Department of Energy, Mines, Industry Regulation and Safety

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	6176/5
Permit type:	Purpose Permit
Applicant name:	Westdeen Holdings Pty Ltd
Application received:	24 June 2024
Application area:	13.52 hectares
Purpose of clearing:	Gypsum Mining
Method of clearing:	Mechanical Removal
Tenure:	Mining Leases 70/171, 70/172, 70/173, 70/264, 70/1078
	Miscellaneous Licence 70/195
Location (LGA area):	Shire of Wyalkatchem
Colloquial name:	Cowcowing Lakes Project

1.2. Description of clearing activities

Westdeen Holdings Pty Ltd proposes to clear up to 13.52 hectares of native vegetation within a boundary of approximately 62.9 hectares, for the purpose of gypsum mining (Westdeen Holdings, 2024). The project is located approximately 18 kilometres north of Wyalkatchem, in the Shire of Wyalkatchem (GIS Database).

Clearing permit CPS 6176/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 11 September 2014 and was valid from 4 October 2014 to 4 October 2019. The permit authorised the clearing of up to 6.97 hectares of native vegetation within a boundary of approximately 11.76 hectares, for the purpose of gypsum mining.

CPS 6176/2 was granted on 26 September 2019, amending the permit to extend the permit duration by five years to 3 October 2024.

CPS 6176/3 was granted on 6 February 2020, amending the permit to increase the area of clearing authorised to 13.52 hectares, increase the permit boundary to 61.98 hectares and adding additional tenure.

Amendment application CPS 6176/4 was withdrawn by Westdeen Holdings Pty Ltd on 15 September 2023. This amendment application proposed to extend the permit duration by an additional five years and to extend the clearing boundary.

On 24 June 2024, the Permit Holder applied to amend CPS 6176/3 to extend the permit duration by an additional five years and to increase the permit boundary by one hectare (Westdeen Holdings, 2024). Approximately 6.31 hectares of the approved 13.52 hectares of native vegetation has been cleared under this permit (Westdeen Holdings, 2023).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	3 September 2024
Decision area:	13.52 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with sections 51KA(1) and 510 of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) 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), supporting information provided by the applicant including the results of a flora and vegetation survey (Ecoscape 2014a; 2014b**Error! Reference source not found.**), 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 has not changed since the assessment for CPS 6089/3. After consideration of the available information, the Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to the environmental values. The Delegated Officer decided to grant the amended clearing permit with the existing permit conditions with the exception of the additional condition requiring the Permit Holder to undertake slow directional clearing.

