



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 10116/1
File Number: DWERVT12252
Duration of Permit: From 8 June 2023 to 8 June 2025

PERMIT HOLDER

City of Perth

LAND ON WHICH CLEARING IS TO BE DONE

Kings Park Road Reserve (PIN 11834798), Perth
Lot 896 on Deposited Plan 213904 (Crown Reserve 1720), Perth

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.36 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 authorised 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 conduct clearing activities in a slow, progressive manner and in one direction, to allow fauna 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 2020 (GDA2020), 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);(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and(f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 2.(g) actions taken in accordance with condition 3.

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



Jessica Burton

A/MANAGER

NATIVE VEGETATION REGULATION

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

15 May 2023

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).



Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10116/1
Permit type:	Area permit
Applicant name:	City of Perth
Application received:	8 March 2023
Application area:	0.36 hectares of native vegetation
Purpose of clearing:	Construction of the Kings Park shared path
Method of clearing:	Mechanical removal
Property:	Kings Park Road Reserve (PIN 11834798) and Lot 896 on Deposited Plan 213904 (R1720)
Location (LGA area/s):	City of Perth
Localities (suburb/s):	West Perth and Kings Park

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area and located on the north-eastern perimeter of the Kings Park Bush Forever Site (Site no, 317) (see Figure 1, Section 1.5). The project is for the construction of a new shared path for pedestrian and bike use as part of the Perth CBD Transport Plan Cycling Upgrades. The section of the path relevant to the clearing permit application is approximate 510-meter long with a width of three meters and located to the south of the Kings Park Road, from Thomas Street to Harvest Terrace (City of Perth, 2023). The path design includes areas of boardwalk and the use of concrete to reduce impact to tree roots (WEPL, 2023a).

1.3. Decision on application

Decision:	Granted
Decision date:	15 May 2023
Decision area:	0.36 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, 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 submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the Flora, Vegetation and Black-Cockatoo Survey provided (see Appendix D), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the proposed shared path is part of the Perth CBD Transport Plan Cycling Upgrades, aimed at improving pedestrian and cyclist linkages within the Perth CBD.

The assessment identified that the proposed clearing would result in:

- the loss of 0.36 hectares of degraded to completely degraded (Keighery, 1994) condition native vegetation within a Bush Forever site.
- potential injury to fauna species that may utilise the application area during the time of clearing.
- the potential to introduction and spread weeds and dieback into adjacent vegetation (which includes a conservation area), which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on flora or fauna of conservation significance or conservation areas. With regard for the extent of the proposed clearing, the degraded to completely degraded condition with low species diversity, high weed load and historical clearing, it is considered the proposed clearing is unlikely to have a significant environmental impact.

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

- avoid, minimise and reduce the impacts and extent of clearing.
- implement hygiene measures to minimise the risk of the introduction and spread of weeds and dieback.
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

1.5. Site map



Figure 1 Map of the application area

The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

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 City of Perth has consulted extensively with Kings Park Botanic Parks and Gardens Authority (BPGA) to determine an alignment which avoids environmental values, while also meeting the engineering and safety criteria for the shared path (WEPL, 2023a).

The applicant provided detailed evidence on the consultation and subsequent mitigation measures undertaken in the design of the shared path to eliminate significant impacts to native vegetation.

In brief, three designs for the pathway alignment have been drawn and considered at subsequent stages of the project. Each design has gone further to reduce potential impacts from clearing. The final alignment avoids all conservation significance flora, vegetation and fauna values, including Threatened Ecological Communities and potential habitat (breeding and foraging) for Black-Cockatoos.

The pavement design has been modified to concrete (from asphalt) to limit the pavement structural depth to further limit the impacts to root zones. Only minimal removal of topsoil is required (WEPL, 2023a). The use of a no fines sub-base material has been specified within the design to enable improved air flow to root system sitting underneath the path pavement structure (WEPL, 2023a). Where excavation is required, it has been specified that a vacuum exaction method will be used to not damage roots zones and if required for the sub-base structure to accommodate potential roots (WEPL, 2023a).

Further mitigation measures during the construction phase include (City of Perth, 2023):

- Vegetation will be cleared by hand and where required and safe to do with low impact mechanical support such as small bobcat.
- Minimal removal of topsoil is required as most of the pathway sits above the natural groundcover.
- Where excavation is required, vacuum excavation has been specified to limit impact to root systems.

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

3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing present a risk to biological values (fauna, adjacent flora and vegetation), significant remnant vegetation and conservation areas.

