Native Vegetation Solutions

Alacer Gold Corporation

Location Lease 48 & 50

LEVEL 2 FLORA AND VEGETATION SURVEY

September 2012

Prepared for: ALACER GOLD

Prepared by: **Native Vegetation Solutions**

[redacted]

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 26th 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.

TABLE OF CONTENTS

Page No.

FIGURES

TABLES

APPENDICES

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).

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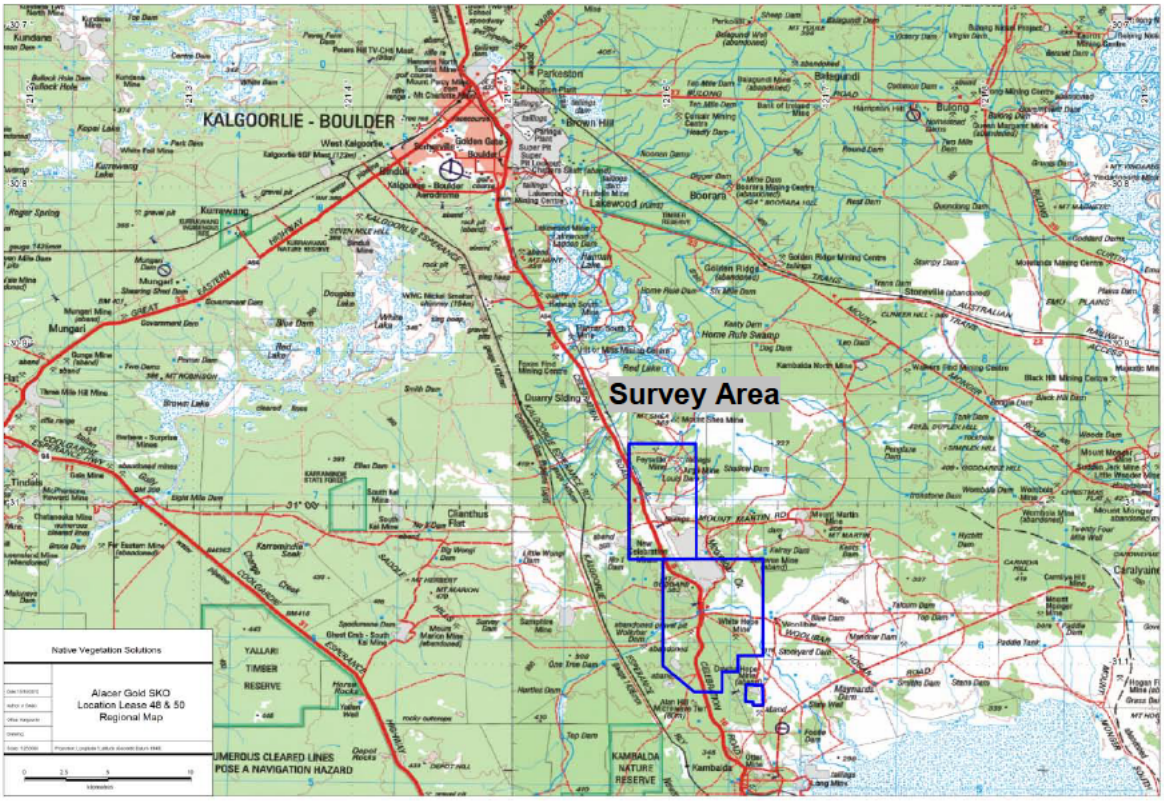

Figure 1: Position of the Location Lease 48 & 50 project

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).

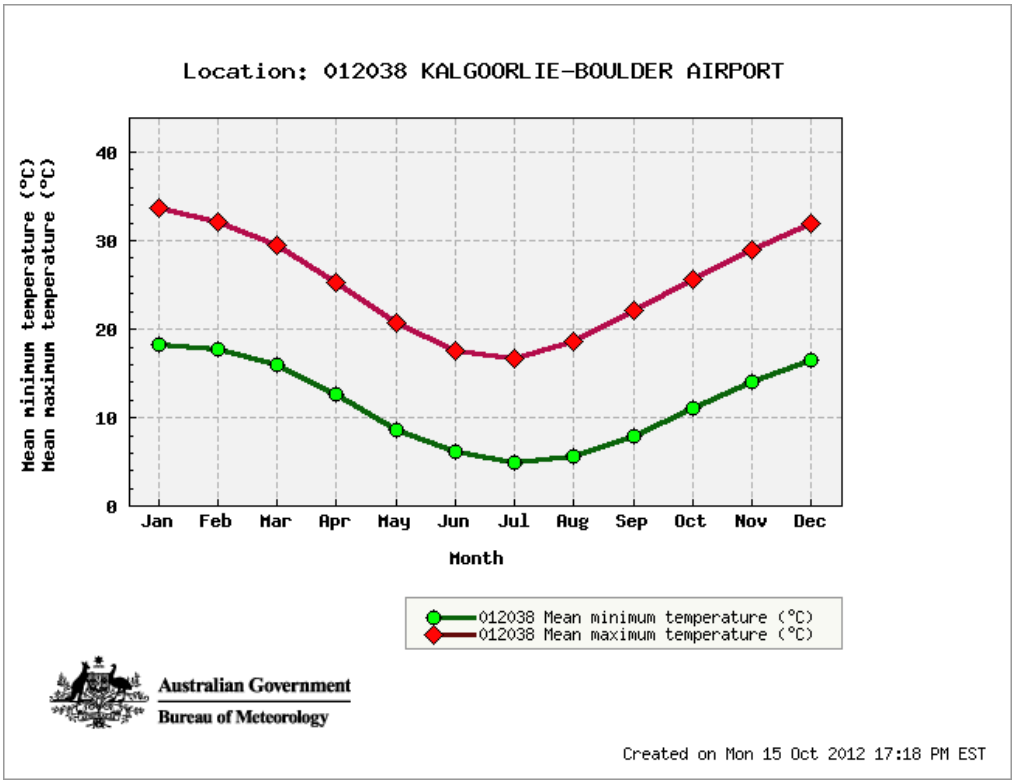

Figure 2: Mean temperature ranges for Kalgoorlie-Boulder weather station

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.

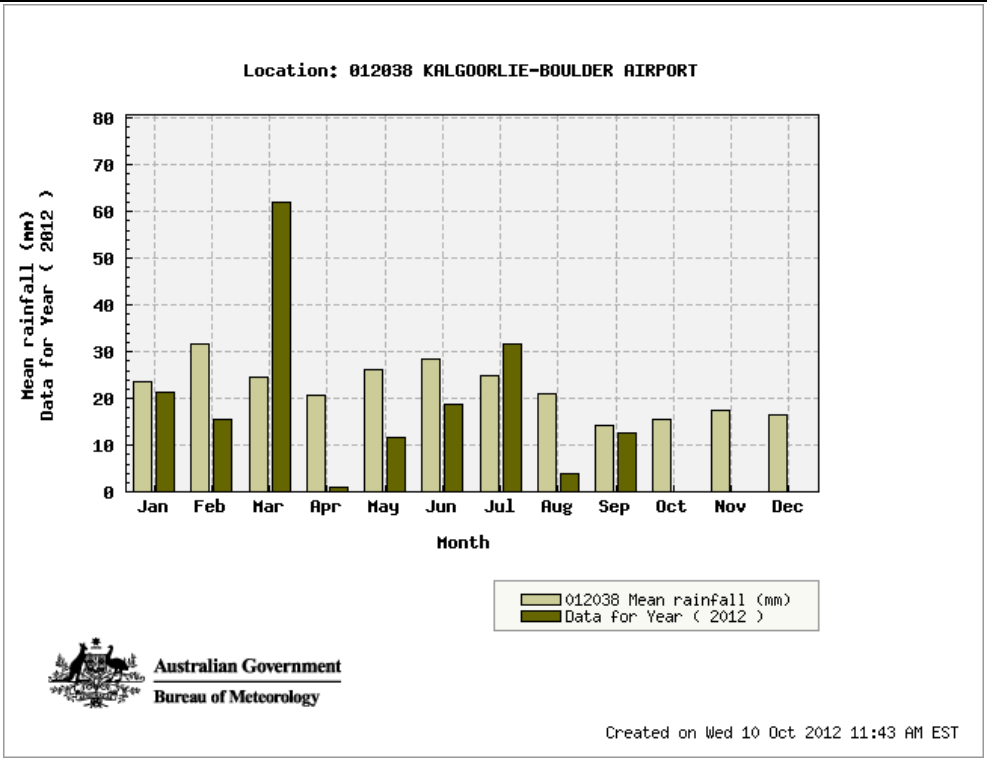

Figure 3: Rainfall data for the Kalgoorlie Boulder Meteorological Station

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 (http://spatial.agric.wa.gov.au/wetlands/).

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 26th 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 3rd - 7th of September and the 9th 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
Competency/experience of the consultant carrying out the survey	No	Experienced and competent personnel conducted the survey. Eren Reid has over 7 years experience in botanical surveys throughout the Goldfields and over a variety of environments across Western Australia.
Scope	No	The Scope of work was adequately defined.
Proportion of flora identified, recorded and/or collected	No	All taxa not identified in the field were collected and pressed, and later identified by a consultant Botanist at the WAHERB. See also Species Accumulation Curves in section 4.2.2.2.
Sources of information	No	Information on flora and vegetation of the region and local area was available from publicly available databases, books and reports.
Proportion of the task achieved	No	All tasks completed.
Timing/season	No	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 present and flowering.
Disturbance in survey area	No	Disturbance from grazing, exploration and historic mining activities was apparent in the survey area. However, the structural dominants of the vegetation persist and, the vegetation remains in Good to Very Good condition.
Intensity of survey effort	No	The intensity of the survey is sufficient to provide adequate coverage and recognition of vegetation units.
Resources	No	Adequate resources were available.
Remoteness and/or access problems	No	All the areas in need of survey were easily accessible from existing tracks, or by foot.
Availability of contextual information for the region`	No	Contextual information regarding vegetation and flora 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)				
Extent (ha)	Scale				
	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				

* Source: Shepherd *et al.* (2002) Appendix 2
**Source: Shepherd *et al.* (2002) Associated GIS data
***Source: Field Assessment

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				
Extent (ha)	Scale				
	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 Land Use***	Pasture Grazing, Exploration and Mining				
Weed prevalence***	Low				

* Source: Shepherd *et al.* (2002) Appendix 2
**Source: Shepherd *et al.* (2002) Associated GIS data
***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 Vegetation Association**	468				
Vegetation Association Description*	Medium woodland; salmon gum & goldfields blackbutt				
Extent (ha)	Scale				
	By Association*	***By Association****	***By IBRA Region**** *(Coolgardie-COO)*	***By IBRA Sub-region**** *(Eastern Goldfields-COO3)*	***By Shire**** *(Shire of 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				

* Source: Shepherd *et al*. (2002) Appendix 2
**Source: Shepherd *et al*. (2002) Associated GIS data
***Source: Field Assessment

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 26th 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.

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.

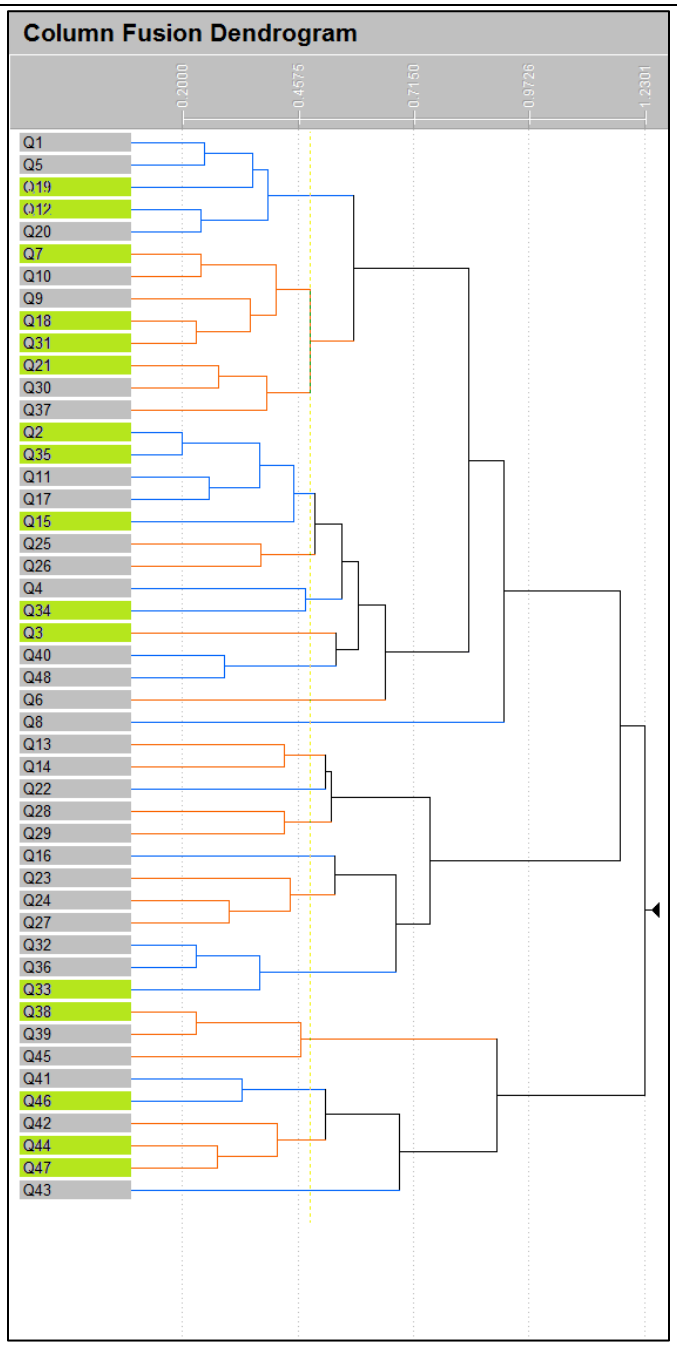

Figure 4: PATN Analysis of Dominant Species into 19 groups

The dendrogram below (Figure 5) of the analysis of all species shows a correlation to pre-grouped 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.

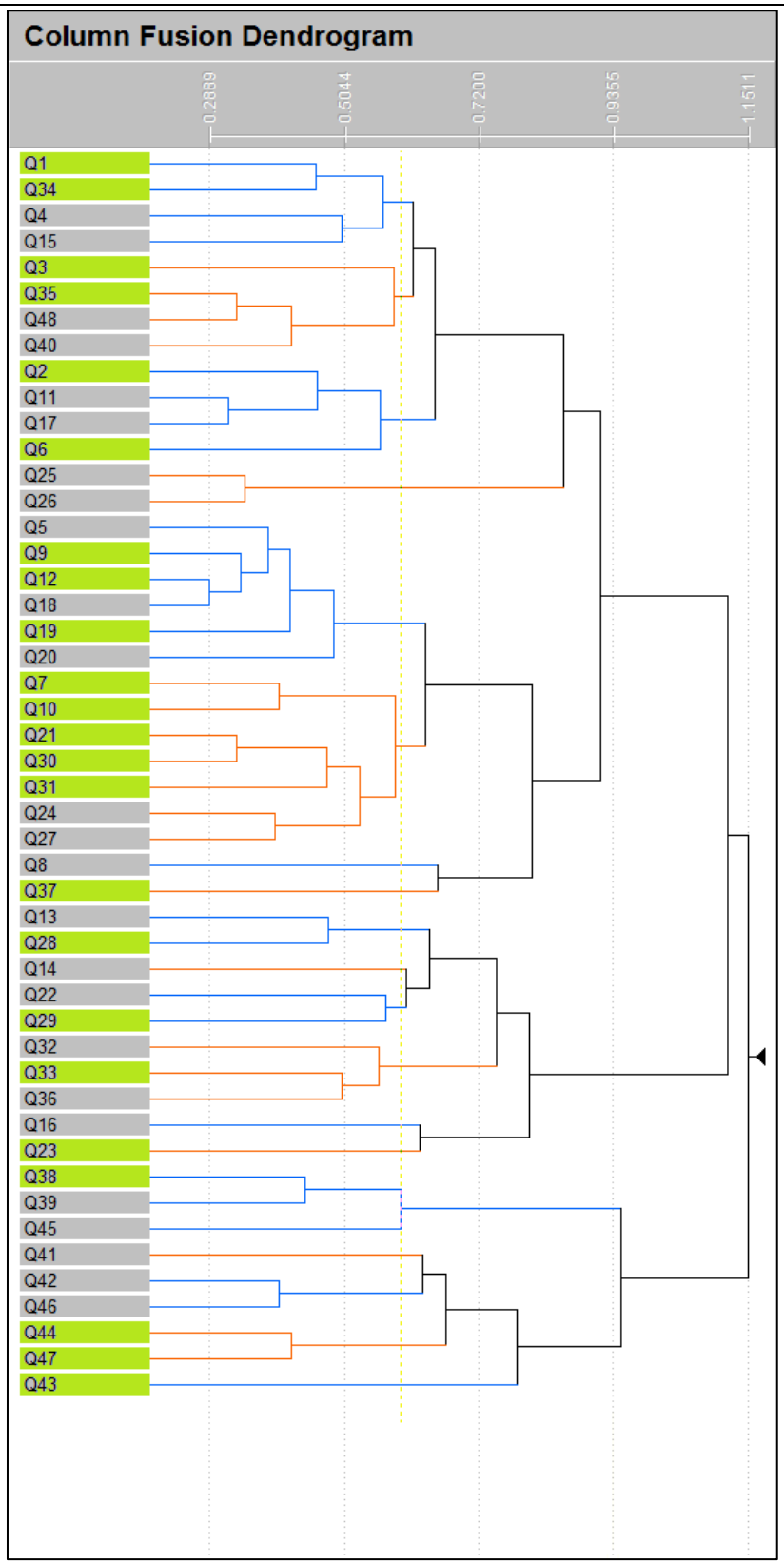

Figure 5: PATN Analysis of All Species into 19 groups

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 R^2 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 R^2 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.

