GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10554/1
Permit Holder:	Mindarie Regional Council
Duration of Permit:	From 17 February 2025 to 17 February 2037

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of constructing an infiltration basin.

2. Land on which clearing is to be done

Lot 9043 on Deposited Plan 424903, Tamala Park

3. Clearing authorised

The permit holder must not clear more than 0.643 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 17 February 2030.

PART II – MANAGEMENT CONDITIONS

5. 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.

6. 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.

7. Directional clearing

The permit holder must:

(a) conduct clearing activities in a slow, progressive manner towards adjacent remnant *native vegetation*; and

(b) allow reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the clearing activity.

8. Revegetation and rehabilitation

Within 12 months of the completion of construction of the infiltration pond and no later than 17 February 2032 at an *optimal time*, the permit holder must implement and adhere to the *Infiltration Pond Revegetation Plan*, including but not limited to the following actions:

(a) commence *revegetating* and *rehabilitating* the area cross-hatched red on Figure 2 of Schedule 1, by way of:

  (i) deliberately *planting* tube stock and salvaged *native vegetation* that will result in the minimum completion criteria detailed in Table 12 of the *Infiltration Pond Revegetation Plan*; and

  (ii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

(b) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the site;

(c) undertake *weed* control activities prior to *planting*, and annually thereafter for the duration of this permit;

(d) undertake watering of the *planted* vegetation between November and March post-*planting* as required, for the duration of this permit;

(e) establish no less than four 5 x 5 metre quadrat monitoring sites within the *revegetated* and *rehabilitated* area;

(f) engage an *environmental specialist* to undertake annual monitoring within the quadrats specified in condition 8(e) until the completion criteria detailed in Table 12 of the *Infiltration Pond Revegetation Plan* are met; and

(g) undertake *remedial action* where monitoring undertaken in accordance with condition 8(e) indicated that *revegetation* has not met the completion criteria detailed in Table 12 of the *Infiltration Pond Revegetation Plan*, including:

  (i) repeating the *revegetation* actions required under conditions 8(a)-(d);

(ii) annual monitoring of the additional *revegetated* and *rehabilitated* areas by an *environmental specialist*, until the completion criteria detailed in Table 12 of the *Infiltration Pond Revegetation Plan* are met; and

(iii) where an *environmental specialist* has determined that the completion criteria detailed in Table 12 of the *Infiltration Pond Revegetation Plan* have been met, that determination must be submitted to the *CEO* within three months of the determination being made by the *environmental specialist*.

9. Offset – revegetation and rehabilitation requirements

Within 24 months of the commencement of clearing and no later than 17 February 2032 at an *optimal time*, the permit holder must implement and adhere to the *Offset Revegetation Plan*, including but not limited to the following actions:

(a) commence *revegetating* and *rehabilitating* the area cross-hatched red on Figure 3 of Schedule 1, by way of:

(i) deliberately *planting* tube stock and salvaged *native vegetation* that will result in the minimum completion criteria detailed in Table 12 of the *Offset Revegetation Plan*; and

(ii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

(b) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the site;

(c) undertake *weed* control activities prior to *planting*, and annually thereafter for the duration of this permit;

(d) undertake watering of the *planted* vegetation between November and March post-*planting* as required, for the duration of this permit;

(e) establish no less than four 10 x 10 metre quadrat monitoring sites within the *revegetated* and *rehabilitated* area;

(f) engage an *environmental specialist* to undertake annual monitoring within the quadrats specified in condition 9(e) until the completion criteria detailed in Table 12 of the *Offset Revegetation Plan* are met; and

(g) undertake *remedial action* where monitoring undertaken in accordance with condition 9(e) indicated that *revegetation* has not met the completion criteria detailed in Table 12 of the *Offset Revegetation Plan*, including:

(i) repeating the *revegetation* actions required under conditions 9(a)-(d);

(ii) annual monitoring of the additional *revegetated* and *rehabilitated* areas by an *environmental specialist*, until the completion criteria detailed in Table 12 of the *Offset Revegetation Plan* are met; and

(iii) where an *environmental specialist* has determined that the completion criteria detailed in Table 12 of the *Offset Revegetation Plan* have been met, that determination must be submitted to the *CEO* within three months of the determination being made by the *environmental specialist*.

PART III - RECORD KEEPING AND REPORTING

10. 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	(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 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 5; (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6; and (g) actions taken in accordance with condition 7.
2.	In relation to *revegetation* and *rehabilitation* of areas pursuant to condition 8 and 9	(a) size of the areas *revegetated* and *rehabilitated*; (b) the date(s) on which the *revegetation* and *rehabilitation* was undertaken; (c) the boundaries of the areas *revegetated* and *rehabilitated* (recorded digitally as a shapefile set to GDA2020); (d) a list of species, including quantities, used for *revegetation* and *rehabilitation;* (e) description of the *revegetation* and *rehabilitation* activities undertaken, including actions taken to implement hygiene protocols and weed control; (f) a copy of the *environmental specialist*'s monitoring report(s); (g) any remedial actions required to be undertaken; (h) the date completion criteria are considered to have been met by the *environmental specialist*; and (i) any other actions taken in accordance with condition 8 and 9.

11. Reporting

(a) The permit holder must provide to the *CEO*, on or before 30 June of each calendar year, a written report containing:

(i) the records required to be kept under condition 10; and

(ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.

(b) If no clearing authorised under this permit has been undertaken, a written report confirming that no clearing under this permit has been undertaken, must be provided to the *CEO* on or before 30 June of each calendar year.

(c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of the permit, a written report of records required under condition 10, where these records have not already been provided under condition 11(a).

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 *Environmental Protection Act 1986*.
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 *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
EP Act	*Environmental Protection Act 1986* (WA)
fill	means material used to increase the ground level, or to fill a depression.
Infiltration Pond Revegetation Plan	Means the plan developed by the permit holder for the onsite *revegetation* and *rehabilitation* in accordance with condition 8 of this permit: *"Mindarie Regional Council – Infiltration Pond Revegetation Plan – Tamala Park, version 4 (Natural Area, 2024)."*
local provenance	means native vegetation seeds and propagating material from natural sources within 25 kilometres and the same IBRA subregion of the area cleared.
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.
Offset Revegetation Plan	Means the plan developed by the permit holder for the *revegetation* and *rehabilitation* of the offset site in accordance with condition 9 of this

Term	Definition
	permit: *"Mindarie Regional Council – Offset Revegetation Plan – Tamala Park, version 2 (Natural Area, 2024)."*
optimal time	means the period between April and July.
planting/ed	means the re-establishment of vegetation by creating soil conditions and planting seedlings of the desired species
remedial action/s	means, for the purpose of this permit, any activity that is required to ensure successful re-establishment of understorey to its pre-clearing composition, structure and density, and may include a combination of soil treatments and revegetation.
rehabilitate/ed/ing/ion	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
revegetate/ed/ing/ion	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; 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

Digitally signed by Temika Mathieson
Date: 2025.01.23 10:52:49 +08'00'

Temika Mathieson
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

23 January 2025

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

Figure 2: Map of the boundary of the area subject to revegetation in accordance with condition 8 of this permit.

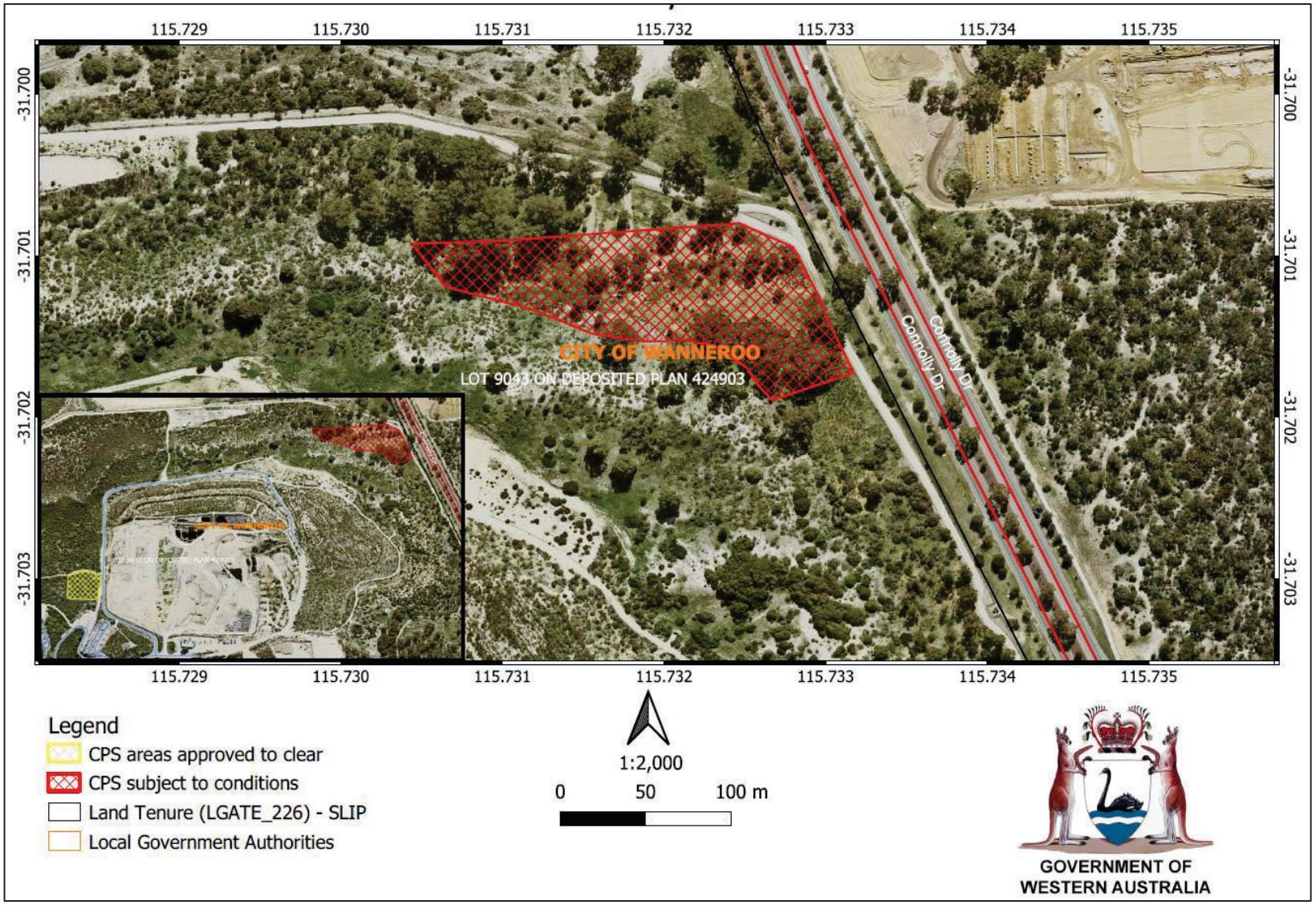

Figure 3: Map of the boundary of the area subject to revegetation in accordance with condition 9 of this permit

