



**Earth
Stewardship**



GNT Resources Pty Ltd:

Dalgaranga Gold Mine - Weed Surveys

February 2018

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Executive Summary

The objective for the Dalgaranga Gold Mine project is not to introduce any new weed species or cause the proliferation of weeds (as per Clearing Permit CPS7240 condition 6) within tenements managed by GNT Resources.

To determine baseline weed status, GNT Resources required a post-construction / pre-mining weed survey of the Dalgaranga Gold Mine project disturbance envelope, completed by Earth Stewardship in January/February 2018.

Eleven weed species were recorded from the Dalgaranga Gold Mine tenements during the survey:

- *Aloe vera* (Aloe)
- *Carrichtera annua* (Ward's Weed)
- *Carthamus lanatus* (Saffron Thistle)
- *Cuscuta epithymum* (Lesser Dodder)
- *?Hypochaeris glabra* (Smooth Cats-ear)
- *Mesembryanthemum nodiflorum* (Slender Iceplant)
- *Rumex hypogaeus* [was *Emex australis*] (Doublegee)
- *Rumex vesicarius* (Ruby Dock)
- *Salvia verbenaca* (Wild Sage)
- *Solanum nigrum* (Blackberry Nightshade)
- *Tamarix aphylla* (Athel Pine).

All weed species recorded on-site are considered to have been present on-site prior to GNT Resources commencing exploration or mining operations at the Dalgaranga Gold Mine leases. Evidence is provided by the fact that all weed species recorded during the field survey at the Dalgaranga Gold Mine were clustered around sites of historical disturbance where previous mining operations occurred. Trees of **Tamarix aphylla* (Athel Pine) are present within the Golden Wings Pit, indicating that this species has been established for some time.

In particular, weeds were dominant in revegetation at the old gold mill site (removed in 2001), waste dumps, tailings storage facility and associated topsoil / bunds within the vicinity of the old mill. Where topsoil had been previously stored and then respread, there was an increase in weed presence. Ripping (with no topsoil spread) on old tracks, pipeline routes and exploration gridlines indicated few to no weeds.

Two weed species recorded on-site have indicative populations of more than 100 plants: **Rumex vesicarius* (Ruby Dock); and **Carrichtera annua* (Ward's Weed). These populations occur at the old mill site (and adjacent locations).

The Weed of National Significance and Declared Pest **Tamarix aphylla* (Athel Pine) occurs within the existing Golden Wings Pit. Appropriate management actions should be applied to this taxon to ensure that this species does not spread from this location.

Contents

1	Project Background – Dalgaranga Gold Mine	1
1.1	Purpose of the Report	1
1.2	Scope of Works	1
2	Methodology	4
2.1	Desktop Review	4
2.2	Weed Survey	4
2.3	Limitations	4
3	Desktop Review	9
3.1	Previous Mining History	9
3.2	Previous Weed Records	9
4	Weed Survey	10
4.1	Recorded Weeds	10
4.2	Review of Weed Species	16
5	References	27

1 Project Background – Dalgaranga Gold Mine

GNT Resources Pty Ltd (GNT) owns and operates the Dalgaranga Gold Mine that is located approximately 60 km WNW of Mt Magnet (Figure 1). The project is currently under construction and mining operations will commence end of February to early March 2018. The environmental outcome for weeds to which GNT are bound under the *Mining Act 1978* approval is that no declared weeds are introduced to the project site due to operations. The objective for the project is not to introduce any new weed species or cause the proliferation of weeds (as per Clearing Permit CPS7240-2 condition 6). GNT requires a post-construction / pre-mining weed survey of the project disturbance envelope.

1.1 Purpose of the Report

This report presents the results of a weed survey of the disturbance footprint of construction activities and incorporates the larger disturbance envelope for comparison during operations and at closure. Prior to the survey, two weed species were known from the disturbance envelope: **Rumex vesicarius* (Ruby Dock); and **Carrichtera annua* (Ward’s Weed) (as recorded by Native Vegetation Solutions, 2016).

1.2 Scope of Works

Earth Stewardship was engaged to undertake and report on the results of the weed survey. The scope of works undertaken included:

- Completion of a weed survey at Dalgaranga Gold Mine within the project disturbance envelope (Figure 2). Specifically, this covered:
 - 15 km of access roads;
 - 8 km perimeter around clearing for infrastructure;
 - Perimeter of the airstrip (1.6 km in length);
 - Proposed waste rock landform locations;
 - Proposed Golden Wings and Sly Fox open-cut pits; and
 - Old plant site rehabilitated in 2001.
- Production of a short report detailing the outcomes of the survey, with locations of weed populations of greater than 100 plants mapped. Data is also provided to GNT in an electronic format.

