Succulent steppe; saltbush						
	Scale					
Extent (ha)	By Association*	By Association**	By IBRA Region** (Coolgardie- COO)	By IBRA Sub- region** (Eastern Goldfields- COO3)	By Shire** (Shire of Coolgardie)	
	58,600	63,797	19,511	17,708	1,004	
% Pre-European Extent Remaining*	100.00%	100.00%	100.00%	100.00%	100.00%	
Surrounding Pasture Grazing, Exploration and Mining Land Use***						
Weed Low prevalence***				_		

<sup>\*\*</sup>Source: Shepherd *et al.* (2002) Associated GIS data \*\*\*Source: Field Assessment

<sup>\*</sup> Source: Shepherd *et al.* (2002) Appendix 2 \*\*Source: Shepherd *et al.* (2002) Associated GIS data

<sup>\*\*\*</sup>Source: Field Assessment



Table 4: Summary of information regarding Pre-European and current vegetation extent of vegetation association 468 within the survey area

Factor			Value			
Beard	468					
Vegetation Association**						
Vegetation Association Description*	Medium woodland; salmon gum & goldfields blackbutt					
	Scale					
Extent (ha)	By Association*	By Association**	By IBRA Region** (Coolgardie-	By IBRA Sub- region** (Eastern	By Shire** (Shire of Coolgardie)	
Extent (ha)			COO)	Goldfields- COO3)	Coolgardie)	
	476,113	592,625	583,952	482,842	149,639	
% Pre-European Extent Remaining*	100.00%	100.00%	100.00%	100.00%	100.00%	
Surrounding Land Use***	Pasture Grazing, Exploration and Mining					
Weed prevalence***	Low					

<sup>\*</sup> Source: Shepherd et al. (2002) Appendix 2

#### 4.1.5 Wetlands

No wetlands which are recorded on the DAFWA WetlandBase occur within the survey area (DAFWA, 2012a).

#### 4.1.6 Dieback

The survey area lies south of the 26<sup>th</sup> parallel, however receives average annual rainfall between 236mm and 250mm (BoM, 2012), below the 400mm threshold mark. There is no record of *Phytophthora cinnamomi* establishing in natural ecosystems in regions receiving <400mm rainfall per annum (CALM, 2003). Therefore Dieback is not considered an issue for this survey area, however all measures should be taken to prevent any possible soil contamination which could pose a risk within the survey area during seasonally favourable conditions.

#### 4.2 FIELD ASSESSMENT

#### 4.2.1 Vegetation of the Survey Area

Beard's vegetation associations are very broad and are used over large areas in which there is also a large amount of variation at a more local level. The vegetation groups described below for the survey area fit into the broader Beard descriptions.

The vegetation groups described below were determined visually, forming the descriptions taken at the time of the field survey.

<sup>\*\*</sup>Source: Shepherd et al. (2002) Associated GIS data

<sup>\*\*\*</sup>Source: Field Assessment



Descriptions of all 48 sites/quadrats are presented in Appendix F. For each site the physical features, vegetation description and unit, along with the species lists for the 20 x 20m plots with typical canopy cover and height, are provided.

#### 4.2.1.1 Vegetation Groups

Nineteen vegetation groups were described during this survey, largely following topographical features. Mapping of the 19 vegetation groups, as well as the quadrat locations can be seen in Appendix D.

#### 1. Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands

Eucalypt woodland over mixed sclerophyll shrubs

Quadrat: 9, 10, 12, 30 and 37

#### 2. Acacia - Mallee shrublands

Mulga shrubland and Eucalyptus over mixed shrubs and herbs

Quadrat: 28, 29, 32 and 36

#### 3. Mixed Eucalyptus woodland over Atriplex nummularia shrublands

Eucalyptus woodland with over mixed shrubs and herbs

Quadrat: 1, 5, 18, 20, 21, 31 and 34

#### 4. Eucalyptus woodlands over Maireana sedifolia

Eucalyptus woodland over Maireana sedifolia, with Tecticornia disarticulata and mixed shrubs

Quadrats: 3 and 6

#### 5. Eucalyptus woodlands over Melaleuca sheathiana

Eucalyptus and Melaleuca sheathiana over scattered low shrubs and grasses

Quadrats: 8

#### 6. Eucalyptus woodland with Allocasuarina and Acacia over mixed shrubland

Eucalyptus with Allocasuarina campestris and A. helmsii, and Acacia shrubland over mixed shrubs and herbs

Quadrat: 23, 24 and 27

#### 7. Casuarina pauper over mixed shrubland

Casuarina pauper over mixed shrubland with Acacia, Eremophila, Dodonaea, Senna and Scaevola

Quadrat: 7

#### 8. Eucalyptus over Acacia sp. Narrow phyllode on lateritic rises

Mixed Eucalyptus woodland with Acacia and mixed shrubs and on lateritic rises

Quadrat: 16

### 9. Halophytes on salt flats

Low mixed salt tolerant shrubs including *Tecticornia* on salt flats.



Quadrats: 38

#### 10. Jam Thicket

Acacia sp. narrow phyllode with Eucalyptus and Melaleuca over mixed shrublands with mixed herbs.

Quadrats: 13, 14 and 33

#### 11. Internally drained claypans

Atriplex nummularia subsp spathulata and mixed shrub over Austrostipa nitida on claypans.

Quadrats: 25, 26 and 35

#### 12. Eucalyptus salmonophloia, E. ravida and E. salubris woodlands over Eremophila

Eucalyptus salmonophloia and E. salubris over mixed shrubs (Eremophila, Atriplex) and herbs.

Quadrat: 11 and 17

#### 13. Scattered Eucalyptus salmonophloia over scattered understory

Eucalyptus salmonophloia woodland over mixed shrubs (Eremophila, Atriplex, Maireana) and herbs on flat plains

Quadrat: 4, 15 and 19

#### 14. Riparian sandplain sclerophyll shrublands

Acacia, Dodonaea, Eremophila, and Maireana with riparian shrublands on sandplains.

Quadrat: 42, 43 and 46

#### 15. Casuarina pauper shrubland on calcrete platform

Casuarina pauper shrubland with Myoporum over mixed shrubs (Acacia, Senna) and herbs on calcrete platform.

Quadrats: 40, 48

#### 16. Riparian sclerophyll shrublands

Maireana sedifolia, Lycium australe and Eremophila over mixed riparian shrubs.

Quadrats: 2

#### 17. Riparian chenopod shrubland with emergent Maireana pyramidata

Maireana pyramidata, Cratystylis subspinescens, C. Microphylla, Lycium australe, and Acacia with riparian chenopod shrubland

Quadrat: 41 and 44

#### 18. Riparian chenopod shrubland with emergent Myoporum acuminatum

Riparian chenopod shrubland with *Cratystylis subspinescens, Maireana brevifolia M. glomerifolia, M. pyramidata* and *emergent Myoporum acuminatum* 

Quadrats: 39, 45 and 47



#### 19. Acacia quadrimarginea over mixed shrubland

Open shrubland with *Acacia quadrimarginea* over mixed shrubs (*Eremophila, Senna*) and herbs on flat plains.

Quadrat: 22

#### 20. Existing Disturbance

This includes pits, waste landforms, dams, and other areas that have been significantly disturbed. However, roads and tracks are not marked as disturbance areas.

#### 4.2.1.2 PATN Analysis of Quadrat Data

PATN Analysis was completed on both the dominant species and all species recorded within each quadrat. The results are supplied below in Figure 4 and Figure 5.

The PATN analysis of the dominant species (Figure 4) shows a good association between vegetation groups described in section 4.2.1.1, however there were some outliers (highlighted green). This variation is expected to occur for vegetation groups with transitional dominant species such as the mixed *Eucalyptus* woodlands. In most case one or two species of Eucalypt will be present within a 20x20 quadrat, but it will not contain all the varieties of Eucalypt that will occur across that vegetation type, and as such these quadrats of one vegetation group, will be separated as different when assessed by the PATN Analysis.



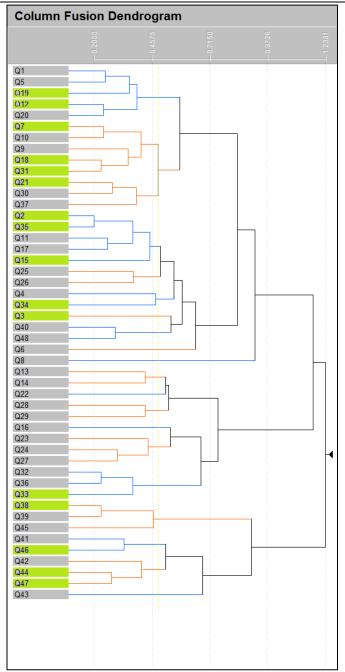


Figure 4: PATN Analysis of Dominant Species into 19 groups

The dendrogram below (Figure 5) of the analysis of all species shows a correlation to pregrouped quadrats described in section 4.2.1.1. However there were some outliers and these are highlighted in green. These outliers are expected because there is often overlap between vegetation communities. Also, the vegetation groups were determined visually, and based largely on dominant species. Throughout the vegetation communities, understory is highly diverse and varied across different areas within the same vegetation community.



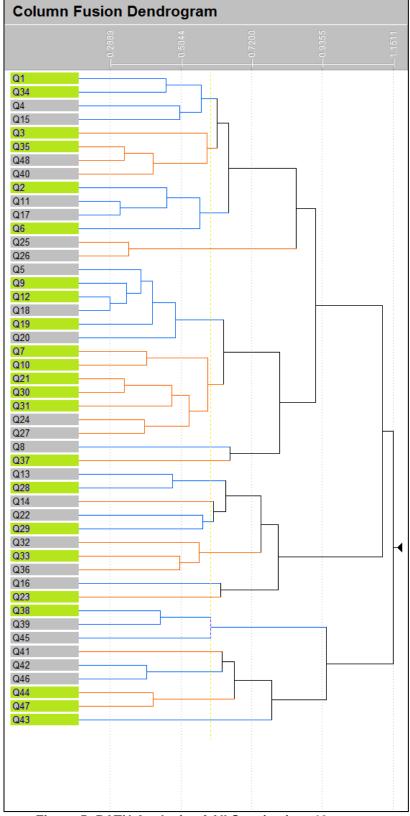


Figure 5: PATN Analysis of All Species into 19 groups

#### 4.2.1.3 Vegetation Condition

Vegetation in the survey area has been subjected to exploration activities and grazing.



According to Keighery (1994), most of the sites/quadrats inspected were in Good to Very Good condition (Appendix E, Map 4). There were existing vehicle tracks in some areas, due to mine exploration activities. The vegetation more than 0.5m off these tracks was mostly in a Good to Very Good condition (Keighery 1994).

As discussed below in Section 4.2.2.4, there were fifteen species of weeds observed during the survey, including one declared weed species.



#### 4.2.2 Flora of the Survey Area

#### 4.2.2.1 **General**

Two Hundred and Nine species were recorded within the survey area with 198 species recorded within quadrats. One hundred and five genera and 35 families were found. These are listed in Appendix E, per Quadrat as well as per vegetation group. Of the native species, Chenopodiaceae had the highest representation, with 33 species from 11 genera, dominated by *Maireana*. Asteraceae was the next best represented family with 31 species from 21 genera.

Of the 209 taxa recorded there were fifteen introduced weed species; *Carrichtera annua* (Wards Weed), *Cotula bipinnata, Dittrichia graveolens* (stinkwort), *Hainardia cylindrica* (common barbgrass), *Lysimachia arvensis* (Pimpernel), *Medicago minima* (Goldfields medic), *Mesembryanthemum nodiflorum* (Ice plant), *Oncosiphon suffruticosum* (Calomba daisy), *Portulaca oleracea* (Purslane), *Rostraria pumila, Salvia verbenaca* (Wild Sage), *Sisymbrium runcinatum, Sonchus oleraceus* (Sowthistle), and *Vellereophyton dealbatum* (white cudweed). Weeds species were recorded within 13 of the 48 quadrats. *Xanthium spinosum* is a P3 declared weed and was found in 2 quadrats.

The most common and widespread species was *Austrostipa nitida*, recorded within 37 quadrats. Its canopy cover was <10%. The next most common and widespread species was *Zygophyllum aurantiacum*, recorded in 28 quadrats, with a canopy cover less than 10%. Following this were *Maireana trichoptera and Scaevola spinescens*, recorded in 25 quadrats each with canopy cover 10% and between 10% and 30% respectively. The next species most common and widespread was *Senna artemisioides subsp. filifolia*, which was recorded from 23 quadrats, with a canopy cover of 10-30%. Subsequent species were *Atriplex nummularia subsp. spathulata* and *Dodonaea lobulata* each from 22 sites, *Maireana georgei* and *Ptilotus obovatus from 21 sites*, then *Marsdenia australis*, *Olearia muelleri* and *Sclerolaena diacantha* from 20 Sites.

There were 39 taxa recorded from within a single site. Of these, five were weed species.

There was one specimen collected that could not be confirmed, beyond genus:

• Celastraceae - Stackhousia sp (sterile);

#### 4.2.2.2 Species Accumulation Curves

A Species Accumulation Curve was generated using the computer programme **Species Diversity and Richness Version 4.1.2**®. This curve was then fitted to a logarithmic curve which is plotted in Figure 6 below. According to the Species Accumulation Curve below, the R² value (0.9795) shows an acceptable fit for a logarithmic curve of the total accumulated species per number of quadrats established (Figure 6). Sufficient sampling was inferred via the effort of intensity (number of quadrats established) versus the return of species collected (total accumulated species). The logarithmic trend line and R² values were generated in **Excel**®. From this fitted logarithmic curve formula, the asymptote was calculated where the gain of new species was less than 1% for every new quadrat established. Based on this reasoning, the asymptote was reached at 32 quadrats, at which the extrapolated total accumulated number of species is 170.38. Therefore the 198 species collected within the 48 quadrats represents 116.21% of the projected asymptote.



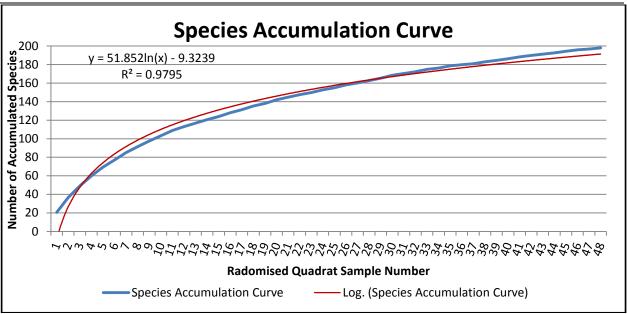


Figure 6: Species Accumulation Curve for the 48 sampled quadrats

#### 4.2.2.3 Conservation significant species

Three Priority species were recorded during the survey; *Angianthus prostratus* (P3), *Astartea sp.* Red hill (P1) and *Melaleuca coccinea* (P3). *Astartea sp.* Red Hill and *Melaleuca coccinea* are generally restricted to hill systems and the flats surrounding these hill systems respectively, while *Angianthus prostratus* is usually restricted to the salt lake beds within the survey area.

#### 4.2.2.4 Introduced species

Fourteen introduced species recorded in the survey area, not considered Declared Plants by the DAFWA (2012) are listed below:

- Carrichtera annua (Wards Weed) was introduced into Australia from the eastern Mediterranean and first recorded in Port Pirie in South Australia in 1915. C. annua is now widespread throughout South Australia, the Interior, and Western Australia (Lamp & Collet, 1999).
- Cotula bipinnata is found in damp wasteland and disturbed wetlands from Kalbarri to Esperance
- *Dittrichia graveolens* (stinkwort) is common along roadsides, in paddocks and waste ground around the south west. If crushed, it can poison stock.
- Hainardia cylindrica (common barbgrass) is a week of brackish creeklines, lakes, swamps and estuaries from Perth to Busselton and in the central wheatbelt. It is a native of Southern Europe.
- Lysimachia arvensis (Pimpernel) is native to Europe. It is an occasional weed of horticulture, crops and pastures and is widespread throughout gardens, paddocks, granite rocks and bushland throughout the south-west.
- Medicago minima (Goldfields medic) is scattered throughout the eastern wheatbelt and adjacent pastoral regions in farmlands, roadsides, wasteland, native woodlands and granite rocks
- Mesembryanthemum nodiflorum (Ice plant) is a widespread weed of saline farmland soils and granite rocks in arid areas, salt lake margins and offshore islands from Carnarvon to Eucla



- Oncosiphon suffruticosum (Calomba daisy) is native to South Africa. It is found along roadsides in the central wheatbelt and throughout grazed woodlands across Kalgoorlie
- Portulaca oleracea (Purslane) is a widespread weed of horticulture, paddocks and gardens. This plant varies across Australia, and may occur in native and introduced forms
- Rostraria pumila
- Salvia verbenaca (Wild Sage) is native to Europe and Asia. It is an occasional weed of roadsides and railway tracks, pastures and disturbed woodlands. It is seen between Kalgoorlie and Esperance and also in the drier parts of the south-west.
- Sisymbrium runcinatum is a localised weed of verges and granite rocks in the southern part of the state
- Sonchus oleraceus (Sowthistle) is widespread on roadsides, gardens and wasteland. It is native to Eurasia and North Africa (Hussey et al, 2007)
- *Vellereophyton dealbatum* (white cudweed) is found in disturbed areas including pastoral lands, road verges and wetlands from Moora to Esperance. It is a native to South Africa.

One species recorded within the survey listed below is considered a Declared Plant by the DAFWA (2012):

Xanthium spinosum (Bathurst Burr) was introduced into Australia in the 1840's, supposedly on the tails of horses brought from America. It is common in the Goldfields and occasionally occurs in the wheatbelt (Hussey et al, 2007). See Appendix D, Map 4 for location.

Bathurst Burr is listed as a P3 declared plant (Table 5), within the Shire of Coolgardie, by DAFWA (2012).

#### Table 5: DAFWA (2012) Declared Plant requirements

# P3 REQUIREMENTS Aims to control infestation by

Aims to control infestation by reducing area and/or density of infestation

The infested area must be managed in such a way that reduces the extent/distribution and/or density of the declared plant within the infested property.

The infested area must be managed to prevent the spread of seeds or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery Treatment must be done prior to seed set each year.



#### 5 DISCUSSION

The EPA (2002) indicated that an ecological assessment of a site must consider its ecological value at the ecosystem level and its biodiversity value at the genetic, species and ecosystem level.

The survey area is located within the Eastern Goldfields subregion which includes four centres of endemism, all of which occur outside the survey area (CALM, 2002). This survey established that mostly, the flora within the project area is not unique, and is in fact common throughout the Eastern Goldfields subregion and adjoining regions.

Two Hundred and Nine species were recorded within the survey area with 198 species recorded within quadrats. One hundred and five genera and 35 families were found. The most common and widespread species was *Austrostipa nitida*, recorded within 37 quadrats. Its canopy cover was <10%. The next most common and widespread species was *Zygophyllum aurantiacum*, recorded in 28 quadrats, with a canopy cover less than 10%.

Of the 209 taxa recorded there were fifteen introduced weed species; Carrichtera annua (Wards Weed), Cotula bipinnata, Dittrichia graveolens (stinkwort), Hainardia cylindrica (common barbgrass), Lysimachia arvensis (Pimpernel), Medicago minima (Goldfields medic), Mesembryanthemum nodiflorum (Ice plant), Oncosiphon suffruticosum (Calomba daisy), Portulaca oleracea (Purslane), Rostraria pumila, Salvia verbenaca (Wild Sage), Sisymbrium runcinatum, Sonchus oleraceus (Sowthistle), and Vellereophyton dealbatum (white cudweed). Weeds species were recorded within 13 of the 48 quadrats. Xanthium spinosum is a P3 declared weed and was found in 2 quadrats.

No Threatened Flora were recorded during the survey, however three Priority Flora were recorded. These species, *Astartea sp* Red Hill (P1), *Melaleuca coccinea* (P3) and *Angianthus prostratus* (P3)

No TECs or PEC's are present within the survey area.

Vegetation condition was generally 'Good' to 'Very Good' (Keighery 1994). Disturbance was present within the survey area mostly attributed to access tracks and exploration related activities, and also grazing.

It is therefore not expected that the disturbance within the survey area will significantly negatively impact on the vegetation in the area in terms of fragmentation or loss of vegetation associations or species that may be unique. This is partially due to the overall size of the survey area as well as the similar vegetation and habitat outside of the survey area.



#### **6 IMPACT ASSESSMENT**

#### 6.1 THREATENING PROCESSES

The major processes likely to impact the Flora within the Survey area, if clearing were to proceed include:

- Vegetation clearing and therefore a reduction in biodiversity;
- Vehicle impacts on uncleared vegetation could increase if tracks are not adhered to;
- An increase in the area of disturbed land could result in an increase in alien species, particularly Bathurst Burr, taking advantage of the lack of competition from native species;
- Dust generated during clearing of native vegetation and associated activities may settle
  on adjacent native vegetation, causing possible stress and perhaps death, especially
  during drier months; and
- Accidental fire arising from clearing and associated activities, may affect vegetation in surrounding areas.



#### 7 CONCLUSIONS AND RECOMMENDATIONS

The survey established that the condition of the vegetation in the survey area is overall 'Good' to 'Very Good' condition. No Declared Rare Flora or Threatened Ecological Communities were recorded in the area; however three Priority Flora species were recorded in the area.

The EPA objective for flora and vegetation is to maintain the abundance, species diversity and geographical distribution of flora and vegetation as well as protect Threatened flora consistent with the provisions of the *Wildlife Conservation Act 1950*.

The proposed clearing of vegetation will result in the loss of some individuals from the local area; however, the impact will not be great enough to remove whole communities or populations. Most of the species and communities recorded during this survey are widespread throughout the Eastern Goldfields subregion and therefore the loss of a small proportion from this area will not be significant.

This report summarises the results of the first stage of the Level 2 survey. It is not deemed necessary to conduct a second stage follow up survey as the results of a previous survey by Western Botanical in a different season was incorporated into this report.

The following recommendations arise from the current flora survey:

- Any disturbance/clearing be minimised in extent to reduce the loss of individuals and impact on populations;
- Vegetation groups and areas where Priority Flora are located should be avoided, unless an impact study is completed, to determine the local and regional affects to the species and submitted to the DEC for a Permit to destroy;
- Weed control measures must be implemented and followed during and after construction activities:
- A rehabilitation plan is developed that progressively rehabilitates areas as soon as they are no longer required;
- · Driving restrictions, ensuring that off-road driving is minimised; and
- All staff to be educated on the importance of fire prevention, and equipment provided for use in the event of fire.



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Appendix A - Vegetation Condition Scale (Keighery, 1994)



**Pristine (1).** Pristine or nearly so, no obvious signs of disturbance.

**Excellent (2).** Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.

**Very Good (3).** Vegetation structure altered obvious signs of disturbance.

For example, disturbance to vegetation structure caused by repeating fires, the presence of some more aggressive weeds, dieback, logging and grazing.

**Good (4).** Vegetation structure significantly altered by very obvious signs of multiple disturbance.

Retains basic vegetation structure or ability to regenerate it.

For example, disturbance to vegetation structure caused by frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.

**Degraded (5).** Basic vegetation structure severely impacted by disturbance.

Scope for regeneration but not to a state approaching good condition without intensive management.

For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.

**Completely Degraded (6).** The structure of the vegetation is no longer intact and the area is completely or almost completely without native species.

These areas are often described as 'parkland cleared' with the flora compromising weed or crop species with isolated trees or shrubs.



**Appendix B - Categories of Conservation Status** 



IUCN categories (based on review by Mace and Stuart 1994) as used for the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 and the WA Wildlife Conservation Act 1950.

**Extinct**. Taxa not definitely located in the wild during the past 50 years.

**Extinct in the Wild.** Taxa known to survive only in captivity.

**Critically Endangered.** Taxa facing an extremely high risk of extinction in the wild in the immediate future.

**Endangered.** Taxa facing a very high risk of extinction in the wild in the near future.

**Vulnerable.** Taxa facing a high risk of extinction in the wild in the medium-term future.

**Near Threatened.** Taxa that risk becoming Vulnerable in the wild.

**Conservation Dependent.** Taxa whose survival depends upon ongoing conservation measures. Without these measures, a conservation dependent taxon would be classed as Vulnerable or more severely threatened.

**Data Deficient (Insufficiently known).** Taxa suspected of being Rare, Vulnerable or Endangered, but whose true status cannot be determined without more information.

**Least Concern.** Taxa that are not Threatened.

#### Schedules used in the WA Wildlife Conservation Act 1950.

Schedule 1. Rare and Likely to become Extinct.

Schedule 2. Extinct.

**Schedule 3.** Migratory species listed under international treaties.

Schedule 4. Other Specially Protected Fauna.

#### **Department of Environment and Conservation Priority Species**

(species not listed under the Conservation Act, but for which there is some concern)

**Priority 1.** Taxa with few, poorly known population on threatened lands.

**Priority 2.** Taxa with few, poorly known populations on threatened lands, or taxa with several, poorly known populations not on conservation lands.

Priority 3. Taxa with several, poorly known populations, some on conservation lands.

**Priority 4.** Taxa in need of monitoring. Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change.

**Priority 5.** Taxa in need of monitoring. Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years (IUCN Conservation Dependent).



**JAMBA** The agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment. Australian Treaty Series 1981 No 6.

**CAMBA** The agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment. Australian Treaty Series 1988 No 22.

**ROKAMBA** The agreement between the Government of Australia and the Government of the Republic of Korea on the Protection of Migratory Birds and their Environment. Australian Treaty Series 2007 ATS 24.