1.5. Site map

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

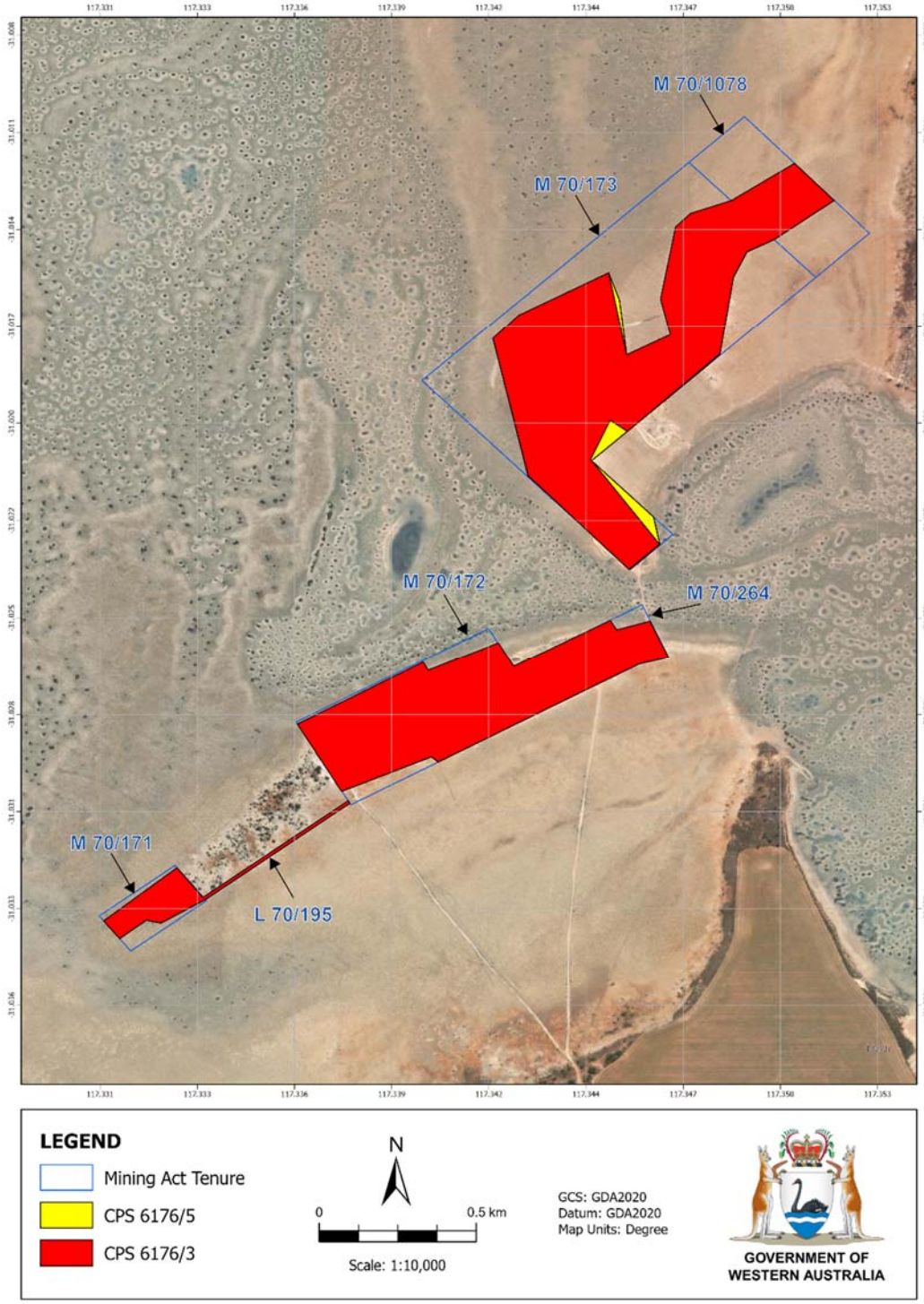

Figure 1. Map of the application area. The red area indicates the current CPS 6176/3 area within which conditional authorised clearing can occur under the granted clearing permit. The yellow area indicates the proposed CPS 6176/5 additional areas.

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 include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Westdeen Holdings (Aglime, 2020) have outlined they maintain the following internal databases, and avoidance and mitigation measures:

- ensure less plants than permitted to be disturbed;
- no fuel, oil or grease will be stored on site;
- site specific training will be appointed for all personnel attending the site;
- ensure all tracks cause minimal disturbance to the vegetated plains; and
- allow *Frankenia conferta* to recolonise stockpiles of kopi that will not be reused for future sale.

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

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 6176/3 and 6176/1.

The environmental values of the application area are well understood and are described in the previous version of the decision report. The previous assessment of the clearing did not identify any significant environmental impacts from the clearing of 13.52 hectares.

No Threatened Ecological Communities or Priority Ecological Communities have been recorded within the application area (GIS Database). Seven Priority flora species and four Threatened flora species have been recorded within 10 kilometres of the application area (GIS Database). One of these Threatened flora species, *Frankenia conferta* (Vulnerable), has been recorded within the application area (Ecoscape, 2014a; 2014b). Predicted *Frankenia conferta* habitat was mapped, using the recorded locations as a guide to identifying habitat areas from aerial imagery, or as interpreted during the field (Ecoscape 2014b). Point radius counts were converted into *Frankenia conferta* density classes which were used to calculate population densities using proportion of habitat (Ecoscape, 2014b). The disturbance of approximately 39,100 individuals of *Frankenia conferta* (approximately 0.39% of the total estimated population) was previously assessed under CPS 6176/3. Of the additional one hectare, 0.06 hectares is mapped as suitable habitat which is estimated as having 200 individuals of this species per hectare (Ecoscape, 2014b). The additional hectare could therefore potentially impact approximately an additional 12 individuals which is not considered significant considered the local population is estimated at over 10 million individuals (Ecoscape, 2014b; Westdeen Holdings, 2019).