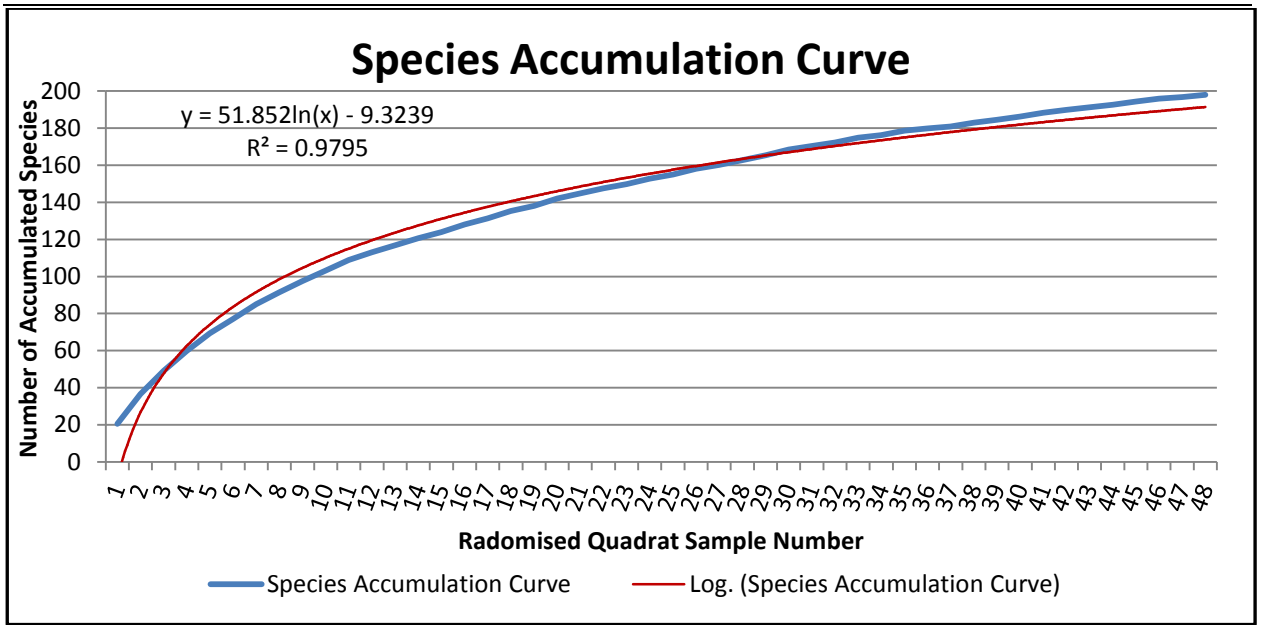

Figure 6: Species Accumulation Curve for the 48 sampled quadrats

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 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 Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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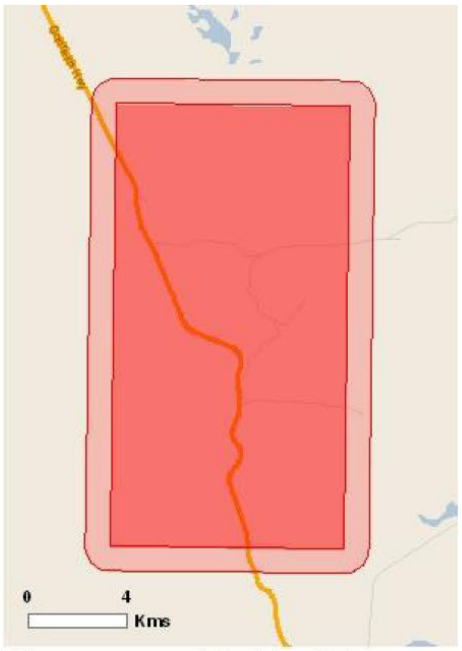

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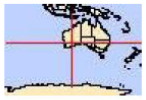


Summary

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 Administrative Guidelines on Significance.

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 heritage values 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 permit 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		
Acanthiza iredalei iredalei		
Slender-billed Thornbill (western) [25967]	Vulnerable	Species or species habitat likely to occur within area
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species 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 Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur 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 area
Migratory Terrestrial Species		
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Merops ornatus		
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 the 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		
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
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
Vulpes vulpes 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.

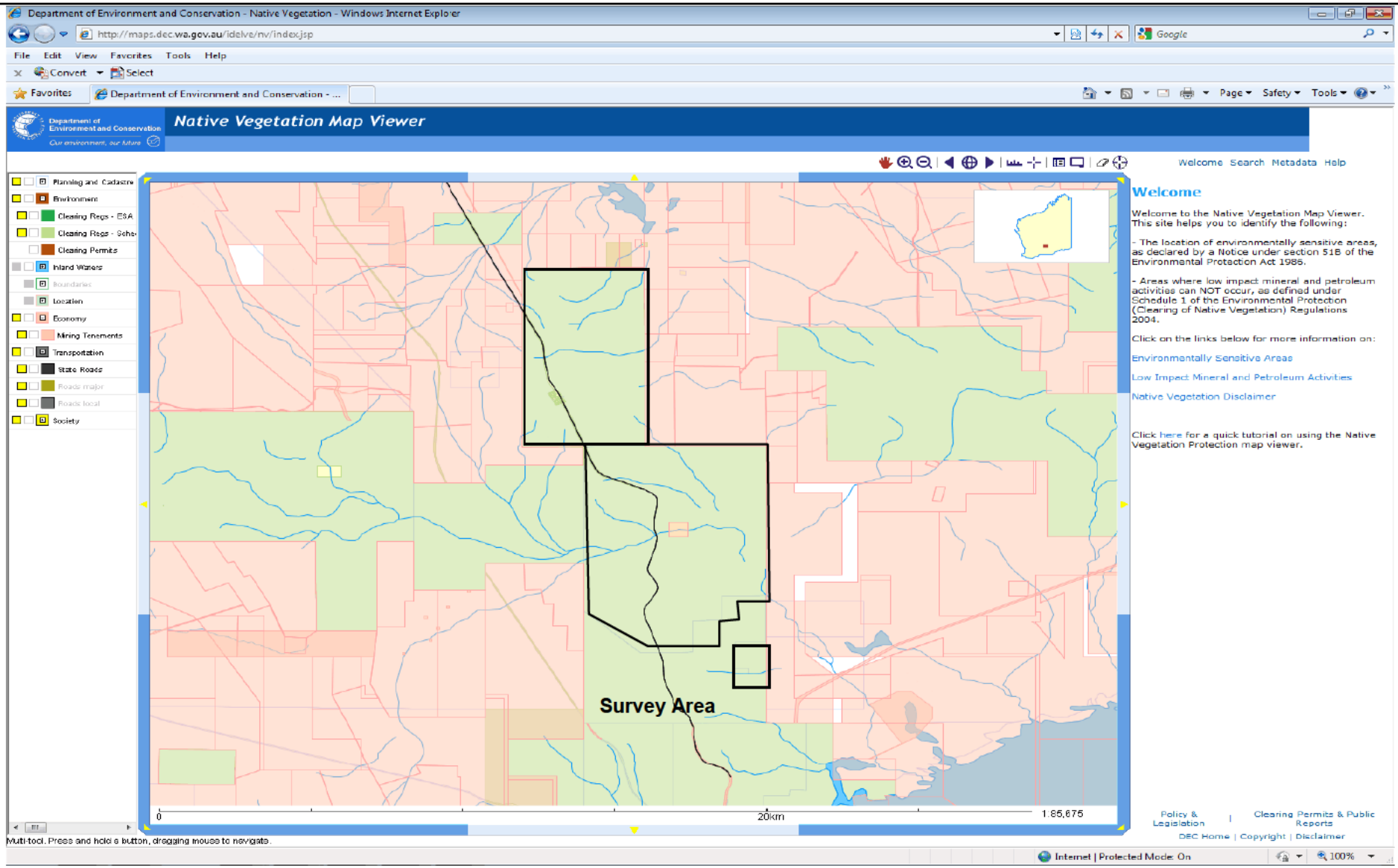
Acknowledgements

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

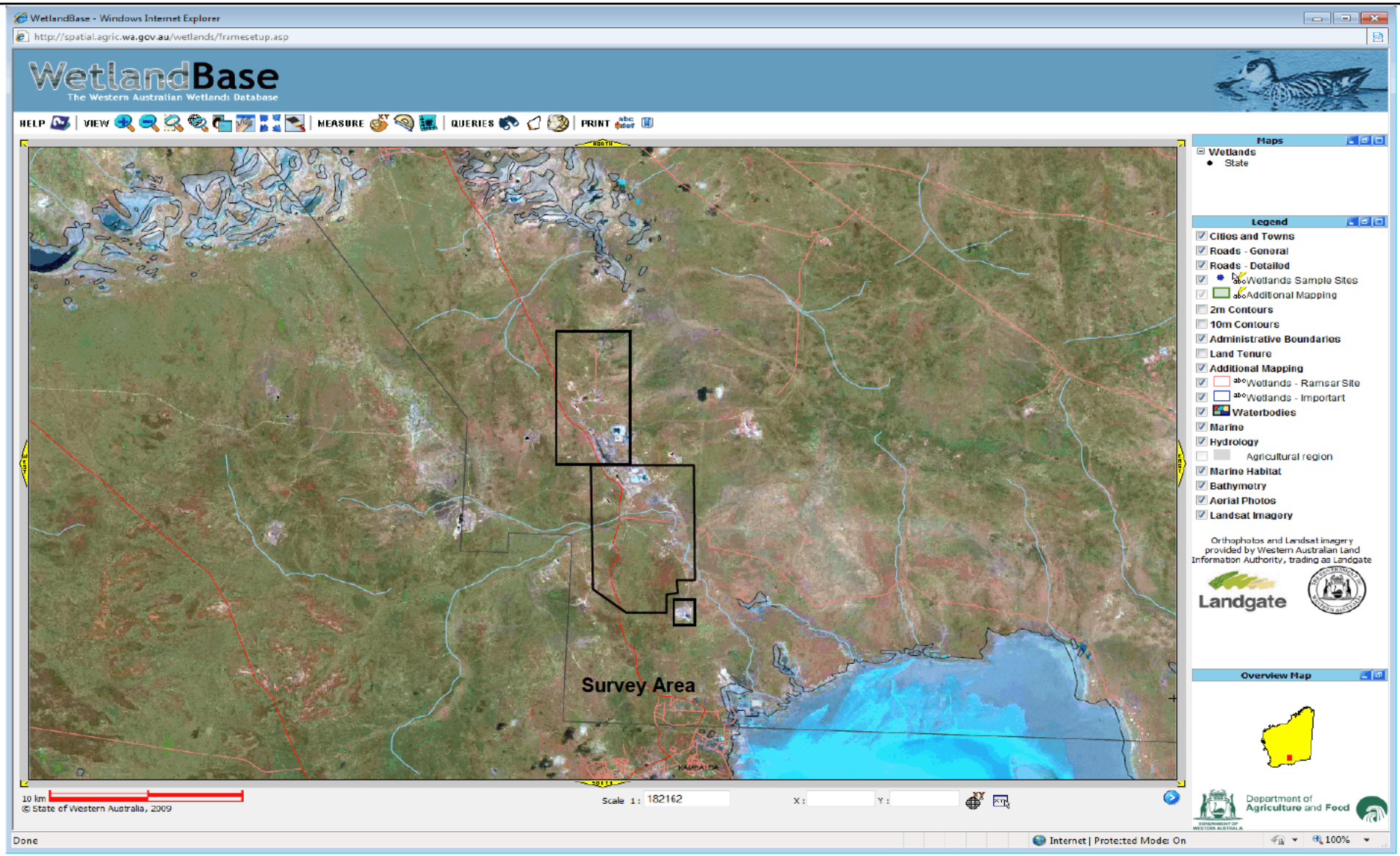
-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT 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.