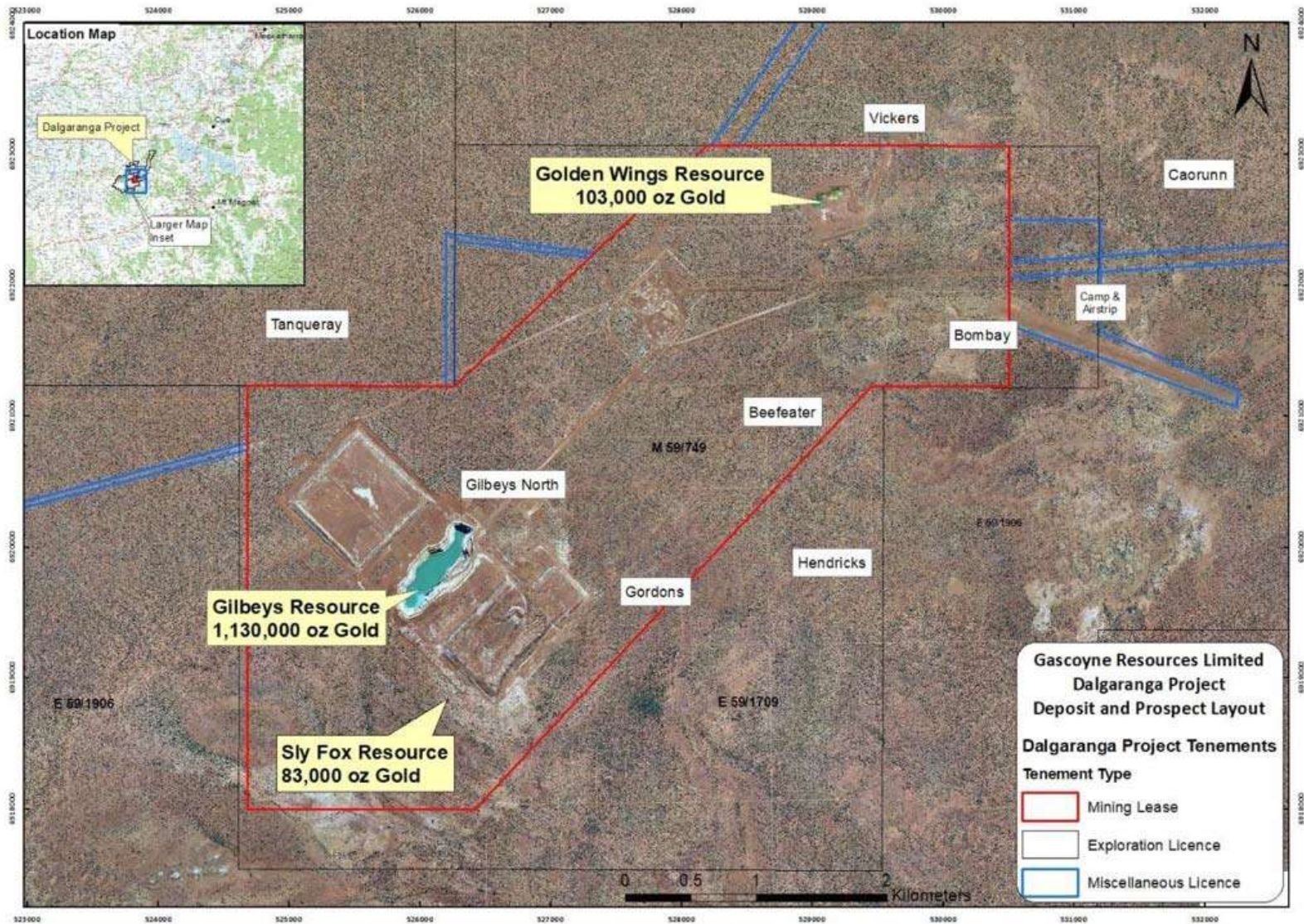


Figure 1 Dalgara Gold Mine Location (source: Clark Lindbeck, 2016)

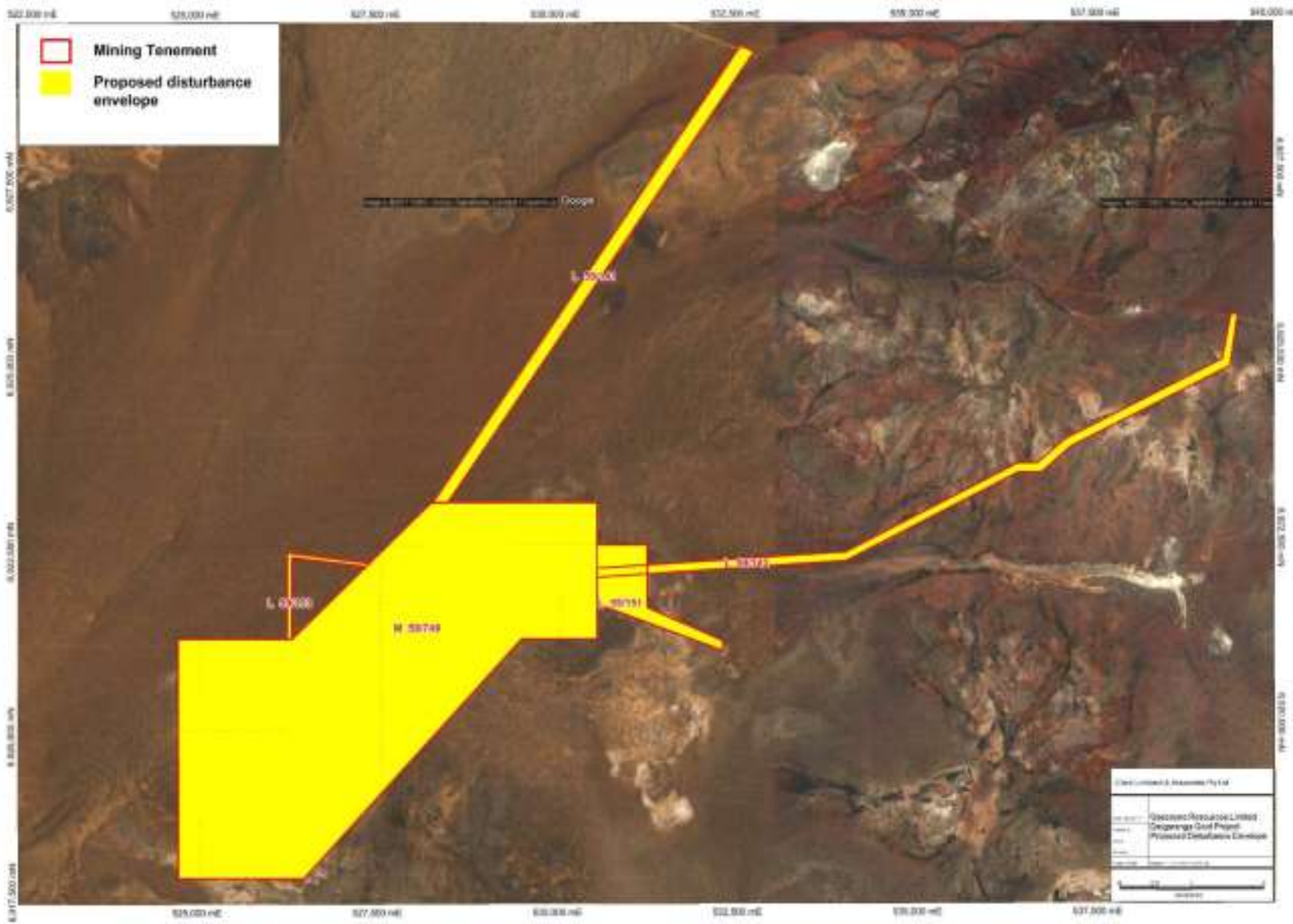


Figure 2 Proposed Disturbance Footprint, Dalgara Gold Mine (source: Clark Lindbeck, 2016)