**Appendix C - EPBC Protected Matters Search Results** 



# **EPBC Act Protected Matters Report**

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

Report created: 15/10/12 10:41:03

Summary

**Details** 

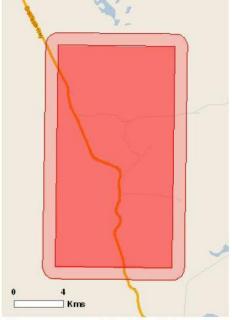
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Other Matters Protected by the EPBC Act

**Extra Information** 

Caveat

<u>Acknowledgements</u>



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 1.0Km





### Summary

#### Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the <u>Administrative Guidelines on Significance</u>.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	3
Listed Migratory Species:	7

#### Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As <a href="heritage values">heritage values</a> of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A <u>permit</u> may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	4
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None



#### Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

Place on the RNE:	None
State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	5
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

## **Details**

## Matters of National Environmental Significance

Listed Threatened Species		[ Resource Information ]
Name	Status	Type of Presence
Birds	Otatus	Type of Frescrice
Acanthiza iredalei iredalei		
Slender-billed Thornbill (western) [25967]  Leipoa ocellata	Vulnerable	Species or species habitat likely to occur within area
Malleefowl [934]	Vulnerable	Species or species
Maneerowi [954]	vullerable	habitat likely to occur within area
Plants		
Gastrolobium graniticum Granite Poison [14872]	Endangered	Species or species habitat likely to occur within area
Listed Migratory Species		[ Resource Information ]
* Species is listed under a different scientific name on	the EPBC Act - Threatened	
Name	Threatened	Type of Presence
Migratory Marine Birds		24
Apus pacificus		
Fork-tailed Swift [678]  Ardea alba		Species or species habitat likely to occur within area
Great Egret, White Egret [59541]		Species or species
		habitat may occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Merops ornatus		Charles or angelos
Rainbow Bee-eater [670]		Species or species



Name	Threatened	Type of Presence
		habitat may occur within area
Migratory Wetlands Species		
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area

### Other Matters Protected by the EPBC Act

Commonwealth Land [ Resource Information ]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

#### Name

Commonwealth Land -

Listed Marine Species		[ Resource Information ]
* Species is listed under a different scientific name on t	he EPBC Act - Threatened	Species list.
Name	Threatened	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		within area

#### Ardea alba

Great Egret, White Egret [59541] Species or species

habitat may occur within

area

Ardea ibis

Cattle Egret [59542] Species or species

habitat may occur within

Merops ornatus

Rainbow Bee-eater [670] Species or species habitat may occur within

area



#### Extra Information

#### Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Mammals		
Capra hircus		
Goat [2]		Species or species habitat likely to occur within area
Felis catus		
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus		
Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
<u>Vulpes vulpes</u>		
Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Carrichtera annua		
Ward's Weed [9511]		Species or species habitat likely to occur within area



### Coordinates

-30.95904 121.57284,-30.95997 121.65935,-31.12353 121.65705,-31.1226 121.5704, -30.95904 121.57284

#### Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.



## Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- -Department of Environment, Climate Change and Water, New South Wales
- -Department of Sustainability and Environment, Victoria
- -Department of Primary Industries, Parks, Water and Environment, Tasmania
- -Department of Environment and Natural Resources, South Australia
- -Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
- -Environmental and Resource Management, Queensland
- -Department of Environment and Conservation, Western Australia
- -Department of the Environment, Climate Change, Energy and Water
- -Birds Australia
- -Australian Bird and Bat Banding Scheme
- -Australian National Wildlife Collection
- -Natural history museums of Australia
- -Museum Victoria
- -Australian Museum
- -SA Museum
- -Queensland Museum
- -Online Zoological Collections of Australian Museums
- -Queensland Herbarium
- -National Herbarium of NSW
- -Royal Botanic Gardens and National Herbarium of Victoria
- -Tasmanian Herbarium
- -State Herbarium of South Australia
- -Northern Territory Herbarium
- -Western Australian Herbarium
- -Australian National Herbarium, Atherton and Canberra
- -University of New England
- -Ocean Biogeographic Information System
- -Australian Government, Department of Defence
- -State Forests of NSW
- -Geoscience Australia
- -CSIRO
- -Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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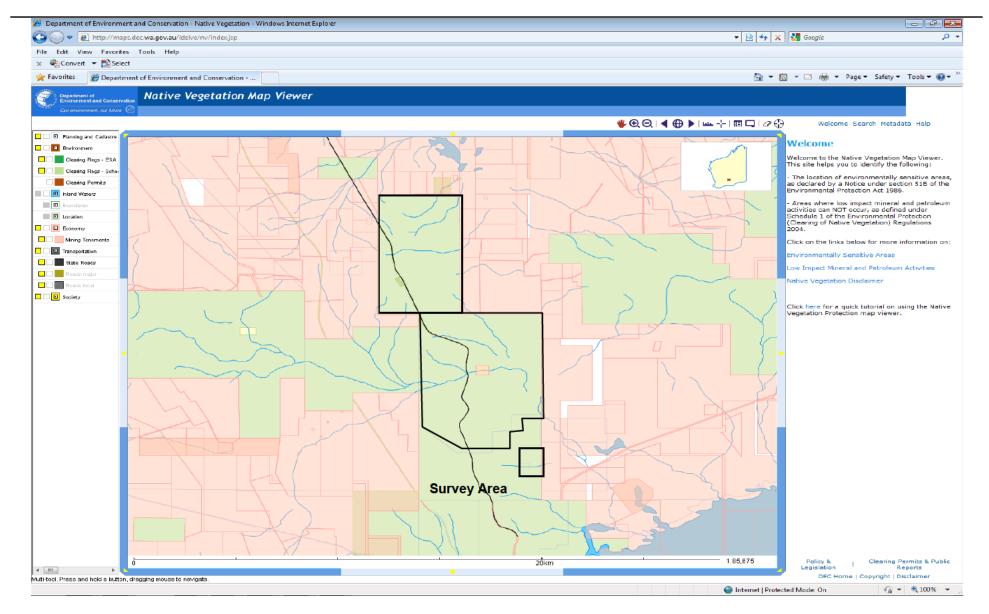
Department of Sustainability, Environment, Water, Population and Communities

GPO Box 787

Canberra ACT 2601 Australia

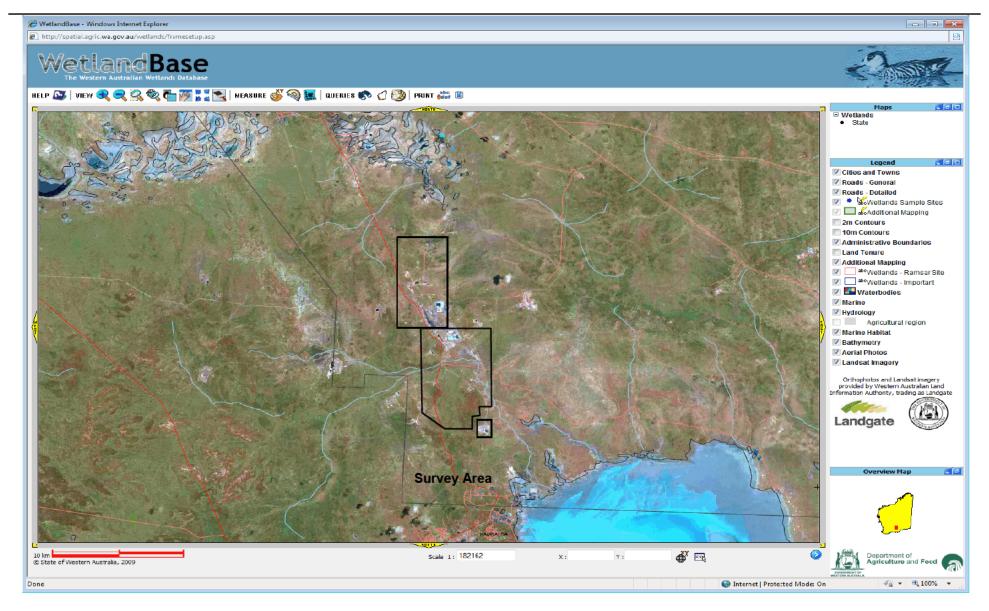
+61 2 6274 1111





DEC's Native Vegetation Map Viewer - showing no ESA's (dark green shaded areas) within the survey area (DEC, 2012).



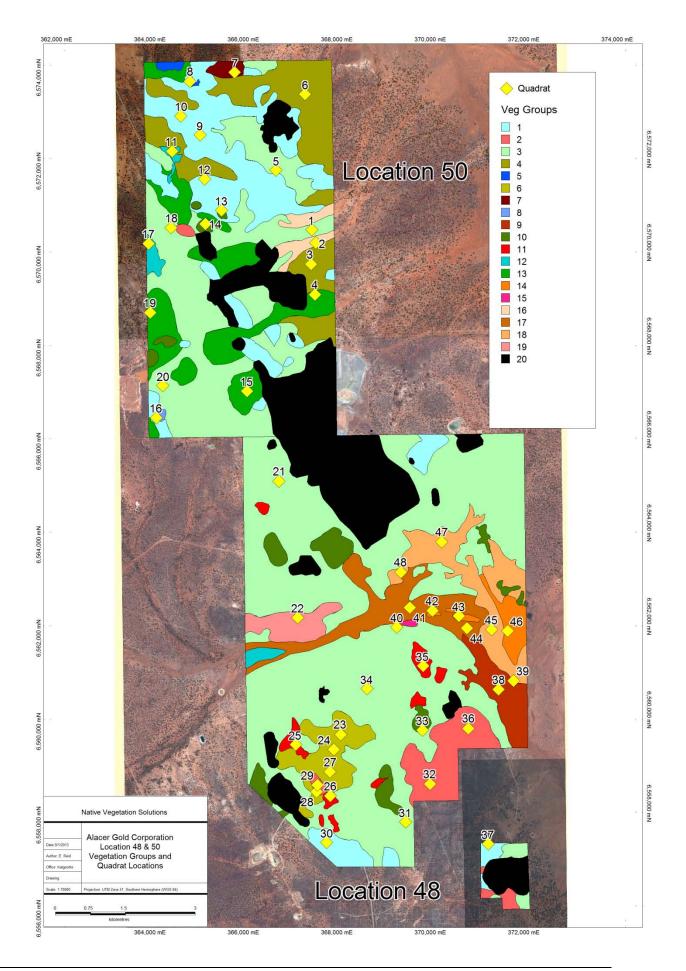


DAFWA Wetland Database - showing no wetland areas within the survey area (DAFWA, 2012a).

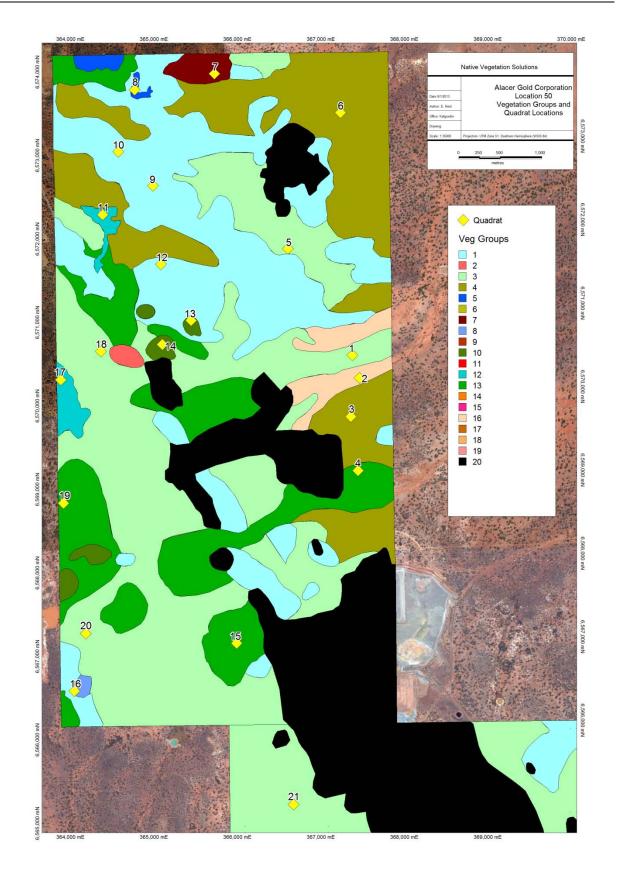


**Appendix D - Maps** 

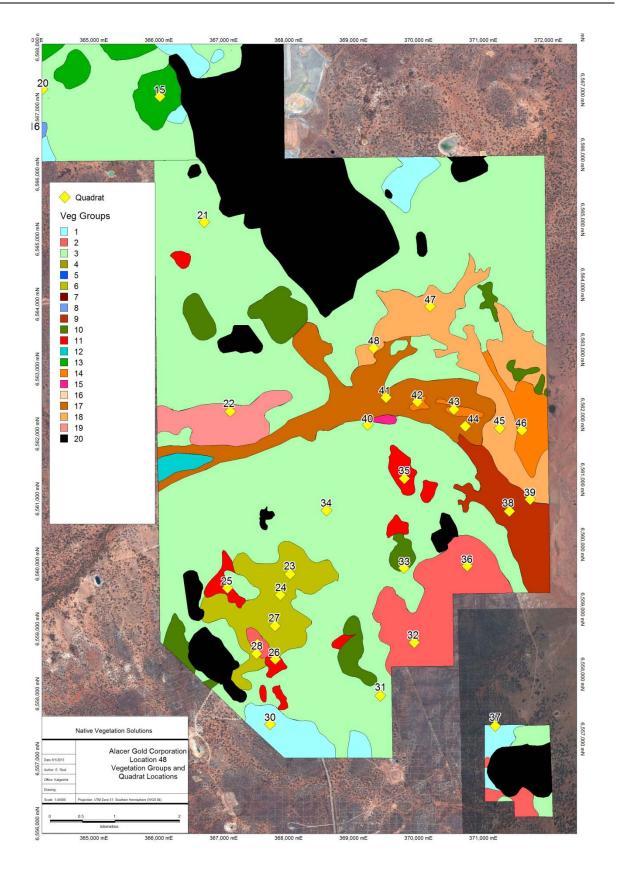




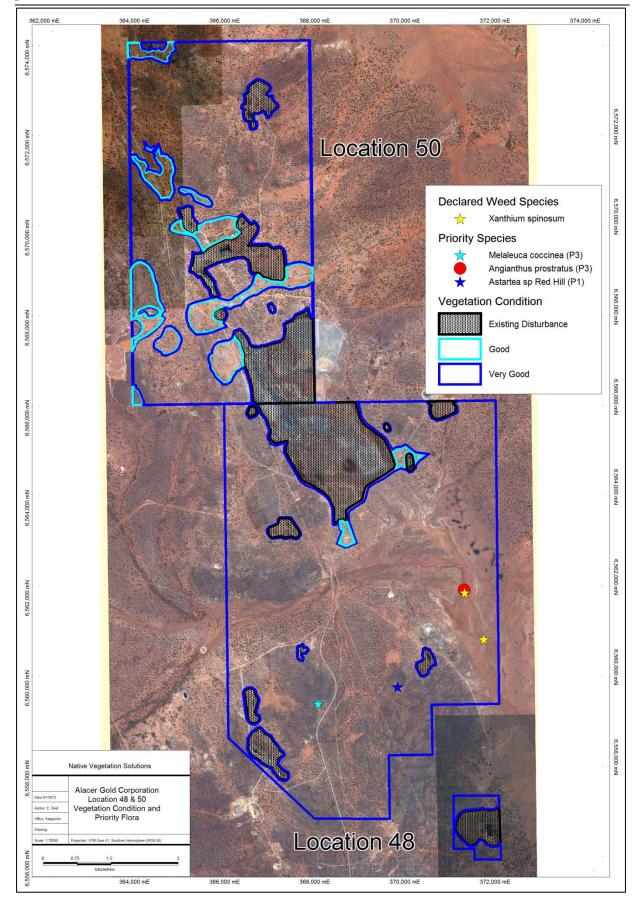














Appendix E - Species Recorded During the September 2012 Survey



Species List per Quadrat

Species List	per Quadra	at																																
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Aizoaceae	Gunniopsis	intermedia		Α	П	П	$\neg \neg$		П	$\top$		П	$\top \top$	$\neg \neg$	十	П	$\top$	十		$\top$	十	П		П	$\top$	au	П	十	П	丁	П	$\top$	•	Ξ
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Amaranthaceae	Ptilotus	carlsonii		Α		П			П	П		•				П	Ш		•	П		П		П	$\Box$	$oldsymbol{oldsymbol{oldsymbol{\Box}}}$	П		П	$\perp$	П	$\perp$	$\Box$	
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Asteraceae	Brachyscome	ciliocarpa		Α	Н.	Н	•	+	₩	+	_	Н.	+	$\dashv$	_	Н		_	ш	-	٠.	11	_	₩	$\dashv$	+	╨	•	1.1	┵	Ŀ.	4	₩	_
Asteraceae	Brunonia	australis		P	₩	Н	$\dashv$	+	₩	+	_	Н	+	$\dashv$	+	$\vdash$	+	+	Н	+	┥.	+	_	₩	$\dashv$	+	+	+	+	—	$\vdash$	+	$\dashv$	_
Asteraceae	Calotis	hispidula		A	Н.	Н	_	+	₩	+	_	Н.	1	$\dashv$	+	₩	₩	+		Н	+	₩	_	₩	44	+	₩	-	1.1	+-	H	4	₩	_
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Asteraceae	Chrysocephalum	puteale		P	Н-	Н	$\dashv$	_	Н	₩	_	Н	$\dashv$	$\dashv$	_	Н	+	_	Н	ш	_	Н	_	₩	$\dashv$	-	₩	_	₩	+	$\vdash$	+	₩	_
Asteraceae	Cotula	bipinnata		NN	₩	Н	+	-	₩	+	_	н	+	+	+	Н	₩	+	Н	+	+	+	_	₩		+	₩	•	₩	+	$\vdash$	+	₩	_
Asteraceae	Cratystylis	conocephala		Р	╙	Н	$\dashv$	_	₩	₩	_	Н	+	$\dashv$	—	Н		_	Н	+	-	₩	_	₩		+	₩	٠.	+	+	$\vdash$	+	₩	_
Asteraceae	Cratystylis	microphylla		P	₩	₩	+	+	₩	₩	+	₩	++	+	+	₩	₩	+	Н	₩	+	₩	+	₩	$\dashv \dashv$	+	₩	+	╁	÷	H	+	₩	$\dashv$
Asteraceae	Cratystylis	subspinescens		Р.	₩	Н	+	+	Н	₩	+	Н	+	+	+	Н	+	+	Н	+	+	$\boldsymbol{\vdash}$	+	₩	$\dashv$	+	∺	:	++	+	ij.	+	₩	_
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Asteraceae	Olearia	magniflora		P	₩	₩		٠.	<del>     </del>	<del>.   .  </del>	٠.	Н.	++	.	٠.	١.,	.++	٠.	$\vdash$	+.	+	+.+		₩	+	╨	₩	+	₩	+	<del></del>	+	╁	_
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Asteraceae	Podolepis	lessonii		A	Н-	₩	$\dashv$	+	₩	╫	+	₩	+	╫	+	₩	++	+		<del>.    </del>	+	╫	+	₩	┿	-	₩	+	╫	+	H	+	╫	_
Asteraceae	Rhodanthe	floribunda		A	Н	₩	$\dashv$	+	₩	┰	+	₩	╁		+	₩	╫	+	$\vdash$	╫	+	╫	+	₩	┿	+	₩	+	₩	+	₩	+	╫	_
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Asteraceae	Senecio	pinnatifolius		A	H	H	$\dashv$	+	H	+	+	H	+	+	+	H	+	+	$\Box$	+	+	+	+	+	+	$\vdash$	1.1	•	+	十	H	+	+	$\exists$
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Asteraceae	Waitzia	acuminata		A	т	П	$\dashv \dashv$	$\top$	$\sqcap$	$\dashv \dashv$	十	Η.	1	$\dashv \dashv$	$\top$	$\sqcap$	1.	$\top$	•	$\dashv \dashv$	١.	1	•	1.1	$\dashv \dashv$	•	$\sqcap$	$\top$	$\sqcap$	$\top$	$\sqcap$	$\top$	$\sqcap$	Ⅎ
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Brassicaceae	Arabidella	chrysoderma		A	$\vdash$	П	$\dashv \dagger$	$\top$	11	11	$\top$	$\sqcap$	++	$\dashv$	$\top$	$\sqcap$	$\top$	$\top$	•	$\top$	$\top$	11	十	$\sqcap$	$\dashv$	$\vdash$	H	十	$\top$	$\top$	$\sqcap$	十	$\sqcap$	╛
Brassicaceae	Carrichtera	annua		NN, A	$\vdash$	П	$\dashv$	$\top$	$\sqcap$	$\top$		$\sqcap$	$\top$	$\dashv$	$\top$	$\sqcap$	$\top$	$\top$		$\top$	$\top$	$\Box$	$\top$	$\vdash$	$\dashv$	$\vdash$	$\Box$		1.	$\top$	$\sqcap$	$\top$	$\Box$	
Brassicaceae	Sisymbrium	runcinatum		NN, A	*	Н	$\dashv$	$\top$	11	$\top$	$\top$	П	$\top$	$\top$	$\top$	$\sqcap$	$\top$		$\Box$	$\top$	+	$\Box$	$\top$	$\vdash$		$\perp$	$\Box$	$\top$	$\top$	$\top$	$\vdash$	+	$\sqcap$	
Brassicaceae	Stenopetalum	sphaerocarpum		A	П	П	$\neg \neg$	$\top$	$\Box$	$\sqcap$	$\top$	П	$\top$	$\sqcap$	$\top$	$\sqcap$	$\top$			$\Box$	$\top$	$\sqcap$		$\sqcap$	$\Box$	$ \mathcal{T} $	$\sqcap$		•	$\top$	$\sqcap$	T	П	٦
Casuarinaceae	Allocasuarina	acutivalvis		P	$\vdash$	П	$\dashv \dashv$	十	$\sqcap$	$\top$	十	П	$\top \top$	$\dashv \dashv$	十	$\sqcap$	$\top$	*	$\sqcap$	$\dashv \dashv$	$\top$	${}^{\dagger\dagger}$	十	$\sqcap$	$\dashv \dashv$	$\vdash$	$\sqcap$	十	$\sqcap$	$\top$	$\sqcap$	$\top$	$\sqcap$	╛
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Family	Genus	Species	Status	P, A, NN	Δ,	_	<u> </u>				Ľ		11		1		1	<u> </u>			Δ,	_	Υ,	1			1	Ĭ	٦	Ĭ			Δ,			1	Ц
Casuarinaceae	Allocasuarina	campestris		P	Щ	丄	ш	┸	Ц	┸	Ц	_	ш		Ш		Ш	_	ш	٠	Ш	ш	Щ		Ц	_	┸	Ш		Ц	$\perp$	_	Щ	_	Ш	┵	Н
Casuarinaceae	Allocasuarina	helmsii		P	Щ	丄	Ш	┸	Ц	┸	Ц	_	ш		Ш		Ш	_	ш	•	Ш	٠	Щ		Ц	_	┸	Ш		Ц	$\perp$	_	Щ	_	Ш	┵	Н
Casuarinaceae	Casuarina	pauper		P	ш	丄	Ш	┸	•	丄	•		ш	•	ш	丄	Ш		ш	┸	Ш	ш	Щ	•	ш	_	丄	Ш		Ш		_	ш	┸	Ш	丄	ш
Chenopodiaceae	Atriplex	amnicola		P	Ш			•	Ш		Ш		Ш		Ш		Ш		Ш						Ш			Ш					Ш				Ш
Chenopodiaceae	Atriplex	codonocarpa		P				•					Ш																		•				•		Ш
Chenopodiaceae	Atriplex	lindleyi subsp. inflata		Α	Ш				Ш		П		Ш		П		Ш		П						Ш					*	•		Ш		•	$\perp$	П
Chenopodiaceae	Atriplex	nummularia subsp. spathulata		P	•	•	•	•	•	•	•	•	П	•	П	•	•	•	П		•				•	Т	•	•	•				П			Т	*
Chenopodiaceae	Atriplex	stipitata		P	П			Т	П	$\top$	П	$\Box$	П		П		•		П	Т	П		П		П	Т	Т	П	Т			Т	П	Т	•	Т	П
Chenopodiaceae	Atriplex	vesicaria		P	П	•	•	Т	П	•	П	•	П		П	•	•	Т	П	Т	П	П	Т	Т	•	Т	•	•	Т		•	·T	П	Т	П	Т	•
Chenopodiaceae	Chenopodium	gaudichaudianum		P	П	丅	П	T	П	$\top$	П	丁	П		П	T	П	T	П	丁	П	П	Т		П	丁	Т	•		П		T	П	丁	П	T	*
Chenopodiaceae	Dissocarpus	paradoxus		P	Η,	•	П	1	П	1	П		П		П	•	П		П	1	П	T	$\Box$		П	1	1	П		П			П	1	П	$\top$	П
Chenopodiaceae	Enchylaena	tomentosa		P		•	$\Box$	•	П	┰	П	•	П		П	•	•	$\top$	П	•	$\Box$	т	$\vdash$	$\top$	П	┰	•	$\Box$	十	П	•	•	*	╅	$\Box$	•	п
Chenopodiaceae	Eriochiton	sclerolaenoides		Р	•	$\top$	١,	• •	Н	十	Н	$\neg$	$\vdash$	$\top$	$\vdash$	十	${}^{+}$	十	${}^{+}$	$\top$	$\vdash$	$\top$	$\dashv$	$\top$	Н	十	•	•	十	Н	o	$\top$	Н	•	$\Box$	٠.	Н
Chenopodiaceae	Maireana	brevifolia		P	H	1	$\Box$	+	Ħ	$\top$	П	_	$\top$	•	$\top$	_	Ħ	_	Ħ	$\top$	Η,		$\top$	1	H	+		$\Box$	1	Н	•	1	Ħ	+	•	十	Н
Chenopodiaceae	Maireana	carnosa		P	$\vdash$	+		$\top$	$\vdash$	$\top$	Н	$\top$	$\dashv$		+	十	┪	$\top$	$\vdash$	$\top$	$\vdash$		$\top$	+	H	十	+	$\vdash$	十	Н	$\top$	$\top$	$\vdash$	•	•	+	Н
Chenopodiaceae	Maireana	georgei		P	$\vdash$	+	١,		•	•	H		+		1.		1.	•	++	+	$\vdash$		$\dashv$	+	Н	+	•	⇈	•	Н	+			•	$\vdash$	٠.	Н
Chenopodiaceae	Maireana	glomerifolia		P	$\vdash$	+	<del>   </del>	+	H	+	Н	+	╫	$\vdash$	┿	+	╫	+	++	+	$\vdash$	+	+	+	H	+	+	↤	+	Н	+	+	$\vdash$	٠.		+	Н
Chenopodiaceae	Maireana	pentatropis		P	$\vdash$				H	•	Н	+	┯		+	-	1.1	+	┿	+	$\vdash$	+	+	+	H	+	٠.	↤	٠.	Н	٠,	+	₩	+	$\vdash$	+	₩
				P	Н,				Н	+	Н	+	↤		Н		↤	+	₩	┿		+	$\vdash$	+	Н	+	٠.		+			٠.	Н	┿		+	Н
Chenopodiaceae Chenopodiaceae	Maireana Maireana	pyramidata sedifolia		P	<del>.  </del>		Η.	·	₩	١.	Н	٠.	+	-	+	•	+.+		┿	+	1	+	+	+	H	+	Ť		+	H		+	₩	+		+.	₩
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	Maireana	thesioides		P	₩	+		٠.	Н	+	Н	+	₩	-	₩	+	₩	+	₩	+	- 1	-	$\vdash$	+	Н	+	+	₩	+	Н	+	+	1	÷	$\vdash$	4:	Н
Chenopodiaceae	Maireana	tomentosa		P	<del></del>	٠.	•		H	+	IJ	٠.	+		₩		+-+	-	₩	+		+	$\vdash$	+		+	+		٠.	Н	Н.	+	H	+	$\vdash$	+:	닞
Chenopodiaceae	Maireana	trichoptera		P	1	1.	Ш.		-	٠,	Ľ		11		+		1.1	•	₩	+	•	ш	$\vdash$	+	1	+	+	-	٠,	Н	Н.	4		+	$\vdash$	4:	H
Chenopodiaceae	Maireana	triptera		P	Ш,	`	Ш,	٠.	•	٠.	ш	٠.	44	•	ш	• •	11	•	₩	_	•	ш	щ	_	Н	4	٠.	ш	_	ш	$\perp$	٠.	щ	٠.	Н	┵.	щ
Chenopodiaceae	Rhagodia	drummondii		P	Н	+	$\vdash$	_	Н	•	Н	-	44		₩	+	₩	_	₩	+	Н	ш	*	┿	Н	4	╄	₩	_	Н	_	+	Н	+	$\vdash$	+	Н
Chenopodiaceae	Rhagodia	eremaea		P	щ	_	ш	┸	Щ	٠.	ш	_	11		ш	_	ш	_	ш	_	Ш	ш	щ		ш	_	╀	ш	_	ш	$\perp$	_	щ	_	ш	┵.	Н
Chenopodiaceae	Salsola	australis		P	ш	┸	$\sqcup$	┸	Ц	_	Ш		ш		Ш	$\perp$	Ш		*	┸	Ш	Ш	Щ		Ц	_	丄	Ш		ш		٠	ш	_	Ш	┵	ш
Chenopodiaceae	Sclerolaena	cuneata		P	ш	┸	$\sqcup$	•	Ц	*	•		ш	•	ш	•	Ш		ш	_	•		Щ		Ц	_	丄	Ш		ш			ш	_	Ш	┵	ш
Chenopodiaceae	Sclerolaena	densiflora		P	•	٠	•	•	Ш		Ш		Ш	•	ш	•	Ш		Ш		•	٠	Ш		Ш	┸	•	Ш		•	•		*		•	丄	*
Chenopodiaceae	Sclerolaena	diacantha		P	•	•		•	Ц	•	Ц	٠	ш	•	Ш	•	Ш	•	Ш	$\perp$					Ц	$\perp$	•	•	•	Ш	•		٠	•	$\Box$	•	•
Chenopodiaceae	Sclerolaena	eurotioides		P	Ш				Ш		Ш		Ш		Ш		Ш		Ш						Ш			Ш		Ш			Ш			Ш	Ш
Chenopodiaceae	Scierolaena	patenticuspis		P	١.				Ш		П	*	Ш		П	•	Ш		П						Ш								Ш	•	•		П
Chenopodiaceae	Tecticornia	disarticulata		P	П	•	П	•	П	Т	П	Т	П		П	Т	П	•	П	Т	П	П	П		П	Т	Т	П				Т	П	•	П	•	•
Chenopodiaceae	Tecticornia	indica subsp. bidens		?	П	Т	П	Т	П	Т	П	Т	П		П	Т	П		П	Т	П	П	П		П	Т	Т	П		•	•	Т	П	Т	•	Т	П
Chenopodiaceae	Tecticornia	pruinosa		P	П	Т	П	Т	П	┰	П	Т	П		П	Т	П	Т	П	┰	П	П	П	Т	П	Т	Т	П	Т	П	Т	•	П	┰	П	Т	П
Convolvulaceae	Convolvulus	remotus		P	7	١	П	Т	П	$\top$	П	丁	П		П	T	П	T	П	丁	П	П	Т		П	丁	Т	П	1	П	•	Т	П	丁	П	Т	п
Fabaceae	Acacia	? enervia subsp. enervia		P	П	T	П	Т	П	$\top$	П	丁	П		П	T	П	T	П	丁	П	П	Т		П	丁	Т	П	1	П		Т	П	•	•	Т	п
Fabaceae	Acacia	donaldsonii		P	Н	$\top$	$\Box$	$\top$	П	$\top$	П	$\top$	П		П	十	П	$\top$	П	$\top$	$\Box$	т	$\vdash$	$\top$	П	$\top$	$\top$	$\Box$	十	П	•			• •	•		•
Fabaceae	Acacia	erinacea		Р	Н	-	$\vdash$	$\top$	Н	$\top$	•	$\neg$	$\dashv$	$\vdash$	Н	十	$\vdash$	$\top$	${}^{+}$	$\top$	$\vdash$	$\top$	$\dashv$	•	Н	o	+	$\vdash$	十	Н	$\top$	$\top$	Н	$\top$	$\Box$	十	н
Fabaceae	Acacia	hemiteles		P	$\sqcap$	十	$\vdash$	$\top$	•	╅	Н	$\top$	⇈	$\vdash$	⇈	$\top$	⇈	$\dashv$	11	╈	$\sqcap$	П	o	$\top$	П	$\top$	╈	⇈	十	Н	$\top$	╈	$\sqcap$	十	$\sqcap$	十	Н
Fabaceae	Acacia	iennerae		P	$\vdash$	$\top$	$\vdash$	$\top$	Н	+	H	+	$\dashv$	$\vdash$	+	$\top$	+	$\top$	+	+	$\vdash$	$\top$	$\vdash$	T	H	+	+	$\sqcap$	$\top$	Н	$\top$		$\vdash$	+	$\sqcap$	十	Н
Fabaceae	Acacia	masliniana		Р	$\vdash$	T	$\vdash$	$\top$	H	+	Н	+	+	$\vdash$	+	$\top$	+	$\top$	+	+	$\vdash$	Ħ	$\dashv$	T	H	+	$^{+}$	$\vdash$	$\top$	Ħ	+			+	$\vdash$		Н
Fabaceae	Acacia	merrallii		P	$\vdash$	$\top$	$\vdash$	$\top$	$\vdash$	+	Н	+	┰	$\vdash$	┪	+	┪	+	++	٠.	$\vdash$	Н	$\dashv$	+	$\vdash$	+	+	$\vdash$	+	Н	+	$\top$	$\vdash$	$\top$	$\vdash$	十	Н
Fabaceae	Acacia	quadrimarginea		P	$\vdash$	+	-	+	H	+	Н	+	╫	-	╁	+	╁┼	+	1.1	+	$\vdash \vdash$	+	+	+	H		+	↤		Н	+	+	$\vdash$	+	$\vdash$	十	Н
Fabaceae	Acacia			P	$\vdash$	+	$\vdash$	+	H	+	Н	+	-		-	+	₩	+	┿	•	Η.			+	${m H}$	٠.	+	↤		H	+	+	$\vdash$	+	$\forall$	+	Н
Fabaceae	Acacia Acacia	sp. narrow phyllode tetragonophylla		P	+	+	$\vdash$	+		+	<del>   </del>	+	+	+	+	+	+	+	++	•	H	+	+	+	$\vdash \vdash$	+	+	↤	+	Н	١.	+	$\vdash$	+	+	+	Н
Fabaceae	Acacia Daviesia			P	$\vdash$	+	$\vdash$	+	$\vdash$	+	Н	+	╫	$\vdash$	↤	+	╫	+	┿	+	$\vdash$	+	+	+	H	+	+	↤	+	Н	+	+	₩	+	$\vdash$	+	Н
		benthamii subsp. acanthoclona arida		P	₩	+	⊢	+	₩	+	Н	+	╫	$\vdash$	╫	+	╫	+	┿	+	⊢╂	+	+	+	H	+	┿	↤	+	Н	+	+	₩	+	$\vdash$	+	H
Fabaceae	lacksonia Madiagga			NN, A	Η.			+	H	+	Н	+	+		+	+	+	+	$\vdash$	+	$\vdash$	+	+	+	Н	+	+	$\vdash$	+	Н		+	₩	+	$\vdash$	+	Н
	Medicago Michelia	minima			H	-		+	H	+	H	+	+		+	-	₩	-	$\vdash$	+	+	+	+	+	H	+	+	H		Н		+	Н	+	$\vdash$	+	H
Fabaceae	Mirbelia	depressa		P	₩	+	$\vdash$	+	₩	+	Н	+	↤	$\vdash$	┯	+	┦┤	+	+.+	+	⊢╂	+	+	+	Н	+-	+	$\vdash$	<del>.</del>	+	+	+	₩	+	$\vdash$	+	↤
Fabaceae	Senna	artemisioides subsp artemisioides		P	<del>   </del>	+	$\vdash$	+	H	+-	Ļ	+	11		┦┦	-	1_1		1	٠,	₩	4	+	+	H	٠,	1	⇊	-	+	+	+	₩	+	₩	+	IJ.
Fabaceae	Senna	artemisioides subsp filifolia		P	1	+	Н,	1	Ľ	┵.	Ľ	Ч.	11	•	┯	┛,	1-1	٠,٠	11	Ή.	₩	+	$\vdash$	٠.	*	4	Ŧ.		_	$\boldsymbol{\sqcup}$	+	+	₩	+	$\sqcup$	ᅷ	H
Fabaceae	Senna	cardiosperma		P	₩	+	$\vdash$	+	Н	-	Н	+	44	$\vdash$	┯	+	44	-	₩	—	₩	+	$\vdash$	+	Н	+	+	$\sqcup$	_	$\boldsymbol{\sqcup}$	+	•	₩	+	$\sqcup$	+	⇊
Fabaceae	Senna	oleurocarpa var. angustifolia		P	Н	_	$\sqcup$	$\bot$	Ц	_	Ш	4	╨	$\perp$	╨	$\bot$	11	$\bot$	⇊	_	$oldsymbol{\sqcup}$	ш	Щ	1	Ц	4	┺	$\sqcup$	$\bot$	Ш	$\perp$	_	Н	4	Щ	ֈ։	ш
Fabaceae	Swainsona	canescens		P	டட	$\perp$	$\Box$	丄	Ш	丄	Ш	$\perp$	Ш		Ш	$\perp$	Ш	$\perp$	Ш	丄	•	· Ш	Ш	$\perp$	Ш	丄	$\perp$	$\sqcup$	丄	$\perp$			ш	丄	$\Box$	丄	Ш