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10554/1
Permit type:	Purpose permit
Applicant name:	Mindarie Regional Council
Application received:	8 March 2024
Application area:	0.643 hectares (as revised) of native vegetation
Purpose of clearing:	Constructing an infiltration basin
Method of clearing:	Mechanical
Property:	Lot 9043 on Deposited Plan 424903
Location (LGA area/s):	City of Wanneroo
Localities (suburb/s):	Tamala Park

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area of native vegetation within Bush Forever Site 323 (see Figure 1, Section 1.5).

The purpose of the clearing is for the construction of an infiltration pond to collect rainwater runoff from the western portion of the landfill as a result of capping on the existing landfill, which is located to the east of the application area (MRC, 2024a). The construction of this infiltration pond is a part of the stormwater management infrastructure under the west landfill capping works and will help reduce the amount of landfill leachate produced (MRC, 2024a and 2024b).

The application was revised during the assessment process as a result of revisions to the detailed design of the infiltration pond, resulting in a reduction in the amount of proposed clearing from 0.777 hectares to 0.643 hectares.

1.3. Decision on application

Decision:	Granted
Decision date:	23 January 2025
Decision area:	0.643 hectares (as revised) 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 B), relevant datasets (see Appendix G.1), the findings of biological surveys (see Appendix F), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- the loss of approximately 0.155 hectares of native vegetation that provides suitable habitat for Carnaby's black cockatoo (BC);
- the loss of approximately 0.643 hectares of regionally significant bushland within Bush Forever Site 323;
- the potential for direct impacts on fauna individuals, if present within the application area at the time of the clearing; and
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that some of the impacts of the proposed clearing, including potential direct impacts on fauna individuals, and the potential to facilitate the introduction of weeds and dieback, can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values through permit conditioning. However, impacts on suitable habitat for Carnaby's BC and Bush Forever Site 323 remained significant even after the application of minimisation and mitigation measures and constituted a significant residual impact.

In accordance with the Government of Western Australia's *Environmental Offsets Policy* (2011) and *Environmental Offsets Guidelines* (2014), the Delegated Officer determined that the revegetation of 1.1 hectares within Bush Forever Site 323, including 0.33 hectares with foraging species for Carnaby's BC, is required to address the significant residual impacts of the proposed clearing (see Section 4).

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

- avoid, minimise, and reduce the impacts and extent of clearing;
- take hygiene steps 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;
- revegetate at least 0.19 hectares within the area proposed to be cleared with suitable foraging species for Carnaby's BC; and
- implement an offset consisting of the revegetation and rehabilitation of of at least 1.1 hectares within Bush Forever Site 323, as outlined above, to address significant residual impacts of the proposed clearing.

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 polluter pays principle.
- 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)
- *Rights in Water and Irrigation Act 1914* (RIWI Act)
- *Contaminated Site Act 2023* (CS Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

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)
- *Environmental Offsets Guidelines* (August 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has advised that the proposed infiltration pond is required to facilitate the landfill-capping project, required to reduce the amount of landfill leachate produced and contain greenhouse gas emissions (MRC, 2024a). The location has been selected as it was the lowest point of the slope to the east of the landfill, and therefore the most appropriate site for capturing run-off (MRC, 2024a). The size of the proposed infiltration pond and clearing area has been determined as the minimum area required to accommodate a one-in-100-year rainfall event and therefore, could not be reduced further without compromising the capacity and function of the pond (MRC, 2024a).

During the assessment, the application area was revised to 0.643 hectares as a result of revisions to the detailed design of the infiltration pond, reduced from 0.777 hectares as proposed in the initial application (MRC, 2024d).

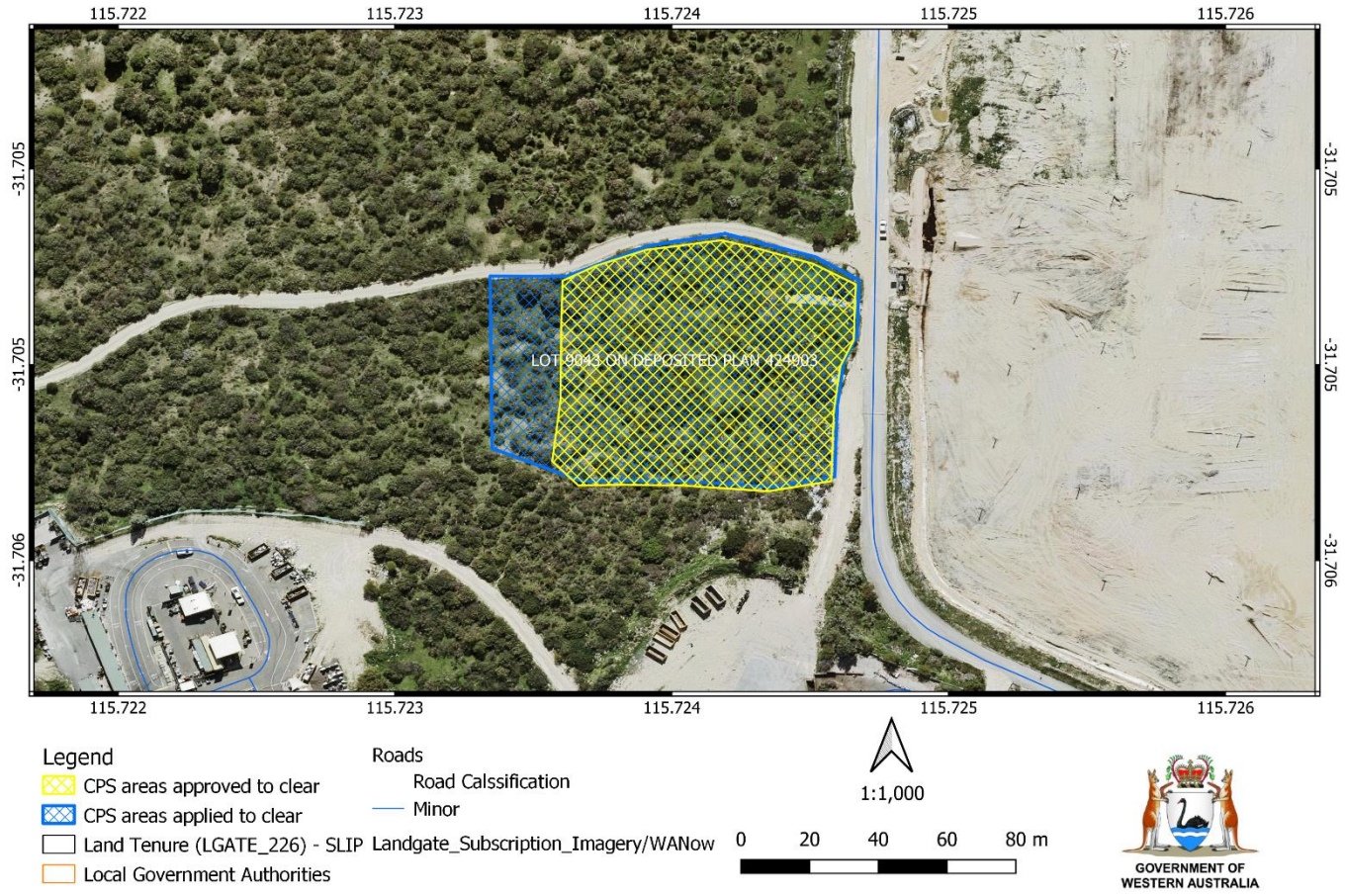

Figure 2. Map of the original application area (crosshatched blue) and the revised application area (crosshatched yellow).

To mitigate the impacts of the proposed clearing, the applicant has proposed to revegetate 0.19 hectares of temporarily cleared areas, accounting for approximately 30 per cent of the area proposed to be cleared, once the construction of the infiltration pond is completed (Natural Area, 2024c). The remaining 0.453 hectares of the application area is considered permanent clearing and is required to remain cleared as it encompasses the infiltration pond base, firebreaks, and rock pitching (Natural Area, 2024c). The proposed onsite revegetation includes the planting of Carnaby's BC foraging species, with a target of having the coverage of Carnaby's BC foraging species of over 60 per cent within the revegetation area (Natural Area, 2024c).

Figure 3. Map of the proposed onsite revegetation within the application area (Natural Area, 2024c).

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. The applicant's commitment to undertake onsite revegetation is enforced as a condition of the clearing permit.

