



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7290/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Dacian Gold Limited

1.3. Property details

Property: Mining Leases: 39/18, 39/36, 39/228, 39/236, 39/272, 39/282, 39/390, 39/395, 39/403
Miscellaneous Licence 39/245
Local Government Area: Shire of Laverton
Colloquial name: Mt Morgans Gold Project

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|--|
| 633 | | Mechanical Removal | Mineral Production and associated activities |

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 24 November 2016

2. Background

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The clearing permit application area has been broadly mapped as the following Beard vegetation associations (GIS Database):
18: Low woodland; mulga (*Acacia aneura*);
39: Shrublands; mulga scrub; and
389: Succulent steppe with open low woodland; mulga over saltbush.

A flora and vegetation survey was conducted by Native Vegetation Solutions in March 2016 over the application areas and surrounding areas, covering a total area of approximately 4,641 hectares (Native Vegetation Solutions, 2016).

The following vegetation communities were recorded within the broader survey area (Native Vegetation Solutions, 2016):

Rehabilitation Vegetation - *Acacia aneura*, *A. mulganeura*, *Eucalyptus clendii*, *E. Campaspe*, *E. torquata*, *Maireana pyramidata*, *Atriplex vesicaria* and *Senna artemisioides* subsp. *filifolia*;

Acacia aneura shrubland - *Acacia aneura*, *A. mulganeura*, *A. pteraneura*, *A. craspedocarpa*, *Senna cardiosperma*, *Senna glutinosa* subsp. *chatelainiana*, *Eremophila platycalyx* subsp. *platycalyx* and *Eremophila compacta*;

Tecticornia shrubland - *Tecticornia species*, *Maireana glomerifolia*, *Sclerolaena cuneata*, *Atriplex vesicaria*, *Melaleuca interioris* and *Casuarina obesa*;

Kopai dunes with Tecticornia and Casuarina - *Casuarina obesa*, *C. pauper*, *Acacia burkittii*, *Grevillea berryana*, *Exocarpos aphyllus*, *Tecticornia indica* subsp. *bidens*, *T. halocnemoides* subsp. *tenuis* and *T. disarticulata*;

Acacia shrubland on emergent hills - *Acacia aneura*, *A. pteraneura*, *A. grasbyi*, *A. tetragonophylla*, *Cratystylis subspinescens*, *Scaevola spinescens*, *Senna cardiosperma*, *Maireana sedifolia*, and *Eremophila oppositifolia* subsp. *angustifolia*;

Acacia over Chenopod shrubland - *Acacia aneura*, *A. mulganeura*, *A. pteraneura*, *Maireana pyramidata*, *Sclerolaena diacantha*, *Tecticornia indica* subsp. *bidens*, *T. peltata*, *T. undulata*, *Cratystylis subspinescens*, *Atriplex vesicaria* and *Atriplex bunburyana*;

Acacia over Eremophila and sclerophyll shrubland on BIF Ridges - *Acacia aneura*, *Eremophila georgei*, *Eremophila latrobei* subsp. *latrobei*, *Eremophila margarethae*, *Eremophila platycalyx* subsp. *platycalyx*, *Scaevola spinescens*, *Senna artemisioides* subsp. *helmsii*, *Solanum lasiophyllum* and *Dodonaea rigida*;

Tecticornia shrubland within Laterite breakaways - *Tecticornia disarticulata*, *T. indica* subsp. *bidens*, *T. peltata*, *Frankenia setosa*, *Dodonaea lobulata*, *Pittosporum angustifolium* and *Eremophila pantonii*;

Acacia mulganeura over Eremophila forrestii and grasslands - *Acacia mulganeura*, *A. caesaneura*, *A. aneura*, *A. craspedocarpa*, *Eremophila forrestii* subsp. *forrestii*, *Scaevola spinescens*, *Eragrostis eriopoda*, *Eremophila platythamnus* subsp. *extrachys*, *Crenidium spinescens* and *Triodia basedowii*;

Acacia aneura creekline vegetation - *Acacia aneura*, *Acacia caesaneura*, *Acacia mulganeura*, *Acacia tetragonophylla*, *Eremophila oppositifolia* subsp. *angustifolia*, *Scaevola spinescens*, *Ptilotus obovatus*, *Senna artemisioides* subsp. *sturtii*, *Lepidium platypetalum*, and *Spartothamnella teucriflora*;

Acacia shrublands on undulating hills - *Acacia resinimarginea*, *Acacia aneura*, *Calytrix erosipetala*, *Eremophila georgei*, *Eremophila forrestii* subsp. *forrestii*, *Dodonaea rigida*, *Chrysocephalum puteale*, *Eremophila latrobei* subsp. *filiformis* and *Senna artemisioides* subsp. *helmsii*;

