



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9253/1
File Number: DWERVT7735
Duration of Permit: From 10 September 2021 to 10 September 2023

PERMIT HOLDER

Department of Education

LAND ON WHICH CLEARING IS TO BE DONE

Lot 580 on Deposited Plan 71883 (Crown Reserve 26126), Lesmurdie

AUTHORISED ACTIVITY

The permit holder must not clear more than 1.1 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. **Avoid, minimise, and reduce impacts and extent of clearing**

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

2. **Weed and dieback management**

When undertaking any clearing authorized under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known dieback or weed-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Directional clearing

The permit holder must:

- (a) conduct clearing authorised under this permit from east to west towards adjacent native vegetation; and
- (b) allow a reasonable time for fauna present within the area being cleared to move into adjacent native vegetation ahead of the clearing activity.

4. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none">(a) the species composition, structure, and density of the cleared area;(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;(c) the date that the area was cleared;(d) the size of the area cleared (in hectares); and(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with <i>condition 1</i>; and(f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with <i>condition 2</i>.(g) Directional clearing actions undertaken in accordance with <i>condition 3</i>.

5. Reporting

The permit holder must provide to the *CEO* the records required under condition 4 of this permit when requested by the *CEO*.

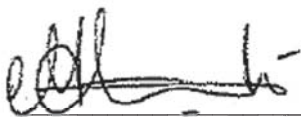
DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

18 August 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below

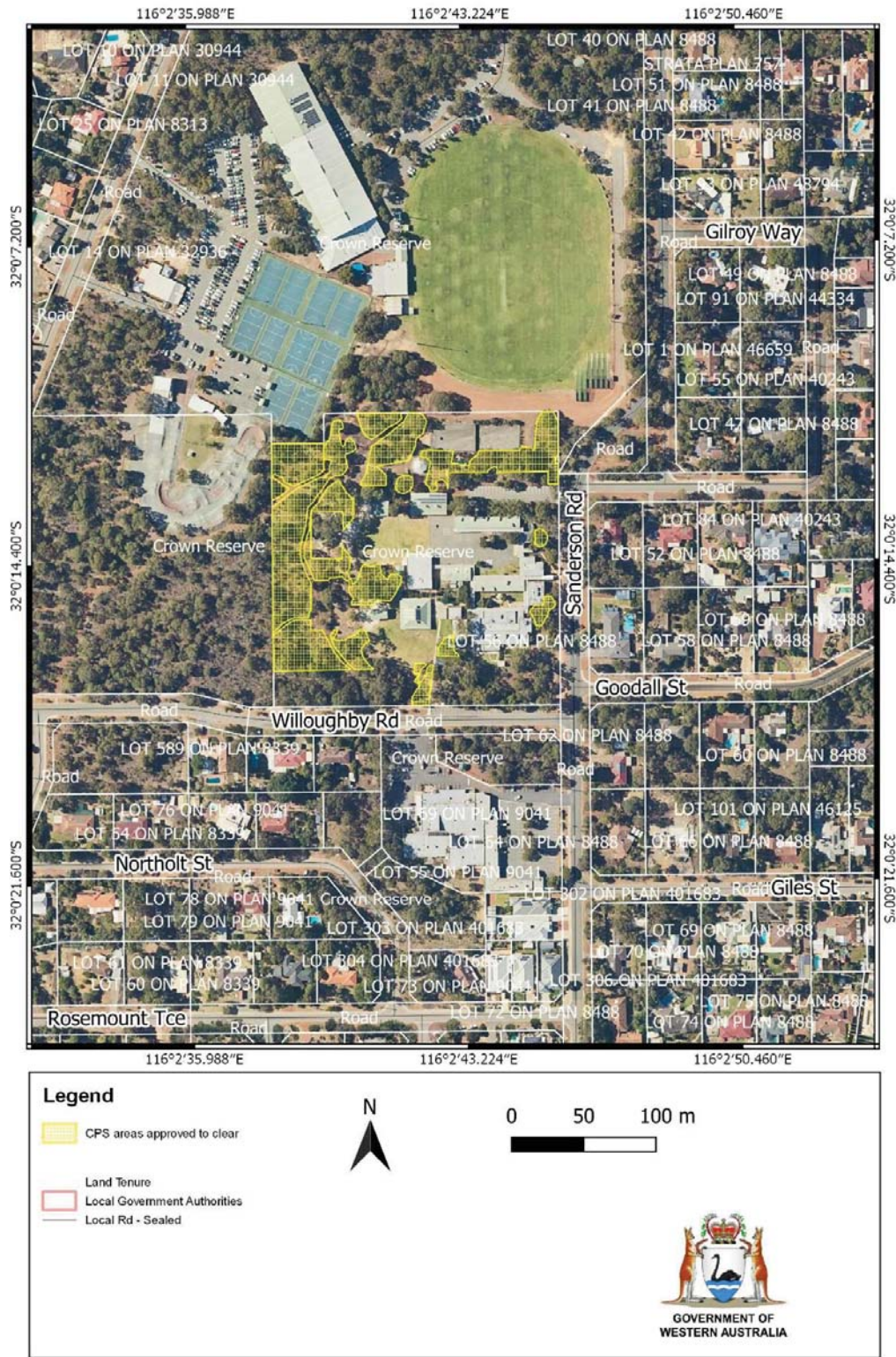


Figure 1: Map of the boundary of the area authorised to clear under this permit.