After consideration of avoidance and mitigation measures, it was determined that an offset to counterbalance the significant residual impacts to Carnaby's BC foraging habitat and regionally significant bushland within Bush Forever Site 323 was necessary. In accordance with the Government of Western Australia's *Environmental Offsets Policy* (2011) and *Environmental Offsets Guidelines* (2014), these significant residual impacts have been addressed through the conditioning of environmental offset requirements on the permit. The nature and suitability of the offset provided are summarised in Section 4.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) 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 **Error! Reference source not found.**) identified that the impacts o f the proposed clearing present a risk to biological values (fauna, flora and ecological communities) and conservation areas. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

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

Assessment

According to available databases, 30 conservation significant fauna are recorded in the local area (10-kilometre radius of the application area). The application area may provide suitable habitat for seven conservation significant fauna species, including three bird, two invertebrate, one mammal, and one reptile species (See B.3 for fauna analysis table).

It is noted that no conservation significant fauna species were recorded within the application area during the flora and fauna survey (Natural Area, 2024a).

Bird species

Baudin's and Carnaby's cockatoo

Based on the known distribution and habitat preferences of the conservation significant bird species recorded, the endangered species Carnaby's BC (*Zanda latirostris* - Endangered) is considered most likely to occur within the application area, with more than 500 records mapped within the local area and the closest record occurring approximately 0.17 kilometres away from the application area. Baudin's BC (*Zanda baudinii* – Endangered) has also been recorded in the local area, with the closest record being 4.6 kilometres away from the area proposed to be cleared. However, noting the limited records in the local area (three records) and that the application does not lie within its mapped distribution, the potential for Baudin's BC to be utilising the application area is considered relatively low.

Carnaby's BC was once abundant in Western Australia. Since the late 1940s, the species has suffered a 30 per cent contraction in range, a 50 per cent decline in population, and disappeared from more than a third of its breeding range between 1968 and 1990 (Saunders, 1990; Johnstone and Storr, 1998; Saunders and Ingram, 1998; Garnett et al. 2011). One of the major reasons for this decline is the loss of nesting trees and foraging habitat (Commonwealth of Australia, 2012).

There are three key components of BC habitat: foraging habitat; roosting habitat; and breeding habitat. Any tall trees, generally close to a riparian environment, can provide potential roosting habitat for BC (Commonwealth of Australia, 2012). A tree suitable for BC breeding is defined as a tree with a diameter of 50 centimetres or greater at a height of 1.5 metres above the ground. Carnaby's BC generally forages within six kilometres of a night roost site and, while nesting, within a 12-kilometre radius of their nest site (Commonwealth of Australia, 2012). Carnaby's BC forages on the seeds, nuts and flowers of a large variety of plants including *Proteaceou*s species (*Banksia*, *Hakea* and *Grevillea*), as well as *Allocasuarina* and *Eucalyptus* species, *Corymbia calophylla* and a range of introduced species (Valentine and Stock, 2008). Critical habitat for Carnaby's BC includes any habitat that provides feeding, watering, regular night roosting, or potential for breeding (DPAW, 2013).

Even though the vegetation proposed to be cleared is in Degraded to Completely Degraded (Keighery, 1994) condition, the application area comprises several flora species which provide suitable foraging habitat for Carnaby's BC, such as *Acacia saligna*, *Banksia attenuata*, *Banksia menziesii*, *Banksia prionotes*, *Eremophila glabra*, *Hakea prostrata* and *Xanthorrhoea preissii* (Natural Area, 2024a). Therefore, the proposed clearing will lead to the loss of foraging habitat for Carnaby's BC within the application area. According to available databases, approximately four roost sites occur within six kilometres of the application area and 11 confirmed breeding sites occur within 12 kilometres, making it likely that the application area supports foraging by local breeding and roosting populations.

In considering the definition of critical habitat for the species, the proximity of the application area to breeding and roosting sites, and the cumulative loss of foraging habitat on the Swan Coastal Plain, the proposed clearing of 0.155 hectares of foraging habitat for Carnaby's BC is considered to represent a significant residual impact.

The applicant has proposed to partially revegetate the clearing area following construction, with a total area of 0.19 hectares to be revegetated (see Section 3.1). The proposed revegetation aims to achieve a coverage of species providing Carnaby's BC foraging habitat within the revegetation area of over 60 per cent (Natural Area, 2024c). However, based on a calculation consistent with the WA Environmental Offsets Metric, the proposed onsite

revegetation alone is insufficient to counterbalance the significant residual impacts to foraging habitat for Carnaby's BC caused by the proposed clearing and an offset is required (see Section 4).

Peregrine falcon

The peregrine falcon (*Falco peregrinus* - Other Specially Protected Fauna) is found Australia-wide and occurs in a range of habitats including woodlands, grasslands and coastal cliffs, usually near watercourses (DAWE, 2020). Preferred roosting and breeding habitat for the peregrine falcon includes granite outcrops and coastal cliffs, but in the absence of these habitats, the species has been known to utilise nests of other bird species or tree hollows for breeding (Marchant et al., 1993). It is considered that the habitat present within the application area may provide suitable transient foraging habitat for this species as individuals migrate through the landscape. However, noting that the peregrine falcon is a highly mobile species with a large home range that does not rely on special niche habitats and the availability of extensive suitable foraging habitat within the surrounding local area, the peregrine falcon is likely to be transient in the application area and it is unlikely that the application area represents significant habitat for the species.

Mammal species

Quenda (*Isoodon fusciventer* - Priority 4) are ground-dwelling marsupials, typically associated with forest or woodlands near watercourses, where understorey consists of dense scrub and leaf litter is abundant (DEC, 2012). This species has a wide coastal distribution from Guilderton to east of Esperance with a patchy distribution within the jarrah and karri forests and the Swan Coastal Plain. It is understood that individuals have overlapping home ranges between 1-2 hectares (DEC, 2012). This species is known from 142 records within the local area occurring as close as 760 meters from the application area. Noting the proximity of the nearest record and the suitable habitat within the application area, quendas are likely to utilise the application area. However, given the extent of the proposed clearing and the extensive vegetated area adjacent to the application area, the proposed clearing area is not likely to be significant for the continued survival of this species. The clearing activities may have direct impacts on quenda individuals if they are utilising the application area at the time of clearing, but it is likely that this can be mitigated through slow, progressive, one directional clearing.

Invertebrate species

Swan Coastal Plain shield-backed trapdoor spider

The Swan Coastal Plain shield-backed trapdoor spider (*Idiosoma sigillatum* – Priority 3) is a mygalomorph spider endemic to Australia. This species is distributed in open forest habitats within the Swan Coastal Plain and Jarrah Forest bioregions (ALA, 2024). The microhabitats for the healthy survival of the species are attached to the presence of Sheaok (*Allocasuarin*a spp.), which the species uses to construct their burrows (Mason et al., 2018). This spider species is highly defensive of their burrows and, if moved, will have a lower survival rate due to their species affiliation with remaining in the same area for life and being vulnerable to predation when not in a burrow (Mason et al., 2018).

The Swan Coastal Plain shield-backed trapdoor spider is known from four records within the local area, with the nearest occurring approximately one kilometre from the application area. Sheoak was not recorded within the application area, however the proposed clearing area consists of Veldt grasses (*Ehrharta calycina* and *Ehrharta longiflora*) which have been recorded as a suitable habitat for this species under experimental conditions (Natural Area, 2024a; Mason et al., 2018). Unfortunately, Veldt grass is an ecological trap that hinders the survival rate of this spiderling species through the loss of ecosystem function and sustainable food resources around the area it grows (Mason et al., 2018). Given the small footprint of the application area and the habitat not being suitable for the long-term survival of this species, it is unlikely that the proposed clearing will impact significant habitat for the Swan Coastal Plain shield-backed trapdoor spider.

The graceful sunmoth

The graceful sunmoth (*Synemon gratiosa* – Priority 4) is most common in sedgelands, heathlands, woodlands and occasionally within open parts of forest where their 'foodplants' (various grasses, sedges and mat-rushes) are found. The species typically prefers Banksia woodland habitat that comprises *Lomandra hermaphrodita* or coastal heath comprising *Lomandra maritima* (DEC, 2011). The graceful sunmoth is known from 94 records within the local area, with the nearest occurring approximately 0.8 kilometres from the application area. Given vegetation within the application area contains *Lomandra maritima* (Natural Area, 2024a) which is the preferred habitat of the species, the graceful sunmoth may occur in the proposed clearing area. However, noting that the vegetation within the application area is contiguous with adjacent remnant vegetation that provides similar habitat values, the vegetation within the application area is not likely to comprise significant habitat for this species or be necessary for the continued survival of this species.

Reptile species

The black-striped snake (*Neelaps calonotos* - Priority 3) is a small fossorial venomous snake, restricted to the sandy coastal strip near Perth, between Mandurah and Cataby, with isolated populations further north near Eneabba and Dongara. Habitat for this species includes Eucalyptus and/or Banksia woodlands and dunes and sand plains vegetated with heaths (Wilson and Swan, 2017). The black-striped snake is known from 11 records within the local area, with the nearest occurring approximately two kilometres from the application area. Noting the proximity of the nearest record, this species is likely to utilise the application area while moving through the landscape. However, given the extent of remnant native vegetation adjacent the application area, the vegetation proposed to be cleared is not likely to be a significant habitat of this species.

Conclusion

Based on the above assessment, the application area contains significant foraging habitat for Carnaby's BC and the proposed clearing will lead to the loss of this habitat. The proposed clearing may also impact suitable habitat for quenda, peregrine falcon, Swan Coastal Plain shield-backed trapdoor spider, graceful sunmoth, and black-striped snake, but the impact is unlikely to be significant. There is also the potential that individuals of conservation significant fauna species may occur within the application area at the time of clearing, however direct impacts can be managed by undertaking slow, progressive, directional clearing.