2 Methodology

2.1 Desktop Review

Prior to the commencement of the field survey, a desktop review was undertaken to identify botanical information relevant to the study area and to assist in survey design. This included a review of:

- The Department of the Environment and Energy (DotEE) Protected Matters Search Tool (PMST) to identify communities and flora taxa listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) potentially occurring within 40 km of the study area (DotEE, 2018) (Appendix A);
- The *NatureMap* database records within 40 km of the study area for listed (introduced) weed species; and
- Existing reports (where available) to provide background information on the weeds previously recorded within the study area.

2.2 Weed Survey

A single season targeted weed survey was conducted by botanist Joshua Foster (SL012114) from 30th January– 3rd February 2018.

2.2.1 Collection of Data

Survey methods involved the sampling of historically disturbed locations, areas where water pooled and/or exhibited concentrated flow, and locations outlined in the scope of works. The study area was traversed by vehicle and on foot (Figure 3).

2.2.2 Flora Identification and Nomenclature

A weed inventory was compiled from taxa recorded throughout the study area.

Flora taxa well known to the botanist were identified in the field.

The conservation status of all recorded flora taxa was compared against the current lists available on *FloraBase* (Department of Biodiversity, Conservation and Attractions (DBCA), 2018), with status compared against any listing by the Department of Primary Industry and Regional Development (DPIRD) *Biosecurity and Agriculture Management Act 2007* (BAM Act) and/or lists of Weeds of National Significance (WoNS) indicated by the Department of the Environment and Energy (DoTEE). Nomenclature used in this report follows that used by the Western Australian Herbarium.

2.3 Limitations

The services undertaken by Earth Stewardship in connection with preparing this report were limited to those specifically detailed in the report and are subject to the limitations set out in the report. The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report (including flora taxa listings).

The EPBC Act PMST is based on bioclimatic modelling for the potential presence of conservation significant taxa. As such, this may not represent actual records of the taxa within the study area. The records from *NatureMap* (including the TPFL and Western Australian Herbarium databases)

provide more reliable information for the study area and surrounds. However, for a variety of reasons, these collections or records may misrepresent the current range of taxa (including significant taxa), and this provides justification for on-ground survey.

The EPA (2016) Technical Guide states that vegetation and flora reports in Western Australia should contain a section describing the limitations of the survey methods used. The limitations and constraints associated with this field survey are discussed in Table 1.

Table 1 Survey Limitations

Aspect	Constraint	Comment
Sources of desktop information and availability of additional broader scale information	Nil	Adequate information is available for the study area and surrounding locale, this includes and is summarised in: <ul style="list-style-type: none"> • DoTEE (2018) PMST_DU84KP? • NatureMap (2018) – database search (40 km buffer) • Native Vegetation Solutions (2016). Level 1 Flora and Vegetation Surveys – Gascoyne Resources, Dalgaringa Tenements: (M59/749, L59/141, L59/142, L59/151, L59/152 & L59/153). Unpublished report prepared for Clark Lindbeck & Associates Pty Ltd
Scope of survey (i.e. what life forms were sampled)	Nil	Vascular flora taxa were sampled during the survey. Non-vascular flora taxa were not assessed as part of survey.
Proportion of flora collected and identified (based on sampling, timing and intensity).	Major	The weed survey was undertaken from 30 th January to the 3 rd February 2018. Flora identification was undertaken by Joshua Foster in the field and utilising specimen records of the Western Australian Herbarium. Some species, particularly annual flora, were not present or may have been overlooked due to lack of material. This may have resulted in a lower than expected inventory of flora. An increased number of weeds (and possibly an increase in diversity) is more likely to have been recorded on-site (particularly in historically disturbed locations) following Winter rains, as is recommended by the EPA (2016).

Aspect	Constraint	Comment
Completeness and further work which might be needed (e.g. was the relevant area fully surveyed).	Moderate	<p>The study area was traversed on foot and by vehicle (see Figure 3). Information gained from the survey was extrapolated across the sections of the study area which could not be accessed due to exploration activities.</p> <p>No weed species were recorded in other exploration locations (recent, or historical), and it has been extrapolated that few weed species are currently present in the eastern exploration areas.</p> <p>An increased number of weeds (and possibly an increase in diversity) is more likely to have been recorded on-site (particularly in historically disturbed locations) following Winter rains, as is recommended by the EPA (2016).</p>
Mapping reliability	Nil	<p>High resolution aerial imagery was available. Data was recorded in the field using hand-held GPS tools (Garmin GPS). Some atmospheric factors and other sources of error can affect the accuracy of GPS receivers. The Garmin GPS units used for this survey are considered accurate to within ± 5 m on average. Therefore, the data points consisting of coordinates recorded from the GPS may contain inaccuracies.</p>
Timing/weather/season/cycle	Major	<p>The field survey was conducted in January-February 2018 - Summer.</p> <p>In the three months preceding the field survey (November to January), rainfall recorded at the Mount Magnet Aerodrome was 62.8 millimetres (mm) which is similar the long-term average (LTA) of 60.0 mm over the same months (Bureau of Meteorology (BoM), 2018).</p> <p>The EPA (2016) preference for surveys in the Eremaean botanical province is 6 to 8 weeks post-wet season (i.e. March to June).</p> <p>An increased number of weeds (and possibly an increase in diversity) is more likely to have been recorded on-site (particularly in historically disturbed locations) following Winter rains, as is recommended by the EPA (2016).</p>
Disturbances (e.g. fire, flood, accidental human intervention)	Minor	<p>Most of the study area has been impacted to some degree by past and current disturbances including mining and exploration activities, grazing by native and feral herbivores and water flow following rainfall events.</p>
Intensity and resources (in retrospect, was the intensity adequate)	Nil	<p>The study area was sufficiently covered by the botanist during the survey. Adequate resources were employed during the field survey. The botanist spent three days completing the survey.</p>