Solutions		T		ī		_		П	_	П	$\overline{}$	$\overline{}$	$\overline{}$		_	П	$\overline{}$	П	$\overline{}$		$\overline{}$	П	$\overline{}$	$\overline{}$		$\overline{}$	$\overline{}$		$\overline{}$	$\overline{}$	П	$\overline{}$	╦	一	$\overline{}$	$\overline{}$	一
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Family	Genus	Species	Conservation Status	P, A, NN	8 8	8	8 8	ဗြ	9 8	8	히	8 8	허	8	히	장	히	8	8 8	8 8	8 8	8	8 8	8 8	8	ချခ	} 8	ဗ	8 8	} 8	ချခ	움	8	多	1 8	장	5 8
		•	Status		₩	+	$\vdash$	₩	+	Н	+	₩	+	╁	+	₩	+	Н	+	$\vdash$	┿	Н	+	+	н	+	┿	Н	+	+	Н	+	₩	+	₩	+	+
Frankeniaceae	Frankenia	interioris		P P	₩	╀	$\vdash$	₩	+	₩	+	₩	+	₩	+	₩	+	₩	+	Н	+	Н	+	┿	Н	+	┿	Н	+	÷	H	+	₩	+	₩	+	+
Frankeniaceae	Frankenia	irregularis		P	₩	╀	$\vdash$	₩	+	₩	+	₩	+	₩	+	₩	+	₩	+	Н	+	Н	+	┿	Н	+	┿	Н	+	÷	H	+	₩	+-	₩	Н.	+
Frankeniaceae	Frankenia	pauciflora var. pauciflora			Н.	╀	$\vdash$	₩	+	₩	+	₩	٠.	₩	+	₩	4	Н	+	Н.	+	Н	٠.	╫	Н	+	╀	Н	+	┿	Н	+	₩	+	₩	-	+
Geraniaceae	Erodium	crinitum		P	Н.	+	$\vdash$	₩	+	Н	+	₩	۲.	₩	+	₩	+	Н	1	щ	Ψ.	H		+	Н	+	╀	Н	+	╄	Н	+	₩	+	$\dashv$	-	+
Goodeniaceae	Dampiera	latealata		P	Н	╀	$\vdash$	₩	+	Н	+	₩	٠.	₩	+	₩	+	Н	•	Н	+	*	٠.	4	Н	+	╀	Н	+	╄	Н	+	₩	+	$\dashv$	-	+
Goodeniaceae	Goodenia	havilandii		Α	ш	$\bot$	ш	₩	_	Н	-	₩	٠.	₩	-	₩	—	Н	Ψ.	Н	_	Н	4	-	Н	-	+	Н	4	+	Н	_	₩	+	$\dashv$	-	+
Goodeniaceae	Goodenia	krauseana		P	ш	$\perp$	Щ	Н	_	Н	_	11	_	$\sqcup$	_	ш	_	Н	_	ш	_	ш	_	_	Ц	•	╄	Ш	4	┸	щ	_	⇊	_	+	$\perp$	4
Goodeniaceae	Goodenia	occidentalis		Α	ш	$\perp$	Щ	Н	_	Н	_	ш	_	$\sqcup$	_	ш	_	Н	_	ш	_	ш	٠.	_	Ц	4	╄	Ш	4	┸	щ	_	⇊	_	+	$\perp$	4
Goodeniaceae	Goodenia	pinnatifida		Α	ш	Ш		ш	┸	ш	_	ш		Ш		ш		Ц	┸	Π,	٠.	Ш	_		Ц	_	┸	Ш	_	┸	Ц		Ш	丄	Ш		ᆚ
Goodeniaceae	Goodenia	pinnatifida		P	ш	Ш	Ш	Ш	丄	Ш	丄	Ш	•	Ш	$\perp$	Ш	$\perp$	Ц	┸	Ш	丄	Ш	丄	$\perp$	Ц	_	┸	Ш	_	┸	Ш	丄	Ш	$\bot$	Ш		1
Goodeniaceae	Scaevola	spinescens		P	Ш		•	Ш	•	•	• •	*	*	•	•	*	•	*	*	•		*		•	Ш	•	•	Ш	•		-	•	*	丄	Ш	•	<u>'</u>
Goodeniaceae	Velleia	rosea		Α	Ш			Ш		Ш		Ш				Ш		Ш				Ш	•										Ш				$\perp$
Haloragaceae	Haloragis	trigonocarpa		Α	П	Т		П	Т	П	Т	П	•	П		П		П	Т	П	Т	П	-		П	Т	Т	П	•	Т	П	Т	П	Т	П		Т
Hemerocallidaceae	Dianella	revoluta subsp. divaricata		P	Ш	Г		П	$\perp$	П	$\perp$	П	$\perp$		$\perp$	П	$\perp$	□			Ι	П	$\perp$		П	Ι	I	$\Box$	Ι	Ι			П	$\perp$	$\Box$		Ι
Lamiaceae	Prostanthera	althoferi subsp althoferi		Р	П	П	$\sqcap$	П	T	П	T	П	$\top$	П	$\top$	П	T	П	*	П	Т	*	•	•	П	* *	Т	П	*	Т	П	Т	П	$\top$	$\Box$	$\top$	Т
Lamiaceae	Salvia	verbenaca		NN, P	•	T		П	$\top$	П	$\top$	$\top$	$\top$	П		П	$\top$	П	$\top$		•	П	$\top$	T	П	$\top$	Τ	•	十	Τ	П		$\Box$	$\top$	•	$\top$	1.
Lamiaceae	Westringia	rigida		Р	П	Т		П		•		$\Box$	$\top$	П	•	П		П		•	Т	•	$\top$	•	П	٠	Т	П	١.		П	Т	1	$\top$	$\sqcap$		T
Malvaceae	Lawrencia	repens		P	$\vdash$	т	$\vdash$	++	$\top$	H	•	+	$\top$	⇈	$\dashv$	⇈	$\top$	$\vdash$	+	$\vdash$	+	H	+	+	Н	+	+	H	$\top$	+	H	+	⇈	+	+	-	.+
Malvaceae	Sida	calyxhymenia		P	$\vdash$	+	$\vdash$	++	+	H	+	╁┼	+	╁	+	++	+	$\vdash$	•	$\vdash$	+	H	+	+	Н	+	+	$\vdash$	+	+	$\vdash$	+	⇈	+	+	+	+
Malvaceae	Sida	intricata		P	$\vdash$			++	+	H	+	┰	+	╁	+	++	+	$\vdash$	+	$\vdash$	+	H	+	+	Н	+	+	$\vdash$	+	+	$\vdash$	+	⇈	+	+	$\dashv$	+
Malvaceae	Sida	sp. Dark green fruits		P	Н	+	$\vdash$	₩	+	Н	+	₩	+	↤	+	₩	+	H	+	H	┿	H	٠,		Н	+	┿	$\vdash$	+	┿	$\vdash$	┿	₩	+	₩	+	+
		sp. Red Hill	P1	P	₩	+	$\vdash$	₩	+	₩	+	₩	+	╁	+	₩	+	₩	+	$\vdash$	┿	Н	┿	+	Н	٠,	+	$\vdash$	+	┿	$\vdash$	┿	₩	+	₩	+	+
Myrtaceae	Astartea		P1	P	₩	₩	$\vdash$	₩	+	₩	+	₩	+	╁┼	+	₩	+	₩		₩	+	₩	+	+	Н	+	┰	↤	+	┿	$\vdash$	+	₩	+	₩	+	+
Myrtaceae	Eucalyptus	ewartiana		P	₩	╀	$\vdash$	+++	+	Н	+	₩	+	₩	+	₩	+	Н	+	$\vdash$	+	Н	+	+	Н	+	┿	Н	+	┿	Н	+	₩	+	+	+	+
Myrtaceae	Eucalyptus	gracilis			₩	╄	Н-	+++	+	₩	-	₩	-	₩	_	╁	-	Н	+-		+	Н	-	+	Н	+	╄	Н	+	╇	Н	+	₩	+	₩	+	+
Myrtaceae	Eucalyptus	griffithsii		P	Н	╄	Н.	₩	+	Н	_	┦	٠.	₩	•	++	+-	1*1	٠		+	1*1	-	+	н	+	+	Н	+	╇	Н	+	₩	4	₩	+	+
Myrtaceae	Eucalyptus	lesouefii		P		┺	Н.	₩	—	11	•	1.1	+	₩	_	₩	٠.	Н	_	$\vdash$	+	Н	-	_	Н	4	ļ.	Н	4	╀	Н	+	₩	+	$\dashv$	$\dashv$	4
Myrtaceae	Eucalyptus	oleosa		P	ш	Щ	Щ	ш	_	ш	_	•	•	ш	•	ш	•	ш	_	ш	┸	ш	_	┸	Ц	4	┸	ш	_	┸	Щ	┸	Н	ᅪ	Ш	$\perp$	4
Myrtaceae	Eucalyptus	oleosa subsp. oleosa		P	ш	Щ	Щ	ш	_	ш	_	ш	_	ш	_	ш		ш	_	ш	┸	ш	•	┸	Ц	4	┸	Ш	_	┸	Щ	┸	Н	ᅪ	Ш	$\perp$	4
Myrtaceae	Eucalyptus	ravida		P	Ш			*		Ш	•	ш		Ш	•	Ш		ш				ш			Ш			Ш			Ш		Ш	丄	Ш		$\perp$
Myrtaceae	Eucalyptus	salicola		P	Ш			Ш		Ш		Ш				Ш		Ш			$\perp$	Ш			Ш								*	$\perp$	Ш		$\perp$
Myrtaceae	Eucalyptus	salmonophloia		P	•		•	Ш		Ш	•			•	•	Ш	•	Ш				Ш					•						Ш	$\perp$			$\perp$
Myrtaceae	Eucalyptus	torquata		P	П	Т		П	Т	•	•	П	Т	П		П		*	Т	П	Т	П	Т	•	П	Т	Т	П	•	Т		Т	П	Т	П		Т
Myrtaceae	Eucalyptus	transcontinentalis		P	П	Т	П	П		П	Т	П	┰	П	•	П	$\neg \vdash$	П	Т	П	┰	П	┰	Т	П	Т	Т	П	Т	Т	П	Т	П	Т	П	Т	Т
Myrtaceae	Melaleuca	elliptica		P	П	Т		П	T	П	丁	П	$\top$	П	$\top$	П	$\top$	П	Т	П	┰	П	丁	Т	П	$\top$	T	П	T	Т	П		П	$\top$	$\Box$	$\Box$	T
Myrtaceae	Melaleuca	hamata		P	П	Т	П	П	一	П	$\neg$	П	$\top$	П	$\neg$	П	$\neg$	П	丅	П	┰	П	•	$\top$	П	•	1	П	丁	┰	П	┰	П	丅	П	$\neg$	T
Myrtaceae	Melaleuca	lateriflora		Р	Н	+		Ħ	十	Н	$\top$	$\vdash$	$\top$	$\vdash$	$\top$	Ħ	$\top$	Н	十	$\vdash$	+	Н	$\top$	+	Н	$^{+}$	+	Н	$^{+}$	十	$\vdash$		Ħ	+	$\vdash$	$\top$	十
Myrtaceae	Melaleuca	sheathiana		P	Н	+		Ħ		Н	$\top$	$\vdash$	$\top$	$\vdash$	$\top$	Ħ	$\top$	Н	十	$\vdash$	+	Н	$\top$	+	Н	$^{+}$	+	Н	$^{+}$	+	$\vdash$	$\top$	Ħ	+	$\vdash$	$\top$	十
Pittosporaceae	Pittosporum	angustifolium		P	Н	+	$\vdash$	H	+	Н	+	+	+	$\vdash$	+	₩	+	Н	+	$\vdash$	+	Н	+	+	Н	+	+	$\vdash$	+	+	•	+	Ħ	+	+	$\dashv$	+
Plantaginaceae	Plantago	drummondii		A	Н	+	$\vdash$	₩	+	Н	+	₩	┰	╁	+	₩	+	↤	+	$\vdash$	┰	Н	┰	+	Н	+	╈	↤	+	╈	$\vdash$		₩	十	++	$\dashv$	+
Poaceae	Aristida	contorta		A	Н	+	$\vdash$	₩	+	Н	+	₩	┰	╁	+	₩	+	↤	+	$\vdash$	٠.	Н	٠,		Н	•	╈	↤	+	╈	$\vdash$	┰	₩	十	₩		+
				P	Η.			H	+	<del>  .  </del>	٠.	1.1	+	╁┼	٠.	1.1	•	H	+	$\vdash$	┰	Н	+	+		+	٠.		+	+	Н		₩	+	₩	٠,	+
Poaceae	Austrostipa	elegantissima		P		1		1.1				1.	٠.	+ 1	-	1.1	<del>.   .</del>	<del>   </del>		١.	٠.	<del>   </del>	٠.	٠.	H	+	+	-	٠.	+	H	_	╁	+	+	-	Η.
Poaceae	Austrostipa	nitida		P	<del>       </del>	+		╀	+	<del>                                     </del>	-   -	++	++-	+-	+	╀		∺	+	-	+	╀	٠,	+	H	+	÷	-	Ψ.	+	Н	٦.	₩	+	₩	-	+
Poaceae	Cymbopogon	ambiguus			Н.	╀	$\vdash$	₩	+	₩	+	₩	+	┦	+	₩	+	₩	+	Н	٠.	Н	+	+	Н	+	╇	Н	+	+	H	٠,	₩	+	+	-	+
Poaceae	Eragrostis	dielsii		Α	Н.	₽	Н	Н	_	Н	_	Н	_	$\boldsymbol{+}$	_	₩	_	Н	+	щ	4	Н	+	+	Н	+	╄	Н	4	Ļ.	1	ų.	₩	+	╨	$\perp$	+
Poaceae	Eragrostis	eriopoda		Р	H.	┺	ш	Н	_	Н	_	Н	_	Н	_	Н	_	Н	+	Н	·	Н	_	_	Н	4	╄	Н	_	┺	Н	_	₩	+	$\dashv$	_	+
Poaceae	Hainardia	cylindrica		NN, A	ш		$\vdash$	$oldsymbol{\sqcup}$	$\perp$	Н	$\perp$	$\sqcup$	$\perp$	Ш		$oldsymbol{\sqcup}$	$\perp$	ш	_	Ш	$\perp$	Ц	$\perp$	_	ш	4	$\perp$	Ш	4	$\bot$	•	$\perp$	₩	$\bot$	Ш	1	4
Poaceae	Monachather	paradoxus		P	ш	$\perp$	$\sqcup$	$oldsymbol{\sqcup}$	_	Ц	$\perp$	ш	丄	Ш		$oldsymbol{\sqcup}$	_	Ц	٠.	Щ	_	Ш	$\perp$	$\perp$	ш	_	┸	Ш	_	┸	Ц	$\perp$	ш	丄	$oldsymbol{oldsymbol{\sqcup}}$	$\perp$	丄
Poaceae	Rostraria	pumila		NN. A	ш	L	Ш	Ш		Ш		Ш		Ш		Ш		ш		Ш	L	Ш		L	Ш	_	L	Ш		$\perp$	•	L	Ш	4	Ш		4
Poaceae	Rytidosperma	acerosum		?	Ш	$\perp$	Ш	Ш	┸	Ш		$\perp 1$		$oldsymbol{oldsymbol{\sqcup}}$		Ш		Ш	$\perp$	$\Box$		Ш	$\perp$	$\perp$	L	⅃	L	Ш		$\perp$	Ш	$\perp$	Ш	┸	Ш		L
Poaceae	Triodia	scariosa		P	Ш			$\Box$	$\perp$	$\Box$	$\perp$	$\Box$	$\perp$		•	$\Box$		Ш	$\perp$	•	Ι	$\Box$	$\perp$		П	$\perp$	L	$\Box$	$\perp$			$\perp$	Ш	*			$\perp$
Portulacaceae	Calandrinia	eremaea		Α	$\Box \Gamma$	Γ	$\Box \Box$	$\Box$	┲	IJ	Т	$\prod$	┚	П		$\prod$	┲	ĹĬ	•	$\Box$	Γ	П	Т	Γ	П	Τ	Γ	ଯ	Ι	Γ		Γ	LT	╧	⊥⊺		⊥
Portulacaceae	Portulaca	oleracea		NN, A	•	П		П	Т	П	Т	П	Т		Т	П		П	Т		Т	П	Т		П	Т	Т	П	Т	Т		Т	$\Box$	T	$\Box$		Т
	Lysimachia	arvensis		NN, P	П	Т		П		П		$\top$		П		П		П	Т		Т	П	Т	Т	П	Т	Т	П	Т	Т	•		$\Box$		$\Box$	T	$\top$
Primulaceae																					-															_	-
Proteaceae	Grevillea	acuaria		P	П	П		П		П	Т	П	Т	П	Т	П		П		П		П	Т	Т	П	Т	Т	П	Т	┰	$\Box$	•		*			- 1