Acacia aneura woodland over Maireana sedifolia and Acacia victoriae mixed shrubland - *Acacia aneura*, *A. pteraneura*, *Maireana sedifolia*, *Atriplex bunburyana*, *Maireana tomentosa*, *Acacia victoriae* subsp. *victoriae*, *Cratystylis subspinescens*, *Eremophila miniata*, *Solanum plicatile*, *Solanum austropeum*, *Acacia kempeana* and *Eremophila longifolia*;

Acacia shrubland on lower breakaways - *Acacia kalgoorliensis*, *Tecticornia peltata*, *T. pergranulata* subsp. *elongata*, *Frankenia georgei* and *Sida calyxhymenia*;

Acacia oswaldii shrubland - *Acacia oswaldii*, *Brachychiton gregorii*, *Acacia ligulata*, *Acacia caesaneura*, *Jacksonia arida*, *Eragrostis eriopoda*, *Enneapogon caeruleus*, *Gunnipopsis quadrifida* and *Pimelea microcephala* subsp. *microcephala*;

Acacia burkittii shrubland - *Acacia burkittii*, *Grevillea berryana*, *Acacia victoriae* subsp. *victoriae*, *Acacia tetragonophylla*, *Senna artemisioides* subsp. *filifolia*, *Acacia ayersiana*, *Acacia caesaneura*, *Melaleuca interioris* and *Enneapogon caeruleus*;

Open Melaleuca shrubland - *Melaleuca hamata*, *Duma florulenta*, *Spartothamnella teucriflora* and *Rhagodia eremaea*; and

Bare Salt Lakes - no vegetation.

| | |
|-----------------------------|---|
| Clearing Description | Mt Morgans Gold Project. Dacian Gold Limited proposes to clear up to 633 hectares of native vegetation within a boundary of approximately 2,981 hectares, for the purposes of mineral production and mining-related infrastructure. The project is located approximately 30 kilometres southwest of Laverton, within the Shire of Laverton. |
| Vegetation Condition | Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994); To Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994). |
| Comment | The vegetation condition was derived from a vegetation survey conducted by Native Vegetation Solutions (2016). The clearing permit application area consists of two minesite areas, known as "Jupiter" and "Westralia", located approximately 10 kilometres apart, and a connecting haulroad (Dacian Gold, 2016). Both minesites have existing mining related infrastructure from previous mining operations. The proposed clearing will be for the development of additional mining related Infrastructure, including mine pits, waste rock dumps, roads, pipelines and an accommodation village (Dacian Gold, 2016). |

3. Assessment of application against Clearing Principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is not likely to be at variance to this Principle

The application area is located within the Eastern Murchison subregion of the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). The Eastern Murchison subregion is characterised by broad plains of red-brown soils and breakaway complexes as well as red sandplains. The vegetation of this subregion is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Halosarcia shrublands (CALM, 2002). The Eastern Murchison subregion supports a rich and diverse flora and fauna, however most species are wide ranging and not restricted to the subregion (CALM, 2002).

Flora and vegetation surveys were conducted by Native Vegetation Solutions in March 2016 over the application areas and surrounding areas (Native Vegetation Solutions, 2016). A total of 195 flora taxa were recorded during the survey, representing 32 families and 77 Genera (Native Vegetation Solutions, 2016).

No Threatened Ecological Communities have been recorded within or in close proximity to the application area, and none were found during the survey (Native Vegetation Solutions, 2016; GIS Database). A Priority Ecological Community (PEC) is mapped as overlapping a small portion of the southern application area. This PEC, "Mount Morgan calcrete groundwater assemblage type on Carey palaeodrainage on Mt Weld Station" (Priority 1) is mapped over a total area of approximately 2,779 hectares, and the portion which overlaps the clearing permit application area (approximately 45 hectares) represents approximately 1.6 percent of the total mapped area of the PEC (GIS Database). The PEC refers to a stygofauna community in the groundwater and the proposed clearing of native vegetation is unlikely to have any significant impact on this PEC.

A desktop survey identified one Threatened flora species and forty one Priority flora species with the potential to occur within the survey area, based on known distributions and habitat preferences (Native Vegetation Solutions, 2016). However, none were recorded during the flora survey (Native Vegetation Solutions, 2016).

The vegetation condition within the application area ranged from Good to Very Good with parts of the survey area previously disturbed by access tracks, historical mining and mineral exploration activities (Native Vegetation Solutions, 2016).

