



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9557/1
Permit type:	Purpose Permit
Applicant name:	Tronox Management Pty Ltd
Application received:	4 January 2022
Application area:	1.47 hectares
Purpose of clearing:	Mineral Production and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 70/435
Location (LGA area/s):	Shire of Dandaragan
Colloquial name:	Jurien Stockpile Areas Project

1.2. Description of clearing activities

Tronox Management Pty Ltd proposes to clear up to 1.47 hectares of native vegetation within a boundary of approximately 1.47 hectares, for the purpose of mineral production and associated activities. The project is located approximately 13 kilometres east of Jurien Bay, within the Shire of Dandaragan.

The application is to allow the proponent to recover several stockpiles of mineral concentrates/tailings deposited in historical mining activities (Tronox, 2022).

Decision:	Grant
Decision date:	27 May 2022
Decision area:	1.47 hectares of native vegetation

1.3. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 4 January 2022. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- the potential for wind erosion.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback; and
- commence construction no later than three months after undertaking clearing to reduce the risk of erosion.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment includes:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

Relevant agreements (treaties) considered during the assessment include:

- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The proposed clearing of native vegetation is for the recovery of stockpiled mineral concentrate/tailings deposited in historical mining activities via a loader. Disturbance is limited to the areas where mineral is present in sufficient concentrations to be recoverable. As such areas have been previously disturbed and the vast majority cleared (Tronox, 2022).

Areas of vegetation outside the stockpiles will be avoided, and the application area is limited to the existing cleared areas where possible (Tronox, 2022).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles identified that the impacts of the proposed clearing present a risk to biological values (flora, vegetation and fauna). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values - Clearing Principles (a) and (d)

Assessment

Principle (a)

Umwelt (2021) completed a flora and vegetation survey over the application area on 28 October 2021. No Threatened or Priority flora species were recorded. Although several taxa identified as part of the desktop assessment were not identifiable at the time of survey (e.g. *Thelymitra pulcherrima* (P2), *Drakaea elastica* (Threatened)), these taxa are considered unlikely to occur within the application area given that either no suitable soils/topographical situations were present, or the condition of the habitat was too degraded to support such taxa (Umwelt, 2021).

The application area is mostly cleared of native vegetation, with the exception of some small areas of native regrowth, and one small area that may be remnant vegetation (stockpile 3). However, all native vegetation is highly modified, with much of the expected diversity and structure lost (Umwelt, 2021). The vegetation within the application area is considered to have limited flora and vegetation conservation value.

There were numerous weeds recorded within the application area, and dieback (*Phytophthora cinnamomi*) may occur within the application area (Umwelt, 2021; GIS Database). The proposed clearing may increase the introduction of weeds and increase the spread of dieback into adjacent remnant vegetation.

Principle (d)

One small area of native vegetation in stockpile 3 possesses the key diagnostic characteristics of the 'Banksia Woodlands of the Swan Coastal Plain' Threatened Ecological Community (TEC) (Umwelt, 2021). This area possesses a woodland stratum dominated by *Banksia attenuata* which is a requirement of the TEC (TSSC, 2016). However, the area of vegetation does not meet the patch size and condition thresholds for this TEC (TSSC, 2016), as it is a very small area surrounded by paddocks, and is considered to be in Completely Degraded condition (Keighery, 1994). Umwelt (2021) determined that this area therefore cannot be considered an occurrence of this TEC.

A single *Eucalyptus gomphocephala* tree, which is considered by Umwelt (2021) to be planted, was recorded in stockpile 6. As it is a single tree, it cannot be considered an occurrence of the 'Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain' TEC, as occurrences must contain at least two living trees of this species (DoEE 2019; Umwelt, 2021).

Conclusion

Based on the above assessment, the proposed clearing can be managed to be environmentally acceptable with hygiene management conditions.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 19 January 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

The permit area is within the South West Native Title Settlement area (DPLH, 2022). 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, 2022). 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.