3.2.1. Biological values (fauna) - Clearing Principles (b)

Assessment

According to available databases, 81 conservation significant fauna species have been recorded within the local area. Of the conservation significant fauna species recorded within the local area, the following have the potential to be found within the application area based on habitat preferences:

- Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (Vulnerable)
- Carnaby's cockatoo (*Zanda latirostris*) (Endangered)
- Quenda (*Isoodon fusciventer*) (Priority 4)
- Peregrine Falcon (*Falco peregrinus*) (OS)
- Grey falcon (*Falco hypoleucos*) (Vulnerable)
- Barking owl (southwest subpop.) (*Ninox connivens connivens*) (Priority 3)
- masked owl (southwest) (*Tyto novaehollandiae novaehollandiae*) (Priority 3)
- Black-striped Snake (*Neelaps calonotos*) (Priority 3)
- Perth slider, lined skink (*Lerista lineata*) (Priority 3)
- Swan Coastal Plain Shield-backed Trapdoor Spider (*Idiosoma sigillatum*) (Priority 3).

This assumption is based on the habitat requirements, distribution, mapped vegetation types and condition of the vegetation, and findings of the Black Cockatoo Survey undertaken by WEPL (2023b).

The fauna habitat within the application area has undergone historical disturbance and the vegetation within the application area is in a degraded to completely degraded (Keighery, 1994) condition with low vegetation diversity (WEPL, 2023b).

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

Breeding Habitat

The application area is within the known breeding range of Carnaby's cockatoo and forest red-tailed black cockatoo. There are three potential breeding sites within 12-kilometre radius of the application area, of which the closest is approximately 700 meters southwest of the application.

Black cockatoos generally breed in woodland or forest but may also breed in former woodland or forest now present as isolated trees (Commonwealth of Australia, 2022). They commonly breed in several different tree species, including jarrah and marri, which are utilised by both Carnaby's and forest re-tailed black cockatoos (Commonwealth of Australia, 2022). 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, 2022).

The Black Cockatoo Assessment identified 11 trees with DBH >500 mm, all of which were Tuart (*Eucalyptus gomphocephala*) and none of which supported hollows (WEPL, 2023b). The applicant area avoids all 11 Tuart trees.

Given that none of these trees are to be removed, the proposed clearing is unlikely to impact on breeding habitat for black cockatoos.

Roosting Habitat

There are 39 known roosting sites within the six kilometres radius of the application area with the closest being approximately 20 meters south. Given that no large trees are to be removed, the proposed clearing is unlikely to impact on roosting habitat for black cockatoos.

Foraging Habitat

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). The records of foraging activity for Carnaby's cockatoo on the SCP show that Banksia species account for nearly 50 percent of the diet for this species (Shah, 2006).

Forest red-tailed black cockatoo forages within jarrah and marri woodlands and forest, and edges of karri forests including wandoo and blackbutt, within the range of the subspecies. This species mostly feeds on seeds of marri and jarrah (Commonwealth of Australia, 2022).

The vegetation within the application area comprises *Eucalyptus gomphocephala* open forest over introduced grasses and herbs. The Black Cockatoo Habitat Survey indicated foraging habitat adjacent to the application area, but the final alignment of the project has avoided all black cockatoo foraging habitat.

Given that no foraging habitat is to be removed, the proposed clearing is unlikely to impact habitat for black cockatoos.

Peregrine Falcon, Grey falcon, Barking owl and Masked owl

These species occupy a wide range of habitats including woodlands, wetlands, open country and built-up areas and are highly mobile. The Peregrine Falcon, Grey falcon, Barking owl and Masked owl may occur in the application area as a foraging visitor, but is unlikely to breed as there is no suitable breeding habitat. They may opportunistically occur over the application area for short periods or fly over the application area on commute while searching for prey. The application area will not provide core habitat for these species.

Swan Coastal Plain Shield-backed Trapdoor

This species has a widespread distribution throughout the Swan Coastal Plain and is known to persist in the remnant bushlands of Kings Park, Bold Park and Shenton Park, in Banksia woodland and heathlands on sandy soil. It is considered unlikely to occur in the clearing area due to the small, previously cleared footprint area, the location along the edge of the reserve and lack of preferred habitat. The proposed clearing is not expected to impact this species.

Other Species

Noting the presence of higher quality native vegetation immediately adjacent, the lack of dense undergrowth and leave litter, the lack of horizontal hollow logs and the small linear footprint of the application area, it not likely to include significant habitat for the quenda, Perth slider or black-striped snake. However, these species may transiently visit the site, and individuals may be impacted should they occur at the time of clearing.

The vegetation within the clearing area is considered suitable habitat for a range of species, however, it does not provide significant habitat for conservation listed fauna and there are areas of similar habitat in better condition in adjoining bushland.

Ecological linkage

According to available databases, the application area is within the Gnangara Ecological Linkages classified as Bush Forever associated with Conceptual Linkage. However, the area impacted has been historically cleared, is in a degraded to completely degraded condition and supports introduced grasses and herbs with few native species (WEPL, 2023b). The application area is unlikely to contribute to the function as an ecological linkage enabling fauna to move between areas of remnant vegetation. In addition, it is located on the edge of the larger area of remnant vegetation of Kings Park which is more likely to be used by fauna for movement across the landscape. Therefore, the proposed clearing is not likely to have an impact on vegetation acting as a significant steppingstone for fauna movement.