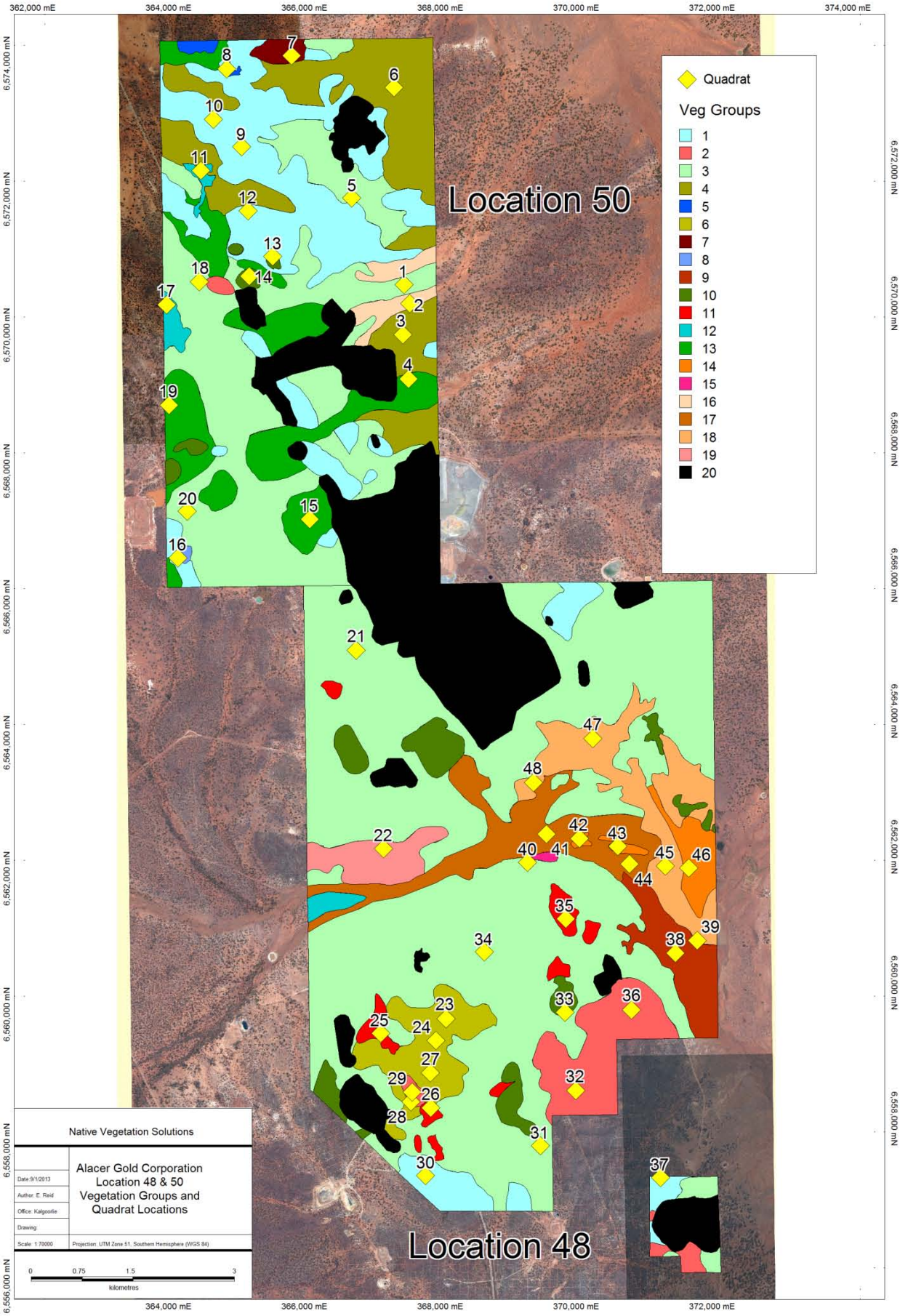


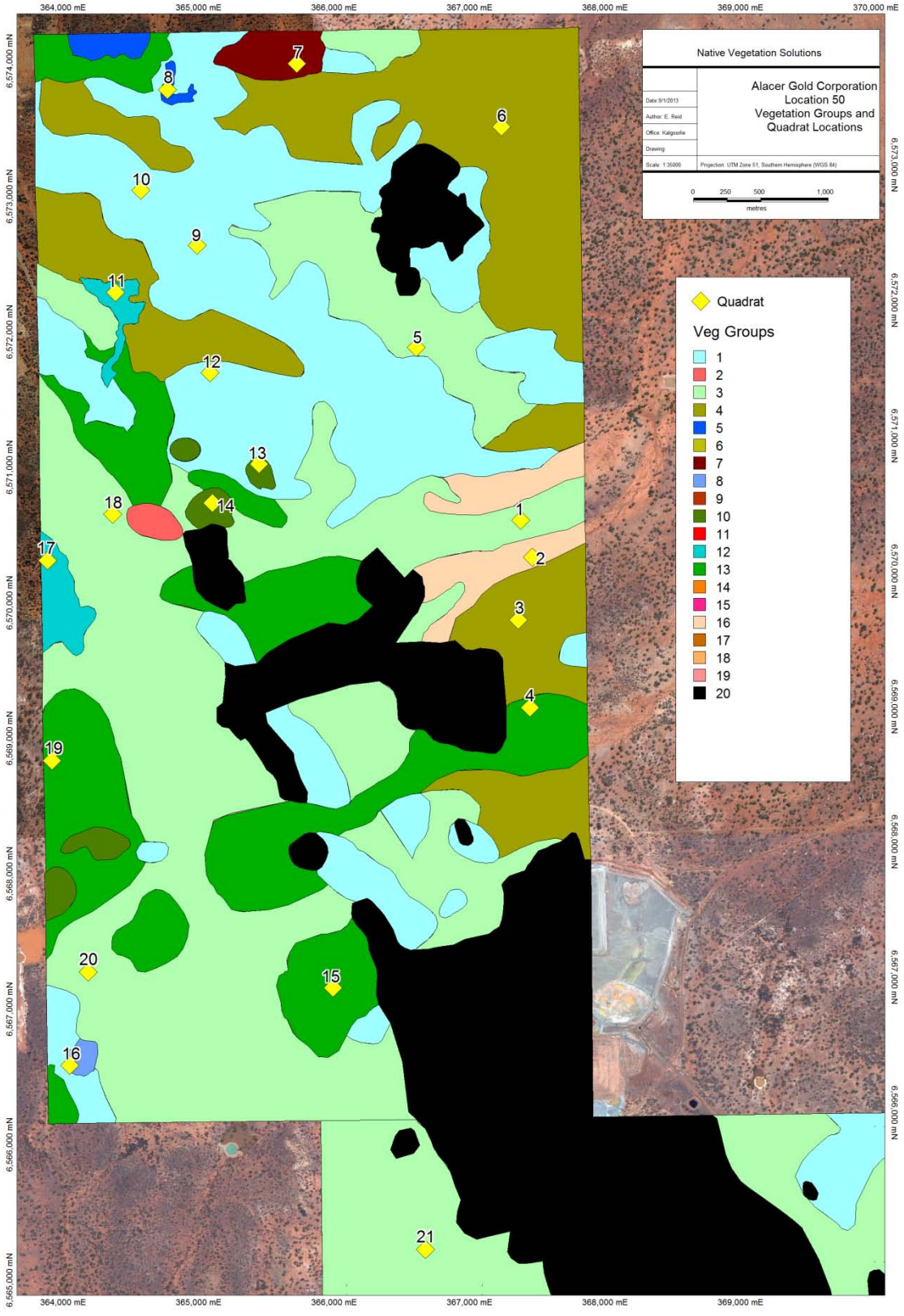
DEC's Native Vegetation Map Viewer - showing no ESA's (dark green shaded areas) within the survey area (DEC, 2012).



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

Appendix D - Maps


362,000 mE
364,000 mE
366,000 mE
368,000 mE
370,000 mE
372,000 mE
374,000 mE
6,574,000 mN
6,572,000 mN
6,570,000 mN
6,568,000 mN
6,566,000 mN
6,564,000 mN
6,562,000 mN
6,560,000 mN
6,558,000 mN
6,556,000 mN
Location 50
Location 48
Quadrat
Veg Groups
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Native Vegetation Solutions
Alacer Gold Corporation
Location 48 & 50
Vegetation Groups and
Quadrat Locations
Date: 9/1/2013
Author: E. Reid
Office: Kalgoorlie
Drawing:
Scale: 1:70000
Projection: UTM Zone 51, Southern Hemisphere (WGS 84)
0
0.75
1.5
3
kilometres


Native Vegetation Solutions
Alacer Gold Corporation
Location 50
Vegetation Groups and
Quadrat Locations
Date: 9/1/2013
Author: E. Reid
Office: Kalgoorlie
Drawing:
Scale: 1:35000
Projection: UTM Zone 51, Southern Hemisphere (WGS 84)
0 250 500 1,000
metres
Quadrat
Veg Groups
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16
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18
19
20
364,000 mE
365,000 mE
366,000 mE
367,000 mE
368,000 mE
369,000 mE
370,000 mE
6,574,000 mN
6,573,000 mN
6,572,000 mN
6,571,000 mN
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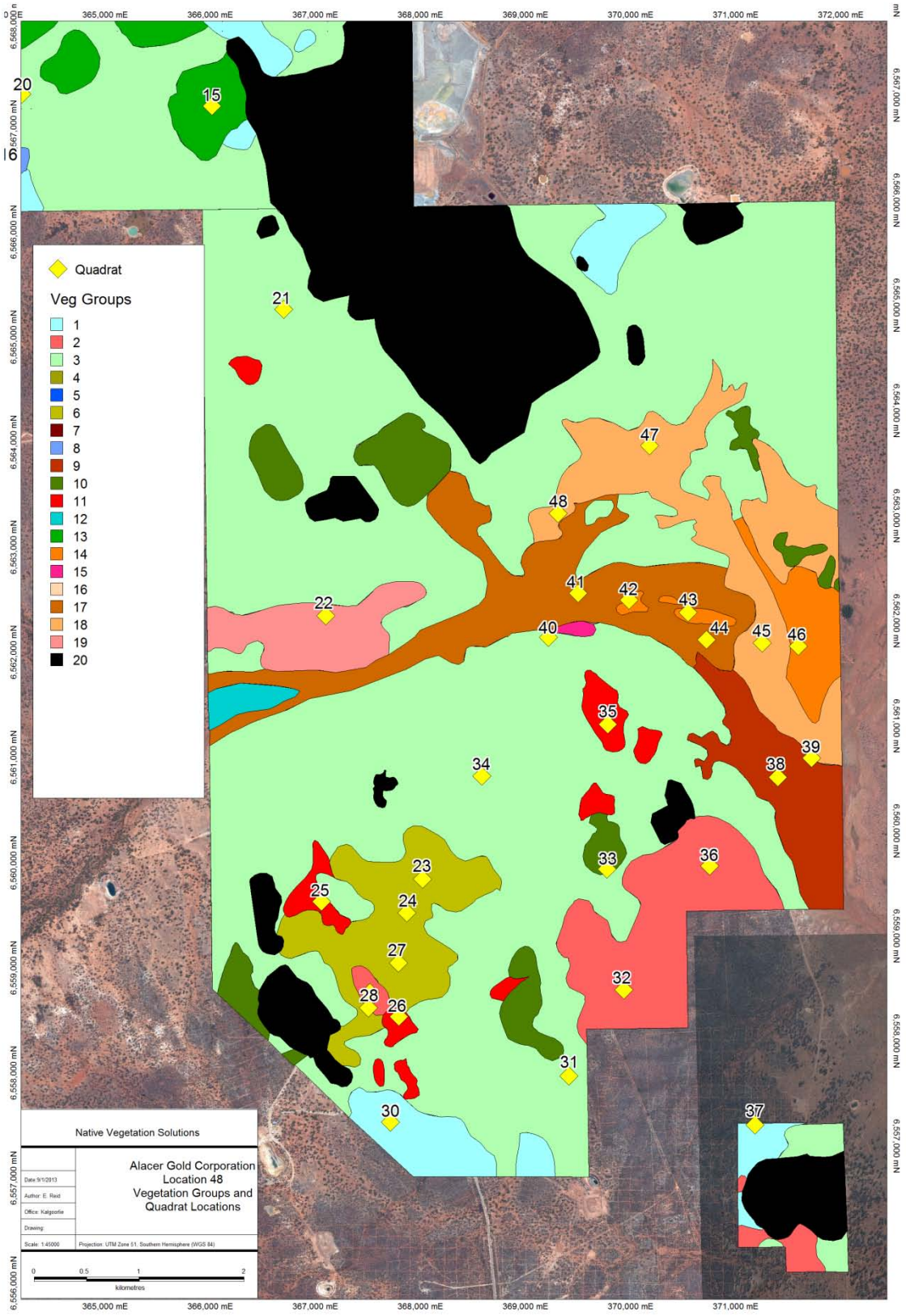
6,566,000 mN
6,565,000 mN


365,000 mE
366,000 mE
367,000 mE
368,000 mE
369,000 mE
370,000 mE
371,000 mE
372,000 mE
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6,567,000 mN
6,566,000 mN
6,565,000 mN
6,564,000 mN
6,563,000 mN
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6,558,000 mN
6,557,000 mN
6,556,000 mN
Quadrat
Veg Groups
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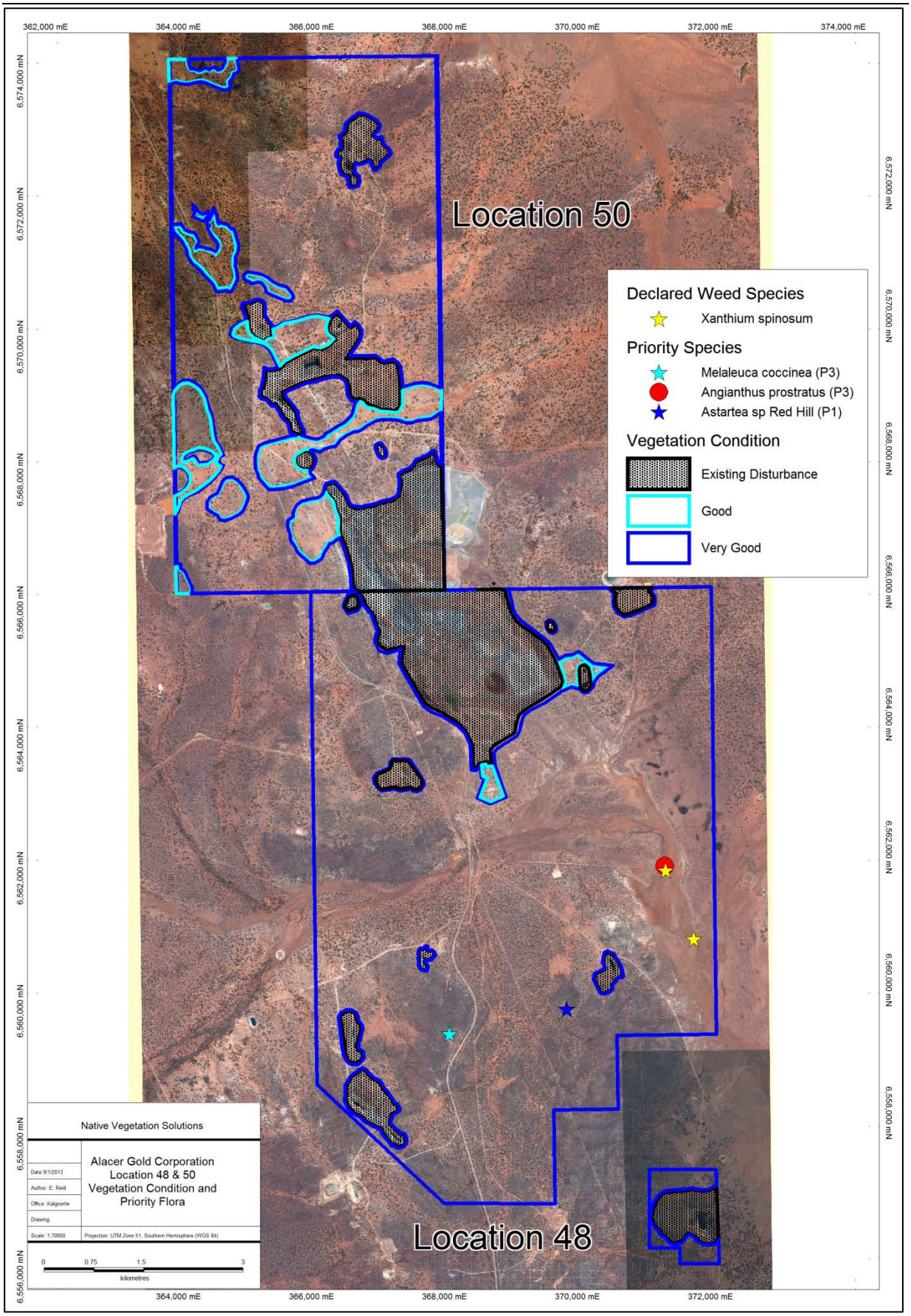
18
19
20
Native Vegetation Solutions
Alacer Gold Corporation
Location 48
Vegetation Groups and
Quadrat Locations
Date: 9/1/2013
Author: E. Reid
Office: Kalgoorlie
Drawing:
Scale: 1:45000
Projection: UTM Zone 51, Southern Hemisphere (WGS 84)
0
0.5
1
2
kilometres


362,000 mE
364,000 mE
366,000 mE
368,000 mE
370,000 mE
372,000 mE
374,000 mE
6,574,000 mN
6,572,000 mN
6,570,000 mN
6,568,000 mN
6,566,000 mN
6,564,000 mN
6,562,000 mN
6,560,000 mN
6,558,000 mN
6,556,000 mN
Location 50
Location 48
Declared Weed Species
Xanthium spinosum
Priority Species
Melaleuca coccinea (P3)
Angianthus prostratus (P3)
Astartea sp Red Hill (P1)
Vegetation Condition
Existing Disturbance
Good
Very Good
Native Vegetation Solutions
Alacer Gold Corporation
Location 48 & 50
Vegetation Condition and
Priority Flora
Date: 9/1/2013
Author: E. Reid
Office: Kalgoorlie
Drawing:
Scale: 1:70000
Projection: UTM Zone 51, Southern Hemisphere (WGS 84)
0
0.75
1.5
3
kilometres