Aspect	Constraint	Comment
Access restrictions	Minor	<p>Minor access constraints were encountered during the survey. GNT Resources readily provided access to the study area, however, the eastern exploration area could not be accessed due to exploration activities.</p> <p>Extrapolation from other current and past exploration areas indicates that few weed species are unlikely to have been present in the eastern exploration areas.</p> <p>An increased number of weeds (and possibly an increase in diversity) is more likely to have been recorded on-site (particularly in historically disturbed locations) following Winter rains, as is recommended by the EPA (2016).</p>
Experience levels	Nil	<p>Joshua Foster (Scientific Flora Collection licence SL012114), is suitably qualified and has over 12 years' experience conducting surveys in the Murchison IBRA region.</p> <p>He has over 19 years' experience in undertaking ecological surveys within Western Australia.</p>

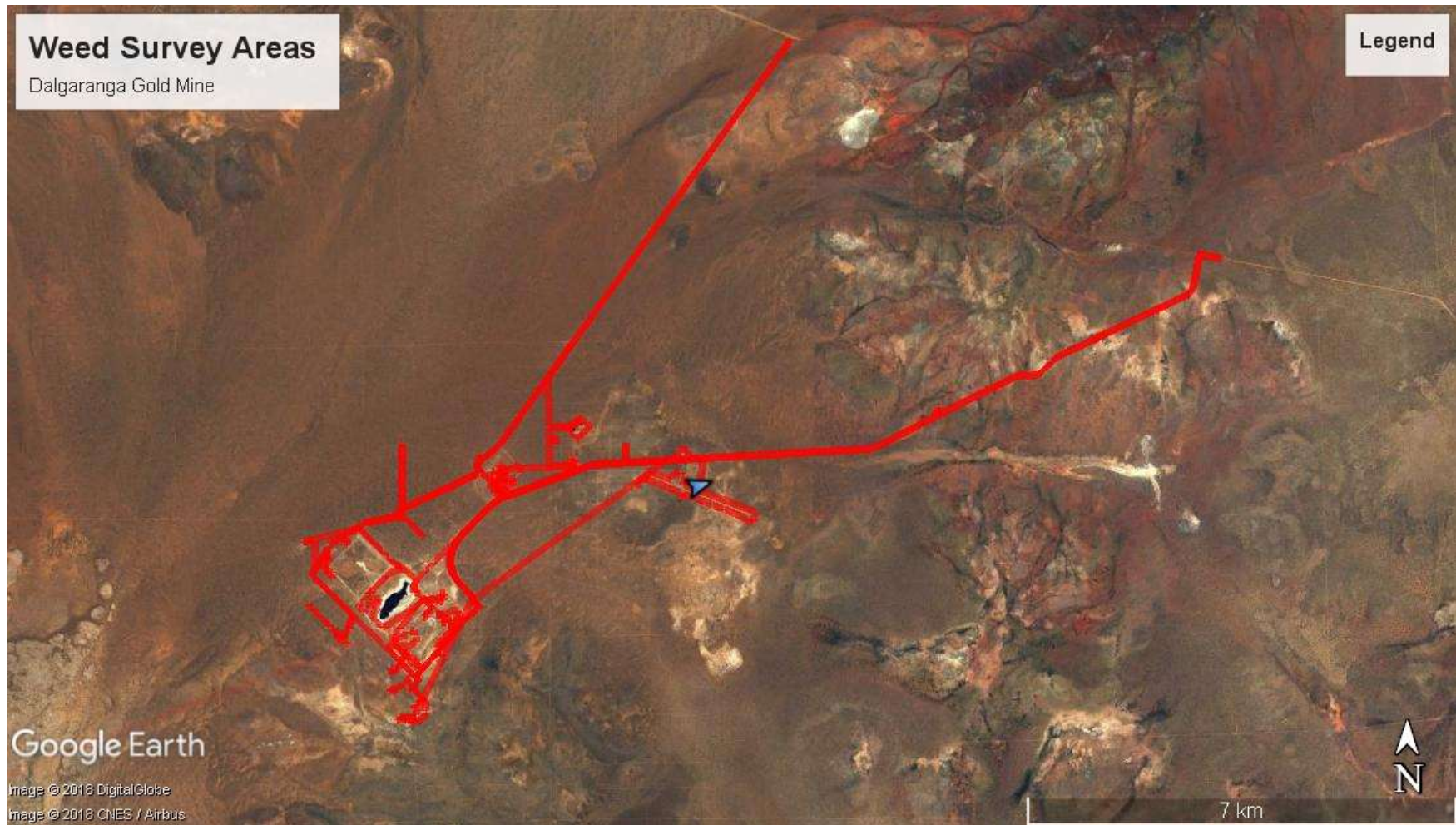


Figure 3 Dalgaranga Gold Mine – Weed Survey Track Log

3 Desktop Review

3.1 Previous Mining History

The Dalgaranga Gold Mine has a project history dating back to 1990, with exploration around the Gilbey's Pit area undertaken by a Newcrest / Hunter joint venture. Equigold Ltd and Western Reefs Ltd purchased Dalgaranga in 1995, and between 1996 – 2000 produced gold from the Gilbey's and Golden Wings Pits. Mining ceased in 2001 and the production mill was removed from site.

In late 2012, Gascoyne Resources acquired the Dalgaranga Gold project and exploration tenements from the previous owners. From there, Gascoyne Resources undertook exploration drilling programs as part of mining feasibility studies which were completed by November 2016 (Gascoyne Resources, 2018).

3.2 Previous Weed Records

A 40 km buffer EPBC Act Protected Matters Search in February 2018 (PMST_DU84KP) indicated that two weed species were reported as occurring or likely to occur within the study area (Table 2).

Using a 40 km buffer search, *NatureMap* (DBCA, 2018) indicates that six weed species have been previously recorded within the vicinity of the Dalgaranga Gold Mine (Table 2).