Conclusion and conditions:

Although the proposed clearing is not assessed as impacting significant habitat for conservation significant fauna, the Delegated Officer has determined that the following fauna management conditions be imposed on the permit:

- a condition which requires the applicant to undertake slow, progressive one-directional clearing to allow terrestrial fauna to disperse into adjacent suitable habitat ahead of the clearing activity should they occur on site at the time of clearing.

3.2.2. Biological values (flora and threatened ecological community) - Clearing Principles (c) & (d)

Assessment

Flora

According to available databases, there are 62 priority flora species and five threatened flora species recorded within the local area of the application. Of these species 25 are mapped within the local area on the same soil type and within the same vegetation complex as those mapped within the application area.

A reconnaissance and targeted field survey was conducted by Western Environmental on 12 October 2022. The Vegetation survey (WEPL, 2023b) indicates the vegetation within the proposed clearing area consists of one vegetation units, namely VT2: *Eucalyptus gomphocephala* open forest over introduced grasses and herbs. Associated trees: **Eucalyptus cladocalyx* (planted) *Corymbia calophylla*, *Eucalyptus marginata*, *Callitris preissii* (planted), *Agonis flexuosa* (planted).

The Vegetation survey (WEPL, 2023b) indicates the vegetation within the proposed clearing area is in Degraded to Completely Degraded (Keighery, 1994) condition with most of the vegetation in Completely Degraded condition. No Commonwealth or State listed Threatened Flora were recorded during the survey.

Two Priority 4 flora species were recorded during the survey (WEPL, 2023b):

- *Dodonaea hackettiana* (Priority 4) is an erect shrub to five metres in height, with yellow-green flowers (Figure 2). This species was recorded from 15 locations during the survey, one of which occurred within the application area. Individuals were observed throughout the Degraded vegetation within two meters of the existing track, and the patch of vegetation in the west. This species has a distribution from Yancheep to Mandurah and is common in the bushland of Kings Park.
- *Jacksonia sericea* (Priority 4) is a low spreading shrub which grows to 60 cm in height and produces orange flowers (Figure 2). This species was recorded at 13 locations during the survey, one of these occurred within the application area. Individuals were observed throughout the Degraded vegetation within two meters of the existing track, and the patch of vegetation in the west. The distribution of this species is confined to the Swan Coastal Plain, however, records of this species appear common in Kings Park. Recent surveys (Biota, 2020) within Kings Park recorded 219 individuals (to the southwest of the disturbance footprint area), and noted that this species is present throughout the bushland in Kings Park.



Figures 2: Photographs of *Dodonaea hackettiana* (Priority 4) (left) and *Jacksonia sericea* (Priority 4)(right) individuals to be impacted by the proposed clearing

The Botanic Gardens and Parks Authority (BGPA) tasked with the care and management of Kings Park, indicated that the removal of these individual plants is not expected to be a significant impact on the population within Kings Park, given that this species is very common within Kings Park and is successfully incorporated into restoration programs. BGPA has further indicated that they will incorporate additional *Jacksonia sericea*, *Dodonaea hackettiana* and *Eucalyptus gomphocephala* into bushland restoration plantings in this precinct (BGPA, 2023).

No other Commonwealth or State listed Threatened Flora or State Priority flora are expected to occur within the area (WEPL, 2023b).

The vegetation survey recorded Bridal Creeper (*Asparagus asparagoides*) a Declared Pest pursuant to section s22(2) of the *Biosecurity and Agriculture Management Act 2007* and a Weed of National Significance (WoNS) within and adjacent to the proposed clearing area (WEPL, 2023b). This species is subject to weed control and management within Kings Park. The BPGA should be liaised with regarding management of this species during the construction phase of the proposal, including correct disposal of individuals (if removed) and measures to reduce the potential for this species to be spread.

Threatened ecological community

Two Commonwealth listed Threatened Ecological Communities (TECs) have been mapped within the larger survey area, and vegetation was representative of these communities (TEPL, 2023b):

- Tuart Woodland and Forests TEC, represented by the Tuart canopy.
- Banksia Woodlands of the Swan Coastal Plain TEC.

The final alignment of the path however has removed any direct impacts to Tuart trees and as such impacts to the Tuart Woodlands and Forests of the Swan Coastal Plain TEC are avoided (WEPL, 2023a). The alignment also does not impact any key diagnostic species of the Banksia Woodlands of the Swan Coastal Plain TEC and therefore avoids impacts to this TEC (WEPL, 2023a).

Conclusion

Based on the above assessment, the Delegated Officer has determined that the proposed clearing is unlikely to have any long-term adverse impacts on any conservation significant flora species or threatened ecological communities, however the application area occurs adjacent to remnants of native vegetation and has recorded occurrence of Declared Pest that may spread.

Conditions

To address these impacts, the following management measure will be required as a condition on the clearing permit:

- weed and dieback management measures to mitigate impacts to adjacent vegetation.