Dolutio			1	1		1 1		-	$\overline{}$		_		1 1	т т			1 1		т т	_		_	-	1 1	-	1 1	1 1	$\overline{}$	1 1	$\overline{}$	$\overline{}$	$\boldsymbol{ o}$	$\overline{}$	$\overline{}$
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Family	Genus	Species	Conservation Status	P, A, NN	2 2	8 8	Q5	90	3 8	8 5	2 2	2 2	취장	집	2 2	2 2	8 6	8 8	8	8 8	8	8 8	93	8 8	8	8 8	ဒီ ဗြ	8 8	9	2 S	8 8	3 8	8 5	주   주
Ranunculaceae	Ranunculus	pentandrus var platycarpus	Status	A	H	+	$\pm$	H	+		+	H	+	+	_	H	+	+	H	+	H	+	H	+	$\vdash$	+	+	*	+	+	++	+	H	+
Rhamnaceae	Cryptandra	aridicola		P	TT				+		+		1 1	*												+		_	1 1		$\vdash$	+	H	$\pm$
Rhamnaceae	Stenanthemum	stipulosum		P	H	+ 1			+		+		+		_		+	*			H	1		1		+	$\pm$	$\pm$	t	+	tt	+	Ħ	$\pm 1$
Rhamnaceae	Trymalium	myrtillus subsp. myrtillus		P	tt				$\top$		1		+				+		tt		*					T			1 1	$\pm$	Ħ	$\top$	Ħ	$\top$
Santalaceae	Exocarpos	aphyllus		Р			*	*	*	*	*	*	1 1		* *	*	11		t		*			1				$\top$	*	*	$\Box$	+	Ħ	$\top$
Santalaceae	Santalum	acuminatum		Р					$\top$				1 1		*		11		t					1				$\top$	tt	$\top$	$\Box$	+	Ħ	$\top$
Santalaceae	Santalum	spicatum		Р				*	*	*	×		1 1					*	t					1				$\top$	tt	$\top$	$\Box$	+	Ħ	$\top$
Sapindaceae	Dodonaea	adenophora		Р				*	*			*	*						t					1				$\top$	tt	$\top$	$\Box$	+	Ħ	$\top$
Sapindaceae	Dodonaea	lobulata		Р				*	*	* *	×	* *	*	* *	*		*	* *	t		* *	* *	*	*	*		* *	$\top$	tt	$\top$	*	+	ŕ	*
Sapindaceae	Dodonaea	viscosa subsp. angustissima		Р					$\top$																	T			*	* *		$\top$	*	T
Scrophulariaceae	Eremophila	decipiens subsp. decipiens		Р			*		$\top$					*						* *						*			*	* *	* *	*	* *	* *
Scrophulariaceae	Eremophila	georgei		Р					$\top$	* *	×	*	*				11	*	t		,	* *		1				$\top$	tt	$\top$	$\Box$	+	Ħ	$\top$
Scrophulariaceae	Eremophila	glabra subsp. glabra		Р			*	*	,	* *	* *				*		*		*		*		* *			T						$\top$	Ħ	T
Scrophulariaceae	Eremophila	granitica		Р				*	,																	T				*		$\top$	Ħ	T
Scrophulariaceae	Eremophila	interstans subsp interstans		Р	*		*		$\top$	*	*	*			*	* *	*						*			T	*					$\top$	Ħ	T
Scrophulariaceae	Eremophila	interstans subsp. virgata		Р				*	$\top$																	T						$\top$	Ħ	T
Scrophulariaceae	Eremophila	ionantha		Р					$\top$						*					*					*					$\top$		$\top$		П
Scrophulariaceae	Eremophila	longifolia		Р					$\top$																	T		*				$\top$	Ħ	T
Scrophulariaceae	Eremophila	miniata		Р					$\top$																	*				*		$\top$		П
Scrophulariaceae	Eremophila	oldfieldii subsp. angustifolia		Р					$\top$					*			*	* *					* *				*			$\top$		$\top$		П
Scrophulariaceae	Eremophila	oppositifolia subsp. angustifolia		Р					$\top$	*	*				*															$\top$		$\top$		П
Scrophulariaceae	Eremophila	parvifolia subsp. auricampa		Р			* *		$\top$	*		*		*	*				*		*									$\top$		$\top$		П
Scrophulariaceae	Eremophila	pustulata		Р					$\top$	*	*																			$\top$		$\top$		П
Scrophulariaceae	Eremophila	rugosa		Р	*				$\top$																							$\top$		
Scrophulariaceae	Eremophila	scoparia		Р		*			$\top$	*					*	*			*				*		*				*		*	*		*
Scrophulariaceae	Eremophila	sp Mt Jackson		Р			*		$\top$																							$\top$		
Scrophulariaceae	Eremophila	maculata subsp brevifolia		Р					$\top$											*												$\top$		
Scrophulariaceae	Myoporum	montanum		Р					$\top$																				*			$\top$		*
Scrophulariaceae	Myoporum	platycarpum subsp. platycarpum		Р					$\top$					*		*																$\top$		
Solanaceae	Lycium	australe		Р	*	4			$\top$		*	*		*	*	*				*						*		*	*	*		$\top$	* *	* *
Solanaceae	Solanum	lasiophyllum		Р					$\top$									*				*		*			*					$\top$		
Solanaceae	Solanum	nummularium		Р			*		$\top$	*	*				*	*										*			*	* *		$\top$	*	*
Thymelaeaceae	Pimelea	microcephala		Р					$\top$																			T		*	П	T	*	$\Box$
Violaceae	Hybanthus	floribundus subsp. curvifolius		Р					$oldsymbol{\Box}$				*	*																		$oldsymbol{\Box}$		
Zygophyllaceae	Zygophyllum	aurantiacum		Р	*	*	* *		*	* *	*	* *	*		* *	* *	*	*	*	* *	* '	*	* *		*	*	k		*			$oldsymbol{\Box}$		*
Zygophyllaceae	Zygophyllum	eremaeum		A	*		* *	*				*			*								*			*							5	* *



## Species List per Vegetation Group

Family	Genus	Species	Conservation Status	P, A, NN	Veg Group 1	Veg Group 2	Veg Group 3	Veg Group 4	Veg Group 5	Veg Group 6	Veg Group 7	Veg Group 8	Veg Group 9	Veg Group 10	Veg Group 11	Veg Group 12	Veg Group 13	Veg Group 14	Veg Group 15	Veg Group 16	Veg Group 17	Veg Group 18	Veg Group 19
Aizoaceae	Disphyma	crassifolium		Р									*					*	*		*	*	
Aizoaceae	Gunniopsis	intermedia		Α																		*	
Aizoaceae	Gunniopsis	quadrifida		Р														*			*	*	
Aizoaceae	Mesembryanthemum	nodiflorum		NN, A			*								*							*	
Amaranthaceae	Hemichroa	diandra		P																	*		-
Amaranthaceae	Ptilotus	aervoides		Α	*															*			-
Amaranthaceae	Ptilotus	carlsonii		Α										*	*								
Amaranthaceae	Ptilotus	carlsonii		Α											*								
Amaranthaceae	Ptilotus	holosericeus		Р											*								
Amaranthaceae	Ptilotus	nobilis		Α			*	*						*		*				*			
Amaranthaceae	Ptilotus	obovatus		Р	*	*	*		*	*	*			*	*		*		*	*		*	*
Apocynaceae	Alyxia	buxifolia		Р	*					*													
Apocynaceae	Marsdenia	australis		Р	*	*	*			*	*			*	*		*	*			*	*	*
Asparagaceae	Thysanotus	manglesianus		Р		*				*												*	
Asteraceae	Angianthus	prostratus	P3	Α																		*	
Asteraceae	Angianthus	tomentosus		Α										*	*		*	*					
Asteraceae	Brachyscome	ciliaris		Α																	*		
Asteraceae	Brachyscome	ciliocarpa		Α		*	*						*	*				*		*	*	*	*
Asteraceae	Brunonia	australis		Р		*				*													*
Asteraceae	Calotis	hispidula		Α										*									*
Asteraceae	Cephalipterum	drummondii		Α											*	*	*	*	*	*	*	*	*
Asteraceae	Chrysocephalum	puteale		Р		*																	
Asteraceae	Cotula	bipinnata		NN																		*	
Asteraceae	Cratystylis	conocephala		Р															*				
Asteraceae	Cratystylis	microphylla		Р														*			*	*	
Asteraceae	Cratystylis	subspinescens		Р									*					*			*	*	-
Asteraceae	Dittrichia	graveolens		NN, A									*									*	-
Asteraceae	Gnephosis	angianthoides		A	*	*																	-
Asteraceae	Olearia	magniflora		Р																	*	*	-
Asteraceae	Olearia	muelleri		Р	*		*		*	*	*	*		*			*	*			*	*	-
Asteraceae	Olearia	pimeleoides		Р							*										*		
Asteraceae	Oncosiphon	suffruticosum		NN																	*	*	
Asteraceae	Podolepis	canescens		Α										*	*								
Asteraceae	Podolepis	capillaris		Р		*											*	*			*	*	
Asteraceae	Podolepis	lessonii		Α		*				*					*			*		一	$\neg$		*
Asteraceae	Rhodanthe	floribunda		Α												*					$\exists$		
Asteraceae	Rhodanthe	oppositifolia subsp. oppositifolia		Α										*						*			



Family	Genus	Species	Conservation Status	P, A, NN	Veg Group 1	Veg Group 2	Veg Group 3	Veg Group 4	Veg Group 5	Veg Group 6	Veg Group 7	Veg Group 8	Veg Group 9	Veg Group 10	Veg Group 11	Veg Group 12	Veg Group 13	Veg Group 14	Veg Group 15	Veg Group 16	Veg Group 17	Veg Group 18
Asteraceae	Rhodanthe	stricta	Giaiao	Α									*								*	*
Asteraceae	Schoenia	cassiniana		A											*						-+	
Asteraceae	Senecio	pinnatifolius		A						*			*								-+	*
Asteraceae	Sonchus	oleraceus		NN									*								*	*
Asteraceae	Vellereophyton	? dealbatum		NN, A											*						-+	
Asteraceae	Vittadinia	eremaea		A											*						-	_
Asteraceae	Waitzia	acuminata		A		*				*				*	*						-	*
Asteraceae	Xanthium	spinosum	Declared Weed (P3)	NN, A																		*
Boraginaceae	Halgania	andromedifolia		Р	*										*							*
Boraginaceae	Heliotropium	curassavicum		Α														*				
Brassicaceae	Arabidella	chrysoderma		Α											*							
Brassicaceae	Carrichtera	annua		NN, A																	*	
Brassicaceae	Sisymbrium	runcinatum		NN, A																*		
Brassicaceae	Stenopetalum	sphaerocarpum		Α																	*	
Casuarinaceae	Allocasuarina	acutivalvis		Р						*												
Casuarinaceae	Allocasuarina	campestris		Р						*												
Casuarinaceae	Allocasuarina	helmsii		Р						*												
Casuarinaceae	Casuarina	pauper		Р	*		*				*						*		*			
Celastraceae	Stackhousia	sp. Mt Keith		?						*												
Celastraceae	Stackhousia	sp. (sterile)		?		*																
Chenopodiaceae	Atriplex	amnicola		Р			*															
Chenopodiaceae	Atriplex	codonocarpa		Р				*														*
Chenopodiaceae	Atriplex	lindleyi subsp. inflata		Α									*									*
Chenopodiaceae	Atriplex	nummularia subsp. spathulata		Р	*		*	*			*				*	*	*		*	*		
Chenopodiaceae	Atriplex	stipitata		Р													*					*
Chenopodiaceae	Atriplex	vesicaria		Р	*		*	*							*	*	*		*	*		*
Chenopodiaceae	Chenopodium	gaudichaudianum		Р	*										*				*			
Chenopodiaceae	Didymanthus	roei		Р									*									
Chenopodiaceae	Dissocarpus	paradoxus		Р	*											*				*	*	
Chenopodiaceae	Enchylaena	tomentosa		Р			*	*		*				*		*	*	*	*	*	*	*
Chenopodiaceae	Eriochiton	sclerolaenoides		Р			*	*							*						*	*
Chenopodiaceae	Maireana	brevifolia		Р			*							*	*							*
Chenopodiaceae	Maireana	carnosa		P						*								*			*	*
Chenopodiaceae	Maireana	georgei		P	*		*	*	*	*	*	*		*		*	*	*			*	*
Chenopodiaceae	Maireana	glomerifolia		P																	*	*
Chenopodiaceae	Maireana	pentatropis		P	*		*	*	*								*	*	*		$\dashv$	*
Chenopodiaceae	Maireana	pyramidata		P			*	*					*		*	*	*			*	*	*
Chenopodiaceae	Maireana	sedifolia		P	*		*	*							*	*	*		*	*	$\neg$	*
Chenopodiaceae	Maireana	thesioides		P	t										*			*			*	*



Family	Genus	Species	Conservation Status	P, A, NN	Veg Group 1	Veg Group 2	Veg Group 3		Veg Group 5	Veg Group 6	Veg Group 7	Veg Group 8	Veg Group 9	Veg Group 10	Veg Group 11	Veg Group 12	Veg Group 13	Veg Group 14	Veg Group 15	Veg Group 16	Veg Group 17	Veg Group 18
Chenopodiaceae	Maireana	tomentosa	Otatas	Р				*								*	*				-+	*
Chenopodiaceae	Maireana	trichoptera		P	*		*	*	*		*			*	*	*	*	*	*	*	-+	*
Chenopodiaceae	Maireana	triptera		P	*		*	*			*			*	*	*			*	*	*	*
Chenopodiaceae	Rhagodia	drummondii		P		*			*						*						$\dashv$	+
Chenopodiaceae	Rhagodia	eremaea		Р	*																$\dashv$	*
Chenopodiaceae	Salsola	australis		P															*		-+	+
Chenopodiaceae	Sclerolaena	cuneata		P	*			*	*						*	*	*				*	+
Chenopodiaceae	Sclerolaena	densiflora		P			*						*		*	*	*	*	*	*	$\dashv$	*
Chenopodiaceae	Sclerolaena	diacantha		P	*		*	*	*					*	*	*		*	*	*	*	*
Chenopodiaceae	Sclerolaena	eurotioides		P											*						-	+
Chenopodiaceae	Sclerolaena	patenticuspis		P				*								*		*		*	*	*
Chenopodiaceae	Tecticornia	disarticulata		P			*	*											*		*	*
Chenopodiaceae	Tecticornia	indica subsp. bidens		?									*								-	*
Chenopodiaceae	Tecticornia	pruinosa		P																	*	+
Convolvulaceae	Convolvulus	remotus		P																*	-+	*
Fabaceae	Acacia	? enervia subsp. enervia		P																	*	*
Fabaceae	Acacia	donaldsonii		P														*	*		*	*
Fabaceae	Acacia	erinacea		P	*																-+	-+
Fabaceae	Acacia	gibbosa		P						*											$-\!\!\!+$	+
Fabaceae	Acacia	hemiteles		P			*				*										$\dashv$	+
Fabaceae				P																	*	+
Fabaceae	Acacia Acacia	jennerae ligulata		P			*														$-\!\!\!+$	+
		masliniana		P														*			*	*
Fabaceae	Acacia			P						*											$\dashv$	+
Fabaceae	Acacia	merrallii		P		*															-+	+
Fabaceae	Acacia	quadrimarginea		P		*				*		*		*	*						$-\!\!\!+$	+
Fabaceae	Acacia	sp. narrow phyllode		P															+		$-\!\!\!+$	
Fabaceae	Acacia	tetragonophylla		P						-								*			$-\!\!\!+$	+
Fabaceae	Daviesia	benthamii subsp. acanthoclona		P														*			$\dashv$	+
Fabaceae	Jacksonia	arida																		*	-+	*
Fabaceae	Medicago	minima		NN, A		*															$-\!\!\!+$	<u> </u>
Fabaceae	Mirbelia	depressa		P			+							+							$-\!\!\!+$	
Fabaceae	Senna	artemisioides subsp artemisioides		P	*	-	*			*				*			+		*		<del></del>	+
Fabaceae	Senna	artemisioides subsp filifolia									-											
Fabaceae	Senna	cardiosperma		Р																		_
Fabaceae	Senna	pleurocarpa var. angustifolia		P	<u> </u>										*						$-\!\!\!+$	
Fabaceae	Swainsona	canescens		P									*		*						<b></b>	$\dashv$
Frankeniaceae	Frankenia	interioris		Р	<u> </u>		^						,								<b></b>	_
Frankeniaceae	Frankenia	irregularis		P P	<u> </u>								*									*
Frankeniaceae	Frankenia	pauciflora var. pauciflora			1	i l						1					*		*		*	~



Family	Genus	Species	Conservation Status	P, A, NN	Veg Group 1	Veg Group 2	Veg Group 3			Veg Group 6	Group	Veg Group 8	Veg Group 9	Veg Group 10	Veg Group 11	Veg Group 12	Veg Group 13	Veg Group 14	Veg Group 15	Veg Group 16	Veg Group 17	Veg Group 18 Veg Group 19
Goodeniaceae	Dampiera	latealata	Otatus	Р		*				*										-+	+	*
Goodeniaceae	Goodenia	havilandii		A		*								*						-+	+	*
Goodeniaceae	Goodenia	krauseana		P		*														-+	+	+
Goodeniaceae	Goodenia	occidentalis		A		*														-+	+	+
Goodeniaceae	Goodenia	pinnatifida		A											*					-+	+	+
Goodeniaceae	Goodenia	pinnatifida		P					-					*						-+	+	+
Goodeniaceae	Scaevola	spinescens		P	*	*	*			*	*	*		*		*	*	*	*	-+	*	* *
Goodeniaceae	Velleia	rosea		A		*														-+	+	+
Haloragaceae	Haloragis	trigonocarpa		A	$\vdash$	*	$\vdash$		-+					*						+	+	+
Hemerocallidaceae	Dianella	revoluta subsp. divaricata		P					-	*										-+	*	+
Lamiaceae	Prostanthera	althoferi subsp althoferi		P		*				*				*						-+	-+	*
Lamiaceae	Salvia	verbenaca		NN, P											*				*	*	*	*
Lamiaceae	Westringia	rigida		P P	*	*				*		*						*		-+	-+	-+-
Malvaceae	Brachychiton	gregorii		P		*														-+	+	+
Malvaceae	Lawrencia	repens		P												*				-+	+	*
Malvaceae	Sida	calyxhymenia		P																$-\!\!\!+$	+	*
Malvaceae	Sida	intricata		P				*									*			$-\!\!\!+$	+	$-\!\!\!\!\!+\!\!\!\!\!-$
Malvaceae	Sida	sp. Dark green fruits		P		*														$-\!\!\!+$	-	+
		sp. Dark green rruits sp. Red Hill	P1	P										*						$-\!\!\!+$	+	$-\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$
Myrtaceae	Astartea		PI	P																$-\!\!\!+$	-	+
Myrtaceae	Eucalyptus	ewartiana		P				*												$-\!\!\!+$	+	*
Myrtaceae	Eucalyptus	gracilis		P			*	-		*		*		*				*		$\dashv$	+	
Myrtaceae	Eucalyptus	griffithsii		P	*		*		-	-								-		$\dashv$	+	$+\!\!-$
Myrtaceae	Eucalyptus	lesouefii		P	-	+	*													$-\!\!\!+$		
Myrtaceae	Eucalyptus	oleosa			<u> </u>	· ·														$-\!\!\!+$		
Myrtaceae	Eucalyptus	oleosa subsp. oleosa		P	<u> </u>			*												$-\!\!\!+$		
Myrtaceae	Eucalyptus	ravida		P																	_	_
Myrtaceae	Eucalyptus	salicola		P			*	*								*				<u> </u>		
Myrtaceae	Eucalyptus	salmonophloia					*	^								^	^				_	_
Myrtaceae	Eucalyptus	torquata		P	*		*					*								<u> </u>		
Myrtaceae	Eucalyptus	transcontinentalis		P					*	*		*								<b></b>	<u></u>	
Myrtaceae	Melaleuca	coccinea	P3	Р						*												
Myrtaceae	Melaleuca	elliptica		P																	*	
Myrtaceae	Melaleuca	hamata		Р	<u> </u>	*								*							_	4
Myrtaceae	Melaleuca	lateriflora		Р	<u> </u>																	4
Myrtaceae	Melaleuca	sheathiana		P	<u> </u>		$\sqcup$		*													_
Pittosporaceae	Pittosporum	angustifolium		P	<u> </u>		*								*			*			<u> </u>	*
Plantaginaceae	Plantago	drummondii		Α																	*	*
Poaceae	Aristida	contorta		Α	*	*									*			*				
Poaceae	Austrostipa	elegantissima		Р	*		*	*							*	*	*		*	*		*
Poaceae	Austrostipa	nitida		Р	*	*	*	*		*	*			*	*	*	*	*	*	*	*	* *



Family	Genus	Species	Conservation Status	P, A, NN	Veg Group 1	Veg Group 2	Veg Group 3		Group		Veg Group 7	Veg Group 8	Veg Group 9	Veg Group 10	Veg Group 11	Veg Group 12	Veg Group 13	Veg Group 14	Veg Group 15	Veg Group 16	Veg Group 18	Veg Group 19
Poaceae	Cymbopogon	ambiguus		Р																,	r	+
Poaceae	Eragrostis	dielsii		A									*		*					* :	*	$\pm$
Poaceae	Eragrostis	eriopoda		P						1					*					*	_	+
Poaceae	Hainardia	cylindrica		NN, A																	*	1
Poaceae	Monachather	paradoxus		P						*											_	*
Poaceae	Rostraria	pumila		NN. A																	*	1
Poaceae	Rytidosperma	acerosum		?											*							
Poaceae	Triodia	scariosa		Р						*		*						*			_	1
Portulacaceae	Calandrinia	eremaea		Α																		*
Portulacaceae	Portulaca	oleracea		NN. A			*														_	1
Primulaceae	Lysimachia	arvensis		NN, P																,	*	1
Proteaceae	Grevillea	acuaria		P														*		,	f	1
Proteaceae	Grevillea	nematophylla subsp. nematophylla		Р		*																
Ranunculaceae	Ranunculus	pentandrus var platycarpus		Α																	*	
Rhamnaceae	Cryptandra	aridicola		Р								*										
Rhamnaceae	Cryptandra	graniticola		Р						*												*
Rhamnaceae	Stenanthemum	stipulosum		Р						*												*
Rhamnaceae	Trymalium	myrtillus subsp. myrtillus		Р						*												
Santalaceae	Exocarpos	aphyllus		Р	*		*			*	*					*	*	*	*			
Santalaceae	Santalum	acuminatum		Р			*									*						
Santalaceae	Santalum	spicatum		Р	*					*	*											
Sapindaceae	Dodonaea	adenophora		Р							*			*								
Sapindaceae	Dodonaea	lobulata		Р	*	*	*			*	*	*		*			*	*			*	*
Sapindaceae	Dodonaea	viscosa subsp. angustissima		Р														*	*	,	:	
Scrophulariaceae	Eremophila	decipiens subsp. decipiens		Р			*					*			*			*	*	,	: *	
Scrophulariaceae	Eremophila	georgei		Р	*	*								*								*
Scrophulariaceae	Eremophila	glabra subsp. glabra		Р	*		*			*	*					*						
Scrophulariaceae	Eremophila	granitica		Р		*					*									,	:	
Scrophulariaceae	Eremophila	interstans subsp interstans		Р	*		*									*	*					
Scrophulariaceae	Eremophila	interstans subsp. virgata		Р				*														
Scrophulariaceae	Eremophila	ionantha		Р			*								*	*						
Scrophulariaceae	Eremophila	Iongifolia		Р																	*	
Scrophulariaceae	Eremophila	miniata		Р											*					,	7	
Scrophulariaceae	Eremophila	oldfieldii subsp. angustifolia		Р	*		*			*							*					*
Scrophulariaceae	Eremophila	oppositifolia subsp. angustifolia		Р	*		*															1
Scrophulariaceae	Eremophila	parvifolia subsp. auricampa		Р	*		*			*							*					T
Scrophulariaceae	Eremophila	pustulata		Р	*																	T
Scrophulariaceae	Eremophila	rugosa		Р																*		
Scrophulariaceae	Eremophila	scoparia		Р	*		*	*		*					*				*	,		
Scrophulariaceae	Eremophila	sp Mt Jackson		Р			*			T												1



Family	Genus	Species	Conservation Status	P, A, NN	Veg Group 1	Veg Group 2	Veg Group 3	Veg Group 4		Veg Group 6	Veg Group 7	Veg Group 8	Veg Group 9	Veg Group 10	Veg Group 11	Veg Group 12	Veg Group 13	Veg Group 14	Veg Group 15	Veg Group 16	Veg Group 17	Group	Veg Group 19
Scrophulariaceae	Eremophila	maculata subsp brevifolia		Р			*								*								
Scrophulariaceae	Myoporum	montanum		Р															*				
Scrophulariaceae	Myoporum	platycarpum subsp. platycarpum		Р			*					*											
Solanaceae	Lycium	australe		Р	*		*								*	*	*	*	*	*		*	
Solanaceae	Solanum	lasiophyllum		Р	*	*																	*
Solanaceae	Solanum	nummularium		Р	*		*								*	*	*	*	*		*		
Thymelaeaceae	Pimelea	microcephala		Р														*			*		
Violaceae	Hybanthus	floribundus subsp. curvifolius		Р								*		*									
Zygophyllaceae	Zygophyllum	aurantiacum		Р	*	*	*	*	*	*				*	*	*	*		*	*			*
Zygophyllaceae	Zygophyllum	eremaeum		Α	*		*	*							*		*		*			*	



## **Appendix F - Site Descriptions**



	Project Name: SKC	) Locatio	n 48 + 50						
Date:	3/09/2012		Botanist:	Eren Reid & Ashley Owen					
Location:	Alacer Gold		Quadrat:	1					
Quadrat size:	20x20								
Vegetation group:         Mixed Eucalyptus woodland over Atriplex nummularia shrublands									
WP:	1								
Photo number:			iphone 179-	·181					
Landform:			Flat/Plain						
Land surface/disturband	ce:		No Effective	e Disturbance					
Coarse fragments on th									
(abundance/size/shape)	:		No Course	Fragments					
Rock outcrop (abundan	ce/runoff):		No Bedrock	/No Runoff					
Soil (profile/field texture	e/soil surface):		Duplex/Clay	/ Loam/Surface Crust					
% Cover leaf litter:			80						
% Cover bare ground:			40						
		•							

Tallest st	ratum	Mid-strat	um	Lower str	atum
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub
Height:	6-12m	Height:	3-6m	Height:	1-3m
Crown cover %:	30-70%	Crown cover %:	<10%	Crown cover %:	10-30%
Dominant taxa:	•	Dominant taxa:		Dominant taxa:	
Eucalyptus salmon	ophloia	Eremophila interstans interstans	subsp	Atriplex nummula spathulata	aria subsp
Eucalyptus lesouel				Maireana sedifol	ia

ALL SPECIES
Atriplex nummularia subsp spathulata
Austrostipa elegantissima
Austrostipa nitida
Enchylaena tomentosa
Eremophila interstans subsp interstans
Eriochiton sclerolaenoides
Eucalyptus lesouefii
Eucalyptus salmonophloia
Maireana sedifolia
Maireana trichoptera
Portulaca oleracea
Ptilotus obovatus
Sclerolaena densiflora
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Zygophyllum eremaeum
Adjacent:
Casuarina pauper
Eucalyptus griffithsii
Pittosporum angustifolium
· · · · · · · · · · · · · · · · · · ·