Appendix E - Species Recorded During the September 2012 Survey

Species List per Quadrat

Family	Genus	Species	Conservation Status	P, A, NN	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
Aizoaceae	*Disphyma*	*crassifolium*		P																																															
Aizoaceae	*Gunniopsis*	*intermedia*		A																																														
Aizoaceae	*Gunniopsis*	*quadrifida*		P																																														
Aizoaceae	*Mesembryanthemum*	*nodiflorum*		NN, A																				•				•																								
Amaranthaceae	*Hemichroa*	*diandra*		P																																														
Amaranthaceae	*Ptilotus*	*nervoides*		A		•																																		•										
Amaranthaceae	*Ptilotus*	*carlsonii*		A														•										•																						
Amaranthaceae	*Ptilotus*	*carlsonii*		A																										•																				
Amaranthaceae	*Ptilotus*	*holosericeus*		P																									•	•																				
Amaranthaceae	*Ptilotus*	*nobilis*		A		•	•			•					•			•			•			•													•														
Amaranthaceae	*Ptilotus*	*obovatus*		P	•	•		•	•		•	•	•	•				•	•			•				•					•	•		•	•		•	•			•			•					•	
Apocynaceae	*Alyxia*	*buxifolia*		P									•														•																								
Apocynaceae	*Marsdenia*	*australis*		P							•					•	•	•					•	•			•	•				•	•	•	•	•				•			•	•		•	•			•	
Asparagaceae	*Thysanotus*	*manglesianus*		P																																				•										•	
Asteraceae	*Angianthus*	*prostratus*	P3	A																																												•			
Asteraceae	*Angianthus*	*tomentosus*		A				•									•		•										•	•										•							•				
Asteraceae	*Brachyscome*	*ciliaris*		A																																									•						
Asteraceae	*Brachyscome*	*ciliocarpa*		A		•			•									•								•							•										•	•		•	•	•			
Asteraceae	*Brunonia*	*australis*		P																													•																		
Asteraceae	*Calotis*	*hispidula*		A														•																																		
Asteraceae	*Cephalipterum*	*drummondii*		A		•		•							•				•				•						•	•										•							•	•	•	•	•	•	•
Asteraceae	*Chrysocephalum*	*puteale*		P																																				•											
Asteraceae	*Cotula*	*bipinnata*		NN																																								•								
Asteraceae	*Cratystylis*	*conocephala*		P																																								•								•
Asteraceae	*Cratystylis*	*microphylla*		P																																								•	•					•		
Asteraceae	*Cratystylis*	*subspinescens*		P																																								•	•		•	•		•		
Asteraceae	*Dittrichia*	*graveolens*		NN, A																																								•	•							
Asteraceae	*Gnephosis*	*angianthoides*		A																																				•	•										
Asteraceae	*Olearia*	*magniflora*		P																																											•	•					
Asteraceae	*Olearia*	*muelleri*		P					•		•	•	•	•		•		•		•		•	•	•	•		•	•			•			•	•									•				•		
Asteraceae	*Olearia*	*pimeleoides*		P							•																																			•						
Asteraceae	*Oncosiphon*	*suffruticosum*		NN																																											•				•		
Asteraceae	*Podolepis*	*canescens*		A														•											•	•																						
Asteraceae	*Podolepis*	*capillaris*		P															•																			•									•	•	•	•		•	
Asteraceae	*Podolepis*	*lessonii*		A																						•			•	•												•						•				
Asteraceae	*Rhodanthe*	*floribunda*		A																	•																																
Asteraceae	*Rhodanthe*	*oppositifolia subsp. oppositifolia*		A		•												•																																			
Asteraceae	*Rhodanthe*	*stricta*		A																																										•	•		•					
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*		P																						•			•																							
Boraginaceae	*Heliotropium*	*curassavicum*		A																																												•				
Brassicaceae	*Arabidella*	*chrysoderma*		A																									•																							
Brassicaceae	*Carrichtera*	*annua*		NN, A																																											•						
Brassicaceae	*Sisymbrium*	*runcinatum*		NN, A		•																																														
Brassicaceae	*Stenopetalum*	*sphaerocarpum*		A																																											•						
Casuarinaceae	*Allocasuarina*	*acutivalvis*		P																							•																									

Family	Genus	Species	Conservation Status	P, A, NN	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
Casuarinaceae	*Allocasuarina*	*campestris*		P																							•																							
Casuarinaceae	*Allocasuarina*	*helmsii*		P																								•		•																				
Casuarinaceae	*Casuarina*	*pauper*		P							•			•					•															•										•						
Chenopodiaceae	*Atriplex*	*amnicola*		P					•																																									
Chenopodiaceae	*Atriplex*	*codonocarpa*		P						•																																						•			
Chenopodiaceae	*Atriplex*	*lindleyi subsp. inflata*		A																																							•	•				•			
Chenopodiaceae	*Atriplex*	*nummularia subsp. spathulata*		P	•	•	•	•	•		•		•	•	•				•			•	•	•	•	•				•	•				•				•	•		•								•
Chenopodiaceae	*Atriplex*	*stipitata*		P																			•																											
Chenopodiaceae	*Atriplex*	*vesicaria*		P		•	•	•					•		•	•					•	•	•												•				•	•				•							•
Chenopodiaceae	*Chenopodium*	*gaudichaudianum*		P																																			•		•										•
Chenopodiaceae	*Dissocarpus*	*paradoxus*		P		•									•	•					•																							•								
Chenopodiaceae	*Enchylaena*	*tomentosa*		P	•	•				•					•			•	•		•		•				•												•				•	•	•			•		•	
Chenopodiaceae	*Eriochiton*	*sclerolaenoides*		P	•				•	•																													•	•						•			•		
Chenopodiaceae	*Maireana*	*brevifolia*		P														•												•									•				•					•			
Chenopodiaceae	*Maireana*	*carnosa*		P																										•																	•	•		
Chenopodiaceae	*Maireana*	*georgei*		P					•	•	•	•			•	•		•	•	•	•	•	•	•						•								•			•			•	•		•	•		
Chenopodiaceae	*Maireana*	*glomerifolia*		P																																											•	•		
Chenopodiaceae	*Maireana*	*pentatropis*		P			•	•	•	•		•							•			•	•															•			•			•					•	•
Chenopodiaceae	*Maireana*	*pyramidata*		P		•				•									•		•							•										•	•		•	•	•				•			
Chenopodiaceae	*Maireana*	*sedifolia*		P	•	•	•		•	•			•			•			•		•		•	•															•										•	•	•
Chenopodiaceae	*Maireana*	*thesioides*		P																									•	•															•		•	•	•
Chenopodiaceae	*Maireana*	*tomentosa*		P				•		•					•																															•				•
Chenopodiaceae	*Maireana*	*trichoptera*		P	•	•	•		•	•	•	•		•	•	•		•	•		•	•	•	•					•	•				•					•		•			•		•			•	•
Chenopodiaceae	*Maireana*	*triptera*		P		•			•	•	•		•		•	•		•			•	•		•					•										•						•			•		•	•
Chenopodiaceae	*Rhagodia*	*drummondii*		P								•																			•																			
Chenopodiaceae	*Rhagodia*	*eremaea*		P									•																																					•	
Chenopodiaceae	*Salsola*	*australis*		P																						•																					•			
Chenopodiaceae	*Sclerolaena*	*cuneata*		P						•		•		•					•		•								•	•																•				
Chenopodiaceae	*Sclerolaena*	*densiflora*		P	•	•		•	•										•		•								•	•									•								•			•
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*	*hemiteles*		P							•																																									
Fabaceae	*Acacia*	*jennerae*		P																																													•			
Fabaceae	*Acacia*	*masliniana*		P																																													•	•			•	•	
Fabaceae	*Acacia*	*merrallii*		P																								•																							
Fabaceae	*Acacia*	*quadrimarginea*		P																						•										•					•										
Fabaceae	*Acacia*	*sp. narrow phyllode*		P													•	•		•							•			•	•	•	•			•	•			•											
Fabaceae	*Acacia*	*tetragonophylla*		P							•			•													•													•					•						
Fabaceae	*Daviesia*	*benthamii subsp. acanthoclona*		P																																														•		
Fabaceae	*Jacksonia*	*arida*		P																																														•		
Fabaceae	*Medicago*	*minima*		NN, A		•																																													
Fabaceae	*Mirbelia*	*depressa*		P																																				•											
Fabaceae	*Senna*	*artemisioides subsp artemisioides*		P																						•										•				•										
Fabaceae	*Senna*	*artemisioides subsp filifolia*		P	•				•		•		•	•		•	•	•				•	•	•	•	•	•	•	•		•		•		•	•	•		•	•								•	•
Fabaceae	*Senna*	*cardiosperma*		P																																														
Fabaceae	*Senna*	*pleurocarpa var. angustifolia*		P																																														•	
Fabaceae	*Swainsona*	*canescens*		P																									•	•																				

Family	Genus	Species	Conservation Status	P, A, NN	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
Frankeniaceae	*Frankenia*	*interioris*		P																															•							•										
Frankeniaceae	*Frankenia*	*irregularis*		P																																						•	•									
Frankeniaceae	*Frankenia*	*pauciflora var. pauciflora*		P																			•																									•			•	•
Geraniaceae	*Erodium*	*crinitum*		P		•												•								•			•	•			•																			
Goodeniaceae	*Dampiera*	*latealata*		P																						•	•				•	•	•																			
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														•															•							•												
Hemerocallidaceae	*Dianella*	*revoluta subsp. divaricata*		P																																									•							
Lamiaceae	*Prostanthera*	*althoferi subsp althoferi*		P																							•				•		•			•	•			•												
Lamiaceae	*Salvia*	*verbenaca*		NN, P		•																							•	•									•						•				•			•
Lamiaceae	*Westringia*	*rigida*		P									•							•							•	•			•			•		•					•					•						
Malvaceae	*Lawrencia*	*repens*		P											•																																				•	
Malvaceae	*Sida*	*calyxhymenia*		P																						•																										
Malvaceae	*Sida*	*intricata*		P			•	•																																												
Malvaceae	*Sida*	*sp. Dark green fruits*		P																													•																			
Myrtaceae	*Astartea*	*sp. Red Hill*	P1	P																																	•															
Myrtaceae	*Eucalyptus*	*ewartiana*		P																						•																										
Myrtaceae	*Eucalyptus*	*gracilis*		P						•																																										
Myrtaceae	*Eucalyptus*	*griffithsii*		P														•		•		•			•		•	•			•				•												•					
Myrtaceae	*Eucalyptus*	*lesouefii*		P	•				•				•	•		•								•														•														
Myrtaceae	*Eucalyptus*	*oleosa*		P												•	•			•				•																												
Myrtaceae	*Eucalyptus*	*oleosa subsp. oleosa*		P																												•																				
Myrtaceae	*Eucalyptus*	*ravida*		P						•					•						•																															
Myrtaceae	*Eucalyptus*	*salicola*		P																																										•						
Myrtaceae	*Eucalyptus*	*salmonophloia*		P	•		•	•							•				•		•		•															•														
Myrtaceae	*Eucalyptus*	*torquata*		P									•	•											•									•							•											
Myrtaceae	*Eucalyptus*	*transcontinentalis*		P								•								•																																
Myrtaceae	*Melaleuca*	*elliptica*		P																																									•							
Myrtaceae	*Melaleuca*	*hamata*		P																												•					•															
Myrtaceae	*Melaleuca*	*lateriflora*		P																																									•							
Myrtaceae	*Melaleuca*	*sheathiana*		P								•																																								
Pittosporaceae	*Pittosporum*	*angustifolium*		P																																							•									
Plantaginaceae	*Plantago*	*drummondii*		A																																									•				•			
Poaceae	*Aristida*	*contorta*		A																										•			•	•		•														•		
Poaceae	*Austrostipa*	*elegantissima*		P		•	•	•					•		•	•					•	•	•												•			•	•					•							•	•
Poaceae	*Austrostipa*	*nitida*		P	•	•		•	•	•	•		•	•	•	•	•	•	•		•	•	•	•	•	•		•	•	•	•	•	•	•	•			•	•	•	•			•		•	•	•			•	•
Poaceae	*Cymbopogon*	*ambiguus*		P																																									•							
Poaceae	*Eragrostis*	*dielsii*		A		•																							•	•												•	•		•				•			
Poaceae	*Eragrostis*	*eriopoda*		P		•																								•																						
Poaceae	*Hainardia*	*cylindrica*		NN, A																																							•									
Poaceae	*Monachather*	*paradoxus*		P																						•	•																									
Poaceae	*Rostraria*	*pumila*		NN. A																																							•									
Poaceae	*Rytidosperma*	*acerosum*		?																										•																						
Poaceae	*Triodia*	*scariosa*		P																•								•																			•					
Portulacaceae	*Calandrinia*	*eremaea*		A																						•																										
Portulacaceae	*Portulaca*	*oleracea*		NN, A	•																																															
Primulaceae	*Lysimachia*	*arvensis*		NN, P																																							•		•							
Proteaceae	*Grevillea*	*acuaria*		P																																									•	•	•					
Proteaceae	*Grevillea*	*nematophylla subsp. nematophylla*		P																													•																			

Family	Genus	Species	Conservation Status	P, A, NN	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
Ranunculaceae	*Ranunculus*	*pentandrus var platycarpus*		A																																							*									
Rhamnaceae	*Cryptandra*	*aridicola*		P																*																																
Rhamnaceae	*Stenanthemum*	*stipulosum*		P																						*																										
Rhamnaceae	*Trymalium*	*myrtillus subsp. myrtillus*		P																										*																							
Santalaceae	*Exocarpos*	*aphyllus*		P					*		*		*		*	*					*	*	*							*														*		*							
Santalaceae	*Santalum*	*acuminatum*		P																	*																																
Santalaceae	*Santalum*	*spicatum*		P							*			*													*																										
Sapindaceae	*Dodonaea*	*adenophora*		P							*						*	*																																			
Sapindaceae	*Dodonaea*	*lobulata*		P							*		*	*		*	*	*	*	*		*			*	*	*				*	*	*	*		*	*			*						*					*	
Sapindaceae	*Dodonaea*	*viscosa subsp. angustissima*		P																																							*	*	*					*			
Scrophulariaceae	*Eremophila*	*decipiens subsp. decipiens*		P					*											*								*	*											*				*	*	*	*	*		*	*	*
Scrophulariaceae	*Eremophila*	*georgei*		P									*	*			*	*								*					*	*																				
Scrophulariaceae	*Eremophila*	*glabra subsp. glabra*		P					*		*		*	*	*							*			*			*			*			*	*																
Scrophulariaceae	*Eremophila*	*granitica*		P							*																																	*									
Scrophulariaceae	*Eremophila*	*interstans subsp interstans*		P	*				*				*		*	*						*	*	*	*										*																	
Scrophulariaceae	*Eremophila*	*interstans subsp. virgata*		P							*																																										
Scrophulariaceae	*Eremophila*	*ionantha*		P																	*								*								*														
Scrophulariaceae	*Eremophila*	*longifolia*		P																																						*									
Scrophulariaceae	*Eremophila*	*miniata*		P																																		*						*							
Scrophulariaceae	*Eremophila*	*oldfieldii subsp. angustifolia*		P															*						*	*	*							*	*				*												
Scrophulariaceae	*Eremophila*	*oppositifolia subsp. angustifolia*		P										*								*																															
Scrophulariaceae	*Eremophila*	*parvifolia subsp. auricampa*		P				*	*				*			*			*			*						*			*																				
Scrophulariaceae	*Eremophila*	*pustulata*		P										*																																						
Scrophulariaceae	*Eremophila*	*rugosa*		P		*																																													
Scrophulariaceae	*Eremophila*	*scoparia*		P			*						*									*		*				*							*			*							*						*
Scrophulariaceae	*Eremophila*	*sp Mt Jackson*		P					*																																											
Scrophulariaceae	*Eremophila*	*maculata subsp brevifolia*		P																										*																							
Scrophulariaceae	*Myoporum*	*montanum*		P																																							*									*
Scrophulariaceae	*Myoporum*	*platycarpum subsp. platycarpum*		P																*				*																													
Solanaceae	*Lycium*	*australe*		P		*									*	*			*		*			*						*													*		*				*	*	*
Solanaceae	*Solanum*	*lasiophyllum*		P																						*							*		*				*											
Solanaceae	*Solanum*	*nummularium*		P					*				*		*							*	*																					*	*	*				*		*
Thymelaeaceae	*Pimelea*	*microcephala*		P																																								*						*		
Violaceae	*Hybanthus*	*floribundus subsp. curvifolius*		P														*		*																																	
Zygophyllaceae	*Zygophyllum*	*aurantiacum*		P		*	*	*	*			*	*	*		*	*	*			*	*	*	*	*	*		*	*	*	*	*		*	*		*	*	*				*								*
Zygophyllaceae	*Zygophyllum*	*eremaeum*		A	*			*	*	*						*						*												*				*												*	*