The application area falls partly within the Glenorn pastoral lease (GIS Database), and previous vegetation disturbance has occurred from pastoral activities, including weed invasion in some areas (Native Vegetation Solutions, 2016). Eight weed species were recorded during the flora surveys one of which (Common Prickly Pear, *Opuntia stricta*) is a declared plant under the *Biosecurity and Agriculture Management Act 2007* (Native Vegetation Solutions, 2016). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A Level 1 fauna survey was conducted over the application area and adjacent areas by Western Wildlife in March 2016 comprising of a desktop review and a five day reconnaissance field survey (Western Wildlife, 2016). The desktop survey identified 279 native fauna species with the potential to occur within the survey area, including 10 frogs, 82 reptiles, 141 birds and 32 mammal species. The field survey recorded a total of 80 native fauna species and six introduced fauna species (Western Wildlife, 2016). Western Wildlife (2016) reported that the fauna assemblage within the survey area was typical of the region.

The desktop survey identified 17 fauna species (mostly birds) of conservation significance, with the potential to occur within the survey area based on known distributions (Western Wildlife, 2016). Of these, the following three species were recorded during the fauna survey: *Merops ornatus*, Rainbow Bee-eater; *Tringa nebularia*, Common Greenshank; and *Calidris ruficollis*, Red-necked Stint (Western Wildlife, 2016). All these species are wide ranging and are unlikely to be significantly impacted by the proposed clearing (Western Wildlife, 2016).

The Murchison Bioregion remains largely uncleared (Government of Western Australia, 2015), and the landforms, vegetation associations and fauna habitat types found within the application area are well represented within the region (Native Vegetation Solutions, 2016; Western Wildlife, 2016; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

CALM (2002)
Government of Western Australia (2015)
Native Vegetation Solutions (2016)
Western Wildlife (2016)

GIS Database:
- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Flora

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposal is not likely to be at variance to this Principle

A Level 1 fauna and habitat survey was conducted over the application area and surrounding areas in March 2016 (Western Wildlife, 2016). The survey comprised a desktop search of relevant fauna databases and a field reconnaissance survey.

Western Wildlife (2016) identified the following eleven main fauna habitat types within the broader survey area:

1. Acacia shrubland on low rocky hills;
2. Acacia shrubland on plains;
3. Banded Ironstone Formation (BIF) ridge;
4. Chenopod shrubland;
5. Claypans;
6. Creeklines;
7. Mulga woodlands on plains;
8. Salt lake;
9. Samphire shrublands;
10. Sandy hills and islets;
11. Disturbed areas.

None of these habitat types are restricted to either the clearing permit application area or the broader survey area (Western Wildlife, 2016).

Opportunistic fauna observations, and a series of transects were conducted throughout the survey area, representing the eleven main habitat types. Targeted searches for conservation significant fauna were also conducted, by traversing areas of suitable habitat (Western Wildlife, 2016).

Although no fauna species listed as either threatened species under the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or protected under the *Western Australian Wildlife Conservation Act 1950* (WC Act) were recorded during the survey, it was considered that some may occur within the survey area (Western Wildlife, 2016). However, the majority of these species are highly mobile and all have wide distributions, and they are unlikely to be specifically dependant on the habitats within the application area (Western Wildlife, 2016).

The majority of fauna habitats found within the application area are relatively common and widespread in the region (Western Wildlife, 2016; GIS Database). Western Wildlife (2016) concluded that potential impacts to fauna are generally likely to be minor, and although some restricted fauna habitats may be considered locally significant, the vegetation proposed to be cleared is unlikely to represent significant habitat for fauna in a regional context.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Western Wildlife (2016)

GIS Database:

- Laverton Orthomosaic - Landgate 2010
- Pre-European Vegetation

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal is not likely to be at variance to this Principle

A flora survey of the application area did not record any species of Threatened flora (Native Vegetation Solutions, 2016). The vegetation associations recorded within the application area are well represented in surrounding areas (Native Vegetation Solutions, 2016; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of threatened (rare) flora.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Native Vegetation Solutions (2016)

GIS Database:

- Declared Rare and Priority Flora List
- Pre-European Vegetation

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database).

Surveys of the application area did not identify any TECs (Native Vegetation Solutions, 2016).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Native Vegetation Solutions (2016)

GIS Database:

- Threatened and Priority Ecological Communities - boundaries

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

The area applied to be cleared is located within the Murchison IBRA bioregion (GIS Database). There is approximately 99% of pre-European vegetation remaining within the bioregion (Government of Western Australia, 2015).