For the reasons set out above, it is considered that the impacts of the proposed clearing to significant foraging habitat for Carnaby's BC constitutes a significant residual impact. In accordance with the *Environmental Offsets Policy* (2011) and *Environmental Offsets Guidelines* (2014), this significant residual impact has been addressed through the conditioning of environmental offset requirements, as outlined under Section 4.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- undertake slow, progressive one directional clearing to allow terrestrial and avian fauna to move into adjacent habitat ahead of the clearing activity;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.;
- revegetate at least 0.19 hectares of temporarily cleared areas within the area proposed to be cleared utilising suitable foraging species for Carnaby's BC; and
- implement an offset consisting of the revegetation and rehabilitation of 0.33 hectares with foraging species for Carnaby's BC within Bush Forever Site 323.

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

Assessment

Flora

Results of the desktop assessment and an analysis of suitable soil type, vegetation type, and habitat showed that there are four conservation significant flora species having the potential to be present within the application area. This presumption is based on known records on similar landform types within the local area (10-kilometre radius). They consist of one threatened species and three priority species (See Appendix B.3 for flora analysis table), including:

- *Eucalyptus argutifolia* (T)
- *Conostylis bracteata* (P3)
- *Sarcozona bicarinata* (P3)
- *Stylidium maritimum* (P3)

Eucalyptus argutifolia (T) known distribution is on the Swan Coastal Plain, with most records located in the Wanneroo and Gingin areas (WAH, 1998-). This threatened species' habitat is usually associated with slopes or gullies of limestone ridges, outcrops (WAH, 1998-). There are 14 records of *E. argutifolia* mapped within the local area, with the closest record approximately one kilometre from the area proposed to be cleared. Considering that the application area does not comprise its suitable habitat, this threatened species is unlikely to occur within the application area.

Conostylis bracteata (P3) is a small rhizomatous herb and has been recorded within the Swan Coastal Plain in habitat associated with limestone or consolidated sand dunes (WAH, 1998-). There are eight records of this species mapped within the local area, with the closest record approximately four kilometres from the application area. The area proposed to be cleared provides suitable habitat for *C.bracterata*, however, no records of this species were identified within the application area during the flora survey (Natural Area, 2024a).

Sarcozona bicarinata (P3) is a shrub distributed in the Swan Coastal Plain, in Dandaragan, Gingin, Joondalup and Wanneroo areas (WAH, 1998-). The species usually occurs on sandy soil over limestone and is usually associated with *Dryandra sessilis* or *Banksia* spp. (WAH, 1998-). In the local area, there are four records of *S. bicarinata*, with the closest record at the distance of 1.3 kilometres from the application area. This species was also absent during the survey, despite the application area comprising its suitable habitat (Natural Area, 2024a).

Stylidium maritimum (P3) is a caespitose herb which has been found across the coastal area of the Swan Coastal Plain. Its habitat is associated with sand over limestone and usually occurs within coastal heath and shrubland, or open Banksia woodland which occurs within the area proposed to be cleared. There are three records of *S. maritimum* within the local area, and the closest record is approximately one kilometre from the application area. Even though the survey did not identify this species, there is the potential that this species does occur within the application area, as the survey was undertaken outside of this species' flowering period (Natural Area, 2024a). However, based on available WA Herbarium records, this species is abundant in areas where it does occur. Furthermore, noting the small area proposed to clear, the possibility of this species occurring within the application area is low. Considering the relatively high local population sizes from WA Herbarium records, the proposed clearing of 0.643 hectares of suitable habitat within the application area is not likely to have a significant impact on the conservation status of *Stylidium maritimum*.

Threatened Ecological Communities

The flora and fauna survey (Natural Area, 2024a) indicates that the species listed as occurring within the application area are indicative of the threatened ecological community (TEC) 'Banksia Woodlands of the Swan Coastal Plain' (Banksia woodlands TEC). Even though the proposed clearing area does not meet the minimum patch size requirement of two hectares at Good (Keighery, 1994) condition, the application area meets majority of the key diagnostic characteristics for the Banksia woodlands TEC and is potentially a part of a larger patch within the adjacent remnant vegetation (Natural Area, 2024a).

Noting this, the Department requested a further assessment of vegetation composition and patch width to accurately determine the presence/absence of the Banksia woodlands TEC within the application area. Responding to this request, a TEC assessment was undertaken in July 2024 for the application area and surrounding area. The assessment found that there are three vegetation types within the application area and surrounding area (Natural Area, 2024b), including:

- *Banksia attenuata* and *B. menziesii* woodland (BaBmW): A woodland of *Banksia attenuata* and *B.menziesii* over an open shrubland of *Xanthorrhoea preissi* and *Hibbertia hypericoides*; and a sparse rushland of *Mesomelaena pseudostygia*.
- *Spyridium globulosum* shrubland (SgS): A mixed coastal heath of *Spyridium globulosum* and *Melaleuca systena* over an understorey of *Lomandra maritima* and *Desmocladus flexuosus.*
- *Acacia cochlearis* open shrubland (AcOS): An open shrubland of *Acacia cochlearis*, *Hakea lissocarpha* and *Scaevola crassifolia* over a mixed understorey of introduced herbs and grasses.

The application area comprises two vegetation types; BaBmW and SgS. The BaBmW vegetation type is likely to be commensurate with the Banksia woodlands TEC (Natural Area, 2024b) and was identified in two patches within the application area, one of which extends north of the area proposed to be cleared (see Figure 4 and Appendix F). An assessment based on the key diagnostic characteristics (local and physical environment, soils and landforms, structure, composition, and contra-indicators) for the Banksia woodlands TEC as outlined in the Approved Conservation Advice (DoEE, 2016) identified that, while the composition of vegetation type BaBmW meets the criteria for Banksia woodlands TEC, the vegetation condition of the patches of BaBmW intersecting the application area is Degraded (Keighery, 1994) and therefore, did not meet the condition threshold to be considered representative of the Banksia woodland TEC (Natural Area, 2024b). The TEC assessment identified that one patch of Banksia woodlands TEC in Good to Excellent (Keighery, 1994) condition occurs approximately 300 metres north of the application area.

Therefore, based on the results of the TEC assessment, the proposed clearing is unlikely to directly or indirectly impact native vegetation that is representative of the Banksia woodlands TEC.

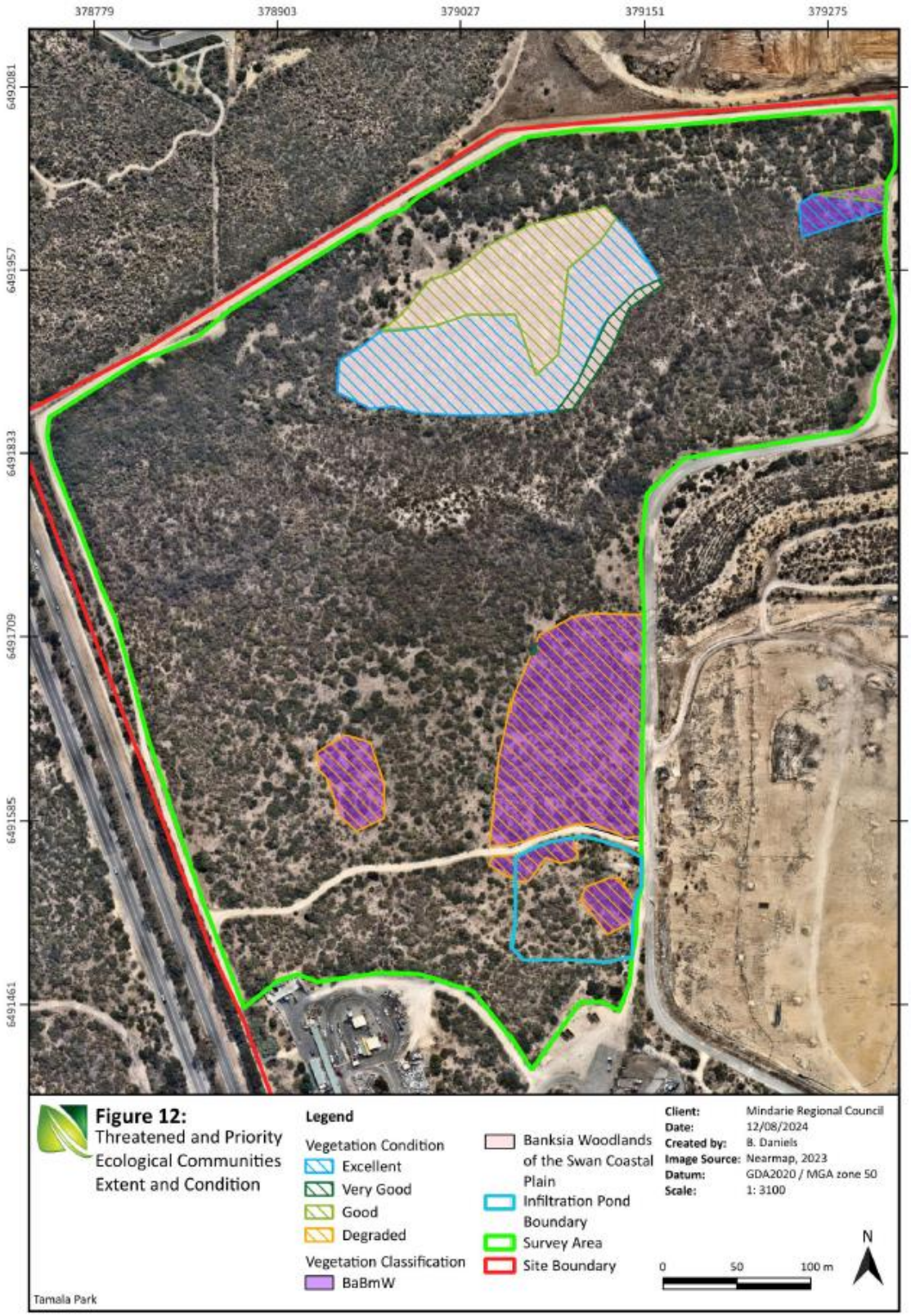

Figure 4. Mapping of TEC assessment within the application area and its surrounding area (Natural Area, 2024b).