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		P									*					*	*		*	*	
Aizoaceae	Gunniopsis	intermedia		A																		*	
Aizoaceae	Gunniopsis	quadrifida		P														*			*	*	
Aizoaceae	Mesembryanthemum	nodiflorum		NN, A			*								*							*	
Amaranthaceae	Hemichroa	diandra		P																	*		
Amaranthaceae	Ptilotus	aervoides		A	*															*			
Amaranthaceae	Ptilotus	carlsonii		A										*	*								
Amaranthaceae	Ptilotus	carlsonii		A											*								
Amaranthaceae	Ptilotus	holosericeus		P											*								
Amaranthaceae	Ptilotus	nobilis		A			*	*						*		*				*			
Amaranthaceae	Ptilotus	obovatus		P	*	*	*		*	*	*			*	*		*		*	*		*	*
Apocynaceae	Alyxia	buxifolia		P	*					*													
Apocynaceae	Marsdenia	australis		P	*	*	*			*	*			*	*		*	*			*	*	*
Asparagaceae	Thysanotus	manglesianus		P		*				*												*	
Asteraceae	Angianthus	prostratus	P3	A																		*	
Asteraceae	Angianthus	tomentosus		A										*	*		*	*					
Asteraceae	Brachyscome	ciliaris		A																	*		
Asteraceae	Brachyscome	ciliocarpa		A		*	*						*	*				*		*	*	*	*
Asteraceae	Brunonia	australis		P		*				*													*
Asteraceae	Calotis	hispidula		A										*									*
Asteraceae	Cephalipterum	drummondii		A											*	*	*	*	*	*	*	*	*
Asteraceae	Chrysocephalum	puteale		P		*																	
Asteraceae	Cotula	bipinnata		NN																		*	
Asteraceae	Cratystylis	conocephala		P															*				
Asteraceae	Cratystylis	microphylla		P														*			*	*	
Asteraceae	Cratystylis	subspinescens		P									*					*			*	*	
Asteraceae	Dittrichia	graveolens		NN, A									*									*	
Asteraceae	Gnephosis	angianthoides		A	*	*																	
Asteraceae	Olearia	magniflora		P																	*	*	
Asteraceae	Olearia	muelleri		P	*		*		*	*	*	*		*			*	*			*	*	
Asteraceae	Olearia	pimeleoides		P							*										*		
Asteraceae	Oncosiphon	suffruticosum		NN																	*	*	
Asteraceae	Podolepis	canescens		A										*	*								
Asteraceae	Podolepis	capillaris		P		*											*	*			*	*	
Asteraceae	Podolepis	lessonii		A		*				*					*			*					*
Asteraceae	Rhodanthe	floribunda		A												*							
Asteraceae	Rhodanthe	oppositifolia subsp. oppositifolia		A										*						*			

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
Asteraceae	Rhodanthe	stricta		A									*								*	*	
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		P	*										*								*
Boraginaceae	Heliotropium	curassavicum		A														*					
Brassicaceae	Arabidella	chrysoderma		A											*								
Brassicaceae	Carrichtera	annua		NN, A																	*		
Brassicaceae	Sisymbrium	runcinatum		NN, A																*			
Brassicaceae	Stenopetalum	sphaerocarpum		A																	*		
Casuarinaceae	Allocasuarina	acutivalvis		P						*													
Casuarinaceae	Allocasuarina	campestris		P						*													
Casuarinaceae	Allocasuarina	helmsii		P						*													
Casuarinaceae	Casuarina	pauper		P	*		*				*						*		*				
Celastraceae	Stackhousia	sp. Mt Keith		?						*													
Celastraceae	Stackhousia	sp. (sterile)		?		*																	
Chenopodiaceae	Atriplex	amnicola		P			*																
Chenopodiaceae	Atriplex	codonocarpa		P				*														*	
Chenopodiaceae	Atriplex	lindleyi subsp. inflata		A									*									*	
Chenopodiaceae	Atriplex	nummularia subsp. spathulata		P	*		*	*			*				*	*	*		*	*			
Chenopodiaceae	Atriplex	stipitata		P													*					*	
Chenopodiaceae	Atriplex	vesicaria		P	*		*	*							*	*	*		*	*		*	
Chenopodiaceae	Chenopodium	gaudichaudianum		P	*										*				*				
Chenopodiaceae	Didymanthus	roei		P									*										
Chenopodiaceae	Dissocarpus	paradoxus		P	*											*				*	*		
Chenopodiaceae	Enchylaena	tomentosa		P			*	*		*				*		*	*	*	*	*	*	*	
Chenopodiaceae	Eriochiton	sclerolaenoides		P			*	*							*						*	*	
Chenopodiaceae	Maireana	brevifolia		P			*							*	*							*	
Chenopodiaceae	Maireana	carnosa		P						*								*			*	*	
Chenopodiaceae	Maireana	georgei		P	*		*	*	*	*	*	*		*		*	*	*			*	*	
Chenopodiaceae	Maireana	glomerifolia		P																	*	*	
Chenopodiaceae	Maireana	pentatropis		P	*		*	*	*								*	*	*			*	
Chenopodiaceae	Maireana	pyramidata		P			*	*					*		*	*	*			*	*	*	
Chenopodiaceae	Maireana	sedifolia		P	*		*	*							*	*	*		*	*		*	
Chenopodiaceae	Maireana	thesioides		P											*			*			*	*	

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
Chenopodiaceae	Maireana	tomentosa		P				*								*	*					*	
Chenopodiaceae	Maireana	trichoptera		P	*		*	*	*		*			*	*	*	*	*	*	*		*	
Chenopodiaceae	Maireana	triptera		P	*		*	*			*			*	*	*			*	*	*	*	
Chenopodiaceae	Rhagodia	drummondii		P		*			*						*								
Chenopodiaceae	Rhagodia	eremaea		P	*																	*	
Chenopodiaceae	Salsola	australis		P															*				*
Chenopodiaceae	Sclerolaena	cuneata		P	*			*	*						*	*	*				*		
Chenopodiaceae	Sclerolaena	densiflora		P			*						*		*	*	*	*	*	*		*	
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			*				*												
Fabaceae	Acacia	jennerae		P																	*		
Fabaceae	Acacia	ligulata		P			*																
Fabaceae	Acacia	masliniana		P														*			*	*	
Fabaceae	Acacia	merrallii		P						*													
Fabaceae	Acacia	quadrimarginea		P		*																	*
Fabaceae	Acacia	sp. narrow phyllode		P		*				*		*		*	*								*
Fabaceae	Acacia	tetragonophylla		P	*	*				*	*								*				
Fabaceae	Daviesia	benthamii subsp. acanthoclona		P														*					
Fabaceae	Jacksonia	arida		P														*					
Fabaceae	Medicago	minima		NN, A																*		*	
Fabaceae	Mirbelia	depressa		P		*																	
Fabaceae	Senna	artemisioides subsp artemisioides		P		*	*							*	*								*
Fabaceae	Senna	artemisioides subsp filifolia		P	*	*	*			*	*			*	*		*		*			*	*
Fabaceae	Senna	cardiosperma		P																	*		
Fabaceae	Senna	pleurocarpa var. angustifolia		P																		*	
Fabaceae	Swainsona	canescens		P											*								
Frankeniaceae	Frankenia	interioris		P			*						*										
Frankeniaceae	Frankenia	irregularis		P									*									*	
Frankeniaceae	Frankenia	pauciflora var. pauciflora		P													*		*		*	*	
Geraniaceae	Erodium	crinitum		P		*								*	*					*			*

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
Goodeniaceae	Dampiera	latealata		P		*				*													*
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		*								*									
Hemerocallidaceae	Dianella	revoluta subsp. divaricata		P						*											*		
Lamiaceae	Prostanthera	althoferi subsp althoferi		P		*				*				*									*
Lamiaceae	Salvia	verbenaca		NN, P											*				*	*	*	*	
Lamiaceae	Westringia	rigida		P	*	*				*		*						*					
Malvaceae	Brachychiton	gregorii		P		*																	
Malvaceae	Lawrencia	repens		P												*						*	
Malvaceae	Sida	calyxhymenia		P																			*
Malvaceae	Sida	intricata		P				*									*						
Malvaceae	Sida	sp. Dark green fruits		P		*																	
Myrtaceae	Astartea	sp. Red Hill	P1	P										*									
Myrtaceae	Eucalyptus	ewartiana		P																			*
Myrtaceae	Eucalyptus	gracilis		P				*														*	
Myrtaceae	Eucalyptus	griffithsii		P			*			*		*		*				*					
Myrtaceae	Eucalyptus	lesouefii		P	*		*																
Myrtaceae	Eucalyptus	oleosa		P	*	*	*					*		*									
Myrtaceae	Eucalyptus	oleosa subsp. oleosa		P		*																	
Myrtaceae	Eucalyptus	ravida		P				*								*							
Myrtaceae	Eucalyptus	salicola		P														*					
Myrtaceae	Eucalyptus	salmonophloia		P			*	*								*	*						
Myrtaceae	Eucalyptus	torquata		P	*		*																
Myrtaceae	Eucalyptus	transcontinentalis		P					*			*											
Myrtaceae	Melaleuca	coccinea	P3	P						*													
Myrtaceae	Melaleuca	elliptica		P																	*		
Myrtaceae	Melaleuca	hamata		P		*								*									
Myrtaceae	Melaleuca	lateriflora		P																	*		
Myrtaceae	Melaleuca	sheathiana		P					*														
Pittosporaceae	Pittosporum	angustifolium		P			*								*			*				*	
Plantaginaceae	Plantago	drummondii		A																	*	*	
Poaceae	Aristida	contorta		A	*	*									*			*					
Poaceae	Austrostipa	elegantissima		P	*		*	*							*	*	*		*	*		*	
Poaceae	Austrostipa	nitida		P	*	*	*	*		*	*			*	*	*	*	*	*	*	*	*	*

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
Poaceae	Cymbopogon	ambiguus		P																	*		
Poaceae	Eragrostis	dielsii		A									*		*					*	*	*	
Poaceae	Eragrostis	eriopoda		P											*					*			
Poaceae	Hainardia	cylindrica		NN, A																		*	
Poaceae	Monachather	paradoxus		P						*													*
Poaceae	Rostraria	pumila		NN. A																		*	
Poaceae	Rytidosperma	acerosum		?											*								
Poaceae	Triodia	scariosa		P						*		*						*					
Portulacaceae	Calandrinia	eremaea		A																			*
Portulacaceae	Portulaca	oleracea		NN, A			*																
Primulaceae	Lysimachia	arvensis		NN, P																	*	*	
Proteaceae	Grevillea	acuaria		P														*			*		
Proteaceae	Grevillea	nematophylla subsp. nematophylla		P		*																	
Ranunculaceae	Ranunculus	pentandrus var platycarpus		A																		*	
Rhamnaceae	Cryptandra	aridicola		P								*											
Rhamnaceae	Cryptandra	graniticola		P						*													*
Rhamnaceae	Stenanthemum	stipulosum		P						*													*
Rhamnaceae	Trymalium	myrtillus subsp. myrtillus		P						*													
Santalaceae	Exocarpos	aphyllus		P	*		*			*	*					*	*	*	*				
Santalaceae	Santalum	acuminatum		P			*									*							
Santalaceae	Santalum	spicatum		P	*					*	*												
Sapindaceae	Dodonaea	adenophora		P							*			*									
Sapindaceae	Dodonaea	lobulata		P	*	*	*			*	*	*		*			*	*				*	*
Sapindaceae	Dodonaea	viscosa subsp. angustissima		P														*	*		*		
Scrophulariaceae	Eremophila	decipiens subsp. decipiens		P			*					*			*			*	*		*	*	
Scrophulariaceae	Eremophila	georgei		P	*	*								*									*
Scrophulariaceae	Eremophila	glabra subsp. glabra		P	*		*			*	*					*							
Scrophulariaceae	Eremophila	granitica		P		*					*										*		
Scrophulariaceae	Eremophila	interstans subsp interstans		P	*		*									*	*						
Scrophulariaceae	Eremophila	interstans subsp. virgata		P				*															
Scrophulariaceae	Eremophila	ionantha		P			*								*	*							
Scrophulariaceae	Eremophila	longifolia		P																		*	
Scrophulariaceae	Eremophila	miniata		P											*						*		
Scrophulariaceae	Eremophila	oldfieldii subsp. angustifolia		P	*		*			*							*						*
Scrophulariaceae	Eremophila	oppositifolia subsp. angustifolia		P	*		*																
Scrophulariaceae	Eremophila	parvifolia subsp. auricampa		P	*		*			*							*						
Scrophulariaceae	Eremophila	pustulata		P	*																		
Scrophulariaceae	Eremophila	rugosa		P																*			
Scrophulariaceae	Eremophila	scoparia		P	*		*	*		*					*				*		*		
Scrophulariaceae	Eremophila	sp Mt Jackson		P			*																

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
Scrophulariaceae	Eremophila	maculata subsp brevifolia		P			*								*								
Scrophulariaceae	Myoporum	montanum		P															*				
Scrophulariaceae	Myoporum	platycarpum subsp. platycarpum		P			*					*											
Solanaceae	Lycium	australe		P	*		*								*	*	*	*	*	*		*	
Solanaceae	Solanum	lasiophyllum		P	*	*																	*
Solanaceae	Solanum	nummularium		P	*		*								*	*	*	*	*		*		
Thymelaeaceae	Pimelea	microcephala		P														*			*		
Violaceae	Hybanthus	floribundus subsp. curvifolius		P								*		*									
Zygophyllaceae	Zygophyllum	aurantiacum		P	*	*	*	*	*	*				*	*	*	*		*	*			*
Zygophyllaceae	Zygophyllum	eremaeum		A	*		*	*							*		*		*			*	

Appendix F - Site Descriptions

Project Name: SKO Location 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/disturbance:		No Effective Disturbance	
Coarse fragments on the surface (abundance/size/shape):		No Course Fragments	
Rock outcrop (abundance/runoff):		No Bedrock/No Runoff	
Soil (profile/field texture/soil surface):		Duplex/Clay Loam/Surface Crust	
% Cover leaf litter:		80	
% Cover bare ground:		40	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
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 salmonophloia		Eremophila interstans subsp interstans		Atriplex nummularia subsp spathulata	
Eucalyptus lesouefii				Maireana sedifolia	

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

Project Name: SKO Location 48 + 50			
Date:	3/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	2
Quadrat size:	20x20		
Vegetation group:	Riparian sclerophyll shrublands		
WP:	4		
Photo number:		iPhone 185-187	
Landform:		Open depression (vale)/Drainage depression	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No coarse fragments	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		15	
% Cover bare ground:		40	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
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 paradoxus	
		Eremophila rugosa 4-1		Sclerolaena diacantha	

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa elegantissima
Austrostipa nitida
Brachyscome ciliocarpa
Convolvulus remotus 4-4
Dissocarpus paradoxus
Enchylaena tomentosa
Eragrostis dielsii
Eragrostis eriopoda 4-3
Eremophila rugosa 4-1
Erodium crinitum
Lycium australe
Maireana pyramidata
Maireana sedifolia
Maireana trichoptera
Maireana triptera
Medicago minima
Ptilotus aervoides
Ptilotus nobilis
Ptilotus obovatus
Rhodanthe oppositifolia subsp. oppositifolia 4-5
Rhagodia drummondii
Salvia verbenaca
Sclerolaena densiflora
Sclerolaena diacantha
Sclerolaena patenticuspis
Sisymbrium runcinatum 4-2
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	3/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	3
Quadrat size:	20x20		
Vegetation group:	Eucalyptus woodlands over Maireana sedifolia		
WP:	5		
Photo number:		iPhone 182 - 184	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Slightly; few/Coarse gravelly; large pebbles/Subrounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		80	
% Cover bare ground:		60	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Forb
Height:	6-12m	**Height:**	0.5-1m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus salmonophloia		Tecticornia disarticulata		No Dominant	
		Maireana sedifolia			