3.2.3. Significant remnant vegetation - Clearing Principle (e)

Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The Environmental Protection Authority (EPA) recommends a minimum ten per cent representation threshold for ecological communities in constrained areas 'where there is a reasonable expectation that development will be able to proceed' (EPA, 2008).

The application area is located within the Perth Metropolitan Region Scheme boundary, which the EPA recognises to be a constrained area.

The mapped vegetation Karrakatta Complex-Central and South (49) retains more than ten per cent of its pre-European extents remaining (at 23.49 per cent) and is considered to be well represented within the constrained area. However, the local area retains less than ten per cent of its pre-European native vegetation cover (at 5.22 per cent) and is considered to be extensively cleared (despite being within a constrained area).

The area impacted has been historically cleared, supports introduced grasses and herbs with few native species. The application area is unlikely to be required to maintain ecosystem, and with regard for the composition and Degraded to Completely Degraded (Keighery, 1994) condition of the vegetation, is unlikely to be biologically diverse or comprise significant habitats for indigenous fauna or flora (including species conservation significance).

Conclusion

For the reasons set out above, it is considered that the native vegetation within the application area is not significant as a remnant in an extensively cleared area.

Conditions

It is considered that the impacts outlined above can be managed to be environmentally acceptable. To address these impacts, the following management measures will be required as conditions on the clearing permit:

- avoid and minimise clearing, to minimise the direct impacts to native vegetation.

3.2.4. Conservation Areas - Clearing Principle (h)

The application area is located within Bush Forever Site 114 Kings Park (Class A Nature Reserve (R1720)). Through Bush Forever Volume 1: Policies, Principles and Processes, the Bush Forever sites were identified on the basis of criteria relating to conservation value. Where possible a comprehensive representation of all ecological communities originally occurring in the region, principally through protecting at least 10 percent of each vegetation complex should be achieved (DPLH, 2000).

State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region sets out that proposals and decision making in respect of Bush Forever areas should support a general presumption against the clearing of regionally significant bushland or other degrading activities, except where a proposal or decision is consistent with the overall purpose and intent of the existing Crown reserve or can be reasonably justified with regard to wider environmental, social, economic or recreational needs (clause 5.1.2.1(i)(e)). The Policy also sets out that unavoidable adverse impacts on regionally significant bushland within a Bush Forever area should be offsets at a ratio of at least 1:1 in habitat hectares.

With regard for the extent of the proposed clearing, the degraded to completely degraded condition with low species diversity and weed occurrence, it is considered the proposed clearing is unlikely to have a significant environmental impact on Bush Forever Site 114. The presence or the use of the application area for habitat of threatened flora and fauna is unlikely. In addition, the proposed works are considered to be consistent with the intent of the reserve and provide a recreational and social benefit (e.g. integrated transport planning). On this basis, it is considered that the proposed clearing does not constitute a significant residual impact and that an offset is not required for impacts to a Bush Forever Site.

The Department of Planning, Lands and Heritage (DPLH, 2023) confirmed that they considered the application is in line with SPP 2.8 5.1.2.1 (i)(e) with the proposal being consistent with the overall purpose and intent of an existing Crown reserve or can be reasonably justified with regard to wider environmental, social, economic or recreational needs, and all reasonable alternatives have been considered in order to avoid or minimise any direct loss of regionally significant bushland.

The proposed clearing may introduce and spread weeds and dieback into this conservation area, which could impact on its habitat quality and connectivity. A weed and dieback condition is considered to minimise this risk.

Conclusion

For the reasons set out above, is not likely to result in a significant residual impact for clearing within a Bush Forever Site. However, it is considered that the threat from the potential introduction and spread of weeds and dieback remain.

Conditions

To address these impacts, the following management measure will be required as a condition on the clearing permit:

- weed and dieback management measures to mitigate impacts to adjacent vegetation.