	Business Names OKO		<b>50</b>									
_	Project Name: SKO											
Date:	3/09/2012	Botanist:	Eren Reid & Ashley O	wen								
Location:	Alacer Gold	Quadrat:	2									
Quadrat size:	20x20											
Vegetation group:	Riparian sclerophyll shrub	lands										
WP:	4	T.=-										
Photo number:		iPhone 185-										
Landform:			ssion (vale)/Drainage de									
Land surface/disturband		hoofed anim	disturbance except gra als	zing by								
Coarse fragments on the (abundance/size/shape):		No coarse fr										
Rock outcrop (abundance			exposed/Slow									
Soil (profile/field texture	/soil surface):		loam/Surface crust									
% Cover leaf litter:		15										
% Cover bare ground:		40										
Tallest stratum Mid-stratum Lower stratum												
				1								
Growth form:	Growth form:	Shrub	Growth form:	Forb								
Height:	Height:	1-3m	Height:	0.25-0.5m								
Crown cover %:	Crown cover %:	30-70	Crown cover %:	30-70								
Dominant taxa:	Dominant taxa:		Dominant taxa:									
	Maireana sedifolia		Maireana trichoptera									
	Lycium australe		Dissocarpus paradoxu	JS								
	Eremophila rugosa 4-1		Sclerolaena diacantha	a								
	ALL SP	ECIES										
	Atriplex nummularia	subsp spathu	lata									
	Atriplex v	esicaria										
	Austrostipa el											
	Austrostip											
	Brachyscome											
	Convolvulus r											
	Dissocarpus											
	Enchylaena											
	Eragrosti											
	Eragrostis er											
	Eremophila   Erodium (											
	Lycium a											
	Maireana p											
	Maireana P											
	Maireana tr											
	Maireana											
	Medicago											
	Ptilotus a											
	Ptilotus	nobilis										
	Ptilotus o											
	Rhodanthe oppositifolia		ifolia 4-5									
	Rhagodia di											
	Salvia vei											
	Sclerolaena											
	Sclerolaena											
	Sclerolaena patenticuspis											
	Sisymbrium rui											
	Zygophyllum a	auranilacum										



		Project Name: SKO	Location 48	+ 50						
Date:	3/09/20	)12	Botanist:	Eren Reid & Ashley O	wen					
Location:	Alacer C	Gold	Quadrat:	3						
Quadrat size:	20x20	<del></del>		-						
Vegetation group:	Eucalyp	tus woodlands over N	/laireana sedif	olia						
WP:	5									
Photo number:	•		iPhone 182 -	· 184						
Landform:			Flat/Plain							
Land surface/disturb	ance:		No effective hoofed anim	disturbance except gra als	zing by					
Coarse fragments on	the surfa	ace	Slightly; few/	Coarse gravelly; large						
(abundance/size/shap			pebbles/Sub							
Rock outcrop (abund				exposed/Very slow						
Soil (profile/field text	ure/soil s	surface):		loam/Surface crust						
% Cover leaf litter: 80										
% Cover bare ground	l:		60							
<b>7</b> II 4 4 4										
Tallest stratun		Mid-strat		Lower stra	1					
Growth form:	Tree	Growth form:	Shrub	Growth form:	Forb					
Height:	6-12m	Height:	0.5-1m	Height:	0.25-0.5m					
					4.0					
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	<10					
Crown cover %: Dominant taxa:	10-30	Dominant taxa:		Crown cover %: Dominant taxa:	<10					
		Dominant taxa: Tecticornia disarticu			<10					
Dominant taxa:		Dominant taxa:		Dominant taxa:	<10					
Dominant taxa:		Dominant taxa: Tecticornia disartica Maireana sedifolia	ulata	Dominant taxa:	<10					
Dominant taxa:		Dominant taxa: Tecticornia disartico Maireana sedifolia  ALL SPI	ulata	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disartico Maireana sedifolia  ALL SPI  Atriplex nummularia	ulata  ECIES subsp spathu	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex v	ulata  ECIES subsp spathu esicaria	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disartico Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex vo Eremophila	ulata  ECIES  subsp spathu esicaria scoparia	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex ve Eremophila Eucalyptus sa	ECIES Subsp spathuesicaria scoparia	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex ve Eremophila Eucalyptus sa Maireana pe	ulata  ECIES Subsp spathuesicaria Scoparia Imonophloiaentatropis	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disartico Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex vo Eremophila Eucalyptus sa Maireana po Maireana	ECIES subsp spathu esicaria scoparia lmonophloia entatropis sedifolia	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex v Eremophila Eucalyptus sa Maireana po Maireana triplem Maireana	ECIES subsp spathu esicaria scoparia lmonophloia entatropis sedifolia ichoptera	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disartico Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex vo Eremophila Eucalyptus sa Maireana po Maireana	ECIES Subsp spathuesicaria Scoparia Imonophloiaentatropis sedifoliacichoptera	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex vi Eremophila Eucalyptus sa Maireana pi Maireana tr Ptilotus	ECIES Subsp spathuresicaria Imonophloia Entatropis Sedifolia ichoptera Inobilis Idiacantha	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex vu Eremophila Eucalyptus sa Maireana pu Maireana tr Ptilotus Sclerolaena	ECIES Subsp spathuesicaria Imonophloiaentatropis sedifoliaichopteranobilis diacantharicata	Dominant taxa: No Dominant	<10					
Dominant taxa:		Dominant taxa: Tecticornia disarticu Maireana sedifolia  ALL SPI Atriplex nummularia Atriplex ve Eremophila Eucalyptus sa Maireana pe Maireana tr Ptilotus Sclerolaena Sida int	ECIES Subsp spathuesicaria Scoparia Imonophloiaentatropis Sedifoliaichoptera nobilis diacantharicata isarticulata	Dominant taxa: No Dominant	<10					



Solutions											
		Project Name: Sk	O Location 4	48 + 50							
Date:	3/09/20	012	Botanist:	Eren Reid & Ashley C	)wen						
Location:	Alacer (	Gold	Quadrat:	4							
Quadrat size:	20x20										
Vegetation group:	Scatter	ed Eucalyptus salmor	nophloia over	scattered understorey							
WP:	9										
Photo number:			iPhone 188	- 190							
Landform:			Flat/Plain								
Land surface/distur	bance:		No effective animals	disturbance except gra	azing by hoofed						
Coarse fragments o		rface	Moderately;	many/Medium gravelly	y; medium						
(abundance/size/sha			pebbles/Sub								
Rock outcrop (abun				exposed/Very slow							
Soil (profile/field tex	ture/soi	l surface):	Duplex/Clay	loam/Surface crust							
% Cover leaf litter:			5								
% Cover bare ground: 90											
Tallest stratur		Mid-stratu		Lower st							
Growth form:	Tree	Growth form:	Shrub	Growth form:	Tussock Grass						
	6-										
Height:	12m	Height:	1-3m	Height:	<0.25m						
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	<10						
Dominant taxa:		Dominant taxa:		Dominant taxa:							
		Eremophila oldfield	ii subsp.								
Eucalyptus salmonop	hloia	angustifolia	•	Austrostipa nitida							
		Atriplex nummularia spathulata	subsp	710011001100							
		Maireana sedifolia									
			PECIES								
			tomentosus								
		Atriplex nummula		thulata							
			vesicaria								
			tipa nitida								
			ım drummond	lii							
		Eremophila oldfield									
		Eremophila parvifo									
			salmonophloia								
		Maireana	pentatropis								
		Maireana	tomentosa								
·			trichoptera	·							
			obovatus								
			na densiflora								
			ntricata								
			n aurantiacum	1							
			m eremaeum								
		Mairean	a sedifolia								



Solutions		David of N	- 01/0 1 1	40 - 50								
Dete	2/22/22:	•	: SKO Location									
Date:	3/09/2012		Botanist:	Eren Reid & Ashley Owe	<u>n</u>							
Location:	Alacer Gol	d	Quadrat:	5								
Quadrat size:	20x20											
Vegetation	Mixed Eu	calyptus woodland	over Atriplex nur	mmularia shrublands								
group:			'									
WP:	11		4 0 (									
Photo number:			1 - 6 (camera)	lillalana /hattana thind af								
Landform:				lillslope (bottom third of	the neight of the							
Land surface/di	cturbonoo	1	landform eleme									
Coarse fragmer				<u>9</u> parse gravelly; large	_							
(abundance/size		surrac <del>e</del>	pebbles/Suban									
Rock outcrop (a		/runoff)·	No bedrock ex									
Soil (profile/field				am/Surface crust								
% Cover leaf litt		on carracoj.	10	am, canado orast								
% Cover bare g			85									
	, <del></del>		1									
Tallest stra	atum	Mid-str	ratum	Lower stra	atum							
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub							
Height:	6-12m	Height:	3-6m	Height:	0.25-0.5m							
Crown cover		Crown cover		<b>J</b>								
%:	10-30	%:	10-30	Crown cover %:	10-30							
Dominant taxa:	•	Dominant taxa:	-	Dominant taxa:								
		Eremophila decipie	ens subsp.	Atriplex nummularia su	ubsp spathulata							
		decipiens										
Eucalyptus lesou	ıefii											
		Eremophila oldfie	ldii subsp.	Maireana triptera								
		angustifolia		·								
		Eremophila inters	tans subsp									
		interstans	•	Senna artemisioides s	ubsp filifolia							
		AL	L SPECIES									
			olex ?amnicola									
			nularia subsp spa	athulata								
			trostipa nitida									
			scome ciliocarpa									
			cipiens subsp. de									
			glabra subsp. gl									
			erstans subsp in									
		•	lfieldii subsp. ang									
			rvifolia subsp. Au									
			hila sp Mt Jackso on sclerolaenoide									
			on scierolaenolae Ilyptus Iesouefii	70								
			arpos aphyllus									
			reana georgei									
			ana pentatropis									
			eana sedifolia									
			ana trichoptera									
	Maireana triptera											
	Olearia muelleri											
	Ptilotus obovatus											
			vola spinescens									
	Sclerolaena densiflora											
	Sclerolaena diacantha											
	Senna artemisioides subsp filifolia											
	Solanum nummularium											
		Zygophy	yllum aurantiacur	n								
			yllum eremaeum									
		75 1			-							



Solutions		callon Lease 40 & 50 Le	ovor E v vora arra	- cyclation carry copie		
Project Name: SKO Location 48 + 50						
Date:	3/09/201	2	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer Gold		Quadrat:	6		
Quadrat size:	20x20		•			
Vegetation group:	Eucalyptu	s woodlands over Ma	aireana sedifolia	a		
WP:	12					
Photo number:			7-9			
Landform:			Flat/Plain			
Land surface/disturbance:			No effective disturbance except grazing by hoofed animals			
Coarse fragments of		ce	Very; abundant/Fine gravelly; small			
(abundance/size/sha			pebbles/Rounded			
Rock outcrop (abun			No bedrock exposed/Slow			
Soil (profile/field tex	ture/soil si	urface):		oam/Surface crust		
% Cover leaf litter:	al.		40			
% Cover bare groun	u.		60			
Tallest stratu	ım	Mid-stra	tum	Lower stratum		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
Height:	6-12m	Height:	1-3m	Height:	0.25-0.5m	
Crown cover %:	10-30	Crown cover %:	<10	Crown cover %:	<10	
Dominant taxa:	10 30	Dominant taxa:	110	Dominant taxa:	110	
		Eremophila intersta	ıns subsp.			
Eucalyptus gracilis		virgata		Tecticornia disarticulata		
Eucalyptus ravida				Maireana sedifolia		
		ALL SPE				
		Atriplex code				
		Austrostipa ele				
Austrostipa nitida						
Enchylaena tomentosa  Eremophila interstans subsp. virgata						
				ıa		
	Eriochiton sclerolaenoides  Eucalyptus gracilis					
Eucalyptus graciiis  Eucalyptus ravida						
Maireana georgei						
Maireana pentatropis						
Maireana pyramidata						
Maireana sedifolia						
Maireana tomentosa						
Maireana trichoptera						
Maireana triptera						
Ptilotus nobilis Sclerolaena cuneata						
Scierolaena cuneata Scierolaena diacantha						
Scierolaena diacantria Scierolaena patenticuspis						
Tecticornia disarticulata						
Zygophyllum eremaeum						
Zygopriyiluiri eremaeum						



Solutions						
		<b>Project Name: SKO</b>	Location 48 + 50			
Date:	3/09/20	)12	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer Gold		Quadrat:	7		
Quadrat size:	20x20	20x20				
Vegetation group:	Casuari	na pauper over mixed	d shrubland			
WP:	13					
Photo number:				10-Dec		
Landform:			Simple slope/Hillslope			
Land surface/disturbance:			No effective disturbance except grazing by hoofed animals			
Coarse fragments on the surface (abundance/size/shape):			Slightly; few/Cobbly; or cobbles/Subangular			
Rock outcrop (abund		off):	No bedrock expo	sed/Slow		
Soil (profile/field text			Duplex/Clay loam/Surface crust			
% Cover leaf litter:		,	30			
% Cover bare ground	d:		65			
Tallest stratur	n	Mid-str	atum	Lower stratum		
Growth form:	Shrub	Growth form:	Shrub	Growth form:		
Height:	6-12m	Height:	1-3m	Height:		
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:		
Dominant taxa:		Dominant taxa:		Dominant taxa:		
		Eremophila oldfieldi	i subsp. Senna artemisioides sub			
Casuarina pauper		angustifolia		filifolia		
		Ĭ		Scaevola spinescens		
		ALL SPI				
		Acacia he				
		Acacia tetraç				
		Atriplex nummularia				
Austrostipa nitida						
		Casuarina				
	Dodonaea adenophora					
Dodonaea lobulata						
Eremophila glabra subsp. glabra Eremophila granitica						
Eremophila oldfieldii subsp. angustifolia Exocarpos aphyllus						
Maireana georgei						
Maireana trichoptera						
Maireana triptera						
Marsdenia australis						
Olearia muelleri						
Olearia pimeleoides						
Ptilotus obovatus						
Santalum spicatum						
Scaevola spinescens						
Senna artemisioides subsp filifolia						



Solutions Solutions						
Project Name: SKO Location 48 + 50						
Date:	3/09/2012		Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer	Gold	Quadrat:	8		
Quadrat size:	20x20					
Vegetation group:	Eucaly	otus woodlands ove	r Melaleuca shea	athiana		
WP:	18					
Photo number:			13 - 15			
Landform:			Upper Slope/Hillslope (top third of the height of the landform element)			
Land surface/disturbance:			No effective disturbance except grazing by hoofed animals			
Coarse fragments		urface	Extremely; very abundant/Medium gravelly; medium			
(abundance/size/sh			pebbles/Rounded			
Rock outcrop (abu	ndance/ı	runoff):	No bedrock exposed/Slow			
Soil (profile/field te	xture/so	il surface):	Duplex/Clay loam/Surface crust			
% Cover leaf litter:			30			
% Cover bare grou	over bare ground: 70					
Tallest stratu		Mid-stra	-t			
Growth form:	T	Growth form:	Shrub	Lower stratur Growth form:	Forb	
Growth form:	Tree 6-	Growth form:	Siliub	Growth form:	FULD	
Height:	12m	Height:	3-6m	Height:	<0.25m	
Crown cover %:	<10	Crown cover %:	10-30	Crown cover %:	<10	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
Eucalyptus (transcontinentalis?) sp M		Melaleuca sheathiana		None		
			SPECIES			
			ostipa nitida	2)		
			anscontinentalis	?) sp		
Maireana georgei						
Maireana pentatropis						
Maireana trichoptera						
Melaleuca sheathiana Olearia muelleri						
Oleana muellen  Ptilotus obovatus						
Sclerolaena cuneata						
Sclerolaena diacantha						
Zygophyllum aurantiacum						
Zygophynam adiantiadam						



Solutions						
		Project Name: S	SKO Location 4	8 + 50		
Date:	4/10/2012		Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer Gold		Quadrat:	9		
Quadrat size:	20x20		•	1 5		
Vegetation group:	Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands					
WP:	20	•		. ,		
Photo number:			22 - 24			
Landform:			Upper Slope/Hillslope (top third of the height of the			
Lanuloini.			landform element)			
Land surface/disturbance:			No effective disturbance except grazing by hoofed animals			
Coarse fragments of		ırface	Very; abundant/Coarse gravelly; large			
(abundance/size/sh			pebbles/Subangular			
Rock outcrop (abur			No bedrock exposed/Moderately rapid			
Soil (profile/field tex	kture/so	il surface):	Duplex/Clay loam/Surface crust			
% Cover leaf litter:			25			
% Cover bare groun	nd:		70			
Tallantata		541	-4	1		
Tallest stratur		Mid-stra		Lower stratum		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
	6-					
Height:	12m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	10-30	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
		Eremophila oldfield	dii subsp.	Eremophila glabra subsp.	glabra	
Eucalyptus torquata		angustifolia				
Lucuryptus torquatu		Eremophila interstans subsp		Olearia muelleri		
				Atriplex nummularia subsp spathulata		
		ALL	SPECIES			
		Alyx	ia buxifolia			
		Atriplex nummu	laria subsp spath	nulata		
		Atriple	ex vesicaria			
Austrostipa nitida						
Dodonaea lobulata						
Eremophila georgei						
Eremophila glabra subsp. glabra						
Eremophila interstans subsp interstans						
Eremophila oldfieldii subsp. angustifolia						
Eremophila parvifolia subsp. auricampa						
Eremophila scoparia						
Eucalyptus torquata						
Exocarpos aphyllus  Maireana sedifolia						
Maireana triptera						
Olearia muelleri						
Ptilotus obovatus						
Rhagodia eremaea						
Scaevola spinescens						
Senna artemisioides subsp filifolia						
	Solanum nummularium					
		West	ringia rigida			
Zygophyllum aurantiacum						



Project Name: SKO Location 48 + 50  Date: 4/10/2012 Botanist: Eren Reid & Ashley Owen  Location: Alacer Gold Quadrat: 10  Quadrat size: 20x20  Vegetation group: Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands  WP: 21  Photo number: 25 - 27  Landform: Crest/Hill Crest  Land surface/disturbance: Limited clearing  Coarse fragments on the surface (abundance/size/shape): pebbles/Subrounded  Rock outcrop (abundance/runoff): No bedrock exposed/Moderately rapid  Soil (profile/field texture/soil surface): Duplex/Clay loam/Surface crust  % Cover leaf litter: 20
Location: Alacer Gold Quadrat: 10  Quadrat size: 20x20  Vegetation group: Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands  WP: 21  Photo number: 25 - 27  Landform: Crest/Hill Crest  Land surface/disturbance: Limited clearing  Coarse fragments on the surface (abundance/size/shape): pebbles/Subrounded  Rock outcrop (abundance/runoff): No bedrock exposed/Moderately rapid  Soil (profile/field texture/soil surface): Duplex/Clay loam/Surface crust
Quadrat size:       20x20         Vegetation group:       Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands         WP:       21         Photo number:       25 - 27         Landform:       Crest/Hill Crest         Land surface/disturbance:       Limited clearing         Coarse fragments on the surface (abundance/size/shape):       Very; abundant/Coarse gravelly; large pebbles/Subrounded         Rock outcrop (abundance/runoff):       No bedrock exposed/Moderately rapid         Soil (profile/field texture/soil surface):       Duplex/Clay loam/Surface crust
Vegetation group:       Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands         WP:       21         Photo number:       25 - 27         Landform:       Crest/Hill Crest         Land surface/disturbance:       Limited clearing         Coarse fragments on the surface (abundance/size/shape):       Very; abundant/Coarse gravelly; large pebbles/Subrounded         Rock outcrop (abundance/runoff):       No bedrock exposed/Moderately rapid         Soil (profile/field texture/soil surface):       Duplex/Clay loam/Surface crust
WP:       21         Photo number:       25 - 27         Landform:       Crest/Hill Crest         Land surface/disturbance:       Limited clearing         Coarse fragments on the surface (abundance/size/shape):       Very; abundant/Coarse gravelly; large pebbles/Subrounded         Rock outcrop (abundance/runoff):       No bedrock exposed/Moderately rapid         Soil (profile/field texture/soil surface):       Duplex/Clay loam/Surface crust
Photo number:  Landform:  Crest/Hill Crest  Limited clearing  Coarse fragments on the surface (abundance/size/shape):  Rock outcrop (abundance/runoff):  Soil (profile/field texture/soil surface):  Duplex/Clay loam/Surface crust
Landform:       Crest/Hill Crest         Land surface/disturbance:       Limited clearing         Coarse fragments on the surface (abundance/size/shape):       Very; abundant/Coarse gravelly; large pebbles/Subrounded         Rock outcrop (abundance/runoff):       No bedrock exposed/Moderately rapid         Soil (profile/field texture/soil surface):       Duplex/Clay loam/Surface crust
Land surface/disturbance:       Limited clearing         Coarse fragments on the surface (abundance/size/shape):       Very; abundant/Coarse gravelly; large pebbles/Subrounded         Rock outcrop (abundance/runoff):       No bedrock exposed/Moderately rapid         Soil (profile/field texture/soil surface):       Duplex/Clay loam/Surface crust
Coarse fragments on the surface (abundance/size/shape): pebbles/Subrounded  Rock outcrop (abundance/runoff): No bedrock exposed/Moderately rapid  Soil (profile/field texture/soil surface): Duplex/Clay loam/Surface crust
(abundance/size/shape):       pebbles/Subrounded         Rock outcrop (abundance/runoff):       No bedrock exposed/Moderately rapid         Soil (profile/field texture/soil surface):       Duplex/Clay loam/Surface crust
Rock outcrop (abundance/runoff):  Soil (profile/field texture/soil surface):  No bedrock exposed/Moderately rapid  Duplex/Clay loam/Surface crust
Soil (profile/field texture/soil surface): Duplex/Clay loam/Surface crust
"
% Cover lear litter:
% Cover bare ground: 70
Tallest stratum Mid-stratum Lower stratum
Height:         6-12m         Height:         1-3m         Height:         0.5-1
Crown cover %:         <10         Crown cover %:         10-30         Crown cover %:         10-30
Dominant taxa: Dominant taxa: Dominant taxa:
Casuarina pauper Senna artemisioides subsp filifolia Dodonaea lobulata
Eucalyptus lesouefii Acacia tetragonophylla Acacia erinacea
Eremophila oldfieldii subsp.
angustifolia
ALL SPECIES
Acacia erinacea
Acacia tetragonophylla
Atriplex nummularia subsp spathulata
Austrostipa nitida
Casuarina pauper
Dodonaea lobulata
Eremophila georgei
Eremophila glabra subsp. glabra Eremophila oldfieldii subsp. angustifolia
Eremophila oppositifolia subsp. angustifolia
Eremophila pustulata
Eucalyptus lesouefii
Maireana trichoptera
Olearia muelleri
Ptilotus obovatus

Sclerolaena cuneata
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum



Solutions						
		Project Name: SKO	Cocation 48	+ 50		
Date:	4/09/20	)12	Botanist:	Eren Reid & Ashley Ov	ven	
Location:	Alacer G	Gold	Quadrat:	11		
Quadrat size:	20x20		•			
Vegetation group:	Eucalyp	tus salmonophloia &	E. ravida/salul	oris woodland over Erer	nophila	
WP:	23				•	
Photo number:			28-30			
Landform:			Flat/Plain			
Land surface/disturb	ance:		No effective of animals	disturbance except graz	ing by hoofed	
Coarse fragments or (abundance/size/sha		ace	No qualifier; of pebbles/Angu	common/Coarse gravel	ly; large	
Rock outcrop (abund		noff)·		exposed/Slow		
Soil (profile/field text				loam/Surface crust		
% Cover leaf litter:		ourradoj.	70	ioani/oanaoc oraot		
% Cover bare ground	d:		60			
70 00 101 Nano ground			00			
Tallest stratun	n	Mid-strat	um	Lower strat	tum	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
Height:	6-12m	Height:	1-3m	Height:	0.25-0.5m	
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	<10	
Dominant taxa:	1000	Dominant taxa:		Dominant taxa:	1 1-0	
Eucalyptus ravida		Eremophila intersta	ns subsp	Scaevola spinescens		
, , , , , , , , , , , , , , , , , , ,		interstans	· ·			
Eucalyptus salmonoph	nloia					
		ALL SP				
		Atriplex nummularia		ulata		
		Atriplex \				
		Austrosti				
		Cephalipterun				
		Dissocarpus				
		Enchylaena				
		Eremophila glab Eremophila intersta				
		Eremoprilia interstal Eucalypti		otario		
		Eucalyptus sa				
		Exocarpos				
		Lawrencia r				
		Lycium a				
		Maireana				
		Maireana t	omentosa			
Maireana trichoptera						
		Maireana				
		Ptilotus				
		Rhagodia d				
		Scaevola s				
		Sclerolaena				
		Sclerolaena p				
Solanum nummularium						



Solutions		20000 10 0 2	57072 7 7074 4774	vegetation Survey- Septem	20, 20,2	
		Project Name: SKO	Location 48 -	+ 50		
Date:	4/09/20	)12	Botanist:	Eren Reid & Ashley Ow	en	
Location:	Alacer C	Gold	Quadrat:	12		
Quadrat size:	20x20					
Vegetation group:		tus torquata and E. le	esouefii woodla	and over sclerophyll shrub	lands	
WP:	24	'		, ,		
Photo number:			31-33			
Landform:	Landform:					
Land surface/disturbance:			No effective of hoofed animal	disturbance except grazin als	g by	
Coarse fragments on the surface (abundance/size/shape):			Very slightly; pebbles/Ang	very few/Fine gravelly; sr ular	mall	
Rock outcrop (abund		off):		exposed/Very slow		
Soil (profile/field text				loam/Surface crust		
% Cover leaf litter:		<u>.</u>	70			
% Cover bare ground	:		80			
Tallest stratun		Mid-stra		Lower stratu		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
Height:	6-12m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	10-30	Crown cover %:	<10	Crown cover %:	<10	
Dominant taxa:	•	Dominant taxa:	•	Dominant taxa:		
Eucalyptus lesouefii		Eremophila intersta	ns subsp	Scaevola spinescens		
		interstans				
Eucalyptus oleosa				Senna artemisioides subsp filifoli		
		ALL SP				
		Atriplex v				
		Austrostipa el				
		Austrostip				
		Dissocarpus Dodonaea	•			
		Eremophila interstar		tane		
		Eremophila oldfieldii				
		Eremophila parvifolia				
		Eucalyptus		· · · ·  - •		
		Eucalyptu				
		Exocarpos				
		Maireana				
		Maireana	sedifolia			
		Maireana tr		·		
		Maireana				
		Marsdenia				
		Olearia r				
		Scaevola s				
_		Senna artemisioid	•	a		
		Zygophyllum				
		Zygophyllum	eremaeum			