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Eremophila scoparia
Eucalyptus salmonophloia
Maireana pentatropis
Maireana sedifolia
Maireana trichoptera
Ptilotus nobilis
Sclerolaena diacantha
Sida intricata
Tecticornia disarticulata
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	3/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	4
Quadrat size:	20x20		
Vegetation group:	Scattered Eucalyptus salmonophloia over scattered understorey		
WP:	9		
Photo number:		iPhone 188 - 190	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Moderately; many/Medium gravelly; medium pebbles/Subrounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		5	
% Cover bare ground:		90	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Tussock Grass
Height:	6-12m	**Height:**	1-3m	**Height:**	<0.25m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus salmonophloia		*Eremophila oldfieldii* subsp. *angustifolia*		Austrostipa nitida	
		Atriplex nummularia subsp spathulata			
		Maireana sedifolia			

ALL SPECIES
Angianthus tomentosus
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa nitida
Cephalipterum drummondii
Eremophila oldfieldii subsp. angustifolia
Eremophila parvifolia subsp. auricampa
Eucalyptus salmonophloia
Maireana pentatropis
Maireana tomentosa
Maireana trichoptera
Ptilotus obovatus
Sclerolaena densiflora
Sida intricata
Zygophyllum aurantiacum
Zygophyllum eremaeum
Maireana sedifolia

Project Name: SKO Location 48 + 50			
Date:	3/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	5
Quadrat size:	20x20		
Vegetation group:	Mixed Eucalyptus woodland over Atriplex nummularia shrublands		
WP:	11		
Photo number:		1 - 6 (camera)	
Landform:		Simple slope/Hillslope (bottom third of the height of the landform element)	
Land surface/disturbance:		Limited clearing	
Coarse fragments on the surface (abundance/size/shape):		Slightly; few/Coarse gravelly; large pebbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		10	
% Cover bare ground:		85	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	3-6m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus lesouefii		Eremophila decipiens subsp. decipiens		Atriplex nummularia subsp spathulata	
		Eremophila oldfieldii subsp. *angustifolia*		Maireana triptera	
		Eremophila interstans subsp interstans		Senna artemisioides subsp filifolia	

ALL SPECIES
Atriplex ?amnicola
Atriplex nummularia subsp spathulata
Austrostipa nitida
Brachyscome ciliocarpa
Eremophila decipiens subsp. decipiens
Eremophila glabra subsp. glabra
Eremophila interstans subsp interstans
Eremophila oldfieldii subsp. angustifolia
Eremophila parvifolia subsp. Auricampa
Eremophila sp Mt Jackson
Eriochiton sclerolaenoides
Eucalyptus lesouefii
Exocarpos aphyllus
Maireana georgei
Maireana pentatropis
Maireana sedifolia
Maireana trichoptera
Maireana triptera
Olearia muelleri
Ptilotus obovatus
Scaevola spinescens
Sclerolaena densiflora
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Solanum nummularium
Zygophyllum aurantiacum
Zygophyllum eremaeum

Project Name: SKO Location 48 + 50			
Date:	3/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	6
Quadrat size:	20x20		
Vegetation group:	Eucalyptus woodlands over Maireana sedifolia		
WP:	12		
Photo number:		7-9	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very; abundant/Fine gravelly; small pebbles/Rounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		40	
% Cover bare ground:		60	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	<10	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus gracilis		Eremophila interstans subsp. virgata		Tecticornia disarticulata	
Eucalyptus ravida				Maireana sedifolia	

ALL SPECIES
Atriplex codonocarpa
Austrostipa elegantissima
Austrostipa nitida
Enchylaena tomentosa
Eremophila interstans subsp. virgata
Eriochiton sclerolaenoides
Eucalyptus gracilis
Eucalyptus ravida
Maireana georgei
Maireana pentatropis
Maireana pyramidata
Maireana sedifolia
Maireana tomentosa
Maireana trichoptera
Maireana triptera
Ptilotus nobilis
Sclerolaena cuneata
Sclerolaena diacantha
Sclerolaena patenticuspis
Tecticornia disarticulata
Zygophyllum eremaeum

Project Name: SKO Location 48 + 50			
Date:	3/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	7
Quadrat size:	20x20		
Vegetation group:	Casuarina pauper over mixed 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 (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		30	
% Cover bare ground:		65	

Tallest stratum		**Mid-stratum**		**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:**	
Casuarina pauper		Eremophila oldfieldii subsp. angustifolia		Senna artemisioides subsp. filifolia	
				Scaevola spinescens	

ALL SPECIES
Acacia hemiteles
Acacia tetragonophylla
Atriplex nummularia subsp. spathulata
Austrostipa nitida
Casuarina pauper
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

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:	Eucalyptus woodlands over Melaleuca sheathiana		
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 on the surface (abundance/size/shape):		Extremely; very abundant/Medium gravelly; medium pebbles/Rounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		30	
% Cover bare ground:		70	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Forb
Height:	6-12m	**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		Melaleuca sheathiana		None	

ALL SPECIES
Austrostipa nitida
Eucalyptus (transcontinentalis?) sp
Maireana georgei
Maireana pentatropis
Maireana trichoptera
Melaleuca sheathiana
Olearia muelleri
Ptilotus obovatus
Sclerolaena cuneata
Sclerolaena diacantha
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	4/10/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	9
Quadrat size:	20x20		
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 landform element)	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very; abundant/Coarse gravelly; large pebbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Moderately rapid	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		25	
% Cover bare ground:		70	

Tallest stratum		Mid-stratum		Lower stratum	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus torquata		Eremophila oldfieldii subsp. *angustifolia*		Eremophila glabra subsp. glabra	
		Eremophila interstans subsp interstans		Olearia muelleri	
				Atriplex nummularia subsp spathulata	

ALL SPECIES
Alyxia buxifolia
Atriplex nummularia subsp spathulata
Atriplex 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
Westringia 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):		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	
% Cover leaf litter:		20	
% Cover bare ground:		70	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	<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
Santalum spicatum
Scaevola spinescens
Sclerolaena cuneata
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	4/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	11
Quadrat size:	20x20		
Vegetation group:	Eucalyptus salmonophloia & E. ravida/salubris woodland over Eremophila		
WP:	23		
Photo number:		28-30	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No qualifier; common/Coarse gravelly; large pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Uniform/Clay loam/Surface crust	
% Cover leaf litter:		70	
% Cover bare ground:		60	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus ravida		Eremophila interstans subsp interstans		Scaevola spinescens	
Eucalyptus salmonophloia				Atriplex vesicaria	

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa nitida
Cephalipterum drummondii
Dissocarpus paradoxus
Enchylaena tomentosa
Eremophila glabra subsp. glabra
Eremophila interstans subsp interstans
Eucalyptus ravida
Eucalyptus salmonophloia
Exocarpos aphyllus
Lawrencia repens 23-1
Lycium australe
Maireana georgei
Maireana tomentosa
Maireana trichoptera
Maireana triptera
Ptilotus nobilis
Rhagodia drummondii
Scaevola spinescens
Sclerolaena diacantha
Sclerolaena patenticuspis
Solanum nummularium

Project Name: SKO Location 48 + 50			
Date:	4/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	12
Quadrat size:	20x20		
Vegetation group:	Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands		
WP:	24		
Photo number:		31-33	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Fine gravelly; small pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		70	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	<10	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus lesouefii		Eremophila interstans subsp interstans		Scaevola spinescens	
Eucalyptus oleosa				Senna artemisioides subsp filifolia	

ALL SPECIES
Atriplex vesicaria
Austrostipa elegantissima
Austrostipa nitida
Dissocarpus paradoxus
Dodonaea lobulata
Eremophila interstans subsp interstans
Eremophila oldfieldii subsp. angustifolia
Eremophila parvifolia subsp. auricampa
Eucalyptus lesouefii
Eucalyptus oleosa
Exocarpos aphyllus
Maireana georgei
Maireana sedifolia
Maireana trichoptera
Maireana triptera
Marsdenia australis
Olearia muelleri
Scaevola spinescens
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum
Zygophyllum eremaeum

Project Name: SKO Location 48 + 50			
Date:	4/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	13
Quadrat size:	20x20		
Vegetation group:	Jam thicket		
WP:	25		
Photo number:		34-36	
Landform:		Mid slope/Hillslope	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very; abundant/Cobbly; or cobbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Moderately rapid	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		30	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	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 phyllode		Dodonaea lobulata	
				Dodonaea adenophora	
				Eremophila georgei	

ALL SPECIES
Acacia sp. narrow phyllode
Angianthus tomentosus
Austrostipa nitida
Dodonaea adenophora
Dodonaea lobulata
Eremophila georgei
Eremophila oldfieldii subsp. angustifolia
Eucalyptus oleosa
Marsdenia australis
Scaevola spinescens
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum
Adjacent:
Podolepis canescens

Project Name: SKO Location 48 + 50			
Date:	4/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	14
Quadrat size:	20x20		
Vegetation group:	Jam thicket		
WP:	27		
Photo number:		37-39	
Landform:		Open depression (vale)/Drainage depression	
Land surface/disturbance:		No effective disturbance	
Coarse fragments on the surface (abundance/size/shape):		Slightly; few/Coarse gravelly; large pebbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Cracking	
% Cover leaf litter:		50	
% Cover bare ground:		70	

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

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

Project Name: SKO Location 48 + 50			
Date:	4/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	15
Quadrat size:	20x20		
Vegetation group:	Scattered Eucalyptus salmonophloia over scattered understorey		
WP:	29		
Photo number:		40-42	
Landform:		Flat/Plain	
Land surface/disturbance:		Limited clearing	
Coarse fragments on the surface (abundance/size/shape):		Moderately; many/Fine gravelly; small pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		15	
% Cover bare ground:		90	

Tallest stratum		**Mid-stratum**		**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:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus salmonophloia		Eremophila oldfieldii subsp. *angustifolia*		Maireana sedifolia	
		Casuarina pauper		Atriplex nummularia subsp spathulata	

ALL SPECIES
Angianthus tomentosus
Atriplex nummularia subsp spathulata
Austrostipa elegantissima
Austrostipa nitida
Casuarina pauper
Dodonaea lobulata
Enchylaena tomentosa
Eremophila oldfieldii subsp. angustifolia
Eremophila parvifolia subsp. auricampa
Eucalyptus salmonophloia
Lycium australe
Maireana georgei
Maireana pentatropis
Maireana pyramidata
Maireana sedifolia
Maireana trichoptera
Podolepis capillaris
Ptilotus obovatus
Rhagodia drummondii
Scaevola spinescens
Sclerolaena cuneata
Sclerolaena densiflora

Project Name: SKO Location 48 + 50			
Date:	4/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	16
Quadrat size:	20x20		
Vegetation group:	Eucalyptus over Acacia sp. Narrow phyllode on lateritic rises		
WP:	31		
Photo number:		43-45	
Landform:		Simple Slope/Hillslope (bottom third of the height of the landform element)	
Land surface/disturbance:		No effective disturbance	
Coarse fragments on the surface (abundance/size/shape):		Extremely; very abundant/Medium gravelly; medium pebbles/Subrounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		10	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	<10	**Crown cover %:**	30-70	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Eremophila oppositifolia		Cryptandra aridicola 31-1	
Eucalyptus transcontinentalis		Acacia sp. narrow phyllode			
Eucalyptus oleosa					

ALL SPECIES
Acacia sp. narrow phyllode
Cryptandra aridicola 31-1
Dodonaea lobulata
Eremophila decipiens subsp. decipiens
Eremophila oppositifolia
Eucalyptus griffithsii
Eucalyptus oleosa
Eucalyptus transcontinentalis
Hybanthus floribundus subsp. curvifolius 26-4
Maireana georgei
Myoporum platycarpum subsp. platycarpum 31-2
Olearia muelleri
Scaevola spinescens
Triodia scariosa
Westringia rigida

Project Name: SKO Location 48 + 50			
Date:	5/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	17
Quadrat size:	20x20		
Vegetation group:	Eucalyptus salmonophloia & Eucalyptus ravida/salubris woodland over Eremophila		
WP:	36		
Photo number:		46-48	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Moderately; many/Medium gravelly; medium pebbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Cracking	
% Cover leaf litter:		70	
% Cover bare ground:		60	

Tallest stratum		Mid-stratum		Lower stratum	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	0.5-1m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	30-70	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus ravida		Eremophila ionantha		Atriplex nummularia subsp spathulata	
Eucalyptus salmonophloia					

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa nitida
Dissocarpus paradoxus
Enchylaena tomentosa
Eremophila ionantha
Eucalyptus ravida
Eucalyptus salmonophloia
Exocarpos aphyllus
Lycium australe
Maireana georgei
Maireana pyramidata
Maireana sedifolia
Maireana trichoptera
Maireana triptera
Ptilotus nobilis
Rhodanthe floribunda
Santalum acuminatum
Sclerolaena cuneata
Sclerolaena densiflora
Sclerolaena diacantha
Sclerolaena patenticuspis
Zygophyllum aurantiacum
Adjacent
Scaevola spinescens

Project Name: SKO Location 48 + 50			
Date:	5/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	18
Quadrat size:	20x20		
Vegetation group:	Mixed Eucalyptus woodland over Atriplex nummularia shrublands		
WP:	37		
Photo number:		49-51	
Landform:		Lower slope/Hillslope	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Slightly; few/Medium gravelly; medium pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam sandy/Surface crust	
% Cover leaf litter:		75	
% Cover bare ground:		60	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Eremophila oppositifolia subsp. angustifolia		Senna artemisioides subsp filifolia	
		Eremophila interstans subsp interstans		Atriplex nummularia subsp spathulata	

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa elegantissima
Austrostipa nitida
Dodonaea lobulata
Eremophila glabra subsp. glabra
Eremophila interstans subsp interstans
Eremophila oppositifolia subsp. angustifolia
Eremophila parvifolia subsp. auricampa
Eremophila scoparia
Eucalyptus griffithsii
Exocarpos aphyllus
Maireana georgei
Maireana pentatropis
Maireana trichoptera
Maireana triptera
Marsdenia australis
Olearia muelleri
Ptilotus obovatus
Scaevola spinescens
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Solanum nummularium
Zygophyllum aurantiacum
Zygophyllum eremaeum

Project Name: SKO Location 48 + 50			
Date:	5/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	19
Quadrat size:	20x20		
Vegetation group:	Scattered Eucalyptus salmonophloia over scattered understorey		
WP:	39		
Photo number:		52-54	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Medium gravelly; medium pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam sandy/Surface crust	
% Cover leaf litter:		90	
% Cover bare ground:		75	

Tallest stratum		Mid-stratum		Lower stratum	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	12-20m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	<1	**Crown cover %:**	<10	**Crown cover %:**	30-70
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus salmonophloia		Eremophila interstans subsp interstans		Maireana sedifolia	
		Atriplex nummularia subsp spathulata		Atriplex vesicaria	

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex stipitata
Atriplex vesicaria
Austrostipa nitida
Enchylaena tomentosa
Eremophila interstans subsp interstans
Eucalyptus salmonophloia
Exocarpos aphyllus
Frankenia pauciflora var. pauciflora
Maireana georgei
Maireana pentatropis
Maireana sedifolia
Maireana trichoptera
Marsdenia australis
Olearia muelleri
Rhagodia drummondii
Scaevola spinescens
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Solanum nummularium
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	5/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	20
Quadrat size:	20x20		
Vegetation group:	Mixed Eucalyptus woodland over Atriplex nummularia shrublands		
WP:	40		
Photo number:		55-57	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Medium gravelly; medium pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Clay loam sandy/Surface crust	
% Cover leaf litter:		60	
% Cover bare ground:		70	

