



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	7141/3
Permit type:	Purpose Permit
Applicant name:	Hanson Construction Materials Pty Ltd
Application received:	16 May 2023
Application area:	22.55 hectares
Purpose of clearing:	Sand Mining
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 70/776
Location (LGA area/s):	City of Swan
Colloquial name:	Tick Road Sand Mine

1.2. Description of clearing activities

Hanson Construction Materials Pty Ltd proposes to clear up to 22.55 hectares of native vegetation within a boundary of approximately 22.55 hectares, for the purpose of sand mining. The project is located approximately 22 kilometres north of Perth, within the City of Swan.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	31 October 2023
Decision area:	22.55 hectares of native vegetation

1.4. Reasons for decision

On 11 August 2016, CPS 7141/1 was granted to clear up to 23.55 hectares of native vegetation for the purpose of sand mining. CPS 7141/1 was amended on 23 September 2021, extending the permit duration by 10 years. One appeal was lodged against the grant of the permit (Appeal Number: 39 of 2021). The appeal broadly centred around the adequacy of the Department of Mines, Industry Regulation and Safety's (DMIRS) assessment of impacts to Carnaby's cockatoo foraging habitat because, in the appellants view, the surveys relied on in the decision-making and the assessment approach were outdated.

This clearing permit amendment gives effect to the determination of the Minister for Environment (the Minister) that the decision to grant the permit was justified, but allow the appeal to the extent that the permit footprint should be amended to:

- Exclude the clearing of 2.6 hectares of Carnaby's cockatoo foraging habitat; and
- Limit the clearing of Carnaby's cockatoo foraging habitat within the permit area to 0.5 hectares.

Given the above, the Delegated Officer decided to grant a clearing permit to reflect the Minister's determination. The assessment against the ten clearing principles has changed from the determination made in Clearing Permit CPS 7141/2.

1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.