The application area is broadly mapped as Beard vegetation associations: 18: Low woodland; mulga (*Acacia aneura*); 39: Shrublands; mulga scrub; and 389: Succulent steppe with open low woodland; mulga over saltbush (GIS Database). Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2015). Hence, the vegetation proposed to be cleared does not represent a significant remnant of vegetation in an area that has been extensively cleared.

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in DPaW managed lands |
|--|-------------------------|----------------------|--------------|-----------------------|--------------------------------------|
| IBRA Bioregion - Murchison | 28,120,586 | 28,044,823 | ~ 99 | Least Concern | 7.78 |
| Beard vegetation association - State | | | | | |
| 18 | 19,892,304 | 19,843,727 | ~ 99 | Least Concern | 6.62 |
| 39 | 6,613,569 | 6,602,580 | ~ 99 | Least Concern | 12.02 |
| 389 | 642,356 | 640,468 | ~ 99 | Least Concern | 3.57 |
| Beard vegetation association - Bioregion | | | | | |
| 18 | 12,403,172 | 12,363,252 | ~ 99 | Least Concern | 4.96 |
| 39 | 1,148,400 | 1,138,064 | ~ 99 | Least Concern | 3.56 |
| 389 | 493,977 | 492,089 | ~ 99 | Least Concern | 4.65 |

* Government of Western Australia (2015)

** Department of Natural Resources and Environment (2002)

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2015)

GIS Database:

- IBRA Australia

- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within or in close proximity to the application area (GIS Database).

Part of the application area intersects with the edge of Lake Carey, at the northern tip of the lake. Lake Carey is approx 90 kilometres long and is part of a larger chain of salt lakes (GIS Database). The lake is dry for most of the year, only filling briefly following significant rainfall events (Dacian Gold, 2016).

Minor drainage lines in the area drain towards Lake Carey and are dry for most of the year, only flowing briefly immediately following significant rainfall (CALM, 2002). Due to the size of the lake and the abundance of ephemeral drainage channels in the region, the proposed clearing is unlikely to have any significant impact on vegetation associated with water courses or wetlands including Lake Carey.

Based on the above, the proposed clearing is at variance to this Principle. Management practices will be implemented to minimise potential impacts to lake carey (Dacian Gold, 2016).

Methodology Dacian Gold (2016)

GIS Database:

- Geodata, Lakes

- Hydrography, linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal may be at variance to this Principle

The application area falls within the Ararak, Brooking, Bullimore, Darlot, Jundee, Laverton, Nubev, Ranchland, Violet, and Yanganoo land systems (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Agriculture and Food).

The Ararak land system consists of broad plains with mantles of ironstone gravel supporting mulga shrublands with wanderrie grasses (Pringle et. al., 1994). The Darlot Land system consists of salt lakes and fringing saline alluvial plains, with extensive, regularly arranged, sandy banks and numerous claypans and swamps, supporting halophytic shrublands and spinifex and wanderrie grasslands (Pringle et. al., 1994). The Ranchland land system is described as hardpan plains and prominent, broad drainage tracts, supporting dense mulga shrublands (Pringle et. al., 1994). The Yanganoo land system consists of hardpan plains and sandy tracts with groved mulga shrublands, hard spinifex and wanderrie grasses (Pringle et. al., 1994). These four land systems are not generally susceptible to erosion (Pringle et. al., 1994).

The Bullimore land system is described as extensive sandplains supporting spinifex hummock grasslands (Pringle et. al., 1994). This land system may be prone to wind erosion if vegetation cover is removed (Pringle et. al., 1994).

The Violet land system is described as undulating stony and gravelly plains and low rises, supporting mulga shrublands (Pringle et. al., 1994). While generally resistant to erosion, this land system may be moderately susceptible to water erosion if stony mantles are removed (Pringle et. al., 1994).

The Brooking land system includes linear rocky ridges supporting mulga shrublands, often with incised narrow drainage tracts, and with occasional minor halophytic communities. Minor soil erosion may occur if stony mantles are disturbed (Pringle et. al., 1994).

The Laverton land system is dominated by greenstone hills and ridges supporting acacia shrublands (Pringle et. al., 1994). Stony mantels protect most of this land system from erosion, with the exception of narrow drainage tracts which may be mildly susceptible to water erosion (Pringle et. al., 1994).

The Jundee land system consists of hardpan plains with ironstone gravel mantles, supporting mulga shrublands (Pringle et. al., 1994). Gravel mantles generally provide effective protection against soil erosion, however impedance to natural sheet flows can initiate soil erosion and cause water starvation to vegetation downslope (Pringle et. al., 1994).