Native Vegetation Solutions (2016) recorded two weed species (Table 2) within the tenements of the Dalgaranga Gold Mine.

None of the weed species previously recorded, or considered likely to occur, are either Weeds of National Significance (WoNS) or listed as Declared Pests under the BAM Act.

Table 2 Indicative Weed Species

Taxon	Common Name	Status	EPBC Act	NatureMap	Native Vegetation Solutions
<i>Carrichtera annua</i>	Ward's Weed	*	x		x
<i>Cenchrus ciliaris</i>	Buffel Grass	*	x		
<i>Cuscuta epithymum</i>	Lesser Dodder	*		x	
<i>Malva parviflora</i>	Marshmallow	*		x	
<i>Medicago minima</i>	Small Burr Medic	*		x	
<i>Medicago polymorpha</i>	Burr Medic	*		x	
<i>Rumex vesicarius</i>	Ruby Dock	*			x
<i>Silene gallica</i> var. <i>gallica</i>	French Catfly	*		x	
<i>Sisymbrium erysimoides</i>	Smooth Mustard	*		x	

4 Weed Survey

All weed species recorded on-site are considered to have been present on-site prior to GNT Resources commencing mining operations at the Dalgaranga Gold Mine leases. Evidence is provided the fact that all weed species recorded during the field survey at the Dalgaranga Gold Mine were clustered around sites of historical disturbance where previous operations occurred. Trees of **Tamarix aphylla* (Athel Pine) are present within the Golden Wings Pit, indicating that this species has been established for some time.

In particular, weeds were dominant in revegetation at the old gold mill site (removed in 2001), waste dumps, tailings storage facility and associated topsoil / bunds within the vicinity of the old mill. Where topsoil had been previously stored and then respread, there was an increase in weed presence.

Ripping (with no topsoil spread) on old tracks, pipeline routes and historical exploration gridlines indicated few to no weeds. At this early stage, current activity does not appear to have resulted in the presence of new weed species, however, the re-use of material from the old mill site should be discouraged to minimise any risk to the spread of existing weeds.

4.1 Recorded Weeds

Eleven weed species were recorded from the Dalgaranga Gold Mine tenements (Table 3) during the field survey. This included the two species previously recorded by Native Vegetation Solutions (2016) (Table 2), and one species indicated by the NatureMap (DBCA, 2018) database search (Table 2).

The diversity of weed species and population sizes recorded on-site is likely to have been impacted by the Summer survey. An increased number of weeds (and possibly an increase in diversity) is more likely to have been recorded on-site (particularly in historically disturbed locations) following Winter rains, as is recommended by the EPA (2016).

One species, **Tamarix aphylla* (Athel Pine), is listed as a Weed of National Significance (WoNS) and as a Declared Pest (s22) under the BAM Act. Trees of **Tamarix aphylla* (Athel Pine) are present within the Golden Wings Pit, indicating that they have been established for some time.

Five species show a significant extension to their known range (RE) of over 200 km from their nearest record (as indicated by NatureMap). This includes the **Carrichtera annua* (Ward's Weed) as noted by Native Vegetation Solutions (2016).

Table 3 Weed species recorded within Dalgaranga Gold Mine tenements

Taxon	Abbreviation	Common Name	Status
<i>Aloe vera</i>	Av	Aloe	* RE
<i>Carrichtera annua</i>	Ca	Ward's Weed	* RE
<i>Carthamus lanatus</i>	Cl	Saffron Thistle	* RE
<i>Cuscuta epithymum</i>	Ce	Lesser Dodder	*
? <i>Hypochaeris glabra</i>	Hg	Smooth Cats-ear	*
<i>Mesembryanthemum nodiflorum</i>	Mn	Slender Iceplant	*
<i>Rumex hypogaeus</i> [was <i>Emex australis</i>]	Rh	Doublegee	*
<i>Rumex vesicarius</i>	Rv	Ruby Dock	*
<i>Salvia verbenaca</i>	Sv	Wild Sage	* RE
<i>Solanum nigrum</i>	Sn	Blackberry Nightshade	*
<i>Tamarix aphylla</i>	Ta	Athel Pine	*WoNS, DP, RE

Where: * = weed/introduced species, RE = range extension, WoNS = Weed of National Significance, DP = Declared Pest under Section 22 of the BAM Act. Abbreviation of species names used in Figure 4 (see Legend)

Locations of the weed species are mapped in Figure 4, with zoomed maps showing the old mill site and Golden Wings (Figure 5) and Gilbey's Pit, Waste Rock Dump (WRD) and Tailings Storage Facility (TSF) (Figure 6).

Two weed species recorded onsite have indicative populations of more than 100 plants: **Rumex vesicarius* (Ruby Dock); and **Carrichtera annua* (Ward's Weed). These populations occur at the old mill site (and adjacent locations) (Figure 7).

Two populations of (approximately) 50 plants of **Mesembryanthemum nodiflorum* (Slender Iceplant) occur within 150 m of each other at the southern corner of the existing Gilbey's Waste Dump.

Plants of the **Tamarix aphylla* (Athel Pine) all occur within the current Golden Wings Pit, with 66 plants recorded.

A review of each species is provided in Section 4.2.