Tallest stratum		Mid-stratum		Lower stratum	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	<10	**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus oleosa		Eucalyptus lesouefii		Maireana sedifolia	
Eucalyptus lesouefii		Eremophila interstans subsp interstans		Tecticornia disarticulata	

ALL SPECIES
Atriplex nummularia subsp spathulata
Austrostipa elegantissima
Austrostipa nitida
Eremophila interstans subsp interstans
Eremophila scoparia
Eucalyptus lesouefii
Eucalyptus oleosa
Frankenia pauciflora var. pauciflora
Lycium australe
Maireana georgei
Maireana sedifolia
Maireana trichoptera
Maireana triptera
Mesembryanthemum nodiflorum
Myoporum platycarpum subsp. platycarpum (40-1)
Olearia muelleri
Ptilotus nobilis
Scaevola spinescens
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Tecticornia disarticulata
Zygophyllum aurantiacum

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 nummularia shrublands		
WP:	43		
Photo number:		66-68	
Landform:		Upper slope/Hillslope	
Land surface/disturbance:		Limited clearing	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Medium gravelly; medium pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam sandy/Surface crust	
% Cover leaf litter:		20	
% Cover bare ground:		85	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	<10	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Eremophila interstans subsp interstans		Senna artemisioides subsp filifolia	
Eucalyptus torquata				Eremophila glabra subsp. glabra	
				Atriplex nummularia subsp spathulata	

ALL SPECIES
Atriplex nummularia subsp spathulata
Austrostipa nitida
Dodonaea lobulata
Eremophila glabra subsp. glabra
Eremophila interstans subsp interstans
Eremophila oldfieldii subsp. angustifolia
Eucalyptus griffithsii
Eucalyptus torquata
Olearia muelleri
Scaevola spinescens
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	5/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	22
Quadrat size:	20x20		
Vegetation group:	Acacia quadrimarginea over mixed shrubland		
WP:	46		
Photo number:		69-71	
Landform:		Crest/Hill Crest	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very; abundant/Cobbly; or cobbles/Subrounded	
Rock outcrop (abundance/runoff):		Very slightly rocky/Moderately rapid	
Soil (profile/field texture/soil surface):		Uniform/Clay loam/Surface crust	
% Cover leaf litter:		30	
% Cover bare ground:		60	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Shrub	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	30-70	**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Acacia quadrimarginea		Eremophila georgei		Ptilotus obovatus	
		Dodonaea lobulata		Stenanthemum stipulosum 46-1	

ALL SPECIES
Acacia quadrimarginea
Austrostipa elegantissima
Austrostipa nitida
Brachyscome ciliocarpa
Calotis eremaea 46-4
Dampiera latealata
Dodonaea lobulata
Eremophila georgei
Eremophila oldfieldii subsp. angustifolia
Erodium crinitum
Eucalyptus ewartiana 46-3
Goodenia havilandii 46-5
Halgania andromedifolia
Marsdenia australis
Monachather paradoxus
Podolepis lessonii
Ptilotus obovatus
Salsola australis
Senecio pinnatifolius
Senna artemisioides subsp artemisioides
Senna artemisioides subsp filifolia
Sida calyxhymenia 46-2
Solanum lasiophyllum
Stenanthemum stipulosum 46-1
Waitzia acuminata
Zygophyllum aurantiacum
Adjacent
Acacia sp. narrow phyllode
Brunonia australis
Calotis hispidula
Cephalipterum drummondii
Cryptandra graniticola
Prostanthera althoferi subsp althoferi
Scaevola spinescens

Project Name: SKO Location 48 + 50			
Date:	5/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	23
Quadrat size:	20x20		
Vegetation group:	Eucalyptus woodland with Allocasuarina and Acacia over mixed shrubland		
WP:	47		
Photo number:		73-75	
Landform:		Upper slope/Hillslope	
Land surface/disturbance:		Limited clearing	
Coarse fragments on the surface (abundance/size/shape):		Very; abundant/Stony; stones/Subangular	
Rock outcrop (abundance/runoff):		Rocky/Moderately rapid	
Soil (profile/field texture/soil surface):		Uniform/Clay loam/Surface crust	
% Cover leaf litter:		60	
% Cover bare ground:		40	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	<10	**Crown cover %:**	30-70	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Acacia sp. narrow phyllode		Prostanthera althoferi subsp althoferi	
		Eremophila oldfieldii subsp. angustifolia		Olearia muelleri	
		Allocasuarina campestris 47-1			

ALL SPECIES
Acacia sp. narrow phyllode
Acacia tetragonophylla
Allocasuarina campestris 47-1
Alyxia buxifolia
Austrostipa elegantissima
Dampiera latealata
Dodonaea lobulata
Enchylaena tomentosa
Eremophila oldfieldii subsp. angustifolia
Eucalyptus griffithsii
Marsdenia australis
Monachather paradoxus
Olearia muelleri
Prostanthera althoferi subsp althoferi
Santalum spicatum
Scaevola spinescens
Senna artemisioides subsp filifolia
Westringia rigida
Adjacent
Brunonia australis
Cryptandra graniticola
Podolepis lessonii
Senecio pinnatifolius
Stackhousia sp Mt. Keith 47-2
Stenanthemum stipulosum
Waitzia acuminata

Project Name: SKO Location 48 + 50			
Date:	6/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	24
Quadrat size:	20x20		
Vegetation group:	Eucalyptus woodland with Allocasuarina and Acacia over mixed shrubland		
WP:	48		
Photo number:		76-78	
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/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam sandy/Surface crust	
% Cover leaf litter:		50	
% Cover bare ground:		40	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	<10	**Crown cover %:**	30-70	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Allocasuarina helmsii		Westringia rigida	
		Eremophila scoparia		Senna artemisioides subsp filifolia	

ALL SPECIES
Acacia merrallii
Allocasuarina helmsii
Austrostipa nitida
Eremophila glabra subsp. glabra
Eremophila parvifolia subsp. auricampa
Eremophila scoparia
Eucalyptus griffithsii
Olearia muelleri
Scaevola spinescens
Senna artemisioides subsp filifolia
Triodia scariosa
Westringia rigida
Zygophyllum aurantiacum
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	**Quadrat:**	25
Quadrat size:	20x20		
Vegetation group:	Internally drained 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 surface (abundance/size/shape):		Slightly; few/Medium gravelly; medium pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Cracking	
% Cover leaf litter:		<5	
% Cover bare ground:		90	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
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 subsp spathulata		Austrostipa nitida	
				Cephalipterum drummondii	

ALL SPECIES
Angianthus tomentosus
Arabidella chrysoderma 49-1
Atriplex nummularia subsp spathulata
Austrostipa nitida
Cephalipterum drummondii
Eragrostis dielsii
Eremophila decipiens subsp. decipiens
Erodium crinitum
Goodenia pinnatifida 49-2
Halgania andromedifolia
Maireana pyramidata
Maireana thesioides
Maireana trichoptera
Maireana triptera
Mesembryanthemum nodiflorum
Podolepis lessonii
Ptilotus carlsonii 49-4
Ptilotus holosericeus
Salvia verbenaca
Schoenia cassiniana
Sclerolaena cuneata
Sclerolaena densiflora
Senecio pinnatifolius
Swainsona canescens
Vellereophyton ?dealbatum 49-3
Waitzia acuminata
Zygophyllum aurantiacum
Adjacent
Acacia sp. narrow phyllode
Eremophila 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 surface (abundance/size/shape):		Slightly; few/Coarse gravelly; large pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Clay loam sandy/Surface crust	
% Cover leaf litter:		<5	
% Cover bare ground:		90	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
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 subsp spathulata		Austrostipa nitida	
		Lycium australe		Maireana trichoptera	
		Eremophila decipiens subsp. decipiens			

ALL SPECIES
Acacia sp. narrow phyllode
Angianthus tomentosus
Aristida contorta
Atriplex nummularia subsp spathulata
Austrostipa nitida
Cephalipterum drummondii
Eragrostis dielsii
Eragrostis eriopoda 52-2
Eremophila decipiens subsp. decipiens
Eremophila ionantha
Eremophila maculata subsp brevifolia 52-4
Erodium crinitum
Goodenia pinnatifida 49-2
Lycium australe
Maireana thesioides
Maireana trichoptera
Podolepis lessonii
Ptilotus carlsonii
Ptilotus holosericeus
Rhagodia drummondii
Rytidosperma acerosum 52-1
Salvia verbenaca
Sclerolaena cuneata
Sclerolaena densiflora
Sclerolaena diacantha
Sclerolaena eurotioides
Senecio pinnatifolius
Swainsona canescens
Vellereophyton ?dealbatum
Vittadinia eremaea 52-3
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	6/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	27
Quadrat size:	20x20		
Vegetation group:	Eucalyptus woodland with Allocasuarina and Acacia over mixed shrubland		
WP:	54		
Photo number:	99-101		
Landform:	Crest/Hill Crest		
Land surface/disturbance:	No effective disturbance		
Coarse fragments on the surface (abundance/size/shape):	Very; abundant/Cobbly; or cobbles/Angular		
Rock outcrop (abundance/runoff):	Very rocky/Moderately rapid		
Soil (profile/field texture/soil surface):	Uniform/Clay loam/Surface crust		
% Cover leaf litter:	85		
% Cover bare ground:	50		

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	30-70	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Dodonaea lobulata		Scaevola spinescens	
		Trymalium myrtillus subsp. myrtillus		Olearia muelleri	
		Allocasuarina helmsii		Westringia rigida	

ALL SPECIES
Acacia sp. narrow phyllode
Allocasuarina helmsii
Austrostipa nitida
Dampiera latealata
Dodonaea lobulata
Eremophila glabra subsp. glabra
Eremophila parvifolia subsp. auricampa
Eucalyptus griffithsii
Exocarpos aphyllus
Maireana carnosa
Maireana georgei
Marsdenia australis
Olearia muelleri
Prostanthera althoferi subsp althoferi
Ptilotus obovatus
Scaevola spinescens
Senna artemisioides subsp filifolia
Trymalium myrtillus subsp. myrtillus
Zygophyllum aurantiacum
Adjacent
Dianella revoluta subsp. divaricata
Thysanotus manglesianus

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		
WP:	55		
Photo number:		102-104	
Landform:		Flat/Plain	
Land surface/disturbance:		Limited clearing	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Coarse gravelly; large pebbles/Subrounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		15	
% Cover bare ground:		80	

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

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. nematophylla
Scaevola spinescens

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		
WP:	56		
Photo number:		105-107	
Landform:		Simple slope/Bench	
Land surface/disturbance:		No effective disturbance	
Coarse fragments on the surface (abundance/size/shape):		Moderately; many/Cobbly; or cobbles/Subangular	
Rock outcrop (abundance/runoff):		Rocky/Slow	
Soil (profile/field texture/soil surface):		Uniform/Clay loam/Surface crust	
% Cover leaf litter:		5	
% Cover bare ground:		75	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Shrub	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	<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 SPECIES
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

Project Name: SKO Location 48 + 50			
Date:	6/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	30
Quadrat size:	20x20		
Vegetation group:	Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands		
WP:	58		
Photo number:		108-111	
Landform:		Upper 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 (abundance/runoff):		No bedrock exposed/Moderately rapid	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		70	
% Cover bare ground:		60	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus torquata		Eremophila interstans subsp interstans		Dodonaea lobulata	
Casuarina pauper				Scaevola spinescens	

ALL SPECIES
Acacia erinacea
Aristida contorta
Austrostipa nitida
Casuarina pauper
Dodonaea lobulata
Eremophila glabra subsp. glabra
Eremophila interstans subsp interstans
Eremophila oldfieldii subsp. angustifolia
Eucalyptus torquata
Marsdenia australis
Olearia muelleri
Ptilotus obovatus
Scaevola spinescens
Senna artemisioides subsp filifolia
Westringia rigida
Zygophyllum aurantiacum
Zygophyllum eremaeum

Project Name: SKO Location 48 + 50			
Date:	6/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	31
Quadrat size:	20x20		
Vegetation group:	Mixed Eucalyptus woodland over Atriplex nummularia shrublands		
WP:	61		
Photo number:		112-114	
Landform:		Simple slope/Hillslope	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Coarse gravelly; large pebbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		35	
% Cover bare ground:		70	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Eremophila scoparia		Atriplex nummularia subsp spathulata	
		Eremophila oldfieldii subsp. angustifolia		Atriplex vesicaria	
				Senna artemisioides subsp filifolia	

ALL SPECIES
Atriplex bunburyana
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa nitida
Eremophila glabra subsp. glabra
Eremophila oldfieldii subsp. angustifolia
Eremophila scoparia
Eucalyptus griffithsii
Frankenia interioris
Maireana trichoptera
Marsdenia australis
Olearia muelleri
Ptilotus obovatus
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum
Adjacent
Santalum acuminatum

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 shrublands		
WP:	62		
Photo number:		115-121	
Landform:		Simple slope/Hillslope	
Land surface/disturbance:		No effective disturbance	
Coarse fragments on the surface (abundance/size/shape):		Very slightly; very few/Cobbly; or cobbles/Angular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		30	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Shrub Mallee (< 8m)	**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:**	
Acacia quadrimarginea		Acacia sp. narrow phyllode		Prostanthera althoferi subsp althoferi	
				Senna artemisioides subsp filifolia	

ALL SPECIES
Acacia quadrimarginea
Acacia sp. narrow phyllode
Aristida contorta
Dodonaea lobulata
Goodenia krauseana 62-1
Goodenia havilandii 62-2
Podolepis capillaris
Prostanthera althoferi subsp althoferi
Scaevola spinescens
Senna artemisioides subsp filifolia
Solanum lasiophyllum
Waitzia acuminata
Westringia rigida
Adjacent
Brachychiton gregorii
Eremophila granitica

Project Name: SKO Location 48 + 50			
Date:	6/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	33
Quadrat size:	20x20		
Vegetation group:	Jam thicket		
WP:	65		
Photo number:		122-124	
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/Angular	
Rock outcrop (abundance/runoff):		Slightly rocky/Slow	
Soil (profile/field texture/soil surface):		Duplex/Sandy loam/Surface crust	
% Cover leaf litter:		30	
% Cover bare ground:		40	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Shrub	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	<10	**Crown cover %:**	30-70	**Crown cover %:**	30-70
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Melaleuca hamata		Acacia sp. narrow phyllode		Dodonaea lobulata	
				Astartea sp. Red Hill 65-1	

ALL SPECIES
Acacia sp. narrow phyllode
Astartea sp. Red Hill 65-1
Dodonaea lobulata
Hybanthus floribundus subsp. curvifolius
Melaleuca hamata
Prostanthera althoferi subsp althoferi
Scaevola spinescens
Senna artemisioides subsp artemisioides
Waitzia acuminata

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	34
Quadrat size:	20x20		
Vegetation group:	Mixed Eucalyptus woodland over Atriplex nummularia shrublands		
WP:	66		
Photo number:		125-127	
Landform:		Open depression (vale)/Drainage depression	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No coarse fragments	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		20	
% Cover bare ground:		85	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	<10	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus salmonophloia		Eremophila scoparia		Atriplex nummularia subsp spathulata	
Eucalyptus lesouefii					

ALL SPECIES
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa nitida
Enchylaena tomentosa
Eremophila ionantha
Eremophila scoparia
Eriochiton sclerolaenoides
Eucalyptus lesouefii
Eucalyptus salmonophloia
Maireana georgei
Maireana pentatropis
Maireana pyramidata
Maireana triptera
Ptilotus nobilis
Ptilotus obovatus
Scaevola spinescens
Sclerolaena densiflora
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Zygophyllum aurantiacum
Adjacent
Acacia hemiteles
Acacia ligulata
Eremophila maculata subsp. brevifolia 66-1
Eremophila parvifolia subsp. auricampa
Maireana sedifolia
Maireana trichoptera
Senna artemisioides subsp artemisioides

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	35
Quadrat size:	20x20		
Vegetation group:	Internally drained claypans		
WP:	67		
Photo number:		128-130	
Landform:		Flat/Plain	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No qualifier; common/Medium gravelly; medium pebbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Cracking	
% Cover leaf litter:		10	
% Cover bare ground:		90	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
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:**		**Dominant taxa:**	
None		Eremophila scoparia		Austrostipa nitida	
		Atriplex nummularia subsp spathulata		Maireana trichoptera	
		Lycium australe			