Solutions				3 1			
		Project Name: SKC	Location 48 +	50			
Date:	4/09/20	12	Botanist:	Eren Reid & Ashley Ov	ven		
Location:	Alacer G	Gold	Quadrat:	13			
Quadrat size:	20x20			<u>l</u>			
Vegetation group:	Jam thic	cket					
WP:	25						
Photo number:	•		34-36				
Landform:			Mid slope/Hillslope				
Land surface/disturbance:			No effective d hoofed anima	isturbance except grazin s	g by		
Coarse fragments on the surface (abundance/size/shape):			Very; abundar	nt/Cobbly; or cobbles/An	gular		
Rock outcrop (abune		off):	No bedrock ex	cposed/Moderately rapid			
Soil (profile/field tex				pam/Surface crust			
% Cover leaf litter:		<u>.</u>	30				
% Cover bare ground	d:		80				
Tallest stratu	m	Mid-stra		Lower stratu	_		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub		
Height:	6-12m	Height:	3-6m	Height:	1-3m		
Crown cover %:	10-30	Crown cover %:	30-70	Crown cover %:	30-70		
Dominant taxa:		Dominant taxa:		Dominant taxa:			
Eucalyptus oleosa		Acacia sp. narrow p	hyllode	Dodonaea lobulata			
				Dodonaea adenophora			
				Eremophila georgei			
		ALL SP					
		Acacia sp. nar					
		Angianthus t					
		Austrosti					
		Dodonaea a					
		Dodonaea					
		Eremophil		alia.			
		Eremophila oldfieldii		Jiia			
		Eucalyptu Marsdenia					
		Scaevola s					
		Senna artemisioid		<b>Y</b>			
		Zygophyllum	•	l			
		<u> </u>	adianiacum				
		Adjad	ent:				
		Podolepis o	canescens				



Solutions		Project Name: SK	O Location 48	8 + 50		
Date:	4/09/20	12	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer G	old	Quadrat:	14		
Quadrat size:	20x20					
Vegetation group:	Jam thic	ket				
WP: 27						
Photo number:			37-39			
Landform:			Open depression (vale)/Drainage depression			
Land surface/disturb	ance:		No effective disturbance			
Coarse fragments or		ace	Slightly; few/Coarse gravelly; large			
(abundance/size/sha			pebbles/Subangular			
Rock outcrop (abund			No bedrock exposed/Very slow			
Soil (profile/field text	ture/soil	surface):	Duplex/Clay loam/Cracking			
% Cover leaf litter:			50			
% Cover bare ground	d:		70			
_		·	·	·		
Tallest stratur	n	Mid-strat	um	Lower stratum		

Tallest stratum		Mid-stratum		Lower strat	um	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
Height:	6-12m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	<10	Crown cover %:	30-70	Crown cover %:	10-30	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
Eucalyptus griffithsii		Acacia sp. narrow phyllode		Dodonaea adenophora		
7				Hybanthus floribundus curvifolius 26-4	subsp.	
ALL SPECIES						
		Vellereophyton	?dealbatum	26-2		

ALL SPECIES
Vellereophyton ?dealbatum 26-2
Acacia sp. narrow phyllode
Austrostipa nitida
Brachyscome ciliocarpa
Calotis hispidula
Dodonaea adenophora
Dodonaea lobulata
Enchylaena tomentosa
Eremophila georgei
Erodium crinitum
Eucalyptus griffithsii
Goodenia havilandii 26-1
Goodenia pinnatifida 26-1
Haloragis trigonocarpa
Hybanthus floribundus subsp. curvifolius 26-4
Maireana brevifolia
Maireana georgei
Maireana trichoptera
Maireana triptera
Marsdenia australis
Olearia muelleri
Podolepis canescens
Ptilotus carlsonii 26-3,
Ptilotus nobilis
Ptilotus obovatus
Rhodanthe oppositifolia subsp. oppositifolia 26-5
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Waitzia acuminata
Zygophyllum aurantiacum



Solutions							
		Project Name: SKO L	ocation 48 + 5	50			
Date:	4/09/20	12	Botanist:	Eren Reid & Ashley Ow	/en		
Location:	Alacer G	iold	Quadrat:	15			
Quadrat size:	20x20						
Vegetation group:	Scattere	d Eucalyptus salmono	phloia over sca	attered understorey			
WP:	29						
Photo number:			40-42				
Landform:			Flat/Plain				
Land surface/disturba			Limited clear				
Coarse fragments on		ce		many/Fine gravelly; smal	I		
(abundance/size/shap			pebbles/Angu				
Rock outcrop (abunda				exposed/Very slow			
Soil (profile/field texture/soil surface):				loam/Surface crust			
% Cover leaf litter:			15				
% Cover bare ground: 90							
Tallest stratum	)	Mid-stratu	ım	Lower stratum			
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub		
Height:	6-12m	Height:	3-6m	Height:	0.5-1m		
Crown cover %:	<1	Crown cover %:	<1	Crown cover %:	<10		
Dominant taxa:	· <del>-</del>	Dominant taxa:	· <del>-</del>	Dominant taxa:			
				Maireana sedifolia			
Eucalyptus salmonophl	oia	angustifolia					
		Casuarina pauper		Atriplex nummularia subsp			
				spathulata			
		ALL SPEC					
		Angianthus ton					
		Atriplex nummularia si		a			
		Austrostipa eleg					
		Austrostipa					
		Casuarina p					
		Dodonaea lo					
		Enchylaena tor Eremophila oldfieldii su		lio			
		Eremophila oldileidii su Eremophila parvifolia s					
		Eucalyptus salm		Ja			
		Lycium aus					
Lycium australe							

Maireana georgei
Maireana pentatropis
Maireana pyramidata
Maireana sedifolia
Maireana trichoptera
Podolepis capillaris
Ptilotus obovatus
Rhagodia drummondii
Scaevola spinescens
Sclerolaena cuneata
Sclerolaena densiflora



Solutions							
		Project Name:	: SKO Location	48 + 50			
Date:	4/09/2	012	Botanist:	Eren Reid & Ashley Ow	en		
Location:	Alacer	Gold	Quadrat:	16			
Quadrat size:	20x20						
Vegetation	Eucaly	ptus over Acacia sr	o. Narrow phyllo	de on lateritic rises			
group: WP:		'					
Photo number:	31		12.15				
			43-45 Simple Slope/Hillslope (bottom third of the height of the				
Landform:			landform elem		and neight of the		
Land surface/distu	rbance:		No effective d	isturbance			
Coarse fragments on the surface				ry abundant/Medium grav	elly; medium/		
(abundance/size/sl			pebbles/Subro				
Rock outcrop (abu			No bedrock ex				
Soil (profile/field to	xture/so	oil surface):		pam/Surface crust			
% Cover leaf litter:			10				
% Cover bare grou	nd:		80				
Tolloot otration	<b>m</b>	Mid of	otum	Lawaretra	tum		
Tallest stratu		Mid-str		Lower stra			
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub		
	6-						
Height:	12m	Height:	1-3m	Height:	0.25-0.5m		
Crown cover %:	<10	Crown cover %:	30-70	Crown cover %:	<10		
Dominant taxa:	<b>\10</b>	Dominant taxa:	30-70	Dominant taxa:	<b>\10</b>		
Eucalyptus griffithsii		Eremophila oppos	sitifolia	Cryptandra aridicola 31-1			
Eucalyptus		Acacia sp. narrow		Cryptandra andicola 31	r_ <b>T</b>		
transcontinentalis		Acadia Sp. Harrow	v priyilode				
Eucalyptus oleosa							
, , , , , , , , , , , , , , , , , , ,		AL	L SPECIES				
		Acacia s	p. narrow phyllo	de			
			dra aridicola 31				
		Dodo	onaea lobulata				
			cipiens subsp. c				
			ohila oppositifoli	a			
			lyptus griffithsii				
			alyptus oleosa				
			s transcontinen				
		Hybanthus floribur		VITOIIUS 26-4			
	R.		reana georgei				
		Myoporum platycarp		ycarpum 31-2			
			earia muelleri				
			ola spinescens odia scariosa				
			stringia rigida				
		V V C-	ourigia rigida				



Solutions			1/0 1 11	10		
	l = 1.	Project Name: S				
Date:	5/09/2		Botanist:	Eren Reid & Ashley C	Owen	
Location:	Alacer	Gold	Quadrat:	17		
Quadrat size:	20x20					
Vegetation group:	Eucalyr Eremor		& Eucalyptus r	avida/salubris woodland	d over	
WP:	36					
Photo number:			46-48			
Landform:			Flat/Plain			
Land surface/disturb	oance:		No effective animals	disturbance except gra	zing by hoofed	
Coarse fragments on the surface (abundance/size/shape):			Moderately; pebbles/Sub	many/Medium gravelly; pangular	medium	
Rock outcrop (abun		ınoff):		exposed/Very slow		
Soil (profile/field tex				loam/Cracking		
% Cover leaf litter:		<u> </u>	70			
% Cover bare groun	d:		60			
Tallest stratur	n	Mid-stra	tum	Lower str	ratum	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
Hoight.	6- 12m	Height:	0.5-1m	Height:	0.25-0.5m	
Height:	10-30		30-70		<10	
Crown cover %: Dominant taxa:	10-30	Crown cover %:  Dominant taxa:	30-70	Crown cover %:  Dominant taxa:	<10	
		Dominant taxa.		Atriplex nummularia	auban	
Eucalyptus ravida		Eremophila ionant	ha	spathulata	subsp	
Eucalyptus salmonop	hloia	Liemopilia ionani	Πα	Spatridiata		
Edicalyptus saimonop	Illoia					
		ALL S	SPECIES			
		Atriplex nummula		thulata		
			x vesicaria			
		Austro	stipa nitida			
		Dissocarp	us paradoxus			
			na tomentosa			
			nila ionantha			
			ptus ravida			
			salmonophloia	a		
			os aphyllus			
			n australe na georgei			
			na georgei a pyramidata			
			na sedifolia			
			a trichoptera			
			na triptera			
			us nobilis			
			he floribunda			
		Santalum	acuminatum			
			ena cuneata			
			na densiflora			
			na diacantha			
Sclerolaena patenticuspis						
		Zygophyllu	m aurantiacum	1		
			inner!			
			jacent			
		Scaevola	a spinescens			



		Project Name: SKO	Location 48 ±	50	
Deter	F (00 /20				
Date:	5/09/20		Botanist:	Eren Reid & Ashley O	wen
Location:	Alacer (	Gold	Quadrat:	18	
Quadrat size:	20x20				
Vegetation group:		ucalyptus woodland ov	er Atriplex nun	nmularia shrublands	
WP:	37				
Photo number:			49-51		
Landform:			Lower slope/		
Land surface/disturb			hoofed anima		
Coarse fragments or (abundance/size/sha	<b>pe)</b> :		pebbles/Ang		m
Rock outcrop (abund				exposed/Very slow	
Soil (profile/field text	ture/soil	surface):	Duplex/Clay	loam sandy/Surface cru	st
% Cover leaf litter:			75		
% Cover bare ground	d:		60		<u> </u>
Tallest stratun	n	Mid-strat	um	Lower strate	ım
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub
Height:	6-12m	Height:	1-3m	Height:	0.5-1m
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	10-30
Dominant taxa:	10-30	Dominant taxa:	10-30	Dominant taxa:	10-30
Dominant taxa.			lio oubon		auban.
Eucalyptus griffithsii		Eremophila oppositifo	filifolia		
		Eremophila interstans subsp interstans		Atriplex nummularia subsp spathulata	
		ALL SPE			
		Atriplex nummularia		ta	
		Atriplex ve			
		Austrostipa ele			
		Austrostipa			
		Dodonaea			
		Eremophila glabra			
		Eremophila interstans			
	E	remophila oppositifolia			
		Eremophila parvifolia		ра	
		Eremophila			
		Eucalyptus			
		Exocarpos			
		Maireana g			
		Maireana pe			
		Maireana tri			
		Maireana			
		Marsdenia :			
		Olearia m			
		Ptilotus ob			
		Scaevola sp			
		Sclerolaena			
		Senna artemisioide			
		Solanum num			
		Zygophyllum a	urantiacum		
		, , ,			
		Żygophyllum (	eremaeum		



		Project Name: Sk	O Location 48	+ 50		
Date:	5/09/20		Botanist:	Eren Reid & Ashley Ower	 າ	
Location:	Alacer G		Quadrat:	19	<u> </u>	
Quadrat size:	20x20	olu	Quadrat.	19		
Vegetation group:		d Eucalyptus salmoi	nonhloia over se	attered understorey		
WP:	39	u Lucaiypius saimoi	iopiniola over sc	allered driderslorey		
Photo number:	33		52-54			
Landform:			Flat/Plain			
				sturbance except grazing b	v hoofed	
Land surface/distur	bance:		animals		,,	
Coarse fragments of	n the sur	face	Very slightly; v	ery few/Medium gravelly; r	nedium	
(abundance/size/sh			pebbles/Angula			
Rock outcrop (abun				posed/Very slow		
Soil (profile/field tex	cture/soil	surface):		am sandy/Surface crust		
% Cover leaf litter:			90			
% Cover bare groun	nd:		75			
T-11 4 4 4		*** 1	4			
Tallest stratu		Mid-stra	1	Lower stratun	1	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
	12-					
Height:	20m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	<1	Crown cover %:	<10	Crown cover %:	30-70	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
		Eremophila intersta	ans subsp			
Eucalyptus salmonop	ohloia	interstans		Maireana sedifolia		
		Atriplex nummularia subsp		Atrialandaria		
		spathulata		Atriplex vesicaria		
		ALL C	PECIES			
		Atriplex nummula		ulata		
		•	x stipitata	nata		
			vesicaria			
			stipa nitida			
			na tomentosa			
		Eremophila interst		stans		
		·	salmonophloia			
			os aphyllus		-	
		Frankenia pauci		ora		
			na georgei			
			pentatropis			
			a sedifolia			
			trichoptera			
			nia australis			
			a muelleri drummondii			
			spinescens			
			na diacantha			
			oides subsp filifo	lia		
			nummularium	<u>.</u>		
			n aurantiacum			
		73-1 7				



		Project Name: Sk	CO Location 4	8 + 50						
Date:	5/09/20	•	Botanist:	Eren Reid & Ashley Ow	ren					
Location:	Alacer		Quadrat:	20						
Quadrat size:	20x20	Joid	Quadrat.	iaurai. 20						
Vegetation group:		Fucalyntus woodland	Lover Atripley r	nummularia shrublands						
WP:	40	Lucaryptus woodiand	rover Ampiex i	idililidialia silidbialids						
Photo number:	40		55-57							
Landform:			Flat/Plain							
Land surface/disturb	nance:		No effective of	disturbance except grazir	ng by hoofed					
			animals							
Coarse fragments of (abundance/size/sha		rface	Very slightly; pebbles/Angu	very few/Medium gravell	y; medium					
Rock outcrop (abun		inoff).		exposed/No runoff						
Soil (profile/field tex				oam sandy/Surface crus	t					
% Cover leaf litter:	10,5011	Surracej.	60	oam oanay/oanaoc oras						
% Cover bare groun	d:		70							
	<del>-</del>									
Tallest stratur	n	Mid-stra	tum	Lower strat	um					
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub					
	6-									
Height:	12m	Height:	1-3m	Height:	0.25-0.5m					
Crown cover %:	<10	Crown cover %:	10-30	Crown cover %:	10-30					
Dominant taxa:	110	Dominant taxa:	10 30	Dominant taxa:						
Eucalyptus oleosa		Eucalyptus lesouef	ii	Maireana sedifolia						
Eddalyptud biodda		Eremophila intersta								
Eucalyptus lesouefii		interstans		Tecticornia disarticulata						
		ALL S	SPECIES							
				nulata						
Atriplex nummularia subsp spathulata										
		•	elegantissima	Austrostipa elegantissima						
		Austrostipa								
		Austrostipa	stipa nitida	rstans						
		Austrostipa Austros Eremophila interst	stipa nitida	rstans						
		Austrostipa Austros Eremophila interst Eremoph Eucalypt	stipa nitida tans subsp inte nila scoparia tus lesouefii	rstans						
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalyp	stipa nitida tans subsp inte nila scoparia tus lesouefii otus oleosa							
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalyp Frankenia pauci	stipa nitida tans subsp inte nila scoparia tus lesouefii otus oleosa flora var. pauci							
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalyp Frankenia pauci Lycium	stipa nitida tans subsp inte nila scoparia tus lesouefii otus oleosa flora var. pauci n australe							
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalyp Frankenia pauci Lycium Maireai	stipa nitida tans subsp inte tila scoparia tus lesouefii otus oleosa flora var. pauci n australe na georgei							
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairear	stipa nitida tans subsp inte tiala scoparia tus lesouefii otus oleosa flora var. pauci n australe na georgei na sedifolia							
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean	stipa nitida tans subsp inte tans subsp inte tila scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera							
		Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean	stipa nitida tans subsp inte tans subsp inte tila scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera na triptera	flora						
	Mv	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean Mairean Mesembryanth	stipa nitida tans subsp inte tans subsp inte tans subsp inte tila scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera na triptera	flora						
	Myd	Austrostipa Austros Austros Eremophila interst Eremoph Eucalypt Eucalyp Frankenia pauci Lycium Mairean Mairean Mairean Mairean Mesembryanth	stipa nitida tans subsp inte tans subsp inte tila scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera na triptera temum nodiflor subsp. platyca	flora						
	Myd	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalyp Frankenia pauci Lycium Mairean Mairean Mairean Mairean Mairean Mesembryanth oporum platycarpum	stipa nitida tans subsp inte tans subsp inte tans subsp inte tila scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera na triptera	flora						
	Myd	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean Mairean Mesembryanth oporum platycarpum Olearia	stipa nitida tans subsp inte tans subsp inte tials scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera na triptera temum nodiflor subsp. platyca	flora						
	Myd	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean Mairean Mesembryanth oporum platycarpum Olearia Ptilotu Scaevola	stipa nitida tans subsp inte tans subsp inte tans subsp inte tals scoparia tus lesouefii tus oleosa flora var. pauci n australe na georgei na sedifolia a trichoptera na triptera temum nodiflor subsp. platyca a muelleri us nobilis	flora						
	Myd	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean Marean Mosembryanth Doporum platycarpum Olearia Ptilotu Scaevola Sclerolae	stipa nitida tans subsp inte tans lesouefii tans oleosa flora var. pauci tans ageorgei tans sedifolia ta trichoptera tans triptera temum nodiflor subsp. platyca tans muelleri tans nobilis tans spinescens tans diacantha toides subsp filit	flora um urpum (40-1)						
	Myd	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean Mairean Moirean Moirean Moirean Seembryanth Doporum platycarpum Olearia Ptilotu Scaevola Sclerolaei Senna artemisia	stipa nitida tans subsp inte tans secuparia tans lesouefii tans oleosa flora var. pauci tans ageorgei tans sedifolia tans trichoptera tans triptera temum nodiflor subsp. platyca tans muelleri tans nobilis tans pinescens tans diacantha	flora um urpum (40-1)						
	Myd	Austrostipa Austros Eremophila interst Eremoph Eucalypt Eucalypt Frankenia pauci Lycium Mairean Mairean Mairean Mairean Moirean Moirean Moirean Seembryanth Doporum platycarpum Olearia Ptilotu Scaevola Sclerolaei Senna artemisia	stipa nitida tans subsp inte tans lesouefii tans oleosa flora var. pauci tans ageorgei tans sedifolia ta trichoptera tans triptera temum nodiflor subsp. platyca tans muelleri tans nobilis tans spinescens tans diacantha toides subsp filit	flora um urpum (40-1)						



Project Name: SKO Location 48 + 50						
Date:	5/09/2012	Botanist:	Eren Reid & Ashley Owen			
Location:	Alacer Gold	Quadrat:	21			
Quadrat size:	20x20					
Vegetation group:	Mixed Eucalyptus woodland	over Atriplex nu	ımmularia shrublands			
WP:	43					
Photo number:		66-68				
Landform:		Upper slope/Hillslope				
Land surface/disturl	bance:	Limited clearing				
Coarse fragments o		Very slightly; very few/Medium gravelly; medium				
(abundance/size/sha		pebbles/Angular				
Rock outcrop (abun	dance/runoff):	No bedrock exposed/Slow				
Soil (profile/field tex	ture/soil surface):	Duplex/Clay loam sandy/Surface crust				
% Cover leaf litter:		20				
% Cover bare groun	d:	85				
% Cover bare groun	d:	85				

Tallest stratur	n	Mid-stra	atum	Lower stratur	n	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
	6-					
Height:	12m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	10-30	Crown cover %:	<10	Crown cover %:	<10	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
		Eremophila intersta	ans subsp			
Eucalyptus griffithsii		interstans		Senna artemisioides sub	sp filifolia	
Eucalyptus torquata				Eremophila glabra subsp	o. glabra	
				Atriplex nummularia subs	sp	
				spathulata		
		ALL S	SPECIES			
		Atriplex nummula		ulata		
			stipa nitida			
			ea lobulata			
			ıbra subsp. glab			
		Eremophila interst				
		Eremophila oldfield		tifolia		
			tus griffithsii			
			tus torquata			
			a muelleri			
			spinescens			
Sclerolaena diacantha						
			oides subsp filifo	llia		
		Zygophyllur	m aurantiacum			



Solutions	L	ocalion Lease 46 & 50 L	.evei 2 Fiora ar	na vegetation Survey- Sep	terriber 2012	
		Project Name: SKC	Location 48	+ 50		
Date:	5/09/20	12	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer G	old	Quadrat:	22		
Quadrat size:	20x20					
Vegetation group:	Acacia	quadrimarginea over mi	xed shrubland			
WP:	46					
Photo number:			69-71			
Landform:			Crest/Hill Cr			
Land surface/disturband			No effective animals	disturbance except grazin	g by hoofed	
Coarse fragments on th (abundance/size/shape)	:		Very; abunda	ant/Cobbly; or cobbles/Sul	orounded	
Rock outcrop (abundan				rocky/Moderately rapid		
Soil (profile/field texture	e/soil sur	face):		/ loam/Surface crust		
% Cover leaf litter:			30			
% Cover bare ground:			60			
Tallest stratum		Mid-strat	um	Lower stra	fum	
Growth form:	Shrub	Growth form:	Shrub	Growth form:	Shrub	
Height:	3-6m	Height:	1-3m	Height:	0.25-0.5m	
Crown cover %:	30-70	Crown cover %:	10-30	Crown cover %:	10-30	
Dominant taxa:	30 70	Dominant taxa:	10 30	Dominant taxa:	10 30	
Acacia quadrimarginea		Eremophila georgei		Ptilotus obovatus		
7.todola quadimiarginoa		Dodonaea lobulata		Stenanthemum stipulos	sum 46-1	
		2000			<u> </u>	
		ALL SP	ECIES			
		Acacia quad				
		Austrostipa e				
		Austrosti				
		Brachyscom				
		Calotis erer				
		Dampiera				
		Dodonaea				
		Eremophil Eremophila oldfieldii		ifolio	_	
		Erodium		liulia		
		Eucalyptus ev				
		Goodenia ha				
		Halgania and				
		Marsdenia				
		Monachathe				
	-	Podolepis	lessonii			
		Ptilotus o				
		Salsola a				
		Senecio pii		.,		
		Senna artemisioides				
		Senna artemisioio		ıa		
		Sida calyxhy Solanum la:				
		Stenanthemum		<u> </u>		
		Waitzia ad		r		
		Zygophyllum				
		Adja				
		Acacia sp. nar Brunonia				
		Calotis h				
		Cephalipterum				
		Cryptandra			_	
Droate the are although it is the mouth of ari						

Prostanthera althoferi subsp althoferi Scaevola spinescens



Solutions				. 9		
	F	Project Name: SKO Lo	cation 48 + 5	0		
Date:	5/09/20		Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer G		Quadrat:	23		
Quadrat size:	20x20			1		
Vegetation group:	Eucalyp	tus woodland with Alloc	asuarina and	Acacia over mixed sh	rubland	
WP:	47					
Photo number:	•		73-75			
Landform:			Upper slope			
Land surface/disturba			Limited clear	ring		
Coarse fragments on to (abundance/size/shape		ce	Very; abunda	ant/Stony; stones/Sub	angular	
Rock outcrop (abunda		ff):	Rocky/Mode	rately rapid		
Soil (profile/field textu			Uniform/Clay	y loam/Surface crust		
% Cover leaf litter:			60			
% Cover bare ground:			40			
Tallest stratum	•	Mid-stratu	ım	Lower stra	tum	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
	6-12m		1-3m		0.25-0.5m	
Height:		Height:	30-70	Height:	10-30	
Crown cover %: Dominant taxa:	<10	Crown cover %:  Dominant taxa:	30-70	Crown cover %: Dominant taxa:	10-30	
Dominant taxa:		Dominant taxa:		Prostanthera althore		
Eucalyptus griffithsii		Acacia sp. narrow phy	vllode	althoferi	iii subsp	
Lucaryptus grimmon		Eremophila oldfieldii subsp.		3.3.101011		
		angustifolia		Olearia muelleri		
		Allocasuarina campes	stris 47-1			
		ALL SPEC	IES			
		Acacia sp. narrow				
		Acacia tetragon				
		Allocasuarina camp				
		Alyxia buxif				
		Austrostipa elega Dampiera late			_	
		Dampiera iate				
		Enchylaena tom				
	E	Fremophila oldfieldii sub		ia		
		Eucalyptus gri				
		Marsdenia au				
		Monachather pa				
		Olearia mue				
		Prostanthera althoferi		<u> </u>		
		Santalum spic			_	
		Scaevola spine				
		Senna artemisioides	•			
Westringia rigida						
		Adjacen	t			
	Brunonia australis					
	Cryptandra graniticola					
Podolepis lessonii						
Senecio pinnatifolius						
Stackhousia sp Mt. Keith 47-2						
		Stenanthemum s				
		Waitzia acum	iinata			



Solutions					
		Project Name: SKO	Location 48 +	50	
Date:	6/09/2	012	Botanist:	Eren Reid & Ashley Owen	
Location:	Alacer	Gold	Quadrat:	24	
Quadrat size:	20x20			l	
Vegetation group: Eucalyptus woodland with Alle			llocasuarina and	d Acacia over mixed shru	bland
WP:	48				
Photo number:			76-78		
Landform:			Flat/Plain		
Land surface/disturba	nce:		No effective d	listurbance except grazin Is	g by
Coarse fragments on (abundance/size/shap		ace	No coarse fra	gments	
Rock outcrop (abunda		noff):	No bedrock e	xposed/Very slow	
Soil (profile/field textu				oam sandy/Surface crust	
% Cover leaf litter:		,	50	,	
% Cover bare ground:			40		
Tallest stratum		Mid-strat		Lower stratum	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub
Height:	3-6m	Height:	1-3m	Height:	0.5-1m
Crown cover %:	<10	Crown cover %:	30-70	Crown cover %:	10-30
Dominant taxa:	•	Dominant taxa:		Dominant taxa:	
Eucalyptus griffithsii		Allocasuarina helms	3 3		
		Eremophila scoparia	ria Senna artemisioides subsp		ıbsp filifolia
		ALL SPI			
		Acacia m Allocasuarir			
		Allocasuarii Austrostip			
		Eremophila glabra			
		Eremophila parvifolia			
		Eremophila		πρα	
		Eucalyptus			
		Olearia n			
		Scaevola sp			
		Senna artemisioid		<u> </u>	
		Triodia so			
		Westringi			
		Zygophyllum a	aurantiacum		
		<u> </u>	<u> </u>	<u> </u>	