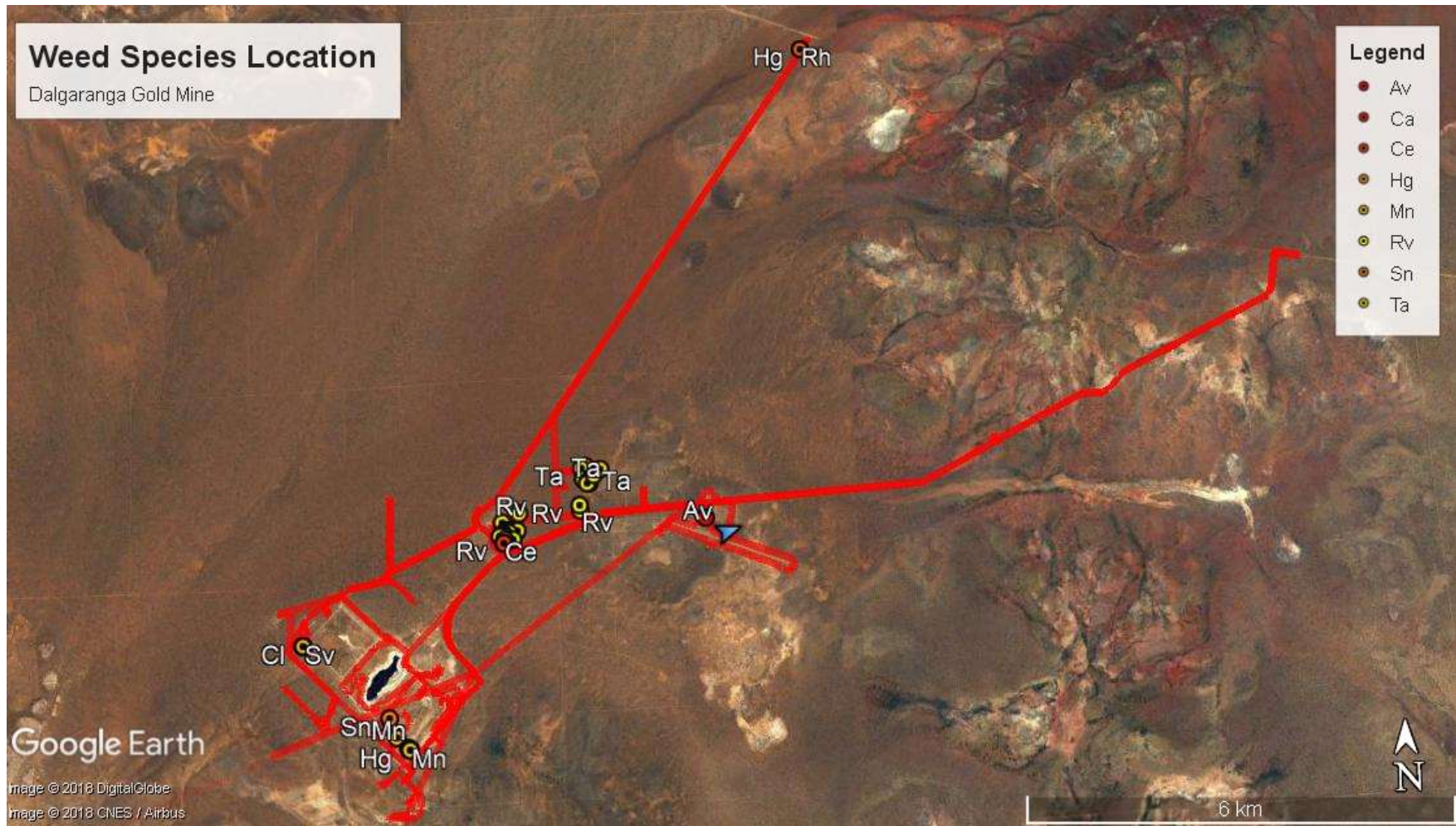


Figure 4 Dalgaranga Gold Mine – Recorded Weed Locations

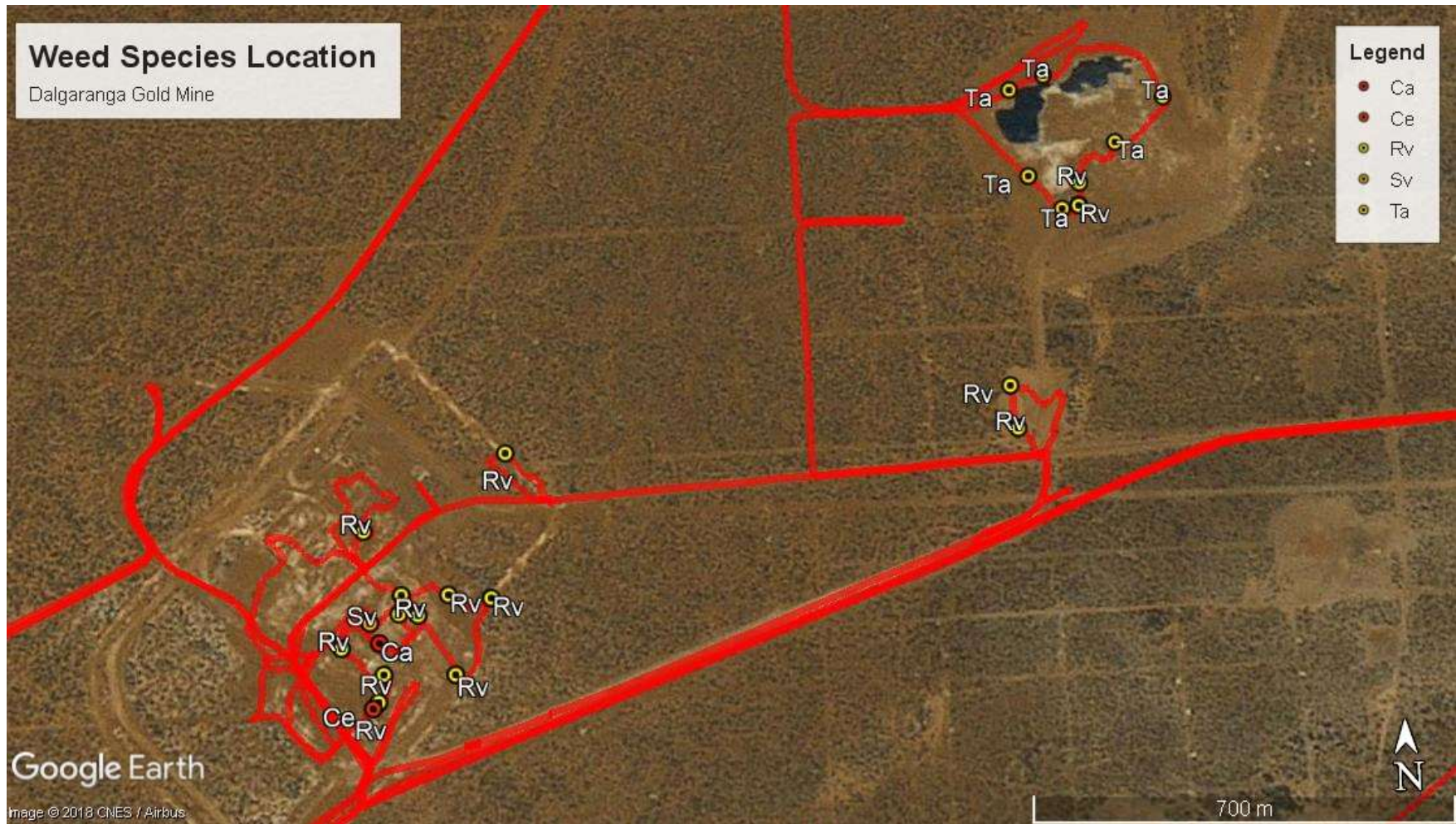


Figure 5 Dalgaranga Gold Mine – Weed Locations (zoomed) – Old Mill Site and Golden Wings Pit



Figure 6 Dalgaranga Gold Mine – Weed Locations (zoomed) – Gilbey’s Pit, WRD and TSF



Figure 7 Dalgaranga Gold Mine – Weed Surveys – Locations of Weed Populations with greater than 100 plants

4.2 Review of Weed Species

4.2.1 Aloe

Aloe vera (Aloe) was recorded from one clump adjacent (Figure 4) to the aircraft parking bay next to the mine camp (Figure 1). The location of the Aloe also occurs with a planted *Eucalyptus* species. Adjacent planted *Eucalyptus* species (and nearby planted *Corymbia citriodora*) indicates that the Aloe is likely to have been deliberately planted in an old (now removed) camp site.



Plate 1 *Aloe vera* clump adjacent to airstrip (at base of a planted *Eucalyptus* species)

4.2.2 Ward's Weed

One population of over 100 plants of **Carrichtera annua* (Ward's Weed) was recorded in the top of the covered rock mound at the old mill site (Figure 7). No live plants were recorded during the survey.

The presence of this taxon within the Dalgaranga Gold Mine is of significance. The nearest known record (after NatureMap) is 210 km south-west (near Dongara). However, considering the prevalence of the taxon in Kalgoorlie-Boulder and surrounds (J. Foster, pers. obs., Hussey, *et al.*, 2007), it may have been brought in during historical gold mining operations and been spread from unclean plant equipment used to move or store topsoil on other gold mining sites from the Goldfields.

This species was not collected due to the advanced state of senescence, preventing collection of suitable specimens.



Plate 2 *Carrichtera annua* (Ward's Weed) – recorded from the old mill site

4.2.3 Saffron Thistle

Twenty-nine (deceased) plants of **Carthamus lanatus* (Saffron Thistle) were recorded from one population at the western corner of the existing Gilbey's Tailings Storage Facility (TSF) (Figure 4, Figure 6).

The presence within the Dalgaranga Gold Mine is of significance as this is the first record for the Murchison IBRA region. The nearest known record (after NatureMap) is 225 km south-west (near Dongara). This species may also have been introduced from unclean plant equipment used to spread or store topsoil from the Wheatbelt or Goldfields.

This species was not collected due to the advanced state of senescence, preventing collection of suitable specimens.



Plate 3 *Carthamus lanatus* (Saffron Thistle) recorded from western corner of Gilbey's TSF

4.2.4 Lesser Dodder