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9253/1
Permit type:	Area permit
Applicant name:	Department of Education
Application received:	31 March 2021
Application area:	1.1 hectares of native vegetation
Purpose of clearing:	Development of recreation areas and for fire hazard reduction, associated with upgrades to Lesmurdie Primary School
Method of clearing:	Mechanical
Property:	Lot 580 on Deposited Plan 71883, Lesmurdie
Location (LGA area/s):	City of Kalamunda
Localities (suburb/s):	Lesmurdie

1.2. Description of clearing activities

The vegetation proposed to be cleared comprises 1.1 hectares of remnant native vegetation, within and surrounding the Lesmurdie Primary School site. The application area is adjacent to a 14 hectares portion of Mundy Regional Park, which incorporates Ray Owen Reserve and the Ray Owen Sports Centre.

The applicant has advised that the proposed clearing relates to upgrades to the Lesmurdie Primary School as part of the WA Recovery Plan to improve public school infrastructure in the state (Natural Area, 2021a).

The applicant notes that that the upgrades are required for the following reasons (Natural Area, 2021a):

“The current school infrastructure does not meet the requirements of the school or its students to deliver high quality education, with much of the infrastructure being in a deteriorated condition. The current size of the school is also not adequate for future growth in the local area. The current capacity at the school is 260 students, whilst 356 enrolments were received in 2020, with this expected to increase steadily to 370 students by 2028”.

The proposed clearing incorporates new buildings, car parks, recreation areas, and areas for fire hazard reduction to maintain a safe Bushfire Attack Level (BAL) rating. This clearing permit application incorporates the proposed clearing for recreation areas and fire hazard reduction, given that clearing for the buildings and car park are exempt from the requirement for a clearing permit under Regulation 5, Item 1 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

1.3. Decision on application

Decision:	Granted
Decision date:	18 August 2021
Decision area:	1.1 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This application was accepted, assessed, and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no public submissions were received.

In undertaking their assessment and in accordance with section 51O of the EP Act, the Delegated Officer considered the site characteristics (see Appendix A), the Clearing Principles in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and other matters (see Section 3), the findings of a biological survey (see Appendix D), as well as relevant datasets available at the time of the assessment (see Appendix E).

The Delegated Officer determined that the proposed clearing of 1.1 hectares of native vegetation within and around Lesmurdie Primary School, is unlikely to result in significant residual environmental impacts.

However, the proposed clearing may result in the following:

- impacts to fauna through mechanical clearing activities should they occur on site at the time of clearing
- the potential introduction and spread of weeds into adjacent native vegetation within a portion of Mundy Regional Park

After considering the available information, the Delegated Officer determined that the following requirements will be conditioned on the clearing permit to manage and address the potential impacts of clearing:

- avoid and minimise measures to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds
- undertake slow, progressive one directional clearing (from east to west) to allow fauna to move into adjacent habitat ahead of the clearing activity

Given the above management condition requirements, the Delegated Officer determined that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

1.5. Site map



Figure 1

Map of the application area. The area cross-hatched yellow indicates the area authorised to clear under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Clearing Regulations.

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer 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)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

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 2019)
- 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

The applicant has advised that consideration of minimising impacts to high value native vegetation was undertaken through the planning process.

The applicant notes that the planning avoidance measures include 12 (of 23) habitat trees (trees with a diameter at breast height of 500 millimetres or greater) located on site. The applicant notes that the proposed public open space to the south-west, and nature strip in the southern carpark have been designed to avoid habitat trees (Natural Area Consulting Management Services (Natural Area), 2021b). The applicant has also avoided all trees containing hollows of a suitable size for black cockatoo breeding (Natural Area, 2021b).

The applicant notes that there may be potential to retain further trees within the north-eastern portion of the site, however this would depend on the outcome of the final City of Kalamunda oval design.

The applicant notes that the total clearing extent has been minimised as much as possible, while allowing the required school upgrades and BAL rating to be achieved.

3.2. Assessment of impacts on environmental values

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

The assessment identified that the clearing presents a risk to flora and fauna values, and that these require further consideration. The consideration of impacts to these values, 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. Environmental value: Biodiversity values (flora) – Clearing Principles (a) and (c)

Assessment

The application area was subject to a flora and vegetation survey (the Flora Survey) undertaken by Natural Area on 24 September 2020. The Flora Survey covered a larger area of 3.21 hectares encompassing the application area. Further information on survey methodology is included within Appendix D.

The Flora Survey identified one vegetation type within the application area, described as woodland of *Corymbia calophylla* (marri) and *Eucalyptus marginata* (jarrah), with a middle storey of *Banksia sessilis* var. *sessilis*, *Xanthorrhoea preissii* and *Xanthorrhoea brunonis* over an understorey of mixed native herbs and sedges (Natural Area, 2021b). This is consistent with the broad scale vegetation mapping over the application area, Dwellingup D2 vegetation complex, described as open forest of jarrah and marri on lateritic uplands in subhumid and semiarid zones

(Mattiske and Havel, 1998). This complex retains approximately 82.5 per cent of its pre-European extent (Government of Western Australia 2019).