Adjacent
Acacia sp. narrow phyllode
Acacia gibbosa



	Project Name: SKO Location 48 + 50							
Date:	6/09/2012		Botanist:	Eren Reid & Ashley Owen				
Location:	Alacer Gold	er Gold Quadrat: 25						
Quadrat size:	20x20			•				
Vegetation group:	Internally drain	ned claypans						
WP:	49							
Photo number:			79-81					
Landform:			Flat/Plain					
Land surface/disturbance:			No effective disturbance except grazing by hoofed animals					
Coarse fragments on the	e surface		Slightly; few/Medium gravelly; medium					
(abundance/size/shape):			pebbles/Angular					
Rock outcrop (abundance	ce/runoff):		No bedrock exposed/No runoff					
Soil (profile/field texture	/soil surface):		Duplex/Clay loam/Cracking					
% Cover leaf litter:	_		<5					
% Cover bare ground:			90					
<u> </u>								
Tallest stratum		Mid-stratur	n	Lower stratum				

Ooli (promerneta texture/st	on surface).	- Duple / Clay loan / Chacking					
% Cover leaf litter:		<5	<5				
% Cover bare ground:		90					
Tallest stratum	Mid-strat	um	Lower stra	atum			
Growth form:	Growth form:	Shrub	Growth form:	Forb			
Height:	Height:	0.5-1m	Height:	<0.25m			
Crown cover %:	Crown cover %:	<10	Crown cover %:	<10			
Dominant taxa:	Dominant taxa:		Dominant taxa:	•			
None	Atriplex nummularia sul	osp spathulata	Austrostipa nitida				
			Cephalipterum drumm	ondii			
			1 ' '				
	ALL S	PECIES					
	Angianthus	tomentosus					
		ysoderma 49-1					
	Atriplex nummular		ta				
		tipa nitida					
	Cephalipteru	m drummondii					
	Eragros	tis dielsii					
	Eremophila decipie	ns subsp. decipie	ns				
	Erodium	n crinitum					
	Goodenia pi	nnatifida 49-2					
	Halgania ar	ndromedifolia					
		pyramidata					
	Maireana	thesioides					
		trichoptera					
		a triptera					
		emum nodiflorum					
		is lessonii					
		ırlsonii 49-4					
		olosericeus					
		erbenaca					
		cassiniana					
		na cuneata					
		a densiflora					
		innatifolius					
		canescens					
		?dealbatum 49-3					
		acuminata					
	Zygophyllun	aurantiacum					
		acent					
		arrow phyllode					
		la ionantha					
	Eremophila scoparia						

Rhagodia drummondii



Project Name: SKO Location 48 + 50						
Date:	6/09/2012	Botanist:	Eren Reid & Ashley Owen			
Location:	Alacer Gold	Quadrat:	26			
Quadrat size:	20x20					
Vegetation group:	Internally drained claypans					
WP:	52					
Photo number:		82-84				
Landform:		Flat/Plain				
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals				
Coarse fragments on the s (abundance/size/shape):	urface	Slightly; few/Coarse gravelly; large pebbles/Angular				
Rock outcrop (abundance/	runoff):	No bedrock exposed/No runoff				
Soil (profile/field texture/so	oil surface):	Duplex/Clay loam sandy/Surface crust				
% Cover leaf litter:		<5				
% Cover bare ground:		90				

Tallest stratum	Mid-strate	um	Lower stra	atum
Growth form:	Growth form:	Shrub	Growth form:	Forb
Height:	Height:	0.5-1m	Height:	<0.25m
Crown cover %:	Crown cover %:	10-30	Crown cover %:	<10
Dominant taxa:	Dominant taxa:		Dominant taxa:	
None	Atriplex nummularia sub	sp spathulata	Austrostipa nitida	
	Lycium australe	•	Maireana trichoptera	
	Eremophila decipiens su	ıbsp. decipiens		
	ALL SF	PECIES		
	Acacia sp. na	rrow phyllode		
	Angianthus	tomentosus		
	Aristida			
	Atriplex nummulari		ta	
	Austrosti			
	Cephalipterur			
	Eragros			
	Eragrostis e			
	Eremophila decipie		ens	
		a ionantha		
	Eremophila maculata		52-4	
	Erodium			
		natifida 49-2		
	Lycium			
	Maireana			
	Maireana t			
	Podolepi			
	Ptilotus Ptilotus ho			
	1 1110101011			
	Rhagodia o			
	Rytidosperma : Salvia ve			
	Sclerolaer			
	Scierolaen			
	Sclerolaena			
	Sclerolaena			
	Senecio pi			
	Swainsona			
		n ?dealbatum		
	Vittadinia er			
	Zygophyllum			



Project Name: SKO Location 48 + 50						
Date:	6/09/20	/09/2012 Botanist : Eren Reid & Ashley O				
Location:	Alacer G	iold	Quadrat:	27		
Quadrat size:	20x20					
Vegetation group:	Eucalyp	tus woodland with Alloca	suarina and	Acacia over mixed shrubland		
WP:	54					
Photo number:			99-101			
Landform:			Crest/Hill Crest			
Land surface/disturbanc	e:		No effective disturbance			
Coarse fragments on the			Very; abundant/Cobbly; or			
(abundance/size/shape):			cobbles/Angular			
Rock outcrop (abundance			Very rocky/Moderately rapid			
Soil (profile/field texture	/soil surfa	ace):	Uniform/Clay loam/Surface crust			
% Cover leaf litter:			85			
% Cover bare ground:		50				
			·			
Tallest stratum		Mid-stratum	1	Lower stratum		

			•		
Tallest stratum		Mid-stratum		Lower stra	itum
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub
Height:	3-6m	Height:	1-3m	Height:	0.25-0.5m
Crown cover %:	10-30	Crown cover %:	30-70	Crown cover %:	10-30
Dominant taxa:		Dominant taxa:		Dominant taxa:	1
Eucalyptus griffithsii		Dodonaea lobulata		Scaevola spinesce	ns
		Trymalium myrtillus sub	osp.		
		myrtillus		Olearia muelleri	
		Allocasuarina helmsii		Westringia rigida	
		ALL SPECIES			
		Acacia sp. narrow phy			
		Allocasuarina helm	_		
		Austrostipa nitida			
		Dampiera latealat			
		Dodonaea lobulat			
		Eremophila glabra subsp			
	Ere	mophila parvifolia subsp		l	
		Eucalyptus griffith			
		Exocarpos aphyllu			
		Maireana carnos			
		Maireana george			
		Marsdenia austra			
		Olearia muelleri			
	Pı	ostanthera althoferi subs			
		Ptilotus obovatus			
		Scaevola spinesce			
<del> </del>		Senna artemisioides sub			
	T	rymalium myrtillus subsp			
		Zygophyllum aurantia	acum		
		Adjacent			
	Г	Dianella revoluta subsp. (	divaricata		
		Thysanotus mangles			
		Thysaliolas mangles	iuiius		



Project Name: SKO Location 48 + 50						
Date:	6/09/2012	Botanist:	Eren Reid & Ashley Owen			
Location: Alacer Gold		Quadrat:	28			
Quadrat size:	20x20					
Vegetation group:         Acacia- Mallee shrublands						
<b>WP</b> : 55						
Photo number:		102-104				
Landform:		Flat/Plain				
Land surface/disturba	ance:	Limited clearing				
Coarse fragments on		Very slightly; very few/Coarse gravelly; large				
(abundance/size/shap	oe):	pebbles/Subrounded				
Rock outcrop (abund	ance/runoff):	No bedrock exposed/No runoff				
Soil (profile/field text	ure/soil surface):	Duplex/Clay loam/Surface crust				
% Cover leaf litter:		15				
% Cover bare ground	:	80				

Tallest stratum		Mid-stratum		Lower stra	Lower stratum			
Growth form:	Tree	Growth form: Shrub		Growth form:	Shrub			
Height:	3-6m	Height:	1-3m	Height:	0.5-1m			
Crown cover %:	<10	Crown cover %:	10-30	Crown cover %:	<10			
Dominant taxa:		Dominant taxa:		Dominant taxa:	Dominant taxa:			
Eucalyptus oleosa subsp. oleosa 55-1		Acacia sp. narrow phyllode		Eremophila georgei				
ALL SPECIES								
	Acacia sp. narrow phyllode							

	ALL SPECIES						
	Acacia sp. narrow phyllode						
Austrostipa elegantissima							
	Austrostipa nitida						
	Dampiera latealata						
	Dodonaea lobulata						
	Eremophila georgei						
	Eucalyptus oleosa subsp. oleosa 55-1						
	Marsdenia australis						
	Melaleuca hamata						
	Ptilotus obovatus						
	Velleia rosea						
	Zygophyllum aurantiacum						
	Adjacent						
	Grevillea nematophylla subsp. nemat	ophylla					
	Scaevola spinescens						

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Project Name: SKO Location 48 + 50							
Date:	6/09/2012		Botanist:	Eren Reid & Ashley Owen			
Location: Alacer Gold			Quadrat:	29			
Quadrat size:	20x20						
Vegetation group:         Acacia- Mallee shrublands							
<b>WP:</b> 56							
Photo number:			105-107				
Landform:			Simple slope/Bench				
Land surface/disturband	e:		No effective disturbance				
Coarse fragments on the			Moderately; many/Cobbly; or				
(abundance/size/shape)	•		cobbles/Subangular				
Rock outcrop (abundan	ce/runoff):		Rocky/Slow				
Soil (profile/field texture	/soil surface):		Uniform/Clay loam/Surface crust				
% Cover leaf litter:			5				
% Cover bare ground:			75				
Tollast stratum Mid stratum Lawar stratum							

70 COTOI Dai o gi caii ai			, 0			
Tallest stratum		Mid-stratum		Lower strat	Lower stratum	
Growth form:	Shrub <b>Growth form:</b>		Shrub	Growth form:	Shrub	
Height:	3-6m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	<1	Crown cover %:	10-30	Crown cover %:	<10	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
Grevillea nematophylla subsp. nematophylla		Acacia sp. narrow phyllode		Prostanthera althoferi subsp althoferi		
				Eremophila georgei		
		ALL SPECIE	S			
		Acacia sp. narrow p	hyllode			
		Aristida contor	ta			
		Austrostipa niti	da			
		Brachyscome cilio	carpa			
		Brunonia auetre	alie			

ALL OI LOILO
Acacia sp. narrow phyllode
Aristida contorta
Austrostipa nitida
Brachyscome ciliocarpa
Brunonia australis
Dampiera latealata
Dodonaea lobulata
Eremophila georgei
Erodium crinitum
Goodenia occidentalis 56-2
Grevillea nematophylla subsp. nematophylla
Haloragis trigonocarpa
Marsdenia australis
Prostanthera althoferi subsp althoferi
Sida sp. Dark green fruits
Solanum lasiophyllum
Velleia rosea
Waitzia acuminata
Adjacent
Acacia tetragonophylla
Eucalyptus oleosa
Melaleuca hamata
Scaevola spinescens
Stackhousia sp. (sterile) 57-1



Solutions		50411011	ovor 2 i iora aria	vegetation early coptemic	01 20 12	
		Project Name: SKO	Location 48 +	· 50		
Date:	6/09/2	012	Botanist:	Eren Reid & Ashley Owe	n	
Location:	Alacer	Gold	Quadrat:	30		
Quadrat size:	20x20		•			
Vegetation group:	Eucaly	ptus torquata and E. I	esouefii woodla	and over sclerophyll shrub	lands	
WP:	58					
Photo number:			108-111			
Landform:			Upper slope/l			
Land surface/disturba			hoofed anima	listurbance except grazing Ils	) by	
Coarse fragments on (abundance/size/shap	<b>e)</b> :		• •	Cobbly; or cobbles/Subang	gular	
Rock outcrop (abunda				xposed/Moderately rapid		
Soil (profile/field textu	re/soil s	surface):		oam/Surface crust		
% Cover leaf litter:			70			
% Cover bare ground:			60			
Tallest stratum		Mid-strat		Lower stratun	2	
	Troo		Shrub		Shrub	
Growth form:	Tree	Growth form:		Growth form:		
Height:	3-6m	Height:	1-3m	Height:	0.5-1m	
	10-	_				
Crown cover %:	30	Crown cover %:	10-30	Crown cover %:	<10	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
Eucobyotuo torquoto		Eremophila interstar interstans	is subsp	Dodonaea lobulata		
Eucalyptus torquata Casuarina pauper		IIILEISIAIIS		Scaevola spinescens		
Ododanna pauper				Scaevola spillescens		
		ALL SPI	ECIES			
		Acacia e				
		Aristida c	ontorta			
		Austrostip	a nitida			
		Casuarina				
		Dodonaea				
		Eremophila glabra				
		Eremophila interstan				
		Eremophila oldfieldii		Ulia		
		Eucalyptus Marsdenia				
		Olearia n				
		Ptilotus ol				
		Scaevola sp				
		Senna artemisioid		a		
		Westringi				
		Zygophyllum a				
		Zygophyllum	eremaeum			



Solutions	_	00dii011 20d00 10 d 00	zovorz mora am	a vegetation earvey expicinic	701 2012	
		Project Name: SK	O Location 48	+ 50		
Date:	6/09/2	012	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer	Gold	Quadrat:	31		
Quadrat size:	20x20					
Vegetation group:	Mixed F	Eucalyptus woodland	over Atriplex n	ummularia shrublands		
WP:	61	• •	•			
Photo number:			112-114			
Landform:			Simple slope			
Land surface/disturb	ance:		No effective of animals	disturbance except grazing	by hoofed	
Coarse fragments on	the sur	face	Very slightly;	very few/Coarse gravelly; la	arge	
(abundance/size/sha			pebbles/Angu	ular		
Rock outcrop (abund			No bedrock e			
Soil (profile/field text	ure/soil	surface):		oam/Surface crust		
% Cover leaf litter:			35			
% Cover bare ground	l:		70			
Tallest stratum	1	Mid-stra		Lower stratum		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
	6-					
Height:	12m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	10-30	
Dominant taxa:		Dominant taxa:	•	Dominant taxa:		
				Atriplex nummularia subs	sp	
Eucalyptus griffithsii		Eremophila scoparia		spathulata		
		Eremophila oldfield	dii subsp.			
		angustifolia		Atriplex vesicaria		
			Senna artemisioides subsp filifolia			
			PECIES			
			unburyana			
		Atriplex nummulari		ılata		
			vesicaria			
			ipa nitida	<u> </u>		
		Eremophila glab Eremophila oldfield				
			a scoparia	uiolid		
			s griffithsii			
			a interioris			
			trichoptera			
			a australis			
			muelleri			
			obovatus			
		Senna artemisioi		lia		
			aurantiacum			
		Adja	cent			
		Santalum a	acuminatum			



Solutions				<u> </u>			
Project Name: SKO Location 48 + 50							
Date:	6/09/2012		Botanist:	Eren Reid & Ashley Owen			
Location:	Alacer Gold		Quadrat:	32			
Quadrat size:	20x20						
Vegetation group:	Acacia- Mallee shru	ublands					
WP:	62						
Photo number:			115-121				
Landform:			Simple slope	e/Hillslope			
Land surface/disturbance: No effective disturbance							
Coarse fragments on the surface Very slightly; very few/Cobbly; or							
(abundance/size/			cobbles/Ang				
Rock outcrop (ab	oundance/runoff):			exposed/Slow			
	texture/soil surface	e):		loam/Surface crust			
% Cover leaf litte			30				
% Cover bare gro	ound:		80				
T-114	24.24	Mid atus		I avvan atnativ	••		
Tallest	Stratum	Mid-stra	itum	Lower stratu	m 		
	Shrub Mallee (<						
Growth form:	8m)	Growth form:	Shrub	Growth form:	Shrub		
Height:	3-6m	Height:	1-3m	Height:	0.5-1m		
		Crown cover			10.00		
Crown cover %:	<10	%:	30-70	Crown cover %:	10-30		
Dominant taxa:		Dominant taxa:	i	Dominant taxa:			
Acacia quadrimarç	ginea	Acacia sp. narro	w phyllode	Prostanthera althoferi subsp althoferi			
				Senna artemisioides subsp filifolia			
		ALL SPECI					
		Acacia quadrim					
		Acacia sp. narrow					
		Aristida cont Dodonaea lob					
		Goodenia krause					
		Goodenia havilar					
		Podolepis cap					
	Prost	anthera althoferi		·i			
	11000	Scaevola spine					
	Sen	na artemisioides					
		Solanum lasiop					
		Waitzia acum					
		Westringia ri					
		Adjacen					
		Brachychiton g					
		Eremophila gra	anitica				



				_		
	T	Project Name: SKO	Location 48 +	- 50		
Date:	6/09/2	2012	Botanist:	Eren Reid & Ashley Owe	n	
Location:	Alacer	Gold	Quadrat:	33		
Quadrat size:	20x20					
Vegetation group:	Jam th	icket				
WP:	65					
Photo number:			122-124			
Landform:			Simple slope/			
Land surface/disturba			No effective of hoofed animal	disturbance except grazing dls	) by	
Coarse fragments on (abundance/size/shap	<b>e</b> ):		Slightly; few/0	Cobbly; or cobbles/Angula	r	
Rock outcrop (abunda	ance/rur	noff):	Slightly rocky			
Soil (profile/field textu	re/soil :	surface):		y loam/Surface crust		
% Cover leaf litter:			30			
% Cover bare ground:			40			
Tallest stratum		Mid-stra	tum Lower stratum		וְ	
	Shru					
Growth form:	Shru b	Growth form:	Shrub	Growth form:	Shrub	
Growth form: Height:		Growth form: Height:	Shrub 1-3m	Growth form: Height:	Shrub 0.5-1m	
	b					
Height:	b 3-6m	Height:	1-3m	Height:	0.5-1m	
Height: Crown cover %:	b 3-6m	Height: Crown cover %:	1-3m 30-70	Height: Crown cover %:	0.5-1m	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa:	1-3m 30-70	Height: Crown cover %: Dominant taxa:	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p	1-3m 30-70 hyllode	Height: Crown cover %: Dominant taxa: Dodonaea lobulata	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p	1-3m 30-70 hyllode	Height: Crown cover %: Dominant taxa: Dodonaea lobulata	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP  Acacia sp. na	1-3m 30-70 hyllode ECIES	Height: Crown cover %: Dominant taxa: Dodonaea lobulata	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP  Acacia sp. na Astartea sp. F	1-3m 30-70 hyllode ECIES rrow phyllode Red Hill 65-1	Height: Crown cover %: Dominant taxa: Dodonaea lobulata	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP  Acacia sp. na  Astartea sp. F  Dodonaea	1-3m 30-70 hyllode ECIES rrow phyllode Red Hill 65-1 a lobulata	Height: Crown cover %: Dominant taxa: Dodonaea lobulata Astartea sp. Red Hill 65	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP  Acacia sp. na  Astartea sp. F  Dodonaea  Hybanthus floribunde	1-3m 30-70 hyllode  ECIES rrow phyllode Red Hill 65-1 a lobulata us subsp. curvifo	Height: Crown cover %: Dominant taxa: Dodonaea lobulata Astartea sp. Red Hill 65	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP Acacia sp. na Astartea sp. F Dodonaea Hybanthus floribunda Melaleuca	1-3m 30-70 hyllode recies rrow phyllode Red Hill 65-1 a lobulata us subsp. curvifo a hamata	Height: Crown cover %: Dominant taxa: Dodonaea lobulata Astartea sp. Red Hill 65	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP Acacia sp. na Astartea sp. F Dodonaea Hybanthus floribundo Melaleuca Prostanthera althor	1-3m 30-70 hyllode row phyllode Red Hill 65-1 a lobulata us subsp. curvifo a hamata feri subsp althof	Height: Crown cover %: Dominant taxa: Dodonaea lobulata Astartea sp. Red Hill 65	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m <10	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP  Acacia sp. na  Astartea sp. F  Dodonaea  Hybanthus floribunde  Melaleuca  Prostanthera althor  Scaevola s	1-3m 30-70 hyllode row phyllode Red Hill 65-1 a lobulata us subsp. curvifo a hamata feri subsp althof pinescens	Height: Crown cover %: Dominant taxa: Dodonaea lobulata Astartea sp. Red Hill 65	0.5-1m 30-70	
Height: Crown cover %: Dominant taxa:	b 3-6m <10	Height: Crown cover %: Dominant taxa: Acacia sp. narrow p  ALL SP Acacia sp. na Astartea sp. F Dodonaea Hybanthus floribundo Melaleuca Prostanthera althor	1-3m 30-70  hyllode  ECIES  rrow phyllode Red Hill 65-1 a lobulata us subsp. curvife a hamata feri subsp althof pinescens subsp artemisic	Height: Crown cover %: Dominant taxa: Dodonaea lobulata Astartea sp. Red Hill 65	0.5-1m 30-70	



Solutions					-		
		<b>Project Name: SKC</b>	Location 48	+ 50			
Date:	7/09/20	012	Botanist:	Eren Reid & Ashley Owen			
Location:	Alacer (	Gold	Quadrat:	34			
Quadrat size:	20x20			1			
Vegetation group:		Eucalyptus woodland	d over Atriplex nummularia shrublands				
WP:	66						
Photo number:			125-127				
Landform:				sion (vale)/Drainage depre	ession		
Land surface/disturbance:			No effective	disturbance except grazing			
Coarse fragments on the surface			No coarse fra				
(abundance/size/shap							
Rock outcrop (abunda				exposed/Very slow			
Soil (profile/field textu	ure/soil s	surface):		loam/Surface crust			
% Cover leaf litter:			20				
% Cover bare ground	:		85				
Tellegt start		Mist store	hi i inn	L auran atratum			
Tallest stratum		Mid-strat		Lower stratun	<u>-</u>		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub		
Height:	6- 12m	Height:	1-3m	Height:	0.5-1m		
Crown cover %:	10-30	Crown cover %:	<10	Crown cover %:	10-30		
Dominant taxa:	10-30	Dominant taxa:	10	Dominant taxa:	10-30		
Dominant taxa.		Dominant taxa.		Atriplex nummularia sub	cn		
Eucalyptus salmonophi	loia	Eremophila scoparia	a	spathulata			
Eucalyptus lesouefii	Ισια	Licinopilia scopari	<u>a</u>	Spatriciata			
Lucaryptus icsouciii							
		ALL SP	ECIES				
		Atriplex nummularia		lata			
		Atriplex v					
		Austrostin					
		Enchylaena					
		Eremophila					
		Eremophila	scoparia				
		Eriochiton scle	erolaenoides				
		Eucalyptus	lesouefii				
		Eucalyptus sa	lmonophloia				
		Maireana					
		Maireana p					
		Maireana p					
		Maireana					
		Ptilotus					
		Ptilotus o					
		Scaevola s					
		Sclerolaena					
		Sclerolaena Sanna artemisioid		io.			
		Senna artemisioid		ld			
Zygophyllum aurantiacum							
		Adjad	cent				
		Acacia he					
		Acacia I					
	F	remophila maculata s		 a 66-1			
		Eremophila parvifolia					
				p.			
	Maireana sedifolia  Maireana trichoptera						
		Senna artemisioides		oides			



Solutions						
_		Project Name:				
Date:	<u> </u>	09/2012	Botanist:	Eren Reid & Ashley Ov	wen	
Location:		acer Gold	Quadrat:	35		
Quadrat size:		x20				
Vegetation group:	_	ernally drained claypa	ans			
WP:	67					
Photo number:			128-130			
Landform:			Flat/Plain			
Land surface/disturba	nce	:	No effective of animals	disturbance except grazi	ng by hoofed	
Coarse fragments on (abundance/size/shap		surface	No qualifier; of pebbles/Suba	common/Medium gravell angular	y; medium	
Rock outcrop (abunda	ance	e/runoff):		xposed/Very slow		
Soil (profile/field textu	ıre/s	soil surface):	Duplex/Clay I	oam/Cracking		
% Cover leaf litter:			10			
% Cover bare ground:	:		90			
Tallest stratum		Mid-strat	tum	Lower stra	atum	
Growth form:		Growth form:	Shrub	Growth form:	Forb	
Height:		Height:	0.5-1m	Height:	0.25-0.5m	
Crown cover %:		Crown cover %:	10-30	Crown cover %:	<10	
Dominant taxa:		Dominant taxa:	10-20	Dominant taxa:	1 /10	
None		Eremophila scoparia		Austrostipa nitida		
		Atriplex nummularia spathulata	subsp	Maireana trichoptera		
		Lycium australe				
			SPECIES			
			nus tomentosus			
		Atriplex nummu		thulata		
		•	ex vesicaria			
			oa elegantissim	a		
			ostipa nitida			
			erum drummon			
			n gaudichaudia			
		Eremophila deci		ecipiens		
			phila miniata			
			phila scoparia			
			sclerolaenoide	S		
			um australe			
			na pyramidata			
			ana sedifolia			
			na trichoptera			
			enia australis			
			enia australis			
			us obovatus			
		· ·	lia drummondii			
			a verbenaca			
			ena densiflora			
			ena diacantha			
			sioides subsp fi	lifolia		
			n nummularium			
			um aurantiacur			
		Zygophy	llum eremaeum	1		
			djacent			
		Acacia sp.	narrow phylloc	de		
		Eremo	phila scoparia			
		Pittosporu	ım angustifoliur	n		
		Senna artemisioio	des subsp arter	misioides		
·						