Conclusion

Based on the above assessment, the proposed clearing is unlikely to comprise and have an impact on any conservation significant flora species or TECs.

Conditions

No management conditions required.

3.2.3. Environmental value (Conservation area) - Clearing Principle (h)

Assessment
Considering that the application area is located within Bush Forever Site 323, advice from the Department of Planning, Lands and Heritage's (DPLH's) Bush Forever office was sought during the assessment of the application.

DPLH advised that an offset in accordance with Appendix 4 of *State Planning Policy 2.8* (SPP 2.8) should be implemented for the proposed clearing (DPLH, 2024a). Appendix 4 of SPP 2.8 specifies that clearing of high-value vegetation within Bush Forever Sites should be offset with a net outcome of at least 2 times the calculated habitat loss in hectares, to ensure there will be an environmental gain for the proposed clearing. Given the proposed clearing area comprises significant foraging habitat for Carnaby's BC and provides significant bushland within a highly modified landscape on the Swan Coastal Plain, it is considered high-value vegetation. Therefore, it has been estimated that the offset required to counterbalance impacts to Bush Forever Site 323 from the proposed clearing is 1.29 hectares (2 x 0.643 hectares).

DPLH provided further advice that onsite revegetation within an impact area is encouraged, where possible, within Bush Forever Sites and that accounting for onsite revegetation as part of the offset requirement is consistent with the intent of SPP 2.8, given that the proposed offset will still provide a net gain, e.g. 1.5 - 2 times of the habitat loss in this instance (DPLH, 2024b). Noting this advice from DPLH and the applicant's proposal of revegetating 0.19 hectares of the proposed clearing area after the completion of construction (Natural Area, 2024c) (see details in Section 3.1), the offset area required has been reduced to 1.1 hectares within Bush Forever Site 323, which is considered to be sufficient to counterbalance the impacts to regionally significant bushland within Bush Forever Site 323 and align with SPP 2.8.

There are several weed species observed within the application area (Natural Area, 2024a). The proposed clearing therefore, has the potential to introduce these weeds and other pathogens into the area, which could impact on the quality of the adjacent vegetation with Bush Forever Site 323 and its habitat values.

Conclusion
Based on the above assessment, the proposed clearing impacts regionally significant bushland within Bush Forever Site 323. There is potential that the clearing activities could result in the introduction or spread of weeds and dieback into adjacent vegetation. It is considered that impacts to adjacent vegetation can be managed by requiring the applicant to undertake weed and dieback management.

For the reasons set out above, it is considered that the impacts of the proposed clearing to significant bushland within Bush Forever Site 323 constitutes a significant residual impact. In accordance with SPP 2.8, this significant residual impact has been addressed through the conditioning of environmental offset requirements, as outlined under Section 4.

Conditions
To address the above 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;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback;
- revegetate at least 0.19 hectares of temporarily cleared areas within area proposed to be cleared; and
- implement an offset consisting of the revegetation and rehabilitation of at least 1.1 hectares within Bush Forever Site 323.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on DWER's website on 7 May 2024, inviting submissions from the public within a for 21-day period. No submissions were received.

The application area is zoned Public Purposes – special uses in the Metropolitan Region Scheme (MRS) and is a designated Bush Forever area (DPLH, 2024). Therefore, the Delegated Officer considers that SPP 2.8 is a relevant matter for this application.

SPP 2.8 sets out that:
'Proposals or decision-making' in respect of Bush Forever areas 'should:

(i) support a general presumption against the clearing of regionally significant bushland or other degrading activities, except where a proposal or decision – a. is 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, and reasonable offset strategies are secured to offset any loss of regionally significant bushland, where appropriate and practical (clause 5.1.2.1(i)(e)).

In considering SPP 2.8 and advice received from DPLH (see Section 3.2.3), the Delegated Officer considered it appropriate to grant the clearing permit in relation to Bush Forever Site 323 given the proposed infiltration pond is consistent with the purpose and intent of the lad parcel, is justified based on the need for landfill capping (see Section 3.1), and a suitable environmental offset is implemented to counterbalance the loss of vegetation (see Section 4).

Based on the advice from the City of Wanneroo that the proposed development requires a development approval (DA) from the Western Australian Planning Commission (WAPC) (City of Wanneroo, 2024), the applicant has obtained a DA for the construction of the filtration pond, which was issued by WAPC on 18 October 2024 (MRC, 2024c). This DA has three additional conditions including groundwater monitoring and management, obtaining the clearing permit from DWER, and managing UXO risk (MRC, 2024c).

The construction of the infiltration pond is part of the construction of stormwater management infrastructure in conjunction with the Stage 2, Phase 2 west landfill capping works which has been licenced under the licence amendment L9395/2023/1 issued by DWER on 10 November 2023 (DWER, 2024).

DWER's Contaminated Sites Branch advised that the land at Lot 9043 on Plan 424903 was classified under the CS Act as 'contaminated – remediation required' with groundwater contamination and landfill gas reported near the location of the filtration pond (DWER, 2024). DWER's Contaminated Sites Branch also provided advice to WAPC regarding the monitoring and management of groundwater at the site which has been incorporated as a condition of the above-mentioned DA.

The application area is partially mapped within a registered Aboriginal Site of Significance (Site ID 3567 – Mindarie Waugal). 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.

4 Suitability of offsets

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures summarised in Section 3.1:

- the loss of approximately 0.155 hectares of native vegetation that provides significant foraging habitat for Carnaby's BC; and
- the loss of approximately 0.643 hectares of native vegetation within Bush Forever Site 323.

In addition to the onsite rehabilitation action as detailed in Section 3.1, the applicant proposed an environmental offset consisting of revegetation within a 1.62-hectare area located within the same property as the application area (Lot 9043 on Deposited Plan 424903). The proposed offset site is also located within Bush Forever Site 323, as required by DPLH to counterbalance impacts to regionally significant bushland within a Bush Forever area (DPLH, 2024a). The majority of the vegetation (1.24 hectares) within the proposed offset site is in Degraded to Completely Degraded (Keighery, 1994) condition. The applicant has committed to revegetating the offset site to achieve (Natural Area, 2024d):

(1) An improvement in vegetation condition to a Good (Keighery, 1994) condition.
(2) Vegetation structure consistent with the BaBmW vegetation type identified within the flora surveys of the reference site.
(3) Suitable foraging habitat for Carnaby's BC.

Figure 5. Context map showing the locations of the application area (crosshatched yellow) and offset area (crosshatched green) within Bush Forever Site 323 (crosshatched black) (Natural Area, 2024d).

In assessing whether the proposed offset is adequately proportionate to the significance of the environmental values being impacted, DWER undertook a calculation using the WA Environmental Offsets Metric calculator. The calculation indicated that, to offset the loss of 0.155 hectares of native vegetation that provides suitable habitat for Carnaby's BC, in addition to 0.19 hectares to be revegetated with Carnaby's BC foraging species within the application area boundary as mentioned in Section 3.1, the revegetation of 0.33 hectares within the proposed offset site that provides Carnaby's BC foraging habitat is required. The justification for the values used in the offset calculation is provided in Appendix E.

As mentioned previously in Section 3.2.3, in addition to 0.19 hectares to be revegetated within the application area boundary, the revegetation of 1.1 hectares within the proposed offset site is required to offset the loss of 0.643 hectares of native vegetation that is mapped within Bush Forever Site 323.

Therefore, the Delegated Officer considers that the proposed offset to revegetate a minimum of 1.1 hectares within a 1.62-hectare area, including at least 0.33 hectares of Carnaby's BC foraging habitat, within Bush Forever Site 323 adequately counterbalances the significant residual impacts listed above. This offset is consistent with the *WA Environmental Offsets Policy* (2011), *WA Environmental Offset Guidelines* (2014), and SPP 2.8.

The offset area is partially mapped within the registered Aboriginal Site of Significance (Site ID 3567 – Mindarie Waugal). 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 proposed revegetation.

End

Appendix A. Additional information provided by applicant

Summary of further information provided	Consideration of information
TEC assessment report (Natural Area, 2024b)	This information is presented in *Assessment of impacts on environmental values* (see Section 3.2.2).
Infiltration pond revegetation plan (Natural Area, 2024c)	This information is presented in *Avoidance and mitigation measures* (see Section 3.1) and has been enforced as a condition of the clearing permit.
Offset revegetation plan (Natural Area, 2024d)	This information is presented in *Suitability of offsets* (see Section 4) and *Offset calculator value justification* (see Appendix E), and has been enforced as a condition of the clearing permit.
Development approval from WAPC (MRC, 2024c)	This information is presented in *Relevant planning instruments and other matters* (see Section 3.3).