3.3. Relevant planning instruments and other matters

Three Aboriginal sites and Heritages Places of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of approximately 350 ha of native vegetation that forms Kings Park in the intensive land use zone of Western Australia. The proposed clearing area is adjacent to King Park Road.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately five per cent of the original native vegetation cover.</p>
Ecological linkage	<p>The proposed clearing area is listed under the State Government Bush Forever Policy and program (Site 317). It is an Environmentally Sensitive Area (ESA) (ID:18665) due to the presence of Bush Forever values and the Bush Forever is associated with Conceptual Linkage as part of the Gngangara Ecological Linkages.</p>
Conservation areas	<p>Kings Park and Botanic Garden is an A-Class Conservation Reserve (R1720), which is managed under the <i>Botanic Gardens and Parks Authority (BGPA) Act and Regulations</i>.</p>
Vegetation description	<p>Vegetation survey (WEPL, 2023b) indicates the vegetation within the proposed clearing area consists of one vegetation units, namely:</p> <ul style="list-style-type: none"> VT2: <i>Eucalyptus gomphocephala</i> open forest over introduced grasses and herbs. Associated trees: *<i>Eucalyptus cladocalyx</i> (planted) <i>Corymbia calophylla</i>, <i>Eucalyptus marginata</i>, <i>Callitris preissii</i> (planted), <i>Agonis flexuosa</i> (planted). <p>The full survey descriptions and maps are available in Appendix D.</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> Karrakatta Complex – Central and South: “Predominantly open forest of <i>Eucalyptus gomphocephala</i> (Tuart) – <i>Eucalyptus marginata</i> (Jarrah) – <i>Corymbia calophylla</i> (Marri) and woodland of <i>Eucalyptus marginata</i> (Jarrah) – <i>Banksia</i> species. <i>Agonis flexuosa</i> (Peppermint) is co-dominant south of the Capel River.” <p><i>The mapped vegetation type retains approximately 23.49 per cent of the original extent (Government of Western Australia, 2019)</i></p>
Vegetation condition	<p>Vegetation survey (WEPL, 2023b) indicates the vegetation within the proposed clearing area is in Degraded to Completely Degraded (Keighery, 1994) condition with most of the vegetation in Completely Degraded condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. The full survey descriptions and mapping are available in Appendix D.</p>
Climate and landform	<p>The average annual rainfall recorded at Perth Metro is 729.1 mm, with most of the precipitation occurring during the winter months (BoM 2022) Perth Metro recorded 562.4 mm of rain in the eight months prior to the survey (January 2022 – August 2022).</p>
Soil description	<p>The soil is mapped as Spearwood System described as: Sand dunes and plains. Yellow deep sands, pale deep sands and yellow/brown shallow sands.</p>
Land degradation risk	<p>The application area is mapped as having a high risk of wind erosion, a low risk of waterlogging, phosphorus export, salinity, subsurface compaction, flood risk and subsurface acidification.</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that no surface waterbodies transect the area proposed to be cleared.</p>

Characteristic	Details
Hydrogeography	The application area is within the Perth Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RiWI Act). The application area does not fall within surface water area proclaimed under the RiWI Act and does not fall within an area subject to the <i>Country Areas Water Supply Act 1917</i> , nor does it occur within a Public Drinking Water Source Area.
Flora	Five threatened and 57 priority flora have been recorded in the local area. The nearest record is approximately 110 metres from the application area.
Ecological communities	Six threatened and three State-listed priority ecological communities (some are threatened under Commonwealth legislation) have been recorded in the local area. One Commonwealth-listed TEC Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region is mapped within the application area.
Fauna	Thirty-seven threatened, 20 priority, one 'other specially protected' fauna and 22 fauna that are migratory/protected under an international agreement, have been recorded in the local area. The nearest record is approximately 0.04 kilometres from the application area.

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*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	38.45
Vegetation complex					
Spearwood 6.1	54,427.13	13,287.64	24.41	5320.63	40.04
Karrakatta Complex-Central and South (49)	53,080.99	12,467.20	23.49	714.13	1.87
Local area					
10km radius	30,275.36	1,580.13	5.22	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Fauna records table

The below table shows conservation listed fauna recorded within the local area.

Species scientific name	Conservation status	Number of known records (total)	Distance of closest record to application area (km)	Suitable habitat features? [N/Y]
barking owl (southwest subpop.) (<i>Ninox connivens connivens</i>)	P3	2	4.81	Yes
Baudin's cockatoo (<i>Zanda baudinii</i>)	EN	4	0.89	Yes
black-striped snake, black-striped burrowing snake (<i>Neelaps calonotos</i>)	P3	95	0.11	Yes
Carnaby's cockatoo (<i>Zanda latirostris</i>)	EN	3224	0.05	Yes
forest red-tailed black cockatoo (<i>Calyptorhynchus banksii naso</i>)	VU	108	0.59	Yes
grey falcon (<i>Falco hypoleucos</i>)	VU	1	2.94	Yes
masked owl (southwest) (<i>Tyto novaehollandiae novaehollandiae</i>)	P3	6	0.45	Yes
Perth slider, lined skink (<i>Lerista lineata</i>)	P3	17	6.43	Yes
Swan Coastal Plain shield-backed trapdoor spider (<i>Idiosoma sigillatum</i>)	P3	113	0.11	Yes