The condition of the vegetation within the application area ranges from excellent to completely degraded (Keighery, 1994) with most in a good to completely degraded (Keighery, 1994) condition (Natural Area, 2021b).

The vegetation recorded within the application area is not considered representative of any known threatened or priority ecological communities.

The Flora Survey identified 111 flora species from 31 families, which included 79 native flora species and 32 weed species (Natural Area, 2021b). Similar woodland remnants within the Dwellingup D2 complex can include over 350 flora species (DEC 2008). Therefore, the application area is unlikely to represent a high level of diversity within this vegetation type.

The Flora Survey incorporated a desktop assessment which identified that up to 10 threatened and 16 priority flora species may occur within the larger survey area (Natural Area, 2021b). This presumption was based on the suitability of habitat and proximity to known records (see Appendix A). The Flora Survey included a targeted search for these species and no threatened or priority flora were identified (Natural Area, 2021b).

The former Department of Parks and Wildlife (Parks and Wildlife) (now the Department of Biodiversity Conservation and Attractions (DBCA)) provided advice in relation to a nearby clearing permit application within the adjacent portion of Mundy Regional Park (reference CPS 9072/1). CPS 9072/1 applied to clear 1.211 hectares of native vegetation comparable with the current application area. DBCA advised that "The department does not have any records of declared rare flora or priority flora at this site. Given the condition and type of vegetation, it is assumed that there is a low likelihood of rare flora on the site, thus the findings of the flora survey are supported" (Parks and Wildlife, 2020).

Noting the above, the relatively small area proposed for clearing in and around the existing school site, and the largely good to completely degraded condition (Keighery, 1994) of the vegetation under application, the proposed clearing is not likely to impact on threatened or priority flora species.

The Flora Survey identified 32 weed species, and the proposed clearing will increase the risk of weeds spreading into adjacent areas of native vegetation, including into the adjacent portion of Mundy Regional Park.

Conclusion

Based on the above assessment the application area is unlikely to contain high biodiversity values. However, the proposed clearing may increase the risk of weeds and dieback spreading into adjacent native vegetation, noting that numerous non-native species were recorded in the Flora Survey.

Outcome

To address the potential spread of weeds and dieback into adjacent native vegetation, the clearing permit contains a condition that requires the applicant to undertake weed and dieback hygiene management measures.

3.2.2. Environmental value: Biological values (fauna) – Clearing Principles (a) and (b)

Assessment

Background

According to available datasets there are records of 25 species of conservation listed fauna with the local area (10 kilometre radius).

Of these, the application area may contain suitable habitat for up to 10 species. This presumption is based on the suitability of habitat for these species within the application area:

- Carnaby's cockatoo (*Calyptorhynchus latirostris*) (endangered)
- Baudin's cockatoo (*Calyptorhynchus baudinii*) (endangered)
- forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (vulnerable)
- chuditch (*Dasyurus geoffroii*) (vulnerable)
- south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) (conservation dependent)
- southern death adder (*Acanthophis antarcticus*) (Priority (P) 3)
- Dell's skink (*Ctenotus delli*) (P4)
- quenda (*Isoodon obesulus* subsp. *fusciventer*) (P4).

- western brush wallaby (*Notamacropus Irma*) (P4)
- western rosella (*Platycercus icterotis xanthogenys*) (P4)

The application area was subject to a Fauna Survey and Black Cockatoo Habitat Assessment (the Fauna Survey) undertaken by Natural Area (2021b). The Fauna Survey identified evidence of forest red-tailed black cockatoo and quenda using the application area (Natural Area, 2021b).

Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo (Black cockatoos)

The application area is within the known range of all three black cockatoo species and there are numerous records of each species within the local area.

The closest known breeding sites for Carnaby's cockatoo and forest red-tailed black cockatoo are located around 9.3 and 23.2 kilometres from the application area respectively. The closest known Baudin's cockatoo breeding site is unknown, given the lack of available data relating to confirmed breeding records for this species.

Black cockatoos commonly breed in several different tree species, including jarrah and marri, which are used by all three species (Commonwealth of Australia, 2012). Suitable breeding habitat for black cockatoos includes trees which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species a suitable DBH is 500 millimetres (Commonwealth of Australia, 2012).

The Fauna Survey identified 34 potential black cockatoo breeding trees (jarrah and marri) within the larger survey area (Natural Area, 2021b). Five of these trees had hollows of a suitable size to support black cockatoo breeding, although no evidence of breeding was identified (Natural Area, 2021b). Of the 34 potential breeding trees, 23 occur within Lot 580 (subject to this application). The applicant has avoided 12 of these trees, including all trees with suitable breeding hollows, therefore, the proposed clearing will impact on 11 potential breeding trees, none of which contain suitable breeding hollows (Natural Area, 2021b).