Appendix B. Site characteristics

B.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the intensive land use zone of Western Australia. It abuts small tracks to its east and north and is surrounded by remnant vegetation within Bush Forever Site 323 to the west and south. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared, excluding the ocean) retains approximately 32.0 per cent of the original native vegetation cover.
Ecological linkage	The application area is mapped within the Gnangara Ecological Linkage with the link type of Bush Forever associated with Conceptual Linkage.
Conservation areas	The application area is mapped within Bush Forever Site 323.
Vegetation description	Flora and fauna survey (Natural Area, 2024a) and TEC assessment (Natural Area, 2024b) indicates the vegetation within the proposed clearing area consists of two vegetation types: • *Banksia attenuata* and *B. menziesii* woodland (BaBmW): A woodland of *Banksia attenuata* and *B.menziesii* over an open shrubland of *Xanthorrhoea preissi* and *Hibbertia hypericoides*;and a sparse rushland of *Mesomelaena pseudostygia*. • *Spyridium globulosum* shrubland (SgS): A mixed coastal heath of *Spyridium globulosum* and *Melaleuca systena* over an understorey of *Lomandra maritima* and *Desmocladus flexuosus.* Representative photo and mapping are available in Appendix F. This is inconsistent with the mapped vegetation type: • Quindalup Complex_55, which is described as coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of *Melaleuca lanceolata* (Rottnest Teatree) - *Callitris preissii* (Rottnest Island

Characteristic	Details
	Pine), the closed scrub of Acacia r*ostellifera* (Summer-scented Wattle) and the low closed *Agonis flexuosa* (Peppermint) forest of Geographe Bay. The mapped vegetation type retains approximately 60.5 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	Flora and fauna survey (Natural Area, 2024a) indicates the vegetation within the proposed clearing area is in Degraded to Completely Degraded (Keighery, 1994) condition. The Keighery (1994) condition rating scale is provided in Appendix D. The mapping is available in Appendix F.
Climate	The closest BOM weather station with available data is located at Perth Metro, which is 27.2 kilometres from Tamala Park (BOM, 2024). The highest mean maximum temperature is in February at 31.7°C, the lowest is in July at 18.5°C. The highest mean minimum temperature is in February at 18.4°C and the lowest is in July at 8.1°C. The average annual rainfall is 721.9 mm.
Soil and landform description	The soils are mapped as: • 211Qu_Qp, described as undulating landscapes with deep calcareous sands overlying limestone. Soils have dark grey-brown sand to about 50 cm and then pale brown sand (majority of the application area). • 211Sp_Ky, described as low hilly to gently undulating terrain. Yellow sand over limestone at 1-2 m.
Land degradation risk	The soil type 211Qu_Qp accounts for the majority of the application area and is mapped as having a low risk of land degradation due to most factors, except for phosphorus export risk which is at medium level. The remaining soil type, 211Sp_Ky, has a high risk of land degradation due to wind erosion and subsurface acidification (DPIRD, 2019).
Waterbodies	The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared. The closest watercourse is a perennial manmade waterbody located approximately 1.7 kilometres from the application area.
Hydrogeography	The application area falls within the Perth Groundwater Area proclaimed under RiWI Act. Groundwater salinity within the application area is mapped as 500 - 1000 milligrams per litre total dissolved solids.
Flora	According to available databases, there are 24 conservation significant flora species within the local area, including four threatened and 25 priority species. The most frequently recorded species is *Jacksonia sericea* (P4). The closest recorded species is *Fabronia hampeana* (P2), mapped approximately 570 metres from the application area.
Ecological communities	The application area is not mapped within any threatened/priority ecological communities. The closest TEC is an occurrence of Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain, which is located approximately 700 metres from the application area. The flora and fauna survey (Natural Area, 2024a) indicates that the species listed as occurring within the application area are indicative for the Banksia woodlands TEC. However, the TEC assessment report (Natural Area, 2024b) has found that the application area does not comprise Banksia woodland TEC due to the Banksia woodland area within the application area not meeting the condition threshold.
Fauna	According to available databases, 30 conservation significant fauna species have been recorded within the local area, including 12 threatened fauna species, ten priority fauna species, and nine specially protected fauna species. The closest record is for Carnaby's black cockatoo (*Zanda latirostris*), approximately 170 metres from the application area.

B.2. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records within local area	Are surveys adequate to identify? [Y, N, N/A]
Peregrine falcon (*Falco peregrinus*)	OS	Y	Y	6.13	7	Y
Swan Coastal Plain shield-backed trapdoor spider *(Idiosoma sigillatum*)	P3	Y	Y	0.99	4	Y
Quenda (*Isoodon fusciventer*)	P4	Y	Y	0.76	142	Y
Black-striped snake (*Neelaps calonotos*)	P3	Y	Y	1.03	6	Y
Graceful sunmoth (*Synemon gratiosa*)	P4	Y	Y	0.81	94	Y
Baudin's cockatoo *(Zanda baudinii)*	EN	Y	Y	4.64	3	Y
Carnaby's cockatoo (*Zanda latirostris*)	EN	Y	Y	0.17	566	Y

EN: endangered, OS: other specially protected, P: priority

B.3. Flora analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable soil type? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records within local area	Are surveys adequate to identify? [Y, N, N/A]
Conostylis bracteata	P3	Y	Y	Y	3.98	8	Y
Eucalyptus argutifolia	T	N	Y	Y	1.01	14	Y
Sarcozona bicarinata	P3	N	Y	N	1.28	4	Y
Stylidium maritimum	P3	Y	Y	N	1.03	3	N

P: priority; T: threatened

B.4. Land degradation risk table

Risk categories	211Qu__Qp (majority of the application area)	211Sp__Ky
Wind erosion	L2: 3-10% of the map unit has a high to extreme hazard	H2: >70% of the map unit has a high to extreme hazard
Water erosion	L2: 3-10% of the map unit has a very high to extreme hazard	L1: <3% of the map unit has a high to extreme hazard
Salinity	L1: <3% of the map unit has a moderate or high hazard or is presently saline	
Subsurface Acidification	L1: <3% of the map unit has a high susceptibility	H2: >70% of the map unit has a high susceptibility
Flood risk	L1: <3% of the map unit has a moderate to high hazard	
Water logging	L1: <3% of the map unit has a moderate to very high to risk	
Phosphorus export risk	M1: 10-30 % of the map unit has a high to extreme hazard	L2: 3-10% of the map unit has a high to extreme hazard

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared contains suitable habitat for conservation significant fauna and flora species indicative of a threatened ecological community.	May be at variance	Yes *Refer to Section 3.2.1 and 3.2.2, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains foraging habitat for conservation significant fauna.	At variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for threatened flora species.	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared contain species that can indicate the Banksia woodlands TEC (Natural Area, 2024a). However, the TEC assessment has identified that the application area does not comprise Banksia woodland TEC due to the area of Banksia woodland vegetation type within the application area not meeting the condition threshold (Natural Area, 2024b).	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation type and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is mapped within an ecological linkage. However, considering the degraded condition of the vegetation proposed to be cleared and the location of the application area which is adjacent to existing tracks and on the edge of the mapped ecological linkage, the proposed clearing is unlikely to significantly fraction the linkage and eliminate the fauna dispersal in the local area.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the application area is located within the Bush Forever Site 323, the proposed clearing may have an impact on the environmental values of the conservation area.	At variance	Yes *Refer to Section 3.2.3, above.*
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on environment associated with a watercourse or wetland.	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: Noting that the soil mapped within the majority of the application area is not susceptible to any factors causing land degradation risks, and the extent of the application area is relatively small, the proposed clearing is not likely to have an appreciable impact to land degradation.	Not likely to be at variance	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given no water courses are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.	Not likely to be at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment The 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. Given no water courses are recorded within the application area, the proposed clearing is unlikely to contribute to waterlogging. However, the construction of the infiltration pond will cause localised waterlogging in high rainfall events or wet seasons which is beyond the scope of this clearing permit application assessment.	Not likely to be at variance	No

Appendix D. 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 E. Offset calculator value justification

WA Environmental Offsets Calculators
Rationale for scores used in the offset calculators

Calculation	Score (Area)	Rationale
Conservation significance		
Description	0.155 hectares of Carnaby's cockatoo foraging habitat	The proposed clearing will impact on 0.155 hectares of significant foraging habitat for Carnaby's cockatoos.
Type of environmental value	Species (flora/fauna)	Carnaby's BC is listed as a threatened fauna species under the Commonwealth EPBC Act and state BC Act.
Conservation significance of environmental value	Endangered	Carnaby's BC is listed as Endangered under both the EPBC Act and BC Act.
Landscape-level value impacted	yes/no	The impact is to an area of foraging habitat in area.
Significant impact		
Description	0.155 hectares of Carnaby's cockatoo foraging habitat	0.155 hectares of native vegetation that comprises significant foraging habitat for Carnaby's BC will be cleared for the construction of an infiltration basin.
Significant impact (hectares) / Type of feature	0.16	The application area contains 0.155 hectares of moderate quality foraging habitat (*Banksia* sp.) for the Endangered Carnaby's BC, based on vegetation mapping from a flora and fauna survey (Natural Area, 2024b) and a TEC assessment (Natural Area, 2024c).
Quality (scale) / Number	6.00	Based on the available information from the flora and fauna survey (Natural Area, 2024b) and TEC assessment (Natural Area, 2024c), the vegetation within the application area is in Degraded (Keighery, 1994) condition. However, the quality of foraging habitat is assessed based on additional criteria including the consideration of the site context. The application area falls within the known distribution of Carnaby's BC, with 18 known roosting sites (closest 1.7km) and 14 breeding site (closest 6km) within the local area (10km). Therefore, the application area is likely to support foraging by birds frequenting the area and roosting/breeding locally. However, no evidence of foraging or use of the application area by either species was identified during the surveys. The application is also located within an extensively modified part of the species' range (Swan Coastal Plain) and available foraging habitat in the region is limited.
Rehabilitation credit		
Description	Revegetating onsite with native vegetation that comprises significant foraging habitat for Carnaby's cockatoos	The applicant proposed to undertake revegetation onsite within the infiltration pond boundary, post-clearing, with native vegetation that comprises significant habitat for Carnaby's BC.
Proposed rehabilitation (area in hectares)	0.19	The proposed onsite revegetation includes a total of 0.19 hectares, proposed to be revegetated with suitable BC foraging species (Banksia spp., Hakea spp., Tuart) and will provide significant foraging habitat for Carnaby's BC.
Current quality of rehabilitation site	0.00	As the onsite revegetation within the application area will occur post-clearing, it is assumed that the area will be in