One record of *Cuscuta epithymum* (Lesser Dodder) was recorded from the flat rehabilitated areas surrounding the old mill site (Figure 5). The nearest known record is approximately 33 km north-east of the Dalgaranga Gold Mine.

This species was not collected due to the advanced state of senescence, preventing collection of suitable specimens.



Plate 4 *Cuscuta epithymum* (Lesser Dodder) growing on a native *Pluchea* sp., old mill site

4.2.5 Smooth Cats-ear

Two uncertain records of *Hypochaeris glabra* (Smooth Cats-ear) were made from Dalgaranga Gold Mine. The records are uncertain due to the deceased nature of the specimens. One record is at the southern corner of the existing Gilbey's WRD, and the other record is at the northern extent of the Northern Access Track.

This species is known to occur within 50 km of the Dalgaranga Gold Mine. This species was not sampled due to lack of suitable material.



Plate 5 *Hypochaeris glabra* (Smooth Cats-ear) habit (left) and closeup of old flower (right)

4.2.6 Slender Iceplant

Three populations of *Mesembryanthemum nodiflorum* (Slender Iceplant) were recorded from the southern corner of the existing Gilbey's Waste Rock Dump (WRD) (Figure 6). The nearest known record is approximately 50 km west of the Dalgaranga Gold Mine (after NatureMap). Two populations of approximately 50 plants each were recorded within 150 m of each other.

This species was not collected due to the advanced state of senescence, preventing collection of suitable specimens.



Plate 6 *Mesembryanthemum nodiflorum* (Slender Iceplant) recorded next to Gilbey's WRD

4.2.7 Doublegee

One confirmed record of **Rumex hypogaeus* [was *Emex australis*] (Doublegee) was recorded at the northern extent of the Northern Access Road (L59/141) (Figure 4). Other, unconfirmed records (juvenile seedlings only) were noted at the south-eastern side of the existing Gilbey's TSF. The nearest known record is approximately 50 km north-east of the Dalgara Gold Mine. This species was not collected due to lack of suitable specimens.



Plate 7 *Rumex hypogaeus* (Doublegee) confirmed record (left) and uncertain seedlings (right)

4.2.8 Ruby Dock

Ruby Dock was the most commonly recorded weed within Dalgaranga Gold Mine. Fifteen locations of *Rumex vesicarius* (Ruby Dock) were recorded within the tenements (Figure 4 to Figure 7). Few live plants were recorded, with most of the records comprising large numbers of seeds at the base of old or deceased plants. Six locations were considered to support populations of over 100 plants (Figure 7), four of which are at the old mill site, with the remaining two on bunds and adjacent disturbed ground immediately north of the old mill site adjacent to the (old) haul road leading from the Golden Wings Pit.