One fauna habitat is present within the application area, which could be described as ‘sparsely vegetated salt lake’ (GIS Database). Ten conservation significant fauna species have been recorded within 20 kilometres of the application area (GIS Database). However, the application area is highly unlikely to represent important habitat for either species, based on the absence of suitable nesting trees and microhabitat suitable for shelter (Commonwealth of Australia 2008; GIS Database).

The proposed clearing occurs within Cowcowing lakes, which is a large saline lake system that experiences seasonal inundation. The lake is rarely submerged, and instead experiences ‘damp soil’ conditions following rainfall (DEC, 2008b). Any surface water which does occur is expected to have naturally moderate to high levels of salinity and sedimentation. Therefore, the proposed clearing is not likely to impact on any surface water values on a local or regional scale.

Given that the application area is located within a lake, the proposed clearing will impact vegetation growing in association with this watercourse. However, as a majority of vegetation within the Cowcowing lakes is undisturbed, the proposed clearing is not expected to have a significant impact on the representation of riparian vegetation or the hydrogeological values of the Cowcowing lakes.

There are no conservation areas within or in close proximity to the application area (GIS Database). The nearest conservation area is the Dukin Nature Reserve (R 16867), located approximately 7.5 kilometres north-east of the application area (GIS Database). The proposed amendment is unlikely to have any impact on any conservation areas.

Based on the current environmental information, the amendment to extend the permit duration and increase the permit boundary by one hectare is unlikely to change the environmental impacts of the proposed clearing. The conditions currently imposed on clearing permit CPS 6176/3 are considered adequate to manage the impacts of the clearing with the addition ofimplementing slow directional clearing.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 24 June 2024 by the Department of Energy, 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, 2024). 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, 2024). 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 noted that the proposed clearing may impact on Endangered flora species *Frankenia conferta*, which are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of Climate Change, Environment and Water for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Climate Change, Energy, the Environment and Water and the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

Other relevant authorisations required for the proposed land use include:

- 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 application area occurs within the Merredin or AW1 - Ancient Drainage sub-region of the Avon Wheatbelt Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This bioregion is characterised by residual lateritic uplands and derived sandplains which support proteaceous scrub-heaths rich in endemics, and Quaternary alluvials and eluvials which support mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands (CALM, 2002). Salt lake chains occur as remnants of ancient drainage systems that only function during years with above-average rainfall (CALM, 2002).
Ecological linkage	Due to the close proximity of the proposed clearing to the nature reserve, the application area may form part of an ecological linkage between Dukin Nature Reserve and other remnant vegetation in the local area (GIS Database).
Conservation areas	The application area does not lie within any conservation areas (GIS Database). The nearest conservation area is the Dukin Nature Reserve (R 16867), located approximately 7.5 kilometres north-east of the application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation associations: • 125: Bare areas; salt lakes; and • 1061: Mosaic: Medium sparse woodland; salmon gum & yorrell / Succulent steppe; saltbush & samphire (GIS Database). A targeted flora survey was conducted over the application area by Ecoscape during October and December 2014 (Ecoscape, 2014a; 2014b). The vegetation of the playa lake bed consisted of sparse samphire shrubs, the footslopes (slightly elevated areas of the lake bed adjacent to the mounds) and lower slopes of the mounds had sparse samphire, *Disphyma crassifolium* and *Frankenia* spp. shrubs, whilst the mound tops were vegetated largely by herbaceous species of mixed native perennial and introduced annual grasses, native and introduced annual herbs, and rare shrubs (*Lycium australe* and some chenopods) (Ecoscape, 2014a; 2014b).
Vegetation condition	Aerial imagery indicates the vegetation within the proposed clearing area is in 'Excellent' to 'Degraded' (Keighery, 1994) condition, described as • Excellent: Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. • 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. The full Keighery (1994) condition rating scale is provided in Appendix C.
Climate and landform	The climate of the Merredin subregion is characterised as Mediterranean with a hot dry summer and cold wet winter (Aglime, 2020). The area experiences an average rainfall of 325.2 millimetres (BoM, 2024).
Soil description and Land degradation risk	The soil is mapped as: • 258Wa: Wallambin system - Salt lake chains, in the central Zone of Ancient Drainage, with salt lake soil and calcareous loamy earth. Mallee, Morrel woodland and saltbush-bluebush-samphire flats (DPRID, 2024) The Wallambin system is an alluvial plain characterised by hydro-aeolian processes where most of this system has a moderate to very high risk of water logging/ inundation and wind erosion. (Griffin & Goulding, 2004).
Waterbodies	The proposed clearing is situated on the salt lake floor of Cowcowing lakes, which is an ephemeral wetland (GIS Database). However, inundation events are likely to take the form of small 'pools' following rainfall rather than large-scale inundation of the lake system.
Hydrogeography	The application area does not occur within a Public Drinking Water Source Area (PDWSA) (GIS Database). The proposed clearing occurs within Cowcowing lakes, which is a large saline lake system that experiences seasonal inundation. The lake is rarely submerged, and instead experiences 'damp soil' conditions following rainfall (DEC, 2008). Any surface water which does occur is expected to have naturally moderate to high levels of salinity and sedimentation
Flora	There are records of 11 conservation significant flora species within the local area (20 kilometre radius) (GIS database). One conservation significant flora species, Threatened flora *Frankenia conferta*, has been recorded within the application area (Ecoscape, 2014a; 2014b).
Ecological communities	There are no known Threatened Ecological Communities (TECs) located within the application (GIS Database).