There are 41 confirmed black cockatoo roost sites within the local area, 31 of these are within six kilometres of the application area and the closest is around 1.5 kilometres north-east. Black cockatoo roost sites are usually located in the tallest trees within the landscape, and in proximity to food and water resources (Commonwealth of Australia, 2017). The application area contains several large trees that may provide roost habitat. However, there are no records of roost sites within the bordering vegetation within Ray Owen Reserve (comprising a portion of Mundy Regional Park) (Parks and Wildlife, 2020), and the Fauna Survey did not identify any evidence of roosting (Natural Area, 2021b).

Carnaby's cockatoo forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea* and *Grevillea*), as well as *Allocasuarina* and Eucalyptus species, *Corymbia calophylla* and a range of introduced species (Valentine and Stock, 2008). Baudin's cockatoo forage within Eucalypt woodlands and forest, and proteaceous woodland and heath. During the breeding season this species feeds primarily on marri (Commonwealth of Australia, 2012). Forest red-tailed black cockatoo forage within jarrah and marri woodlands and forest, and edges of karri forests, mostly feeding on seeds of marri and jarrah (Commonwealth of Australia, 2012). The application area comprises jarrah and marri woodland and therefore contains preferred foraging habitat for all three species.

The importance of foraging habitat increases when it occurs within foraging distance of nesting sites (12 kilometres), as it supports breeding effort (Parks and Wildlife, 2013). The closest known breeding site occurs around 9.3 kilometres from the application area (Carnaby's cockatoo). Food resources within the range of roost sites are also important to sustain populations of black cockatoos (Commonwealth of Australia, 2017). As discussed above, there are several roost sites within six kilometres of the application area. The Fauna Survey identified forest red-tailed black cockatoo foraging evidence within the application area (Natural Area, 2021b). Therefore, the application area may provide a foraging resource, particularly for forest red-tailed black cockatoos roosting with six kilometres, and Carnaby's cockatoos breeding within 12 kilometres.

However, the foraging habitat within the application area is not considered significant habitat for black cockatoos, based on the following:

- the local area comprises around 16,350 hectares of mapped black cockatoo foraging habitat (around 93 per cent of all remnant vegetation).
- around 70 percent of the above 16,350 hectares occurs within conservation areas and state forest, including Korung and Kalamunda National Park.
- the proposed clearing of 1.1 hectares comprises around 0.007 per cent of the mapped black cockatoo foraging habitat in the local area.

Quenda

Quenda prefers dense scrubby, often swampy, vegetation with dense cover up to one metre high. It also occurs in woodlands and may use less ideal habitat where this habitat occurs adjacent to the thicker, more desirable vegetation (Department of Environment and Conservation (DEC), 2012).

This species has previously been recorded around 350 metres from application area. The Fauna Survey identified quenda diggings adjacent to the application area (Natural Area, 2021b). Quenda are also known to be a common visitor to the school grounds (Natural Area, 2021b). The Fauna Survey notes that this species is likely a transient feeder within the site noting a lack of dense understorey to provide permanent habitat (Natural Area, 2021b).

Noting the lack of preferred dense riparian habitat within the application area and extent of potentially suitable habitat within the local area, including within Korung National Park which comprises around 6000 hectares and contains areas of higher quality riparian habitat, the proposed clearing is unlikely to impact on significant habitat for this species.

While the proposed clearing is not likely to impact on significant habitat for quenda, the species may be subject to individual harm should they be present at the time of clearing.

Other conservation significant fauna

The application area provides suitable habitat for:

- chuditch (closest known record one kilometre north-west)
- south-western brush-tailed phascogale (closest known record 550 metres north-east)
- southern death adder (closest known record 1.4 kilometres south)
- Dell's skink (closest known record 5.9 kilometres north)
- western brush wallaby (closest known record 1.4 kilometres south)
- western rosella (closest known record 6.7 kilometres east)

The Fauna Survey did not identify evidence of these species within the application area, and noting that trees with hollows are being avoided, the application area does not provide any specific high value habitat features for these species (Natural Area, 2021b).

The local area retains around 54.6 per cent vegetation cover (17,550 hectares), including vegetation within the Korung and Kalamunda National Parks, which contain around 6000 and 375 hectares respectively. These areas are likely to provide suitable habitat for the above species. Therefore, the proposed clearing 1.1 hectares of native vegetation within the existing school site is not likely to impact on significant habitat for these species.

Conclusion

The application area is unlikely to provide significant habitat for black cockatoos, noting the lack of current breeding habitat, absence of roosting signs, and extent of suitable foraging habitat proposed for impact relative to that mapped within the local area. The proposed clearing is also unlikely to impact on significant habitat for any other conservation listed fauna species.

However, the proposed clearing may result in fauna fatalities should terrestrial fauna occur within the application area at the time of clearing.

Outcome

To address the above impacts, the clearing permit contains a condition that requires the applicant to undertake slow one directional clearing (from east to west) to allow fauna to move into adjacent vegetation ahead of the clearing activity.

3.2.3. Environmental value: Conservation areas – Clearing Principle (h)

Assessment

The application area is adjacent to a 16.5 hectare portion of Mundy Regional Park, with this portion also known as Ray Owen Reserve. This majority of the Regional Park (comprising 751 hectares) is located further west.

Ray Owen Reserve has been previously impacted by recreational facilities including buildings, ovals and carparks with approximately 6.2 hectares of native vegetation remaining.