Plate 8 *Rumex vesicarius* (Ruby Dock) seeds in rip lines at the old mill (left), seed cases (right)

There is a concern that this species may spread by mechanical means due to the reuse of material currently being extracted from the rock mound at the old mill site in other locations of the Dalgaranga Gold Mine. However, Ruby Dock has also been heavily grazed by native (kangaroos) and feral herbivores (goats) (J. Foster, pers. obs.), and dispersal within the local and regional area via scats and/or disturbance from grazing fauna is considered likely.

This species was not collected due to lack of suitable specimens.

4.2.9 Wild Sage

Two records of *Salvia verbenaca* (Wild Sage) were made from the Dalgaranga Gold Mine, one at the western corner of Gilbey's TSF and one at the old mill site (Figure 4).

The presence of this taxon within the Dalgaranga Gold Mine is of significance. The nearest known record (after NatureMap) is 275 km west (near Geraldton). However, considering the prevalence of the taxon in Kalgoorlie-Boulder and surrounds (J. Foster, pers. obs., Hussey, *et al.*, 2007), it may have been introduced during historical gold mining activities from unclean plant equipment used to move or store topsoil on other gold mining sites from the Goldfields.

This species was sampled for permanent record.



Plate 9 *Salvia verbenaca* (Wild Sage) showing basal leaves (left) and old flowering stem (right)

4.2.10 Blackberry Nightshade

One location of **Solanum nigrum* (Blackberry Nightshade) was recorded from Dalgaranga Gold Mine. Three plants were recorded within a disturbed location on the western corner of the existing Gilbey's WRD (Figure 6).

The nearest known record is approximately 50 km north-east of Dalgaranga Gold Mine. This species was not sampled due to safety concerns at the plant location (unstable piping in the WRD).



Plate 10 *Solanum nigrum* (Blackberry Nightshade) on Gilbey's WRD

4.2.11 Athel Pine

Sixty-six plants of *Tamarix aphylla* (Athel Pine) were recorded in and around the Golden Wings Pit (Figure 5). The majority of records occur at seven locations at a high-water mark around the pit, with scattered records at the base of the pit. Trees of *Tamarix aphylla* (Athel Pine) are present within the pit, indicating that this species has been established for some time. This taxon was not recorded anywhere else within the study area.

The nearest (official) record is 285 km west of Dalgaranga Gold Mine, however, this species is often seen around old settlements and some watering points (J. Foster, pers. obs.) at other scattered locations within Western Australia. This species was sampled for official record.

Hussey *et al.* (2007) indicates that this species can spread from broken branches that take root or from seedlings from fertile plants. As a WoNS and Declared Pest, appropriate management of this species should occur prior to the proposed expansion of the Golden Wings Pit, to minimise the risk of potential spread.



Plate 11 *Tamarix aphylla* (Athel Pine) around Golden Wings Pit (left) and flower (right)

5 References

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Appendix A

Weed Survey Data

Table 4 Dalgara Gold Mine – Weed Survey Data

Taxon	Common Name	Count	Easting	Northing
<i>Aloe vera</i>	Aloe	1	530795	6921913
<i>Carrichtera annua</i>	Ward's Weed	>100	527885	6921756
<i>Carthamus lanatus</i>	Saffron Thistle	29	524999	6920296
<i>Cuscuta epithymum</i>	Lesser Dodder	1	527875	6921648
? <i>Hypochaeris glabra</i>	Smooth Cats-ear	5	526521	6918811
? <i>Hypochaeris glabra</i>	Smooth Cats-ear	10	532467	6928917
<i>Mesembryanthemum nodiflorum</i>	Slender Iceplant	15	526521	6918811
<i>Mesembryanthemum nodiflorum</i>	Slender Iceplant	50	526498	6918834
<i>Mesembryanthemum nodiflorum</i>	Slender Iceplant	50	526333	6918982
<i>Rumex hypogaeus</i>	Doublegee	1	532467	6928917
<i>Rumex vesicarius</i>	Ruby Dock	1	527857	6921944
<i>Rumex vesicarius</i>	Ruby Dock	>100	527923	6921834
<i>Rumex vesicarius</i>	Ruby Dock	>100	527951	6921800
<i>Rumex vesicarius</i>	Ruby Dock	>100	527919	6921803
<i>Rumex vesicarius</i>	Ruby Dock	15	527822	6921749
<i>Rumex vesicarius</i>	Ruby Dock	>15	527893	6921703
<i>Rumex vesicarius</i>	Ruby Dock	10	528101	6922069
<i>Rumex vesicarius</i>	Ruby Dock	10	527885	6921658
<i>Rumex vesicarius</i>	Ruby Dock	10	529127	6922514
<i>Rumex vesicarius</i>	Ruby Dock	25	529123	6922473
<i>Rumex vesicarius</i>	Ruby Dock	10	528014	6921699
<i>Rumex vesicarius</i>	Ruby Dock	10	528075	6921824
<i>Rumex vesicarius</i>	Ruby Dock	10	528002	6921832
<i>Rumex vesicarius</i>	Ruby Dock	>100	528180	6921982
<i>Rumex vesicarius</i>	Ruby Dock	>100	528989	6922081
<i>Rumex vesicarius</i>	Ruby Dock	>100	528981	6922156
<i>Salvia verbenaca</i>	Wild Sage	1	524999	6920296
<i>Salvia verbenaca</i>	Wild Sage	2	527869	6921789
<i>Solanum nigrum</i>	Blackberry Nightshade	3	526230	6919251
<i>Tamarix aphylla</i>	Athel Pine	8	529196	6922586
<i>Tamarix aphylla</i>	Athel Pine	2	529013	6922689
<i>Tamarix aphylla</i>	Athel Pine	1	529076	6922715
<i>Tamarix aphylla</i>	Athel Pine	4	529289	6922667
<i>Tamarix aphylla</i>	Athel Pine	14	529123	6922473
<i>Tamarix aphylla</i>	Athel Pine	28	529093	6922468
<i>Tamarix aphylla</i>	Athel Pine	9	529037	6922529