Other relevant authorisations required for the proposed land use include:

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

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 13 kilometres east of Jurien Bay, within the Shire of Dandaragan in the extensive land use zone. The predominant land use in the region is grazing, agriculture and conservation. The application area and surrounding area have previously been cleared for mining activities. There are extensive tracts of native vegetation to the north, south and west of the application area (GIS Database).
Ecological linkage	As the application area is within an area that has been previously cleared for stockpiles, it is not considered to be an ecological linkage to other areas of vegetation. According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	The nearest conservation area is Hill River Reserve, which is located approximately 1.2 kilometres north of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>1029: Shrublands; scrub-heath dryandra-<i>calothamnus</i> association with <i>Banksia prionotes</i> on limestone in the northern Swan Region; and</p> <p>1030: Low woodland; <i>Banksia attenuata</i> & <i>B. menziesii</i> (GIS Database).</p> <p>A flora and vegetation survey was undertaken on 28 October 2021 (Umwelt, 2021). Umwelt (2021) made the following summaries of observations within the application area:</p> <p><u>Stockpile 1</u> - Isolated natives over pasture weeds. Entire stockpile rated as Completely Degraded.</p> <p><u>Stockpile 2</u> - Isolated native trees and shrubs, and planted trees, over pasture weeds. Entire stockpile rated as Completely Degraded.</p> <p><u>Stockpile 3</u> - Small area of <i>Banksia</i> woodland rated as Completely Degraded, remainder of stockpile pasture weeds, rated as Completely Degraded.</p> <p><u>Stockpile 4</u> - Two small areas of regrowth of isolated <i>Banksia prionotes</i> over <i>Daviesia divaricata</i> over pasture weeds and occasional native herbs, both rated as Degraded. Remainder of stockpile is pasture weeds, rated as Completely Degraded. Stockpile is bordered by large wetlands on its eastern and southern boundaries.</p> <p><u>Stockpile 5</u> - Isolated native trees and shrubs over pasture weeds, entire stockpile rated as Completely Degraded.</p> <p><u>Stockpile 6</u> - Isolated planted trees (including <i>Eucalyptus gomphocephala</i> and <i>Eucalyptus camaldulensis</i>) and native shrubs (including <i>Daviesia divaricata</i>), remainder pasture weeds, entire stockpile rated as Completely Degraded.</p> <p><u>Stockpile 7</u> - Small area of regrowth of <i>Daviesia divaricata</i> over weeds, rated as Completely Degraded. Remainder of stockpile pasture weeds, rated as Completely Degraded.</p> <p><u>Stockpile 9</u> - Pasture weeds, rated as Completely Degraded.</p>
Vegetation condition	<p>The vegetation survey (Umwelt, 2021) indicates the vegetation within the proposed clearing area is in a Completely Degraded to Degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p> <p>Representative photos are available in Appendix D.</p>
Climate and landform	The application area is mapped at an elevation of 56 to 64 metres (GIS Database). The annual average rainfall (Jurien Bay) is 545.1 millimetres (BoM, 2022).
Soil description	The application area is within the soil landscape system zone 211 (Perth Coastal Zone) (DPIRD, 2022). The soil is further mapped as 211Sp. Soil type 211Sp is described as sand dunes and plains. Yellow deep sand, pale deep sands and yellow/brown shallow sands (DPIRD, 2022). Further mapping indicates that the area is a mine and that the land is disturbed (DPIRD, 2022).
Land degradation risk	The soil type mapped within the application area has a potentially high risk of wind erosion (GIS Database).