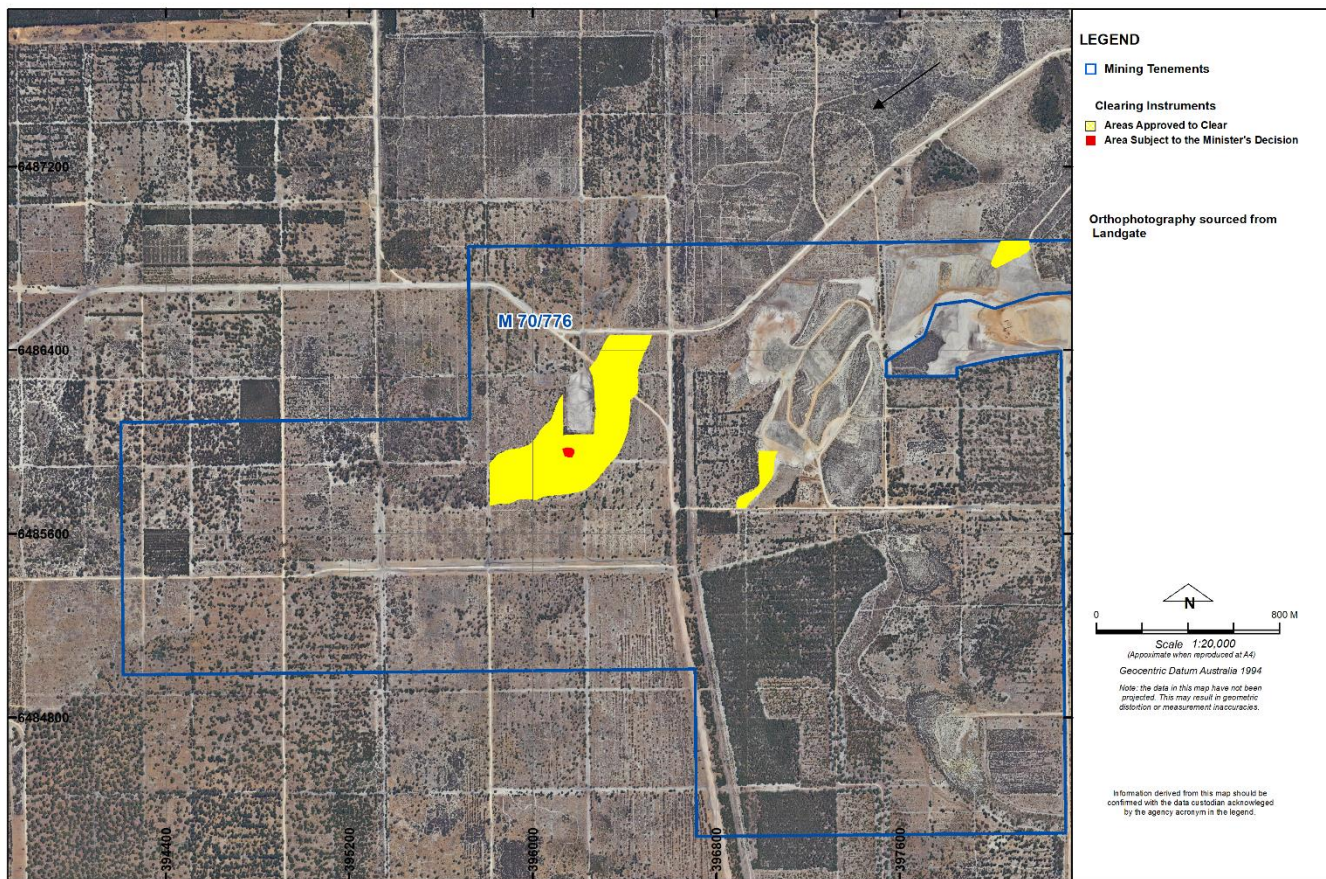


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit and the red shaded area indicates where the area has been excluded from being cleared as determined by the Minister.

2. Detailed assessment of application

2.1. Assessment of impacts on environmental values

The amendment is a result of an appeal determination made by the Minister regarding the grant of clearing permit CPS 7141/2.

The Minister noted the appellant's primary concern was that the vegetation surveys submitted to DMIRS were outdated and a black cockatoo habitat assessment was absent (Minister for Environment; Climate Action, 2023). The appellant also considered that DMIRS' assessment approach was outdated, and that vegetation condition is a poor surrogate for determining the quality of foraging habitat (Minister for Environment; Climate Action, 2023).

The Minister noted that DMIRS' assessment relied on a 2009 flora survey and 2014 site walk through of the application area, in addition to several GIS databases and imagery as listed in the decision report (Minister for Environment; Climate Action, 2023).

As part of the appeal investigation, the permit holder was requested to consider the need for further survey effort and provided the results of a black cockatoo habitat assessment on 28 March 2023. The survey identified that 1.2 hectares of native vegetation within the permit areas is foraging habitat for Carnaby's cockatoo (*Zanda latirostris*) and approximately 22.3 hectares is pine re-growth. The permit holder advised that it would retain one hectare of native vegetation as mapped in the Appeals Convenor's report of Black Cockatoo foraging habitat (Minister for Environment; Climate Action, 2023). This area of native vegetation has been excluded from being cleared as per the Minister's determination and has resulted in the amount of clearing authorised for the permit being reduced from 23.55 hectares to 22.55 hectares. As also determined by the Minister, a condition has been placed on the permit to limit the amount of clearing of the remaining Carnaby's cockatoo foraging habitat to 0.2 hectares.

The appellant also raised concern in relation to DMIRS use of vegetation condition to determine the value of the vegetation to black cockatoos, with the Minister agreeing that measures such as the 'Keighery Scale' are largely irrelevant to arboreal foraging species (Minister for Environment; Climate Action, 2023). The variance for principle (b) has now been changed from 'not likely at variance' to 'at variance' per the appeals convenors recommendation.

In regards to cumulative impacts, it was noted by the Minister that these are generally considered in a clearing permit assessment under the biodiversity-related clearing principles, including clearing principle (e). The Appeals Convener advised the Minister that both the mapped vegetation complex and the remnant vegetation within the local area are both above the State's policy threshold of 30% remaining (Minister for Environment; Climate Action, 2023). Given this, the Minister considered that the clearing is not 'at variance' to clearing principle (e).