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p>Principle (a): "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p>Assessment:</p> <p>The area proposed to be cleared includes 0.36 hectares of vegetation in degraded to completely degraded condition (Keighery, 1994), that has been historically disturbed and is unlikely to contain locally or regionally significant flora, fauna, habitats, or assemblages of plants.</p>	Not likely to be at variance	No
<p>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."</p> <p>Assessment: The area proposed to be cleared consists of 0.36 hectares of vegetation in the Perth Metropolitan Region and is unlikely to contain significant foraging, roosting, or breeding habitat for conservation significant fauna.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p>Principle (c): "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p>Assessment:</p> <p>The area proposed to be cleared contains one <i>Jacksonia sericea</i> (Priority 4) and one <i>Dodonaea hackettiana</i> (Priority 4) listed under the BC Act. The potential removal of these individual plants is not expected to be a significant</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
impact on the population within Kings Park, given that this species is very common within Kings Park and is successfully incorporated into restoration programs.		
<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 area proposed to be cleared does not contain species or species composition that can indicate a threatened ecological community. Two Commonwealth listed TEC’s, Tuart Woodlands and Forests of the Swan Coastal Plain and Banksia Woodlands of the Swan Coastal Plain TEC were mapped during the survey (WEPL, 2023b), however the final alignment avoids all impacts to these vegetation types.</p>	Not likely to be at variance	Yes Refer to Section 3.2.2, above.
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 application area is located within an extensively cleared landscape and within a constrained area as recognised by the EPA. However, the application area is not considered a significant remnant given its degraded to completely degraded condition and lack of habitat for conservation significant flora or fauna.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.3, above.</i>
<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 located within Bush Forever site 114, managed as Kings Park. Given the degraded to completely degraded condition of the vegetation proposed to be cleared and the minimal clearing that will occur, it is unlikely the clearing will compromise the environmental values of this Bush Forever site.</p>	At variance	Yes Refer to Section 3.2.4, above.
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>Given no water courses or wetlands are recorded the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</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>Noting the extent of the application area, the purpose of the proposed clearing and the construction design, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (i)</u>: “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.”</p> <p><u>Assessment</u>:</p> <p>Due to the small extent of the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j)</u>: “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment</u>:</p> <p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

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

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

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

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as ‘parkland cleared’ with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Biological survey information

Flora, Vegetation and Black -Cockatoo Survey, Kings Park Road Shared Path

The reconnaissance and targeted field survey was conducted during a half day on 12 October 2022.

The Disturbance Footprint Area represented the potential impact area for the Shared Pathway, and as such was very small (up to 4 m wide by 797 m long). To ensure sufficient information was collected to contextualise values and meet regulator expectations, areas immediately adjacent to the Disturbance Footprint Area were also surveyed, including for significant flora searches and Tuart (*Eucalyptus gomphocephala*) mapping.

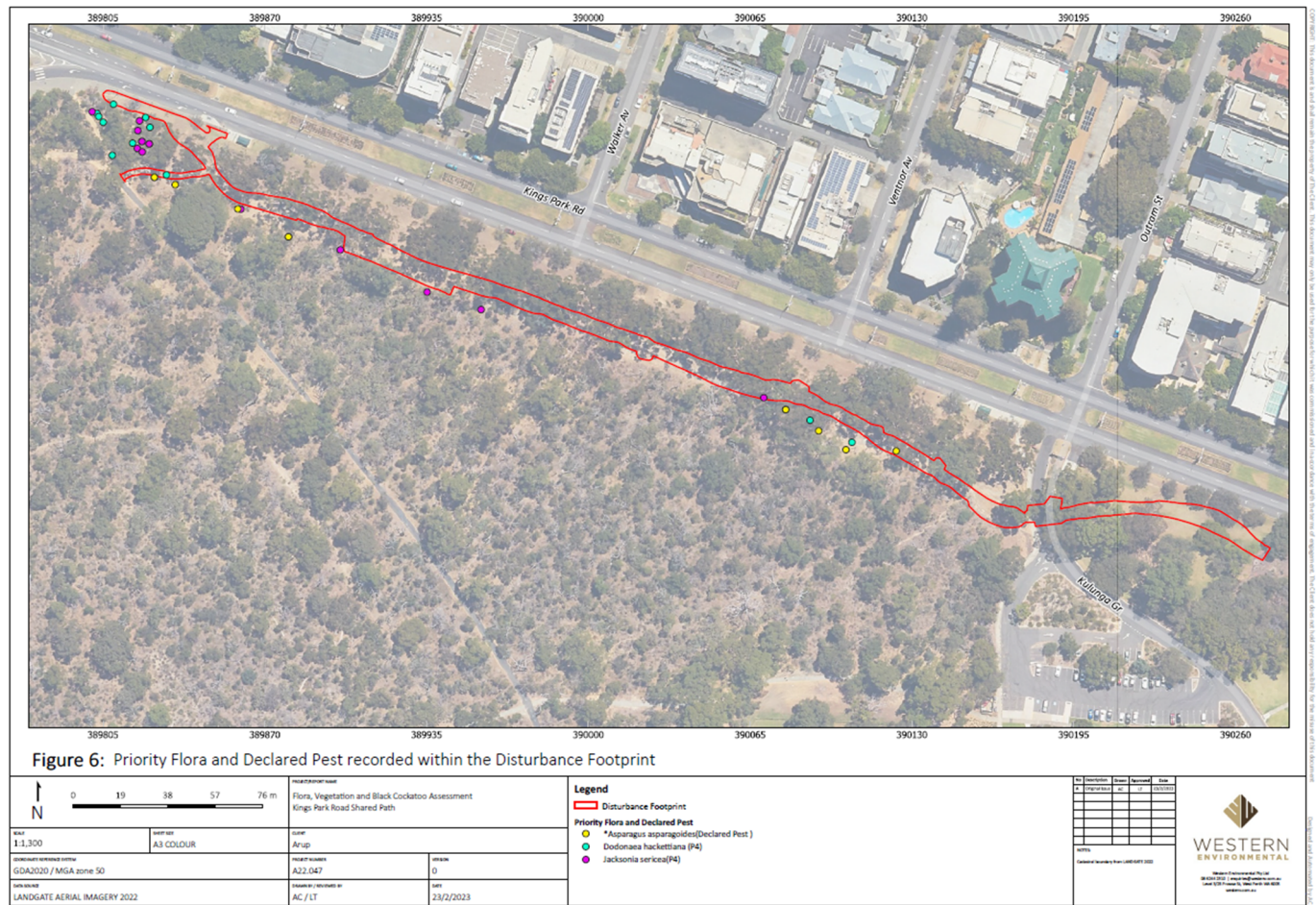
Due to the small size of the Disturbance Footprint Area, and the reduced condition of much of the vegetation, quadrats could not be conducted. Alternatively, a relevé was conducted. Relevé sampling included observations for an area similar in size to an unmarked quadrat (approximately 10 x 10 m).