Calculation	Score (Area)	Rationale
		Completely Degraded (Keighery, 1994) condition and provide little to no foraging habitat.
Future quality WITHOUT rehabilitation (scale) / Future number WITHOUT rehabilitation	0.00	It is not expected that the quality of foraging habitat within the application area post-clearing would change in the absence of onsite revegetation.
Future quality WITH rehabilitation (scale) / Future number WITH rehabilitation	4.00	Assuming revegetation is undertaken in accordance with the Infiltration Pond Revegetation Plan (Natural Area, 2024d) which will achieve specific measurable criteria for the establishment of BC foraging habitat within the revegetation area.
Time until ecological benefit (years)	12.00	Based on the species list specified in the Infiltration Pond Revegetation Plan (Natural Area, 2024d), it is expected that the primary foraging species to be planted in this area will include common Banksia woodland foraging species (e.g., *Banksia attenuata, B. menziesii*). Therefore, it is assumed that the benefits of revegetation of Carnaby's cockatoo foraging habitat will be available after 10 years. This is a conservative measure based on available literature (e.g., Lee et al. (2013) who identified evidence of foraging on marri and Banksia in rehabilitated mine pit areas, ranging from 8-14 years of age) and the understanding that proteaceous species are relatively fast maturing and have high calorific value at a relatively young age. An extra two years have been allowed to account for the delay in commencement of the revegetation (assumed to commence within 2 years of permit start date).
Confidence in offset result (%)	0.8	There is a moderate level of confidence that the offset will achieve the predicted result given revegetation will be undertaken in accordance with the Infiltration Pond Revegetation Plan (Natural Area, 2024d).
Offset		
Description	Rehabilitation of native vegetation that comprises significant foraging habitat for Carnaby's cockatoos within Bush Forever Site 323	A single offset involving the rehabilitation of native vegetation within Bush Forever Site 323 (Lot 9043 on Deposited Plan 424903, Tamala Park) that contains significant foraging habitat for Carnaby's BC.
Proposed offset (area in hectares)	0.33	The area required to be revegetated to counterbalance the significant residual impacts to native vegetation that provides significant foraging habitat for Carnaby's BC by 100%.
Current quality of offset site	3.00	Based on the Offset Revegetation Plan - Tamala Park (Natural Area, 2024e), the rehabilitation site is in Degraded to Completely Degraded (Keighery, 1994) condition and contains sparsely distributed secondary foraging habitat (*Eucalyptus gomocephala* and *Xanthorrhoea preissii*) for Carnaby's BC.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	3.00	It is not expected that the quality of foraging habitat within the rehabilitation offset area would change without offset, with no management actions undertaken to improve the condition within the offset area.
Future quality WITH offset (scale) / Future number WITH offset	5.00	The Completion Criteria specified in the Offset Revegetation Plan - Tamala Park (Natural Area, 2024d) will restore the vegetation to Good (Keighery, 1994) condition and ensure BC foraging habitat has a coverage of 60 per cent.

Calculation	Score (Area)	Rationale
Time until ecological benefit (years)	12.00	Based on the species list specified in the Offset Revegetation Plan (Natural Area, 2024e), it is expected that the primary foraging species to be planted in this area will include common Banksia woodland foraging species (e.g., *Banksia attenuata, B. menziesii*). Therefore, it is assumed that the benefits of revegetation of Carnaby's BC foraging habitat will be available after 10 years. This is a conservative measure based on available literature (e.g., Lee et al. (2013) who identified evidence of foraging on marri and Banksia in rehabilitated mine pit areas, ranging from 8-14 years of age) and the understanding that proteaceous species are relatively fast maturing and have high calorific value at a relatively young age. An extra two years have been allowed to account for the delay in commencement of the revegetation (assumed to commence within 2 years of permit start date).
Confidence in offset result (%)	0.8	There is a moderate level of confidence that the offset will achieve the predicted result given revegetation will be undertaken in accordance with the Offset Revegetation Plan (Natural Area, 2024e).
Duration of offset implementation (maximum 20 years)	20.00	The revegetation program will occur over 5 years as per the Offset Revegetation Plan (Natural Area, 2024e). However, the revegetation offset area occurs within Bush Forever Site 323 which is already considered secure and managed for conservation of regionally significant bushland long-term. Therefore, the maximum of 20 years for this field is applied.
Time until offset site secured (years)	1.00	No change in vesting is proposed, noting the offset site is within Bush Forever Site 323 which is already considered secure and managed for conservation of regionally significant bushland long-term. Therefore, minimum of one year for this field is applied.
Risk of future loss WITHOUT offset (%)	5.0%	The area is within Bush Forever Site 323 and managed for conservation of regionally significant bushland long-term. Therefore, there is a relatively low risk of future loss.
Risk of future loss WITH offset (%)	5.0%	No change in land tenure or vesting is proposed. Therefore, risk of loss remains the same with the offset.

Appendix F. Biological survey information excerpts

Vegetation Type	Description	Photograph
Acacia cochlearis open shrubland (AcOS)	An open shrubland of *Acacia cochlearis, Hakea lissocarpha* and *Scaevola crassifolia* over a mixed understorey of introduced herbs and grasses.	
Banksia attenuata and *B. menziesii* woodland (BaBmW)	A woodland of *Banksia attenuata* and *B. menziesii* over an open shrubland of *Xanthorrhoea preissi* and *Hibbertia hypericoides;* and a sparse rushland of *Mesomelaena pseudostygia.*	
Spyridium globulosum shrubland (SgS)	A mixed coastal heath of *Spyridium globulosum* and *Melaleuca systena* over an understorey of *Lomandra maritima* and *Desmocladus flexuosus.*	

Figure F.1. Representative photo and description of vegetation types within the area proposed to be cleared (BaBmW and SgS) and its surrounding area (Natural Area, 2024b).

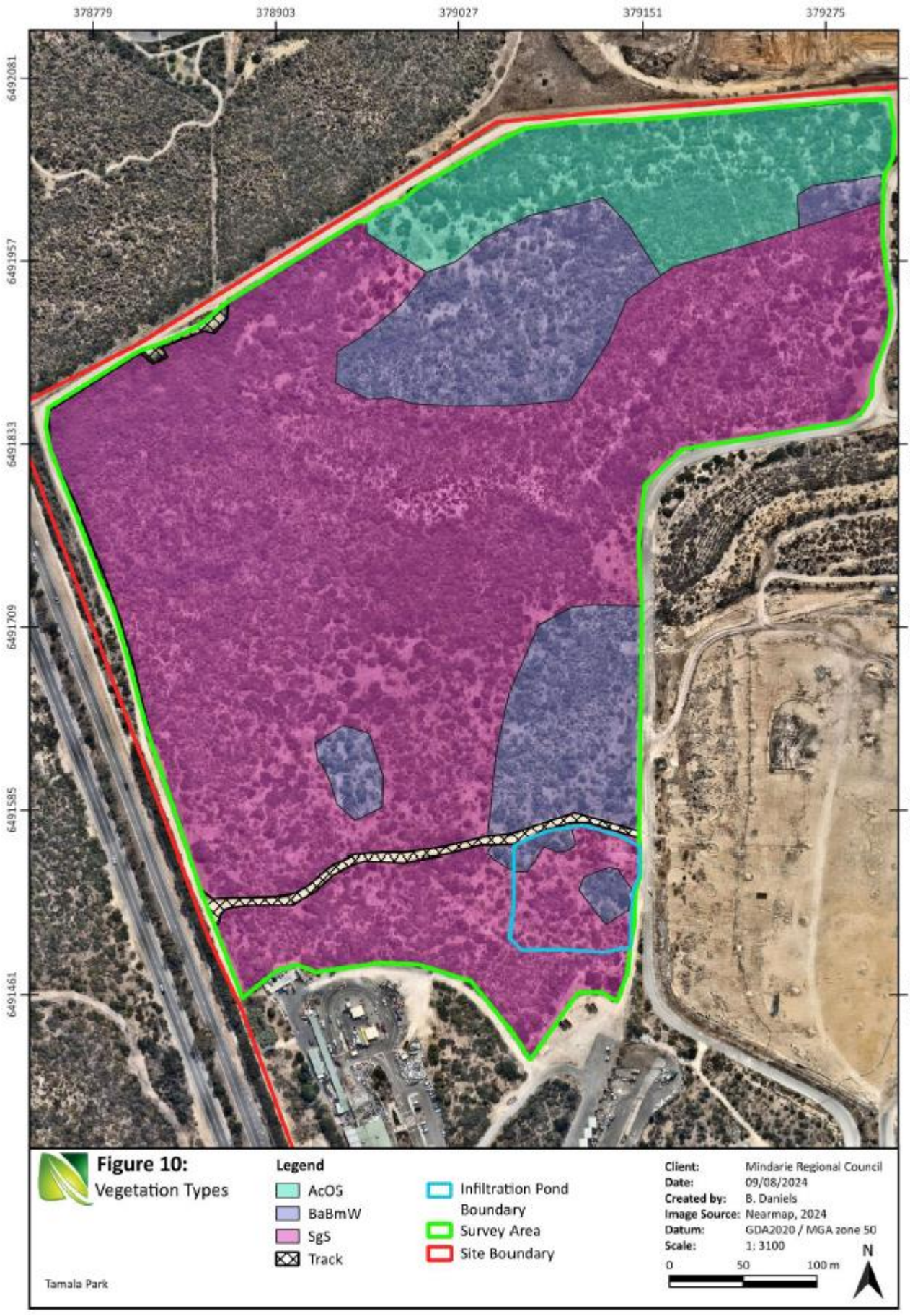

Figure F.2. Mapping of vegetation types within the area proposed to be cleared (infiltration pond area) and its surrounding area (Natural Area, 2024b)