The Minister was satisfied that the amendments were justified primarily on the basis that impacts to Carnaby's cockatoo habitat have been limited and the sand resource is identified as a significant geological supply within State Planning Policy 2.4 Basic Raw Materials. The sand resource is recognised as being of the highest priority for extraction as it represents a strategic and long-term supply (Minister for Environment; Climate Action, 2023).

The permit holder has committed to rehabilitate the clearing areas with banksia woodland as proposed in its Mine Closure Plan and supporting Environmental Management Plan. Given the scale of the revegetation program compared to the impact of 0.5 hectares, the impact to Carnaby's cockatoo is adequately counterbalanced (Minister for Environment; Climate Action, 2023).

2.2. Relevant planning instruments and other matters

The permit area is within the South West Native Title Settlement area (DPLH, 2023). This settlement resolves Native Title rights and interests over an area of approximately 200,000 square kilometres within the south west of Western Australia. 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*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2023). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 2021* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

The sand resource present within the application area is identified as a significant geological supply within *State Planning Policy 2.4 Basic Raw Materials*. The sand resource is recognised as being of the highest priority for extraction as it represents a strategic and long-term supply (Minister for Environment; Climate Action, 2023).

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

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately 22 kilometres north of Perth, in the City of Swan. The area proposed to be cleared is part of scattered patch of native vegetation in the intensive land use zone of Western Australia.
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	The application area falls within Gnangara-Moore River State Forest which is managed by the Department of Biodiversity, Conservation and Attractions (GIS Database).
Vegetation description	<p>Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association is located within the application area (GIS Database):</p> <p>Beard vegetation association 949: Low woodland; banksia (GIS Database).</p> <p>One Hedde vegetation complex is also mapped over the application area:</p> <p>Bassendean Complex - North: Consists of a Low Open Forest of Banksia spp., <i>Eucalyptus todtiana</i> to Low Woodland of <i>Melaleuca</i> spp. and Sedgelands which occupy the moister sites.</p> <p>A site visit was conducted over the application area on 2 September 2014 by RPS Consulting. One vegetation community was identified within the application area. The community was described as being comprised of opportunistic native regrowth including areas of <i>Xanthorrhoea preissii</i>, <i>Stirlingia latifolia</i>, <i>Jacksonia densiflora</i> and <i>Anigozanthos humilis</i>. Mature trees and regrowth of <i>Pinus pinaster</i> were also scattered throughout the application area (RPS, 2014).</p>
Vegetation condition	<p>The vegetation survey (RPS, 2014) and prior DMIRS site inspection indicates the vegetation within the proposed clearing area is in a Degraded to Completely Degraded (Keighery, 1994) condition, described as</p> <ul style="list-style-type: none"> Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994); Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994) <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped within elevations of 55-65 metres AHD. The annual average rainfall (Upper Swan Research Station) is 738.9 millimetres (BoM, 2023).
Soil description	According to available datasets, there is one soil type (Cn39) within the application area (GIS Database). These soil type is described as subdued dune-swale terrain. Chief soils are leached sands (Uc2.33) with (Uc2.22) and (Uc2.21) on the low dunes. Associated are small areas of other sand soils (Northcote e. al., 1968).
Land degradation risk	Given that the soils of the application are chiefly composed of sand soils, land degradation, in the form of wind erosion, is likely to occur if areas are left open for extended periods.
Waterbodies	The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared (GIS Database).
Hydrogeography	According to available databases, the application area is located within a Priority One Public Drinking Water Source Area (the Gnangara Underground water Pollution Control Area). The groundwater salinity within the amendment area is approximately less than 500 milligrams/Litre Total Dissolved Solids (GIS Database).
Flora	Five species of Threatened flora have been recorded within the local area (10 kilometre radius): <i>Grevillea maccutcheonii</i> , <i>Grevillea curviloba</i> subsp. <i>curviloba</i> , <i>Trithuria occidentalis</i> , <i>Dasymalla axillaris</i> and <i>Caladenia huegelii</i> . Seven Priority 1 species and five Priority 2 flora species have also been recorded within the local area (DPaW, 2016).
Ecological communities	According to available datasets, no Threatened Ecological Communities or Priority Ecological Communities are known to occur within the application area.(GIS Database).