Characteristic	Details
Waterbodies	According to available databases, there are no permanent drainage channels or wetlands within the application area (GIS Database). There is one non-perennial wetland that partially intersects the application area.
Hydrogeography	The application area is within the Jurien proclaimed groundwater area under the <i>Rights In Water and Irrigation Act 1914</i> (GIS Database). Groundwater salinity ranges between 3,000 to 7,000 milligrams per litre total dissolved solids (GIS Database).
Flora	A total of 65 significant flora taxa are known to occur within the local area (10 kilometre radius), however no conservation significant flora species were identified within the application area (Umwelt, 2021).
Ecological communities	According to available databases, the application area partially intersects the buffer of the 'Banksia Woodlands of the Swan Coastal Plain' PEC and the Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain' PEC, however the application area sits outside the mapped boundaries of these PEC's (GIS Database).
Fauna	The application area may provide low quality foraging habitat for the Carnaby's Cockatoo (<i>Calyptorhynchus latirostris</i>), however no fauna surveys have been undertaken over the application area (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> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>A flora assessment did not identify any Threatened or Priority flora within the application area (Umwelt, 2021). The vegetation within the application area is unlikely to represent any Threatened or Priority Ecological Communities, however the application area is within the buffer of a Priority Ecological Community (GIS Database).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "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."</p> <p><u>Assessment:</u></p> <p>No fauna surveys have been undertaken over the application area. While the application area may contain some foraging habitat for the Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>) (Endangered – BC Act, EPBC Act), the vegetation is degraded to highly degraded and is not considered significant foraging habitat for this species (GIS Database).</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). No Threatened Flora were identified during the field survey (Umwelt, 2021). The vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> "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."</p> <p><u>Assessment:</u></p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The application area sits within the buffer of the “Banksia Woodlands of the Swan Coastal Plain” Threatened Ecological Community (TEC) (Endangered) and the ‘Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain’ TEC (Critically Endangered). These TECs are a listed threatened ecological community as defined in the Commonwealth Environment Act section 528; These communities are also listed as a Priority 3 Ecological Community in Western Australia.</p>		
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> “Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</p> <p><u>Assessment:</u></p> <p>The application area falls within the Swan Coastal Plain Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 38% of the pre-European vegetation still exists in the Swan Coastal Plain IBRA Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation associations 1029 and 1030 (GIS Database). Over 63% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level which gives them a conservation status of ‘least concern’ (Department of Natural Resources and Environment, 2002; Government of Western Australia, 2019).</p> <p>The application area is mostly cleared of native vegetation, with sparse areas of native regrowth. However, all native vegetation is highly modified, with much of the expected diversity and structure lost.</p> <p>Whilst there has been large amounts of clearing for agricultural activities to the east of the application area, the vegetation within the application area is not part of a remnant of vegetation, nor forms part of a larger remnant. Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.</p>	Not likely to be at variance	No
<p><u>Principle (h):</u> “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.”</p> <p><u>Assessment:</u></p> <p>There are no conservation areas in the vicinity of the application area. The nearest conservation area is the Hill River Reserve which is located approximately 1.2 kilometres north of the application area (GIS Database).</p> <p>The proposed clearing is unlikely to impact on the environmental values of any conservation area.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> “Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</p> <p><u>Assessment:</u></p> <p>A small portion (0.009 hectares) of the application area intersects a wetland (GIS Database). Umwelt (2021) recorded <i>Melaleuca raphiophylla</i> and <i>Melaleuca preissiana</i> over native sedges and rushes growing in association with this wetland. Given that the proposed clearing of riparian vegetation is very small, it is unlikely to adversely impact vegetation growing in association with this wetland.</p>	May be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<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 soils within the application area have been mapped as predominately yellow deep sandy soils, within an area that has been highly disturbed (DPIRD, 2022). The proposed clearing may be at risk of wind erosion when vegetation cover is removed (GIS Database).</p> <p>The applicant advised that protection measures will be employed during the proposed activities to minimise impacts beyond the application area. These include:</p> <ul style="list-style-type: none"> • Dust suppression; • Windrow in high risk area; and • Post disturbance rehabilitation to pasture and equivalent areas of vegetation to that cleared (Tronox, 2022). <p><u>Condition:</u></p> <p>Potential land degradation impacts may be minimised by the implementation of a staged clearing condition.</p>	May be at variance	No
<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>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). The permit area is located within a large tract of uncleared vegetation and the proposed clearing of 1.47 hectares has a low probability of leading to salinity developing within or outside the application area (DPIRD, 2022).</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <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 mapped soils and in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>Given no permanent watercourses or wetlands are recorded within the application area, the proposed clearing is unlikely to contribute to waterlogging.</p>	Not likely to be at variance	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. Biological survey information excerpts / photographs of the vegetation / DMIRS site inspection report

Photos from the flora and vegetation survey undertaken by Umwelt on 28 October 2021 (Umwelt, 2021).



Photo 1: Stockpile 1.



Photo 2: Stockpile 2.



Photo 3: Stockpile 3.



Photo 4: Stockpile 4.



Photo 5: Stockpile 4.



Photo 6: Stockpile 5.



Photo 7: Stockpile 6.



Photo 8: Stockpile 7.



Photo 10: Stockpile 9.

Appendix G. Sources of information

G.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)
- Aboriginal Heritage Places (DPLH-001)
- Bush Forever (Regional Scheme) (DPLH-022)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)

- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Black Cockatoo BC Roosts
- Black Cockatoo BC Feeding SCP
- Black Cockatoo Feeding JF
- Black Cockatoo Feeding Areas Buffered
- Black Cockatoo Carnabys Distribution
- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

G.2. References

- BOM (2022) Bureau of Meteorology Website - Climate Statistics for Australian Locations, Summary Statistics Jurien Bay. <http://www.bom.gov.au/> (Accessed 11 May 2022).
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- 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.
- Tronox (2022) Re: Native Vegetation Clearing Permit: Tronox Jurien Mineral sands stockpile recovery Project: M70/435.
- Threatened Species Scientific Committee (TSSC) (2016) Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain Ecological Community. Canberra: Department of the Environment and Energy. Available: <http://www.environment.gov.au/biodiversity/threatened/>

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
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)
DAWE	Department of Agriculture, Water and the Environment, 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 DAWE)
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.