Threatened and Priority Flora identified during the desktop analysis as potentially occurring within the Disturbance Footprint Area were targeted for searches in areas of potential habitat. The locations of all targeted species collected were recorded using a handheld GPS.

Vegetation was described from the relevé, and mapping notes, using the height and estimated cover of dominant and characteristic species of each stratum based on NVIS, recorded at Level V (NVIS Technical Working Group, 2017). Up to three species per stratum from each stratum (upper, mid and ground) were used to formulate vegetation descriptions for each quadrat and each vegetation type. Vegetation types were defined by observation of species dominance and structural composition by the field survey team. Due to the small size of the Disturbance Footprint Area and degraded condition of the vegetation, statistical analysis was not applied to assist in defining Floristic Community Types, as per Gibson et al. (1994).

Vegetation condition was assessed during traverses of the Disturbance Footprint Area using the Vegetation Condition Scale for the appropriate bioregion as per the Flora and Vegetation Technical Guidance (EPA, 2016).

The black cockatoo habitat field survey followed the Commonwealth referral guidelines for Threatened Black Cockatoos (DotEE 2017, DCCEEW 2022) for identifying breeding and foraging habitat.



Vegetation Description	Vegetation Condition	Photo
<p>VT1: <i>Eucalyptus gomphocephala</i>, <i>Corymbia calophylla</i> (<i>Allocasuarina fraseriana</i>) woodland over <i>Banksia attenuata</i>, <i>B. prionotes</i> low open woodland over <i>Banksia sessilis</i>, <i>Jacksonia stembergiana</i>, <i>Grevillea crithmifolia</i>, <i>Dodonaea hackettiana</i> tall sparse shrubland over <i>Hibbertia hypericoides</i>, <i>Xanthorrhoea preissii</i> sparse shrubland over <i>Jacksonia sericea</i> low sparse shrubland over mixed sparse grassland and forbland.</p>	<p>Good (to Very Good): introduced species, surrounded by paths/clearing.</p>	
<p>VT2: <i>Eucalyptus gomphocephala</i> open forest over introduced grasses and herbs. Associated trees: *<i>Eucalyptus cladocalyx</i> (planted) <i>Corymbia calophylla</i>, <i>Eucalyptus marginata</i>, <i>Callitris preissii</i> (planted), <i>Agonis flexuosa</i> (planted).</p>	<p>Degraded (to Completely Degraded): cleared area dominated by introduced flora with some remaining remnant canopy; rubbish.</p>	



Figure 7: Vegetation within and adjacent to the Disturbance Footprint

<p>Scale: 1:11,500 Map: A3 COLOUR</p>		<p>Project Name: Flora, Vegetation and Black Cockatoo Assessment Location: Kings Park Road Shared Path Client: Arup</p>		<p>Legend</p> <ul style="list-style-type: none"> Disturbance Footprint Vegetation Condition <ul style="list-style-type: none"> Good condition Completely degraded condition Degraded condition Vegetation Type <ul style="list-style-type: none"> VT1: <i>Eucalyptus gomphocephala</i>, <i>Corymbia calophylla</i> (<i>Allocasuarina fraseriana</i>) woodland over <i>Banksia attenuata</i>, <i>B. prionotes</i> low open woodland over <i>Banksia sessilis</i>, <i>Jacksonia stembergiana</i>, <i>Grevillea crithmifolia</i>, <i>Dodonaea hackettiana</i> tall sparse shrubland over <i>Hibbertia hypericoides</i>, <i>Xanthorrhoea preissii</i> sparse shrubland over <i>Jacksonia sericea</i> low sparse shrubland over mixed sparse grassland and forbland VT2: <i>Eucalyptus gomphocephala</i> open forest over introduced grasses VT3: <i>Eucalyptus gomphocephala</i> open forest over introduced grasses 	<table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Date</th> <th>Author</th> <th>Rev</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Map Data: Data Sources: LANDGATE AERIAL IMAGERY 2022 Map Date: 24/2/2023</p>	No.	Description	Date	Author	Rev					
No.	Description	Date	Author			Rev									
<p>Map Scale: 1:11,500 Map: A3 COLOUR</p>		<p>Project Name: Flora, Vegetation and Black Cockatoo Assessment Location: Kings Park Road Shared Path Client: Arup</p>													