Solutions										
	Proj	ect Name: SKO	Location 48 +	50						
Date:	7/09/2012		Botanist:	Eren Reid & Ashley Owe	en					
Location:	Alacer Gold		Quadrat:	36						
Quadrat size:	20x20									
Vegetation	Assais Mallas abr	ما ما ما ما ما								
group:	Acacia- Mallee shr	ubiands								
WP:	69									
Photo number:			135-137							
Landform:			Upper slope/H							
Land surface/disturbance:			No effective d hoofed anima	isturbance except grazinç Is	j by					
Coarse fragmer (abundance/size	nts on the surface e/shape):		Slightly; few/C	Cobbly; or cobbles/Angula	r					
Rock outcrop (a	abundance/runoff):		Slightly rocky/	Moderately rapid						
	d texture/soil surfa	ce):		loam/Surface crust						
% Cover leaf litt			20							
% Cover bare g	round:		65							
Talles	t stratum	Mid-st	ratum	Lower stratun	1					
	Shrub Mallee (<									
Growth form:	8m)	Growth form:	Shrub	Growth form:	Shrub					
Height:	3-6m	Height:	1-3m	Height:	0.5-1m					
Crown cover		Crown cover								
%:	<10	%:	30-70	Crown cover %:	30-70					
Dominant taxa:		Dominant taxa								
Acacia quadrima	arginea	Acacia sp. narre	Prostanthera althoferi subsp							
				althoferi						
		ALL SPE	CIEC	Scaevola spinescens						
		Acacia quadr								
		Acacia sp. narr								
		Austrostip								
		Chrysocephal								
		Dodonaea								
		Gnephosis an								
		Haloragis trig	jonocarpa							
		Senecio pin								
		Marsdenia								
		Podolepis								
	Pro	stanthera althofe		eri						
		Scaevola sp		(1						
	Senn	a artemisioides s		des						
		Stackhousia s								
		Thysanotus ma Waitzia ac								
		Zygophyllum a								
			idiailiacuiii							
		Adjac	ent							
		Mirbelia de								



Solutions						
		Project Name: SKO	Location 48 +	- 50		
Date:	7/09/	2012	Botanist:	Eren Reid & Ashley Owe	n	
Location:	Alacei	· Gold	Quadrat:	37		
Quadrat size:	20x20			1		
Vegetation group:	Eucal	ptus torquata and E. I	esouefii woodla	and over sclerophyll shrub	lands	
WP:	71	,		1 7		
Photo number:	•		137-139			
Landform:			Upper slope/l	Hillslope		
Land surface/disturbance:				disturbance except grazing	by	
Coarse fragments on the surface				common/Cobbly; or		
(abundance/size/shape			cobbles/Suba			
Rock outcrop (abunda		noff):		xposed/Moderately rapid		
Soil (profile/field textu				loam/Surface crust		
% Cover leaf litter:		<i>'</i>	10			
% Cover bare ground:			80			
<u> </u>			1			
Tallest stratum Mid-stratum Lower stratum					1	
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
<u> </u>	3-					
Height:	6m	Height:	1-3m	Height:	0.5-1m	
			+			
Crown cover %:	<10	Crown cover %:	<10	Crown cover %:	10-30	
Dominant taxa:		Dominant taxa:	Dominant taxa:			
Every book of the second		Eremophila interstan	s subsp	Dadanasa lahulata		
Eucalyptus torquata		interstans		Dodonaea lobulata		
				Atriplex nummularia subsp		
				spathulata		
		ALL SPI	ECIES	Westringia rigida		
				ata		
		Atriplex nummularia		ala		
		Austrostip				
		Chenopodium ga Dodonaea				
		Eremophila interstan		ane		
		Eremophila oldfieldii				
		Eucalyptus		Olia		
		Gnephosis an				
		Halgania and				
		Maireana				
		Maireana pe				
		Maireana tr				
		Marsdenia				
		Ptilotus ae				
		Ptilotus of				
		Sclerolaena				
		Solanum las				
		Westringi				
		v v cou ii igi	a rigida			



Project Name: SKO Location 48 + 50					
Date:	7/09/2012	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer Gold	Quadrat:	38		
Quadrat size:	20x20				
Vegetation group:	Halophytes on Salt Flats				
WP:	73				
Photo number: 141-143					
Landform:		Flat/Plain			
Land surface/disturbance:		No effective	disturbance		
Coarse fragments on the s (abundance/size/shape):	Coarse fragments on the surface (abundance/size/shape):  No coarse fragments				
Rock outcrop (abundance/	runoff):	No bedrock exposed/No runoff			
Soil (profile/field texture/so	oil surface):	Duplex/Clay loam/Cracking			
% Cover leaf litter:		<5			
% Cover bare ground:		50			

% Cover bare ground: 50								
Tallest stratum	Mid-stratun	n	Lower strat	um				
Growth form:	Growth form:		Growth form:	Forb				
Height:	Height:		Height:	<0.25m				
Crown cover %:	Crown cover %:		Crown cover %:	30-70				
Dominant taxa:	Dominant taxa:		Dominant taxa:					
			Tecticornia indica subsp.					
None	None		bidens	-				
				Disphyma crassifolium				
	ALL SPECIE	S						
	Atriplex lindleyi subsp.	inflata 73-1						
	Brachyscome ciliocarpa							
	Cratystylis subspin	escens						
	Didymanthus roei	73-6						

ALL OI LOILO
Atriplex lindleyi subsp. inflata 73-1
Brachyscome ciliocarpa
Cratystylis subspinescens
Didymanthus roei 73-6
Disphyma crassifolium
Dittrichia graveolens 73-7
Eragrostis dielsii
Frankenia irregularis 73-5
Maireana pyramidata
Rhodanthe stricta 73-4
Sclerolaena densiflora
Senecio pinnatifolius 73-2
Sonchus oleraceus
Tecticornia indica subsp. bidens 74-3
Tecticornia pruinosa 73-3



Solutions					
		Project Name: SKO	Location 48	+ 50	
Date:	7/09/		Botanist:	Eren Reid & Ashley Ov	wen
Location:	Alacer		Quadrat:	39	
Quadrat size:	20x20		Quadrat.	33	
Vegetation group:			nd with emera	ent Myoporum acumina	tum
WP:	80	an Chenopou sinubiai	id with emerg	ent myoporum acumina	turri
Photo number:	00		144-146		
Landform:			Flat/Plain		
				disturbance except graz	zina hv
Land surface/disturbance:			hoofed anim		Zing by
Coarse fragments on the surface (abundance/size/shape):			No coarse fr	agments	
Rock outcrop (abunda	ınce/ru	noff):	No bedrock	exposed/Slow	
Soil (profile/field textu	re/soil	surface):	Duplex/Heav	vy clay/Surface flake	
% Cover leaf litter:			<5		
% Cover bare ground:			40		
Tallest stratum		Mid-stratu		Lower strat	um
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub
	1-				
Height:	3m	Height:	0.5-1m	Height:	0.25-0.5m
Crown cover %:	<1	Crown cover %:	30-70	Crown cover %:	30-70
Dominant taxa:		Dominant taxa:	30-70	Dominant taxa:	30-70
Pittosporum angustifoliu	ım	Cratystylis subspines	20000	Tecticornia indica sub	an hidana
Fillosporum angustiioiit	<i>1</i> 1111	Lycium australe	SCELIS		
		ALL SPI	ECIES	Disphyma crassifolium	ı
		Atriplex lindleyi su		1	
		Brachyscome		- 1	
		Cotula bipin			
		Cratystylis sub			
		Disphyma cr			
		Dispriyma cr Dittrichia grav			
		Enchylaena			
		Eragrostis			
		Eremophila			
		Frankenia irre			
		Hainardia cyli			
		Lycium a			
		Lysimachia			
		Maireana b			
		Maireana py			
		Marsdenia			
		Medicago			
		Mesembryanthen		n	
		Oncosiphon suffi			
		Pittosporum a	ngustifolium		
	R	anunculus pentandrus		us 74-4	
		Rhagodia dr			
		Rhodanthe s			
		Rostraria pu	ımila 74-2		
		Senecio pinna			
		Sonchus o	leraceus		
		Tecticornia indica	a subsp. biden	S	
		Tecticornia pr			
		Xanthium s			



Solutions						
		<b>Project Name: SKO</b>	Location 48 +	· 50		
Date:	7/09/20	012	Botanist:	Eren Reid & Ashley Owe	n	
Location:	Alacer	Gold	Quadrat:	40		
Quadrat size:	20x20					
Vegetation group:		ina pauper shrubland	on calcrete pla	tform		
WP:	74	ma paapor om abiana	on calcrote pla			
Photo number:			148-150			
Landform:			Flat/Plain			
Land surface/disturbance:				listurbance except grazing	by	
Land Surface/disturbance:			hoofed anima		•	
Coarse fragments on the surface			Slightly: fow/0	Cobbly; or cobbles/Subrou	nded	
(abundance/size/shap					nueu	
Rock outcrop (abunda				xposed/No runoff		
Soil (profile/field textu	re/soil s	surface):		/ clay loam/Loose		
% Cover leaf litter:			30			
% Cover bare ground:	:		80			
<b>T</b> II						
Tallest stratum		Mid-strat		Lower stratum		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
	6-					
Height:	12m	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	10-30	Crown cover %:	<10	Crown cover %:	10-30	
Dominant taxa: Dominant taxa:				Dominant taxa:		
Casuarina pauper Myoporum montanum Cratystylis conocephala						
	Maireana sedifolia					
		ALL SPI				
		Acacia dor				
		Acacia tetrag				
		Atriplex ve				
		Austrostipa ele				
		Austrostip				
		Casuarina				
		Cratystylis co		ima		
		Dodonaea viscosa su		IIIIa		
		Enchylaena teremophila decipient		ens		
		Eremophila		GIIO .		
		Exocarpos				
		Lycium a				
		Maireana pe				
		Maireana s				
		Maireana tr				
		Myoporum n	•			
		Ptilotus of				
		Rhagodia dr				
		Salsola a				
		Scaevola sp	oinescens			
		Sclerolaena	densiflora			
		Sclerolaena	diacantha			
		Solanum nur				
Zugophyllum gurantingum						

Zygophyllum aurantiacum



		SKO Location 48 + 50		
Date:	7/09/2012	Botanist:	Eren Reid & Ashley Ow	ven
Location:	Alacer Gold	Quadrat:	41	
Quadrat size:	20x20	•	•	
Vegetation group:		and with Maireana pyramida	ta	
WP:	75			
Photo number:		151-153		
Landform:		Open depression (va	ale)/Stream channel	
Land surface/disturbance	<u>.</u> }:		ance except grazing by hoofed	lanimals
	surface (abundance/size/shape		gravelly; large pebbles/Angul	
Rock outcrop (abundance	e/runoff)·	No bedrock exposed		<u> </u>
Soil (profile/field texture/s		Duplex/Sand/Loose	a/140 Tarion	
% Cover leaf litter:	son surface).	5		
% Cover bare ground:		60		
% Cover bare ground.		00		
Tallest stratum		Mid-stratum	Lower strat	um
				Shrub
Growth form:	Growth form:	Shrub Mallee (< 8m)	Growth form:	
Height:	Height:	1-3m	Height:	0.5-1m
Crown cover %:	Crown cover %:	10-30	Crown cover %:	30-70
Dominant taxa:	Dominant taxa:		Dominant taxa:	
None	Melaleuca elliptica 75-	1	Cratystylis subspines	scens
			Lycium australe	
	AL	L SPECIES		
	Aca	icia jennerae		
	Acad	cia masliniana		
	Austrost	ipa elegantissima		
		come ciliaris 75-3		
		scome ciliocarpa		
		ichtera annua		
		lis subspinescens		
		pogon ambiguus		
		oluta subsp. divaricata		
		ma crassifolium		
	1 2			
		arpus paradoxus		
		osa subsp. angustissima		
		aena tomentosa		
		grostis dielsii		
		cipiens subsp. decipiens		
		ophila granitica		
		ophila miniata		
		villea acuaria		
		opsis quadrifida		
		ium australe		
	Lysim	achia arvensis		
		eana georgei		
		ana pyramidata		
		reana triptera		
		denia australis		
		uca elliptica 75-1		
		n suffruticosum 74-5		
		ea microcephala		
		drummondii 75-2		
		lepis capillaris		
		dia drummondii		
		nthe stricta 73-4		-
		ria verbenaca		
		olaena cuneata		
		laena diacantha		
		a cardiosperma		
		m nummularium		
		hus oleraceus		
		n sphaerocarpum 75-4		
	Tecticor	nia pruinosa 73-2		
		Adjacent		
		ophila scoparia		
	Mairea	ana glomerifolia		
		rola spinescens		
		rnia disarticulata		



Solutions					
	ı	Project Name: SKO		+ 50	
Date:	7/09/2	012	Botanist:	Eren Reid & Ashley O	wen
Location:	Alacer	Gold	Quadrat:	42	
Quadrat size:	20x20		1	ı	-
Vegetation group:	Riparia	n sandplain sclerophyl	ll shrubland		-
WP:	77	, , ,			-
Photo number:			154-156		
Landform:			Crest/Dune	crest	-
Land surface/disturbance:			No effective hoofed anim	disturbance except gra	zing by
Coarse fragments on the surface (abundance/size/shape):			No coarse fi	ragments	
Rock outcrop (abund		noff):	No bedrock	exposed/No runoff	-
Soil (profile/field textu				/Sand/Loose	
% Cover leaf litter:		,	70		-
% Cover bare ground	:		80		-
•					
Tallest stratum		Mid-stratu	ım	Lower strat	tum
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub
Olowan Iolini	6-	Growth form.		Grower romm.	1
Llaight.	12m	Uaimht.	1-3m	Haimbt.	0.25-0.5m
Height:		Height:		Height:	<u> </u>
Crown cover %:	10-30	Crown cover %:	10-30	Crown cover %:	<10
Dominant taxa: Dominant taxa:				Dominant taxa:	
Eucalyptus salicola 77-	·1	Acacia masliniana		Westringia rigida	
		Dodonaea viscosa si	ubsp.		
angustissima					
Acacia masliniana					
		ALL SPE			
		Acacia ma			
		Austrostip			
		Cratystylis sub			
		Dodonaea viscosa su		sima	
		Enchylaena t		•	
		Eremophila decipiens		iens	
		Eucalyptus sa			
		Exocarpos			
		Grevillea a			
		Gunniopsis o			
		Lycium a			
		Maireana th			
		Maireana th Maireana tri			
		Marsdenia			
		Olearia m			
		Rhagodia dr			
		Scaevola sp			
		Sclerolaena			
		Sclerolaena			
		Solanum nun			
		Westringia			
		v v cou ii i gid	a rigida		
		Adjac	ent		
		Cratystylis m			
		Cratystylls III	погоргтупа		



Solutions				a vegetation carvey sep	
	Pro	ject Name: SKO	<b>Location 48</b>	+ 50	
Date:	7/09/2012		Botanist:	Eren Reid & Ashley O	wen
Location:	Alacer Gold		Quadrat:	43	
Quadrat size:	20x20				
Vegetation	Riparian sandplai	n eclerophyll ehri	ıhland		
group:		ii scieropriyii siiit	ubianu		
WP:	78		T		
Photo number:			157-159		
Landform:			Crest/Dune		1
Land surface/dis			hoofed anim	disturbance except granals	izing by
(abundance/size			No coarse fi	ragments	
	bundance/runoff):			exposed/No runoff	
	l texture/soil surfa	ce):		/Sand/Loose	
% Cover leaf litte			30		
% Cover bare gr	ound:		80		
<b>-</b>		1011	,		
lallest	stratum	Mid-str	atum 	Lower stra	tum
	Tree Mallee (>				
Growth form:	8m)	Growth form:	Shrub	Growth form:	Shrub
Height:	6-12m	Height:	1-3m	Height:	0.25-0.5m
Crown cover	10.20	Crown cover	-110		10.20
%: Dominant taxa:	10-30	%: Dominant taxa	<10	Crown cover %:  Dominant taxa:	10-30
Eucalyptus griffith	neii	Acacia donalds			
Lucalypius grilliu	1311	Dodonaea lobu			
		Dodonada loba	idia	Triodia dodridoa	
		ALL SPE	ECIES		
		Acacia dor	naldsonii		
		Angianthus to			
		Austrostip			
		Brachyscome			
		Cratystylis m			
	Г	Dodonaea		niono	
	Erei	mophila decipiens		nens	
		Eucalyptus Grevillea			
		Podolepis			
		Podolepis			
		Prostanthera sp			
		Rhagodia dr			
		Heliotropium co			
		•			
		Adjac		-	
		Acacia ma		-	
		Hemichroa di	andra 78-3		



Project Name: SKO Location 48 + 50					
Date:	7/09/2012	Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer Gold	Quadrat:	44		
Quadrat size:	20x20				
Vegetation group:	Riparian chenopod shrul	bland with Maire	ana pyramidata		
WP:	79				
Photo number:		160-162			
Landform:		Flat/Plain			
Land surface/disturban	ce:	No effective disturbance except grazing by hoofed animals			
Coarse fragments on the (abundance/size/shape		No coarse fra	agments		
Rock outcrop (abundar	nce/runoff):	No bedrock exposed/Very slow			
Soil (profile/field texture	e/soil surface):	Duplex/Sandy clay loam/Loose			
% Cover leaf litter:		5			
% Cover bare ground: 85					
	•				

Tallest stratum	Mid-stra	Mid-stratum		Lower stratum	
Growth form:	Growth form:	Shrub	Growth form:	Shrub	
Height:	Height:	1-3m	Height:	0.5-1m	
Crown cover %:	Crown cover %:	<10	Crown cover %:	30-70	
Dominant taxa:	Dominant taxa:	Dominant taxa:		Dominant taxa:	
None	Acacia ?enervia subs	sp. enervia 79-1	Cratystylis subspinescens		
		Cratystylis microphylla			
		_			

	ALL SPECIES							
Acacia ?enervia subsp. enervia 79-1								
Austrostipa nitida								
Brachyscome ciliocarpa								
	Cratystylis microphylla							
	Cratystylis subspinescens							
	Disphyma crassifolium							
[	Eremophila decipiens subsp. decipiens							
	Eremophila scoparia							
	Eriochiton sclerolaenoides							
F	rankenia pauciflora var. pauciflora 79-2							
	Gunniopsis quadrifida							
	Hemichroa diandra 78-3							
	Maireana carnosa							
	Maireana georgei							
Maireana glomerifolia								
Maireana thesioides								
	Maireana triptera							
Olearia magniflora 79-3								
	Olearia muelleri							
Olearia pimeleoides								
	Podolepis capillaris							
Rhagodia drummondii								
Sclerolaena diacantha								
Sclerolaena patenticuspis								
Tecticornia disarticulata								
Adjacent								
Exocarpos aphyllus								



Project Name: SKO Location 48 + 50							
Date:	7/09/2012	<b>Botanist:</b> Eren Reid & Ashley Owen					
Location:	Alacer Gold	Quadrat: 45					
Quadrat size:	20x20						
Vegetation group:	Riparian Chenopod shrub	land with eme	rgent Myoporum acuminatum				
WP:	81						
Photo number:		163-165					
Landform:		Flat/Plain					
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals					
Coarse fragments on the surface (abundance/size/shape):		No coarse fragments					
Rock outcrop (abundance	ce/runoff):	No bedrock exposed/Very slow					
Soil (profile/field texture	/soil surface):	Duplex/Sandy clay loam/Loose					
% Cover leaf litter:		<5					
% Cover bare ground:		90					

Tallest stratum	Mid-stra	Mid-stratum		Lower stratum	
Growth form:	Growth form:	Shrub	Growth form:	Shrub	
Height:	Height:	0.5-1m	Height:	0.25-0.5m	
Crown cover %:	Crown cover %:	10-30	Crown cover %:	10-30	
Dominant taxa:	Dominant taxa: Dominant taxa:		Dominant taxa:		
None	Maireana pyramidata	Maireana pyramidata		а	
	Cratystylis subspine	Cratystylis subspinescens			

ALL SPECIES							
Acacia ?enervia subsp. enervia 79-1							
Angianthus prostratus 81-1							
Atriplex codonocarpa							
Atriplex lindleyi subsp. inflata 81-2							
Atriplex stipitata							
Austrostipa elegantissima							
Brachyscome ciliocarpa							
Cratystylis subspinescens							
Daviesia benthamii subsp. acanthoclona							
Disphyma crassifolium							
Eragrostis dielsii							
Frankenia pauciflora var. pauciflora							
Gunniopsis quadrifida							
Lycium australe							
Maireana brevifolia							
Maireana carnosa							
Maireana glomerifolia							
Maireana pyramidata							
Olearia magniflora 79-3							
Oncosiphon suffruticosum							
Plantago drummondii							
Podolepis capillaris							
Salvia verbenaca							
Sclerolaena densiflora							
Sclerolaena patenticuspis							
Senecio pinnatifolius							
Tecticornia indica subsp. bidens							
Xanthium spinosum							



Solutions									
	Project N	lame: SKO Location							
Date:	7/09/2012		Botanist :	Eren Reid & Ashle	ey Owen				
Location:	Alacer Gold		Quadrat:	46					
Quadrat size:	20x20		I .						
Vegetation group:	Riparian sandplain sclerophyll shrubland								
WP: 82									
Photo number:		166-170							
Landform:			Simple slo	pe/Hillslope					
Land surface/distur		Limited clearing							
Coarse fragments of			No coarse fragments						
(abundance/size/sh				-					
Rock outcrop (abur				k exposed/No runo					
Soil (profile/field te	xture/soil surface):			ndy clay loam/Loos	se				
% Cover leaf litter:			5						
% Cover bare groun	na:		90						
Tallest	otrotum	Mid-strat	um.	Lawaratu	otum				
				Lower stra	1				
Growth form:	Tree Mallee (> 8m)	Growth form:	Shrub	Growth form:	Shrub				
					0.25-				
Height:	3-6m	Height:	0.5-1m	Height:	0.5m				
		Crown cover		Crown cover	40				
Crown cover %:	<10	%:	<10	%:	<10				
Dominant taxa:		Dominant taxa:		Dominant taxa:	.:f: -l -				
Acacia masliniana		Scaevola spinesco	ens	Gunniopsis quadrifida					
		Lycium australe		Rhagodia drumm	onali				
		ALL SPECIES							
		Acacia masliniana							
		Aristida contorta							
	Tem	pletonia incrassata	82-3						
		isphyma crassifoliu							
		a viscosa subsp. an							
		nchylaena tomentos							
	Eremophi	la decipiens subsp.	decipiens						
		Gunniopsis quadrifid							
		Jacksonia arida 82-2	2						
		Lycium australe							
		Maireana georgei							
		Maireana thesioides							
		rimelea microcepha							
		Rhagodia drummono Scaevola spinescen							
		olanum nummulariu							
	<u></u>	olanum nummulanu							
		Adjacent							
Alyxia buxifolia									
	Cratystylis subspinescens								
Maireana carnosa									
Maireana pentatropis									
Pittosporum angustifolium									
Sclerolaena diacantha									
Sclerolaena patenticuspis									



Solutions Ecodation Ecode 40 & 60 Ecolor 2 Flora and Vegetation Salvey September 2012							
		Project Name: SKO	Location 48 +	50			
Date:				Eren Reid & Ashley Ower	1		
Location:	_	acer Gold	er Gold Quadrat: 47				
Quadrat size:	20x20						
Vegetation group:		parian Chenopod shrublan	d with emergen	t Myoporum acuminatum			
WP:	1		T				
Photo number:			1-Mar				
Landform:			Flat/Plain				
Land surface/disturbance:			No effective disturbance except grazing by hoofed animals				
Coarse fragments on the surface (abundance/size/shape):			Slightly; few/Cobbly; or cobbles/Angular				
Rock outcrop (abundance/r				cposed/Very slow			
Soil (profile/field texture/so	il sı	ırface):		oam/Surface crust			
% Cover leaf litter:			<5				
% Cover bare ground:			70				
				_			
Tallest stratum		Mid-stratur		Lower strate			
Growth form:		Growth form:	Shrub	Growth form:	Shrub		
Height:		Height:	1-3m	Height:	0.5-1m		
Crown cover %:		Crown cover %:	10-30	Crown cover %:	10-30		
Dominant taxa:		Dominant taxa:		Dominant taxa:			
None		Acacia masliniana		Scaevola spinescens			
				Tecticornia disarticulata			
				Cratystylis subspinesce	∍ns		
		ALL SPE					
		Acacia mas					
		Austrostipa ele					
		Austrostipa					
		Calandrinia					
		Cratystylis m					
		Cratystylis sub					
		Disphyma cra					
		Dodonaea					
		Eremophila decipiens		ns			
		Eriochiton scle		4			
		Frankenia pauciflora Gunniopsis inte		-1			
		Gunniopsis inte					
		Lawrencia re					
		Lycium au					
		Maireana g					
		Maireana g					
		Maireana gid					
		Maireana s					
		Maireana th					
		Maireana to					
		Maireana tri					
Maireana triptera  Marsdenia australis							
		Olearia m					
		Podolepis o					
Ptilotus obovatus							
Rhagodia drummondii							
Scaevola spinescens							
Sclerolaena diacantha							
Senna artemisioides subsp filifolia							
Senna pleurocarpa var. angustifolia 1-2							
Tecticornia disarticulata							
Thysanotus manglesianus							
Zygophyllum eremaeum							
Adjacent							
		Atriplex ve					
Eucalyptus gracilis							



		Project Name: SKC	) I ocation 48	± 50		
Date:	9/10/2		Botanist:	Eren Reid & Ashley Owen		
Location:	Alacer		Quadrat:	48		
Quadrat size:	20x20	Gold	Quadrat.	48		
Vegetation group:		rina naunar ehruhland	par chruhland on calcrata platform			
WP:	Casuarina pauper shrubland on calcrete platform 2					
Photo number: 4-8						
Landform:			Simple slope	e/Bank		
				disturbance except graz	zina bv	
Land surface/disturba	ınce:		hoofed anim		3 - 7	
Coarse fragments on the surface		Slightly; few/Medium gravelly; medium				
(abundance/size/shap			pebbles/Subangular			
Rock outcrop (abunda				exposed/Slow		
Soil (profile/field textu	re/soil	surface):		loam/Surface crust		
% Cover leaf litter:			<5			
% Cover bare ground:			80			
Tellegt stretum		Mid-strat	1100	Lauren etnet	11100	
Tallest stratum	Tues	20 20 200		Lower strat		
Growth form:	Tree	Growth form:	Shrub	Growth form:	Shrub	
Height:	3-6m	Height:	1-3m	Height:	0.25-0.5m	
	10-					
Crown cover %:	30	Crown cover %:	<1	Crown cover %:	30-70	
Dominant taxa:		Dominant taxa:		Dominant taxa:		
		Senna artemisioides	s subsp			
Myoporum montanum		filifolia		Maireana sedifolia		
				Lycium australe		
		ALL SP	ECIES	Tecticornia disarticulat	ia	
		ACC SP				
		Atriplex nummularia		ılata		
		Atriplex Nathingland		Jiata		
		Austrostipa e				
		Austrosti				
		Chenopodium ga	audichaudianu	m		
		Cratystylis c				
		Disphyma c	rassifolium			
		Eremophila decipier		piens		
		Eremophila				
		Frankenia pauciflora		a 1-1		
		Lycium a				
		Maireana p Maireana				
		Maireana t				
		Maireana				
		Myoporum				
Rhagodia drummondii						
		Salvia ve				
		Sclerolaena	densiflora			
Sclerolaena diacantha						
Senna artemisioides subsp filifolia						
Solanum nummularium						
Tecticornia disarticulata						
		Zygophyllum				
Zygophyllum eremaeum						