While the proposed clearing will not directly impact on the native vegetation within Mundy Regional Park, or on linkage values between this remnant and other conservation areas in the local area, it may indirectly impact on the values of this area through the spread of weeds and dieback. Weed and dieback management practices will help to mitigate this risk.

Conclusion

Based on the above assessment, the proposed clearing may impact on the environmental values of Mundy Regional Park through the spread of weeds and dieback.

Outcome

To address the potential spread of weeds and dieback into adjacent native vegetation within Mundy Regional Park, the clearing permit contains a condition that requires the applicant to undertake weed and dieback hygiene management measures.

3.3. Relevant planning instruments and other matters

The former Parks and Wildlife (now DBCA) provided advice in relation to a nearby clearing permit application within an adjacent portion of Mundy Regional Park (reference CPS 9072/1). CPS 9072/1 applied to clear 1.211 hectares of native vegetation comparable with the current application area. Parks and Wildlife advised that it had no specific objections to that application (Parks and Wildlife, 2020).

According to available databases, there are no Aboriginal Sites of Significance are located within the application area.

The City of Kalamunda provided comment on the application and advised the following (City of Kalamunda, 2021):

“The City is currently in receipt of a referral from the Department of Finance for a joint development assessment panel (JDAP) application. The application is for proposed major works on the subject site...The rebuild with allow the school to increase the capacity from 337 students to 370 students full time equivalent FTE.

Under the provisions of the Metropolitan Region Scheme the application requires determination by the Western Australian Planning Commission [WAPC]. Under delegation the General Manager, Statutory Planning and Asset Policy (SPAP), Department of Finance (DoF) is authorised to determine this application on the Commission's behalf.

The subject site is located within the office of bushfire risk management (OBRM) mapped area. The subject site has a determined bushfire attack level of BAL-FZ. In support of the application, a bushfire management plan (BMP) has been provided which states the site is able to achieve a BAL-29 with the installation of asset protection zones. The BMP also advises all applicable bushfire solutions for the four bushfire protection criteria have been met...

Whilst efforts should be made to retain native vegetation where possible, the City understands the need to clear vegetation in accordance with the submitted Bushfire Management Plan to achieve a BAL-29”.

The school upgrades are subject to Development Approval issued by JDAP on 30 June 2021. The Development Approval is subject to conditions which include the following:

- prior to the commencement of works, a Construction Management Plan shall be prepared in consultation with the City of Kalamunda and to the satisfaction of the WAPC. The requirements of the Construction Management Plan shall be observed at all times during the construction process.
- prior to the commencement of works, a Dust Management Plan shall be prepared in consultation with the City of Kalamunda and to the satisfaction of the WAPC. Once approved, the Dust Management Plan is to be implemented in its entirety.
- prior to occupation of the development, a Waste Management Plan shall be prepared to the specification of the City of Kalamunda and the satisfaction of the WAPC.
- within six months of the completion of construction works, all transportable classrooms used to temporarily accommodate students during these construction works are to be removed and the land be remediated to the satisfaction of the WAPC.

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details																					
Local context	<p>The application area is in the Northern Jarrah Forest subregion. This subregion occurs east of the Darling Scarp which is overlying granite and metamorphic rocks.</p> <p>The application area comprises remnant native vegetation within and immediately surrounding Lesmurdie Primary School, within the larger Lesmurdie suburban area.</p> <p>It is adjacent to a portion of Mundy Regional Park, with the western boundary of the application area bordering a 4.5 hectare patch of remnant vegetation within the Regional Park. This portion of the Regional Park is also known as Ray Owen Reserve and includes the Ray Owen sporting facility.</p>																					
Ecological linkage	There are no mapped ecological linkages within the application area, and the application area does not provide significant linkage values.																					
Conservation areas	The application area is adjacent to a portion of Mundy Regional Park, is around 700 metres north of Korung National Park and 900 metres south of Lesmurdie Falls National Park.																					
Vegetation description	<p>The Flora Survey (Natural Area, 2021b) described the vegetation within the clearing area as; <i>Corymbia calophylla</i> (marri) and <i>Eucalyptus marginata</i> (jarrah), with a middle storey of <i>Banksia sessilis</i> var. <i>sessilis</i>, <i>Xanthorrhoea preissii</i> and <i>Xanthorrhoea brunonis</i> over an understorey of mixed native herbs and sedges.</p> <p>This is consistent with the broad scale vegetation complex mapping which identifies the following vegetation complex within the application area:</p> <ul style="list-style-type: none"> • Dwellingup D2 – Open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i>-<i>Corymbia calophylla</i> on lateritic uplands in subhumid and semiarid zones. <p>The mapped vegetation type retains around 82.5 per cent of its original extent (Government of Western Australia, 2019).</p>																					
Vegetation condition	<p>The table below lists the condition of the vegetation within the application area (Natural Area, 2021b) according to the Keighery condition rating scale (Keighery, 1994)</p> <table border="1"> <thead> <tr> <th>Vegetation Condition</th> <th>Excellent</th> <th>Very Good</th> <th>Good</th> <th>Degraded</th> <th>Completely Degraded</th> <th>Totals</th> </tr> </thead> <tbody> <tr> <td>Area (ha)</td> <td>0.32</td> <td>-</td> <td>0.29</td> <td>0.1</td> <td>0.39</td> <td>1.1</td> </tr> <tr> <td>Area (%)</td> <td>29%</td> <td>-</td> <td>26%</td> <td>9%</td> <td>36%</td> <td>100</td> </tr> </tbody> </table> <p>The full Keighery (1994) condition rating scale is provided in Appendix B. Representative photos are available in Appendix C.</p>	Vegetation Condition	Excellent	Very Good	Good	Degraded	Completely Degraded	Totals	Area (ha)	0.32	-	0.29	0.1	0.39	1.1	Area (%)	29%	-	26%	9%	36%	100
Vegetation Condition	Excellent	Very Good	Good	Degraded	Completely Degraded	Totals																
Area (ha)	0.32	-	0.29	0.1	0.39	1.1																
Area (%)	29%	-	26%	9%	36%	100																
Climate and landform	<p>The climate is classified as Mediterranean, with dry hot summers and cool wet winters. The average annual rainfall is 762 mm, the majority falling between May and August.</p> <p>Topography on the site ranges from 270 – 272 m AHD, with the school located at the top of a flat area. The land surrounding the school site slopes downwards to the west, south and east (Natural Area, 2021b).</p>																					
Soil description	The application area is mapped as the <i>Dwellingup 2 Phase (255DpDW2)</i> landform, described as very gently undulating terrain with well drained, shallow to moderately deep gravelly brownish sands, pale brown sands and earthy sands overlying lateritic duricrust (DPIRD 2019).																					