Characteristic	Details
Fauna	Thirty three fauna species of conservation significance have been recorded within the local area, the majority of which are migratory species (GIS Database). Faunal habitat for the remaining species is limited due to the lack of vegetative cover, landform features and the existing level of disturbance (RPS, 2014; GIS Database).

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The vegetation that occurs within the application area is regrowth from a Pine (Pinus pinaster) plantation that had been cleared progressively from 2010 to 2014. The original native vegetation was cleared approximately 54 years ago to establish the Gngangara Pine Plantation. A walk over of the application area was undertaken by RPS (2014) on 2 September 2014. No vegetation units within the application area were considered to be of high conservation significance and habitat diversity was very low within the application area despite being within the Gngangara-Moore River State Forest (RPS, 2014; GIS Database).</p> <p>No Threatened Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded during the botanical survey or have previously been recorded within the application area (RPS, 2014; GIS Database).</p> <p>Faunal habitats within the application area are limited due to the lack of vegetative cover and landform features, and the existing level of disturbance (RPS, 2014; GIS Database). The application area is not likely to have a higher level of faunal diversity than the surrounding area.</p>	Not likely to be at variance As per CPS 7141/2	No
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There is one conservation significant species listed as Threatened under the Environment Protection and Biodiversity Conservation Act 1999 or protected under Western Australian legislation (Wildlife Conservation Act, 1950), that may potentially occur within the application area: Carnaby Black Cockatoo (Calyptorhynchus latirostris) (EPBC Act - Endangered; WC Act - Schedule 1) (GIS Database).</p> <p>During the appeals investigation, the permit holder undertook a black cockatoo habitat assessment and identified a total of 0.2 hectares of native vegetation that is foraging habitat for Carnaby’s cockatoo and approximately 22.3 hectares of pine re-growth (Minister for Environment; Climate Action, 2023). The Minister for Environment; Climate Action (2023) in their appeal determination decided to authorise the clearing of 0.2 hectares of foraging habitat. However, the permit holder during discussions with the appeal convenor agreed to remove one hectare of native vegetation from the permit area (Minister for Environment; Climate Action, 2023).</p>	At variance Changed from CPS 7141/2	No
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>Five species of Threatened flora have been recorded within the local area (10 kilometre radius): Grevillea maccutcheonii, Grevillea curviloba subsp. curviloba, Trithuria occidentalis, Dasymalla axillaris and Caladenia huegelii. A Level 1 flora survey of adjacent areas, which included large parts of the application area, did not record the presence of any Threatened flora species (RPS, 2014).</p> <p>Given that the application area has been subject to existing disturbance and there are no known occurrences of Threatened or Priority flora in the vicinity, the vegetation to be cleared is not likely to be necessary for the continued existence of the above mentioned Threatened flora species.</p>	Not likely to be at variance As per CPS 7141/2	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database).</p> <p>A flora and vegetation survey of the application area did not identify any TECs (RPS, 2014).</p>	<p>Not likely to be at variance As per CPS 7141/2</p>	<p>No</p>
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the mapped vegetation type in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Government of Western Australia, 2019). Beard vegetation association 949 is well represented within the local area and region, retaining over approximately 56% of pre-European vegetation within the state and bioregion (Government of Western Australia, 2019).</p>	<p>Not likely to be at variance As per CPS 7141/2</p>	<p>No</p>
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The application area falls within Gngangara-Moore River State Forest which is managed by the Department of Parks and Wildlife (GIS Database).</p> <p>The Gngangara-Moore River State Forest is over 7,000 hectares in area (GIS Database). The application area is a cleared Pine (<i>Pinus pinaster</i>) plantation, where the native vegetation was cleared approximately 54 years ago to establish the plantation (RPS, 2014). The degraded condition of the native vegetation is due to the high numbers of weeds, rubbish and historical clearing (GIS Database). Given this, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the environmental values of the conservation area.</p>	<p>Not likely to be at variance As per CPS 7141/2</p>	<p>No</p>
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>According to available databases, there are no watercourses or wetlands within the application area (GIS Database). There is a low surface runoff due to the high infiltration rates associated with the sand and sandy soils present within the application area (Northcote e. al., 1968).</p>	<p>Not at variance As per CPS 7141/2</p>	<p>No</p>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The application area is associated with subdued dune-swale terrain by limestone at depth (Northcote et al, 1968; GIS Database). Chief soils are white sandy soils (Northcote et al, 1968). Generally, these soils have a high risk of wind erosion and a low risk of water erosion due to the high infiltration rates associated with sands. Potential land degradation impacts as a result of the proposed clearing may be minimised by maintain the staged clearing condition.</p>	<p>May be at variance As per CPS 7141/2</p>	<p>No</p>
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>The application area is located within the Priority One Gngangara Public Drinking Water Source Area and is within the area covered by the Environmental Protection (Gngangara Mound Crown Land) Policy 1992 (GIS Database). The Department of Water (DoW) have considered the proposal and offer no comment (DoW, 2014). The application area is located within the proclaimed Swan River groundwater area under</p>	<p>Not likely to be at variance As per CPS 7141/2</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>the Rights in Water and Irrigation Act 1914 (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the DoW.</p> <p>There are no permanent or ephemeral water bodies located within the application area (GIS Database). The application area has a groundwater salinity that is fresh (<500 milligrams/Litre Total Dissolved solids (TDS)) (GIS Database). Although the proposed clearing may increase the amount of rainwater that infiltrates to the groundwater, given the nature of the overlying materials (i.e. limestone ridges overlain by yellow or brown sand), the proposed clearing is not likely to adversely impact the quality of groundwater.</p>		
<p>Principle (j): <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The application area is predominately comprised of leached Bassendean sands, which are generally considered to have high infiltration rates and therefore a low risk of water logging (Churchward & McArthur, 1980). Given the soils are well drained and that average annual evaporation rate (1,800 - 2,000 millimetres) is well above the annual rate of rainfall (738.9 millimetres (BoM, 2023)), the risk of flooding is low.</p>	Not likely to be at variance As per CPS 7141/2	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	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/or grazing.
Completely degraded	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 comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Bush Forever (Regional Scheme) (DPLH-022)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)

- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Black Cockatoo WTBC Breeding
- Black Cockatoo FRTBC Breeding
- Black Cockatoo BC Roosts
- Black Cockatoo BC Feeding SCP
- Black Cockatoo Feeding JF
- Black Cockatoo Carnabys Distribution
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

- Bureau of Meteorology (BoM) (2023) Bureau of Meteorology Website – Climate Data Online, *Upper Swan Research Station*. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 11 August 2023).
- Churchward H. M. & McArthur W.M (1980) 'Landforms and Soils of the Darling System' in Atlas of Natural Resources, Darling System, Western Australia. Government of Western Australia.
- Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 11 August 2023).
- DoW (2014) Advice provided for CPS 6362/1. Department of Water, Swan-Avon Branch, December 2014.
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Minister for Environment; Climate Action (2023) Appeal Number: 38 of 2021. Minister's Appeal Determination: Appeals Against the Grant of Clearing Permit CPS 7140/2 Tick Road Sand Mine and CPS 7141/2 Gngangara Mine Site Project, Mining Lease 70/776, City of Swan.
- Northcote, K. H., Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- RPS (2014) Tick Road Sand Mine (Tenement M70/776). Native Vegetation Clearing Application Supporting Document. Report prepared for Rocla Quarry Products Limited, by RPS Consulting, November 2014.

3. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016, Western Australia</i>
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia

DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, 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	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

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 in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX Extinct species

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its*

life cycle and form", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes 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 fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P Priority species:

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species 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.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.