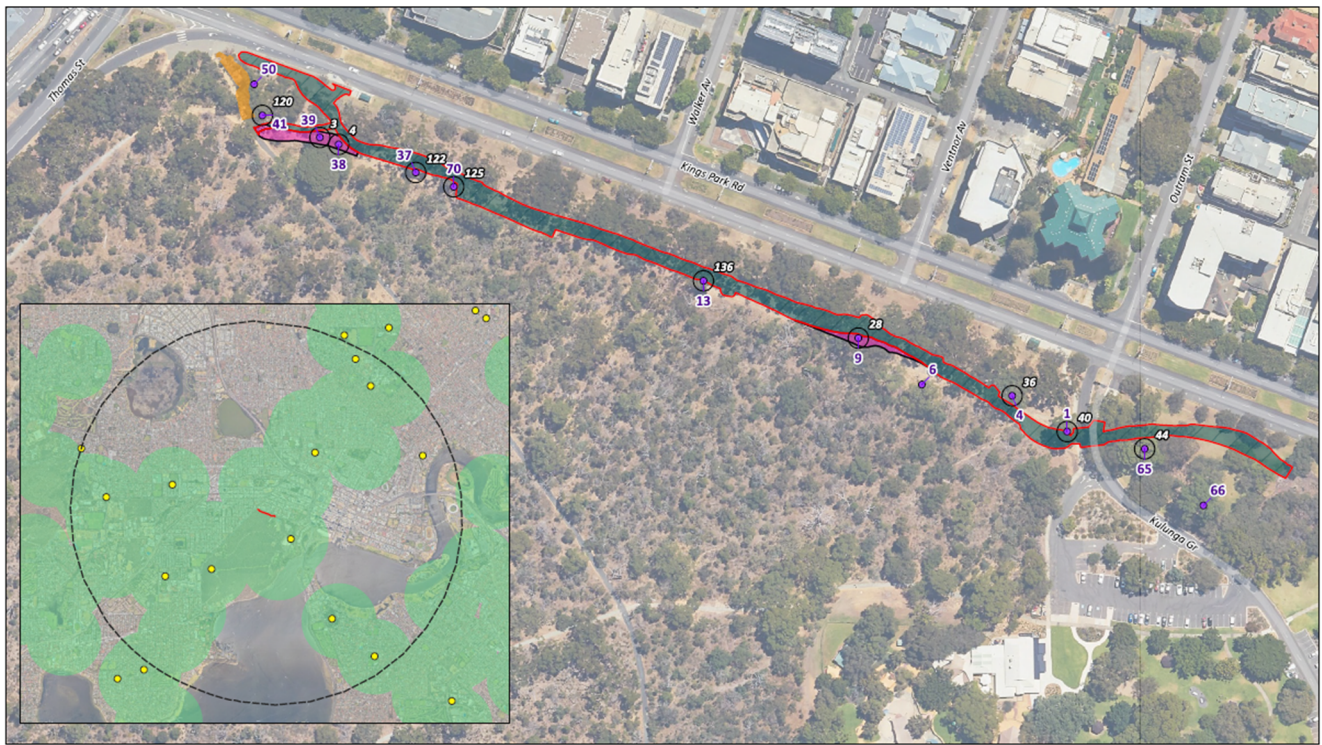
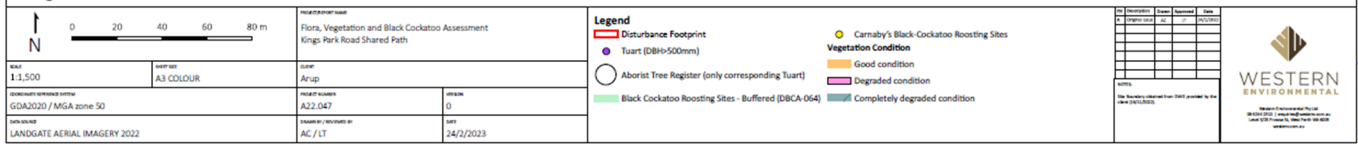


Figure 9: Black Cockatoo Habitat



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)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas

- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Vegetation Complexes - Swan Coastal Plain (DBCA-046)

Restricted GIS Databases used:

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

E.2. References

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