Characteristic	Details
Land degradation risk	The Dwellingup 2 Phase landform unit generally presents a low risk of land degradation. The highest risk factor is wind erosion, with 70 per cent of the mapped soil unit having a high to extreme risk.
Wetlands and watercourses	There are no wetlands or watercourses mapped within the application area. The closest wetland or watercourse is a minor non-perennial watercourse located around 360 metres east of the application area.
Conservation listed flora	There are no records of threatened or priority flora species within the application area, and none were identified during a Flora Survey of the application area (Natural Area, 2021b). The closest threatened flora record to the application area is <i>Conospermum undulatum</i> , located around 1.6km away. The closest priority flora species to the application area is <i>Senecio leucoglossus</i> (priority 4) located around 750 m away.
Ecological communities	There are no threatened or priority ecological communities (TEC/PEC) mapped within the application area. The closest TEC or PEC is the Central Northern Darling Scarp Granite Shrubland Community (Priority 4), located around 1.2km northwest.
Fauna	There are no records of conservation listed flora within the application area. The Fauna Survey identified two species of conservation listed fauna within the larger survey area (Natural Area, 2021b): <ul style="list-style-type: none"> • Forest red-tailed black cockatoo • Quenda Additional species known from the local area that may utilise the application area considered in section A.3 below.

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	69.74	37.14
Vegetation complex					
Dwellingup D2	86,128.33	71,055.96	82.5	58,975.34	68.47
Local area					
10km radius		17,550	55	-	-

Government of Western Australia (2019)

A.3. Fauna analysis table

The below table shows conservation listed fauna previously recorded in the local area (10 kilometre radius) that may occur within the application area based on the presence of suitable habitat.

Species name	Conservation status	Suitable habitat features? [Y/N]	Did surveys identify [Y, N, N/A]
<i>Acanthopis antarcticus</i> (southern death adder)	P3	Y	N
<i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo)	VU	Y	Y
<i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	EN	Y	N
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	N
<i>Ctenotus delli</i> (Dell's skink)	P4	Y	N
<i>Dasyurus geoffroii</i> (chuditch)	VU	Y	N
<i>Isoodon fusciventer</i> (quenda)	P4	Y	Y
<i>Notamacropus irma</i> (western brush wallaby)	P4	Y	N
<i>Phascogale tapoatafa wambenger</i> (south-western brush-tailed phascogale)	CD	Y	N
<i>Platycercus icterotis xanthogenys</i> (western rosella)	P4	Y	N

CD: conservation dependent fauna, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.4. Flora analysis table

The below table shows threatened and priority flora previously recorded in the local area (10 kilometre radius) that may occur within the application area based on the presence of suitable habitat..

Species name	Conservation status (state listing)	Suitable habitat present	Did surveys identify? [Y, N, N/A]
<i>Acacia anomala</i>	VU	Y	N
<i>Acacia aphylla</i>	VU	Y	N
<i>Acacia drummondii</i> subsp. <i>affinis</i>	P3	Y	N
<i>Acacia horridula</i>	P3	Y	N
<i>Acacia oncinophylla</i> subsp. <i>patulifolia</i>	P4	Y	N
<i>Allocasuarina grevilleoides</i>	P3	Y	N
<i>Anthocercis gracilis</i>	VU	Y	N
<i>Asteridea gracilis</i>	P3	Y	N
<i>Banksia kippistiana</i> var. <i>paenepeccata</i>	P3	Y	N
<i>Banksia mimica</i>	EN	Y	N
<i>Banksia pteridifolia</i> subsp. <i>vernalis</i>	P3	Y	N
<i>Beaufortia purpurea</i>	P3	Y	N
<i>Calectasia grandiflora</i>	P2	Y	N
<i>Calothamnus accedens</i>	P4	Y	N
<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i>	P4	Y	N
<i>Conospermum undulatum</i>	VU	Y	N
<i>Cyanicula ixioides</i> subsp. <i>ixioides</i>	P4	Y	N
<i>Darwinia apiculata</i>	EN	Y	N
<i>Eucalyptus balanites</i>	EN	Y	N
<i>Goodenia arthrotricha</i>	EN	Y	N
<i>Grevillea pimeleoides</i>	P4	Y	N