The Nubev land system is described as undulating stony plains, minor low rises and drainage floors, supporting mulga and halophytic shrublands (Pringle et. al., 1994). Drainage zones within this land system are moderately susceptible to soil erosion, if vegetation cover is removed. The saline plains may also be susceptible to water erosion if protective stony mantles are disturbed (Pringle et. al., 1994).

Based on the above, the proposed clearing may be at variance to this Principle. Potential land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Methodology Pringle et. al. (1994)

GIS Database:
- Rangeland Land System Mapping

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposal is not likely to be at variance to this Principle

The nearest conservation area is a small unnamed Nature Reserve, which is located approximately 97 kilometres southwest of the application area (GIS Database). The proposed clearing is unlikely to have any impacts on the environmental values of this or any other conservation area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:
- DPaW Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposal is not likely to be at variance to this Principle

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the application area (GIS Database). Part of the application area intersects with the edge of Lake Carey, a large ephemeral salt lake system (GIS Database). Minor saline drainage lines are abundant in the area and drain towards Lake Carey. However, they are dry for most of the year, only flowing briefly immediately following significant rainfall (CALM, 2002).

The proposed clearing is unlikely to result in increased sedimentation of any watercourse, or cause deterioration in the quality of surface or underground water.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology CALM (2002)
Dacian Gold (2016)

GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposal is not likely to be at variance to this Principle

The climate of the region is semi-arid, with a low average rainfall of approximately 200 millimetres per year (CALM, 2002). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (CALM, 2002).

There are no permanent water courses or waterbodies within the application area (GIS Database). Part of the application area intersects with the edge of Lake Carey, a large ephemeral salt lake system (GIS Database). Temporary localised flooding may occur during heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology CALM (2002)

GIS Database:
- Hydrography, linear

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 10 October 2016 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There are no native title claims over the area under application (DAA, 2016). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

Numerous registered Aboriginal Sites of Significance are located within or in close proximity to the application areas (DAA, 2016). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation, the Department of Water, and the Department of Parks and Wildlife, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

Methodology DAA (2016)

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DAA (2016) Aboriginal Heritage Enquiry System. Department of Aboriginal Affairs. <http://maps.dia.wa.gov.au/AHIS2/> (Accessed 22 November 2016).
- Dacian Gold (2016) Purpose Permit Application. Assessment of Clearing Principles Mt Morgans Gold Project. Dacian Gold Limited, September 2016.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Government of Western Australia (2015) 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2015. WA Department of Parks and Wildlife, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Native Vegetation Solutions (2016) Level 1 Flora and Vegetation Survey Dacian Gold Ltd Mt Morgans Gold Project. Report prepared for Dacian Gold Limited, by Native Vegetation Solutions, July 2016.
- Pringle, H.J.R., Van Vreeswyk, A.M.E., and Gilligan, S.A. (1994) An Inventory and Condition Survey of the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
- Western Wildlife (2016) Dacian Gold Limited: Mt Morgans Gold Project. Report prepared for Dacian Gold Limited, by Western Wildlife, July 2016.

5. Glossary

Acronyms:

| | |
|-----------------|---|
| BoM | Bureau of Meteorology, Australian Government |
| DAA | Department of Aboriginal Affairs, Western Australia |
| DAFWA | Department of Agriculture and Food, Western Australia |
| DEC | Department of Environment and Conservation, Western Australia (now DPaW and DER) |
| DEE | Department of the Environment and Energy, Australian Government |
| DER | Department of Environment Regulation, Western Australia |
| DMP | Department of Mines and Petroleum, Western Australia |
| DRF | Declared Rare Flora |
| DoE | Department of the Environment, Australian Government (now DEE) |
| DoW | Department of Water, Western Australia |
| DPaW | Department of Parks and Wildlife, Western Australia |
| DSEWPaC | Department of Sustainability, Environment, Water, Population and Communities (now DEE) |
| EPA | Environmental Protection Authority, Western Australia |
| EP Act | <i>Environmental Protection Act 1986</i> , Western Australia |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act) |
| GIS | Geographical Information System |
| ha | Hectare (10,000 square metres) |
| IBRA | Interim Biogeographic Regionalisation for Australia |
| IUCN | International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union |
| PEC | Priority Ecological Community, Western Australia |

RIWI Act *Rights in Water and Irrigation Act 1914*, Western Australia
TEC Threatened Ecological Community

Definitions:

{DPaW (2015) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia):-

- T** **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).
Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.
Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.
The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.
- CR** **Critically endangered species**
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN** **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU** **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX** **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA** **Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD** **Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS** **Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P** **Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1** **Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk.

All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 Priority Two - Poorly-known species:

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority Three - Poorly-known species:

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring:

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.