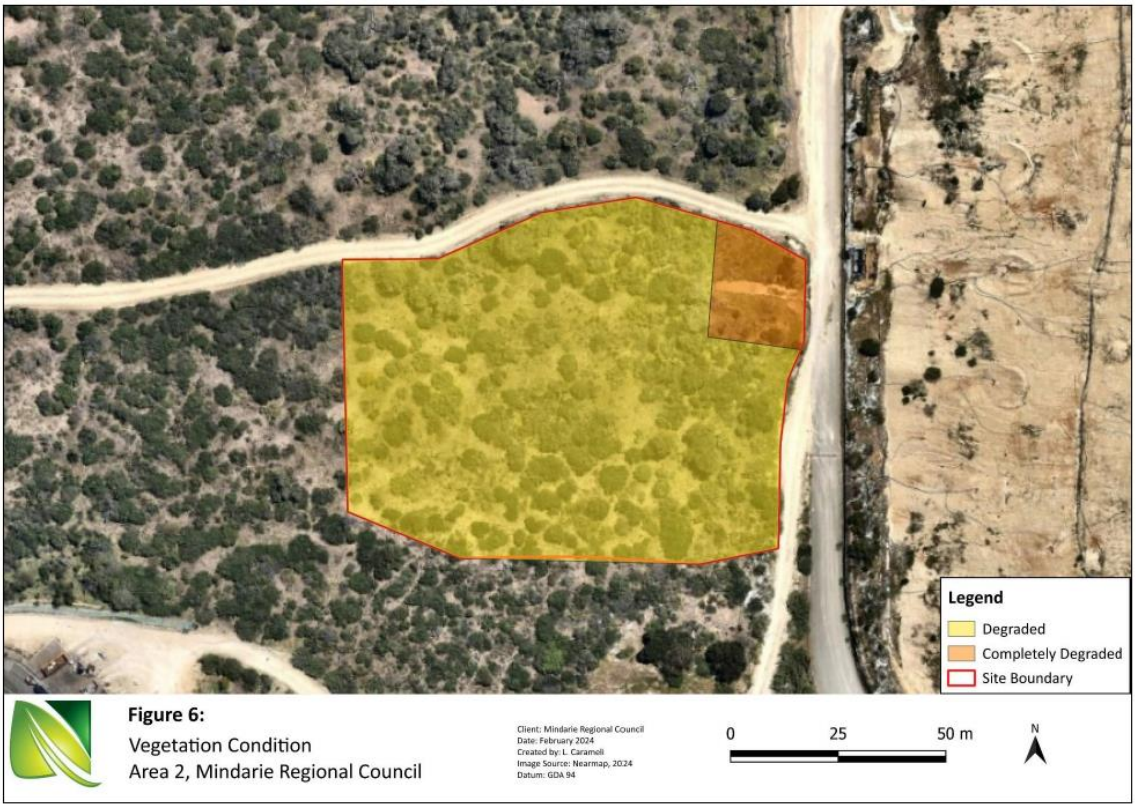

Figure F.3. Mapping of vegetation condition within the application area (Natural Area, 2024a)

Appendix G. Sources of information

G.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- 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

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)

G.2. References

Atlas of Living Australia (ALA) (2024) *Idiosoma sigillatum (O.P.-Cambridge, 1870) - Swan Coastal Plain Shield-Backed Trapdoor Spider*. Available at: https://bie.ala.org.au/species/https://biodiversity.org.au/afd/taxa/83672d75-48f9-4d93-8c1c-b5a9d25ec640

Bureau of Meteorology (BOM) (2024) *Climate statistics for Australian locations – Perth Metro*. Available at: http://www.bom.gov.au/climate/averages/tables/cw_009225.shtml (Accessed in May 2024).

City of Wanneroo (DPLH) (2024a) *Comments on the clearing permit application CPS 10554/1*. Received 7 June 2024 (DWER Ref: DWERDT960742).

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

Commonwealth of Australia (2022) *Referral guidelines for three WA threatened black cockatoo species. Carnaby's Cockatoo (Zanda latirostris), Baudin's Cockatoo (Zanda baudinii) and the Forest Red-tailed Black-cockatoo (Calyptorhynchus banksii naso)*. Available from https://www.dcceew.gov.au/sites/default/files/documents/referral-guideline-3-wa-threatened-black-cockatoo-species-2022.pdf

Department of Agriculture, Water and the Environment (DAWE) (2020) *The Peregrine Falcon (Falco peregrinus).* Canberra, Australia. Available from: https://www.environment.gov.au/resource/peregrine-falconfalcoperegrinus

Department of Environment and Conservation (DEC) (2011) *Information sheet 41/2011 Graceful Sun-moth (Synemon gratiosa*) https://www.dpaw.wa.gov.au/images/documents/about/science/pubs/infosheets/sdis041.pdf

Department of Environment and Conservation (DEC) (2012) *Fauna profiles: Quenda, Isoodon obesulus fusciventer*. Department of Environment and Conservation, Western Australia. Retrieved from: https://www.dpaw.wa.gov.au/images/documents/conservation-management/pestsdiseases/quenda_2012.pdf

Department of the Environment and Energy (DoEE) (2016) *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*. Canberra: Department of the Environment and Energy. Retrieved from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/131-conservationadvice.pdf

Department of Environment Regulation (DER) (2013) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

Department of Planning, Lands and Heritage (DPLH) (2024a) *Comments on the clearing permit application CPS 10554/1*. Received 7 June 2024 (DWER Ref: DWERDT960742).

Department of Planning, Lands and Heritage (DPLH) (2024b) *Further advice on the revegetation and offset within Bush Forever sites for the clearing permit application CPS 10554/1*. Received 25 November 2024 (DWER Ref: DWERDT1016718).

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 30 June 2020).

Department of Water and Environmental Regulation (DWER) (2019) *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.

Department of Water and Environmental Regulation (DWER) (2024) *DWER Response to WAPC (DPLH) request on the referral for the Development Application No: 30-50244-6 – Lot No 9043 (No. 1700k) Marmion Avenue, Tamala Park.* 18 September 2024. Department of Water and Environmental Regulation, Western Australia (DWER Ref: DWERDT1008005).

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

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

Government of Western Australia (2019) *2018 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

Garnett, S., Szabo, J. and Dutson, G. (2011) *The Action Plan for Australian Birds 2010*. CSIRO Publishing, Melbourne, Victoria.

Johnstone, R.E. and Storr, G.M. (1998) *Handbook of Western Australian Birds, Volume I, Non-passerines (Emu to Dollarbird)*. Western Australian Museum, Perth.

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

Lee, J.G.H., Finn, H., Calver, M. (2013) *Feeding activity of threatened black cockatoos in mine-site rehabilitation in the jarrah forest of south-western Australia*. Australian Journal of Zoology. DOI: 10.1071/ZO12101.

Marchant, S., Higgins, P.J., Ambrose, S.J., & Steele, W.K. (2006) *Handbook of Australian, New Zealand & Antarctic birds*. Oxford University Press, USA

Mindarie Regional Council (MRC) (2024a) *Clearing permit application CPS 10554/1*, received 8 March 2024 (DWER Ref: DWERDT918157).

Mindarie Regional Council (MRC) (2024b) *Further information about the infiltration pond for the clearing permit application CPS 10554/1*, received 15 October 2024 (DWER Ref: DWERDT1025978).

Mindarie Regional Council (MRC) (2024c) *Providing the development approval for the infiltration pond*, received 21 October 2024 (DWER Ref: DWERDT1025979).

Mindarie Regional Council (MRC) (2024d) *Confirming the revised application area*, received 18 December 2024 (DWER Ref: DWERDT1053436).

Natural Area (2024a) *Mindarie Regional Council – Flora and Fauna Survey – Areas 1 and 2*, received 12 March 2024. IBSA number: IBSA-2024-0138.

Natural Area (2024b) *Mindarie Regional Council – Threatened Ecological Community Assessment – Tamala Park*, received 04 October 2024. IBSA number: IBSA-2024-0386.

Natural Area (2024c) *Mindarie Regional Council – Infiltration Pond Revegetation Plan – Tamala Park, version 4*, received 24 December 2024 (DWER Ref: DWERDT1056258).

Natural Area (2024d) *Mindarie Regional Council – Offset Revegetation Plan – Tamala Park, version 2*, received 22 November 2024 (DWER Ref: DWERDT1041114).

Saunders, D.A. (1990) *Problems of survival in an extensively cultivated landscape: the case of Carnaby's cockatoo Calyptorhynchus funereus latirostris*. Biological Conservation. 54: 277-290.

Saunders, D.A. and Ingram, J.A. (1998) *Twenty-eight years of monitoring a breeding population of Carnaby's cockatoo*. Pacific Conservation Biology. 4: 261-270.

Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.

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

Wilson, S. and Swan, G. (2017) *A Complete Guide to Reptiles of Australia - 5th Edition*. Sydney, NSW. New Holland Publisher.