Species name	Conservation status (state listing)	Suitable habitat present	Did surveys identify? [Y, N, N/A]
<i>Halgania corymbosa</i>	P3	Y	N
<i>Pimelia rara</i>	P4	Y	N
<i>Senecio leucoglossus</i>	P4	Y	N
<i>Thelymitra dedmaniarum</i>	EN	Y	N
<i>Thelymitra stellata</i>	EN	Y	N

Appendix B. 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 C. 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>The Flora and Fauna Surveys did not identify any threatened or priority flora or threatened or priority ecological communities within the application area (Natural Area, 2021b).</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 Flora Survey identified 111 flora species from 31 families, which included 79 native flora species and 32 weed species (Natural Area, 2021b). Similar woodland remnants within the Dwellingup D2 complex (mapped over the application area) can include over 350 flora species (DEC 2008). Therefore, the application area does is unlikely to represent a high level of diversity within this vegetation type.</p>		
<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>The Fauna Survey identified two conservation listed species within the application area, being forest red-tailed black cockatoo and quenda.</p> <p>While the application area includes suitable habitat for these species, and for six other conservation listed fauna (including Carnaby’s and Baudin’s cockatoo), it is not considered significant noting:</p> <ul style="list-style-type: none"> • a lack of trees with hollows • lack of dense riparian habitat (for quenda) • relatively small application area compared to the extent of native vegetation within the local area. 	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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>No threatened flora was identified in the application area (Natural Area, 2021b). Therefore, the relatively small application area, of which the majority is in a good to completely degraded (Keighery, 1994) condition, is unlikely to contain threatened flora.</p>	Not likely to be at variance	No
<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>The application area is not considered to be representative of any known threatened ecological communities.</p>	Not likely to be at variance	No
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 vegetation within the application area is representative of Dwellingup D2 complex, which retains 82.5 percent of its pre-European extent. The local area retains 54.6 per cent of its original vegetation extent, which is above the 30 per cent threshold outlined in the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia 2001). Therefore, the application area is not considered to be within an extensively cleared landscape.</p> <p>The application area does not provide significant ecological linkage values in the local area.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<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 is adjacent to Mundy Regional Park and the proposed clearing may impact this area through the inadvertent spread of weeds and dieback.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, above.</i>
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>There are no wetlands or watercourses within the application area, and riparian vegetation was not recorded during the Flora Survey (Natural Area, 2021b). Therefore, the proposed clearing is unlikely to impact on an environment associated with a watercourse or wetland.</p>	Not likely to be at variance	No
<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 mapped as the Dwellingup 2 landform unit, which is mapped as having a low risk of water erosion, nutrient export, and salinity. However, 70 percent of this soil unit is mapped as having a high to extreme risk of wind erosion.</p> <p>Noting the size of the application area and that it comprises scattered native vegetation around the existing school site, bordered by remnant vegetation west, significant wind erosion is unlikely. Therefore, the proposed clearing is not likely to result in appreciable land degradation.</p>	Not likely to 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>Given no watercourses or wetlands are recorded within or adjacent to the application area, the proposed clearing is unlikely to impact on surface or groundwater quality.</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>Given no watercourses or wetlands are recorded in or adjacent to the application area, and the relatively small size of the application area around the existing school site, the proposed clearing is unlikely to contribute to flooding.</p>	Not likely to be at variance	No

Appendix D. Biological survey information excerpts / photographs of the vegetation.

Survey methods

Natural Area was contracted to undertake a level 1 flora and vegetation survey, level 1 fauna survey and black cockatoo habitat assessment over a larger area encompassing the application area.

The survey aimed to determine (Natural Area, 2021b):

- flora and fauna species present (native and non-native)
- the extent and boundaries of vegetation type and condition
- the location of declared rare or priority flora, fauna and/or ecological communities
- the location of habitat trees and whether they have hollows suitable for threatened black cockatoos.

The survey incorporated (Natural Area, 2021b):

- desktop database searches to identify flora ecological communities that may be present at the site, including any conservation significant species and ecological communities
- desktop review of available data for the site including vegetation complex, soils characteristics, and topography
- two botanists traversing the site on 24 September 2020, with key GPS data recorded a site survey to –
 - identify flora species present, including targeting declared rare and priority species indicated as potentially present during desktop assessments
 - assess boundaries of vegetation type and condition extent across the site
 - determine the presence of any further threatened or priority listed flora species and/or ecological communities listed under the *Biodiversity and Conservation Act 2016 (WA)* and/or the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
 - identify locations of habitat trees with a DBH >500 mm which have the potential to provide habitat in the form of foraging, roosting or hollows for threatened black cockatoos
- the survey was conducted in accordance with the Environmental Protection Authority '*Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*'.
- samples were collected, or photographs taken of unfamiliar species to enable later identification.