Characteristic	Details
Fauna	There are records of ten conservation significant fauna species within 20 kilometres of the application area (GIS Database).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current extent in all DBCA Managed Land (proportion of pre-European extent) (%)
IBRA Bioregion Avon Wheatbelt	9,517,109.95	1,761,187.42	18.51	174,980.68	1.84
IBRA Subregion Merredin	6,524,180.55	1,367,565.48	20.96	126,804.59	1.94
Local Government Shire of Wyalkatchem	159,508.71	13,123.96	8.23	1,309.59	0.82
Beard vegetation associations - State					
Veg Assoc No. 125	3,485,785.49	3,146,487.22	90.27	265,740.10	7.62
Veg Assoc No. 1061	42,747.48	20,355.18	47.62	5,321.69	12.45
Beard vegetation associations - Bioregion					
Veg Assoc No. 125	167,448.18	16,289.27	9.73	3,309.89	1.98
Veg Assoc No. 1061	42,747.48	20,355.18	47.62	5,321.69	12.45
Beard vegetation associations - subregion					
Veg Assoc No. 125	148,564.13	13,642.55	9.18	1,748.89	1.18
Veg Assoc No. 1061	42,747.48	20,355.18	47.62	5,321.69	12.45

Government of Western Australia (2019)

A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix D.1), and biological survey information (Ecoscape 2014a; 2014b; Western Australian Herbarium, 1998-), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Distance of closest record to application area (km)	Number of known records (total)	Suitable habitat features? [Y/N]
Cryptandra subtilis	P3	<10	10	N
Eremophila resinosa	EN	<6	31	N
Eucalyptus erythronema subsp. *inornata*	P3	<10	45	N
Fitzwillia axilliflora	P2	<1	20	Y
Frankenia conferta	VU	<0	28	Y
Frankenia glomerata	P4	<10	69	Y
Grammosolen odgersii subsp. *occidentalis*	CR	<10	16	Y
Grevillea haplantha subsp. *recedens*	P3	<10	14	N
Lepidium genistoides	P3	<10	23	Y
Pityrodia scabra subsp. *scabra*	CR	<8	9	N
Verticordia mitchelliana subsp. *mitchelliana*	P3	<9	21	N

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.4. Fauna analysis table

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
Aganippe castellum	tree-stem trapdoor spider	P4	<16	Y
Zanda latirostris	Carnaby's cockatoo	EN	<18	N
Egernia stokesii badia	western spiny-tailed skink	VU	<3	N
Falco peregrinus	Peregrine falcon	OS	<4	N
Idiosoma nigrum	shield-backed trapdoor spider	EN	<18	N
Leipoa ocellata	malleefowl	VU	<17	N
Macrotis lagotis	bilby, dalgyte, ninu	VU	<14	N
Oxyura australis	Blue-billed duck	P4	<4	N
Parartemia contracta	a brine shrimp (Wheatbelt)	P1	<10	Y
Teyl sp. (BY Main 1953/2683, 1984/13)	Minnivale trapdoor spider	CR	<19	N