ALL SPECIES
Angianthus tomentosus
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa elegantissima
Austrostipa nitida
Cephalipterum drummondii
Chenopodium gaudichaudianum
Eremophila decipiens subsp. decipiens
Eremophila miniata
Eremophila scoparia
Eriochiton sclerolaenoides
Lycium australe
Maireana pyramidata
Maireana sedifolia
Maireana trichoptera
Marsdenia australis
Marsdenia australis
Ptilotus obovatus
Rhagodia drummondii
Salvia verbenaca
Sclerolaena densiflora
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Solanum nummularium
Zygophyllum aurantiacum
Zygophyllum eremaeum
Adjacent
Acacia sp. narrow phyllode
Eremophila scoparia
Pittosporum angustifolium
Senna artemisioides subsp artemisioides

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	36
Quadrat size:	20x20		
Vegetation group:	Acacia- Mallee shrublands		
WP:	69		
Photo number:		135-137	
Landform:		Upper 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/Angular	
Rock outcrop (abundance/runoff):		Slightly rocky/Moderately rapid	
Soil (profile/field texture/soil surface):		Uniform/Clay loam/Surface crust	
% Cover leaf litter:		20	
% Cover bare ground:		65	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Shrub Mallee (< 8m)	**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 %:**	30-70
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Acacia quadrimarginea		Acacia sp. narrow phyllode		Dodonaea lobulata	
				Prostanthera althoferi subsp althoferi	
				Scaevola spinescens	

ALL SPECIES
Acacia quadrimarginea
Acacia sp. narrow phyllode
Austrostipa nitida
Chrysocephalum puteale
Dodonaea lobulata
Gnephosis angianthoides
Haloragis trigonocarpa
Senecio pinnatifolius
Marsdenia australis
Podolepis lessonii
Prostanthera althoferi subsp althoferi
Scaevola spinescens
Senna artemisioides subsp artemisioides
Stackhousia sp. Mt Keith
Thysanotus manglesianus
Waitzia acuminata
Zygophyllum aurantiacum
Adjacent
Mirbelia depressa

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	37
Quadrat size:	20x20		
Vegetation group:	Eucalyptus torquata and E. lesouefii woodland over sclerophyll shrublands		
WP:	71		
Photo number:		137-139	
Landform:		Upper slope/Hillslope	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No qualifier; common/Cobbly; or cobbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Moderately rapid	
Soil (profile/field texture/soil surface):		Uniform/Clay loam/Surface crust	
% Cover leaf litter:		10	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	<10	**Crown cover %:**	<10	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus torquata		Eremophila interstans subsp interstans		Dodonaea lobulata	
				Atriplex nummularia subsp spathulata	
				Westringia rigida	

ALL SPECIES
Atriplex nummularia subsp spathulata
Austrostipa nitida
Chenopodium gaudichaudianum
Dodonaea lobulata
Eremophila interstans subsp interstans
Eremophila oldfieldii subsp. angustifolia
Eucalyptus torquata
Gnephosis angianthoides
Halgania andromedifolia
Maireana georgei
Maireana pentatropis
Maireana trichoptera
Marsdenia australis
Ptilotus aervoides
Ptilotus obovatus
Sclerolaena diacantha
Solanum lasiophyllum
Westringia 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 surface (abundance/size/shape):		No coarse fragments	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Cracking	
% Cover leaf litter:		<5	
% Cover bare ground:		50	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
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:**	
None		None		Tecticornia indica subsp. bidens	
				Disphyma crassifolium	

ALL SPECIES
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

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	39
Quadrat size:	20x20		
Vegetation group:	Riparian Chenopod shrubland with emergent Myoporum acuminatum		
WP:	80		
Photo number:		144-146	
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/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Heavy clay/Surface flake	
% Cover leaf litter:		<5	
% Cover bare ground:		40	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	1-3m	**Height:**	0.5-1m	**Height:**	0.25-0.5m
Crown cover %:	<1	**Crown cover %:**	30-70	**Crown cover %:**	30-70
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Pittosporum angustifolium		Cratystylis subspinescens		Tecticornia indica subsp. bidens	
		Lycium australe		Frankenia irregularis 73-5	
				Disphyma crassifolium	

ALL SPECIES
Atriplex lindleyi subsp. inflata 73-1
Brachyscome ciliocarpa
Cotula bipinnata 74-6
Cratystylis subspinescens
Disphyma crassifolium
Dittrichia graveolens 73-7
Enchylaena tomentosa
Eragrostis dielsii
Eremophila longifolia
Frankenia irregularis 73-5
Hainardia cylindrica 74-3
Lycium australe
Lysimachia arvensis
Maireana brevifolia
Maireana pyramidata
Marsdenia australis
Medicago minima
Mesembryanthemum nodiflorum
Oncosiphon suffruticosum 74-5
Pittosporum angustifolium
Ranunculus pentandrus var platycarpus 74-4
Rhagodia drummondii
Rhodanthe stricta 73-4
Rostraria pumila 74-2
Senecio pinnatifolius 73-2
Sonchus oleraceus
Tecticornia indica subsp. bidens
Tecticornia pruinosa 73-3
Xanthium spinosum

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	40
Quadrat size:	20x20		
Vegetation group:	Casuarina pauper shrubland on calcrete platform		
WP:	74		
Photo number:		148-150	
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/Subrounded	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Sandy clay loam/Loose	
% Cover leaf litter:		30	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:	10-30	**Crown cover %:**	<10	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Casuarina pauper		Myoporum montanum		Cratystylis conocephala	
				Maireana sedifolia	

ALL SPECIES
Acacia donaldsonii
Acacia tetragonophylla
Atriplex vesicaria
Austrostipa elegantissima
Austrostipa nitida
Casuarina pauper
Cratystylis conocephala
Dodonaea viscosa subsp. angustissima
Enchylaena tomentosa
Eremophila decipiens subsp. decipiens
Eremophila scoparia
Exocarpos aphyllus
Lycium australe
Maireana pentatropis
Maireana sedifolia
Maireana trichoptera
Myoporum montanum
Ptilotus obovatus
Rhagodia drummondii
Salsola australis
Scaevola spinescens
Sclerolaena densiflora
Sclerolaena diacantha
Solanum nummularium
Zygophyllum aurantiacum

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	41
Quadrat size:	20x20		
Vegetation group:	Riparian chenopod shrubland with Maireana pyramidata		
WP:	75		
Photo number:	151-153		
Landform:	Open depression (vale)/Stream channel		
Land surface/disturbance:	No effective disturbance except grazing by hoofed animals		
Coarse fragments on the surface (abundance/size/shape):	Slightly; few/Coarse gravelly; large pebbles/Angular		
Rock outcrop (abundance/runoff):	No bedrock exposed/No runoff		
Soil (profile/field texture/soil surface):	Duplex/Sand/Loose		
% Cover leaf litter:	5		
% Cover bare ground:	60		

Tallest stratum		Mid-stratum		Lower stratum	
Growth form:		**Growth form:**	Shrub Mallee (< 8m)	**Growth form:**	Shrub
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 subspinescens	
				Lycium australe	

ALL SPECIES
Acacia jennerae
Acacia masliniana
Austrostipa elegantissima
Brachyscome ciliaris 75-3
Brachyscome ciliocarpa
Carrichtera annua
Cratystylis subspinescens
Cymbopogon ambiguus
Dianella revoluta subsp. divaricata
Disphyma crassifolium
Dissocarpus paradoxus
Dodonaea viscosa subsp. angustissima
Enchylaena tomentosa
Eragrostis dielsii
Eremophila decipiens subsp. decipiens
Eremophila granitica
Eremophila miniata
Grevillea acuaria
Gunniopsis quadrifida
Lycium australe
Lysimachia arvensis
Maireana georgei
Maireana pyramidata
Maireana triptera
Marsdenia australis
Melaleuca elliptica 75-1
Oncosiphon suffruticosum 74-5
Pimelea microcephala
Plantago drummondii 75-2
Podolepis capillaris
Rhagodia drummondii
Rhodanthe stricta 73-4
Salvia verbenaca
Sclerolaena cuneata
Sclerolaena diacantha
Senna cardiosperma
Solanum nummularium
Sonchus oleraceus
Stenopetalum sphaerocarpum 75-4
Tecticornia pruinosa 73-2
Adjacent
Eremophila scoparia
Maireana glomerifolia
Scaevola spinescens
Tecticornia disarticulata

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	42
Quadrat size:	20x20		
Vegetation group:	Riparian sandplain sclerophyll shrubland		
WP:	77		
Photo number:		154-156	
Landform:		Crest/Dunecrest	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No coarse fragments	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Gradational/Sand/Loose	
% Cover leaf litter:		70	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	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 subsp. angustissima			
		Acacia masliniana			

ALL SPECIES
Acacia masliniana
Austrostipa nitida
Cratystylis subspinescens
Dodonaea viscosa subsp. angustissima
Enchylaena tomentosa
Eremophila decipiens subsp. decipiens
Eucalyptus salicola 77-1
Exocarpos aphyllus
Grevillea acuaria
Gunniopsis quadrifida
Lycium australe
Maireana georgei
Maireana thesioides
Maireana trichoptera
Marsdenia australis
Olearia muelleri
Rhagodia drummondii
Scaevola spinescens
Sclerolaena densiflora
Sclerolaena diacantha
Solanum nummularium
Westringia rigida
Adjacent
Cratystylis microphylla

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	43
Quadrat size:	20x20		
Vegetation group:	Riparian sandplain sclerophyll shrubland		
WP:	78		
Photo number:		157-159	
Landform:		Crest/Dunecrest	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		No coarse fragments	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Gradational/Sand/Loose	
% Cover leaf litter:		30	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree Mallee (> 8m)	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	6-12m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	<10	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Eucalyptus griffithsii		Acacia donaldsonii		Scaevola spinescens	
		Dodonaea lobulata		Triodia scariosa	

ALL SPECIES
Acacia donaldsonii
Angianthus tomentosus
Austrostipa nitida
Brachyscome ciliocarpa
Cratystylis microphylla
Dodonaea lobulata
Eremophila decipiens subsp. decipiens
Eucalyptus griffithsii
Grevillea acuaria
Podolepis capillaris
Podolepis lessonii
Prostanthera sp from before
Rhagodia drummondii
Heliotropium curassavicum
Adjacent
Acacia masliniana
Hemichroa diandra 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 shrubland with Maireana pyramidata		
WP:	79		
Photo number:		160-162	
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/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Sandy clay loam/Loose	
% Cover leaf litter:		5	
% Cover bare ground:		85	

Tallest stratum		**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:**	
None		Acacia ?enervia subsp. 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
Frankenia 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	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	45
Quadrat size:	20x20		
Vegetation group:	Riparian Chenopod shrubland with emergent 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/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-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:**	
None		Maireana pyramidata		Maireana glomerifolia	
		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

Project Name: SKO Location 48 + 50			
Date:	7/09/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	46
Quadrat size:	20x20		
Vegetation group:	Riparian sandplain sclerophyll shrubland		
WP:	82		
Photo number:		166-170	
Landform:		Simple slope/Hillslope	
Land surface/disturbance:		Limited clearing	
Coarse fragments on the surface (abundance/size/shape):		No coarse fragments	
Rock outcrop (abundance/runoff):		No bedrock exposed/No runoff	
Soil (profile/field texture/soil surface):		Duplex/Sandy clay loam/Loose	
% Cover leaf litter:		5	
% Cover bare ground:		90	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree Mallee (> 8m)	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	0.5-1m	**Height:**	0.25-0.5m
Crown cover %:	<10	**Crown cover %:**	<10	**Crown cover %:**	<10
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Acacia masliniana		Scaevola spinescens		Gunniopsis quadrifida	
		Lycium australe		Rhagodia drummondii	

ALL SPECIES
Acacia masliniana
Aristida contorta
Templetonia incrassata 82-3
Disphyma crassifolium
Dodonaea viscosa subsp. angustissima
Enchylaena tomentosa
Eremophila decipiens subsp. decipiens
Gunniopsis quadrifida
Jacksonia arida 82-2
Lycium australe
Maireana georgei
Maireana thesioides
Pimelea microcephala
Rhagodia drummondii
Scaevola spinescens
Solanum nummularium
Adjacent
Alyxia buxifolia
Cratystylis subspinescens
Maireana carnosa
Maireana pentatropis
Pittosporum angustifolium
Sclerolaena diacantha
Sclerolaena patenticuspis

Project Name: SKO Location 48 + 50			
Date:	9/10/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	47
Quadrat size:	20x20		
Vegetation group:	Riparian Chenopod shrubland with emergent Myoporum acuminatum		
WP:	1		
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/runoff):		No bedrock exposed/Very slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		<5	
% Cover bare ground:		70	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:		**Growth form:**	Shrub	**Growth form:**	Shrub
Height:		**Height:**	1-3m	**Height:**	0.5-1m
Crown cover %:		**Crown cover %:**	10-30	**Crown cover %:**	10-30
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
None		Acacia masliniana		Scaevola spinescens	
				Tecticornia disarticulata	
				Cratystylis subspinescens	

ALL SPECIES
Acacia masliniana
Austrostipa elegantissima
Austrostipa nitida
Calandrinia eremaea
Cratystylis microphylla
Cratystylis subspinescens
Disphyma crassifolium
Dodonaea lobulata
Eremophila decipiens subsp. decipiens
Eriochiton sclerolaenoides
Frankenia pauciflora var. pauciflora 1-1
Gunniopsis intermedia 1-4
Gunniopsis quadrifida
Lawrencia repens 1-3
Lycium australe
Maireana georgei
Maireana glomerifolia
Maireana pentatropis
Maireana sedifolia
Maireana thesioides
Maireana tomentosa
Maireana trichoptera
Maireana triptera
Marsdenia australis
Olearia muelleri
Podolepis capillaris
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 vesicaria
Eucalyptus gracilis

Project Name: SKO Location 48 + 50			
Date:	9/10/2012	**Botanist:**	Eren Reid & Ashley Owen
Location:	Alacer Gold	**Quadrat:**	48
Quadrat size:	20x20		
Vegetation group:	Casuarina pauper shrubland on calcrete platform		
WP:	2		
Photo number:		4-8	
Landform:		Simple slope/Bank	
Land surface/disturbance:		No effective disturbance except grazing by hoofed animals	
Coarse fragments on the surface (abundance/size/shape):		Slightly; few/Medium gravelly; medium pebbles/Subangular	
Rock outcrop (abundance/runoff):		No bedrock exposed/Slow	
Soil (profile/field texture/soil surface):		Duplex/Clay loam/Surface crust	
% Cover leaf litter:		<5	
% Cover bare ground:		80	

Tallest stratum		**Mid-stratum**		**Lower stratum**	
Growth form:	Tree	**Growth form:**	Shrub	**Growth form:**	Shrub
Height:	3-6m	**Height:**	1-3m	**Height:**	0.25-0.5m
Crown cover %:	10-30	**Crown cover %:**	<1	**Crown cover %:**	30-70
Dominant taxa:		**Dominant taxa:**		**Dominant taxa:**	
Myoporum montanum		Senna artemisioides subsp filifolia		Maireana sedifolia	
				Lycium australe	
				Tecticornia disarticulata	

ALL SPECIES
Acacia donaldsonii
Atriplex nummularia subsp spathulata
Atriplex vesicaria
Austrostipa elegantissima
Austrostipa nitida
Chenopodium gaudichaudianum
Cratystylis conocephala
Disphyma crassifolium
Eremophila decipiens subsp. decipiens
Eremophila scoparia
Frankenia pauciflora var. pauciflora 1-1
Lycium australe
Maireana pentatropis
Maireana sedifolia
Maireana trichoptera
Maireana triptera
Myoporum montanum
Rhagodia drummondii
Salvia verbenaca
Sclerolaena densiflora
Sclerolaena diacantha
Senna artemisioides subsp filifolia
Solanum nummularium
Tecticornia disarticulata
Zygophyllum aurantiacum
Zygophyllum eremaeum