Figure 2. Example of vegetation within the application area (Natural Area, 2021b).

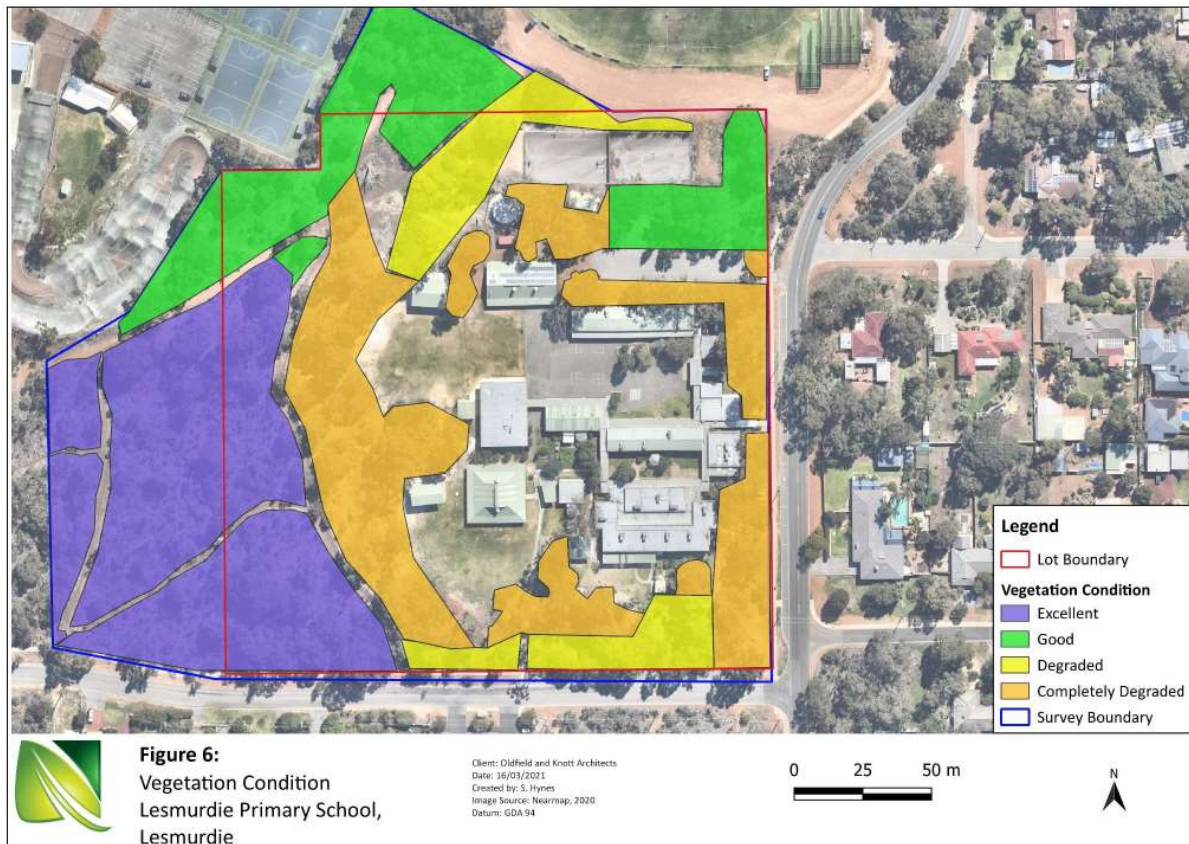


Figure 3. Vegetation condition of the application area (Natural Area, 2021b).

Appendix E. Sources of information

E.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)
- Cadastre (LGATE-218)
- 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)
- Groundwater Salinity Statewide (DWER-026)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- 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 – 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

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened and Priority Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

E.2. References

- City of Kalamunda (2021) Direct Interest Comment provided for Clearing permit Application CPS 9253/1.
- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.
- Commonwealth of Australia (2017). Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo.
- Department of Environment and Conservation (DEC) 2008. *Perth Region Plant Biodiversity Project Jarrah Forest Reference Sites of the Perth Metropolitan Area: Southern transect*, Workshop Notes. The Southern Transect.
- Department of Environment and Conservation (DEC) 2012. *Fauna Profiles. Quenda Isoodon obesulus (Shaw, 1797)*.
- Department of Parks and Wildlife (Parks and Wildlife) (2020) Direct interest Comments on Application to clear native vegetation under the *Environmental Protection Act 1986*. Swan Region. Western Australia (DER Ref: A1956230).
- Department of Parks and Wildlife (Parks and Wildlife) (2013). Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Western Australian Department of Parks and Wildlife (Now the Department of Biodiversity, Conservation and Attractions). Perth. Western Australia.
- Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed August 2021).
- Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Natural Area (2021a) Social and Economic Benefits of the Proposed Lesmurdie Primary School Development. Additional information for Clearing Permit Application CPS 9253/1.
- Natural Area (2021b) *Preliminary Environmental Assessment – Lesmurdie primary School*. A report compiled in support of Clearing Permit Application CPS 9253/1.
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnarara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008