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: There is one habitat type within the application area, which may be described as 'sparsely vegetated salt lake' (GIS Database). Gypsum dunes, such as those that may occur within the application area, provide habitat for several gypsum-specialist Threatened and Priority flora (Ecoscape, 2014b; GIS Database). Following floristic analysis, vegetation composition within Cowcowing Lakes was not shown to be significantly different from other lake systems in the area (Rick, 2011).	Not likely to be at variance (as per CPS 6176/3)	No
Principle (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."* Assessment: No fauna surveys have been conducted over the application area. According to available imagery, there is one fauna habitat within the application area, which could be described as 'sparsely vegetated salt lake' (GIS Database). Ten conservation significant fauna species have been recorded within 20 kilometres of the application area (GIS Database). However, the application area is highly unlikely to represent important habitat for either species, based on the absence of suitable nesting trees and microhabitat suitable for shelter (Commonwealth of Australia 2008; GIS Database).	Not likely to be at variance (as per CPS 6176/3)	No .
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared contains several individuals of Threatened flora species, *Frankenia conferta* (Ecoscape, 2014a; 2014b). The disturbance of approximately 39,100 individuals of *F. conferta* (approximately 0.39% of the total estimated population) was previously assessed under CPS 6176/3. The proposed amendment (increasing the permit boundary by one hectare) would result in a potential additional impact to approximately 12 individuals which is not considered significant considered the local population is estimated at over 10 million individuals (Ecoscape, 2014b; Westdeen Holdings, 2019).	May be at variance (as per CPS 6176/3)	Yes Refer to Section 3.2, above.

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (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."* Assessment: There are no known Threatened Ecological Communities (TECs) located within the application area (Ecoscape 2014b; GIS Database).	Not likely to be at variance (as per CPS 6176/3)	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (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."* Assessment: The vegetation of the application area is mapped as Beard vegetation associations 125 and 1061 (GIS Database). Approximately 90.27% and 9.73% of Beard vegetation association 125 remains at a state and bioregional level, respectively (Government of Western Australia, 2013). Approximately 47.62% of Beard vegetation association 1061 remains at both a state and bioregional level (Government of Western Australia, 2013). The percentage of remaining vegetation association 125 at a bioregional level is below the 30% threshold recommended in the National Objectives Targets for Biodiversity Conservation, due to the extensive clearing which has occurred within the Avon Wheatbelt bioregion (Commonwealth of Australia, 2001). However, according to both photographs of the application area provided by the proponent and aerial imagery, vegetation within the application area appears to be comprised of small to medium shrubs (mostly samphire and saltbush), with few trees, that provide a moderate to low level of ground cover (GIS Database). Therefore, vegetation within the application area is more likely to represent Beard vegetation association 1061, which is above the 30% threshold.	Not likely to be at variance (as per CPS 6176/3)	No
Principle (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."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas (GIS Database).	Not likely to be at variance (as per CPS 6176/3)	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given that the application area is located within a lake, the proposed clearing will impact vegetation growing in association with this watercourse. However, as a majority of vegetation within the Cowcowing lakes is undisturbed, the proposed clearing is not expected to have a significant impact on the representation of riparian vegetation or the hydrogeological values of the Cowcowing lakes.	At variance (as per CPS 6176/3)	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The application area is mapped within the Wallambin Land System where there is potential for wind erosion to occur following the removal of vegetation (Griffin & Goulding, 2004; GIS Database). Land degradation caused by erosion may be minimised by continuing the implementation of the staged clearing condition.	May be at variance (as per CPS 6176/3)	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (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."* Assessment: The application area does not occur within a Public Drinking Water Source Area (PDWSA) (GIS Database). The proposed clearing occurs within Cowcowing lakes, which is a large saline lake system that experiences seasonal inundation. The lake is rarely submerged, and instead experiences 'damp soil' conditions following rainfall (DEC, 2008b). Any surface water which does occur is expected to have naturally moderate to high levels of salinity and sedimentation. Therefore, the proposed clearing is not likely to impact on any surface water values on a local or regional scale.	Not likely to be at variance (as per CPS 6176/3)	No
Principle (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."* Assessment: The application area is located on the lake floor of Cowcowing lakes (GIS Database). Cowcowing lakes experience a seasonal hydroperiod, with small-scale and infrequent inundation (DEC, 2008; GIS Database). The removal of 13.52 hectares of native vegetation within Cowcowing lakes, which cover up to 15,000 hectares (GIS Database), is unlikely to increase the incidence or intensity of inundation events.	Not likely to be at variance (as per CPS 6176/3)	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)
- Contours (DPIRD-073)
- Clearing Regulations – Schedule One Areas (DWER-057)

- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- 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
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Remnant Vegetation, All Areas
    - Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- 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

Aglime (2020) Westdeen Holdings Pty Ltd Mining Proposal. Unpublished report prepared for Westdeem Holdings Pty Ltd by Aglime of Australia, March 2020.

Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Weather Station (Wyalkatchem: 010140). Bureau of Meteorology. https://reg.bom.gov.au/climate/data/ (Accessed 16 August 2024).

Conservation and Land Management (CALM) (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Commonwealth of Australia (2008) Species Profile and Threats Database. Department of Climate Change, Energy, the Environment and Water, Australia. https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl (Accessed 16 August 2024).

DEC (2008) Evaluating the conservation significance of basin and granite outcrop wetlands within the Avon Natural Resource Management region: Stage One Assessment Method, Department of Environment and Conservation, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) (2020) Advice received in relation to Clearing Permit Application CPS 6176/3. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, Western Australia, January 2020.

Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf

Department of Planning, Lands and Heritage (DPLH) (2024) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS (Accessed 16 August 2024).

Department of Primary Industries and Regional Development (DPIRD) (2024) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. https://dpird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f (Accessed 16 August 2024).

Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf

Ecoscape (2014a) Cowcowing Threatened Flora Survey. Report prepared for Aglime of Australia by Ecoscape (Australia) Pty Ltd, November 2014.

Ecoscape (2014b) Cowcowing Threatened Flora Survey: Aglime Tenements and Regional Surveys. Report prepared for Aglime of Australia by Ecoscape (Australia) Pty Ltd, December 2014.

Environmental Protection Authority (EPA) (2016a) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf

Environmental Protection Authority (EPA) (2016b) Technical Guidance – Terrestrial Fauna Surveys. https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf

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

Griffin, P & Goulding, P (2004) Soil-landscape mapping for the Butine-Marchagee Recovery Catchment. Land Resource Assessment and Monitoring. Department of Conservation and Land Management, Western Australia.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Rick (2011) Survey and Analysis of Plant Communities Growing on Gypsum in the Western Australian Wheatbelt: Botanical consultants report for the Wheatbelt NRM Region and the Department of Environment and Conservation Western Australia, Newdegate.

Westdeen Holdings (2019) Clearing Application Support Document for Cowcowing Lakes. Report prepared by Westdeen Holdings Pty Ltd, November 2019.

Westdeen Holdings (2023) Annual Clearing Report CPS 6176/3, M70/173, M70/1078, Cowcowing, South West Mineral Field For the period of 1 July 2022 to 30 June 2023. Unpublished report prepared by Westdeen Holdings Pty Ltd, July 2023.

Westdeen Holdings (2024) Clearing permit application form, CPS 6176/5, received 24 June 2024.

Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. https://florabase.dpaw.wa.gov.au/ (Accessed 16 August 2024).

4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* 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)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
DMP	Department of Mines and Petroleum, Western Australia (now DEMIRS)
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	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (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:

{DBCA (2023) 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 the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

Threatened flora is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species.

The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline Number 1 and Ministerial Guideline Number 2 that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria, and is based on the national distribution of the species.

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.

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.

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.

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).

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.

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).

Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) or 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.

CD **Species of special conservation interest (conservation dependent fauna)**
Species of special conservation need that are 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).

Currently only fauna are listed as species of special conservation interest.

OS **Other specially protected species**
Species 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).

Currently only fauna are listed as species otherwise in need of special protection.

P **Priority species:**

Priority is not a listing category under the BC Act. The Priority Flora and Fauna lists are maintained by the department and are published on the department's website.

All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land).

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey 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 prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

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

Assessment of priority status 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 – known from few locations, none on conservation lands**
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, for example, 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 for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species – known from few locations, some on conservation lands**
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, for example, 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 for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species – known from several locations**
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. These species need 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 a conservation dependent specially protected species.
(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.
(d) Other species in need of monitoring.

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.